

2010 Saturn VUE Owner Manual

In Brief	1-1
Instrument Panel	1-2
Initial Drive Information	1-3
Vehicle Features	1-14
Performance and Maintenance	1-17

Keys, Doors and Windows ...	2-1
Keys and Locks	2-2
Doors	2-8
Vehicle Security	2-9
Exterior Mirrors	2-12
Interior Mirrors	2-13
Windows	2-13
Roof	2-15

Seats and Restraints	3-1
Head Restraints	3-2
Front Seats	3-3
Rear Seats	3-9
Safety Belts	3-10
Airbag System	3-25
Child Restraints	3-42

Storage	4-1
Storage Compartments	4-1
Additional Storage Features ...	4-3
Roof Rack System	4-4

Instruments and Controls	5-1
Controls	5-2
Warning Lights, Gages, and Indicators	5-9
Information Displays	5-25
Vehicle Messages	5-31
Vehicle Personalization	5-39
Universal Remote System ...	5-45

Lighting	6-1
Exterior Lighting	6-1
Interior Lighting	6-5
Lighting Features	6-5

Infotainment System	7-1
Introduction	7-1
Radio	7-4
Audio Players	7-11
Phone	7-18

Climate Controls	8-1
Climate Control Systems	8-1
Air Vents	8-9
Maintenance	8-9

Driving and Operating	9-1
Driving Information	9-2
Starting and Operating	9-27
Engine Exhaust	9-34
Automatic Transmission	9-35
Drive Systems	9-38
Brakes	9-38
Ride Control Systems	9-40
Cruise Control	9-42
Object Detection Systems ...	9-44
Fuel	9-47
Towing	9-52
Conversions and Add-Ons ...	9-61

2010 Saturn VUE Owner Manual

Vehicle Care	10-1
General Information	10-2
Vehicle Checks	10-4
Headlamp Aiming	10-30
Bulb Replacement	10-33
Electrical System	10-37
Wheels and Tires	10-43
Jump Starting	10-74
Towing	10-78
Appearance Care	10-82

Service and Maintenance ...	11-1
General Information	11-1
Scheduled Maintenance	11-2
Recommended Fluids, Lubricants, and Parts	11-7
Maintenance Records	11-10

Technical Data	12-1
Vehicle Identification	12-1
Vehicle Data	12-2
Customer Information	13-1
Customer Information	13-1
Reporting Safety Defects	13-13
Vehicle Data Recording and Privacy	13-15
Index	i-1



SATURN, the SATURN Emblem, and the name VUE are registered trademarks of Saturn Corporation. GENERAL MOTORS and GM are registered trademarks of General Motors Corporation.

This manual describes features that may or may not be on your specific vehicle either because they are options that you did not purchase or due to changes subsequent to the printing of this owner manual.

Please refer to the purchase documentation relating to your specific vehicle to confirm each of the features found on your vehicle. For vehicles first sold in Canada, substitute the name "General Motors of Canada Limited" for Saturn Corporation wherever it appears in this manual.

Keep this manual in the vehicle for quick reference.

Canadian Vehicle Owners

Propriétaires Canadiens

A French language copy of this manual can be obtained from your dealer/retailer or from:

On peut obtenir un exemplaire de ce guide en français auprès du concessionnaire ou à l'adresse suivante:

Helm, Incorporated
P.O. Box 07130
Detroit, MI 48207

1-800-551-4123
Numéro de poste 6438 de langue
française
www.helminc.com

Using this Manual

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

Danger, Warnings, and Cautions

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

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

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



WARNING

These mean there is something that could hurt you or other people.

Notice: This means there is something that could result in property or vehicle damage. This would not be covered by the vehicle's warranty.



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

Symbols

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



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



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

Vehicle Symbol Chart

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

 : Airbag Readiness Light

 : Air Conditioning

 : Antilock Brake System (ABS)

 : Audio Steering Wheel Controls or OnStar®

 : Brake System Warning Light

 : Charging System

 : Cruise Control

 : Engine Coolant Temperature

 : Exterior Lamps

 : Fog Lamps

 : Fuel Gage

 : Fuses

 : Headlamp High/Low-Beam Changer

 : LATCH System Child Restraints

 : Malfunction Indicator Lamp

 : Oil Pressure

 : Power

 : Remote Vehicle Start

 : Safety Belt Reminders

 : Tire Pressure Monitor

 : Traction Control

 : Windshield Washer Fluid



 NOTES

In Brief

Instrument Panel

Instrument Panel	1-2
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Initial Drive Information

Initial Drive Information	1-3
Remote Keyless Entry (RKE)	
System	1-3
Remote Vehicle Start	1-4
Door Locks	1-5
Liftgate	1-5
Windows	1-5
Seat Adjustment	1-6
Heated Seats	1-8
Head Restraint Adjustment	1-8
Safety Belt	1-9
Sensing System for	
Passenger Airbag	1-9
Mirror Adjustment	1-10
Steering Wheel	
Adjustment	1-10
Interior Lighting	1-11
Exterior Lighting	1-11
Windshield Wiper/Washer	1-12
Climate Controls	1-13

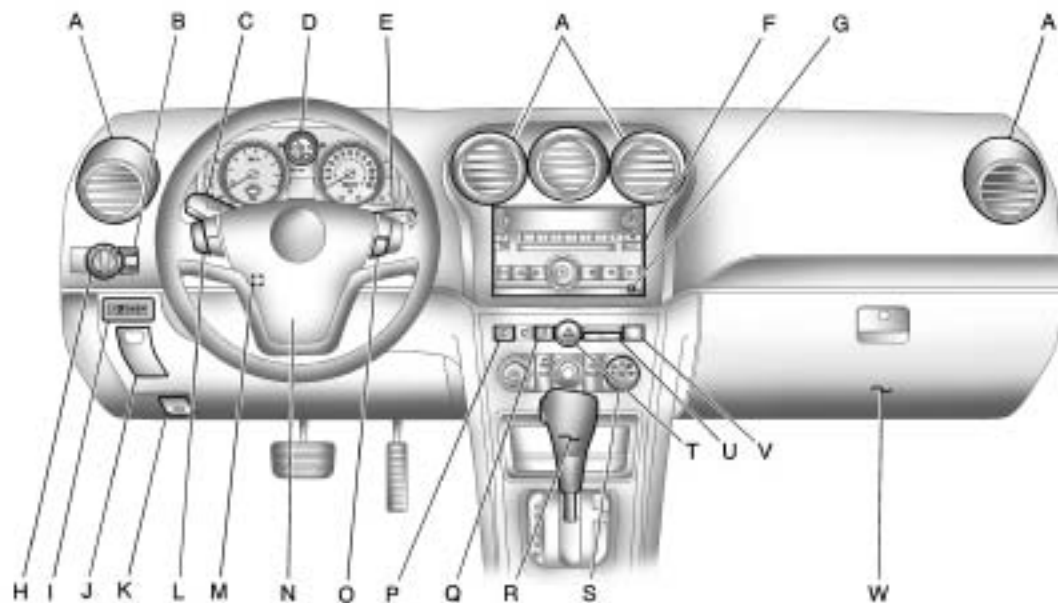
Vehicle Features

Radio(s)	1-14
Satellite Radio	1-15
Portable Audio Devices	1-15
Bluetooth®	1-15
Steering Wheel Controls	1-16
Navigation System	1-16
Cruise Control	1-16
Power Outlets	1-17
Sunroof	1-17

Performance and Maintenance

Traction Control	
System (TCS)	1-17
StabiliTrak®	1-18
Tire Pressure Monitor	1-18
Engine Oil Life System	1-19
Driving for Better Fuel	
Economy	1-19
Roadside Assistance	
Program	1-20
OnStar®	1-20

Instrument Panel



- A. *Air Vents on page 8-9.*
- B. *Instrument Panel Illumination Control on page 6-5.*
- C. *Turn and Lane-Change Signals on page 6-4.*
- D. *Instrument Cluster on page 5-10.*
- E. *Windshield Wiper/Washer on page 5-3.*
- F. *AM-FM Radio on page 7-4.*
- G. *Auxiliary Input Jack. See Auxiliary Devices on page 7-17.*
- H. *Exterior Lamp Controls on page 6-1.*
- I. *Driver Information Center (DIC) Buttons. See Driver Information Center (DIC) on page 5-25.*
- J. *Instrument Panel Storage on page 4-1.*
- K. *Hood Release. See Hood on page 10-5.*
- L. *Cruise Control on page 9-42.*
- M. *Steering Wheel Adjustment on page 5-2.*
- N. *Horn on page 5-3.*
- O. *Steering Wheel Controls on page 5-3.*
- P. *Rear Window Wiper/Washer on page 5-5.*
- Q. *Traction Control System (TCS) on page 9-40.*
- R. *Shift Lever. See Automatic Transmission on page 9-35.*
- S. *Climate Control Systems on page 8-1 or Automatic Climate Control System on page 8-5 (If Equipped).*
- T. *Hazard Warning Flashers on page 6-3.*
- U. *Passenger Airbag Status Indicator. See Passenger Sensing System on page 3-34.*
- V. *Passenger Safety Belt Reminder. See Safety Belt Reminders on page 5-12.*
- W. *Glove Box on page 4-1.*

Initial Drive Information

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

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

Remote Keyless Entry (RKE) System

The RKE transmitter is used to remotely lock and unlock the doors from up to 60 m (195 feet) away from the vehicle.



Remote Start Not Shown

Press  to unlock the driver door.
Press  again within five seconds to unlock all remaining doors.

Press  to lock all doors, including the liftgate.

Lock and unlock feedback can be personalized.

Press  and release to locate the vehicle.

Press  and hold to sound the panic alarm.

Press  again to cancel the panic alarm.

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

Remote Vehicle Start

Starting the Vehicle

With this feature the engine can be started from outside of the vehicle.

1. Aim the RKE transmitter at the vehicle.
2. Press .
3. Immediately after completing Step 2, press and hold  until the parking lamps flash.

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

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

Canceling a Remote Start

To cancel a remote start:

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

See *Remote Vehicle Start* on page 2-4.

Door Locks

To lock or unlock a door, use the key from the outside or the door lock from the inside.

See *Door Locks on page 2-6.*

Power Door Locks

: The power door lock switches are located on the driver door.

To unlock the doors, press the right side of the switch.

To lock the doors, remove the ignition key and press the left side of the switch.

See *Power Door Locks on page 2-6.*

Liftgate

To lock or unlock the liftgate, if the vehicle has this feature, press  or  twice on the Remote Keyless Entry (RKE) transmitter or press the power door lock switch.

To open the liftgate, press the touchpad on the underside of the liftgate handle and pull up.

To close the liftgate, pull down using the handle and close until it latches.

See *Liftgate on page 2-8.*

Windows



All window switches are located on the driver door. Each passenger door has a switch that controls only that window.

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

The power windows operate when the ignition is in ON/RUN or ACC/ACCESSORY, or while in Retained Accessory Power (RAP). See *Retained Accessory Power (RAP) on page 9-29.*

See *Power Windows on page 2-14.*

Seat Adjustment

Manual Seats

To move a manual seat forward or rearward:



1. Lift the bar to unlock the seat.
2. Slide the seat to the desired position and release the bar.

Try to move the seat with your body to be sure the seat is locked in place.

See *Seat Adjustment* on page 3-3.

Power Seats

This vehicle may have power seats.



To adjust the seat location, move the control forward or rearward.



To raise or lower the front or rear part of the seat cushion, move the front or rear of the control up or down.

See *Power Seat Adjustment* on page 3-4.

Seat Height Adjuster



On vehicles with this feature, move the lever upward repeatedly to raise the seat.

Move the lever downward repeatedly to lower the seat.

See *Seat Adjustment* on page 3-3.

Reclining Seatbacks — Manual

On seats with manual reclining seatbacks, use the lever located on the outboard side of the seat.



To recline the seatback:

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

See *Reclining Seatbacks* on page 3-5.

Reclining Seatbacks — Power

On seats with power reclining seatbacks, the control is located on the outboard side of the seat.



To recline the seatback, tilt the top of the control rearward.

To return the seatback to an upright position, tilt the top of the control forward.

See *Reclining Seatbacks* on page 3-5.

Lumbar Adjustment



If the vehicle has this feature, the knob is located on the inboard side of the driver seatback.

Turn the knob clockwise or counterclockwise to increase or decrease the lumbar support.

Second Row Seats

The rear seatbacks can be folded down to increase cargo space.

For detailed instructions, see *Rear Seats on page 3-9*.

Heated Seats

On vehicles with heated front seats, the controls are located on the center console. The engine must be running to operate the heated seats.

 : Press this button to turn on the heated seat.

Continue to press the button to cycle through the temperature settings.

- High = three indicator lights.
- Medium = two indicator lights.
- Low = one indicator light.
- Off = no indicator lights.

The passenger seat may take longer to heat up.

Head Restraint Adjustment

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

For more information see *Head Restraints on page 3-2*.

Safety Belt



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

- *Safety Belts on page 3-10.*
- *How to Wear Safety Belts Properly on page 3-13.*
- *Lap-Shoulder Belt on page 3-19.*
- *Lower Anchors and Tethers for Children (LATCH System) on page 3-50.*

Sensing System for Passenger Airbag



United States



Canada

The passenger sensing system will turn off the right front passenger frontal airbag and the seat-mounted side impact airbag under certain conditions. The driver airbags, and roof-rail airbags are not affected by the passenger sensing system. See *Passenger Airbag Status Indicator on page 5-14* for more information.

The passenger airbag status indicator will be visible on the instrument panel when the vehicle is started.

Mirror Adjustment

Exterior Mirrors



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

1. Turn the knob to choose the left (L) or the (R) right mirror.
2. Adjust each mirror so that you can see the side of your vehicle and the area behind your vehicle.

3. Return the control to the center position so the mirror cannot be moved.

The mirrors can be manually folded inward toward the vehicle. Return to the original position to use correctly.

See *Power Mirrors* on page 2-12.

Interior Mirrors

If the vehicle has the manual rearview mirror, it can be adjusted by holding the mirror in the center to move it for a clearer view behind the vehicle. Reduce the glare of headlamps from behind by turning the lever for daytime or nighttime use.

See *Manual Rearview Mirror* on page 2-13.

Steering Wheel Adjustment



The lever is located on the left side of the steering column.

To adjust the steering wheel:

1. Hold the steering wheel and pull the lever down.
2. Move the steering wheel up or down to a comfortable position.
3. Pull the lever up firmly to lock the steering wheel in place.

See *Steering Wheel Adjustment* on page 5-2.

Interior Lighting

Dome Lamp

 : Press this button on the overhead console to keep the dome lamps and other interior lamps turned off while any door is open. Press this button again to return it to the out position and the lamps automatically come on when any door is opened.

 : Press this button to turn the dome lamps on and off while the doors are closed.

Reading Lamps

The reading lamps are located on the overhead console.

To turn the reading lamps on or off, press the button located next to each lamp.

For more information on interior lamps, see:

- *Dome Lamps* on page 6-5.
- *Instrument Panel Illumination Control* on page 6-5.

Exterior Lighting



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

 : Turns off the exterior lamps. The knob returns to the AUTO position after it is released.

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

 : Turns on the parking lamps, instrument panel lights, and other exterior lamps.

 : Turns on the headlamps, instrument panel lights, and other exterior lamps.

For more information, see:

- *Exterior Lamp Controls* on page 6-1.
- *Daytime Running Lamps (DRL)* on page 6-2.
- *Automatic Headlamp System* on page 6-3.

Windshield Wiper/Washer



The windshield wiper lever is on the right side of the steering column.

: Single wipe, briefly move the lever down. The lever returns to its starting position when released. For several wipes, hold the lever down.

: Turns the windshield wipers off.

: Sets a delay between wipes. Move the switch on top of the lever left for less frequent wipes or right for more frequent wipes.

: Slow wipes.

: Fast wipes.

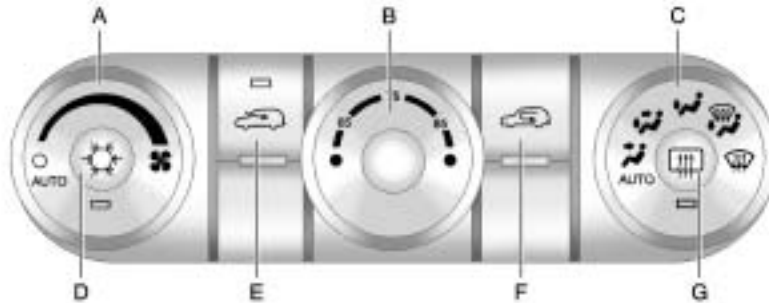
Windshield Washer

Pull the windshield wiper lever to spray windshield washer fluid and activate the wipers.

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

Climate Controls

The heating, cooling, and ventilation for the vehicle can be controlled by this system. Vehicles with automatic climate control automatically maintain the desired temperature inside the vehicle.



United States version shown, Canada version similar.

- A. Fan Control
- B. Temperature Control
- C. Air Delivery Mode Control
- D. Air Conditioning
- E. Outside Air

- F. Air Recirculation
- G. Rear Window Defogger

See *Climate Control Systems* on page 8-1 and *Automatic Climate Control System* on page 8-5.

Vehicle Features

Radio(s)



(Power/Volume): Press to turn the system on and off.

Turn to increase or decrease the volume.

BAND: Press to switch between AM, FM, or XM™, if equipped.

🎵: Select radio stations.

◀ ▶: Seek or scan stations.

i (Information) (XM Satellite Radio Service, MP3, and RDS Features): Press to display additional text information related to

the current FM-RDS or XM station; or CD, MP3 or WMA song. If information is available during XM, CD, MP3 or WMA playback, the song title information displays on the top line of the display and artist information displays on the bottom line. When information is not available, "NO INFO" displays.

For more information about these and other radio features, see *Operation on page 7-2*.

Storing a Favorite Station

A maximum of 36 stations can be stored as favorites using the six softkeys located below the radio station frequency tabs and by using the radio FAV button. Press FAV to go through up to six pages of favorites, each having six favorite stations available per page. Each page of favorites can contain any combination of AM, FM, or XM stations.

See *AM-FM Radio on page 7-4*.

Setting the Clock

To set the time and date:

1. Turn the ignition key to ACC/ACCESSORY or ON/RUN.
Press  to turn the radio on.
2. Press  and the HR, MIN, MM, DD, YYYY (hour, minute, month, day, and year) displays.
3. Press the softkey located below any one of the tabs that you want to change.
4. Turn  clockwise or counterclockwise to increase or decrease the time or date.

For detailed instructions on setting the clock for the vehicle's specific audio system, see *Clock on page 5-8*.

Satellite Radio

Vehicles with an XM™ Satellite Radio tuner and a valid XM Satellite Radio subscription can receive XM programming.

XM Satellite Radio Service

XM is a satellite radio service that is based in the 48 contiguous United States and 10 Canadian provinces. XM Satellite Radio has a wide variety of programming and commercial-free music, coast-to-coast, and in digital-quality sound. A fee is required to receive the XM service.

For more information refer to:

- www.xmradio.com or call 1-800-929-2100 (U.S.).
- www.xmradio.ca or call 1-877-438-9677 (Canada).

See *Satellite Radio on page 7-6*.

Portable Audio Devices

This vehicle may have a 3.5 mm (1/8 in) auxiliary input, located on the radio faceplate. External devices such as iPod®, MP3 players, etc. can be connected to the 3.5 mm (1/8 in) auxiliary input using a 3.5 mm (1/8 in) input jack cable.

See *Auxiliary Devices on page 7-17*.

Bluetooth®

The in-vehicle Bluetooth system allows users with a Bluetooth-enabled cell phone to make and receive hands-free calls using the vehicle's audio system, microphone and controls.

The Bluetooth-enabled cell phone must be paired with the in-vehicle Bluetooth system before it can be used in the vehicle. Not all phones will support all functions.

See *Bluetooth on page 7-18*.

Steering Wheel Controls



Some audio controls can be adjusted at the steering wheel. They include the following:

+ / - : Press and release to go to the next or the previous preset radio station or CD track.

📞 : Press to reject an incoming call, or to end a call.

🔊 + 🔊 - : Move the thumbwheel up or down to increase or to decrease the volume.

🔇 : Press and release to mute the system. Press it again to turn the sound back on.

Press and hold longer than two seconds to interact with the OnStar® or Bluetooth systems.

For more information, see *Steering Wheel Controls* on page 5-3.

Navigation System

The vehicle's navigation system provides detailed maps of most major freeways and roads throughout the United States and Canada. After a destination has been set, the system provides turn-by-turn instructions for reaching the destination. In addition, the system can help locate a variety of points of interest (POI), such as banks, airports, restaurants, and more.

See the vehicle's Navigation System manual for more information.

Cruise Control



The cruise control buttons are on the left side of the steering wheel.

🕒 : Press to turn the cruise control system on and off. An indicator light comes on.

RES+ : Move the thumbwheel up to resume a set speed or to accelerate to a higher speed.

-SET : Press the thumbwheel to set a speed or move the thumbwheel down to decrease the speed.

See *Cruise Control* on page 9-42.

Power Outlets

The accessory power outlets can be used to connect electrical equipment, such as a cellular phone.

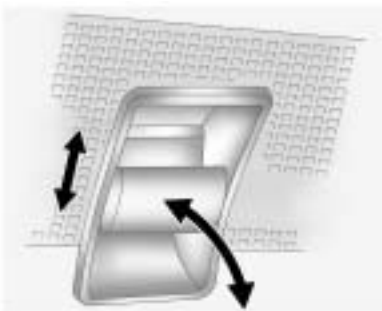
The accessory power outlets are located on the rear of the center storage console and in the rear cargo compartment. There may be a power outlet located inside the instrument panel storage area below the climate controls.

See *Power Outlets* on page 5-8.

Sunroof

The sunroof switch is located between the sun visors.

To operate the sunroof, the ignition must be in ON/RUN, ACC/ACCESSORY, or in Retained Accessory (RAP). See *Retained Accessory Power (RAP)* on page 9-29.



Slide and release the switch rearward to express open the sunroof. Slide the switch forward or rearward to stop movement.

Open/Close: The sunshade opens automatically with the sunroof or can be manually operated.

Slide and hold the switch forward to close the sunroof.

Vent Open/Close: Press and hold the switch to vent; pull and hold the switch to close the sunroof.

Performance and Maintenance

Traction Control System (TCS)

The traction control system limits wheel spin. The system turns on automatically every time the vehicle is started.

- To turn off traction control, press and release the  button located on the Instrument panel.  illuminates and the appropriate DIC message displays. See *Vehicle Messages* on page 5-31.
- Press the button again to turn traction control back on.

For more information, see *Traction Control System (TCS)* on page 9-40.

StabiliTrak®

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

- To turn off both Traction Control and StabiliTrak, press and hold  until  illuminates and the appropriate DIC message displays. See *Vehicle Messages* on page 5-31.
- Press the button again to turn on both systems.

For more information, see *StabiliTrak System* on page 9-41.

Tire Pressure Monitor

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



The Tire Pressure Monitor System alerts you when a significant reduction in pressure occurs in one or more of your vehicle's tires by illuminating the low tire pressure warning light on the instrument cluster. The warning light will remain on until the tire pressure is corrected. The proper tire pressures for your vehicle are listed on the Tire and Loading Information label located on the driver side center pillar (B pillar). See *Vehicle Load Limits* on page 9-22.

You may notice during cooler conditions that the low tire pressure warning light will appear when the vehicle is first started and then turn off as you drive. This may be an early indicator that your tire pressures are getting low and the tires need to be inflated to the proper pressure.

Note: The Tire Pressure Monitor System can alert you about low tire pressure, but it does not replace normal monthly tire maintenance. It is the driver's responsibility to maintain correct tire pressures.

See *Tire Pressure Monitor System* on page 10-52 and *Tire Pressure Monitor Operation* on page 10-54.

Engine Oil Life System

The engine oil life system calculates engine oil life based on vehicle use and turns on the change engine oil light when it is time to change the engine oil and filter. The oil life system should be reset to 100% only following an oil change.

Resetting the Oil Life System

1. Press the DIC vehicle information button to display OIL LIFE REMAINING on the DIC.
2. Press the DIC Set/Reset button for during 5 seconds to reset the oil life at 100%.

Be careful not to reset the oil life display accidentally at any time other than after the oil is changed. It cannot be reset accurately until the next oil change.

The oil life system can also be reset as follows:

1. Turn the ignition key to ON/RUN with the engine off.
2. Fully press and release the accelerator pedal three times within five seconds.

If the change engine oil light is not on, the system is reset.

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

Driving for Better Fuel Economy

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

- Avoid fast starts and accelerate smoothly.
- Brake gradually and avoid abrupt stops.

- Avoid idling the engine for long periods of time.
- When road and weather conditions are appropriate, use cruise control, if equipped.
- Always follow posted speed limits or drive more slowly when conditions require.
- Keep vehicle tires properly inflated.
- Combine several trips into a single trip.
- Replace the vehicle's tires with the same TPC Spec number molded into the tire's sidewall near the size.
- Follow recommended scheduled maintenance.

Roadside Assistance Program

U.S.: **1-800-553-6000**

TTY Users: **1-888-889-2438**

Canada: **1-800-268-6800**

As the owner of a new Saturn, you are automatically enrolled in the Roadside Assistance program. This program provides technically trained advisors who are available 24 hours a day, 365 days a year, minor repair information or towing arrangements.

Roadside Assistance and OnStar

If you have a current OnStar subscription, press the OnStar button and the current GPS location will be sent to an OnStar Advisor who will assess your problem, contact Roadside Assistance, and relay exact location to get you the help you need.

Online Owner Center

The Online Owner Center is a complimentary service that includes online service reminders, vehicle maintenance tips, online owner manual, special privileges and more.

Sign up today at:

www.gmownercenter.com/saturn
(U.S.) or **www.gm.ca** (Canada).

OnStar®



OnStar® uses several innovative technologies and live advisors to provide a wide range of safety, security, navigation, diagnostics, and calling services.

Automatic Crash Response

In a crash, built in sensors can automatically alert an OnStar advisor who is immediately connected to the vehicle to see if you need help.

How OnStar Service Works

 : This blue button connects you to a specially trained OnStar advisor to verify your account information and to answer questions.

 : Push this red emergency button to get priority help from specially trained OnStar emergency advisors.

 : Push this button for hands-free, voice-activated calling and to give voice commands for turn-by-turn navigation.

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 on all vehicles. For more information see the OnStar Owner's Guide or visit www.onstar.com (U.S.) or www.onstar.ca (Canada), contact OnStar at 1-888-4-ONSTAR (1-888-466-7827) or TTY

1-877-248-2080, or press  to speak with an OnStar advisor 24 hours a day, 7 days a week.

For a full description of OnStar services and system limitations, see the OnStar Owner's Guide in the glove box.

OnStar service is subject to the OnStar terms and conditions included in the OnStar Subscriber Information.

OnStar service cannot work unless the vehicle is in a place where OnStar has an agreement with a wireless service provider for service in that area. OnStar service also cannot work unless the vehicle is in a place where the wireless service provider OnStar has hired for that area has coverage, network capacity and reception when the service is needed, and technology that is compatible with the OnStar service. Not all services are available everywhere, particularly in remote or enclosed areas, or at all times.

The OnStar system can record and transmit vehicle information. This information is automatically sent to an OnStar call center when  is pressed,  is pressed, or if the airbags or ACR system deploy. This information usually includes the vehicle's GPS location and, in the event of a crash, additional

information regarding the crash that the vehicle was involved in (e.g. the direction from which the vehicle was hit). When the virtual advisor feature of OnStar hands-free calling is used, the vehicle also sends OnStar the vehicle's GPS location so they can provide services where it is located.

Location information about the vehicle is only available if the GPS satellite signals are unobstructed and available.

The vehicle must have a working electrical system, including adequate battery power, for the OnStar equipment to operate. There are other problems OnStar cannot control that may prevent OnStar from providing OnStar service at any particular time or place. Some examples are damage to important parts of the vehicle in a crash, hills, tall buildings, tunnels, weather or wireless phone network congestion.

OnStar Steering Wheel Controls

This vehicle may have a Talk/Mute button that can be used to interact with OnStar hands-free calling. See *Steering Wheel Controls on page 5-3* for more information.

On some vehicles, the mute button can be used to dial numbers into voice mail systems, or to dial phone extensions. See the OnStar Owner's Guide for more information.

Your Responsibility

Increase the volume of the radio if the OnStar advisor cannot be heard.

If the light next to the OnStar buttons is red, the system may not be functioning properly. Press  and request a vehicle diagnostic. If the light appears clear (no light is appearing), your OnStar subscription has expired and all services have been deactivated.

Press  to confirm that the OnStar equipment is active.

Keys, Doors and Windows

Keys and Locks

Keys	2-2
Remote Keyless Entry (RKE)	
System	2-2
Remote Keyless Entry (RKE)	
System Operation	2-3
Remote Vehicle Start	2-4
Door Locks	2-6
Power Door Locks	2-6
Delayed Locking	2-7
Automatic Door Locks	2-7
Lockout Protection	2-7
Safety Locks	2-7

Doors

Liftgate	2-8
----------------	-----

Vehicle Security

Vehicle Security	2-9
Anti-Theft Alarm System	2-9
Immobilizer	2-10
Immobilizer Operation	2-10

Exterior Mirrors

Convex Mirrors	2-12
Power Mirrors	2-12
Heated Mirrors	2-12

Interior Mirrors

Manual Rearview Mirror	2-13
------------------------------	------

Windows

Windows	2-13
Power Windows	2-14
Sun Visors	2-15

Roof

Sunroof	2-15
---------------	------

Keys and Locks

Keys

WARNING

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



The two keys can be used for the ignition and all locks.

The key code is stamped on the key number plate and can be used to make new keys at any dealer/retailer. Store this information in a safe place outside the vehicle.

Notice: If you ever lock your keys in the vehicle, you may have to damage the vehicle to get in. Be sure you have spare keys.

If you are locked out of the vehicle, contact Roadside Assistance. See *Roadside Assistance Program* on page 13-6 for more information.

Remote Keyless Entry (RKE) System

See *Radio Frequency Statement* on page 13-16 for information regarding Part 15 of the Federal Communications Commission (FCC) Rules and RSS-210/211 of Industry and Science Canada.

Changes or modifications to this system by other than an authorized service facility could void authorization to use this equipment.

If there is a decrease in the RKE operating range:

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

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

Remote Keyless Entry (RKE) System Operation

The Remote Keyless Entry (RKE) transmitter functions work up to 195 feet (60 m) away from the vehicle.

There are other conditions which can affect the performance of the transmitter. See *Remote Keyless Entry (RKE) System* on page 2-2.



Without Remote Start Shown (With Remote Start Similar)

Ⓚ (Remote Vehicle Start): For vehicles with this feature, this button is used to operate the remote start feature. See *Remote Vehicle Start* on page 2-4 for additional information.

🔒 (Lock): Press to lock all the doors, including the liftgate. The vehicle's lamps may flash and the horn may sound. See "Remote Door Lock" under *Vehicle Personalization* on page 5-39 for more information.

🔓 (Unlock): Press once to unlock the driver door. If 🔓 is pressed again within five seconds, all remaining doors unlock. The interior lamps come on and stay on for 20 seconds or until the ignition is turned on. The exterior lamps may flash when unlocking the vehicle. See "Remote Door Unlock" under *Vehicle Personalization* on page 5-39 for more information.

🚨 (Vehicle Locator/Panic Alarm): Press and release to locate the vehicle. The turn signal lamps flash and the horn sounds three times. Press and hold 🚨 to activate the panic alarm. The turn signal lamps flash and the horn sounds repeatedly for 30 seconds. The alarm turns off when the ignition is turned to ON/RUN or when 🚨 is pressed again. The ignition must be in LOCK/OFF for the panic alarm to work.

2-4 Keys, Doors and Windows

Programming Transmitters to the Vehicle

Only RKE transmitters programmed to the vehicle will work. If a transmitter is lost or stolen, a replacement can be purchased and programmed through your dealer/retailer. When the replacement transmitter is programmed to the vehicle, all remaining transmitters must also be programmed. Any lost or stolen transmitters no longer work once the new transmitter is programmed. Each vehicle can have up to eight transmitters programmed to it. See "Relearn Remote Key" under *Driver Information Center (DIC)* on page 5-25.

Battery Replacement

Replace the battery if the REPLACE REMOTE KEY FOB BATTERY message displays on the Driver Information Center (DIC). See "REPLACE REMOTE KEY FOB BATTERY" under *Key and Lock Messages* on page 5-35.

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



To replace the battery:

1. Separate the transmitter with a flat, thin object inserted into the notch on the side.
2. Remove the old battery. Do not use a metal object.

3. Insert the new battery, positive side facing down. Replace with a CR2032 or equivalent battery.
4. Reassemble the transmitter.

Remote Vehicle Start

This vehicle may have a remote starting feature that starts the engine from outside of the vehicle.

Q (Remote Start): This button is located on the RKE transmitter if the vehicle has remote start.

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

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

If the vehicle has the remote start feature, the RKE transmitter functions have an increased range of operation. However, the range may be less while the vehicle is running.

There are other conditions which can affect the performance of the transmitter, see *Remote Keyless Entry (RKE) System on page 2-2* for additional information.

Starting the Engine Using Remote Start

To start the vehicle:

1. Aim the RKE transmitter at the vehicle.
2. Press  on the RKE transmitter.
3. Immediately after completing Step 2, press and hold  until the parking lamps flash. If the vehicle's lights can not be seen, press and hold  for at least four seconds.

When the vehicle starts the parking lamps will turn on and remain on as long as the engine is running. The doors will be locked and the climate control system will operate at the same setting as when the vehicle was last turned off.

After entering the vehicle during a remote start, insert and turn the key to the ON/RUN position to drive the vehicle. If the vehicle has the Rear Vision Camera (RVC), the display located on the inside rearview mirror will remain on for about four seconds. See *Rear Vision Camera (RVC) on page 9-44* for more information.

If the vehicle is left running it automatically shuts off after 10 minutes unless a time extension has been done.

Extending Engine Run Time

To extend the engine run time by 10 minutes, repeat Steps 1 though 3 while the engine is still running. The engine run time can only be extended if it is the first remote start

since the vehicle has been driven. Remote start can be extended one time.

If the remote start procedure is used again before the first 10 minute time frame has ended, the first 10 minutes will immediately expire and the second 10 minute time frame will start.

For example, if the lock button and then the remote start buttons are pressed again after the vehicle has been running for five minutes, 10 minutes are added, allowing the engine to run for a total of 15 minutes.

A maximum of two remote starts or remote start attempts are allowed between ignition cycles.

After the vehicle's engine has been started two times using the remote start button, the ignition must be turned on and then back off before the remote start procedure can be used again.

2-6 Keys, Doors and Windows

Shutting the Engine Off After a Remote Start

To manually shut off a remote start:

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

Conditions in Which the Remote Start Will Not Work

The vehicle cannot be started using the remote start feature if the key is in the ignition, the hood is open, or if there is an emission control system malfunction.

The engine turns off during a remote start if the coolant temperature gets too high or if the oil pressure gets low.

Door Locks



WARNING

Unlocked doors can be dangerous.

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

(Continued)

WARNING (Continued)

injuries or even death from heat stroke. Always lock the vehicle whenever leaving it.

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

To lock or unlock a door, use the key from the outside or the door lock from the inside.

Power Door Locks

: The power door lock switches are located on the driver door.

- Press the right side of the switch to unlock the doors.
- Remove the ignition key and press the left side of the switch to lock all of the doors.

Delayed Locking

A chime will sound to indicate a door or liftgate is open when you try to lock the doors with the power door lock switch. The doors will not lock, and the theft-deterrent system will not arm until all the doors are closed and five seconds have passed.

Automatic Door Locks

Automatic Door Lock

The doors are programmed to automatically lock when the shift lever is moved into a forward gear.

The automatic door lock feature cannot be disabled.

Automatic Door Unlock

The doors will automatically unlock when the shift lever is moved into (P) Park.

Lockout Protection

When the power door lock switch is pressed with the key in the ignition, and any door is open, all the doors lock and the driver door unlocks. When doors are closed with the key in the ignition, the horn will sound as a reminder.

If the doors are locked with the Remote Keyless Entry (RKE) transmitter, and the key is in the ignition, a chime sounds and all except the driver door lock.

The lockout protection feature can be overridden by holding the power door lock switch for three seconds.

Safety Locks

The vehicle has rear door security locks to prevent passengers from opening the rear doors from the inside.



Open the rear doors to access the security locks on the inside edge of each door.

To set the locks, insert a key into the slot and turn it to the horizontal position. The door can only be opened from the outside with the door unlocked. To return the door to normal operation, turn the slot to the vertical position.

Doors

Liftgate

WARNING

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

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

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

(Continued)

WARNING (Continued)

- Adjust the Climate Control system to a setting that brings in only outside air and set the fan speed to the highest setting. See Climate Control System in the Index.
- If the vehicle is equipped with a power liftgate, disable the power liftgate function.

For more information about carbon monoxide, see *Engine Exhaust* on page 9-34.

To lock or unlock the liftgate, if the vehicle has this feature, press  or  twice on the Remote Keyless Entry (RKE) transmitter or press the power door lock switch.

To open the liftgate, press the touchpad on the underside of the liftgate handle and pull up.

To close the liftgate, pull down using the handle and close until it latches.

Liftgate Operation with Loss of Power



To open the liftgate if the vehicle's battery is disconnected or the voltage is low, access the release lever. Remove the interior trim cover on the inside of the liftgate. Use a tool to push the lever on the latch until the liftgate releases.

Vehicle Security

Vehicle theft is big business, especially in some cities. This vehicle has theft-deterrent features, however, they do not make it impossible to steal.

Anti-Theft Alarm System

Your vehicle may have a content theft-deterrent alarm system.



**United States shown,
Canada similar**

The security light is located near the center of the instrument panel.

To arm the theft-deterrent system, press  on the RKE transmitter when all doors and the hood (vehicles started with the remote start feature only) are closed. The security light will come on solid for approximately 30 seconds and then flashes slowly. If  on the RKE transmitter is pressed a second time, the theft-deterrent system will activate immediately, bypassing the 30 second delay. The content theft deterrent alarm is not armed until the security light flashes slowly.

If any door, liftgate or the hood (vehicles started with the remote start feature only) are opened without using the key or pressing  on the RKE transmitter, the exterior lamps flash and the horn will sound for about 30 seconds. If  or  on the RKE transmitter is not pressed,

the alarm sounds and periodically repeats. If the system does not operate as described above, see your dealer/retailer for service.

The theft-deterrent system also activates if you lock the doors with a key.

To avoid setting off the alarm by accident, always unlock a door with the RKE transmitter or a key. Unlocking a door any other way will set off the alarm if the system has been armed.

If you set off the alarm by accident, turn off the alarm by pressing  or  on the RKE transmitter or by placing the key in the ignition and turning it to START.

Testing the Alarm

To test the alarm:

1. From inside the vehicle, lower the driver window and open the driver door.
2. Get out of the vehicle, close the door and activate the system by locking the doors with the RKE transmitter.
3. Wait for the security light to flash slowly.
4. Then reach in through the window, unlock the door with the manual door lock and open the door. This should set off the alarm.

If the alarm does not sound when it should, but the vehicle's headlamps flash, check to see if the horn works. The horn fuse may be blown. To replace the fuse, see *Fuses and Circuit Breakers on page 10-37*.

If the alarm does not sound or the vehicle's headlamps do not flash, see your dealer/retailer for service.

Immobilizer

See *Radio Frequency Statement on page 13-16* for information regarding Part 15 of the Federal Communications Commission (FCC) Rules and RSS-210/211 of Industry and Science Canada.

Immobilizer Operation

This vehicle has PASS-Key® III+ (Personalized Automotive Security System) theft-deterrent system. PASS-Key® III+ is a passive theft-deterrent system.

The system is automatically armed when the key is removed from the ignition.

You do not have to manually arm or disarm the system.

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

When the PASS-Key® III+ system senses that someone is using the wrong key, it prevents the vehicle from starting. Anyone using a trial-and-error method to start the vehicle will be discouraged because of the high number of electrical key codes.

When trying to start the vehicle if the engine does not start and the security light on the instrument panel cluster comes on, there may be a problem with your theft-deterrent system. Turn the ignition off and try again.

If the engine still does not start, and the key appears to be not damaged, wait about five minutes and try another ignition key and check the fuse. See *Fuses and Circuit Breakers* on page 10-37. If the engine still does not start with the other key, the vehicle needs service. If the vehicle does start, the first key may be faulty. See your dealer/retailer who can service the PASS-Key® III+ to have a new key made. In an emergency, contact Roadside Assistance. See *Roadside Assistance Program* on page 13-6.

It is possible for the PASS-Key® III+ decoder to “learn” the transponder value of a new or replacement key. Up to 10 keys may be programmed for the vehicle. The following procedure is for programming

additional keys only. If all the currently programmed keys are lost or do not operate, you must see your dealer/retailer or a locksmith who can service PASS-Key® III+ to have keys made and programmed to the system.

See your dealer/retailer or a locksmith who can service PASS-Key® III+ to get a new key blank that is cut exactly as the ignition key that operates the system.

To program the new key:

1. Verify that the new key has a ⊕ stamped on it.
2. Insert the already programmed key in the ignition and start the engine. If the engine does not start, see your dealer/retailer for service.

3. After the engine has started, turn the key to LOCK/OFF, and remove the key.
4. Insert the key to be programmed and turn it to the ON/RUN position within five seconds of the original key being turned to the LOCK/OFF position.

The security light turns off once the key has been programmed.
5. Repeat Steps 1 through 4 if additional keys are to be programmed.

If the PASS-Key® III+ key is lost or damaged, see your dealer/retailer or a locksmith to have a new key made.

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

Exterior Mirrors

Convex Mirrors

WARNING

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

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

Power Mirrors



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

To adjust the power mirrors:

1. Turn the knob to choose the left (L) or the (R) right mirror.
2. Adjust each mirror so that you can see the side of your vehicle and the area behind your vehicle.
3. Return the control to the center position so the mirror cannot be moved.

Heated Mirrors

For vehicles with outside heated mirrors:

 **(Rear Window Defogger):**
Press to heat the outside rearview mirrors. See "Rear Window Defogger" under *Automatic Climate Control System* on page 8-5 for more information.

Interior Mirrors

Manual Rearview Mirror

If the vehicle has the manual rearview mirror, it can be adjusted by holding the mirror in the center to move it for a clearer view behind the vehicle. Reduce the glare of headlamps from behind by turning the lever for daytime or nighttime use.

Vehicles with OnStar® have three additional control buttons for the OnStar® system. See your dealer/retailer for more information about OnStar® and how to subscribe to it. See the OnStar® owner guide for more information about the services OnStar® provides.

Your vehicle may also have a Rear Vision Camera. See *Rear Vision Camera (RVC)* on page 9-44 for more information.

Windows

WARNING

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



Power Windows



WARNING

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

When there are children in the rear seat use the window lockout button to prevent unintentional operation of the windows.



The window switches for all doors are located on the driver door. Each passenger door has a switch that controls only that window.

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

The power windows operate when the ignition is in ON/RUN or ACC/ACCESSORY, or while in Retained Accessory Power (RAP). See *Retained Accessory Power (RAP)* on page 9-29.

Express-Down Window

The driver window switch has an express-down feature that lowers the window without holding the switch. Press the switch part way and the window will open a small amount. Press the switch down all the way and release it and the window lowers all the way.

To stop the window while it is lowering, press and release the switch.

Window Lockout

 **(Window Lockout):** The vehicle has a lockout feature to prevent rear seat passengers from operating the windows. Press the lockout button, located with the power window switches, to turn the feature on and off.

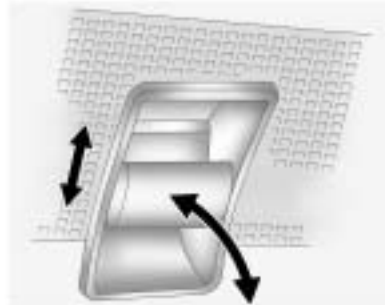
Sun Visors

To block out glare, swing the sun visor down, or detach the driver sun visor from the center mount and slide it along the rod from side-to-side.

On a visor with a mirror, lift the cover to use it.

Roof

Sunroof



The sunroof switch is located between the sun visors.

To operate the sunroof, the ignition must be in ON/RUN, ACC/ACCESSORY, or in Retained Accessory Power (RAP). See *Retained Accessory Power (RAP)* on page 9-29.

Open/Close: Slide and release the switch rearward to express open the sunroof. Slide the switch forward or rearward to stop movement.

The sun shade opens automatically with the sunroof or can be manually operated. The sunshade cannot be closed with the sunroof open.

Slide and hold the switch forward to close the sunroof. The sunshade must be closed manually.

Vent Open/Close: Press and hold the switch to vent the sunroof. Pull and hold the switch to close it. The sunshade must be manually operated when the sunroof is in the vent position.



NOTES

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Seats and Restraints

Head Restraints

Head Restraints	3-2
Active Head Restraints	3-3

Front Seats

Seat Adjustment	3-3
Power Seat Adjustment	3-4
Lumbar Adjustment	3-5
Reclining Seatbacks	3-5
Heated Front Seats	3-7
Folding Seatback	3-8

Rear Seats

Rear Seats	3-9
------------------	-----

Safety Belts

Safety Belts	3-10
How to Wear Safety Belts Properly	3-13
Lap-Shoulder Belt	3-19
Safety Belt Use During Pregnancy	3-23
Safety Belt Extender	3-23

Safety System Check	3-23
Safety Belt Care	3-24
Replacing Safety Belt System Parts After a Crash	3-24

Airbag System

Airbag System	3-25
Where Are the Airbags?	3-27
When Should an Airbag Inflate?	3-29
What Makes an Airbag Inflate?	3-31
How Does an Airbag Restrain?	3-31
What Will You See After an Airbag Inflates?	3-32
Passenger Sensing System	3-34
Servicing the Airbag-Equipped Vehicle	3-39
Adding Equipment to the Airbag-Equipped Vehicle ...	3-40
Airbag System Check	3-41
Replacing Airbag System Parts After a Crash	3-41

Child Restraints

Older Children	3-42
Infants and Young Children	3-44
Child Restraint Systems	3-47
Where to Put the Restraint ...	3-48
Lower Anchors and Tethers for Children (LATCH System)	3-50
Replacing LATCH System Parts After a Crash	3-55
Securing Child Restraints (Rear Seat Position)	3-56
Securing Child Restraints (Front Seat Position)	3-58

3-2 Seats and Restraints

Head Restraints

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

WARNING

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



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



Pull the head restraint up to raise it. To lower the head restraint, press the button, located on the top of the seatback, and push the restraint down.

Push down on the head restraint after the button is released to make sure that it is locked in place.

The rear seats have head rests that adjust the same as the head restraints.

The head restraints and head rests are not designed to be removed.

Active Head Restraints

This vehicle has an active head restraint system in the front outboard seating positions. The active head restraints automatically tilt forward to reduce the risk of neck injury if the vehicle is hit from behind.

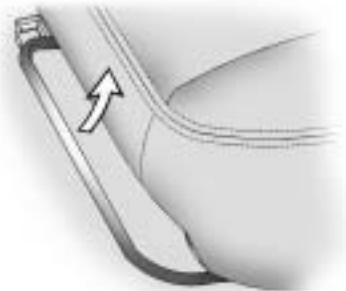
Front Seats

Seat Adjustment

WARNING

You can lose control of the vehicle if you try to adjust a manual driver's seat while the vehicle is moving. The sudden movement could startle and confuse you, or make you push a pedal when you do not want to. Adjust the driver's seat only when the vehicle is not moving.

To move a manual seat forward or rearward:



1. Lift the bar to unlock the seat.
2. Slide the seat to the desired position and release the bar.

Try to move the seat with your body to be sure the seat is locked in place.

3-4 Seats and Restraints

Seat Height Adjuster



If the vehicle has a manual driver seat height adjuster, it is located on the outboard side of the seat near the front of the seat cushion.

To raise the seat, move the lever upward repeatedly until the seat is at the desired height. To lower the seat, move the lever downward repeatedly until the seat is at the desired height.

Power Seat Adjustment

This vehicle may have power seats.



To adjust the seat location, move the control forward or rearward.



To raise or lower the front or rear part of the seat cushion, move the front or rear of the control up or down.

Lumbar Adjustment



If the vehicle has this feature, the knob is located on the inboard side of the driver seatback.

Turn the knob clockwise to increase lumbar support and counterclockwise to decrease it.

Reclining Seatbacks

Manual Reclining Seatbacks

WARNING

You can lose control of the vehicle if you try to adjust a manual driver's seat while the vehicle is moving. The sudden movement could startle and confuse you, or make you push a pedal when you do not want to. Adjust the driver's seat only when the vehicle is not moving.

WARNING

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



On seats with manual reclining seatbacks, the lever used to operate them is located on the outboard side of the seat.

3-6 Seats and Restraints

To recline the seatback:

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

To return the seatback to an upright position:

1. Lift the lever fully without applying pressure to the seatback and the seatback returns to the upright position.
2. Push and pull on the seatback to make sure it is locked.

Power Reclining Seatbacks



If the seats have power reclining seatbacks, the control used to recline them is located on the outboard side of the seat.

- To recline the seatback, tilt the top of the control rearward.
- To bring the seatback forward, tilt the top of the control forward.

WARNING

Sitting in a reclined position when your vehicle is in motion can be dangerous. Even if you buckle up, your safety belts cannot do their job when you are reclined like this.

The shoulder belt cannot do its job. In a crash, you could go into it, receiving neck or other injuries.

(Continued)

WARNING (Continued)

The lap belt cannot do its job either. In a crash the belt could go up over your abdomen. The belt forces would be there, not at your pelvic bones. This could cause serious internal injuries.

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



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

Heated Front Seats

On vehicles with heated front seats, the controls are located on the center console. The engine must be running to operate the heated seats.

 **(Heated Seat):** Press this button to turn on the heated seat.

Continue to press the button to cycle through the temperature settings.

- High = three indicator lights.
- Medium = two indicator lights.
- Low = one indicator light.
- Off = no indicator lights.

The passenger seat may take longer to heat up.

3-8 Seats and Restraints

Folding Seatback

The front passenger seatback may fold flat.

WARNING

If you fold the seatback forward to carry longer objects, such as skis, be sure any such cargo is not near an airbag. In a crash, an inflating airbag might force that object toward a person. This could cause severe injury or even death. Secure objects away from the area in which an airbag would inflate. For more information, see *Where Are the Airbags?* on page 3-27 and *Vehicle Load Limits* on page 9-22.

WARNING

Things you put on this seatback can strike and injure people in a sudden stop or turn, or in a crash. Remove or secure all items before driving.

To fold the seatback:

1. Lower the head restraint all the way.
2. Lift the bar under the front of the seat to unlock it. Slide the seat as far back as it will go and release the bar. Try to move the seat back and forth to make sure it is locked into place.
3. Lift the recliner lever, located on the outboard side of the seat, up fully and fold the seatback forward until it disengages.
4. Continue to fold the seat forward into the folded position.
5. Pull up on the seatback to be sure it is locked.



To raise the seatback:

1. Lift the recliner lever, located on the outboard side of the seat, up fully and push up on the seatback.
2. Continue raising the seatback until the seatback re-engages.

 WARNING

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

3. Push and pull on the seatback to make sure it is locked in place.

The recliner lever is also used to recline the seatback while a passenger is seated. See *Seat Adjustment* on page 3-3.

Rear Seats

The rear split bench seatbacks can be folded forward, upright, or partially reclined, independent of the other seatback position.

 WARNING

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

 WARNING

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

To fold the seatback down:

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

1. Unbuckle all three safety belts and put the front seatback in an upright position.



2. Lift the lever located on the top of the seatback to release the seatback and fold the seatback forward.

To recline the seatback:

1. Lift and hold the lever located on top of the seatback.
2. Tilt the seatback rearward, then release the lever.

Safety Belts

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

WARNING

Do not let anyone ride where a safety belt cannot be worn properly. In a crash, if you or your passenger(s) are not wearing safety belts, the injuries can be much worse. You can hit things inside the vehicle harder or be ejected from the vehicle. You and your passenger(s) can be seriously injured or killed. In the same crash, you might not be, if you are buckled up. Always fasten your safety belt, and check that your passenger(s) are restrained properly too.

WARNING

It is extremely dangerous to ride in a cargo area, inside or outside of a vehicle. In a collision, people riding in these areas are more likely to be seriously injured or killed. Do not allow people to ride in any area of your vehicle that is not equipped with seats and safety belts. Be sure everyone in your vehicle is in a seat and using a safety belt properly.

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

In most states and in all Canadian provinces, the law requires wearing safety belts. Here is why:

You never know if you will be in a crash. If you do have a crash, you do not know if it will be a serious one.

A few crashes are mild, and some crashes can be so serious that even buckled up, a person would not survive. But most crashes are in between. In many of them, people who buckle up can survive and sometimes walk away. Without safety belts they could have been badly hurt or killed.

After more than 40 years of safety belts in vehicles, the facts are clear. In most crashes buckling up does matter ... a lot!

Why Safety Belts Work

When you ride in or on anything, you go as fast as it goes.



Take the simplest vehicle. Suppose it is just a seat on wheels.



Put someone on it.



Get it up to speed. Then stop the vehicle. The rider does not stop.

3-12 Seats and Restraints



The person keeps going until stopped by something. In a real vehicle, it could be the windshield...



or the instrument panel...



or the safety belts!

With safety belts, you slow down as the vehicle does. You get more time to stop. You stop over more distance, and your strongest bones take the forces. That is why safety belts make such good sense.

Questions and Answers About Safety Belts

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

A: You *could* be — whether you are wearing a safety belt or not. But your chance of being conscious during and after an accident, so you *can* unbuckle and get out, is *much* greater if you are belted. And you can unbuckle a safety belt, even if you are upside down.

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

A: Airbags are supplemental systems only; so they work *with* safety belts — not instead of them. Whether or not an airbag is provided, all occupants still have to buckle up to get the most protection. That is true not only in frontal collisions, but especially in side and other collisions.

Q: If I am a good driver, and I never drive far from home, why should I wear safety belts?

A: You may be an excellent driver, but if you are in a crash — even one that is not your fault — you and your passenger(s) can be hurt. Being a good driver does not protect you from things beyond your control, such as bad drivers.

Most accidents occur within 40 km (25 miles) of home. And the greatest number of serious injuries and deaths occur at speeds of less than 65 km/h (40 mph).

Safety belts are for everyone.

How to Wear Safety Belts Properly

This section is only for people of adult size.

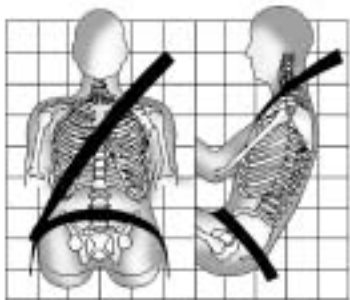
Be aware that there are special things to know about safety belts and children. And there are different rules for smaller children and infants. If a child will be riding in the vehicle, see *Older Children on page 3-42* or *Infants and Young Children on page 3-44*. Follow those rules for everyone's protection.

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

Occupants who are not buckled up can be thrown out of the vehicle in a crash. And they can strike others in the vehicle who are wearing safety belts.

3-14 Seats and Restraints

First, before you or your passenger(s) wear a safety belt, there is important information you should know.

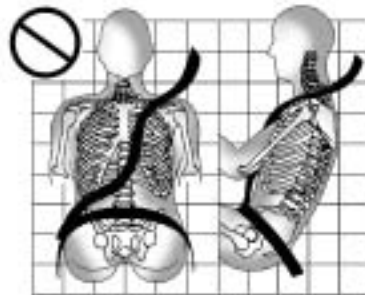


Sit up straight and always keep your feet on the floor in front of you. The lap part of the belt should be worn low and snug on the hips, just touching the thighs. In a crash, this

applies force to the strong pelvic bones and you would be less likely to slide under the lap belt. If you slid under it, the belt would apply force on your abdomen. This could cause serious or even fatal injuries. The shoulder belt should go over the shoulder and across the chest. These parts of the body are best able to take belt restraining forces.

The shoulder belt locks if there is a sudden stop or crash.

Q: What is wrong with this?



A: The shoulder belt is too loose. It will not give as much protection this way.

WARNING

You can be seriously hurt if your shoulder belt is too loose. In a crash, you would move forward too much, which could increase injury. The shoulder belt should fit snugly against your body.

Q: What is wrong with this?



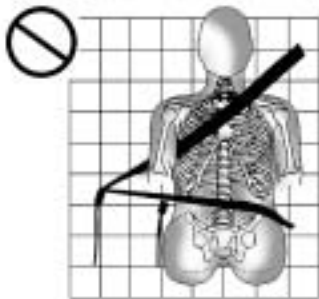
A: The lap belt is too loose. It will not give nearly as much protection this way.

WARNING

You can be seriously hurt if your lap belt is too loose. In a crash, you could slide under the lap belt and apply force on your abdomen. This could cause serious or even fatal injuries. The lap belt should be worn low and snug on the hips, just touching the thighs.

3-16 Seats and Restraints

Q: What is wrong with this?



A: The belt is buckled in the wrong buckle.



WARNING

You can be seriously injured if your belt is buckled in the wrong place like this. In a crash, the belt would go up over your abdomen. The belt forces would be there, not on the pelvic bones. This could cause serious internal injuries. Always buckle your belt into the buckle nearest you.

Q: What is wrong with this?

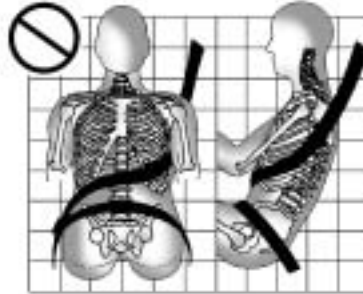


A: The belt is over an armrest.

⚠ WARNING

You can be seriously injured if your belt goes over an armrest like this. The belt would be much too high. In a crash, you can slide under the belt. The belt force would then be applied on the abdomen, not on the pelvic bones, and that could cause serious or fatal injuries. Be sure the belt goes under the armrests.

Q: What is wrong with this?



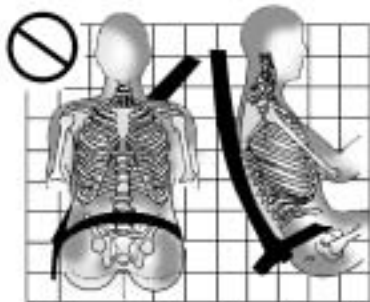
A: The shoulder belt is worn under the arm. It should be worn over the shoulder at all times.

⚠ WARNING

You can be seriously injured if you wear the shoulder belt under your arm. In a crash, your body would move too far forward, which would increase the chance of head and neck injury. Also, the belt would apply too much force to the ribs, which are not as strong as shoulder bones. You could also severely injure internal organs like your liver or spleen. The shoulder belt should go over the shoulder and across the chest.

3-18 Seats and Restraints

Q: What is wrong with this?

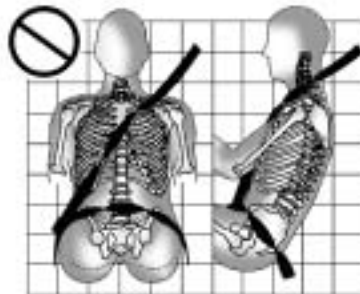


A: The belt is behind the body.

WARNING

You can be seriously injured by not wearing the lap-shoulder belt properly. In a crash, you would not be restrained by the shoulder belt. Your body could move too far forward increasing the chance of head and neck injury. You might also slide under the lap belt. The belt force would then be applied right on the abdomen. That could cause serious or fatal injuries. The shoulder belt should go over the shoulder and across the chest.

Q: What is wrong with this?



A: The belt is twisted across the body.

WARNING

You can be seriously injured by a twisted belt. In a crash, you would not have the full width of the belt to spread impact forces. If a belt is twisted, make it straight so it can work properly, or ask your dealer/retailer to fix it.

Lap-Shoulder Belt

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

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

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



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

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

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

Engaging the child restraint locking feature in the right front seating position may affect the passenger sensing system. See *Passenger Sensing System* on page 3-34 for more information.



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

Pull up on the latch plate to make sure it is secure. If the belt is not long enough, see *Safety Belt Extender* on page 3-23.

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

3-20 Seats and Restraints

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



5. To make the lap part tight, pull up on the shoulder belt.
It may be necessary to pull the stitching on the safety belt through the latch plate to fully tighten the lap belt on smaller occupants.



To unlatch the belt, push the button on the buckle. The belt should return to its stowed position. Slide the latch plate up the safety belt webbing when the safety belt is not in use. The latch plate should rest on the stitching on the safety belt, near the guide loop on the side wall.

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

Shoulder Belt Height Adjuster

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

Adjust the height so that the shoulder portion of the belt is centered on the shoulder. The belt should be away from the face and neck, but not falling off of the shoulder. Improper shoulder belt height adjustment could reduce the effectiveness of the safety belt in a crash.



Squeeze the release buttons (A) together and move the height adjuster up or down to the desired position.

After the adjuster is set to the desired position, try to move it up or down without squeezing the release buttons to make sure it has locked into position.

Safety Belt Pretensioners

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

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

Pretensioners work only once. If the pretensioners activate in a crash, they will need to be replaced, and probably other new parts for the vehicle's safety belt system. See *Replacing Safety Belt System Parts After a Crash* on page 3-24.

Rear Safety Belt Comfort Guides

This vehicle may have rear shoulder belt comfort guides. If not, they are available through your dealer/retailer. The guides may provide added safety belt comfort for older children who have outgrown booster seats and for some adults. When

installed and properly adjusted, the comfort guide positions the shoulder belt away from the neck and head.

There is one guide, if equipped, for each outboard passenger position in the rear seat. Here is how to install a comfort guide to the safety belt:

1. Remove the guide from its storage location, which is a pocket on the side of the seat.



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

3-22 Seats and Restraints



3. Be sure that the belt is not twisted and it lies flat. The elastic cord must be under the belt and the guide on top.



WARNING

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



4. Buckle, position, and release the safety belt as described previously in this section. Make sure that the shoulder belt crosses the shoulder.

To remove and store the comfort guide, squeeze the belt edges together so that the safety belt can be removed from the guide. Store the comfort guide in its storage location, which is a pocket on the side of the seat.

Safety Belt Use During Pregnancy

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



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

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

Safety Belt Extender

If the vehicle's safety belt will fasten around you, you should use it.

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

Safety System Check

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

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

Keep safety belts clean and dry. See *Safety Belt Care* on page 3-24.

Safety Belt Care

Keep belts clean and dry.



WARNING

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

Replacing Safety Belt System Parts After a Crash



WARNING

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

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

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

Have the safety belt pretensioners checked if the vehicle has been in a crash, or if the airbag readiness light stays on after you start the vehicle or while you are driving. See *Airbag Readiness Light* on page 5-13.

Airbag System

The vehicle has the following airbags:

- A frontal airbag for the driver.
- A frontal airbag for the right front passenger.
- A seat-mounted side impact airbag for the driver.
- A seat-mounted side impact airbag for the right front passenger.
- A roof-rail airbag for the driver and the passenger seated directly behind the driver.
- A roof-rail airbag for the right front passenger and the passenger seated directly behind the right front passenger.

All of the airbags in the vehicle will have the word AIRBAG embossed in the trim or on an attached label near the deployment opening.

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

With seat-mounted side impact airbags, the word AIRBAG will appear on the side of the seatback closest to the door.

With roof-rail airbags, the word AIRBAG will appear along the headliner or trim.

Even if you do not have a right front passenger seat in the vehicle there is still an active frontal airbag in the right side of the instrument panel. Do not place cargo in front of this airbag.

WARNING

Be sure that cargo is not near an airbag. In a crash, an inflating airbag might force that object toward a person. This could cause severe injury or even death. Secure objects away from the area in which an airbag would inflate. For more information, see *Where Are the Airbags?* on page 3-27 and *Vehicle Load Limits* on page 9-22.

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

3-26 Seats and Restraints

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

WARNING

You can be severely injured or killed in a crash if you are not wearing your safety belt — even if you have airbags. Airbags are designed to work with safety belts, but do not replace them. Also, airbags are not designed to deploy in every crash. In some crashes safety belts are your only restraint. See *When Should an Airbag Inflate?* on page 3-29.

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

WARNING

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

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

WARNING

Children who are up against, or very close to, any airbag when it inflates can be seriously injured or killed. Airbags plus lap-shoulder belts offer protection for adults and older children, but not for young children and infants. Neither the vehicle's safety belt system nor its airbag system is designed for them. Young children and infants need the protection that a child restraint system can provide. Always secure children properly in your vehicle. To read how, see *Older Children* on page 3-42 or *Infants and Young Children* on page 3-44.



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

The system checks the airbag electrical system for malfunctions. The light tells you if there is an electrical problem. See *Airbag Readiness Light* on page 5-13 for more information.

Where Are the Airbags?



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



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



Driver Side shown, Passenger Side similar

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



Driver Side shown, Passenger Side similar

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

WARNING

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

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

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

When Should an Airbag Inflate?

Frontal airbags are designed to inflate in moderate to severe frontal or near-frontal crashes to help reduce the potential for severe injuries mainly to the driver's or right front passenger's head and chest. However, they are only designed to inflate if the impact exceeds a predetermined deployment threshold. Deployment thresholds are used to predict how severe a crash is likely to be in time for the airbags to inflate and help restrain the occupants.

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

Frontal airbags may inflate at different crash speeds. For example:

- If the vehicle hits a stationary object, the airbags could inflate at a different crash speed than if the vehicle hits a moving object.
- If the vehicle hits an object that deforms, the airbags could inflate at a different crash speed than if the vehicle hits an object that does not deform.

- If the vehicle hits a narrow object (like a pole), the airbags could inflate at a different crash speed than if the vehicle hits a wide object (like a wall).
- If the vehicle goes into an object at an angle, the airbags could inflate at a different crash speed than if the vehicle goes straight into the object.

Thresholds can also vary with specific vehicle design.

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

3-30 Seats and Restraints

In addition, the vehicle has dual-stage frontal airbags. Dual-stage airbags adjust the restraint according to crash severity. The vehicle has electronic frontal sensors, which help the sensing system distinguish between a moderate frontal impact and a more severe frontal impact. For moderate frontal impacts, dual-stage airbags inflate at a level less than full deployment. For more severe frontal impacts, full deployment occurs.

The vehicle has seat-mounted side impact and roof-rail airbags. See *Airbag System on page 3-25*. Seat-mounted side impact and roof-rail airbags are intended to inflate in moderate to severe side crashes. In addition, these roof-rail airbags are intended to inflate

during a rollover or in a severe frontal impact. Seat-mounted side impact and roof-rail airbags will inflate if the crash severity is above the system's designed threshold level. The threshold level can vary with specific vehicle design.

Seat-mounted side impact airbags are not intended to inflate in frontal impacts, near-frontal impacts, rollovers, or rear impacts. Roof-rail airbags are not intended to inflate in rear impacts. A seat-mounted side impact airbag is intended to deploy on the side of the vehicle that is struck. Both roof-rail airbags will

deploy when either side of the vehicle is struck, or if the sensing system predicts that the vehicle is about to roll over, or in a severe frontal impact.

In any particular crash, no one can say whether an airbag should have inflated simply because of the damage to a vehicle or because of what the repair costs were. For frontal airbags, inflation is determined by what the vehicle hits, the angle of the impact, and how quickly the vehicle slows down. For seat-mounted side impact and roof-rail airbags, deployment is determined by the location and severity of the side impact. In a rollover event, roof-rail airbag deployment is determined by the direction of the roll.

What Makes an Airbag Inflate?

In a deployment event, the sensing system sends an electrical signal triggering a release of gas from the inflator. Gas from the inflator fills the airbag causing the bag to break out of the cover and deploy. The inflator, the airbag, and related hardware are all part of the airbag module.

Frontal airbag modules are located inside the steering wheel and instrument panel. For vehicles with seat-mounted side impact airbags, there are airbag modules in the side of the front seatbacks closest to the door. For vehicles with roof-rail airbags, there are airbag modules in the ceiling of the vehicle, near the side windows that have occupant seating positions.

How Does an Airbag Restrain?

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

Airbags supplement the protection provided by safety belts. Frontal airbags distribute the force of the impact more evenly over the occupant's upper body, stopping the occupant more gradually. Seat-mounted side impact and roof-rail airbags distribute the force of the impact more evenly over the occupant's upper body.

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

But airbags would not help in many types of collisions, primarily because the occupant's motion is not toward those airbags. See *When Should an Airbag Inflate?* on page 3-29 for more information.

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

What Will You See After an Airbag Inflates?

After the frontal airbags and seat-mounted side impact airbags inflate, they quickly deflate, so quickly that some people may not even realize an airbag inflated. Roof-rail airbags may still be at least partially inflated for some time after they deploy. Some components of the airbag module may be hot for several minutes. For location of the airbag modules, see *What Makes an Airbag Inflate?* on page 3-31.

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



WARNING

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

(Continued)

WARNING (Continued)

airbag inflates, then get fresh air by opening a window or a door. If you experience breathing problems following an airbag deployment, you should seek medical attention.

The vehicle has a feature that may automatically unlock the doors, turn on the interior lamps and hazard warning flashers, and shut off the fuel system after the airbags inflate.

You can lock the doors, turn off the interior lamps and hazard warning flashers by using the controls for those features. You must first, however, turn the ignition key to the following ignition switch positions:

1. Turn the ignition key to LOCK/OFF.
2. Turn the ignition key to ON/RUN.

WARNING

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

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

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

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

- The vehicle has a crash sensing and diagnostic module which records information after a crash. See *Vehicle Data Recording and Privacy on page 13-15* and *Event Data Recorders on page 13-15*.
- Let only qualified technicians work on the airbag systems. Improper service can mean that an airbag system will not work properly. See your dealer/retailer for service.

Passenger Sensing System

The vehicle has a passenger sensing system for the right front passenger position. The passenger airbag status indicator will be visible on the instrument panel when the vehicle is started.



United States



Canada

The words ON and OFF, or the symbol for on and off, are visible during the system check. If you are using remote start, if equipped, to

start the vehicle from a distance, you may not see the system check. When the system check is complete, either the word ON or OFF, or the symbol for on or off, will be visible. See *Passenger Airbag Status Indicator* on page 5-14.

The passenger sensing system turns off the right front passenger frontal airbag and seat-mounted side impact airbag under certain conditions. The driver airbags and the roof-rail airbags are not affected by the passenger sensing system.

The passenger sensing system works with sensors that are part of the right front passenger seat and safety belt. The sensors are designed to detect the presence of a properly-seated occupant and determine if the right front passenger frontal airbag and seat-mounted side impact airbag should be enabled (may inflate) or not.

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

We recommend that children be secured in a rear seat, including: an infant or a child riding in a rear-facing child restraint; a child riding in a forward-facing child seat; an older child riding in a booster seat; and children, who are large enough, using safety belts.

A label on the sun visor says, "Never put a rear-facing child seat in the front." This is because the risk to the rear-facing child is so great, if the airbag deploys.

WARNING

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

(Continued)

WARNING (Continued)

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

(Continued)

WARNING (Continued)

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

If the vehicle does not have a rear seat that will accommodate a rear-facing child restraint, a rear-facing child restraint should not be installed in the vehicle, even if the airbag is off.

3-36 Seats and Restraints

The passenger sensing system is designed to turn off the right front passenger airbag and seat-mounted side impact airbag if:

- The right front passenger seat is unoccupied.
- The system determines that an infant is present in a rear-facing infant seat.
- The system determines that a small child is present in a child restraint.
- The system determines that a small child is present in a booster seat.
- A right front passenger takes his/her weight off of the seat for a period of time.
- The right front passenger seat is occupied by a smaller person, such as a child who has outgrown child restraints.
- Or, if there is a critical problem with the airbag system or the passenger sensing system.

When the passenger sensing system has turned off the right front passenger frontal airbag and seat-mounted side impact airbag, the off indicator will light and stay lit to remind you that the airbags are off. See *Passenger Airbag Status Indicator* on page 5-14.

The passenger sensing system is designed to turn on (may inflate) the right front passenger frontal airbag and seat-mounted side impact airbag anytime the system senses that a person of adult size is sitting properly in the right front passenger seat.

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

For some children who have outgrown child restraints, and for very small adults, the passenger sensing system may or may not turn off the right front passenger frontal airbag and seat-mounted side

impact airbag, depending upon the person's seating posture and body build. Everyone in the vehicle who has outgrown child restraints should wear a safety belt properly — whether or not there is an airbag for that person.

WARNING

If the airbag readiness light ever comes on and stays on, it means that something may be wrong with the airbag system. To help avoid injury to yourself or others, have the vehicle serviced right away. See *Airbag Readiness Light* on page 5-13 for more information, including important safety information.

If the On Indicator is Lit for a Child Restraint

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

1. Turn the vehicle off.
2. Remove the child restraint from the vehicle.
3. Remove any additional items from the seat such as blankets, cushions, seat covers, seat heaters, or seat massagers.
4. Reinstall the child restraint following the directions provided by the child restraint manufacturer and refer to *Securing Child Restraints (Rear Seat Position)* on page 3-56 or *Securing Child Restraints (Front Seat Position)* on page 3-58.

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

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

6. Restart the vehicle.

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

If no rear seat is available, do not install a child restraint in this vehicle.

If the Off Indicator is Lit for an Adult-Size Occupant



If a person of adult-size is sitting in the right front passenger seat, but the off indicator is lit, it could be because that person is not sitting properly in the seat. If this happens, use the following steps to allow the system to detect that person and

enable the right front passenger frontal airbag and seat-mounted side impact airbag:

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

Additional Factors Affecting System Operation

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

If the shoulder portion of the belt is pulled out all the way, the child restraint locking feature will be engaged. This may unintentionally cause the passenger sensing system to turn the airbag(s) off for some adult size occupants. If this happens, let the belt go back all the way and start again.

A thick layer of additional material, such as a blanket or cushion, or aftermarket equipment such as seat covers, seat heaters, and seat massagers can affect how well the passenger sensing system operates. We recommend that you not use seat covers or other aftermarket equipment except when approved by GM for your specific vehicle. See *Adding Equipment to the Airbag-Equipped Vehicle* on page 3-40 for more information about modifications that can affect how the system operates.

 WARNING

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

Servicing the Airbag-Equipped Vehicle

Airbags affect how the vehicle should be serviced. There are parts of the airbag system in several places around the vehicle. Your dealer/retailer and the service manual have information about servicing the vehicle and the airbag system. To purchase a service manual, see *Service Publications Ordering Information* on page 13-12.

 WARNING

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

Adding Equipment to the Airbag-Equipped Vehicle

Q: Is there anything I might add to or change about the vehicle that could keep the airbags from working properly?

A: Yes. If you add things that change the vehicle's frame, bumper system, height, front end or side sheet metal, they may keep the airbag system from working properly. Changing or moving any parts of the front seats, safety belts, the airbag sensing and diagnostic module, steering wheel, instrument panel, roof-rail airbag modules, ceiling headliner or pillar garnish trim, overhead console, front sensors, side impact sensors, rollover sensor module, or airbag wiring can affect the operation of the airbag system.

In addition, the vehicle has a passenger sensing system for the right front passenger position, which includes sensors

that are part of the passenger seat. The passenger sensing system may not operate properly if the original seat trim is replaced with non-GM covers, upholstery or trim, or with GM covers, upholstery or trim designed for a different vehicle.

Any object, such as an aftermarket seat heater or a comfort enhancing pad or device, installed under or on top of the seat fabric, could also interfere with the operation of the passenger sensing system. This could either prevent proper deployment of the passenger airbag(s) or prevent the passenger sensing system from properly turning off the passenger airbag(s). See *Passenger Sensing System on page 3-34*.

If you have questions, call Customer Assistance. The phone numbers and addresses for Customer Assistance are in

Step Two of the Customer Satisfaction Procedure in this manual.

If the vehicle has rollover roof-rail airbags, see *Different Size Tires and Wheels on page 10-61* for additional important information.

Q: Because I have a disability, I have to get my vehicle modified. How can I find out whether this will affect my airbag system?

A: If you have questions, call Customer Assistance. The phone numbers and addresses for Customer Assistance are in Step Two of the Customer Satisfaction Procedure in this manual.

In addition, your dealer/retailer and the service manual have information about the location of the airbag sensors, sensing and diagnostic module and airbag wiring.

Airbag System Check

The airbag system does not need regularly scheduled maintenance or replacement. Make sure the airbag readiness light is working. See *Airbag Readiness Light* on page 5-13 for more information.

Notice: If an airbag covering is damaged, opened, or broken, the airbag may not work properly. Do not open or break the airbag coverings. If there are any opened or broken airbag covers, have the airbag covering and/or airbag module replaced. For the location of the airbag modules, see *What Makes an Airbag Inflate?* on page 3-31. See your dealer/retailer for service.

Replacing Airbag System Parts After a Crash

WARNING

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

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

If the airbag readiness light stays on after the vehicle is started or comes on when you are driving, the airbag system may not work properly. Have the vehicle serviced right away. See *Airbag Readiness Light* on page 5-13 for more information.

Child Restraints

Older Children



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

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

- Sit all the way back on the seat. Do the knees bend at the seat edge? If yes, continue. If no, return to the booster seat.
- Buckle the lap-shoulder belt. Does the shoulder belt rest on the shoulder? If yes, continue. If no, try using the rear safety belt comfort guide. See "Rear Safety Belt Comfort Guides" under *Lap-Shoulder Belt on page 3-19* for more information. If the shoulder belt still does not rest on the shoulder, then return to the booster seat.
- Does the lap belt fit low and snug on the hips, touching the thighs? If yes, continue. If no, return to the booster seat.

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

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

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

Also see "Rear Safety Belt Comfort Guides" under *Lap-Shoulder Belt on page 3-19*.

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

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

 WARNING

Never do this.

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



 WARNING

Never do this.

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

(Continued)

WARNING (Continued)

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



Infants and Young Children

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



WARNING

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

Airbags plus lap-shoulder belts offer protection for adults and older children, but not for young children and infants. Neither the vehicle's safety belt system nor its airbag system is designed for them. Every time infants and young children ride in vehicles, they should have the protection provided by appropriate child restraints.

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



WARNING

Never do this.

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

**⚠ WARNING**

Never do this.

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



Q: What are the different types of add-on child restraints?

A: Add-on child restraints, which are purchased by the vehicle's owner, are available in four basic types. Selection of a particular restraint should take into consideration not only the child's weight, height, and age but also whether or not the restraint will be compatible with the motor vehicle in which it will be used.

For most basic types of child restraints, there are many different models available. When purchasing a child restraint, be sure it is designed to be used in a motor vehicle. If it is, the restraint will have a label saying that it meets federal motor vehicle safety standards.

The restraint manufacturer's instructions that come with the restraint state the weight and height limitations for a particular child restraint. In addition, there are many kinds of restraints available for children with special needs.

 WARNING

To reduce the risk of neck and head injury during a crash, infants need complete support. This is because an infant's neck is not fully developed and its head weighs so much compared with the rest of its body. In a crash, an infant in a rear-facing child restraint settles into the restraint, so the crash forces can be distributed across the strongest part of an infant's body, the back and shoulders. Infants should always be secured in rear-facing child restraints.

 WARNING

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

Child Restraint Systems



(A) Rear-Facing Infant Seat

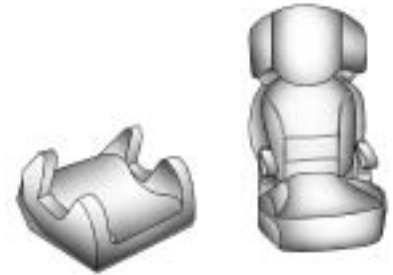
A rear-facing infant seat (A) provides restraint with the seating surface against the back of the infant.

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



(B) Forward-Facing Child Seat

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



(C) Booster Seats

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

Securing an Add-On Child Restraint in the Vehicle

WARNING

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

To help reduce the chance of injury, the child restraint must be secured in the vehicle. Child restraint systems must be secured in vehicle seats by lap belts or the lap belt portion of a lap-shoulder belt, or by

the LATCH system. See *Lower Anchors and Tethers for Children (LATCH System)* on page 3-50 for more information. Children can be endangered in a crash if the child restraint is not properly secured in the vehicle.

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

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

Securing the Child Within the Child Restraint

WARNING

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

Where to Put the Restraint

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

We recommend that children and child restraints be secured in a rear seat, including: an infant or a child riding in a rear-facing child restraint; a child riding in a forward-facing

child seat; an older child riding in a booster seat; and children, who are large enough, using safety belts.

A label on the sun visor says, "Never put a rear-facing child restraint in the front." This is because the risk to the rear-facing child is so great, if the airbag deploys.

WARNING

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

(Continued)

WARNING (Continued)

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

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

See *Passenger Sensing System* on page 3-34 for additional information.

If the vehicle does not have a rear seat that will accommodate a rear-facing child restraint, a rear-facing child restraint should not be installed in the vehicle, even if the airbag is off.

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

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

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

Lower Anchors and Tethers for Children (LATCH System)

The LATCH system holds a child restraint during driving or in a crash. This system is designed to make installation of a child restraint easier. The LATCH system uses anchors in the vehicle and attachments on the child restraint that are made for use with the LATCH system.

Make sure that a LATCH-compatible child restraint is properly installed using the anchors, or use the vehicle's safety belts to secure the restraint, following the instructions that came with that restraint, and also the instructions in this manual. When installing a child restraint with a top tether, you must also use either the lower anchors or the safety belts to properly secure the child restraint. A child restraint must never be installed using only the top tether and anchor.

In order to use the LATCH system in your vehicle, you need a child restraint that has LATCH attachments. The child restraint manufacturer will provide you with instructions on how to use the child restraint and its attachments. The following explains how to attach a child restraint with these attachments in your vehicle.

Not all vehicle seating positions or child restraints have lower anchors and attachments or top tether anchors and attachments.

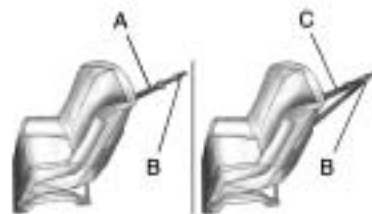
Lower Anchors



Lower anchors (A) are metal bars built into the vehicle. There are two lower anchors for each LATCH

seating position that will accommodate a child restraint with lower attachments (B).

Top Tether Anchor



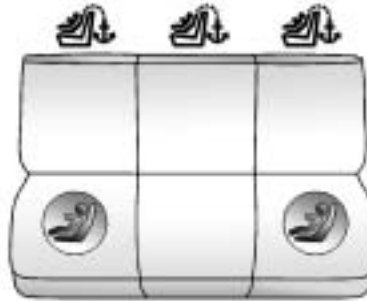
A top tether (A, C) anchors the top of the child restraint to the vehicle. A top tether anchor is built into the vehicle. The top tether attachment (B) on the child restraint connects to the top tether anchor in the vehicle in order to reduce the forward movement and rotation of the child restraint during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

Your child restraint may have a single tether (A) or a dual tether (C). Either will have a single attachment (B) to secure the top tether to the anchor.

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

If the child restraint does not have a top tether, one can be obtained, in kit form, for many child restraints. Ask the child restraint manufacturer whether or not a kit is available.

Lower Anchor and Top Tether Anchor Locations



Rear Seat

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

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

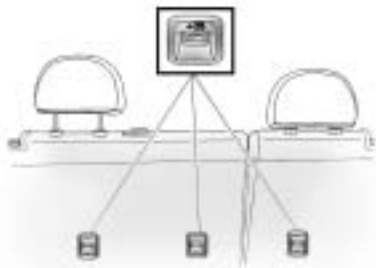


To assist you in locating the lower anchors, each seating position with lower anchors has two labels, near the crease between the seatback and the seat cushion.



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

The top tether anchors are located on the back of the rear seatback. Be sure to use an anchor located on the same side of the vehicle as the seating position where the child restraint will be placed.



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

Accident statistics show that children are safer if they are restrained in the rear rather than the front seat. See *Where to Put the Restraint* on page 3-48 for additional information.

Securing a Child Restraint Designed for the LATCH System

WARNING

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

WARNING

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

WARNING

Children can be seriously injured or strangled if a shoulder belt is wrapped around their neck and the safety belt continues to tighten. Buckle any unused safety belts behind the child restraint so children cannot reach them. Pull the shoulder belt all the way out of the retractor to set the lock, if your vehicle has one, after the child restraint has been installed.

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

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

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

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

- 1.2. Put the child restraint on the seat.

- 1.3. Attach and tighten the lower attachments on the child restraint to the lower anchors.

2. If the child restraint manufacturer recommends that the top tether be attached, attach and tighten the top tether to the top tether anchor, if equipped.

3-54 Seats and Restraints

Refer to the child restraint instructions and the following steps:

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



If the position you are using does not have a headrest or head restraint and you

are using a single tether, route the tether over the seatback.



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



If the position you are using has an adjustable headrest or head restraint and you are using a dual tether, route the tether around the headrest or head restraint .



If the position you are using has an adjustable headrest or head restraint and you are using a single tether, raise the headrest or head restraint and route the tether under the headrest or head restraint and in between the headrest or head restraint posts.

3. Push and pull the child restraint in different directions to be sure it is secure.

Replacing LATCH System Parts After a Crash

WARNING

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

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

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

Securing Child Restraints (Rear Seat Position)

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

If the child restraint has the LATCH system, see *Lower Anchors and Tethers for Children (LATCH System)* on page 3-50 for how and where to install the child restraint using LATCH. If a child restraint is secured in the vehicle using a safety belt and it uses a top tether, see *Lower Anchors and Tethers for Children (LATCH System)* on page 3-50 for top tether anchor locations.

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

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

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

If more than one child restraint needs to be installed in the rear seat, be sure to read *Where to Put the Restraint* on page 3-48.

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



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

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



4. Pull the rest of the shoulder belt all the way out of the retractor to set the lock.



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

6. If the child restraint has a top tether, follow the child restraint manufacturer's instructions regarding the use of the top tether. See *Lower Anchors and Tethers for Children (LATCH System)* on page 3-50 for more information.
7. Push and pull the child restraint in different directions to be sure it is secure.

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

Securing Child Restraints (Front Seat Position)

The vehicle has airbags. A rear seat is a safer place to secure a forward-facing child restraint. See *Where to Put the Restraint on page 3-48*.

In addition, the vehicle has a passenger sensing system which is designed to turn off the right front passenger frontal airbag under certain conditions. See *Passenger Sensing System on page 3-34* and *Passenger Airbag Status Indicator on page 5-14* for more information, including important safety information.

A label on the sun visor says, "Never put a rear-facing child seat in the front." This is because the risk to the rear-facing child is so great, if the airbag deploys.

WARNING

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

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

(Continued)

WARNING (Continued)

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

See *Passenger Sensing System on page 3-34* for additional information.

If the vehicle does not have a rear seat that will accommodate a rear-facing child restraint, a rear-facing child restraint should not be installed in the vehicle, even if the airbag is off.

If the child restraint has the LATCH system, see *Lower Anchors and Tethers for Children (LATCH System)* on page 3-50 for how and where to install the child restraint using LATCH. If a child restraint is secured using a safety belt and it uses a top tether, see *Lower Anchors and Tethers for Children (LATCH System)* on page 3-50 for top tether anchor locations.

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

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

You will be using the lap-shoulder belt to secure the child restraint in this position. Follow the instructions that came with the child restraint.

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

When the passenger sensing system has turned off the right front passenger frontal airbag, the off indicator on the passenger airbag status indicator should light and stay lit when the vehicle is started. See *Passenger Airbag Status Indicator* on page 5-14.

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



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

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



5. Pull the rest of the shoulder belt all the way out of the retractor to set the lock.



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

7. If the vehicle does not have a rear seat and the child restraint has a top tether, follow the child restraint manufacturer's instructions regarding the use of the top tether. See *Lower Anchors and Tethers for Children (LATCH System)* on page 3-50 for more information.
8. Push and pull the child restraint in different directions to be sure it is secure.

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

If a child restraint has been installed and the on indicator is lit, see "If the On Indicator is Lit for a Child Restraint" under *Passenger Sensing System* on page 3-34 for more information.

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

Storage

Storage Compartments

Instrument Panel Storage	4-1
Glove Box	4-1
Cupholders	4-1
Front Storage	4-2
Sunglasses Storage	4-2
Armrest Storage	4-2
Center Console Storage	4-2

Additional Storage Features

Cargo Cover	4-3
Cargo Tie Downs	4-3
Cargo Management System	4-3
Convenience Net	4-4

Roof Rack System

Roof Rack System	4-4
------------------------	-----

Storage Compartments

Instrument Panel Storage

Your vehicle has a storage area located to left of the steering wheel. Pull down on the handle to access.

Glove Box

To open the glove box, lift up on the lever. If the glove box has a lock use the key to lock and unlock it. The glove box divider can be removed. The slots on the left side are for storing the divider.

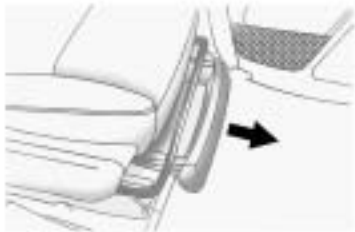
Cupholders

There are cupholders located in front of and behind the center console.



To access the cupholders behind the center console, push the button.

Front Storage

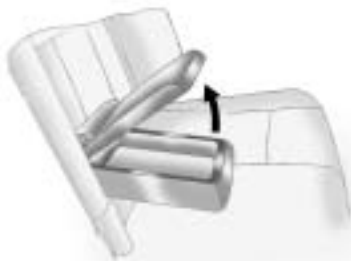


For vehicles with a storage area located under the front passenger seat, lift up on the end of the tray and pull it forward to access it.

Sunglasses Storage

Your vehicle may have a sunglasses storage compartment located near the rearview mirror. Push the cover to open.

Armrest Storage



To access the rear seat armrest, pull the handle down. Lift the top of the armrest to access the storage area.

Center Console Storage



Your vehicle has a center console with an upper, lower and rear storage area. To access the upper storage area, lift up on the top lever. To access the lower storage area, lift up on the bottom lever. The top of the center console can extend forward. To adjust, hold the top of the lever up and pull the top of the center console forward.



To open the cover of the the rear storage area, push the button located at the top.

Additional Storage Features

Cargo Cover

For vehicles with a cargo cover, use it to cover items in the rear of the vehicle.

To remove the cover and remove it from the vehicle, pull both ends toward each other. To reinstall, place each end of the cover in the holes behind the rear seat.

Cargo Tie Downs

Four cargo tie-downs are located in the rear compartment of the vehicle. The tie-downs can be used to secure small loads.

Cargo Management System

If the vehicle has a cargo management system in the rear of the vehicle, it will have rails with adapters and hooks. These are used to hold the net and mesh pocket.



The adapters are used to hold the net. Slide the adapters to the desired location on the upper and lower rail and turn the handle up to lock it in place. Compress the rods of the net and insert them into the corresponding openings of the adapter. The longer rod is for the upper adapter.

The hooks hold the mesh pocket. To insert a hook on the rail, place the hook in the upper groove of the rail and press it into the lower groove.

Convenience Net

For vehicles with a convenience net, located in the rear, use it to store small loads as far forward as possible. The net should not be used to store heavy loads.

Roof Rack System

WARNING

If something is carried on top of the vehicle that is longer or wider than the roof rack— like paneling, plywood, or a mattress— the wind can catch it while the vehicle is being driven. The item being carried could be violently torn off, and this could cause a collision, and damage the vehicle. Never carry something longer or wider than the roof rack on top of the vehicle unless using a GM Certified accessory carrier.

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

Notice: Loading cargo on the roof rack that weighs more than 75 kg (165 lbs) or hangs over the rear or sides of the vehicle may damage the vehicle. Load cargo so that it rests evenly between the crossrails, making sure to fasten cargo securely.

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

Do not exceed the maximum vehicle capacity when loading your vehicle. For more information on vehicle capacity and loading, see *Vehicle Load Limits* on page 9-22.

Check that all cargo is securely fastened to prevent damage or loss while driving.



 NOTES

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Instruments and Controls

Controls

Steering Wheel Adjustment . . .	5-2
Steering Wheel Controls	5-3
Horn	5-3
Windshield Wiper/Washer	5-3
Rear Window Wiper/ Washer	5-5
Compass	5-5
Clock	5-8
Power Outlets	5-8

Warning Lights, Gages, and Indicators

Warning Lights, Gages, and Indicators	5-9
Instrument Cluster	5-10
Speedometer	5-11
Odometer	5-11
Trip Odometer	5-11
Tachometer	5-11
Fuel Gage	5-11
Safety Belt Reminders	5-12
Airbag Readiness Light	5-13

Passenger Airbag Status Indicator	5-14
Charging System Light	5-15
Malfunction Indicator Lamp	5-15
Service Vehicle Soon Light	5-18
Brake System Warning Light	5-18
Antilock Brake System (ABS) Warning Light	5-19
All-Wheel-Drive Light	5-19
Power Steering Warning Light	5-20
StabiliTrak® Indicator Light . . .	5-20
Traction Control System (TCS) Warning Light	5-20
Engine Coolant Temperature Warning Light	5-21
Tire Pressure Light	5-21
Engine Oil Pressure Light . . .	5-22
Change Engine Oil Light . . .	5-22
Low Fuel Warning Light	5-23
Security Light	5-23
Reduced Engine Power Light	5-23
High-Beam on Light	5-24
Fog Lamp Light	5-24

Low Washer Fluid Warning Light	5-24
Cruise Control Light	5-25
Door Ajar Light	5-25
Gate Ajar Light	5-25

Information Displays

Driver Information Center (DIC)	5-25
--	------

Vehicle Messages

Vehicle Messages	5-31
Battery Voltage and Charging Messages	5-31
Brake System Messages . . .	5-31
Compass Messages	5-31
Cruise Control Messages . . .	5-32
Door Ajar Messages	5-32
Engine Cooling System Messages	5-32
Engine Oil Messages	5-33
Engine Power Messages . . .	5-34
Fuel System Messages	5-34
Key and Lock Messages . . .	5-35
Ride Control System Messages	5-35
Airbag System Messages . . .	5-36
Service Vehicle Messages . .	5-37

5-2 Instruments and Controls

Tire Messages	5-37
Transmission Messages	5-38
Vehicle Reminder Messages	5-39

Vehicle Personalization

Vehicle Personalization	5-39
-------------------------------	------

Universal Remote System

Universal Remote System ...	5-45
Universal Remote System Programming	5-46
Universal Remote System Operation	5-49

Controls

Steering Wheel Adjustment



The lever is located on the left side of the steering column.

To adjust the steering wheel:

1. Hold the steering wheel and pull the lever down.
2. Move the steering wheel up or down to a comfortable position.
3. Pull the lever up firmly to lock the steering wheel in place.

Steering Wheel Controls



Some audio controls can be adjusted at the steering wheel. They include the following:

+ / - (Next/Previous) : Press and release to go to the next or the previous preset radio station or CD track.

📞 (End Call): For vehicles with the OnStar[®] system, press to end a Hands-Free call, an OnStar[®] call, cancel an incoming call, or end the Advisor Playback.

For vehicles with Bluetooth[®], press to end a call, or cancel an incoming call.

See *Bluetooth on page 7-18* and the OnStar Owner's Guide for more information.

🔊 + 🔊 - (Volume): Move the thumbwheel up or down to increase or to decrease the volume.

📞 (Call / Mute): Press and release to mute the system. Press it again to turn the sound back on.

For vehicles with a Bluetooth or OnStar[®] system, press and hold for longer than two seconds to interact with those systems.

Horn

Press near or on the horn symbols on the steering wheel pad to sound the horn.

Windshield Wiper/Washer



The windshield wiper lever is on the right side of the steering column.

Move the lever up or down to select the wiper speed.

🌫️ (Mist): Single wipe, briefly move the lever down. The lever returns to its starting position when released. For several wipes, hold the lever down.

○ (Off): Turns the windshield wipers off.

5-4 Instruments and Controls

(Adjustable Interval Wipes):

Sets a delay between wipes. Move the switch on top of the lever left for less frequent wipes or right for more frequent wipes.

 (Low): Slow wipes.

 (High): Fast wipes.

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

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

Rainsense™

Notice: Going through an automatic car wash with the wipers on can damage them. Turn the wipers off when going through an automatic car wash.

For vehicles with Rainsense™ windshield wipers, the moisture sensor is located next to the inside rearview mirror and is mounted on the windshield. When active, these sensors are able to detect moisture on the windshield and automatically turn on the wipers.

To turn on the Rainsense feature, the wipers must be set to one of the five delay settings on the multifunction lever. Each of the five settings adjusts the sensitivity of the sensor.

Since different drivers have different setting preferences, it is recommended that the mid-range setting (position 3) be used initially. For more wipes, select the higher settings; for fewer wipes, select the lower settings located closer to the off position on the turn signal/lane change lever.

The sensor automatically controls the frequency of the wipes from the off setting to the high speed setting according to the weather conditions. The wipers can be left in a rainsense mode even when it is not raining.

When Rainsense is active, the headlamps turn on automatically if the exterior lamp control is in the AUTO position and the wipers are active.

Windshield Washer



WARNING

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

Pull the windshield wiper lever to spray windshield washer fluid and activate the wipers. The wipers will continue until the lever is released or the maximum wash time is reached.

Rear Window Wiper/Washer

The rear wiper and rear wash button is on the instrument panel above the climate control system.

 **(Rear Wiper/Washer):** Press to wash and wipe the rear window.

The rear window washer uses the same reservoir as the windshield washer. Check the windshield washer reservoir level if the front windshield can be worked, but no fluid is sprayed when the rear washer is activated. See *Washer Fluid* on page 10-22.

 **(Delay):** Press to turn the delayed wiping on or off.

Compass

Your vehicle may have a compass in the Driver Information Center (DIC).

Compass Zone

The zone is set to zone eight upon leaving the factory. Your dealer/retailer will set the correct zone for your location.

Under certain circumstances, such as during a long distance cross-country trip or moving to a new state or province, it will be necessary to compensate for compass variance by resetting the zone through the DIC if the zone is not set correctly.

Compass variance is the difference between the earth's magnetic north and true geographic north. If the compass is not set to the zone where you live, the compass may give false readings. The compass must be set to the variance zone in which the vehicle is traveling.

5-6 Instruments and Controls

To adjust for compass variance, use the following procedure:

Compass Variance (Zone) Procedure

1. Do not set the compass zone when the vehicle is moving. Only set it when the vehicle is in P (Park).

Press the vehicle information button until PRESS ✓ TO SET COMPASS ZONE: ## displays.



2. Find the vehicle's current location and variance zone number on the map.
Zones 1 through 15 are available.
3. Press and hold the set/reset button to scroll through and select the appropriate variance zone.

4. Press the trip/fuel button until the vehicle heading, for example, N for North, is displayed in the DIC.
5. If calibration is necessary, calibrate the compass. See "Compass Calibration Procedure" following.

Compass Calibration

The compass can be manually calibrated. Only calibrate the compass in a magnetically clean and safe location, such as an open parking lot, where driving the vehicle in circles is not a danger. It is suggested to calibrate away from tall buildings, utility wires, manhole covers, or other industrial structures, if possible.

If CAL should ever appear in the DIC display, the compass should be calibrated.

If the DIC display does not show a heading, for example, N for North, or the heading does not change after making turns, there may be a strong magnetic field interfering with the compass. Such interference may be caused by a magnetic CB or cell phone antenna mount, a magnetic emergency light, magnetic note pad holder, or any other magnetic item. Turn off the vehicle, move the magnetic item, then turn on the vehicle and calibrate the compass.

To calibrate the compass, use the following procedure:

Compass Calibration Procedure

1. Before calibrating the compass, make sure the compass is set to the variance zone in which the vehicle is located. See "Compass Variance (Zone) Procedure" earlier in this section.

Do not operate any switches such as window, sunroof, climate controls, seats, etc. during the calibration procedure.

2. Press the vehicle information button until PRESS ✓ TO CALIBRATE COMPASS displays.

3. Press the set/reset button to start the compass calibration.
4. The DIC will display CALIBRATING COMPASS : TURN IN CIRCLES. Drive the vehicle in tight circles at less than 5 mph (8 km/h) to complete the calibration. The DIC will display COMPASS CALIBRATION COMPLETE for a few seconds when the calibration is complete. The DIC display will then return to the previous menu.

5-8 Instruments and Controls

Clock

To set the time and date:

1. Turn the ignition key to ACC/ACCESSORY or ON/RUN.
Press  to turn the radio on.
2. Press  and the HR, MIN, MM, DD, YYYY (hour, minute, month, day, and year) displays.
3. Press the softkey located below any one of the tabs that you want to change.
4. To increase the time or date do one of the following:
 - Press the softkey located below the selected tab.
 - Press  SEEK, or  FWD.
 - Turn  clockwise.

5. To decrease the time or date do one of the following:

- Press  SEEK or  REV.
- Turn  counterclockwise.

The date does not automatically display. To see the date press  while the radio is on. The date with display times out after a few seconds and goes back to the normal radio and time display.

To change the time default setting from 12 hour to 24 hour or to change the date default setting from month/day/year to day/month/year:

1. Press  and then the softkey located below the forward arrow label. Once the time 12H and 24H, and the date MM/DD/YYYY (month, day, and year) and DD/MM/YYYY (day, month, and year) displays.

2. Press the softkey located below the desired option.
3. Press  again to apply the selected default, or let the screen time out.

Power Outlets

The accessory power outlets can be used to connect electrical equipment, such as a cellular phone.

The accessory power outlets are located on the rear of the center storage console and in the rear cargo compartment. There may be a power outlet located inside the instrument panel storage area below the climate controls.

To use the outlets, remove the cover. When not in use, always cover the outlet with the protective cap.

Notice: Leaving electrical equipment on for extended periods will drain the battery. Always turn off electrical equipment when not in use and do not plug in equipment that exceeds the maximum 20 ampere rating.

Certain electrical accessories may not be compatible with the accessory power outlet and could result in blown vehicle or adapter fuses. If you experience a problem, see your dealer/retailer for additional information on the accessory power outlet.

Notice: Adding any electrical equipment to your vehicle may damage it or keep other components from working as they should. The repairs would not be covered by your warranty. Check with your dealer/retailer before adding electrical equipment.

When adding electrical equipment, be sure to follow the installation instructions included with the equipment.

Notice: Improper use of the power outlet can cause damage not covered by the vehicle warranty. Do not hang any type of accessory or accessory bracket from the plug because the power outlets are designed for accessory power plugs only.

Warning Lights, Gages, and Indicators

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

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

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

Speedometer

The speedometer shows the vehicle's speed in both kilometers per hour (km/h) and miles per hour (mph).

Odometer

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

This vehicle has a tamper-resistant odometer. If the vehicle needs a new odometer installed, the new one is set to the mileage of the old odometer. If this is not possible, it is set at zero and a label is put on the driver's door to show the old mileage reading.

Trip Odometer

The trip odometer can record the number of miles, used in the United States, or kilometers, used in Canada, traveled for up to two trips.

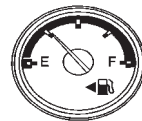
Cycle between the odometer and trip odometers A and B by pressing the reset button located in the lower right area of the speedometer. Press the reset button to tell how many miles or kilometers have been recorded on either Trip A or Trip B since the trip odometer was last set back to zero.

To reset each trip odometer to zero, press and hold the reset button. The reset button resets only the trip odometer that is being displayed. Each trip odometer must be reset individually.

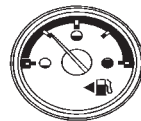
Tachometer

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

Fuel Gage



United States



Canada

When the ignition is on, the fuel gage indicates how much fuel is left in the tank.

When the indicator nears empty, the low fuel light comes on. There is still a little fuel left, but the fuel tank should be refilled soon. See *Low Fuel Warning Light* on page 5-23 for more information.

An arrow on the fuel gage indicates the side of the vehicle the fuel door is on.

5-12 Instruments and Controls

Here are four things that some owners ask about. None of these means the fuel gage is not working properly:

- At the service station, the fuel pump shuts off before the gage reads full.
- It takes a little more or less fuel to fill up than the gage indicated. For example, the gage may have indicated the tank was half full, but it actually took a little more or less than half the tank's capacity to fill the tank.
- The gage moves a little while turning a corner or speeding up.
- The gage takes a few seconds to stabilize after the ignition is turned on, but it goes back to empty when the ignition is turned off.

For fuel tank capacity, see *Capacities and Specifications on page 12-2*.

Safety Belt Reminders

Driver Safety Belt Reminder Light

The driver safety belt reminder light is on the instrument panel cluster.



When the engine is started this light and the chime come on and stay on for several seconds to remind the driver to fasten the safety belt. The light also begins to flash.

This cycle repeats if the driver remains unbuckled and the vehicle is moving.

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

Passenger Safety Belt Reminder Light



When the engine is started this light and the chime come on and stay on for several seconds to remind the passenger to fasten their safety belt. The light also begins to flash.

This cycle repeats if the passenger remains unbuckled and the vehicle is moving.

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

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

Airbag Readiness Light

There is an airbag readiness light on the instrument panel cluster, which shows the airbag symbol. The system checks the airbag's electrical system for malfunctions. The light indicates if there is an electrical problem. The system check includes the airbag sensor, the pretensioners, the airbag modules, the wiring and the crash sensing and diagnostic module. For more information on the airbag system, see *Airbag System* on page 3-25.



WARNING

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



The airbag readiness light comes on when the vehicle is started, and flashes for a few seconds. The light goes out when the system is ready.

If the airbag readiness light stays on after the vehicle is started or comes on while driving, the airbag system may not work properly. Have the vehicle serviced right away.

The airbag readiness light should flash for a few seconds when the engine is started. If the light does not come on then, have it fixed immediately. If there is a problem with the airbag system, an airbag Driver Information Center (DIC) message may also come on. See *Driver Information Center (DIC)* on page 5-25 for more information.

Passenger Airbag Status Indicator

The vehicle has the passenger sensing system. See *Passenger Sensing System* on page 3-34 for important safety information. The instrument panel has a passenger airbag status indicator.



United States



Canada

When the vehicle is started, the passenger airbag status indicator will light ON and OFF, or the symbol for on and off, for several seconds as a system check. If you are using remote start, if equipped, to start the vehicle from a distance, you may not see the system check. Then, after several more seconds, the status indicator will light either ON or OFF, or either the on or off symbol to let you know the status of the right front passenger frontal and seat-mounted side impact airbags.

If the word ON or the on symbol is lit on the passenger airbag status indicator, it means that the right front passenger frontal airbag and seat-mounted side impact airbag are enabled (may inflate).

If the word OFF or the off symbol is lit on the airbag status indicator, it means that the passenger sensing system has turned off the right front passenger frontal airbag and seat-mounted side impact airbag.

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

⚠ WARNING

If the airbag readiness light ever comes on and stays on, it means that something may be wrong with the airbag system. To help avoid injury to yourself or others, have the vehicle serviced right away. See *Airbag Readiness Light* on page 5-13 for more information, including important safety information.

Charging System Light

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

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

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

Malfunction Indicator Lamp

A computer system called OBD II (On-Board Diagnostics-Second Generation) monitors operation of the fuel, ignition, and emission control systems. It ensures that emissions are at acceptable levels for the life of the vehicle, helping to produce a cleaner environment.



This light comes on when the ignition is on, but the engine is not running, as a check to show it is working. If it does not, have the vehicle serviced by your dealer/retailer.

5-16 Instruments and Controls

If the check engine light comes on and stays on, while the engine is running, this indicates that there is an OBD II problem and service is required.

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

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

Notice: Modifications made to the engine, transmission, exhaust, intake, or fuel system of the vehicle or the replacement of the original tires with other than those of the same Tire Performance Criteria (TPC) can affect the vehicle's emission controls and can cause this light to come on. Modifications to these systems could lead to costly repairs not covered by the vehicle warranty. This could also result in a failure to pass a required Emission Inspection/Maintenance test. See *Accessories and Modifications on page 10-3*.

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

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

The following can prevent more serious damage to the vehicle:

- Reduce vehicle speed.
- Avoid hard accelerations.
- Avoid steep uphill grades.
- If towing a trailer, reduce the amount of cargo being hauled as soon as it is possible.

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

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

An emission system malfunction might be corrected.

- Make sure the fuel cap is fully installed. See *Filling the Tank* on page 9-50. The diagnostic system can determine if the fuel cap has been left off or improperly installed. A loose or missing fuel cap allows fuel to evaporate into the atmosphere. A few driving trips with the cap properly installed should turn the light off.
- If the vehicle has been driven through a deep puddle of water, the vehicle's electrical system might be wet. The condition is usually corrected when the electrical system dries out. A few driving trips should turn the light off.

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

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

See *Gasoline Specifications* on page 9-48.

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

Emissions Inspection and Maintenance Programs

Some state/provincial and local governments have or might begin programs to inspect the emission control equipment on the vehicle. Failure to pass this inspection could prevent getting a vehicle registration.

Here are some things to know to help the vehicle pass an inspection:

- The vehicle will not pass this inspection if the check engine light is on with the engine running, or if the key is in ON/RUN and the light is not on.

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

Service Vehicle Soon Light



The service vehicle soon light comes on if a condition exists that may require the vehicle to be taken in for service.

If the light comes on, take the vehicle to your dealer/retailer for service as soon as possible.

Brake System Warning Light



BRAKE

United States

The brake indicator light should come on briefly as the engine is started. If it does not come on have the vehicle serviced by your dealer/retailer.

When the ignition is on, the brake system warning light comes on when the parking brake is set. The light stays on if the parking brake does not fully release. If it stays on after the parking brake is fully released, there is a brake problem. Have the brake system inspected immediately.



Canada

⚠ WARNING

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

If the light comes on while driving, a chime sounds. Pull off the road and stop. The pedal might be harder to push or go closer to the floor. It might also take longer to stop. If the light is still on, have the vehicle towed for service. See *Driving Characteristics and Towing Tips* on page 9-53.

Antilock Brake System (ABS) Warning Light

For vehicles with the Antilock Brake System (ABS), this light should come on briefly as the engine is started. If it does not come on have the vehicle serviced by your dealer/retailer.

If the ABS light stays on longer than a few seconds after engine is started, or comes on and stays on while driving, try resetting the system. To reset the system:

1. While driving, pull over when it is safe to do so.
2. Place the vehicle in P (PARK).
3. Turn off the ignition.
4. Then restart the engine.

If the ABS light remains on after resetting the system or comes on again while driving, the vehicle needs service. If the ABS light is on, but the regular brake system warning light is not on, the antilock brakes are not working properly, but the regular brakes are still functioning. Have the vehicle serviced right away. If both brake lights are on, the vehicle does not have antilock brakes, and there is a problem with the regular brakes as well. Have the vehicle towed for service. See *Towing the Vehicle* on page 10-78.

All-Wheel-Drive Light

This light comes on when there is a malfunction in the All-Wheel Drive (AWD) system.

This light flashes when the AWD system is temporarily disabled.

For more information see *All-Wheel Drive* on page 9-38.

Power Steering Warning Light



For 4-cylinder vehicles with Electric Power Steering (EPS), this light comes on briefly when the ignition is turned to ON/RUN as a check to show it is working.

If it does not come on have the vehicle serviced by your dealer/retailer.

If the EPS light stays on, or comes on while driving, the EPS system may not be working. If this happens, see your dealer/retailer for service.

StabiliTrak[®] Indicator Light



The StabiliTrak[®] light comes on briefly as the engine is started. If it does not come on have the vehicle serviced by your dealer/retailer.

This light flashes while the StabiliTrack or the Traction Control System (TCS) is working. The light comes on when the ESP has been turned off and if there is a problem with the StabiliTrak or the TCS. See *Traction Control System (TCS)* on page 9-40 and *StabiliTrak System* on page 9-41 for more information.

Traction Control System (TCS) Warning Light



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

It also comes on when the Traction Control System (TCS) has been turned off or when the Electronic Stability Program (ESP) is not ready. If there is a problem with the TCS or the ESP, this light and the TCS warning light comes on at the same time. See *Traction Control System (TCS)* on page 9-40 and *StabiliTrak System* on page 9-41 for more information.

Engine Coolant Temperature Warning Light

The engine coolant temperature light should come on briefly as the engine is started. If it does not come on have the vehicle serviced by your dealer/retailer.



Notice: Driving with the engine coolant temperature warning light on could cause the vehicle to overheat. See *Engine Overheating* on page 10-20. The vehicle's engine could be damaged, and it might not be covered by the vehicle warranty. Never drive with the engine coolant temperature warning light on.

If this light comes on and stays on, the engine has overheated. Pull over and see *Engine Overheating* on page 10-20 for more information.

Tire Pressure Light



For vehicles with a tire pressure monitoring system, this light comes on briefly when the engine is started. It provides information about tire pressures and the Tire Pressure Monitoring System.

When the Light is On Steady

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

A tire pressure message in the Driver Information Center (DIC), can accompany the light. See *Tire Messages* on page 5-37 for more information. Stop as soon as possible, and inflate the tires to the pressure value shown on the tire loading information label. See *Tire Pressure* on page 10-50 for more information.

When the Light Flashes First and Then is On Steady

This indicates that there may be a problem with the Tire Pressure Monitor System. The light flashes for about a minute and stays on steady for the remainder of the ignition cycle. This sequence repeats with every ignition cycle. See *Tire Pressure Monitor Operation* on page 10-54 for more information.

Engine Oil Pressure Light



WARNING

Do not keep driving if the oil pressure is low. The engine can become so hot that it catches fire. Someone could be burned. Check the oil as soon as possible and have the vehicle serviced.

Notice: Lack of proper engine oil maintenance can damage the engine. The repairs would not be covered by the vehicle warranty. Always follow the maintenance schedule in this manual for changing engine oil.



The oil pressure light should come on briefly as the engine is started. If it does not come on have the vehicle serviced by your dealer/retailer.

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

Change Engine Oil Light



When the change engine oil light comes on, it means that service is required on the vehicle.

See *Scheduled Maintenance* on page 11-2 and *Engine Oil* on page 10-8 for more information.

After the engine oil is changed the engine oil life system needs to be reset in order to turn off this light. See *Engine Oil Life System* on page 10-10 for more information.

Low Fuel Warning Light



The low fuel warning light, below the fuel gage, comes on briefly when the engine is started.

This light also comes on when the fuel tank is low on fuel. When fuel is added, the light should go off. If it does not, have the vehicle serviced.

Security Light



This light flashes when the security system is activated.

For more information, see *Vehicle Security* on page 2-9.

Reduced Engine Power Light



The reduced engine power light should come on briefly as the engine is started. If it does not come on have the vehicle serviced by your dealer/retailer.

This light, along with the service engine soon light displays when a noticeable reduction in the vehicle's performance occurs. Stop the vehicle and turn off the ignition. Wait for 10 seconds and restart the vehicle. This might correct the condition.

The vehicle can be driven at a reduced speed when the reduced engine power light is on but acceleration and speed might be reduced. The performance could be reduced until the next time the vehicle is driven. If this light stays on, see your dealer/retailer as soon as possible for diagnosis and repair.

High-Beam on Light



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

See *Headlamp High/Low-Beam Changer* on page 6-2 for more information.

Fog Lamp Light



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

The light goes out when the fog lamps are turned off. See *Fog Lamps* on page 6-4 for more information.

Low Washer Fluid Warning Light



The low washer fluid warning light comes on when the windshield washer fluid is low. See *Washer Fluid* on page 10-22 for more information.

Cruise Control Light



The cruise control light comes on whenever the cruise control is set.

The light goes out when the cruise control is turned off. See *Cruise Control* on page 9-42 for more information.

Door Ajar Light



The door ajar light comes on when a door is open. Before driving, check that all doors are properly closed.

Gate Ajar Light



If the gate ajar light comes on, the liftgate is not completely closed. Driving with the liftgate open can cause carbon monoxide (CO) to enter the vehicle.

See *Engine Exhaust* on page 9-34 for more information.

Information Displays

Driver Information Center (DIC)

Your vehicle has a Driver Information Center (DIC).

All information appears in the DIC display located in the instrument panel cluster.

The DIC comes on when the ignition is on. After a short delay, the DIC displays the information that was last displayed before the engine was turned off.

The DIC displays trip, fuel, and vehicle system information, and warning messages if a system problem is detected.

The DIC also displays the compass direction, outside air temperature, and shift position indicator at the top of the DIC display. If there is a problem with the system that controls the temperature display, the numbers will be replaced with

dashes. If this occurs, have the vehicle serviced by your dealer/retailer. If an abnormal temperature reading is displayed for an extended period of time, consult your dealer/retailer. Under certain circumstances, especially when the engine is idling, a delay updating the temperature display is normal.

See *Compass on page 5-5* and *Automatic Transmission on page 9-35* for more information.

The DIC has different displays which can be accessed by pressing the DIC buttons located on the instrument panel, below the headlamp switch.

The DIC displays trip, fuel, and vehicle system information, and warning messages if a system problem is detected.

DIC Buttons



The buttons are the trip/fuel, vehicle information, customization, and set/reset buttons. The button functions are detailed in the following pages.

🧭 (Trip/Fuel): Press this button to display the odometer, trip odometer, fuel range, average economy, fuel used, and elapsed time. Some vehicles also display instantaneous economy. The compass and outside temperature will also be shown in the display. The temperature will be shown in °F or °C depending on the units selected.

🚗i (Vehicle Information): Press this button to display the oil life, units, tire pressure readings and tire pressure sensor learning for vehicles with the Tire Pressure Monitor System (TPMS), Remote Keyless Entry (RKE) transmitter programming, compass zone setting, compass recalibration on vehicles with this feature, coolant temperature, and battery voltage.

⚙️ (Customization): Press this button to customize the feature settings on your vehicle. See *Vehicle Personalization on page 5-39* for more information.

✓ (Set/Reset): Press this button to set or reset certain functions and to turn off or acknowledge messages on the DIC.

Trip/Fuel Menu Items

 (Trip/Fuel): Press this button to scroll through the following menu items:

Odometer

Press the trip/fuel button until ODOMETER displays. This display shows the distance the vehicle has been driven in either miles (mi) or kilometers (km). Pressing the trip odometer reset stem will also display the odometer.

To switch between English and metric measurements, see “Units” later in this section.

Trip Odometer

Press the trip/fuel button until TRIP A or TRIP B displays. This display shows the current distance traveled in either miles (mi) or kilometers (km) since the last reset for the trip odometer. Pressing the trip odometer reset stem will also display the trip odometer.

Each trip odometer can be reset to zero separately by pressing the set/reset button while the trip odometer is displayed. You can also reset the trip odometer while it is displayed by pressing and holding the trip odometer reset stem.

Fuel Range

Press the trip/fuel button until FUEL RANGE displays. This display shows the approximate number of remaining miles (mi) or kilometers (km) the vehicle can be driven without refueling. The display will show LOW if the fuel level is low.

The fuel range estimate is based on an average of the vehicle's fuel economy over recent driving history and the amount of fuel remaining in the fuel tank. This estimate will change if driving conditions change. For example, if driving in traffic and making frequent stops, this display may read one number, but if the vehicle is driven on a freeway, the number may change even though

the same amount of fuel is in the fuel tank. This is because different driving conditions produce different fuel economies. Generally, freeway driving produces better fuel economy than city driving. Fuel range cannot be reset.

If the vehicle is low on fuel, the FUEL LEVEL LOW message will be displayed. See “FUEL LEVEL LOW” under *Fuel System Messages* on page 5-34.

Average Fuel Economy

Press the trip/fuel button until AVERAGE FUEL ECONOMY displays. This display shows the approximate average miles per gallon (mpg) or liters per 100 kilometers (L/100 km) or kilometers per liter (km/L). This number is calculated based on the number of mpg (L/100 km) (km/L) recorded since the last time this menu item was reset. To reset the AVERAGE FUEL ECONOMY, press and hold the set/reset button. The display will show zero.

Fuel Used

Press the trip/fuel button until FUEL USED displays. This display shows the number of gallons (gal) or liters (L) of fuel used since the last reset of this menu item. To reset the fuel used information, press and hold the set/reset button while FUEL USED is displayed.

Elapsed Time

Press the trip/fuel button until ELAPSED TIME displays. This display can be used as a timer.

To start the timer, press the set/reset button while ELAPSED TIME is displayed. The display will show the amount of time that has passed since the timer was last reset, not including time the ignition is off. Time will continue to be counted as long as the ignition is on, even if another display is being shown on the DIC. The timer will record up to 99 hours, 59 minutes and 59 seconds (99:59:59) after which the display will return to zero.

To stop the timer, press the set/reset button briefly while ELAPSED TIME is displayed.

To reset the timer to zero, press and hold the set/reset button while ELAPSED TIME is displayed.

Instantaneous Fuel Economy

If the vehicle has this display, press the trip/fuel button until INSTANT FUEL ECONOMY displays. This display shows the current fuel economy at a particular moment and will change frequently as driving conditions change. This display shows the instantaneous fuel economy in miles per gallon (mpg) or liters per 100 kilometers (L/100 km). Unlike average fuel economy, this display cannot be reset.

Blank Display

This display shows no information.

Vehicle Information Menu Items

 **i (Vehicle Information):** Press this button to scroll through the following menu items:

Oil Life

Press the vehicle information button until OIL LIFE REMAINING displays. This display shows an estimate of the oil's remaining useful life. If you see 99% OIL LIFE REMAINING on the display, that means 99% of the current oil life remains. The engine oil life system will alert you to change the oil on a schedule consistent with your driving conditions.

When the remaining oil life is low, the CHANGE ENGINE OIL SOON message will appear on the display. See "CHANGE ENGINE OIL SOON" under *Engine Oil Messages* on page 5-33. You should change the oil as soon as you can. See *Engine Oil* on page 10-8. In addition to the engine oil life system monitoring the oil life, additional maintenance is recommended in the Maintenance Schedule in this manual. See *Scheduled Maintenance* on page 11-2 for more information. Whenever the oil is changed the Oil Life System will need to be reset. To reset the system through the DIC, press and hold ✓ while this display is shown. When the system is reset the display will show 100% OIL LIFE REMAINING.

Units

Press the vehicle information button until UNITS displays. This display allows you to select between English or Metric units of measurement. Once in this display, press the set/reset button to select between ENGLISH or METRIC units. All of the vehicle information will then be displayed in the unit of measurement selected.

Tire Pressure

If your vehicle has the Tire Pressure Monitor System (TPMS), the pressure for each tire can be viewed in the DIC. The tire pressure will be shown in either pounds per square inch (psi) or kilopascals (kPa). Press the vehicle information button until the DIC displays FRONT TIRES PSI (kPa) LEFT ## RIGHT ##. Press the vehicle information button again until the DIC displays REAR TIRES PSI (kPa) LEFT ## RIGHT ##.

If a low or high tire pressure condition is detected by the system while driving, a message advising you to check the pressure in a specific tire will appear in the display. See *Tire Pressure* on page 10-50 and *Tire Messages* on page 5-37 for more information.

If the tire pressure display shows dashes instead of a value, there may be a problem with your vehicle. If this consistently occurs, see your dealer/retailer for service.

For information on relearning tire positions see "TPMS Sensor Matching Process" under *Tire Pressure Monitor Operation* on page 10-54.

Relearn Remote Key

This display allows you to program Remote Keyless Entry (RKE) transmitters to your vehicle. When a new transmitter is programmed to the vehicle, all remaining transmitters must also be programmed. Any lost or stolen transmitters no longer work once the new transmitter is programmed.

To program an RKE transmitter to your vehicle:

1. Press the vehicle information button until PRESS ✓ TO RELEARN REMOTE KEY displays.
2. Press the set/reset button until REMOTE KEY LEARNING ACTIVE is displayed.
3. Press and hold the lock and unlock buttons on the first transmitter at the same time for about 15 seconds.

A chime will sound indicating that the transmitter is matched and REMOTE KEY LEARNING COMPLETE will be shown on the display.

4. To program additional transmitters at this time, repeat Step 3.

Each vehicle can have a maximum of eight transmitters programmed to it.

5. To exit the programming mode, you must cycle the key to LOCK/OFF.

Compass Zone Setting

This display allows for setting the compass zone. See *Compass on page 5-5* for more information.

Compass Recalibration

This display allows for calibrating the compass. See *Compass on page 5-5* for more information.

Coolant Temperature

Press the vehicle info button until the coolant temperature is displayed. The temperature will be shown in °F or °C depending on the units selected.

If the coolant temperature display shows dashes instead of a value, there may be a problem with the vehicle. If this happens often, see your dealer/retailer for service.

Battery Voltage

Press the vehicle info button until the battery voltage is displayed.

If the battery voltage display shows dashes instead of a value, there may be a problem with the vehicle. If this happens often, see your dealer/retailer for service.

Blank Display

This display shows no information.

Vehicle Messages

Messages are displayed on the DIC to notify the driver that the status of the vehicle has changed and that some action may be needed by the driver to correct the condition.

Multiple messages may appear one after another.

Some messages may not require immediate action, but you can press any of the DIC buttons, or the trip odometer reset stem on the instrument panel cluster to acknowledge that you received the messages and to clear them from the display.

Some messages cannot be cleared from the DIC display because they are more urgent. These messages require action before they can be cleared. Take any messages that appear on the display seriously and remember that clearing the messages will only make the messages disappear, not correct the problem.

You will find the possible messages that can be displayed and some information about them grouped by subject in the following information.

Battery Voltage and Charging Messages

BATTERY SAVER ACTIVE

This message displays when the charging system detects that the battery is being drained. You may notice that the vehicle attempts to reduce the drain for you by turning off accessories, such as interior fans, rear defogger, and heated seats. Turn off all accessories. If the vehicle is not running, start and run the engine for at least 10 minutes to allow the battery to recharge. If the engine is running and the condition persists, see your dealer/retailer immediately.

Brake System Messages

SERVICE BRAKE SYSTEM

This message displays along with the brake system warning light if there is a problem with the brake system or when the brake fluid level is low. See *Brake System Warning Light on page 5-18*. Have the brake system serviced by your dealer/retailer as soon as possible.

Compass Messages

CALIBRATING COMPASS: TURN IN CIRCLES

This message displays when calibrating the compass. Drive the vehicle in circles at less than 8 km/h (5 mph) to complete the calibration. See *Compass on page 5-5*.

COMPASS CALIBRATION COMPLETE

This message displays when the compass calibration is complete. See *Compass on page 5-5*.

Cruise Control Messages

CRUISE SET TO XXX

This message will display when the cruise control is set and it will show the speed it was set to. See *Cruise Control* on page 9-42 for more information.

Door Ajar Messages

DRIVER DOOR OPEN

This message will display when the driver door is not closed properly. Close the door completely.

HOOD OPEN

If your vehicle has the remote start feature, this message displays along with a chime when the hood is not closed properly. Make sure that the hood is closed completely. See *Hood* on page 10-5. This message displays while the ignition is in ON/RUN. Press any of the DIC buttons to acknowledge this message and to clear it from the screen.

This message continues to display for two seconds if it has not been acknowledged when the engine is turned off. The message comes back on for two seconds if it has been acknowledged, but the condition still exists when the engine is turned off. If the condition still exists, the message reappears when the engine is turned on.

LIFTGATE OPEN

This message will display when the liftgate is not closed properly. Close the liftgate completely.

PASSENGER DOOR OPEN

This message will display when the passenger doors are not closed properly. Close the door completely.

Engine Cooling System Messages

ENGINE HOT A/C (Air Conditioning) OFF

This message displays when the engine coolant becomes hotter than the normal operating temperature. To avoid added strain on a hot engine, the air conditioning compressor is automatically turned off. When the coolant temperature returns to normal, the A/C operation automatically resumes. You can continue to drive your vehicle.

ENGINE OVERHEATED IDLE ENGINE

Notice: If you drive your vehicle while the engine is overheating, severe engine damage may occur. If an overheat warning appears on the instrument panel cluster and/or DIC, stop the vehicle as soon as possible. Do not increase the engine speed above normal idling speed. See *Engine Overheating on page 10-20* for more information.

This message displays when the engine coolant temperature is too hot. Stop and allow the vehicle to idle until it cools down.

ENGINE OVERHEATED STOP ENGINE

Notice: If you drive your vehicle while the engine is overheating, severe engine damage may occur. If an overheat warning appears on the instrument panel cluster and/or DIC, stop the vehicle as soon as possible. Do not increase the engine speed above normal idling speed. See *Engine Overheating on page 10-20* for more information.

This message displays along with a continuous chime when the engine has overheated. Stop and turn the engine off immediately to avoid severe engine damage. See *Engine Overheating on page 10-20*.

Engine Oil Messages**CHANGE ENGINE OIL SOON**

This message displays when service is required for the vehicle. See your dealer/retailer. See *Engine Oil on page 10-8* and *Scheduled Maintenance on page 11-2* for more information.

Acknowledging this message will not reset the OIL LIFE REMAINING display. That must be done at the OIL LIFE screen. See "OIL LIFE" under *Driver Information Center (DIC) on page 5-25* and *Engine Oil Life System on page 10-10* for more information.

OIL PRESSURE LOW STOP ENGINE

Notice: If you drive your vehicle while the engine oil pressure is low, severe engine damage may occur. If a low oil pressure warning appears on the instrument panel cluster and/or DIC, stop the vehicle as soon as possible. Do not drive the vehicle until the cause of the low oil pressure is corrected. See *Engine Oil* on page 10-8 for more information.

This message displays when the vehicle's engine oil pressure is low. The oil pressure light also appears on the instrument panel cluster. See *Engine Oil Pressure Light* on page 5-22.

Stop the vehicle immediately, as engine damage can result from driving a vehicle with low oil pressure. Have the vehicle serviced by your dealer/retailer as soon as possible when this message is displayed.

Engine Power Messages

ENGINE POWER IS REDUCED

This message displays when the vehicle's engine power is reduced. Reduced engine power can affect the vehicle's ability to accelerate. If this message is on, but there is no reduction in performance, proceed to your destination. The performance may be reduced the next time the vehicle is driven. The vehicle may be driven at a reduced speed while this message is on, but maximum acceleration and speed may be reduced. Anytime this message stays on, the vehicle should be taken to your dealer/retailer for service as soon as possible.

Fuel System Messages

FUEL LEVEL LOW

This message displays when your vehicle is low on fuel. Refill the fuel tank as soon as possible. See *Fuel Gage* on page 5-11 and *Filling the Tank* on page 9-50 for more information.

TIGHTEN GAS CAP

This message may display along with the check engine light on the instrument panel cluster if the vehicle's fuel cap is not tightened properly. See *Malfunction Indicator Lamp* on page 5-15. Reinstall the fuel cap fully. See *Filling the Tank* on page 9-50. The diagnostic system can determine if the fuel cap has been left off or improperly installed. A loose or missing fuel cap allows fuel to evaporate into the atmosphere. A few driving trips with the cap properly installed should turn this light and message off.

Key and Lock Messages

REMOTE KEY LEARNING ACTIVE

This message displays while matching a Remote Keyless Entry (RKE) transmitter to your vehicle. See “MATCHING TRANSMITTERS TO YOUR VEHICLE” under *Remote Keyless Entry (RKE) System Operation on page 2-3* and *Driver Information Center (DIC) on page 5-25* for more information.

REMOTE KEY LEARNING COMPLETE

This message displays while matching a Remote Keyless Entry (RKE) transmitter to your vehicle. See “MATCHING TRANSMITTERS TO YOUR VEHICLE” under *Remote Keyless Entry (RKE) System Operation on page 2-3* and *Driver Information Center (DIC) on page 5-25* for more information.

REPLACE REMOTE KEY FOB BATTERY

This message displays if a Remote Keyless Entry (RKE) transmitter battery is low. The battery needs to be replaced in the transmitter. See “Battery Replacement” under *Remote Keyless Entry (RKE) System Operation on page 2-3*.

Ride Control System Messages

SERVICE STABILITRAK

This message displays if there is a problem with the StabiliTrak[®] system. A warning light also appears on the instrument panel cluster. See *StabiliTrak[®] Indicator Light on page 5-20*. See *StabiliTrak System on page 9-41* for more information.

If this message turns on while you are driving, pull off the road as soon as possible and stop carefully. Try resetting the system by turning the ignition off and then back on. If this message still stays on or turns back on again while you are driving, your vehicle needs service. Have the system inspected by your dealer/retailer as soon as possible.

SERVICE TRACTION CONTROL

This message displays when the Traction Control System (TCS) is not functioning properly. A warning light also appears on the instrument panel cluster. See *Traction Control System (TCS) Warning Light on page 5-20* and *Traction Control System (TCS) on page 9-40* for more information. Have the TCS serviced by your dealer/retailer as soon as possible.

STABILITRAK NOT READY

If your vehicle has StabiliTrak, this message may display and the StabiliTrak indicator light on the instrument panel cluster may be on after first driving the vehicle and exceeding 20 mph (32 km/h) for 30 seconds. The StabiliTrak system is not functional until the light has turned off. See *StabiliTrak System* on page 9-41 for more information.

STABILITRAK OFF

If your vehicle has StabiliTrak, this message displays when you turn off the StabiliTrak, or when the stability control has been automatically disabled. To limit wheel spin and realize the full benefits of the stability enhancement system, you should normally leave StabiliTrak on. However, you should turn StabiliTrak off if your vehicle gets stuck in sand, mud, ice, or snow and you want to rock your vehicle to attempt to free it, or if you are driving in extreme off-road conditions and require more wheel

spin. See *If the Vehicle is Stuck on page 9-22*. To turn the StabiliTrak system on or off, see *StabiliTrak System* on page 9-41.

TRACTION CONTROL OFF

This message displays when the Traction Control System (TCS) turns off. See *Traction Control System (TCS)* on page 9-40 for more information.

This message only displays while the ignition is in ON/RUN and disappears after 10 seconds, unless it is acknowledged or an urgent warning appears.

Any of the following conditions may cause the TCS to turn off:

- The TCS is turned off by pressing the TCS/StabiliTrak button. See *StabiliTrak System* on page 9-41 for more information.

- The battery is low.
- There is a TCS failure. See your dealer/retailer for service.

TRACTION CONTROL ON

This message displays when the Traction Control System (TCS) turns on. See *StabiliTrak System* on page 9-41 for more information.

Airbag System Messages

SERVICE AIR BAG

This message displays when there is a problem with the airbag system. Have your vehicle serviced by your dealer/retailer immediately. See *Airbag Readiness Light* on page 5-13 for more information.

Service Vehicle Messages

SERVICE A/C (Air Conditioning) SYSTEM

This message displays when there is a problem detected in the air conditioning system. Have the vehicle serviced by your dealer/retailer.

SERVICE POWER STEERING

If the vehicle has electric power steering, this message displays if a problem has been detected with the power steering. See *Steering* on page 9-5 for more information.

SERVICE VEHICLE SOON

This message displays when a non-emissions related malfunction occurs. Have the vehicle serviced by your dealer/retailer as soon as possible.

Tire Messages

CHECK TIRE PRESSURE

On vehicles with the Tire Pressure Monitor System (TPMS), this message displays when the pressure in one or more of the vehicle's tires needs to be checked. This message also displays LEFT FRONT, RIGHT FRONT, LEFT REAR, or RIGHT REAR to indicate which tire needs to be checked. You can receive more than one tire pressure message at a time. To read the other messages that may have been sent at the same time, press the set/reset button. If a tire pressure message appears on the DIC, stop as soon as you can. Have the tire pressures checked and set to those shown on the Tire Loading Information label. See *Tires* on page 10-43, *Vehicle Load Limits* on page 9-22, and *Tire Pressure* on page 10-50. The DIC also shows the

tire pressure values. See *Driver Information Center (DIC)* on page 5-25. If the tire pressure is low, the low tire pressure warning light comes on. See *Tire Pressure Light* on page 5-21.

SERVICE TIRE MONITORING SYSTEM

On vehicles with the Tire Pressure Monitor System (TPMS), this message displays if a part on the TPMS is not working properly. The tire pressure light also flashes and then remains on during the same ignition cycle. See *Tire Pressure Light* on page 5-21. Several conditions may cause this message to appear. See *Tire Pressure Monitor Operation* on page 10-54 for more information. If the warning comes on and stays on, there may be a problem with the TPMS. See your dealer/retailer.

TIRE LEARNING ACTIVE

On vehicles with the Tire Pressure Monitor System (TPMS), this message displays when the TPMS is re-learning the tire positions on your vehicle. The tire positions must be re-learned after rotating the tires or after replacing a tire or sensor. See *Tire Rotation on page 10-57*, *Tire Pressure Monitor System on page 10-52*, and *Tire Pressure on page 10-50* for more information.

Transmission Messages

CHANGE TRANSMISSION FLUID

Notice: Use of the incorrect automatic transmission fluid may damage the vehicle, and the damages may not be covered by the vehicle's warranty. Always use the automatic transmission fluid listed in *Recommended Fluids and Lubricants on page 11-7*.

This message displays when the life of the transmission fluid has expired and it should be changed. See *Scheduled Maintenance on page 11-2* and *Recommended Fluids and Lubricants on page 11-7* for the proper fluid and change intervals.

SERVICE TRANSMISSION

This message displays when there is a problem with the transmission. See your dealer/retailer for service.

TRANSMISSION HOT IDLE ENGINE

Notice: If you drive your vehicle while the transmission fluid is overheating and the transmission temperature warning is displayed on the instrument panel cluster and/or DIC, you can damage the transmission. This could lead to costly repairs that would not be covered by your warranty. Do not drive your vehicle with overheated transmission fluid or while the transmission temperature warning is displayed.

This message displays along with a chime if the transmission fluid in the vehicle gets hot. Driving with the transmission fluid temperature high can cause damage to the vehicle. Stop the vehicle and let it idle to allow the transmission to cool. This message clears and the chime stops when the fluid temperature reaches a safe level.

Vehicle Reminder Messages

ICE POSSIBLE DRIVE WITH CARE

This message displays when the outside air temperature is cold enough to create icy road conditions. Adjust your driving accordingly.

TURN SIGNAL ON

This message displays and a chime sounds as a reminder to turn off the turn signal if you drive your vehicle for more than about 1.2 km (3/4 mile) with a turn signal on. See *Turn and Lane-Change Signals* on page 6-4 for more information.

Vehicle Personalization

Your vehicle may have customization capabilities that allow you to program certain features to one preferred setting. Customization features can only be programmed to one setting on the vehicle and cannot be programmed to a preferred setting for two different drivers.

All of the customization options may not be available on your vehicle. Only the options available will be displayed on the DIC.

The default settings for the customization features were set when your vehicle left the factory, but may have been changed from their default state since then.

The customization preferences are automatically recalled.

To change customization preferences, use the following procedure.

Entering the Feature Settings Menu

1. Turn the ignition on and place the vehicle in P (Park).

To avoid excessive drain on the battery, it is recommended that the headlamps are turned off.
2. Press the customization button to scroll through the available customizable options.

Feature Settings Menu Items

The following are customization features that allow you to program settings to the vehicle:

DISPLAY IN ENGLISH

This feature will only display if a language other than English has been set. This feature allows you to change the language in which the DIC messages appear to English.

Press the customization button until the **PRESS ✓ TO DISPLAY IN ENGLISH** screen appears on the DIC display. Press the set/reset button once to display all DIC messages in English.

DISPLAY LANGUAGE

This feature allows you to select the language in which the DIC messages will appear.

Press the customization button until the **PRESS ✓ TO SET DISPLAY LANGUAGE** screen appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

ENGLISH (default): All messages will appear in English.

FRANCAIS: All messages will appear in French.

ESPANOL: All messages will appear in Spanish.

PORTUGUESE: All messages will appear in Portuguese.

NO CHANGE: No change will be made to this feature. The current setting will remain.

To select a setting, press the set/reset button while the desired setting is displayed on the DIC.

AUTO DOOR LOCK

This feature allows you to select when the vehicle's doors will automatically lock. See *Automatic Door Locks on page 2-7* for more information.

Press the customization button until **PRESS ✓ TO SET AUTO DOOR LOCK** appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

SHIFT OUT OF PARK (default): The doors will automatically lock when the vehicle is shifted out of P (Park).

AT VEHICLE SPEED: The doors will automatically lock when the vehicle speed is above 8 mph (13 km/h) for three seconds.

NO CHANGE: No change will be made to this feature. The current setting will remain.

To select a setting, press the set/reset button while the desired setting is displayed on the DIC.

AUTO DOOR UNLOCK

This feature allows you to select whether or not to turn off the automatic door unlocking feature. It also allows you to select which doors and when the doors will automatically unlock. See *Automatic Door Locks on page 2-7* for more information.

Press the customization button until **PRESS ✓ TO SET AUTO DOOR UNLOCK** appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

OFF: None of the doors will automatically unlock.

DRIVER DOOR AT KEY OUT:

Only the driver's door will unlock when the key is taken out of the ignition.

DRIVER DOOR IN PARK: Only the driver's door will unlock when the vehicle is shifted into P (Park) .

ALL DOORS AT KEY OUT: All of the doors will unlock when the key is taken out of the ignition.

ALL DOORS IN PARK (default):

All of the doors will unlock when the vehicle is shifted into P (Park).

NO CHANGE: No change will be made to this feature. The current setting will remain.

To select a setting, press the set/reset button while the desired setting is displayed on the DIC.

REMOTE DOOR LOCK

This feature allows you to select the type of feedback you will receive when locking the vehicle with the Remote Keyless Entry (RKE) transmitter. You will not receive feedback when locking the vehicle with the RKE transmitter if the doors are open. See *Remote Keyless Entry (RKE) System Operation on page 2-3* for more information.

Press the customization button until **PRESS ✓ TO SET REMOTE DOOR LOCK** appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

VERIFICATION OFF: There will be no feedback when you press the lock button on the RKE transmitter.

VERIFICATION LIGHTS ONLY:

The exterior lamps will flash when you press the lock button on the RKE transmitter.

VERIFICATION HORN ONLY: The horn will sound on the second press of the lock button on the RKE transmitter.

VERIFICATION HORN & LIGHTS

(default): The exterior lamps will flash when you press the lock button on the RKE transmitter, and the horn will sound when the lock button is pressed again within five seconds of the previous command.

VERIFICATION NO CHANGE: No change will be made to this feature. The current setting will remain.

To select a setting, press the set/reset button while the desired setting is displayed on the DIC.

REMOTE DOOR UNLOCK

This feature allows you to select the type of feedback you will receive when unlocking the vehicle with the Remote Keyless Entry (RKE) transmitter. You will not receive feedback when unlocking the vehicle with the RKE transmitter if the doors are open. See *Remote Keyless Entry (RKE) System Operation on page 2-3* for more information.

Press the customization button until **PRESS ✓ TO SET REMOTE DOOR UNLOCK** appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

VERIF LIGHTS OFF: The exterior lamps will not flash when you press the unlock button on the RKE transmitter.

VERIF LIGHTS ON (default): The exterior lamps will flash when you press the unlock button on the RKE transmitter.

VERIF NO CHANGE: No change will be made to this feature. The current setting will remain.

To select a setting, press the set/reset button while the desired setting is displayed on the DIC.

DELAY DOOR LOCK

This feature allows you to select whether or not the locking of the vehicle's doors will be delayed. When locking the doors with the power door lock switch and a door is open, this feature will delay locking the doors until five seconds after the last door is closed. You will hear three chimes to signal that the delayed locking feature is in use. The key must be out of the ignition for this feature to work. You can temporarily override delayed locking by pressing the power door lock switch twice or the lock button on

the RKE transmitter twice. See *Delayed Locking on page 2-7* for more information.

Press the customization button until **PRESS ✓ TO SET DELAY DOOR LOCK** appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

OFF: There will be no delayed locking of the vehicle's doors.

ON (default): The doors will not lock until five seconds after the last door is closed.

NO CHANGE: No change will be made to this feature. The current setting will remain.

To select a setting, press the set/reset button while the desired setting is displayed on the DIC.

EXIT LIGHTING

This feature allows you to select the amount of time you want the exterior lamps to remain on when it is dark enough outside. This happens after the key is turned from ON/RUN to LOCK/OFF.

Press the customization button until **PRESS ✓ TO SET EXIT LIGHTING** appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

OFF: The exterior lamps will not turn on.

10 SECONDS (default): The exterior lamps will stay on for 10 seconds.

30 SECONDS: The exterior lamps will stay on for 30 seconds.

2 MINUTES: The exterior lamps will stay on for two minutes.

NO CHANGE: No change will be made to this feature. The current setting will remain.

To select a setting, press the set/reset button while the desired setting is displayed on the DIC.

APPROACH LIGHTING

This feature allows you to select whether or not to have the exterior lights turn on briefly during low light periods after unlocking the vehicle using the Remote Keyless Entry (RKE) transmitter.

Press the customization button until **PRESS ✓ TO SET APPROACH LIGHTING** appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

OFF: The exterior lights will not turn on when you unlock the vehicle with the RKE transmitter.

ON (default): If it is dark enough outside, the exterior lights will turn on briefly when you unlock the vehicle with the RKE transmitter.

The lights will remain on for 20 seconds or until the lock button on the RKE transmitter is pressed, or the vehicle is no longer off. See *Remote Keyless Entry (RKE) System Operation on page 2-3* for more information.

NO CHANGE : No change will be made to this feature. The current setting will remain.

To select a setting, press the set/reset button while the desired setting is displayed on the DIC.

CHIME VOLUME

This feature allows you to select the volume level of the chime.

Press the customization button until **PRESS ✓ TO SET CHIME VOLUME** appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

NORMAL: The chime volume will be set to a normal level.

LOUD: The chime volume will be set to a loud level.

NO CHANGE: No change will be made to this feature. The current setting will remain.

There is no default for chime volume. The volume will stay at the last known setting.

To select a setting, press the set/reset button while the desired setting is displayed on the DIC.

REMOTE START

If your vehicle has this feature, it allows you to turn the remote start off or on. The remote start feature allows you to start the engine from outside of the vehicle using the Remote Keyless Entry (RKE) transmitter. See *Remote Vehicle Start* on page 2-4 for more information.

Press the customization button until **PRESS ✓ TO SET REMOTE START** appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

OFF: The remote start feature will be disabled.

ON (default): The remote start feature will be enabled.

NO CHANGE: No change will be made to this feature. The current setting will remain.

To select a setting, press the set/reset button while the desired setting is displayed on the DIC.

FACTORY SETTINGS

This feature allows you to set all of the customization features back to their factory default settings.

Press the customization button until **PRESS ✓ TO RESTORE DEFAULTS** appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

RESTORE (default): The customization features will be set to their factory default settings.

NO CHANGE: The customization features will not be set to their factory default settings.

To select a setting, press the set/reset button while the desired setting is displayed on the DIC.

EXIT FEATURE SETTINGS

This feature allows you to exit the feature settings menu.

Press the customization button until **PRESS ✓ TO EXIT FEATURE SETTINGS** appears in the DIC display. Press the set/reset button once to exit the menu.

If you do not exit, pressing the customization button again will return you to the beginning of the feature settings menu.

Exiting the Feature Settings Menu

The feature settings menu will be exited when any of the following occurs:

- The vehicle is no longer in ON/RUN.
- The trip/fuel or vehicle information DIC buttons are pressed.
- The end of the feature settings menu is reached and exited.
- A 40 second time period has elapsed with no selection made.

Universal Remote System

See *Radio Frequency Statement on page 13-16* for information regarding Part 15 of the Federal Communications Commission (FCC) Rules and RSS-210/211 of Industry and Science Canada.

Universal Remote System Programming



If there is one triangular Light Emitting Diode (LED) indicator light above the Universal Home Remote buttons, follow the instructions below.

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

Do not use the Universal Home Remote with any garage door opener that does not have the stop and reverse feature. This includes any garage door opener model manufactured before April 1, 1982.

Read the instructions completely before attempting to program the Universal Home Remote. Because of the steps involved, it may be helpful to have another person available to assist you in the programming the Universal Home Remote.

Keep the original hand-held transmitter for use in other vehicles as well as for future Universal Home Remote programming. It is also recommended that upon the sale of the vehicle, the programmed Universal Home Remote buttons should be erased for security purposes. See “Erasing Universal Home Remote Buttons” later in this section.

When programming a garage door, park outside of the garage. Park directly in line with and facing the garage door opener motor-head or gate motor-head. Be sure that people and objects are clear of the garage door or gate that is being programmed.

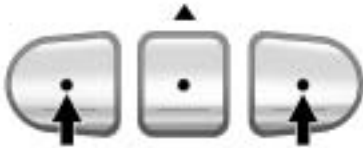
It is recommended that a new battery be installed in your hand-held transmitter for quicker and more accurate transmission of the radio-frequency signal.

Programming the Universal Home Remote System

For questions or help programming the Universal Home Remote System, call 1-800-355-3515 or go to homelink.com.

Programming a garage door opener involves time-sensitive actions, so read the entire procedure before starting. Otherwise, the device will time out and the procedure will have to be repeated.

To program up to three devices:



1. From inside the vehicle, press and hold down the two outside buttons at the same time, releasing only when the Universal Home Remote indicator light begins to flash, after 20 seconds. This step will erase the factory settings or all previously programmed buttons. Do not hold down the buttons for longer than 30 seconds and do not repeat this step to program the remaining two Universal Home Remote buttons.

2. Hold the end of your hand-held transmitter about 1 to 3 inches (3 to 8 cm) away from the Universal Home Remote buttons while keeping the indicator light in view. The hand-held transmitter was supplied by the manufacturer of your garage door opener receiver (motor head unit).
3. At the same time, press and hold both the Universal Home Remote button to be used to control the garage door and the hand-held transmitter button. Do not release the Universal Home Remote button or the hand-held transmitter button until Step 4 has been completed.

Some entry gates and garage door openers may require substitution of Step 3 with the procedure noted in "Gate Operator and Canadian Programming" later in this section.

4. The indicator light on the Universal Home Remote will flash slowly at first and then rapidly after Universal Home Remote successfully receives the frequency signal from the hand-held transmitter. Release both buttons.
5. Press and hold the newly-trained Universal Home Remote button and observe the indicator light.

If the indicator light stays on continuously, the programming is complete and the garage door should move when the Universal Home Remote button is pressed and released. There is no need to continue programming Steps 6 through 8.

If the Universal Home Remote indicator light blinks rapidly for two seconds and then turns to a constant light, continue with the programming Steps 6 through 8.

It may be helpful to have another person assist with the remaining steps.



6. After Steps 1 through 5 have been completed, locate inside the garage the garage door opener receiver (motor-head unit). Locate the “Learn” or “Smart” button. The name and color of the button may vary by manufacturer.
7. Firmly press and release the “Learn” or “Smart” button. After you press this button, you will have 30 seconds to complete Step 8.

8. Immediately return to the vehicle. Firmly press and hold the Universal Home Remote button, chosen in Step 3 to control the garage door, for two seconds, and then release it. If the garage door does not move, press and hold the same button a second time for two seconds, and then release it. Again, if the door does not move, press and hold the same button a third time for two seconds, and then release.

The Universal Home Remote should now activate the garage door.

To program the remaining two Universal Home Remote buttons, begin with Step 2 of “Programming the Universal Home Remote System.” Do not repeat Step 1, as this will erase all previous programming from the Universal Home Remote buttons.

Gate Operator and Canadian Programming

If you have questions or need help programming the Universal Home Remote System, call 1-800-355-3515 or go to homelink.com.

Canadian radio-frequency laws require transmitter signals to time out or quit after several seconds of transmission. This may not be long enough for Universal Home Remote to pick up the signal during programming. Similarly, some U.S. gate operators are manufactured to time out in the same manner.

If you live in Canada, or you are having difficulty programming a gate operator or garage door opener by using the “Programming Universal Home Remote” procedures, regardless of where you live, replace Step 3 under “Programming Universal Home Remote” with the following:

Continue to press and hold the Universal Home Remote button while you press and release every

two seconds (cycle) the hand-held transmitter button until the frequency signal has been successfully accepted by the Universal Home Remote. The Universal Home Remote indicator light will flash slowly at first and then rapidly. Proceed with Step 4 under "Programming Universal Home Remote" to complete.

Universal Remote System Operation

Using Universal Home Remote

Press and hold the appropriate Universal Home Remote button for at least half of a second. The indicator light will come on while the signal is being transmitted.

Erasing Universal Home Remote Buttons

The programmed buttons should be erased when the vehicle is sold or the lease ends.

To erase all programmed buttons on the Universal Home Remote device:



1. Press and hold down the two outside buttons until the indicator light begins to flash, after 20 seconds.
2. Release both buttons.

Reprogramming a Single Universal Home Remote Button

To reprogram any of the three Universal Home Remote buttons, repeat the programming instructions earlier in this section, beginning with Step 2.

For help or information on the Universal Home Remote System, call the customer assistance phone number under *Roadside Assistance Program* on page 13-6.



 NOTES

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Lighting

Exterior Lighting

Exterior Lamp Controls	6-1
Headlamp High/Low-Beam	
Changer	6-2
Flash-to-Pass	6-2
Daytime Running	
Lamps (DRL)	6-2
Automatic Headlamp	
System	6-3
Hazard Warning Flashers	6-3
Turn and Lane-Change	
Signals	6-4
Fog Lamps	6-4

Interior Lighting

Instrument Panel Illumination	
Control	6-5
Dome Lamps	6-5
Reading Lamps	6-5

Lighting Features

Entry Lighting	6-5
Battery Load Management	6-6
Battery Power Protection	6-6

Exterior Lighting

Exterior Lamp Controls



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

Turn the control to the following positions:

○ (Off): Turns off the exterior lamps. The knob returns to the AUTO position after it is released.

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

Ⓜ (Parking Lamps): Turns on the parking lamps together with the following:

- Sidemarkers Lamps
- Taillamps
- License Plate Lamps
- Instrument Panel Lights

Ⓜ (Headlamps): Turns on the headlamps, together with the previously listed lamps and lights.

6-2 Lighting

Lamps On Reminder

A warning chime sounds, if the driver door is opened while the ignition is off and the lamps are on.

Wiper-Activated Headlamps

The headlamps and parking lamps turn on automatically if the exterior lamp control is set in the AUTO position and the windshield wipers are turned on and have completed eight wipe cycles.

When the ignition is turned off, the wiper-activated headlamps immediately turn off. They also turn off if the windshield wiper control is turned off.

Headlamp High/Low-Beam Changer

 **Headlamp High/Low Beam Changer:** Push the turn signal/lane change lever away from you to turn the high beams on.

Pull the lever towards you to return to low beams.



This indicator light turns on in the instrument panel cluster when the high beam headlamps are on.

Flash-to-Pass

This feature allows use of the high-beam headlamps to signal a driver in front that you want to pass.

To flash the high beams, pull the turn signal/lane change lever towards you, and release.

Daytime Running Lamps (DRL)

The Daytime Running Lamps (DRL) system makes the low-beam headlamps come on in daylight when the following conditions are met:

- The engine is running,
- The exterior lamp band is in AUTO, and
- The light sensor determines it is daytime.

Fully functional daytime running lamps are required on all vehicles first sold in Canada.

When the DRL are on, the low-beam headlamps will be on. The taillamps, sidemarker, instrument panel lights and other lamps will not be on.

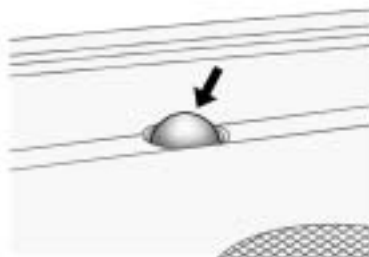
When the exterior lamp band is turned to the headlamp position, the regular headlamps will come on. The other lamps that come on with the headlamps will also come on.

When the headlamps are turned off, the regular lamps also turn off, and the low-beam headlamps turn on.

The regular headlamp system should be used when needed.

Automatic Headlamp System

When it is dark enough outside, the headlamps come on automatically.



Do not cover the light sensor on top of the instrument panel or the headlamps will come on when they are not needed.

The system may also turn on the headlamps when driving through a parking garage or tunnel.

Hazard Warning Flashers

 **(Hazard Warning Flasher):**

Press this button located on the instrument panel, to make the front and rear turn signal lamps flash on and off. This warns others that you are having trouble.

Press  again to turn the flashers off.

Turn and Lane-Change Signals



An arrow on the instrument panel cluster flashes in the direction of the turn or lane change.

Move the lever all the way up or down to signal a turn.

Raise or lower the lever until the arrow starts to flash and then release, to signal a lane change. The turn signal flashes automatically three times.

The lever returns to its starting position whenever it is released.

If after signaling a turn or lane change the arrow flashes rapidly or does not come on, a signal bulb may be burned out.

Have the bulbs replaced. If a bulb is not burned out, check the fuse. See *Instrument Panel Fuse Block* on page 10-40 and for burned-out bulbs.

Fog Lamps

For vehicles with fog lamps, the button is on the instrument panel next to the exterior lamps switch.

 : Press to turn the fog lamps on or off.

The fog lamp indicator in the instrument panel comes on when the fog lamps are in use.

The parking lamps or low-beam headlamps must be on, before the fog lamps can be turned on.

If the exterior lamp control is set to AUTO mode, the parking lamps and low-beam headlamps come on simultaneously when the fog lamps are turned on.

When the high-beam headlamps are turned on, the fog lamps turn off automatically. When the high-beam headlamps are turned off, the fog lamps come on again.

Some localities have laws that require the headlamps to be on along with the fog lamps.

Interior Lighting

Instrument Panel Illumination Control

The thumbwheel for this feature is on the left side of the steering wheel next to the exterior lamps control.



Turn the thumbwheel to the right or left to brighten or dim the instrument panel lights.

Dome Lamps

 **(Dome Lamp Override):** Press this button on the overhead console to keep the dome lamps and other interior lamps turned off while any door is open. Press this button again to return it to the out position and the lamps automatically come on when any door is opened.

 **(On/Off):** Press this button to turn the dome lamps on and off while the doors are closed.

Reading Lamps

The reading lamps are located on the overhead console.

To turn the reading lamps on or off, press the button located next to each lamp.

Lighting Features

Entry Lighting

If the dome lamp override button is in the out position, the lamps inside the vehicle automatically come on when any door is opened or when the Remote Keyless Entry (RKE) unlock button is pressed. After the door is opened the lights remain on and stay on for 20 seconds after the doors are closed, or until the key is put into the ignition and turned to the ACC/ACCESSORY position. The lights will then gradually dim until they are no longer lit.

Battery Load Management

The vehicle has Electric Power Management (EPM) that estimates the battery's temperature and state of charge. It then adjusts the voltage for best performance and extended life of the battery.

When the battery's state of charge is low, the voltage is raised slightly to quickly bring the charge back up. When the state of charge is high, the voltage is lowered slightly to prevent overcharging. If the vehicle has a voltmeter gage or a voltage display on the Driver Information Center (DIC), you may see the voltage move up or down. This is normal. If there is a problem, an alert will be displayed.

The battery can be discharged at idle if the electrical loads are very high. This is true for all vehicles. This is because the generator (alternator) may not be spinning fast enough at idle to produce all the power that is needed for very high electrical loads.

A high electrical load occurs when several of the following are on, such as: headlamps, high beams, fog lamps, rear window defogger, climate control fan at high speed, heated seats, engine cooling fans, trailer loads, and loads plugged into accessory power outlets.

EPM works to prevent excessive discharge of the battery. It does this by balancing the generator's output and the vehicle's electrical needs. It can increase engine idle speed to generate more power, whenever needed. It can temporarily reduce the power demands of some accessories.

Normally, these actions occur in steps or levels, without being noticeable. In rare cases at the highest levels of corrective action, this action may be noticeable to the driver. If so, a Driver Information Center (DIC) message might be displayed, such as BATTERY SAVER ACTIVE, BATTERY VOLTAGE LOW, or LOW BATTERY. If one of these messages displays, it is recommended that the driver reduce the electrical loads as much as possible. See *Driver Information Center (DIC)* on page 5-25.

Battery Power Protection

The battery saver feature is designed to protect the vehicle's battery.

If any interior or exterior lamp is left on and the ignition is turned off, the battery rundown protection system automatically turns the lamp off after 10 minutes.

Infotainment System

Introduction

Introduction	7-1
Theft-Deterrent Feature	7-2
Operation	7-2

Radio

AM-FM Radio	7-4
Satellite Radio	7-6
Radio Reception	7-10
Fixed Mast Antenna	7-11
Satellite Radio Antenna	7-11

Audio Players

CD Player	7-11
MP3	7-13
Auxiliary Devices	7-17

Phone

Bluetooth	7-18
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Introduction

Read the following pages to become familiar with the infotainment system features.



WARNING

Taking your eyes off the road for extended periods could cause a crash resulting in injury or death to you or others. Do not give extended attention to entertainment tasks while driving.

This system provides access to many audio and non audio listings.

To minimize taking your eyes off the road while driving, do the following while the vehicle is parked:

- Become familiar with the operation and controls of the audio system.
- Set up the tone, speaker adjustments, and preset radio stations.

For more information, see *Defensive Driving* on page 9-3.

Notice: Contact your dealer/retailer before adding any equipment.

Adding audio or communication equipment could interfere with the operation of the vehicle's engine, radio, or other systems, and could damage them. Follow federal rules covering mobile radio and telephone equipment.

The vehicle has Retained Accessory Power (RAP). With RAP, the infotainment system can play even after the ignition is turned off.

7-2 Infotainment System

See *Retained Accessory Power (RAP)* on page 9-29 for more information.

Navigation/Radio System

For vehicles with a navigation radio system, see the separate Navigation System manual.

Theft-Deterrent Feature

THEFTLOCK® is designed to discourage theft of the vehicle's radio by learning a portion of the Vehicle Identification Number (VIN). The radio does not operate if it is stolen or moved to a different vehicle.

Operation



Radio with CD

Playing the Radio

Power/Volume: Press to turn the system on and off.

Turn to increase or decrease the volume.

i (Information) (XM Satellite Radio Service, MP3, and RDS Features): Press to display additional text information related to the current FM-RDS or XM station; or CD, MP3 or WMA song.

If information is available during XM, CD, MP3 or WMA playback, the song title information displays on the top line of the display and artist information displays on the bottom line. When information is not available, "NO INFO" displays.

Setting the Tone (Bass/Midrange/Treble)

BASS/MID/TREB (Bass, Midrange, or Treble): To adjust bass, midrange, or treble:

1. Press the  knob until the tone control labels display.
2. Continue pressing the  knob to highlight the desired label, or press the pushbutton under the desired label.
3. To adjust the highlighted setting, do one of the following:
 - Turn the  knob clockwise or counterclockwise.
 - Press the  FWD, or  REV button.

If a station's frequency is weak or if there is static, decrease the treble.

To quickly adjust bass, midrange, or treble to the middle position, press the pushbutton positioned under the BASS, MID, or TREB label for more than two seconds. A beep sounds and the level adjusts to the middle position.

To quickly adjust all speaker and tone controls to the middle position, press the  knob for more than two seconds until a beep sounds.

EQ (Equalization): Press to select preset equalization settings.

To return to the manual mode, press the EQ button until Manual displays or manually adjust the bass, midrange, or treble by pressing the  knob.

Adjusting the Speakers (Balance/Fade)

BAL/FADE (Balance/Fade): To adjust the balance or fade:

1. Press the  knob until the speaker control labels display.
2. Continue pressing the  knob to highlight the desired label, or press the pushbutton under the desired label.
3. To adjust the highlighted setting, do one of the following until the desired levels are obtained.
 - Turn the  knob clockwise or counterclockwise.
 - Press the  FWD, or  REV button.

To quickly adjust balance or fade to the middle position, press the pushbutton positioned under the BAL or FADE label for more than two seconds. A beep sounds and the level adjusts to the middle position.

To quickly adjust all speaker and tone controls to the middle position, press the  knob for more than two seconds until a beep sounds.

Chime Volume

The radio may be used to adjust the vehicle's chime level. If the radio can be used to change the volume level of the chime, press and hold the sixth FAV pushbutton with the ignition on and the radio power off. The volume level changes between Normal and Loud. The selected volume level appears on the radio display.

Removing the radio and not replacing it with a factory radio or chime module will disable vehicle chimes.

Radio Messages

Calibration Error: The audio system has been calibrated for the vehicle from the factory. If Calibration Error displays, it means that the radio has not been configured properly for the vehicle and it must be returned to your dealer/retailer for service.

Locked: This message displays when the THEFTLOCK® system has locked up the radio. Take the vehicle to your dealer/retailer for service.

If any error occurs repeatedly or if an error cannot be corrected, contact your dealer/retailer.

Radio

AM-FM Radio

Radio Data System (RDS)

The Radio Data System (RDS) feature is available for use only on FM stations that broadcast RDS information. This system relies upon receiving specific information from these stations and only works when the information is available. While the radio is tuned to an FM-RDS station, the station name or call letters display. In rare cases, a radio station could broadcast incorrect information that causes the radio features to work improperly. If this happens, contact the radio station.

Finding a Station

BAND: Press to switch between AM, FM, or XM™, if equipped.

 **(Tune):** Turn to select radio stations.

◀ SEEK ▶ : Press to go to the previous or to the next station.

To scan stations, press and hold either arrow for a few seconds until a beep sounds. The radio goes to a station, plays for a few seconds, then goes to the next station. Press either arrow again to stop scanning.

The radio only seeks and scans stations with a strong signal that are in the selected band.

i (Information) (XM™ Satellite Radio Service, MP3, and RDS Features): Press to display additional text information related to the current FM-RDS station, XM station, or MP3 song. If information is available, the song title information displays on the top line of the display and artist information displays on the bottom line. When information is not available, “NO INFO” displays.

Storing a Radio Station as a Favorite

Drivers are encouraged to set up their radio station favorites while the vehicle is in P (Park). Tune to favorite stations using the presets, favorites button, and steering wheel controls. See *Steering Wheel Controls* on page 5-3.

FAV (Favorites): A maximum of 36 stations can be programmed as favorites using the six pushbuttons positioned below the radio station frequency labels and by using the radio favorites page button (FAV button). Press to go through up to six pages of favorites, each having six favorite stations available per page. Each page of favorites can contain any combination of AM, FM, or XM stations, if equipped.

The balance/fade and tone settings that were previously adjusted, are stored with the favorite stations.

To store a station as a favorite:

1. Tune to a radio station.
2. Press FAV to display the page where to store the station.
3. Press and hold one of the six pushbuttons until a beep sounds. When that pushbutton is pressed and released, the station that was set, returns.
4. Repeat the steps for each radio station to be stored as a favorite.

7-6 Infotainment System

To setup the number of favorites pages:

1. Press MENU to display the radio setup menu.
2. Press the pushbutton located below the FAV 1-6 label.
3. Select the desired number of favorites pages by pressing the pushbutton located below the displayed page numbers.
4. Press FAV, or let the menu time out, to return to the original main radio screen showing the radio station frequency labels and to begin the process of programming favorites for the chosen amount of numbered pages.

Satellite Radio

The vehicle may have XM™ Satellite Radio Service.

XM™ Satellite Radio Service

XM is a satellite radio service that is based in the 48 contiguous United States and 10 Canadian provinces. XM Satellite Radio has a wide variety of programming and commercial-free music, coast-to-coast, and in digital-quality sound. A service fee is required to receive the XM service. For more information, contact XM at www.xmradio.com or call 1-800-929-2100 in the U.S. and www.xmradio.ca or call 1-877-438-9677 in Canada.

Finding a Station

BAND: Press to switch between AM, FM, or XM. The selection displays.

🎵 (Tune): Turn to select radio stations.

◀ SEEK ▶ : Press to go to the previous or to the next station and stay there.

To scan stations, press and hold **◀** or **▶** until a beep sounds. The radio goes to a station, plays for a few seconds, then goes to the next station. Press either arrow again to stop scanning.

Finding a Category (CAT) Station

CAT (Category): The CAT button is used to find XM™ stations when the radio is in the XM mode. To find XM channels within a desired category:

1. Press BAND until the XM frequency displays.
2. Press CAT to display the category tabs.
3. To navigate through the categories, do one of the following:
 - Press the CAT button.
 - Press the ◀◀ REV or ▶▶ FWD button.
 - Turn the 🎵 knob.

4. To tune to a station in the selected category, do one of the following:
 - Turn the 🎵 knob.
 - Press the pushbutton below the right or left arrows on the display.
 - Press the ◀◀ SEEK or ▶▶ SEEK button.
5. To exit the category search mode, press the FAV button or the BAND button to display the favorites again.

Removing XM Categories

Undesired XM categories can be removed through the setup menu. To remove an undesired category:

1. Press the MENU button.
2. Press the pushbutton located below the XM CAT label.

3. Turn the 🎵 knob, press the ◀◀ SEEK or ▶▶ SEEK button, or the ◀◀ REV or ▶▶ FWD button to display the category to be removed.
4. Press the pushbutton located under the Remove tab until the category name along with the word Removed displays.
5. Repeat the steps to remove more categories.

Removed categories can be restored by pressing the pushbutton under the Add label when a removed category is displayed or by pressing the pushbutton under the Restore All label.

Categories cannot be removed or added while the vehicle is moving faster than 5 mph (8 km/h).

Storing a Radio Station as a Favorite

Drivers are encouraged to set up their radio station favorites while the vehicle is in P (Park). Tune to favorite stations using the presets, favorites button, and steering wheel controls. See *Steering Wheel Controls* on page 5-3.

FAV (Favorites): A maximum of 36 stations can be programmed as favorites using the six pushbuttons positioned below the radio station frequency labels and by using the radio favorites page button (FAV button). Press to go through up to six pages of favorites, each having six favorite stations available per page. Each page of favorites can contain any combination of AM, FM, or XM stations.

The balance/fade and tone settings that were previously adjusted, are stored with the favorite stations.

To store a station as a favorite:

1. Tune to a radio station.
2. Press FAV to display the page where to store the station.
3. Press and hold one of the six pushbuttons until a beep sounds. When that pushbutton is pressed and released, the station that was set, returns.
4. Repeat the steps for each radio station to be stored as a favorite.

To setup the number of favorites pages:

1. Press MENU to display the radio setup menu.
2. Press the pushbutton located below the FAV 1-6 label.
3. Select the desired number of favorites pages by pressing the pushbutton located below the displayed page numbers.

4. Press FAV, or let the menu time out, to return to the original main radio screen showing the radio station frequency labels and to begin the process of programming favorites for the chosen amount of numbered pages.

XM™ Radio Messages

XL (Explicit Language

Channels): These channels, or any others, can be blocked at a customer's request, by calling 1-800-852-XXM (9696).

XM Updating: The encryption code in the receiver is being updated, and no action is required. This process should take no longer than 30 seconds.

No XM Signal: The system is functioning correctly, but the vehicle is in a location that is blocking the XM™ signal. When the vehicle is moved into an open area, the signal should return.

Loading XM: The audio system is acquiring and processing audio and text data. No action is needed. This message should disappear shortly.

Channel Off Air: This channel is not currently in service. Tune in to another channel.

Channel Unauth : This channel is blocked or cannot be received with your XM Subscription package.

Channel Unavail: This previously assigned channel is no longer assigned. Tune to another station. If this station was one of the presets, choose another station for that preset button.

No Artist Info: No artist information is available at this time on this channel. The system is working properly.

No Title Info: No song title information is available at this time on this channel. The system is working properly.

No CAT Info: No category information is available at this time on this channel. The system is working properly.

No Information: No text or informational messages are available at this time on this channel. The system is working properly.

CAT Not Found: There are no channels available for the selected category. The system is working properly.

XM Theftlocked: The XM receiver in the vehicle could have previously been in another vehicle. For security purposes, XM receivers cannot be swapped between vehicles. If this message is received after having the vehicle serviced, check with your dealer/retailer.

XM Radio ID: If tuned to channel 0, this message alternates with the XM™ Radio 8 digit radio ID label. This label is needed to activate the service.

Unknown: If this message is received when tuned to channel 0, there could be a receiver fault. Consult with your dealer/retailer.

Check XM Receiver: If this message does not clear within a short period of time, the receiver could have a fault. Consult with your dealer/retailer.

XM Not Available: If this message does not clear within a short period of time, the receiver could have a fault. Consult with your dealer/retailer.

Radio Reception

Frequency interference and static can occur during normal radio reception if items such as cell phone chargers, vehicle convenience accessories, and external electronic devices are plugged into the accessory power outlet. If there is interference or static, unplug the item from the accessory power outlet.

FM

FM signals only reach about 16 to 65 km (10 to 40 miles). Although the radio has a built-in electronic circuit that automatically works to reduce interference, some static can occur, especially around tall buildings or hills, causing the sound to fade in and out.

AM

The range for most AM stations is greater than for FM, especially at night. The longer range can cause station frequencies to interfere with each other. For better radio reception, most AM radio stations boost the power levels during the day, and then reduce these levels during the night. Static can also occur when things like storms and power lines interfere with radio reception. When this happens, try reducing the treble on the radio.

XM™ Satellite Radio Service

XM Satellite Radio Service gives digital radio reception from coast-to-coast in the 48 contiguous United States, and in Canada. Just

as with FM, tall buildings or hills can interfere with satellite radio signals, causing the sound to fade in and out. In addition, traveling or standing under heavy foliage, bridges, garages, or tunnels may cause loss of the XM signal for a period of time.

Cellular Phone Usage

Cellular phone usage may cause interference with the vehicle's radio. This interference may occur when making or receiving phone calls, charging the phone's battery, or simply having the phone on. This interference can cause an increased level of static while listening to the radio. If static is received while listening to the radio, unplug the cellular phone and turn it off.

Fixed Mast Antenna

The fixed mast antenna can withstand most car washes without being damaged as long as it is securely attached to the base. If the mast becomes slightly bent, straighten it out by hand. If the mast is badly bent, replace it.

Occasionally check to make sure the antenna is tightened to its base. If tightening is required, tighten by hand.

Satellite Radio Antenna

The XM Satellite Radio antenna is located on the roof of the vehicle. Keep the antenna clear of obstructions for clear radio reception.

If the vehicle has a sunroof, the performance of the XM system may be affected if the sunroof is open.

Audio Players

CD Player

Playing a CD

Insert a CD partway into the slot, label side up. The player pulls it in and the CD should begin playing.

 **EJECT**: Press to eject the disc that is currently playing. A beep sounds and Ejecting Disc displays. Once the disc is ejected, Remove Disc displays. The disc can be removed. If the disc is not removed, after several seconds, the disc automatically pulls back into the player.

 **(Tune)**: Turn to select tracks on the CD that is currently playing.

 **SEEK**  : Press  to go to the start of the current track, if more than ten seconds on the CD have played. Press  to go to the next track.

If either arrow is held, or pressed multiple times, the player continues moving backward or forward through the tracks on the CD.

 **REV (Fast Reverse)**: Press and hold to reverse playback quickly within a track. Sound will be heard at a reduced volume. Release to resume playing the track. The elapsed time of the track displays.

 **FWD (Fast Forward)**: Press and hold to advance playback quickly within a track. Sound will be heard at a reduced volume. Release to resume playing the track. The elapsed time of the track displays.

RDM (Random): CD tracks can be listened to in random, rather than sequential order with the random setting. To use random, press the pushbutton positioned under the RDM label until Random Current Disc displays. Press the pushbutton again to turn off random play.

BAND: Press to listen to the radio when a CD is playing. The CD remains inside the radio for future listening.

CD/AUX (CD/Auxiliary): Press to select between CD, or Auxiliary.

- When a CD is in the player the CD icon and a message showing the disc and/or track number displays.
- If an auxiliary input device is not connected, “No Input Device Found” displays.

Care of CDs

If playing a CD-R, the sound quality can be reduced due to CD-R or CD-RW quality, the method of recording, the quality of the music that has been recorded, and the way the CD-R or CD-RW has been handled. Handle them carefully. Store CD-R(s) or CD-RW(s) in their original cases or other protective cases and away from direct sunlight and dust. The CD player scans the bottom surface of the disc. If the

surface of a CD is damaged, such as cracked, broken, or scratched, the CD does not play properly or not at all. Do not touch the bottom side of a CD while handling it; this could damage the surface. Pick up CDs by grasping the outer edges or the edge of the hole and the outer edge.

If the surface of a CD is soiled, take a soft, lint free cloth or dampen a clean, soft cloth in a mild, neutral detergent solution mixed with water, and clean it. Make sure the wiping process starts from the center to the edge.

Care of the CD Player

Do not add any label to a CD, it could get caught in the CD player. If a CD is recorded on a personal computer and a description label is needed, try labeling the top of the recorded CD with a marking pen.

The use of CD lens cleaners for CDs is not advised, due to the risk of contaminating the lens of the CD optics with lubricants internal to the CD player mechanism.

Notice: If a label is added to a CD, or more than one CD is inserted into the slot at a time, or an attempt is made to play scratched or damaged CDs, the CD player could be damaged. While using the CD player, use only CDs in good condition without any label, load one CD at a time, and keep the CD player and the loading slot free of foreign materials, liquids, and debris.

If an error displays, see “CD Messages” later in this section.

Playing an MP3 CD-R or CD-RW Disc

The radio has the capability of playing an MP3 CD-R or CD-RW disc. For more information on how to play an MP3 CD-R or CD-RW disc, see *MP3 on page 7-13*.

CD Messages

CHECK DISC: If this message displays and/or the CD comes out, it could be:

- It is very hot. When the temperature returns to normal, the CD should play.
- The road is very rough. When the road becomes smoother, the CD should play.
- The CD is dirty, scratched, wet, or upside down.
- The air is very humid. If so, wait about an hour and try again.
- There could have been a problem while burning the CD.
- The label could be caught in the CD player.

If the CD is not playing correctly, for any other reason, try a known good CD.

If any error occurs repeatedly or if an error cannot be corrected, contact your dealer/retailer. If the radio displays an error message, write it down and provide it to your dealer/retailer when reporting the problem.

MP3

MP3 CD-R or CD-RW Disc

The radio plays MP3 files that were recorded on a CD-R or CD-RW disc. The files can be recorded with the following fixed bit rates: 32 kbps, 40 kbps, 56 kbps, 64 kbps, 80 kbps, 96 kbps, 112 kbps, 128 kbps, 160 kbps, 192 kbps, 224 kbps, 256 kbps, and 320 kbps or a variable bit rate. Song title, artist name, and album are available for display by the radio when recorded using ID3 tags version 1 and 2.

Compressed Audio

The radio also plays discs that contain both uncompressed CD audio (.CDA files) and MP3 files. By default the radio reads only the uncompressed audio and ignores the MP3 files. Pressing the CAT (category) button toggles between compressed and uncompressed audio format.

MP3 Supported File and Folder Structure

To burn an MP3 disc on a personal computer:

- Make sure the MP3 files are recorded on a CD-R or CD-RW disc.
- Do not mix standard audio and MP3 files on one disc.
- The CD player is able to read and play a maximum of 50 folders, 50 playlists, and 255 files.

- Create a folder structure that makes it easy to find songs while driving. Organize songs by albums using one folder for each album. Each folder or album should contain 18 songs or less.
- Avoid subfolders. The system can support up to eight subfolders deep, however, keep the total number of folders to a minimum in order to reduce the complexity and confusion in trying to locate a particular folder during playback.
- Make sure playlists have a .m3u or .wpl extension, other file extensions may not work.
- Minimize the length of the file, folder or playlist names. Long file, folder, or playlist names, or a combination of a large number of files and folders, or playlists can cause the player to be unable to play up to the

maximum number of files, folders, playlists, or sessions. To play a large number of files, folders, playlists or sessions, minimize the length of the file, folder, or playlist name. Long names also take up more space on the display, potentially getting cut off.

- Finalize the audio disc before burning it. Trying to add music to an existing disc can cause the disc not to function in the player.

Playlists can be changed by using the previous and next folder buttons, the tune knob, or the SEEK arrows. An MP3 CD-R or CD-RW that was recorded using no file folders can also be played. If a CD-R or CD-RW contains more than the maximum of 50 folders, 50 playlists, and 255 files, the player can access and navigate up to the maximum, but all items over the maximum are not accessible.

Root Directory

The root directory of the CD-R or CD-RW is treated as a folder. If the root directory has compressed audio files, the directory displays as F1 ROOT. All files contained directly under the root directory are accessed prior to any root directory folders. However, playlists (Px) are always accessed before root folders or files.

Empty Directory or Folder

If a root directory or a folder exists somewhere in the file structure that contains only folders/subfolders and no compressed files directly beneath them, the player advances to the next folder in the file structure that contains compressed audio files. The empty folder does not display.

No Folder

When the CD contains only compressed files, the files are located under the root folder. The next and previous folder functions do not display on a CD that was recorded without folders or playlists. When displaying the name of the folder the radio displays ROOT.

When the CD contains only playlists and compressed audio files, but no folders, all files are located under the root folder. The folder down and up buttons searches playlists (Px) first and then go to the root folder. When the radio displays the name of the folder the radio displays ROOT.

Order of Play

Tracks recorded to the CD-R or CD-RW are played in the following order:

- Play begins from the first track in the first playlist and continues sequentially through all tracks in each playlist. When the last track of the last playlist has played, play continues from the first track of the first playlist.
- Play begins from the first track in the first folder and continues sequentially through all tracks in each folder. When the last track of the last folder has been played, play continues from the first track of the first folder.

When play enters a new folder, the display does not automatically show the new folder name unless the folder mode is chosen as the default display. The new track name displays.

File System and Naming

The song name that is displayed is the song name that is contained in the ID3 tag. If the song name is not present in the ID3 tag, then the radio displays the file name without the extension (such as .mp3) as the track name.

Track names longer than 32 characters or four pages are shortened. Parts of words on the last page of text and the extension of the filename does not display.

Preprogrammed Playlists

Preprogrammed playlists that were created by WinAmp™, MusicMatch™, or Real Jukebox™ software can be accessed, however, they cannot be edited using the radio. These playlists are treated as special folders containing compressed audio song files.

Playing an MP3

 **(Tune):** Turn to select MP3 files on the CD-R or CD-RW currently playing.

 **SEEK**  : Press the left arrow to go to the start of the current MP3 file, if more than ten seconds have played. Press the right arrow to go to the next MP3 file. If either arrow is held or pressed multiple times, the player continues moving backward or forward through MP3 files on the CD.

  **(Previous Folder):** Press the pushbutton positioned under the Folder label to go to the first track in the previous folder.

  **(Next Folder):** Press the pushbutton positioned under the Folder label to go to the first track in the next folder.

 **REV (Reverse):** Press and hold to reverse playback quickly within an MP3 file. Sound is heard at a reduced volume. Release to resume playing the file. The elapsed time of the file displays.

 **FWD (Fast Forward):** Press and hold to advance playback quickly within an MP3 file. Sound is heard at a reduced volume. Release to resume playing the file. The elapsed time of the file displays.

RDM (Random): With the random setting, the MP3 files on the CD-R or CD-RW can be listened to in random, rather than sequential order. To use random, press the pushbutton positioned under the RDM label until Random Current Disc displays. Press the same pushbutton again to turn off random play.

 **(Music Navigator):** Use the music navigator feature to play MP3 files on the CD-R or CD-RW in order by artist or album. Press the pushbutton located below the music navigator label. The player scans the disc to sort the files by artist and album ID3 tag information. It can take several minutes to scan the disc depending on the number of MP3 files recorded to the CD-R or CD-RW. The radio can begin playing while it is scanning the disc in the background. When the scan is finished, the CD-R or CD-RW begins playing again.

Once the disc has been scanned, the player defaults to playing MP3 files in order by artist. The current artist playing is shown on the second line of the display between the arrows. Once all songs by that artist are played, the player moves to the next artist in alphabetical order on the CD-R/CD-RW and begins playing MP3 files by that artist. To listen to MP3 files by another artist, press the pushbutton

located below either arrow button. The disc goes to the next or previous artist in alphabetical order. Continue pressing either button until the desired artist is displayed.

To change from playback by artist to playback by album, press the pushbutton located below the Sort By label. From the sort screen, push one of the buttons below the album button. Press the pushbutton below the back label to return to the main music navigator screen. Now the album name is displayed on the second line between the arrows and songs from the current album begins to play. Once all songs from that album are played, the player moves to the next album in alphabetical order on the CD-R/CD-RW and begins playing MP3 files from that album.

To exit music navigator mode, press the pushbutton below the Back label to return to normal MP3 playback.

Auxiliary Devices

The radio system has an auxiliary input jack located on the lower right side of the faceplate. This is not an audio output; do not plug the headphone set into the front auxiliary input jack. An external audio device such as an iPod™, laptop computer, MP3 player, CD changer, etc. can be connected to the auxiliary input jack for use as another audio source.

Drivers are encouraged to set up any auxiliary device while the vehicle is in P (Park). see *Defensive Driving on page 9-3* for more information on driver distraction.

To use a portable audio player, connect a 3.5 mm (1/8 inch) cable to the radio's front auxiliary input jack. When a device is connected, press the radio CD/AUX button to begin playing audio from the device over the vehicle speakers.

 **(Power/Volume):** Turn to increase or decrease the volume of the portable player. Additional volume adjustments might have to be made from the portable device if the volume is not loud or soft enough.

BAND: Press to listen to the radio when a portable audio device is playing. The portable audio device continues playing.

CD/AUX (CD/Auxiliary): Press to play a CD when a portable audio device is playing. Press again and the system begins playing audio from the connected portable audio player. If a portable audio player is not connected, "No Input Device Found" displays.

Phone

Bluetooth

Vehicles with a Bluetooth system can use a Bluetooth capable cell phone with a Hands Free Profile to make and receive phone calls. The system can be used while the key is in ON/RUN or ACC/ACCESSORY position. The range of the Bluetooth system can be up to 9.1 m (30 ft.). Not all phones support all functions, and not all phones are guaranteed to work with the in-vehicle Bluetooth system. See www.gm.com/bluetooth for more information on compatible phones.

Voice Recognition

The Bluetooth system uses voice recognition to interpret voice commands to dial phone numbers and name tags.

Noise: Keep interior noise levels to a minimum. The system may not recognize voice commands if there is too much background noise.

When to Speak: A short tone sounds after the system responds indicating when it is waiting for a voice command. Wait until the tone and then speak.

How to Speak: Speak clearly in a calm and natural voice.

Audio System

When using the in-vehicle Bluetooth system, sound comes through the vehicle's front audio system speakers and overrides the audio system. Use the audio system volume knob, during a call, to change the volume level. The adjusted volume level remains in memory for later calls. To prevent missed calls, a minimum volume level is used if the volume is turned down too low.

Bluetooth Controls

Use the buttons located on the steering wheel to operate the in-vehicle Bluetooth system. See *Steering Wheel Controls* on page 5-3 for more information.

 /  (**Push To Talk**) : Press to answer incoming calls, confirm system information, and to start speech recognition.

- /  (**Phone On Hook**): Press to end a call and to cancel an operation.

Pairing

A Bluetooth enabled cell phone must be paired to the in-vehicle Bluetooth system first and then connected to the vehicle before it can be used. See the cell phone manufacturers user guide for Bluetooth functions before pairing the cell phone. If a Bluetooth phone is not connected, calls will be made using OnStar® Hands-Free Calling, if available. Refer to the OnStar owner's guide for more information.

Pairing Information:

- Up to five cell phones can be paired to the in-vehicle Bluetooth system.
- The pairing process is disabled when the vehicle is moving.
- The in-vehicle Bluetooth system automatically links with the first available paired cell phone in the order the phone was paired.
- Only one paired cell phone can be connected to the in-vehicle Bluetooth system at a time.
- Pairing should only need to be completed once, unless changes to the pairing information have been made or the phone is deleted.

To link to a different paired phone, see Linking to a Different Phone later in this section.

Pairing a Phone

1. Press and hold  /  for two seconds. The system responds with "Ready" followed by a tone.
2. Say "Bluetooth". The system responds with "Bluetooth ready" followed by a tone.
3. Say "Pair". The system responds with instructions and a four digit PIN number. The PIN number will be used in Step 4.
4. Start the Pairing process on the cell phone that will be paired to the vehicle. Reference the cell phone manufacturers user guide for information on this process.
Locate the device named "General Motors" in the list on the cellular phone and follow the instructions on the cell phone to enter the four digit PIN number that was provided in Step 3.
5. The system prompts for a name for the phone. Use a name that best describes the phone. This

name will be used to indicate which phone is connected. The system then confirms the name provided.

6. The system responds with "<Phone name> has been successfully paired" after the pairing process is complete.
7. Repeat Steps 1 through 7 for additional phones to be paired.

Listing All Paired and Connected Phones

1. Press and hold  /  for two seconds. The system responds with "Ready" followed by a tone.
2. Say "Bluetooth". The system responds with "Bluetooth ready" followed by a tone.
3. Say "List". The system lists all the paired Bluetooth devices. If a phone is connected to the vehicle, the system will say "Is connected" after the connected phone.

Deleting a Paired Phone

1. Press and hold  /  for two seconds. The system responds with “Ready” followed by a tone.
2. Say “Bluetooth”. The system responds with “Bluetooth ready” followed by a tone.
3. Say “Delete”. The system asks which phone to delete followed by a tone.
4. Say the name of the phone to be deleted. If the phone name is unknown, use the “List” command for a list of all paired phones. The system responds with “Would you like to delete <phone name>? Yes or No” followed by a tone.
5. Say “Yes” to delete the phone. The system responds with “OK, deleting <phone name>”.

Linking to a Different Phone

1. Press and hold  /  for two seconds. The system responds with “Ready” followed by a tone.
2. Say “Bluetooth”. The system responds with “Bluetooth ready” followed by a tone.
3. Say “Change phone”. The system responds with “Please wait while I search for other phones”.
 - If another phone is found, the response will be “<Phone name> is now connected”.
 - If another phone is not found, the original phone remains connected.

Storing Name Tags

The system can store up to thirty phone numbers as name tags that are shared between the Bluetooth and OnStar systems.

The system uses the following commands to store and retrieve phone numbers:

- Store
- Digit Store
- Directory

Using the Store Command

The store command allows a phone number to be stored without entering the digits individually.

1. Press and hold  /  for two seconds. The system responds with “Ready” followed by a tone.
2. Say “Store”. The system responds with “Store, number please” followed by a tone.

3. Say the complete phone number to be stored at once with no pauses.
 - If the system recognizes the number it responds with “OK, Storing” and repeats the phone number.
 - If the system is unsure it recognizes the phone number, it responds with “Store” and repeats the number followed by “Please say yes or no”. If the number is correct, say “Yes”. If the number is not correct, say “No”. The system will ask for the number to be re-entered.
4. After the system stores the phone number, it responds with “Please say the name tag” followed by a tone.

5. Say a name tag for the phone number. The name tag is recorded and the system responds with “About to store <name tag>. Does that sound OK?”.
 - If the name tag does not sound correct, say “No” and repeat Step 5.
 - If the name tag sounds correct, say “Yes” and the name tag is stored. After the number is stored the system returns to the main menu.

Using the Digit Store Command

The digit store command allows a phone number to be stored by entering the digits individually.

1. Press and hold  /  for two seconds. The system responds with “Ready” followed by a tone.

2. Say “Digit Store”. The system responds with “Please say the first digit to store” followed by a tone.
3. Say the first digit to be stored. The system will repeat back the digit it heard followed by a tone. Continue entering digits until the number to be stored is complete.
 - If an unwanted number is recognized by the system, say “Clear” at any time to clear the last number.
 - To hear all of the numbers recognized by the system, say “Verify” at any time and the system will repeat them.
4. After the complete number has been entered, say “Store”. The system responds with “Please say the name tag” followed by a tone.

5. Say a name tag for the phone number. The name tag is recorded and the system responds with "About to store <name tag>. Does that sound OK?".
 - If the name tag does not sound correct, say "No" and repeat Step 5.
 - If the name tag sounds correct, say "Yes" and the name tag is stored. After the number is stored the system returns to the main menu.

Using the Directory Command

The directory command lists all of the name tags stored by the system. To use the directory command:

1. Press and hold  /  for two seconds. The system responds with "Ready" followed by a tone.

2. Say "Directory". The system responds with "Directory" and then plays back all of the stored name tags. When the list is complete, the system returns to the main menu.

Deleting Name Tags

The system uses the following commands to delete name tags:

- Delete
- Delete all name tags

Using the Delete Command

The delete command allows specific name tags to be deleted.

To use the delete command:

1. Press and hold  /  for two seconds. The system responds with "Ready" followed by a tone.
2. Say "Delete". The system responds with "Delete, please say the name tag" followed by a tone.

3. Say the name tag to be deleted. The system responds with "Would you like to delete, <name tag>? Please say yes or no".

- If the name tag is correct, say "Yes" to delete the name tag. The system responds with "OK, deleting <name tag>, returning to the main menu."
- If the name tag is incorrect, say "No". The system responds with "No. OK, let's try again, please say the name tag."

Using the Delete All Name Tags Command

The delete all name tags command deletes all stored phone book name tags and route name tags for OnStar (if present).

To use the delete all name tags command:

1. Press and hold  /  for two seconds. The system responds with “Ready” followed by a tone.
2. Say “Delete all name tags”. The system responds with “You are about to delete all name tags stored in your phone directory and your route destination directory. Are you sure you want to do this? Please say yes or no.”
 - Say “Yes” to delete all name tags.
 - Say “No” to cancel the function and return to the main menu.

Making a Call

Calls can be made using the following commands:

- Dial
- Digit Dial
- Call
- Re-dial

Using the Dial Command

1. Press and hold  /  for two seconds. The system responds with “Ready” followed by a tone.
2. Say “Dial”. The system responds with “Dial using <phone name>.” “Number please” followed by a tone.
3. Say the entire number without pausing.
 - If the system recognizes the number, it responds with “OK, Dialing” and dials the number.

- If the system does not recognize the number, it confirms the numbers followed by a tone. If the number is correct, say “Yes”. The system responds with “OK, Dialing” and dials the number. If the number is not correct, say “No”. The system will ask for the number to be re-entered.

Using the Digit Dial Command

1. Press and hold  /  for two seconds. The system responds with “Ready” followed by a tone.
2. Say “Digit Dial”. The system responds with “Digit dial using <phone name>,” please say the first digit to dial” followed by a tone.
3. Say the digits to be dialed one at a time. Following each digit, the system will repeat back the digit it heard followed by a tone.

4. Continue entering digits until the number to be dialed is complete. After the whole number has been entered, say "Dial". The system responds with "OK, Dialing" and dials the number.
 - If an unwanted number is recognized by the system, say "Clear" at any time to clear the last number.
 - To hear all of the numbers recognized by the system, say "Verify" at any time and the system will repeat them.

Using the Call Command

1. Press and hold  /  for two seconds. The system responds with "Ready" followed by a tone.
2. Say "Call". The system responds with "Call using <phone name>. Please say the name tag" followed by a tone.

3. Say the name tag of the person to call.

- If the system clearly recognizes the name tag it responds with "OK, calling, <name tag>" and dials the number.
- If the system is unsure it recognizes the right name tag, it confirms the name tag followed by a tone. If the name tag is correct, say "Yes". The system responds with "OK, calling, <name tag>" and dials the number. If the name tag is not correct, say "No". The system will ask for the name tag to be re-entered.

Once connected, the person called will be heard through the audio speakers.

Using the Re-dial Command

1. Press and hold  /  for two seconds. The system responds with "Ready" followed by a tone.
2. After the tone, say "Re-dial". The system responds with "Re-dial using <phone name>" and dials the last number called from the connected Bluetooth phone.

Once connected, the person called will be heard through the audio speakers.

Receiving a Call

When an incoming call is received, the audio system mutes and a ring tone is heard in the vehicle.

- Press  /  and begin speaking to answer the call.
- Press - /  to ignore a call.

Call Waiting

Call waiting must be supported on the Bluetooth phone and enabled by the wireless service carrier to work.

- Press  /  to answer an incoming call when another call is active. The original call is placed on hold.
- Press  /  again to return to the original call.
- To ignore the incoming call, continue with the original call with no action.
- Press – /  to disconnect the current call and switch to the call on hold.

Three-Way Calling

Three-Way Calling must be supported on the Bluetooth phone and enabled by the wireless service carrier to work.

1. While on a call press  / . The system responds with “Ready” followed by a tone.
2. Say “Three-way call”. The system responds with “Three-way call, please say dial or call”.
3. Use the dial or call command to dial the number of the third party to be called.
4. Once the call is connected, press  /  to link all the callers together.

Ending a Call

Press – /  to end a call.

Muting a Call

During a call, all sounds from inside the vehicle can be muted so that the person on the other end of the call cannot hear them.

To Mute a call

1. Press  / . The system responds with “Ready” followed by a tone.
2. Say “Mute Call”. The system responds with “Call muted”.

To Cancel Mute

1. Press  / . The system responds with “Ready” followed by a tone.
2. After the tone, say “Mute Call”. The system responds with “Resuming call”.

Transferring a Call

Audio can be transferred between the in-vehicle Bluetooth system and the cell phone.

To Transfer Audio to the Cell Phone

During a call with the audio in the vehicle:

1. Press  / . The system responds with "Ready" followed by a tone.
2. Say "Transfer Call." The system responds with "Transferring call" and the audio will switch from the vehicle to the cell phone.

To Transfer Audio to the In-Vehicle Bluetooth System

The cellular phone must be paired and connected with the Bluetooth system before a call can be transferred. The connection process can take up to two minutes after the key is turned to the ON/RUN or ACC/ACCESSORY position.

During a call with the audio on the cell phone, press  /  for more than two seconds. The audio switches from the cell phone to the vehicle.

Voice Pass-Thru

Voice Pass-Thru allows access to the voice recognition commands on the cell phone. See the cell phone manufacturers user guide to see if the cell phone supports this feature. This feature can be used to verbally access contacts stored in the cell phone.

1. Press and hold  /  for two seconds. The system responds with "Ready" followed by a tone.
2. Say "Bluetooth". The system responds with "Bluetooth ready" followed by a tone.

3. Say "Voice". The system responds with "OK, accessing <phone name>".

- The cell phone's normal prompt messages will go through its cycle according to the phone's operating instructions.

Dual Tone Multi-Frequency (DTMF) Tones

The in-vehicle Bluetooth system can send numbers and numbers stored as name tags during a call. This is used when calling a menu driven phone system. Account numbers can be programmed into the phonebook for retrieval during menu driven calls.

Sending a Number During a Call

1. Press  / . The system responds with "Ready" followed by a tone.
2. Say "Dial". The system responds with "Say a number to send tones" followed by a tone.

3. Say the number to send.

- If the system clearly recognizes the number it responds with “OK, Sending Number” and the dial tones are sent and the call continues.
- If the system is not sure it recognized the number properly, it responds “Dial Number, Please say yes or no?” followed by a tone. If the number is correct, say “Yes”. The system responds with “OK, Sending Number” and the dial tones are sent and the call continues.

Sending a Stored Name Tag During a Call

1. Press  / . The system responds with “Ready” followed by a tone.
2. Say “Send name tag.” The system responds with “Say a name tag to send tones” followed by a tone.

3. Say the name tag to send.

- If the system clearly recognizes the name tag it responds with “OK, Sending <name tag>” and the dial tones are sent and the call continues.
- If the system is not sure it recognized the name tag properly, it responds “Dial <name tag>, Please say yes or no?” followed by a tone. If the name tag is correct, say “Yes”. The system responds with “OK, Sending <name tag>” and the dial tones are sent and the call continues.

Clearing the System

Unless information is deleted out of the in-vehicle Bluetooth system, it will be retained indefinitely. This includes all saved name tags in the phonebook and phone pairing information. For information on how to delete this information, see the above sections on Deleting a Paired Phone and Deleting Name Tags.

Other Information

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See *Radio Frequency Statement on page 13-16* for FCC information.



 NOTES

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Climate Controls

Climate Control Systems

Climate Control Systems	8-1
Automatic Climate Control System	8-5

Air Vents

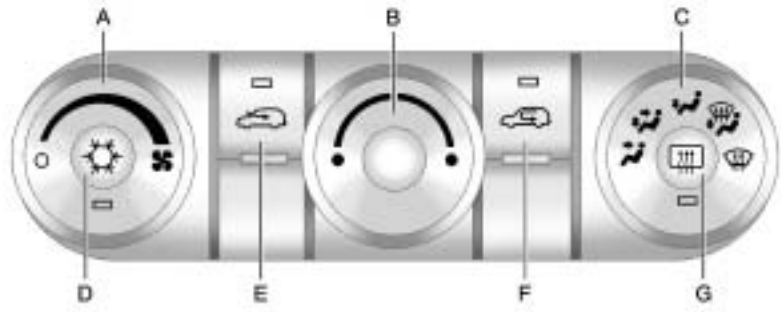
Air Vents	8-9
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Maintenance

Passenger Compartment Air Filter	8-9
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Climate Control Systems

The heating, cooling, and ventilation for the vehicle can be controlled with this system. For vehicles with the remote start feature, the climate control system functions as part of the remote start feature. See *Remote Keyless Entry (RKE) System Operation* on page 2-3.



- A. Fan Control
- B. Temperature Control
- C. Air Delivery Mode Control
- D. Air Conditioning

- E. Outside Air
- F. Recirculation
- G. Rear Window Defogger

8-2 Climate Controls

🌀 (Fan Control): Turn clockwise or counterclockwise to increase or decrease the fan speed. To turn the fan off, turn the left knob all the way counterclockwise. In any setting other than off, the fan runs continuously with the ignition on. There will be some airflow noticeable from the various outlets when driving, even with the fan in the off position. To turn off the air completely, turn the fan to  and select the recirculation button.

Temperature Control: Turn clockwise or counterclockwise to increase or decrease the temperature inside the vehicle.

Air Delivery Mode Control: Turn clockwise or counterclockwise to change the current airflow mode.

Select from the following air delivery modes:

↗ (Vent): Air is directed to the instrument panel outlets.

↕ (Bi-Level): Air is divided between the instrument panel and the floor outlets.

↘ (Floor): Air is directed to the floor outlets with some air directed to the windshield.

When this mode is selected, the system turns the recirculation mode off. Recirculation mode cannot be selected while in floor mode. This helps prevent window fogging.

☁ (Defog): Clears the windows of fog or moisture. Air is directed to the floor outlets, with some air directed to the windshield and side window outlets. In this mode, the system turns the recirculation mode off and runs the air conditioning compressor unless the outside air is at or below freezing. Recirculation mode cannot be selected while in defog mode. This helps prevent window fogging.

☁ (Defrost): Removes fog or frost from the windshield more quickly. Air is directed to the windshield and the side window outlets. In this mode, the system turns the recirculation mode off automatically and runs the air conditioning compressor unless the outside air is at or below freezing. Recirculation mode cannot be selected while in defrost mode. This helps prevent window fogging.

For best results, clear all snow and ice from the windshield before defrosting.

⚙ (Air Conditioning): Press to turn the air conditioning system on or off. An indicator light comes on to show that the air conditioning is on. The air conditioning can be selected in any mode as long as the fan is on and the outside temperature is above freezing. A flashing indicator light indicates that the air conditioning compressor is currently not available.

On hot days, open the windows to let hot inside air escape; then close them. This helps reduce the time it takes for the vehicle to cool down and helps the system to operate more efficiently.

For quick cool down on hot days, select the following settings together:

1. Select  mode.
2. Select .
3. Turn the  on.
4. Select the coolest temperature and highest fan speed.
5. Once the vehicle's interior temperature is below the outside temperature, select recirculation mode for enhanced cooling.

Using these settings together for long periods of time may cause the air inside the vehicle to become too dry. To prevent this from happening, after the air inside of the vehicle has cooled, turn the recirculation mode off.

The air conditioning system removes moisture from the air, so a small amount of water might drip under the vehicle while idling or after turning off the engine. This is normal.

 **(Outside Air):** Press to turn the outside air mode on. An indicator light comes on to show that outside air is on. Air from outside the vehicle will circulate throughout the vehicle. The outside air mode can be used with all modes, but it cannot be used with the recirculation mode. Pressing this button will cancel the recirculation mode.

 **(Recirculation):** Press to turn on the recirculation mode. An indicator light comes on to show that recirculation is on. This mode recirculates and helps to quickly cool or heat the air inside the vehicle. It can be used to prevent outside air and odors from entering the vehicle. Avoid using the recirculation mode during high periods of humidity and cool outside temperatures since this may result in increased window fogging. If window fogging is experienced, select the defrost mode.

Recirculation mode is not available in floor, defog or defrost modes and will shut off automatically and change to outside air. The indicator will flash if the button is selected in any of these modes. This helps prevent window fogging and moisture building up inside the vehicle.

8-4 Climate Controls

Rear Window Defogger

The rear window defogger uses a warming grid to remove fog from the rear window.

The rear window defogger only works when the ignition is in ON/RUN.

(Rear Window Defogger):

Press to turn the rear window defogger on or off. An indicator light on the button comes on to show that the rear window is activated.

The rear window defogger stays on for approximately 10 minutes after the button is pressed, unless the ignition is turned to ACC/ACCESSORY or LOCK/OFF.

If turned on again, the defogger only runs for approximately five minutes before turning off again. At higher vehicle speeds, the defogger may stay on continuously. The defogger can also be turned off by turning off the engine.

For vehicles with the remote start feature, the rear defogger will automatically turn on.

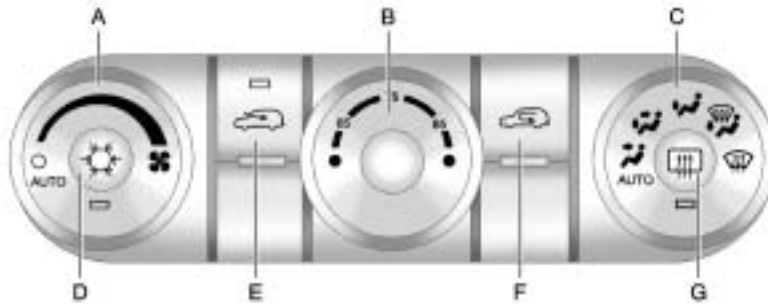
Notice: Do not use anything sharp on the inside of the rear window. If you do, you could cut or damage the warming grid, and the repairs would not be covered by the vehicle warranty. Do not attach a temporary vehicle license, tape, a decal or anything similar to the defogger grid.

Remote Start Climate Control Operation

For vehicles with the remote start feature and if it is activated, the climate control system heats and cools the inside of the vehicle using the modes that were set before the vehicle was turned off and the rear defogger automatically turns on.

Automatic Climate Control System

The heating, cooling, and ventilation for the vehicle can be controlled with this system. For vehicles with the remote start feature, the climate control system functions as part of the remote start feature. See *Remote Keyless Entry (RKE) System Operation* on page 2-3.



United States version shown, Canada version similar.

- | | |
|------------------------------|-------------------------|
| A. Fan Control | E. Outside Air |
| B. Temperature Control | F. Recirculation |
| C. Air Delivery Mode Control | G. Rear Window Defogger |
| D. Air Conditioning | |

Automatic Operation

This climate control system automatically maintains the desired temperature inside the vehicle. Do not cover the sensor located on the top of the instrument panel near the windshield or the sensor grille below the climate control faceplate. These two sensors help regulate the inside air temperature.

AUTO (Automatic Fan): Turn the fan knob to AUTO for the system to automatically adjust the fan speed to reach the desired inside temperature.

Temperature Control: Select the desired cabin air temperature between 60-90°F (16-32°C). Choosing the coldest or warmest temperature setting does not cause the system to heat or cool any faster.

8-6 Climate Controls

AUTO (Automatic Air Delivery Mode): Turn the air delivery mode knob to AUTO for the system to automatically control the direction of the airflow to help reach the desired inside temperature.

The system automatically controls the air inlet to supply the outside air or recirculated inside air needed to heat or cool the vehicle faster. The recirculation button indicator light is lit whenever the recirculation mode is on.

Press the outside air button to change to outside air. However, the recirculation mode may turn back on automatically.

In cold weather, if the fan and air delivery modes are in automatic, the system starts at lower fan speeds to avoid directing cold air into the vehicle until warmer air is available.

The climate control system directs air to the floor, but may automatically change modes as the vehicle warms up to maintain the chosen temperature setting. The length of time needed to warm the interior depends on the outside temperature and inside temperature of the vehicle.

Manual Operation

✿ (Fan Control): Turn clockwise or counterclockwise to increase or decrease the fan speed. To turn the fan off, turn the left knob to the ○ position. In any setting other than off, the fan runs continuously with the ignition on. The fan must be turned on to run the air conditioning compressor. There will be some airflow noticeable from the various outlets when driving, even with the fan in the off position. To turn off the air completely, turn the fan to ○ and select the recirculation button.

Temperature Control: Turn clockwise or counterclockwise to increase or decrease the temperature. Select the desired cabin air temperature between 60-90°F (16-32°C). Typically, the best setting is near 75°F (23°C). Choosing the coldest or warmest temperature setting does not cause the system to heat or cool any faster.

Air Delivery Mode Control: Turn clockwise or counterclockwise to change the current airflow mode.

Select from the following air delivery modes:

↗ (Vent): Air is directed to the instrument panel outlets.

↕ (Bi-Level): Air is divided between the instrument panel outlets and the floor outlets.

↘ (Floor): Air is directed to the floor outlets with some air directed to the windshield.

When this mode is selected, the system turns the recirculation mode off. Recirculation mode cannot be selected while in floor mode. This is to help prevent window fogging.

 **(Defog):** Clears the windows of fog or moisture. Air is directed to the floor outlets, with some air directed to the windshield and side window outlets. In this mode, the system turns the recirculation mode off and runs the air conditioning compressor unless the outside air is at or below freezing. Recirculation mode cannot be selected while in defog mode. This helps prevent window fogging.

 **(Defrost):** Removes fog or frost from the windshield more quickly. Air is directed to the windshield and the side window outlets. In this mode, the system turns the recirculation mode off automatically and runs the air conditioning compressor unless the outside air is at or below freezing. Recirculation mode cannot be selected while in defrost mode. This helps prevent window fogging.

For best results, clear all snow and ice from the windshield before defrosting.

 **(Air Conditioning):** Press to turn the air conditioning system on or off. An indicator light comes on to show that the air conditioning is on. The air conditioning can be selected in any mode as long as the fan is on and the outside temperature is above freezing. A flashing indicator light indicates that the air conditioning compressor is currently not available.

On hot days, use the automatic fan and automatic air delivery mode settings and the vehicle will reach the desired temperature more quickly. The desired fan and air delivery mode settings can still be adjusted manually. Open the windows to let the hot inside air escape, then close them. This helps reduce the time it takes for the vehicle to cool down and helps the system to operate more efficiently.

The air conditioning system removes moisture from the air, so a small amount of water might drip under the vehicle while idling or after turning off the engine.

 **(Outside Air):** Press to turn the outside air mode on. An indicator light comes on to show that outside air is on. Air from outside the vehicle will circulate throughout the vehicle. The outside air mode can be used with all modes, but it cannot be used with the recirculation mode. Pressing this button will cancel the recirculation mode.

 **(Recirculation):** Press to turn on the recirculation mode. An indicator light comes on to show that recirculation is on. This mode recirculates and helps to quickly cool or heat the air inside the vehicle. It can be used to prevent outside air and odors from entering the vehicle. Avoid using the recirculation mode during high periods of humidity and cool outside temperatures since this may result in increased window fogging. If window fogging is experienced, select the defrost mode.

Recirculation mode is not available in floor, defog or defrost modes and will shut off automatically and change to outside air. If the button is selected in any of these modes, the indicator will flash. This helps prevent window fogging and moisture building up inside the vehicle.

Rear Window Defogger

The rear window defogger uses a warming grid to remove fog from the rear window.

The rear window defogger only works when the ignition is in ON/RUN.

 **(Rear Window Defogger):** Press to turn the rear window defogger on or off. An indicator light on the button comes on to show that it is activated.

The rear window defogger stays on for approximately 10 minutes after the button is pressed, unless the ignition is turned to ACC/ACCESSORY or LOCK/OFF. If turned on again, the defogger only runs for approximately five minutes before turning off. At higher vehicle speeds, the defogger may stay on continuously. The defogger can also be turned off by turning off the engine.

For vehicles with the remote start feature, the rear defogger will automatically turn on when remote start is activated.

Notice: Do not use anything sharp on the inside of the rear window. If you do, you could cut or damage the warming grid, and the repairs would not be covered by the vehicle warranty. Do not attach a temporary vehicle license, tape, a decal or anything similar to the defogger grid.

Remote Start Climate Control Operation

For vehicles with the remote start feature and if it is activated, the climate control system heats and cools the inside of the vehicle using the modes that were set before the vehicle was turned off.

Air Vents

Use the louvers located on the air outlets to adjust the airflow.

Operation Tips

- Clear away any ice, snow, or leaves from the air inlets at the base of the vehicle that may block the flow of air into the vehicle.
- Do not use any non-GM approved hood deflectors that could adversely affect the performance of the system.
- Keep the path under the front seats clear of objects to help circulate the air inside of the vehicle more effectively.

Maintenance

Passenger Compartment Air Filter

The filter removes dust, pollen, and other airborne irritants from outside air that is pulled into the vehicle.

The filter should be replaced as part of routine scheduled maintenance. See *Scheduled Maintenance on page 11-2* for replacement intervals. To find out what type of filter to use, see *Maintenance Replacement Parts on page 11-9*.

The passenger compartment air filter can be accessed by removing the entire glove box.

1. Remove the six screws from around the glove box and detach the three inner clips from the glove box.



2. Lower the loosened glove box housing.

8-10 Climate Controls



3. Unplug both wire cables and remove the glove box.



4. Remove the air filter cover screw.



5. Remove the filter cover and pull out the old air filter.
6. Install the new air filter.
7. Reinstall the air filter cover. Reconnect the wire cabling and re-install the glove box.

See your dealer/retailer if additional assistance is needed.

Driving and Operating

Driving Information

Driver Behavior	9-2
Driving Environment	9-2
Vehicle Design	9-2
Defensive Driving	9-3
Drunk Driving	9-3
Control of a Vehicle	9-4
Braking	9-4
Steering	9-5
Off-Road Recovery	9-6
Loss of Control	9-7
Off-Road Driving	9-8
Driving on Wet Roads	9-18
Highway Hypnosis	9-18
Hill and Mountain Roads	9-19
Winter Driving	9-20
If the Vehicle is Stuck	9-22
Vehicle Load Limits	9-22

Starting and Operating

New Vehicle Break-In	9-27
Ignition Positions	9-28
Retained Accessory Power (RAP)	9-29

Starting the Engine	9-29
Engine Coolant Heater	9-30
Shifting Into Park	9-31
Shifting Out of Park	9-33
Parking Over Things That Burn	9-33

Engine Exhaust

Engine Exhaust	9-34
Running the Vehicle While Parked	9-34

Automatic Transmission

Automatic Transmission	9-35
Manual Mode	9-37

Drive Systems

All-Wheel Drive	9-38
-----------------------	------

Brakes

Antilock Brake System (ABS)	9-38
Parking Brake	9-39

Ride Control Systems

Traction Control System (TCS)	9-40
StabiliTrak System	9-41

Cruise Control

Cruise Control	9-42
----------------------	------

Object Detection Systems

Rear Vision Camera (RVC)	9-44
-----------------------------------	------

Fuel

Fuel	9-47
Recommended Fuel	9-48
Gasoline Specifications	9-48
California Fuel Requirements	9-48
Fuels in Foreign Countries ...	9-49
Fuel Additives	9-49
Filling the Tank	9-50
Filling a Portable Fuel Container	9-52

Towing

General Towing Information	9-52
Driving Characteristics and Towing Tips	9-53
Trailer Towing	9-56
Towing Equipment	9-60
Trailer Sway Control (TSC)	9-60

Conversions and Add-Ons

Add-On Electrical Equipment	9-61
--------------------------------------	------

Driving Information

Driver Behavior

Whenever we drive, we are taking on an important responsibility. This is true for any motor vehicle — passenger car, van, truck, sport utility. Driver behavior, the driving environment, and the vehicle's design all affect how well a vehicle performs. But statistics show that the most important factor, by far, is how we drive.

Knowing how these three factors work together can help you understand how your vehicle handles and what you can do to avoid many types of crashes, including a rollover crash.

The single most important thing is this: everyone in the vehicle, including the driver, should buckle up. See *Safety Belts on page 3-10*. In fact, most serious injuries and fatalities to unbelted occupants can be reduced or prevented by the use

of safety belts. In a rollover crash, an unbelted person is significantly more likely to die than a person wearing a seat belt. In addition, avoiding excessive speed, sudden or abrupt turns, and drunken or aggressive driving can help make trips safer and avoid the possibility of a crash, especially a rollover crash. This section provides many useful tips to help you drive more safely.

Driving Environment

You can also help avoid a rollover or other type of crash by being prepared for driving in inclement weather, at night, or during other times where visibility or traction may be limited, such as on curves, slippery roads, or hilly terrain. Unfamiliar surroundings can also have hidden hazards.

To help you learn more about driving in different conditions, this section contains information about

city, freeway, and off-road driving, as well as other hints for driving in various weather conditions.

Vehicle Design

According to the U.S. Department of Transportation, utility vehicles have a significantly higher rollover rate than other types of vehicles. Utility vehicles do have higher ground clearance and a narrower track or shorter wheelbase than passenger cars, to make them more capable for off-road driving. Specific design characteristics like these give the driver a better view of the road, but also give utility vehicles a higher center of gravity than other types of vehicles. This means that you should not expect a utility vehicle to handle the same way a vehicle with a lower center of gravity, like a car, would in similar situations.

But driver behavior factors are far more often the cause of a utility vehicle rollover than are environmental or vehicle factors.

Safe driver behavior and understanding the environment in which you will be driving can help avoid a rollover crash in any type of vehicle, including utility vehicles.

Defensive Driving

Defensive driving means “always expect the unexpected.” The first step in driving defensively is to wear your safety belt, see *Safety Belts on page 3-10*.

WARNING

Assume that other road users (pedestrians, bicyclists, and other drivers) are going to be careless and make mistakes. Anticipate what they might do and be ready. In addition:

- Allow enough following distance between you and the driver in front of you.
- Focus on the task of driving.

(Continued)

WARNING (Continued)

Driver distraction can cause collisions resulting in injury or possible death. These simple defensive driving techniques could save your life.

Drunk Driving

WARNING

Drinking and then driving is very dangerous. Your reflexes, perceptions, attentiveness, and judgment can be affected by even a small amount of alcohol. You can have a serious — or even fatal — collision if you drive after drinking. Do not drink and drive or ride with a driver who has been drinking. Ride home in a cab; or if you are with a group, designate a driver who will not drink.

Death and injury associated with drinking and driving is a global tragedy.

Alcohol affects four things that anyone needs to drive a vehicle: judgment, muscular coordination, vision, and attentiveness.

Police records show that almost 40 percent of all motor vehicle-related deaths involve alcohol. In most cases, these deaths are the result of someone who was drinking and driving. In recent years, more than 17,000 annual motor vehicle-related deaths have been associated with the use of alcohol, with about 250,000 people injured.

For persons under 21, it is against the law in every U.S. state to drink alcohol. There are good medical, psychological, and developmental reasons for these laws.

The obvious way to eliminate the leading highway safety problem is for people never to drink alcohol and then drive.

9-4 Driving and Operating

Medical research shows that alcohol in a person's system can make crash injuries worse, especially injuries to the brain, spinal cord, or heart. This means that when anyone who has been drinking — driver or passenger — is in a crash, that person's chance of being killed or permanently disabled is higher than if the person had not been drinking.

Control of a Vehicle

The following three systems help to control the vehicle while driving — brakes, steering, and accelerator. At times, as when driving on snow or ice, it is easy to ask more of those control systems than the tires and road can provide. Meaning, you can lose control of the vehicle. See *Traction Control System (TCS)* on page 9-40.

Adding non-dealer/non-retailer accessories can affect vehicle performance. See *Accessories and Modifications* on page 10-3.

Braking

See *Brake System Warning Light* on page 5-18.

Braking action involves perception time and reaction time. Deciding to push the brake pedal is perception time. Actually doing it is reaction time.

Average reaction time is about three-fourths of a second. But that is only an average. It might be less with one driver and as long as two or three seconds or more with another. Age, physical condition, alertness, coordination, and eyesight all play a part. So do alcohol, drugs, and frustration. But even in three-fourths of a second, a vehicle moving at 100 km/h (60 mph) travels 20 m (66 ft). That could be a lot of distance in an emergency, so keeping enough space between the vehicle and others is important.

And, of course, actual stopping distances vary greatly with the surface of the road, whether it is pavement or gravel; the condition of the road, whether it is wet, dry, or icy; tire tread; the condition of the brakes; the weight of the vehicle; and the amount of brake force applied.

Avoid needless heavy braking. Some people drive in spurts — heavy acceleration followed by heavy braking — rather than keeping pace with traffic. This is a mistake. The brakes might not have time to cool between hard stops. The brakes will wear out much faster with a lot of heavy braking. Keeping pace with the traffic and allowing realistic following distances eliminates a lot of unnecessary braking. That means better braking and longer brake life.

If the engine ever stops while the vehicle is being driven, brake normally but do not pump the brakes. If the brakes are pumped, the pedal could get harder to push down. If the engine stops, there will still be some power brake assist but it will be used when the brake is applied. Once the power assist is used up, it can take longer to stop and the brake pedal will be harder to push.

Adding non-dealer/non-retailer accessories can affect vehicle performance. See *Accessories and Modifications* on page 10-3.

Steering

Electric Power Steering

If the vehicle has the electric power steering system and the engine stalls while driving, the power steering assist system will continue

to operate until you are able to stop the vehicle. If power steering assist is lost because the electric power steering system is not functioning, the vehicle can be steered but it will take more effort.

If you turn the steering wheel in either direction several times until it stops, or hold the steering wheel in the stopped position for an extended amount of time, you may notice a reduced amount of power steering assist. The normal amount of power steering assist should return shortly after a few normal steering movements.

The electric power steering system does not require regular maintenance. If you suspect steering system problems and/or the Service Vehicle Soon light comes on, contact your dealer/retailer for service repairs.

Hydraulic Power Steering

If the vehicle has the hydraulic power steering system and power steering assist is lost because the engine stops or the power steering system is not functioning, the vehicle can be steered but it will take more effort.

Steering Tips

It is important to take curves at a reasonable speed.

Traction in a curve depends on the condition of the tires and the road surface, the angle at which the curve is banked, and vehicle speed. While in a curve, speed is the one factor that can be controlled.

If there is a need to reduce speed, do it before entering the curve, while the front wheels are straight.

Try to adjust the speed so you can drive through the curve. Maintain a reasonable, steady speed. Wait to accelerate until out of the curve, and then accelerate gently into the straightaway.

9-6 Driving and Operating

Steering in Emergencies

There are times when steering can be more effective than braking. For example, you come over a hill and find a truck stopped in your lane, or a car suddenly pulls out from nowhere, or a child darts out from between parked cars and stops right in front of you. These problems can be avoided by braking — if you can stop in time. But sometimes you cannot stop in time because there is no room. That is the time for evasive action — steering around the problem.

The vehicle can perform very well in emergencies like these. First apply the brakes. See *Braking on page 9-4*. It is better to remove as much speed as possible from a collision. Then steer around the problem, to the left or right depending on the space available.



An emergency like this requires close attention and a quick decision. If holding the steering wheel at the recommended 9 and 3 o'clock positions, it can be turned a full 180 degrees very quickly without removing either hand. But you have to act fast, steer quickly, and just as quickly straighten the wheel once you have avoided the object.

The fact that such emergency situations are always possible is a good reason to practice defensive driving at all times and wear safety belts properly.

Off-Road Recovery

The vehicle's right wheels can drop off the edge of a road onto the shoulder while driving.



If the level of the shoulder is only slightly below the pavement, recovery should be fairly easy. Ease off the accelerator and then, if there is nothing in the way, steer so that the vehicle straddles the edge of the pavement. Turn the steering wheel 8 to 13 cm (3 to 5 inches), about one-eighth turn, until the right front

tire contacts the pavement edge. Then turn the steering wheel to go straight down the roadway.

Loss of Control

Let us review what driving experts say about what happens when the three control systems — brakes, steering, and acceleration — do not have enough friction where the tires meet the road to do what the driver has asked.

In any emergency, do not give up. Keep trying to steer and constantly seek an escape route or area of less danger.

Skidding

In a skid, a driver can lose control of the vehicle. Defensive drivers avoid most skids by taking reasonable care suited to existing conditions, and by not overdriving those conditions. But skids are always possible.

The three types of skids correspond to the vehicle's three control systems. In the braking skid, the wheels are not rolling. In the steering or cornering skid, too much speed or steering in a curve causes tires to slip and lose cornering force. And in the acceleration skid, too much throttle causes the driving wheels to spin.

If the vehicle starts to slide, ease your foot off the accelerator pedal and quickly steer the way you want the vehicle to go. If you start steering quickly enough, the vehicle may straighten out. Always be ready for a second skid if it occurs.

Of course, traction is reduced when water, snow, ice, gravel, or other material is on the road. For safety, slow down and adjust your driving to these conditions. It is important to slow down on slippery surfaces because stopping distance is longer and vehicle control more limited.

While driving on a surface with reduced traction, try your best to avoid sudden steering, acceleration, or braking, including reducing vehicle speed by shifting to a lower gear. Any sudden changes could cause the tires to slide. You might not realize the surface is slippery until the vehicle is skidding. Learn to recognize warning clues — such as enough water, ice, or packed snow on the road to make a mirrored surface — and slow down when you have any doubt.

Remember: Any Antilock Brake System (ABS) helps avoid only the braking skid.

Off-Road Driving

Vehicles with all-wheel drive can be used for off-road driving. Vehicles without all-wheel drive should not be driven off-road except on a level, solid surface.

Many of the vehicle design features that help make the vehicle more responsive on paved roads during poor weather conditions also help make it better suited for off-road use than conventional passenger vehicles. The vehicle does not have features usually thought to be necessary for extended or severe off-road use such as special underbody shielding and transfer case low gear range.

The airbag system is designed to work properly under a wide range of conditions, including off-road usage. Always wear your safety belt and observe safe driving speeds, especially on rough terrain.

Drinking and driving can be very dangerous on any road and this is certainly true for off-road driving. At

the very time you need special alertness and driving skills, your reflexes, perceptions, and judgment can be affected by even a small amount of alcohol. You could have a serious — or even fatal — accident if you drink and drive or ride with a driver who has been drinking.

Off-roading can be great fun but has some definite hazards. The greatest of these is the terrain itself. When off-road driving, traffic lanes are not marked, curves are not banked, and there are no road signs. Surfaces can be slippery, rough, uphill, or downhill.

Avoid sharp turns and abrupt maneuvers. Failure to operate the vehicle correctly off-road could result in loss of vehicle control or vehicle rollover.

Off-roading involves some new skills. That is why it is very important that you read these driving tips and suggestions to help make off-road driving safer and more enjoyable.

Before You Go Off-Roading

- Have all necessary maintenance and service work done.
- Make sure there is enough fuel, that fluid levels are where they should be, and that the spare tire is fully inflated.
- Be sure to read all the information about all-wheel-drive vehicles in this manual.
- Make sure all underbody shields, if the vehicle has them, are properly attached.
- Know the local laws that apply to off-roading where you will be driving or check with law enforcement people in the area.
- Be sure to get the necessary permission if you will be on private land.

Loading Your Vehicle for Off-Road Driving

WARNING

- Cargo on the load floor piled higher than the seatbacks can be thrown forward during a sudden stop. You or your passengers could be injured. Keep cargo below the top of the seatbacks.
- Unsecured cargo on the load floor can be tossed about when driving over rough terrain. You or your passengers can be struck by flying objects. Secure the cargo properly.

(Continued)

WARNING (Continued)

- Heavy loads on the roof raise the vehicle's center of gravity, making it more likely to roll over. You can be seriously or fatally injured if the vehicle rolls over. Put heavy loads inside the cargo area, not on the roof. Keep cargo in the cargo area as far forward and low as possible.

There are some important things to remember about how to load your vehicle.

- The heaviest things should be on the floor, forward of the rear axle. Put heavier items as far forward as you can.
- Be sure the load is properly secured, so things are not tossed around.

You will find other important information under *Vehicle Load Limits* on page 9-22 and *Tires* on page 10-43.

Environmental Concerns

Off-road driving can provide wholesome and satisfying recreation. However, it also raises environmental concerns. We recognize these concerns and urge every off-roader to follow these basic rules for protecting the environment:

- Always use established trails, roads, and areas that have been specially set aside for public off-road recreational driving and obey all posted regulations.
- Avoid any driving practice that could damage shrubs, flowers, trees, or grasses or disturb wildlife. This includes wheel-spinning, breaking down trees, or unnecessary driving through streams or over soft ground.

9-10 Driving and Operating

- Always carry a litter bag and make sure all refuse is removed from any campsite before leaving.
- Take extreme care with open fires (where permitted), camp stoves, and lanterns.
- Never park your vehicle over dry grass or other combustible materials that could catch fire from the heat of the vehicle's exhaust system.

Traveling to Remote Areas

It makes sense to plan your trip, especially when going to a remote area. Know the terrain and plan your route. Get accurate maps of trails and terrain. Check to see if there are any blocked or closed roads.

It is also a good idea to travel with at least one other vehicle in case something happens to one of them.

For vehicles with a winch, be sure to read the winch instructions. In a remote area, a winch can be handy if you get stuck but you will want to know how to use it properly.

Getting Familiar with Off-Road Driving

It is a good idea to practice in an area that is safe and close to home before you go into the wilderness. Off-roading requires some new and different skills.

Tune your senses to different kinds of signals. Your eyes need to constantly sweep the terrain for unexpected obstacles. Your ears need to listen for unusual tire or engine sounds. Use your arms, hands, feet, and body to respond to vibrations and vehicle bounce.

Controlling the vehicle is the key to successful off-road driving. One of the best ways to control the vehicle is to control the speed. At higher speeds:

- You approach things faster and have less time to react.
- There is less time to scan the terrain for obstacles.
- The vehicle has more bounce when driving over obstacles.
- More braking distance is needed, especially on an unpaved surface.

WARNING

When you are driving off-road, bouncing and quick changes in direction can easily throw you out of position. This could cause you to lose control and crash. So, whether you are driving on or off the road, you and your passengers should wear safety belts.

Scanning the Terrain

Off-road driving can take you over many different kinds of terrain. Be familiar with the terrain and its many different features.

Surface Conditions: Off-roading surfaces can be hard-packed dirt, gravel, rocks, grass, sand, mud, snow, or ice. Each of these surfaces affects the vehicle's steering, acceleration, and braking in different ways. Depending on the surface, slipping, sliding, wheel spinning, delayed acceleration, poor traction, and longer braking distances can occur.

Surface Obstacles: Unseen or hidden obstacles can be hazardous. A rock, log, hole, rut, or bump can startle you if you are not prepared for them. Often these obstacles are hidden by grass, bushes, snow, or even the rise and fall of the terrain itself.

Some things to consider:

- Is the path ahead clear?
- Will the surface texture change abruptly up ahead?
- Does the travel take you uphill or downhill?
- Will you have to stop suddenly or change direction quickly?

When driving over obstacles or rough terrain, keep a firm grip on the steering wheel. Ruts, troughs, or other surface features can jerk the wheel out of your hands.

When driving over bumps, rocks, or other obstacles, the wheels can leave the ground. If this happens, even with one or two wheels, you cannot control the vehicle as well or at all.

Because you will be on an unpaved surface, it is especially important to avoid sudden acceleration, sudden turns, or sudden braking.

Off-roading requires a different kind of alertness from driving on paved roads and highways. There are no road signs, posted speed limits, or signal lights. Use good judgment about what is safe and what is not.

Driving on Hills

Off-road driving often takes you up, down, or across a hill. Driving safely on hills requires good judgment and an understanding of what the vehicle can and cannot do. There are some hills that simply cannot be driven, no matter how well built the vehicle.

WARNING

Many hills are simply too steep for any vehicle. If you drive up them, you will stall. If you drive down them, you cannot control your speed. If you drive across them, you will roll over. You could be seriously injured or killed. If you have any doubt about the steepness, do not drive the hill.

Approaching a Hill

When you approach a hill, decide if it is too steep to climb, descend, or cross. Steepness can be hard to judge. On a very small hill, for example, there may be a smooth, constant incline with only a small change in elevation where you can easily see all the way to the top. On a large hill, the incline may get steeper as you near the top, but you might not see this because the crest of the hill is hidden by bushes, grass, or shrubs.

Consider this as you approach a hill:

- Is there a constant incline, or does the hill get sharply steeper in places?
- Is there good traction on the hillside, or will the surface cause tire slipping?
- Is there a straight path up or down the hill so you will not have to make turning maneuvers?

- Are there obstructions on the hill that can block your path, such as boulders, trees, logs, or ruts?
- What is beyond the hill? Is there a cliff, an embankment, a drop-off, a fence? Get out and walk the hill if you do not know. It is the smart way to find out.
- Is the hill simply too rough? Steep hills often have ruts, gullies, troughs, and exposed rocks because they are more susceptible to the effects of erosion.

Driving Uphill

Once you decide it is safe to drive up the hill:

- Use a low gear and get a firm grip on the steering wheel.
- Get a smooth start up the hill and try to maintain speed. Not using more power than needed can avoid spinning the wheels or sliding.

 WARNING

Turning or driving across steep hills can be dangerous. You could lose traction, slide sideways, and possibly roll over. You could be seriously injured or killed. When driving up hills, always try to go straight up.

- Try to drive straight up the hill if at all possible. If the path twists and turns, you might want to find another route.
- Ease up on the speed as you approach the top of the hill.
- Attach a flag to the vehicle to be more visible to approaching traffic on trails or hills.
- Sound the horn as you approach the top of the hill to let opposing traffic know you are there.
- Use headlamps even during the day to make the vehicle more visible to oncoming traffic.

 WARNING

Driving to the top (crest) of a hill at full speed can cause an accident. There could be a drop-off, embankment, cliff, or even another vehicle. You could be seriously injured or killed. As you near the top of a hill, slow down and stay alert.

If the vehicle stalls, or is about to stall, and you cannot make it up the hill:

- Push the brake pedal to stop the vehicle and keep it from rolling backwards and apply the parking brake.
- If the engine is still running, shift the transmission to R (Reverse), release the parking brake, and slowly back down the hill in R (Reverse).

- If the engine has stopped running, you need to restart it. With the brake pedal pressed and the parking brake still applied, shift the transmission to P (Park) and restart the engine. Then, shift to R (Reverse), release the parking brake, and slowly back down the hill as straight as possible in R (Reverse).
- While backing down the hill, put your left hand on the steering wheel at the 12 o'clock position so you can tell if the wheels are straight and can maneuver as you back down. It is best to back down the hill with the wheels straight rather than in the left or right direction. Turning the wheel too far to the left or right will increase the possibility of a rollover.

9-14 Driving and Operating

Things not to do if the vehicle stalls, or is about to stall, when going up a hill:

- Never attempt to prevent a stall by shifting into N (Neutral) to rev-up the engine and regain forward momentum. This will not work. The vehicle can roll backward very quickly and could go out of control.
- Never try to turn around if about to stall when going up a hill. If the hill is steep enough to stall the vehicle, it is steep enough to cause it to roll over. If you cannot make it up the hill, back straight down the hill.

If, after stalling, you try to back down the hill and decide you just cannot do it, set the parking brake, put your transmission in P (Park), and turn off the engine. Leave the vehicle and go get some help. Exit on the uphill side and stay clear of the path the vehicle would take if it rolled downhill.

Driving Downhill

When off-roading takes you downhill, consider:

- How steep is the downhill? Will I be able to maintain vehicle control?
- What is the surface like? Smooth? Rough? Slippery? Hard-packed dirt? Gravel?
- Are there hidden surface obstacles? Ruts? Logs? Boulders?
- What is at the bottom of the hill? Is there a hidden creek bank or even a river bottom with large rocks?

If you decide you can go down a hill safely, try to keep the vehicle headed straight down. Use a low gear so engine drag can help the brakes so they do not have to do all the work. Descend slowly, keeping the vehicle under control at all times.

WARNING

Heavy braking when going down a hill can cause your brakes to overheat and fade. This could cause loss of control and a serious accident. Apply the brakes lightly when descending a hill and use a low gear to keep vehicle speed under control.

Things not to do when driving down a hill:

- When driving downhill, avoid turns that take you across the incline of the hill. A hill that is not too steep to drive down might be too steep to drive across. The vehicle could roll over.
- Never go downhill with the transmission in N (Neutral), called free-wheeling. The brakes will have to do all the work and could overheat and fade.

Vehicles are much more likely to stall when going uphill, but if it happens when going downhill:

1. Stop the vehicle by applying the regular brakes and apply the parking brake.
2. Shift to P (Park) and, while still braking, restart the engine.
3. Shift back to a low gear, release the parking brake, and drive straight down.
4. If the engine will not start, get out and get help.

Driving Across an Incline

An off-road trail will probably go across the incline of a hill. To decide whether to try to drive across the incline, consider the following:



WARNING

Driving across an incline that is too steep will make your vehicle roll over. You could be seriously

(Continued)

WARNING (Continued)

injured or killed. If you have any doubt about the steepness of the incline, do not drive across it. Find another route instead.

- A hill that can be driven straight up or down might be too steep to drive across. When going straight up or down a hill, the length of the wheel base — the distance from the front wheels to the rear wheels — reduces the likelihood the vehicle will tumble end over end. But when driving across an incline, the narrower track width — the distance between the left and right wheels — might not prevent the vehicle from tilting and rolling over. Driving across an incline puts more weight on the downhill wheels which could cause a downhill slide or a rollover.

- Surface conditions can be a problem. Loose gravel, muddy spots, or even wet grass can cause the tires to slip sideways, downhill. If the vehicle slips sideways, it can hit something that will trip it — a rock, a rut, etc. — and roll over.
- Hidden obstacles can make the steepness of the incline even worse. If you drive across a rock with the uphill wheels, or if the downhill wheels drop into a rut or depression, the vehicle can tilt even more.

For these reasons, carefully consider whether to try to drive across an incline. Just because the trail goes across the incline does not mean you have to drive it. The last vehicle to try it might have rolled over.

If you feel the vehicle starting to slide sideways, turn downhill. This should help straighten out the vehicle and prevent the side slipping. The best way to prevent this is to “walk the course” first, so you know what the surface is like before driving it.

Stalling on an Incline

WARNING

Getting out on the downhill (low) side of a vehicle stopped across an incline is dangerous. If the vehicle rolls over, you could be crushed or killed. Always get out on the uphill (high) side of the vehicle and stay well clear of the rollover path.

If the vehicle stalls when crossing an incline, be sure you, and any passengers, get out on the uphill side, even if the door there is harder to open. If you get out on the downhill side and the vehicle starts to roll over, you will be right in its path.

If you have to walk down the slope, stay out of the path the vehicle will take if it does roll over.

Driving in Mud, Sand, Snow, or Ice

When you drive in mud, snow, or sand, the wheels do not get good traction. Acceleration is not as quick, turning is more difficult, and braking distances are longer.

It is best to use a low gear when in mud — the deeper the mud, the lower the gear. In really deep mud, keep the vehicle moving so it does not get stuck.

When driving on sand, wheel traction changes. On loosely packed sand, such as on beaches or sand

dunes, the tires will tend to sink into the sand. This affects steering, accelerating, and braking. Drive at a reduced speed and avoid sharp turns or abrupt maneuvers.

Hard packed snow and ice offer the worst tire traction. On these surfaces, it is very easy to lose control. On wet ice, for example, the traction is so poor that you will have difficulty accelerating. And, if the vehicle does get moving, poor steering and difficult braking can cause it to slide out of control.

WARNING

Driving on frozen lakes, ponds, or rivers can be dangerous. Underwater springs, currents under the ice, or sudden thaws can weaken the ice. Your vehicle could fall through the ice and you and your passengers could drown. Drive your vehicle on safe surfaces only.

Driving in Water

WARNING

Driving through rushing water can be dangerous. Deep water can sweep your vehicle downstream and you and your passengers could drown. If it is only shallow water, it can still wash away the ground from under your tires, and you could lose traction and roll the vehicle over. Do not drive through rushing water.

Heavy rain can mean flash flooding, and flood waters demand extreme caution.

Find out how deep the water is before driving through it. Do not try it if it is deep enough to cover the wheel hubs, axles, or exhaust pipe — you probably will not get through. Deep water can damage the axle and other vehicle parts.

If the water is not too deep, drive slowly through it. At faster speeds, water splashes on the ignition system and the vehicle can stall. Stalling can also occur if you get the tailpipe under water. If the tailpipe is under water, you will never be able to start the engine. When going through water, remember that when the brakes get wet, it might take longer to stop. See *Driving on Wet Roads* on page 9-18.

After Off-Road Driving

Remove any brush or debris that has collected on the underbody, chassis, or under the hood. These accumulations can be a fire hazard.

After operation in mud or sand, have the brake linings cleaned and checked. These substances can cause glazing and uneven braking. Check the body structure, steering, suspension, wheels, tires, axles, and exhaust system for damage and check the fuel lines and cooling system for any leakage.

The vehicle requires more frequent service due to off-road use. Refer to the Maintenance Schedule for additional information.

Driving on Wet Roads

Rain and wet roads can reduce vehicle traction and affect your ability to stop and accelerate. Always drive slower in these types of driving conditions and avoid driving through large puddles and deep-standing or flowing water.



WARNING

Wet brakes can cause crashes. They might not work as well in a quick stop and could cause pulling to one side. You could lose control of the vehicle.

After driving through a large puddle of water or a car/vehicle wash, lightly apply the brake pedal until the brakes work normally.

(Continued)

WARNING (Continued)

Flowing or rushing water creates strong forces. Driving through flowing water could cause your vehicle to be carried away. If this happens, you and other vehicle occupants could drown. Do not ignore police warnings and be very cautious about trying to drive through flowing water.

Hydroplaning

Hydroplaning is dangerous. Water can build up under your vehicle's tires so they actually ride on the water. This can happen if the road is wet enough and you are going fast enough. When your vehicle is hydroplaning, it has little or no contact with the road.

There is no hard and fast rule about hydroplaning. The best advice is to slow down when the road is wet.

Other Rainy Weather Tips

Besides slowing down, other wet weather driving tips include:

- Allow extra following distance.
- Pass with caution.
- Keep windshield wiper equipment in good shape.
- Keep the windshield washer fluid reservoir filled.
- Have good tires with proper tread depth. See *Tires on page 10-43*.
- Turn off cruise control.

Highway Hypnosis

Always be alert and pay attention to your surroundings while driving. If you become tired or sleepy, find a safe place to park your vehicle and rest.

Other driving tips include:

- Keep the vehicle well ventilated.
- Keep interior temperature cool.

- Keep your eyes moving — scan the road ahead and to the sides.
- Check the rearview mirror and vehicle instruments often.

Hill and Mountain Roads

Driving on steep hills or through mountains is different than driving on flat or rolling terrain. Tips for driving in these conditions include:

- Keep the vehicle serviced and in good shape.
- Check all fluid levels and brakes, tires, cooling system, and transmission.
- Going down steep or long hills, shift to a lower gear.



WARNING

If you do not shift down, the brakes could get so hot that they would not work well. You would then have poor braking or even none going down a hill. You could crash. Shift down to let the engine assist the brakes on a steep downhill slope.



WARNING

Coasting downhill in N (Neutral) or with the ignition off is dangerous. The brakes will have to do all the work of slowing down and they could get so hot that they would not work well. You
(Continued)

WARNING (Continued)

would then have poor braking or even none going down a hill. You could crash. Always have the engine running and the vehicle in gear when going downhill.

- Stay in your own lane. Do not swing wide or cut across the center of the road. Drive at speeds that let you stay in your own lane.
- Top of hills: Be alert — something could be in your lane (stalled car, accident).
- Pay attention to special road signs (falling rocks area, winding roads, long grades, passing or no-passing zones) and take appropriate action.

Winter Driving

Driving on Snow or Ice

Drive carefully when there is snow or ice between the tires and the road, creating less traction or grip. Wet ice can occur at about 0°C (32°F) when freezing rain begins to fall, resulting in even less traction. Avoid driving on wet ice or in freezing rain until roads can be treated with salt or sand.

Drive with caution, whatever the condition. Accelerate gently so traction is not lost. Accelerating too quickly causes the wheels to spin and makes the surface under the tires slick, so there is even less traction.

Try not to break the fragile traction. If you accelerate too fast, the drive wheels will spin and polish the surface under the tires even more.

The *Antilock Brake System (ABS)* on page 9-38 improves vehicle stability during hard stops on slippery roads, but apply the brakes sooner than when on dry pavement.

Allow greater following distance on any slippery road and watch for slippery spots. Icy patches can occur on otherwise clear roads in shaded areas. The surface of a curve or an overpass can remain icy when the surrounding roads are clear. Avoid sudden steering maneuvers and braking while on ice.

Turn off cruise control, if equipped, on slippery surfaces.

Blizzard Conditions

Being stuck in snow can be in a serious situation. Stay with the vehicle unless there is help nearby. If possible, use the *Roadside Assistance Program* on page 13-6. To get help and keep everyone in the vehicle safe:

- Turn on the hazard warning flashers.
- Tie a red cloth to an outside mirror.

⚠ WARNING

Snow can trap engine exhaust under the vehicle. This may cause exhaust gases to get inside. Engine exhaust contains carbon monoxide (CO) which cannot be seen or smelled. It can cause unconsciousness and even death.

If the vehicle is stuck in the snow:

- Clear away snow from around the base of your vehicle, especially any that is blocking the exhaust pipe.
- Check again from time to time to be sure snow does not collect there.
- Open a window about 5 cm (two inches) on the side of the vehicle that is away from the wind to bring in fresh air.

(Continued)

WARNING (Continued)

- Fully open the air outlets on or under the instrument panel.
- Adjust the Climate Control system to a setting that circulates the air inside the vehicle and set the fan speed to the highest setting. See Climate Control System in the Index.

For more information about carbon monoxide, see *Engine Exhaust* on page 9-34.

Snow can trap exhaust gases under your vehicle. This can cause deadly CO (carbon monoxide) gas to get inside. CO could overcome you and kill you. You cannot see it or smell it, so you might not know it is in your vehicle. Clear away snow from

(Continued)

WARNING (Continued)

around the base of your vehicle, especially any that is blocking the exhaust.

Run the engine for short periods only as needed to keep warm, but be careful.

To save fuel, run the engine for only short periods as needed to warm the vehicle and then shut the engine off and close the window most of the way to save heat. Repeat this until help arrives but only when you feel really uncomfortable from the cold. Moving about to keep warm also helps.

If it takes some time for help to arrive, now and then when you run the engine, push the accelerator pedal slightly so the engine runs faster than the idle speed. This keeps the battery charged to restart the vehicle and to signal for help with the headlamps. Do this as little as possible to save fuel.

If the Vehicle is Stuck

Slowly and cautiously spin the wheels to free the vehicle when stuck in sand, mud, ice, or snow.

If the vehicle has a traction system, it can often help to free a stuck vehicle. Refer to the vehicle's traction system in the Index. If stuck too severely for the traction system to free the vehicle, turn the traction system off and use the rocking method.



WARNING

If the vehicle's tires spin at high speed, they can explode, and you or others could be injured. The vehicle can overheat, causing an engine compartment fire or other damage. Spin the wheels as little as possible and avoid going above 55 km/h (35 mph) as shown on the speedometer.

For information about using tire chains on the vehicle, see *Tire Chains* on page 10-64.

Rocking the Vehicle to Get it Out

Turn the steering wheel left and right to clear the area around the front wheels. Turn off any stability system. Shift back and forth between R (Reverse) and a forward gear, or with a manual transmission, between 1 (First) or 2 (Second) and R (Reverse), spinning the wheels as little as possible. To prevent transmission wear, wait until the wheels stop spinning before shifting gears. Release the accelerator pedal while shifting, and press lightly on the accelerator pedal when the transmission is in gear. Slowly spinning the wheels in the forward and reverse directions causes a rocking motion that could free the vehicle. If the vehicle does need to be towed out, see *Towing the Vehicle* on page 10-78.

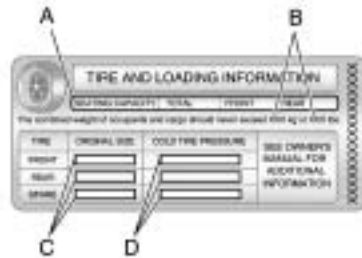
Vehicle Load Limits

It is very important to know how much weight the vehicle can carry. This weight is called the vehicle capacity weight and includes the weight of all occupants, cargo and all nonfactory-installed options. Two labels on the vehicle show how much weight it may properly carry, the Tire and Loading Information label and the Certification label.

WARNING

Do not load the vehicle any heavier than the Gross Vehicle Weight Rating (GVWR), or either the maximum front or rear Gross Axle Weight Rating (GAWR). If you do, parts on the vehicle can break, and it can change the way your vehicle handles. These could cause you to lose control and crash. Also, overloading can shorten the life of the vehicle.

Tire and Loading Information Label



Label Example

A vehicle specific Tire and Loading Information label is attached to the vehicle's center pillar (B-pillar). With the driver's door open, you will find the label attached near the door lock post. The Tire and Loading Information label shows the number of occupant seating

positions (A), and the maximum vehicle capacity weight (B) in kilograms and pounds.

The Tire and Loading Information label also shows the tire size of the original equipment tires (C) and the recommended cold tire inflation pressures (D). For more information on tires and inflation see *Tires on page 10-43* and *Tire Pressure on page 10-50*.

There is also important loading information on the Certification label. It tells you the Gross Vehicle Weight Rating (GVWR) and the Gross Axle Weight Rating (GAWR) for the front and rear axle. See "Certification Label" later in this section.

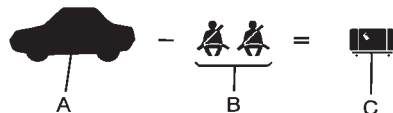
Steps for Determining Correct Load Limit

1. Locate the statement "The combined weight of occupants and cargo should never exceed XXX kg or XXX lbs" on your vehicle's placard.
2. Determine the combined weight of the driver and passengers that will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kg or XXX lbs.
4. The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the "XXX" amount equals 1400 lbs and there will be five 150 lb passengers in your vehicle,

the amount of available cargo and luggage load capacity is 650 lbs
(1400 – 750 (5 x 150) = 650 lbs).

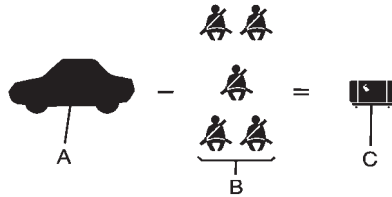
5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.
6. If your vehicle will be towing a trailer, the load from your trailer will be transferred to your vehicle. Consult this manual to determine how this reduces the available cargo and luggage load capacity of your vehicle.

See *Trailer Towing* on page 9-56 for important information on towing a trailer, towing safety rules and trailering tips.



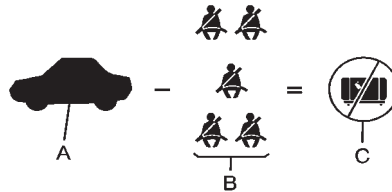
Example 1

- A. Vehicle Capacity Weight for Example 1 = 453 kg (1,000 lbs).
- B. Subtract Occupant Weight @ 68 kg (150 lbs) × 2 = 136 kg (300 lbs).
- C. Available Occupant and Cargo Weight = 317 kg (700 lbs).



Example 2

- A. Vehicle Capacity Weight for Example 2 = 453 kg (1,000 lbs).
- B. Subtract Occupant Weight @ 68 kg (150 lbs) $\times$ 5 = 340 kg (750 lbs).
- C. Available Cargo Weight = 113 kg (250 lbs).



Example 3

- A. Vehicle Capacity Weight for Example 3 = 453 kg (1,000 lbs).
- B. Subtract Occupant Weight @ 91 kg (200 lbs) $\times$ 5 = 453 kg (1,000 lbs).
- C. Available Cargo Weight = 0 kg (0 lbs).

Refer to the vehicle's Tire and Loading Information label for specific information about the vehicle's capacity weight and seating positions. The combined weight of the driver, passengers, and cargo should never exceed the vehicle's capacity weight.

Certification Label



Label Example

A vehicle specific Certification label is attached to the lower area of the center pillar (B-Pillar) on the driver side of the vehicle.

The label tells the gross weight capacity of the vehicle, called the Gross Vehicle Weight Rating (GVWR). The GVWR includes the weight of the vehicle, all occupants, fuel, and cargo. Never exceed the GVWR for the vehicle, or the Gross Axle Weight Rating (GAWR) for either the front or rear axle.

If the vehicle is carrying a heavy load, it should be spread out. See “Steps for Determining Correct Load Limit” earlier in this section.

WARNING

Do not load the vehicle any heavier than the Gross Vehicle Weight Rating (GVWR), or either the maximum front or rear Gross Axle Weight Rating (GAWR).

(Continued)

WARNING (Continued)

If you do, parts on the vehicle can break, and it can change the way your vehicle handles. These could cause you to lose control and crash. Also, overloading can shorten the life of the vehicle.

WARNING

Things you put inside the vehicle can strike and injure people in a sudden stop or turn, or in a crash.

- Put things in the cargo area of the vehicle. In the cargo area, put them as far forward as you can. Try to spread the weight evenly.

(Continued)

WARNING (Continued)

- Never stack heavier things, like suitcases, inside the vehicle so that some of them are above the tops of the seats.
- Do not leave an unsecured child restraint in the vehicle.
- When you carry something inside the vehicle, secure it whenever you can.
- Do not leave a seat folded down unless you need to.

Starting and Operating

New Vehicle Break-In

Notice: The vehicle does not need an elaborate break-in. But it will perform better in the long run if you follow these guidelines:

- Do not drive at any one constant speed, fast or slow, for the first 500 miles (805 km). Do not make full-throttle starts. Avoid downshifting to brake or slow the vehicle.

- Avoid making hard stops for the first 200 miles (322 km) or so. During this time the new brake linings are not yet broken in. Hard stops with new linings can mean premature wear and earlier replacement. Follow this breaking-in guideline every time you get new brake linings.
- Do not tow a trailer during break-in. See *Trailer Towing on page 9-56* for the trailer towing capabilities of the vehicle and more information.

Following break-in, engine speed and load can be gradually increased.

Ignition Positions



The ignition switch has four different positions.

To shift out of P (Park), turn the ignition to ON/RUN and apply the regular brake pedal.

Notice: Using a tool to force the key to turn in the ignition could cause damage to the switch or break the key. Use the correct key, make sure it is all the way in, and turn it only with your hand. If the key cannot be turned by hand, see your dealer/retailer.

LOCK/OFF: This position locks the ignition. It also locks the steering wheel and the transmission. The key can only be removed in LOCK/OFF. The shift lever must be in P (Park) to turn the ignition switch to LOCK/OFF.

The steering can bind with the wheels turned off center. If this happens, move the steering wheel from right to left while turning the key to ACC/ACCESSORY. If this doesn't work, the vehicle needs service.

ACC (ACC/ACCESSORY): This is the position in which you can operate the electrical accessories or items plugged into the accessory power outlets.

Use this position if the vehicle must be pushed or towed.

ON/RUN: This position can be used to operate the electrical accessories and to display some instrument panel cluster warning and indicator lights. The switch stays in this position when the engine is running. The transmission is also unlocked in this position. If you leave the key in the ACC/ACCESSORY or ON/RUN positions with the engine off, the battery could be drained. You may not be able to start the vehicle if the battery is allowed to drain for an extended period of time.

START: This is the position that starts the engine. When the engine starts, release the key. The ignition switch returns to ON/RUN for driving.

A warning tone will sound when the driver door is opened, the ignition is in ACC/ACCESSORY or LOCK/OFF and the key is in the ignition.

Retained Accessory Power (RAP)

These vehicle accessories may be used for up to 10 minutes after the ignition key is turned to the LOCK position:

- Outside Mirror
- Power Windows
- Sunroof (if equipped)
- Radio

The outside mirror, power windows and sunroof will function until a door is opened.

The radio will function until the driver door is opened.

Starting the Engine

Move the shift lever to P (Park) or N (Neutral). The engine will not start in any other position. To restart the engine when the vehicle is already moving, use N (Neutral) only.

Notice: Do not try to shift to P (Park) if the vehicle is moving. If you do, you could damage the transmission. Shift to P (Park) only when the vehicle is stopped.

Starting Procedure

1. With your foot off the accelerator pedal, turn the ignition to START. When the engine starts, let go of the key. The idle speed will slow down as the engine warms. Do not race the engine immediately after starting it. Operate the engine and transmission gently to allow the oil to warm up and lubricate all moving parts.

The vehicle has a Computer-Controlled Cranking System. This feature assists in starting the engine and protects

components. If the ignition key is turned to the START position, and then released when the engine begins cranking, the engine will continue cranking for a few seconds or until the vehicle starts. If the engine does not start and the key is held in START, cranking will be stopped after 15 seconds to prevent cranking motor damage. To prevent gear damage, this system also prevents cranking if the engine is already running. Engine cranking can be stopped by turning the ignition switch to the ACC/ACCESSORY or LOCK/OFF position.

Notice: Cranking the engine for long periods of time, by returning the key to the START position immediately after cranking has ended, can overheat and damage the cranking motor, and drain the battery. Wait at least 15 seconds between each try, to let the cranking motor cool down.

2. If the engine does not start after 5-10 seconds, especially in very cold weather (below -18°C or 0°F), it could be flooded with too much gasoline. Try pushing the accelerator pedal all the way to the floor and holding it there as you hold the key in START for up to a maximum of 15 seconds. Wait at least 15 seconds between each try, to allow the cranking motor to cool down. When the engine starts, let go of the key and accelerator. If the vehicle starts briefly but then stops again, repeat these steps. This clears the extra gasoline from the engine. Do not race the engine immediately after starting it. Operate the engine and transmission gently until the oil warms up and lubricates all moving parts.

Notice: The engine is designed to work with the electronics in the vehicle. If you add electrical parts or accessories, you could change the way the engine operates. Before adding electrical equipment, check with your dealer/retailer. If you do not, the engine might not perform properly. Any resulting damage would not be covered by the vehicle warranty.

Engine Coolant Heater

The engine coolant heater can provide easier starting and better fuel economy during engine warm-up in cold weather conditions at or below -18°C (0°F). Vehicles with an engine coolant heater should be plugged in at least four hours before starting. Some models may have an internal thermostat in the cord which will prevent engine coolant heater operation at temperatures above -18°C (0°F).

To Use the Engine Coolant Heater

1. Turn off the engine.
2. Open the hood and unwrap the electrical cord. The engine coolant heater cord is located near the air cleaner box on the passenger side of the engine compartment. See *Engine Compartment Overview* on page 10-6 for more information on location.
3. Plug the cord into a normal, grounded 110-volt AC outlet.

 WARNING

Plugging the cord into an ungrounded outlet could cause an electrical shock. Also, the wrong kind of extension cord could overheat and cause a fire. You could be seriously injured. Plug the cord into a properly grounded three-prong 110-volt AC outlet. If the cord will not reach, use a heavy-duty three-prong extension cord rated for at least 15 amps.

4. Before starting the engine, be sure to unplug and store the cord as it was before to keep it away from moving engine parts. If you do not, it could be damaged.

The length of time the heater should remain plugged in depends on several factors. Ask a dealer/retailer in the area where you will be parking the vehicle for the best advice on this.

Shifting Into Park

 WARNING

It can be dangerous to get out of the vehicle if the shift lever is not fully in P (Park) with the parking brake firmly set. The vehicle can roll. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure the vehicle will not move, even when you are on fairly level ground, use the steps that follow. If you are pulling a trailer, see *Trailer Towing on page 9-56*.

To shift into P (Park):

1. Hold the brake pedal down and set the parking brake. See *Parking Brake on page 9-39* for more information.
2. Move the shift lever into P (Park) by holding in the button on the shift lever and pushing the lever all the way toward the front of the vehicle.
3. Turn the ignition key to LOCK/OFF.

Leaving the Vehicle With the Engine Running (Automatic Transmission)

WARNING

It can be dangerous to leave the vehicle with the engine running. The vehicle could move suddenly if the shift lever is not fully in P (Park) with the parking brake firmly set. And, if you leave the vehicle with the engine running, it could overheat and even catch fire. You or others could be injured. Do not leave the vehicle with the engine running.

If you have to leave an automatic transmission vehicle with the engine running, be sure the vehicle is in P (Park) and the parking brake is firmly set before you leave it. After you have moved the shift lever into P (Park), hold the brake pedal down. Then, see if you can move the shift lever away from P (Park) without first pushing the button. If you can, it means that the shift lever was not fully locked into P (Park).

Torque Lock (Automatic Transmission)

If you are parking on a hill and you do not shift into P (Park) properly, the weight of the vehicle may put too much force on the parking pawl in the transmission. You may find it

difficult to pull the shift lever out of P (Park). This is called “torque lock.” To prevent torque lock, set the parking brake and then shift into P (Park) properly before you leave the driver seat. To find out how, see *Shifting Into Park* on page 9-31.

Move the shift lever out of P (Park) before you release the parking brake.

If torque lock does occur, you may need to have another vehicle push yours a little uphill to take some of the pressure from the parking pawl in the transmission, so you can pull the shift lever out of P (Park).

Shifting Out of Park

The vehicle has an electronic shift lock release system. The shift lock release is designed to:

- Prevent ignition key removal unless the shift lever is in P (Park) with the shift lever button fully released.
- Prevent movement of the shift lever out of P (Park), unless the ignition is in ON/RUN and the regular brake pedal is applied.

The shift lock release is always functional except in the case of an uncharged or low voltage (less than 9 volt) battery.

If the vehicle has an uncharged battery or a battery with low voltage, try charging or jump starting the battery. See *Jump Starting on page 10-74* for more information.

To shift out of P (Park):

1. Apply the brake pedal.
2. Press the shift lever button.
3. Move the shift lever to the desired position.

If you still are unable to shift out of P (Park):

1. Fully release the shift lever button.
2. Hold the brake pedal down and press the shift lever button again.
3. Move the shift lever to the desired position.

If you still cannot move the shift lever from P (Park), consult your dealer/retailer or a professional towing service.

Parking Over Things That Burn

WARNING

Things that can burn could touch hot exhaust parts under the vehicle and ignite. Do not park over papers, leaves, dry grass, or other things that can burn.

Engine Exhaust

WARNING

Engine exhaust contains Carbon Monoxide (CO) which cannot be seen or smelled. Exposure to CO can cause unconsciousness and even death.

Exhaust may enter the vehicle if:

- The vehicle idles in areas with poor ventilation (parking garages, tunnels, deep snow that may block underbody airflow or tail pipes).
- The exhaust smells or sounds strange or different.
- The exhaust system leaks due to corrosion or damage.

(Continued)

WARNING (Continued)

- The vehicle's exhaust system has been modified, damaged or improperly repaired.
- There are holes or openings in the vehicle body from damage or after-market modifications that are not completely sealed.

If unusual fumes are detected or if it is suspected that exhaust is coming into the vehicle:

- Drive it only with the windows completely down.
- Have the vehicle repaired immediately.

Never park the vehicle with the engine running in an enclosed area such as a garage or a building that has no fresh air ventilation.

Running the Vehicle While Parked

It is better not to park with the engine running. But if you ever have to, here are some things to know.

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 9-34.

⚠ WARNING

It can be dangerous to get out of the vehicle if the automatic transmission shift lever is not fully in P (Park) with the parking brake firmly set. The vehicle can roll. Do not leave the vehicle when the engine is running unless you have to. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure the vehicle will not move, even when you are on fairly level ground, always set the parking brake and move the shift lever to P (Park).

Follow the proper steps to be sure the vehicle will not move. See *Shifting Into Park* on page 9-31.

If parking on a hill and pulling a trailer, see *Driving Characteristics and Towing Tips* on page 9-53.

Automatic Transmission

The shift lever is located on the console between the seats.



There are several different positions for the automatic transmission.

P (Park): This position locks the front wheels. It is the best position to use when you start the engine because the vehicle cannot move easily.

⚠ WARNING

It is dangerous to get out of the vehicle if the shift lever is not fully in P (Park) with the parking brake firmly set. The vehicle can roll.

Do not leave the vehicle when the engine is running unless you have to. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure the vehicle will not move, even when you are on fairly level ground, always set the parking brake and move the shift lever to P (Park). See *Shifting Into Park* on page 9-31. If you are pulling a trailer, see *Driving Characteristics and Towing Tips* on page 9-53.

Make sure the shift lever is fully in P (Park) before starting the engine. The vehicle has an automatic transmission shift lock control system. You have to fully apply the regular brakes first and then press

the shift lever button before you can shift from P (Park) when the ignition key is in ON/RUN. If you cannot shift out of P (Park), ease pressure on the shift lever and push the shift lever all the way into P (Park) as you maintain brake application. Then press the shift lever button and move the shift lever into another gear. See *Shifting Out of Park* on page 9-33.

R (Reverse): Use this gear to back up.

Notice: Shifting to R (Reverse) while the vehicle is moving forward could damage the transmission. The repairs would not be covered by the vehicle warranty. Shift to R (Reverse) only after the vehicle is stopped.

To rock the vehicle back and forth to get out of snow, ice or sand without damaging the transmission, see *If the Vehicle is Stuck* on page 9-22.

N (Neutral): In this position, the engine does not connect with the wheels. To restart the engine when the vehicle is already moving, use N (Neutral) only. Also, use N (Neutral) when the vehicle is being towed.

WARNING

Shifting into a drive gear while the engine is running at high speed is dangerous. Unless your foot is firmly on the brake pedal, the vehicle could move very rapidly. You could lose control and hit people or objects. Do not shift into a drive gear while the engine is running at high speed.

Notice: Shifting out of P (Park) or N (Neutral) with the engine running at high speed may damage the transmission. The repairs would not be covered by the vehicle warranty. Be sure the engine is not running at high speed when shifting the vehicle.

D (Drive): This position is for normal driving with the automatic transmission. It provides the best fuel economy. If you need more power for passing, and you are:

- Going less than about 55 km/h (35 mph), push the accelerator pedal about halfway down.
- Going about 55 km/h (35 mph), push the accelerator all the way down.

Downshifting the transmission in slippery road conditions could result in skidding, see “Skidding” under *Loss of Control* on page 9-7.

M (Manual): This position allows you to change gears similar to a manual transmission. If the vehicle has this feature, see Manual Shift Mode.

Notice: Spinning the tires or holding the vehicle in one place on a hill using only the accelerator pedal may damage the transmission. The repair will not be covered by the vehicle warranty. If you are stuck, do not spin the tires. When stopping on a hill, use the brakes to hold the vehicle in place.

Manual Mode

Manual Shift Mode (MSM) (Automatic Transmission)

To use this feature, do the following:

1. Move the shift lever from D (Drive) rearward to M (Manual).

The six-speed transmission will downshift to a lower gear and the instrument panel will display the gear range selected. If equipped with a 4-speed transmission it will display a 3 for third gear range.

When coming to a stop in the manual position, the vehicle will automatically shift to 1 (First) gear.
2. Press the plus (+) button to upshift or the minus (-) button to downshift.

While using the MSM feature the vehicle will have sportier performance. You can use this when driving hilly roads to stay in gear longer or to downshift for more power or engine braking.

The transmission will only allow you to shift into a gear range appropriate for the vehicle speed.

- The transmission will not automatically shift to the next higher gear range without pressing the button on the shifter handle.
- The transmission will not allow shifting to the next lower gear if the vehicle speed is too high.

If the vehicle does not respond to a gear change, or detects a problem with the transmission, the range of gears may be reduced and the Malfunction Indicator Lamp will come on. See *Malfunction Indicator Lamp* on page 5-15 Malfunction Indicator Lamp .

Drive Systems

All-Wheel Drive

With this feature, engine power is always sent to all four wheels. It is fully automatic, and adjusts itself as needed for road conditions.

When using a compact spare tire on an AWD vehicle, the system automatically detects the compact spare and disables AWD. To restore AWD operation and prevent excessive wear on system, replace the compact spare with a full-size tire as soon as possible. See *Compact Spare Tire* on page 10-73 for more information.

Brakes

Antilock Brake System (ABS)

This vehicle has the Antilock Brake System (ABS), an advanced electronic braking system that helps prevent a braking skid.

When the engine is started and the vehicle begins to drive away, ABS checks itself. A momentary motor or clicking noise might be heard while this test is going on, and it might even be noticed that the brake pedal moves a little. This is normal.



If there is a problem with ABS, this warning light stays on. See *Antilock Brake System (ABS) Warning Light* on page 5-19.

If driving safely on a wet road and it becomes necessary to slam on the brakes and continue braking to avoid a sudden obstacle, a computer senses that the wheels are slowing down. If one of the wheels is about to stop rolling, the computer will separately work the brakes at each wheel.

ABS can change the brake pressure to each wheel, as required, faster than any driver could. This can help the driver steer around the obstacle while braking hard.

As the brakes are applied, the computer keeps receiving updates on wheel speed and controls braking pressure accordingly.

Remember: ABS does not change the time needed to get a foot up to the brake pedal or always decrease stopping distance. If you get too close to the vehicle in front of you, there will not be enough time to apply the brakes if that vehicle suddenly slows or stops. Always leave enough room up ahead to stop, even with ABS.

Using ABS

Do not pump the brakes. Just hold the brake pedal down firmly and let ABS work. The ABS pump or motor might be heard operating, and the brake pedal might be felt to pulsate, but this is normal.

Braking in Emergencies

ABS allows the driver to steer and brake at the same time. In many emergencies, steering can help more than even the very best braking.

Parking Brake



The parking brake lever is located in the center console between the front seats.

To set the parking brake, hold the brake pedal down and pull up on the parking brake lever. If the ignition is in ON/RUN, the brake system warning light will come on.

To release the parking brake, hold the brake pedal down. Pull the parking brake lever up until you can press the release button. Hold the release button in as you move the brake lever all the way down.

Release the parking brake before driving the vehicle.

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.

Ride Control Systems

Traction Control System (TCS)

The vehicle has a Traction Control System (TCS) that limits wheel spin. This is especially useful in slippery road conditions. The system operates only if it senses that any of the drive wheels are spinning or beginning to lose traction. When this happens, TCS applies the brakes to limit wheel spin and also reduces engine power. The system may be heard or felt while it is working, but this is normal.



This light will flash when TCS is limiting wheel spin.

It is recommended to leave the system on for normal driving conditions, but it may be necessary to turn the system off if the vehicle is stuck in sand, mud, ice, or snow, and you want to “rock” the vehicle to attempt to free it. See *If the Vehicle is Stuck on page 9-22* for more information.



The TCS/StabiliTrak button is located on the instrument panel.

Press and release this button to turn off TCS. The TCS warning light will be displayed on the instrument panel cluster. The traction control system can be turned back on by pressing the TCS/StabiliTrak button.

If the system is limiting wheel spin when the button is pressed, the system will not turn off until there is no longer a current need to limit wheel spin. The system can be turned back on at any time by pressing the button again. If the TCS light does not come on, TCS may not be functioning properly and the vehicle should be serviced at your dealer/retailer.

Adding non-dealer/non-retailer accessories can affect the vehicle's performance. See *Accessories and Modifications* on page 10-3 for more information.

StabiliTrak System

The vehicle has a stability control system called StabiliTrak which combines antilock brake, traction and stability control systems and helps the driver maintain directional control of the vehicle in most driving conditions.

StabiliTrak activates when the computer senses a difference between the intended path and the direction the vehicle is actually traveling. StabiliTrak selectively applies braking pressure at any one of the vehicle's brakes to assist the driver with keeping the vehicle on the intended path.

When the vehicle is started and begins to move, the system performs several diagnostic checks to insure there are no problems.

The system may be heard or felt while it is working. This is normal and does not mean there is a problem with the vehicle.



This light is located on the instrument panel cluster.

It will flash when StabiliTrak is both on and activated.

If the system fails to turn on or activate, this light will be on solid. When the light is on solid, the system will not assist the driver maintain directional control of the vehicle. Adjust your driving accordingly.

The StabiliTrak system automatically comes on whenever the vehicle is started. To assist the driver with vehicle directional control, especially in slippery road

conditions, the system should always be left on. StabiliTrak can be turned off if needed.



The Traction Control System (TCS)/StabiliTrak button is located on the instrument panel.

TCS can be turned off or turned on by pressing and releasing the TCS/StabiliTrak button. To disable both StabiliTrak and TCS, press and hold the button until the TCS/StabiliTrak warning light turns on solid.

It is recommended to leave the system on for normal driving conditions, but it may be necessary to turn the system off if the vehicle is stuck in sand, mud, ice or snow, and you want to "rock" the vehicle to attempt to free it.

StabiliTrak may also turn off automatically if it determines that a problem exists with the system. The TCS/StabiliTrak warning light will be on solid to warn the driver that StabiliTrak is disabled and requires service. If the problem does not clear itself after restarting the vehicle, see your dealer/retailer for service.

If cruise control is being used when StabiliTrak activates, the cruise control automatically disengages. The cruise control can be re-engaged when road conditions allow. See *Cruise Control* on page 9-42.

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 StabiliTrak® feature, the system may begin to limit wheel spin while you are using cruise control. If this happens, the cruise control will automatically disengage. See *StabiliTrak System* on page 9-41.

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.

Setting Cruise Control

WARNING

If you leave your cruise control on when you are not using cruise, you might hit a button and go into cruise when you do not want to. You could be startled and even lose control. Keep the cruise control switch off until you want to use cruise control.



The cruise control buttons are on the left side of the steering wheel.

(On/Off): Press to turn the cruise control system on and off. An indicator light comes on.

RES+ (Resume/Accel): Move the thumbwheel up to resume a set speed or to accelerate to a higher speed.

-SET(Set/Coast): Press the thumbwheel to set a speed or move the thumbwheel down to decrease the speed.

To set a speed:

1. Press to turn cruise control on. The indicator light on the button comes on.
2. Get to the speed desired.
3. Press the thumbwheel and release it.
4. Take your foot off the accelerator pedal.

When the brakes are applied, the cruise control shuts off.

Resuming a Set Speed

If the cruise control is set at a desired speed and then the brakes are applied, the cruise control is disengaged. The indicator light on the instrument panel cluster goes out when the cruise is no longer engaged. To return to the previously set speed, press the thumbwheel up toward RES+ briefly when the vehicle has reached a speed of about 40 km/h (25 mph) or more.

This accelerates the vehicle to the previously selected speed.

Increasing Speed While Using Cruise Control

To increase the cruise speed while using cruise control:

- Move the thumbwheel up toward RES+ and hold it until the vehicle accelerates to the desired speed, and then release the switch.
- To increase the speed in small amounts, move the thumbwheel up toward RES+ briefly and then release it. Each time this is done, the vehicle goes about 1.6 km/h (1 mph) faster.
- Use the accelerator pedal to reach the desired speed and move the thumbwheel towards -SET. The new desired speed must be greater than the previous set speed by at least 8 km/h (5 mph).

Reducing Speed While Using Cruise Control

If the cruise control system is already engaged,

- Move the thumbwheel toward -SET and hold until the desired lower speed is reached, then release it.
- To slow down in very small amounts, move the thumbwheel toward -SET briefly. 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 previously 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. For some vehicles the transmission may automatically downshift when going down hills to help maintain the vehicle's speed. When the brakes are applied the cruise control shuts off.

Ending Cruise Control

There are two ways to disengage the cruise control:

- Step lightly on the brake pedal; when cruise control disengages, the indicator light on the instrument panel cluster goes out.
- Press  to turn off the cruise control system.

Erasing Speed Memory

The cruise control set speed memory is erased when the cruise control or the ignition is turned off.

Object Detection Systems

Rear Vision Camera (RVC)

The vehicle may have a Rear Vision Camera system. Read this entire section before using it.

WARNING

The Rear Vision Camera (RVC) system does not replace driver vision. RVC does not:

- Detect objects that are outside the camera's field of view, below the bumper, or underneath the vehicle.
- Detect children, pedestrians, bicyclists, or pets.

(Continued)

WARNING (Continued)

Do not back the vehicle by only looking at the RVC screen, or use the screen during longer, higher speed backing maneuvers or where there could be cross-traffic. Your judged distances using the screen will differ from actual distances.

So if you do not use proper care before backing up, you could hit a vehicle, child, pedestrian, bicyclist, or pet, resulting in vehicle damage, injury, or death. Even though the vehicle has the RVC system, always check carefully before backing up by checking behind and around the vehicle.

The rear vision camera system is designed to help the driver when backing up by displaying a view of the area behind the vehicle. When the key is in the ON/RUN position and the driver shifts the vehicle into R (Reverse), the video image automatically appears on the inside rear view mirror. Once the driver shifts out of R (Reverse), the video image automatically disappears from the inside rear view mirror after a four second delay.

Turning the Rear Vision Camera System Off or On

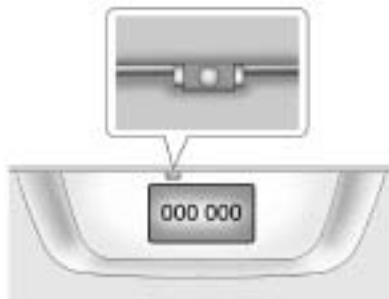
To turn off the rear vision camera system, the vehicle must be in R (Reverse), then press and release the button located on the back of the mirror on the passenger side.



The video display will default back to on when the ignition is cycled, or the vehicle is put back in R (Reverse).

Rear Vision Camera Location

The camera is located in the rear of the vehicle.



The area displayed by the camera is limited and does not display objects that are close to either corner or under the bumper. The area displayed can vary depending on vehicle orientation or road conditions. The distance of the image that appears on the screen differs 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 rear vision camera system might 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, or there is not enough light at the rear of the vehicle.
- The sun or the beam of headlights is 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/retailer.

The rear vision camera system display in the rearview mirror may turn off or not appear as expected due to one of the following conditions. If this occurs the video display will turn blue.

During any wire harness or camera fault condition, the display will be blue while the vehicle is in R (Reverse) or until the conditions return to normal.

If the display is turned off by pressing and releasing the button located the back of the inside rear view mirror on the passenger side, it will default back to on when the ignition is cycled, or the vehicle is put back in R (Reverse).

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.



The 8th 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 the 3.6L V6 engine (VIN Code 7), use regular unleaded gasoline with a posted octane rating of 87 or higher. For best performance or trailer towing, you could choose to use middle grade 89 octane unleaded gasoline. 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 2.4L L4 engine (VIN Code P) or the 3.5L V6 engine (VIN Code N), 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.

Gasoline Specifications

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 9-49 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 5-15. If this occurs, return to your authorized dealer/retailer 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

If you plan on driving in another country outside the United States or Canada, the proper fuel might be hard to find. 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, or if the vehicle experiences 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.

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/retailer.

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 10% 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 the life of spark plugs and the performance of the emission control system could be affected. The malfunction indicator lamp might turn on. If this occurs, return to your dealer/retailer 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 located behind a hinged fuel door on the driver side of the vehicle.

To remove the fuel cap, turn it slowly counterclockwise. The fuel cap has a spring in it; if the cap is released too soon, it will spring back to the right. To avoid fuel contact on the painted surface of the vehicle when filling the fuel tank, place the tethered cap on the fuel filler door.

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.

Be careful not to spill fuel. Do not top off or overfill the tank and wait a few seconds after you have finished pumping before removing the nozzle. Clean fuel from painted surfaces as soon as possible. See *Exterior Care* on page 10-82.

When replacing the fuel cap, turn it clockwise until it clicks. Make sure the cap is fully installed. The diagnostic system can determine if the fuel cap has been left off or improperly installed. This would

allow fuel to evaporate into the atmosphere. See *Malfunction Indicator Lamp* on page 5-15.

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/retailer. The wrong type 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 5-15.

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/retailer or towing retailer 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 10-78*. For information on

towing the vehicle behind another vehicle — such as a motorhome, see *Recreational Vehicle Towing* on page 10-78.

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/retailer 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* on page 9-56. 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 with state or provincial police.

- Do not tow a trailer at all during the first 800 km (500 miles) the new vehicle is driven. The engine, axle or other parts could be damaged.
- During the first 800 km (500 miles) 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.
- Do not tow a trailer when the outside temperature is above 38°C (100°F).

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 won't 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 will boil at a lower temperature than at normal altitudes. If the engine is turned off immediately after towing at high altitude on steep uphill grades, the vehicle may show signs similar to engine overheating. To avoid this, let the engine run while parked, preferably on level ground, with the transmission in P (Park) for a few minutes before turning the engine off. If the overheat warning comes on, see *Engine Overheating on page 10-20*.

Parking on Hills

WARNING

Parking the vehicle on a hill with the trailer attached can be dangerous. If something goes wrong, the rig could start to move. People can be injured, and both the vehicle and the trailer can be damaged. When possible, always park the rig on a flat surface.

If parking the rig on a hill:

1. Press the brake pedal, but do not shift into P (Park) yet. Turn the wheels into the curb if facing downhill or into traffic if facing uphill.
2. Have someone place chocks under the trailer wheels.
3. When the wheel chocks are in place, release the brake pedal until the chocks absorb the load.
4. Reapply the brake pedal. Then apply the parking brake and shift into P (Park).
5. Release the brake pedal.

Leaving After Parking on a Hill

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

Maintenance When Trailer Towing

The vehicle needs service more often when pulling a trailer. See this manual's Maintenance Schedule or Index for more information. 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 10-20*.

Trailer Towing

Three important considerations have to do with weight:

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

Weight of the Trailer

How heavy can a trailer safely be?

Speed, altitude, road grades, outside temperature, special equipment, and the amount of tongue weight the vehicle can carry must be considered. 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.

Use the following chart to determine how much the vehicle can weigh, based upon the vehicle model and options.

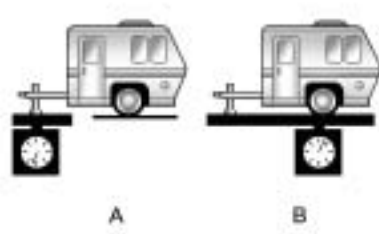
Vehicle	Axle Ratio	Max. Trailer Wt.	*GCWR
2WD — 2.4L L4 Engine	3.91	680 kg (1,500 lbs)	2 438 kg (5,375 lbs)
2WD — 3.6L V6 Engine	2.77	1 588 kg (3,500 lbs)	3 538 kg (7,800 lbs)
AWD — 3.5L V6 Engine	2.77	1 588 kg (3,500 lbs)	3 629 kg (8,000 lbs)
AWD — 3.6L V6 Engine	2.77	1 588 kg (3,500 lbs)	3 629 kg (8,000 lbs)
*The Gross Combination Weight Rating (GCWR) is the total allowable weight of the completely loaded vehicle and trailer including any passengers, cargo, equipment and conversion. The GCWR for the vehicle should not be exceeded.			

Ask your dealer/retailer for our trailering information or advice. See *Customer Assistance Offices on page 13-4* 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 9-22*



If a weight-carrying hitch or a weight-distributing hitch is being used, the trailer tongue (A) should weigh 10-15 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.

Trailerling may be limited by the vehicle's ability to carry tongue weight. Tongue weight cannot cause the vehicle to exceed the GVWR (Gross Vehicle Weight Rating) or the RGAWR (Rear Gross Axle Weight Rating). The effect of additional weight may reduce the trailerling capacity more than the total of the additional weight.

Consider the following example:

A vehicle model base weight is 2 495 kg (5,500 lbs); 1 270 kg (2,800 lbs) at the front axle and 1 225 kg (2,700 lbs) at the rear axle.

It has a GVWR of 3 266 kg (7,200 lbs), a RGAWR of 1 814 kg (4,000 lbs) and a GCWR (Gross Combination Weight Rating) of 6 350 kg (14,000 lbs). The trailer rating should be:

6350 kg (14,000 lbs)	GCWR
2495 kg (5,500 lbs)	Vehicle Weight
3855 kg (8,500 lbs)	Trailer Rating

Expect tongue weight to be at least 10 percent of trailer weight (386 kg (850 lbs)) and because the weight is applied well behind the rear axle, the effect on the rear axle is greater than just the weight itself, as much as 1.5 times as much. The weight at the rear axle could be 386 kg (850 lbs) X 1.5 = 578 kg (1,275 lbs).

Since the rear axle already weighs 1 225 kg (2,700 lbs), adding 578 kg (1,275 lbs) brings the total to 1 803 kg (3,975 lbs). This is very close to, but within the limit for RGAWR as well. The vehicle is set to trailer up to 3 856 kg (8,500 lbs).

If the vehicle has many options and there is a front seat passenger and two rear seat passengers with some luggage and gear in the vehicle as well. 136 kg (300 lbs) could be added to the front axle weight and 181 kg (400 lbs) to the rear axle weight. The vehicle now weighs:

1270 kg (2,800 lbs)	+	136 kg (300 lbs)	Front
1225 kg (2,700 lbs)	+	181 kg (400 lbs)	Rear
<u>2812 kg (6,200 lbs)</u>			Total

Weight is still below 3 266 kg (7,200 lbs) and you might think 318 additional kilograms (700 lbs)

should be subtracted from the trailering capacity to stay within GCWR limits. The maximum trailer would only be 3 538 kg (7,800 lbs). You may go further and think the tongue weight should be limited to less than 454 kg (1,000 lbs) to avoid exceeding GVWR. But the effect on the rear axle must still be considered. Because the rear axle now weighs 1 406 kg (3,100 lbs), 408 kg (900 lbs) can be put on the rear axle without exceeding RGAWR. The effect of tongue weight is about 1.5 times the actual weight. Dividing the 408 kg (900 lbs) by 1.5 leaves only 272 kg (600 lbs) of tongue weight that can be handled. Since tongue weight is usually at least 10 percent of total loaded trailer weight, expect that the largest trailer the vehicle can properly handle is 2 722 kg (6,000 lbs).

It is important that the vehicle does not exceed any of its ratings — GCWR, GVWR, RGAWR, Maximum Trailer Rating or Tongue Weight. The only way to be sure it is not exceeding any of these ratings is to weigh the vehicle and trailer.

Total Weight on the Vehicle's Tires

Inflate the vehicle's tires to the upper limit for cold tires. These numbers can be found on the Certification label or see *Vehicle Load Limits* on page 9-22 for more information. Do not go over the GVW limit for the vehicle, or the GAWR, including the weight of the trailer tongue. If using a weight distributing hitch, do not go over the rear axle limit before applying the weight distribution spring bars.

Towing Equipment

Hitches

It is important to have the correct hitch equipment. Crosswinds, large trucks going by and rough roads are a few reasons why the right hitch is needed.

- 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, then be sure to seal the holes when the hitch is removed. If the holes are not sealed, dirt, water, and deadly carbon monoxide (CO) from the exhaust may get into the vehicle. See *Engine Exhaust* on page 9-34.

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. Always leave just enough slack so the rig can turn. Never allow safety chains to drag on the ground.

Trailer Brakes

A loaded trailer that weighs more than 450 kg (1,000 lbs) needs to have its own brake system that is adequate for the weight of the trailer. Be sure to read and follow the instructions for the trailer brakes so they are installed, adjusted and maintained properly.

Because the vehicle has antilock brakes, do not try to tap into the vehicle's hydraulic brake system. If you do, both brake systems will not work well, or at all.

Trailer Sway Control (TSC)

Trailer Sway Control (TSC)

The vehicle has a Trailer Sway Control (TSC) feature as part of the StabiliTrak system. If the vehicle is towing a trailer and the system detects that the trailer is swaying, the vehicle's brakes are applied without the driver pressing the brake pedal. The TCS/StabiliTrak warning light will flash on the instrument panel cluster to notify the driver to reduce speed. If the trailer continues to sway, StabiliTrak will reduce engine torque to help slow the vehicle.

Adding non-dealer/non-retailer accessories can affect the vehicle's performance. See *Accessories and Modifications* on page 10-3 for more information.

Conversions and Add-Ons

Add-On Electrical Equipment

Notice: Do not add anything electrical to the vehicle unless you check with your dealer/retailer 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 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 3-39* and *Adding Equipment to the Airbag-Equipped Vehicle on page 3-40*.



 NOTES

[illegible]

Vehicle Care

General Information

General Information	10-2
California Proposition	
65 Warning	10-2
California Perchlorate	
Materials Requirements	10-3
Accessories and	
Modifications	10-3

Vehicle Checks

Doing Your Own	
Service Work	10-4
Hood	10-5
Engine Compartment	
Overview	10-6
Engine Oil	10-8
Engine Oil Life System	10-10
Automatic Transmission	
Fluid	10-12
Engine Air Cleaner/Filter	10-12
Cooling System	10-14
Engine Coolant	10-15
Engine Overheating	10-20
Power Steering Fluid	10-21
Washer Fluid	10-22

Brakes	10-23
Brake Fluid	10-24
Battery	10-25
All-Wheel Drive	10-26
Starter Switch Check	10-27
Automatic Transmission	
Shift Lock Control System	
Check	10-28
Ignition Transmission	
Lock Check	10-28
Park Brake and P (Park)	
Mechanism Check	10-29
Wiper Blade	
Replacement	10-29

Headlamp Aiming

Headlamp Aiming	10-30
-----------------------	-------

Bulb Replacement

Bulb Replacement	10-33
Halogen Bulbs	10-33
Headlamps	10-33
Front Turn Signal and	
Parking Lamps	10-34
Taillamps, Turn Signal,	
Stoplamps, and	
Back-Up Lamps	10-35
License Plate Lamp	10-36
Replacement Bulbs	10-36

Electrical System

Electrical System	
Overload	10-37
Fuses and Circuit	
Breakers	10-37
Engine Compartment Fuse	
Block	10-38
Instrument Panel Fuse	
Block	10-40

Wheels and Tires

Tires	10-43
Tire Sidewall Labeling	10-44
Tire Designations	10-46
Tire Terminology and	
Definitions	10-47
Tire Pressure	10-50
Tire Pressure for	
High-Speed Operation	10-52
Tire Pressure Monitor	
System	10-52
Tire Pressure Monitor	
Operation	10-54
Tire Inspection	10-57
Tire Rotation	10-57
When It Is Time for	
New Tires	10-58
Buying New Tires	10-59

10-2 Vehicle Care

Different Size Tires and Wheels	10-61
Uniform Tire Quality Grading	10-62
Wheel Alignment and Tire Balance	10-63
Wheel Replacement	10-64
Tire Chains	10-64
If a Tire Goes Flat	10-65
Tire Changing	10-67
Compact Spare Tire	10-73
Jump Starting	
Jump Starting	10-74
Towing	
Towing the Vehicle	10-78
Recreational Vehicle Towing	10-78
Appearance Care	
Exterior Care	10-82
Interior Care	10-86

General Information

For service and parts needs, visit your dealer/retailer. You will receive genuine Saturn parts and Saturn-trained and supported service people.

Genuine Saturn parts have one of these marks.

ACDelco®



SATURN®

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 transmitters, may contain perchlorate materials. Special handling may be necessary. For additional information, see www.dtsc.ca.gov/hazardouswaste/perchlorate.

Accessories and Modifications

Adding non-dealer/non-retailer accessories 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. Some of these accessories could even cause malfunction or damage not covered by the vehicle warranty.

Damage to vehicle components resulting from the installation or use of non-GM certified parts, including control module 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. Your GM dealer/retailer can accessorize the vehicle using genuine GM Accessories. When you go to your GM dealer/retailer and ask for GM Accessories, you will know that GM-trained and supported service technicians will perform the work using genuine GM Accessories.

Also, see *Adding Equipment to the Airbag-Equipped Vehicle* on page 3-40.

Vehicle Checks

Doing Your Own Service Work



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.

(Continued)

WARNING (Continued)

- Be sure to use the proper nuts, bolts, and other fasteners. English and metric 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 13-12*.

This vehicle has an airbag system. Before attempting to do your own service work, see *Airbag System Check on page 3-41*.

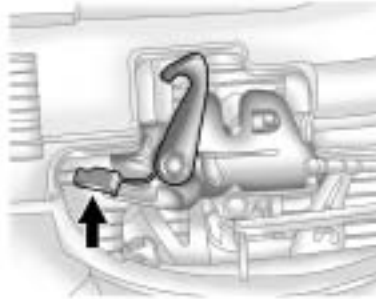
Keep a record with all parts receipts and list the mileage and the date of any service work performed. See *Maintenance Records on page 11-10*.

Hood

To open the hood:



1. Pull the handle with this symbol on it. It is located under the instrument panel on the driver side of the vehicle.

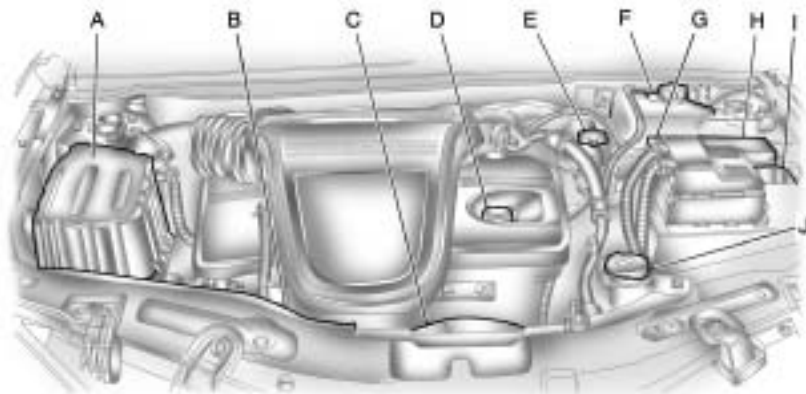


2. Then go to the front of the vehicle and lift up on the secondary hood release lever.
3. Lift the hood.

Before closing the hood, be sure all the filler caps are on properly. Then pull the hood down and close it firmly.

Engine Compartment Overview

2.4L L4 Engine

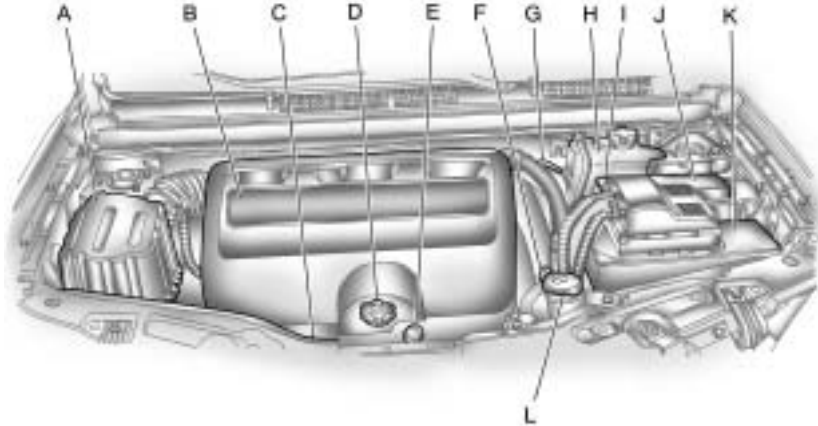


- A. See *Engine Air Cleaner/Filter* on page 10-12.
- B. Electric Engine Cooling Fan (Out of View). See *Cooling System* on page 10-14.

- C. Engine Oil Dipstick (Out of View). See "Checking Engine Oil" under *Engine Oil* on page 10-8.

- D. Engine Oil Fill Cap (Out of View). See "When to Add Engine Oil" under *Engine Oil* on page 10-8.
- E. Brake Fluid Reservoir. See *Brakes* on page 10-23.
- F. Engine Coolant Surge Tank. See "Checking Coolant" under *Engine Coolant* on page 10-15.
- G. Remote Positive (+) Terminal. See *Jump Starting* on page 10-74.
- H. See *Engine Compartment Fuse Block* on page 10-38.
- I. See *Battery* on page 10-25.
- J. Windshield Washer Fluid Reservoir. See "Adding Washer Fluid" under *Washer Fluid* on page 10-22.

3.5L V6 Engine (3.6L V6 Engine similar)



- A. See *Engine Air Cleaner/Filter* on page 10-12.
- B. *Power Steering Fluid Reservoir* (Out of View). See *Power Steering Fluid* on page 10-21.

- C. *Electric Engine Cooling Fan* (Out of View). See *Cooling System* on page 10-14.
- D. *Engine Oil Fill Cap*. See "When to Add Engine Oil" under *Engine Oil* on page 10-8.

- E. *Engine Oil Dipstick* (Out of View). See "Checking Engine Oil" under *Engine Oil* on page 10-8.
- F. *Automatic Transmission Fluid Dipstick* (Out of View). See "Checking the Fluid Level" under *Automatic Transmission Fluid* on page 10-12.
- G. *Brake Fluid Reservoir* (Out of View). See *Brakes* on page 10-23.
- H. *Engine Coolant Recovery Tank*. See *Cooling System* on page 10-14.
- I. *Remote Positive (+) Terminal*. See *Jump Starting* on page 10-74.
- J. See *Engine Compartment Fuse Block* on page 10-38.
- K. See *Battery* on page 10-25.
- L. *Windshield Washer Fluid Reservoir*. See "Adding Washer Fluid" under *Washer Fluid* on page 10-22.

Engine Oil

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 oil must be warm and 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.

1. Turn off the engine and give the oil several minutes to drain back into the oil pan. If this is not done, the oil dipstick might not show the actual level.
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 MIN (minimum) mark, add at least one liter/quart of the recommended oil. This section explains 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. If the engine has so much oil that the oil level gets above the upper mark that shows the proper operating range, the engine could be damaged.

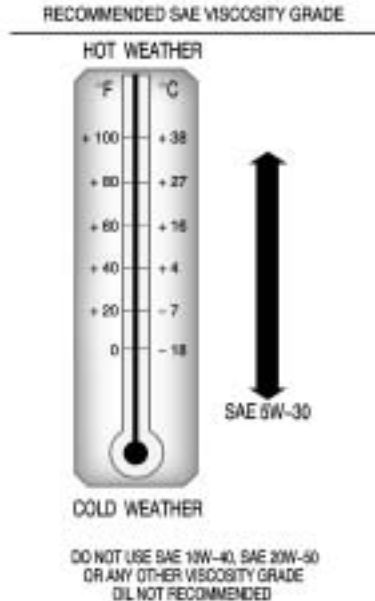


See *Engine Compartment Overview* on page 10-6 for the location of the engine oil fill cap.

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

What Kind of Engine Oil to Use

Look for three things:



- GM6094M
Use only an oil that meets GM Standard GM6094M.
- SAE 5W-30
SAE 5W-30 is best for the vehicle. These numbers on an oil container show its viscosity, or thickness. Do not use other viscosity oils such as SAE 20W-50.
- American Petroleum Institute (API) starburst symbol



Oils meeting these requirements should have the starburst symbol on the container. This symbol indicates that the oil has been certified by the American Petroleum Institute (API).

Notice: Use only engine oil identified as meeting GM Standard GM6094M and showing the American Petroleum Institute Certified For Gasoline Engines starburst symbol. Failure to use the recommended oil can result in engine damage not covered by the vehicle warranty.

Cold Temperature Operation

If in an area of extreme cold, where the temperature falls below -29°C (-20°F), use either an SAE 5W-30 synthetic oil or an SAE 0W-30 engine oil. Both provide easier cold starting for the engine at extremely low temperatures. Always use an oil that meets the required specification, GM6094M.

Engine Oil Additives / Engine Oil Flushes

Do not add anything to the oil. The recommended oils with the starburst symbol that meet GM standards 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.

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 engine revolutions and engine temperature, and not on mileage. 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 light comes on. See *Change Engine Oil Light* on page 5-22. Change the oil as soon as possible within the next 1 000 km (600 miles). It is possible that, if driving under the best conditions, the oil life system might not indicate that an oil change is necessary for over a year. However, the engine oil and filter must be changed at least once a year and at this time the system must be reset. Your dealer/retailer has trained service people who will perform this work using genuine parts and reset the system. It is also important to check the oil regularly 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 miles) 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

The Engine Oil Life System calculates when to change the engine oil and filter based on vehicle use. Whenever the oil is changed, reset the system so it can calculate when the next oil change is required. If a situation occurs where the oil is changed prior to a change engine oil message being turned on, reset the system.

After changing the engine oil, reset the system:

1. Press the DIC vehicle information button to display OIL LIFE REMAINING on the DIC. See *Driver Information Center (DIC)* on page 5-25 and *Engine Oil Messages* on page 5-33.
2. Press the DIC Set/Reset button for during 5 seconds to reset the oil life at 100%.

Be careful not to reset the oil life display accidentally at any time other than after the oil is changed. It cannot be reset accurately until the next oil change.

The oil life system can also be reset as follows:

1. Turn the ignition key to ON/RUN with the engine off.
2. Fully press and release the accelerator pedal three times within five seconds.

If the change engine oil light is not on, the system is reset.

If the change engine oil light comes on again and stays on for 30 seconds at the next ignition cycle, it did not reset. The system needs to be reset again.

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, 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.

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 your vehicle to the dealer/retailer and have it repaired as soon as possible.

Change the fluid and filter at the intervals listed in *Scheduled Maintenance on page 11-2*, and be sure to use the transmission fluid listed in *Recommended Fluids and Lubricants on page 11-7*.

Notice: Use of the incorrect automatic transmission fluid may damage the vehicle, and the damages may not be covered by the vehicle's warranty. Always use the automatic transmission fluid listed in *Recommended Fluids and Lubricants on page 11-7*.

For the 2.4L, 3.5L and 3.6L engines, the transmission fluid will not reach the end of the dipstick unless the transmission is at operating temperature. If you need to check the transmission fluid level, please take your vehicle to your dealer/retailer.

Engine Air Cleaner/Filter

See *Engine Compartment Overview on page 10-6* for the location of the engine air cleaner/filter.

When to Inspect the Engine Air Cleaner/Filter

Inspect the air cleaner/filter at the Maintenance II intervals and replace it at the first oil change after each 80 000 km (50,000 mile) interval.

See *Scheduled Maintenance on page 11-2* 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 caked with dirt, a new filter is required.

To inspect or replace the engine air cleaner/filter, do the following:



1. Remove the clamp on the air duct hose.
2. Disconnect the hose.
3. Remove the four bolts on the side of the air cleaner assembly.
4. Turn the cover upward to disengage the cover hinges.

5. Remove the air cleaner cover assembly and air filter element.

6. Inspect or replace the air filter element.

If the air filter element is dirty, you should replace it. If it is only dusty, it may be cleaned by blowing compressed air through it from the clean side.

Make sure you are away from the engine compartment when cleaning the air filter with compressed air.

Wipe all dust from inside of the housing and inspect the air cleaner and air outlet duct for cracks, cuts and deterioration. The air outlet duct must be replaced if damaged.

7. Reverse Steps 1 through 5 to reinstall the engine air cleaner/filter cover and air duct hose.

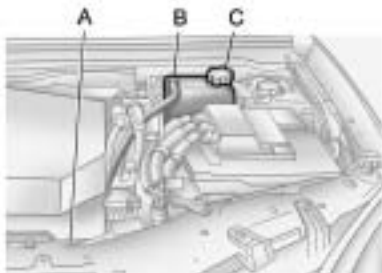
 WARNING

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. If it is not there and the engine backfires, you could be burned. Do not drive with it off, and be careful working on the engine 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

When it is safe to lift the hood:



2.4L L4 Engine shown, 3.5L V6 and 3.6L V6 Engines similar

- A. Electric Engine Fan
- B. Coolant Surge Tank
- C. 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.

If the coolant inside the coolant surge tank is hot, do not do anything else until it cools down. The vehicle should be parked on a level surface.

The coolant level should be between the MIN and MAX lines. If it is not, you may have a leak at the radiator hoses, heater hoses, radiator, water pump, or somewhere else in the cooling system.

WARNING

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

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

If there seems to be no leak, with the engine on, check to see if the electric engine cooling fan is running. If the engine is overheating, the fan should be running. If it is not, your vehicle needs service. Turn off the engine.

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

Notice: Using coolant other than DEX-COOL® can cause premature engine, heater core, or radiator corrosion. In addition, the engine coolant could require changing sooner, at 50 000 km (30,000 miles) or 24 months, whichever occurs first. 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 your vehicle is filled with DEX-COOL® engine coolant. This coolant is designed to remain in your vehicle for five years or 240 000 km (150,000 miles), whichever occurs first, if you add only DEX-COOL® extended life coolant.

The following explains your cooling system and how to add coolant when it is low. If you have a problem with engine overheating, see *Engine Overheating* on page 10-20.

A 50/50 mixture of clean, drinkable water and DEX-COOL® coolant will:

- Give freezing protection down to -37°C (-34°F).
- Give boiling protection up to 129°C (265°F).

- Protect against rust and corrosion.
- Help keep the proper engine temperature.
- Let the warning lights and gages work as they should.

Notice: Using coolant other than DEX-COOL® can cause premature engine, heater core, or radiator corrosion. In addition, the engine coolant may require changing sooner, at the first maintenance service after each 30,000 miles (50 000 km) or 24 months, whichever occurs first. Any repairs would not be covered by the vehicle warranty. Always use DEX-COOL® (silicate-free) coolant in the vehicle.

What to Use

Use a mixture of one-half clean, drinkable water and one-half DEX-COOL[®] coolant which will not damage aluminum parts. If you use this coolant mixture, you do not need to add anything else.



WARNING

Adding only plain water to the cooling system can be dangerous. Plain water, or some other liquid such as alcohol, can boil before the proper coolant mixture will. The vehicle's coolant warning system is set for the proper coolant mixture. With plain water or the wrong mixture, the

(Continued)

WARNING (Continued)

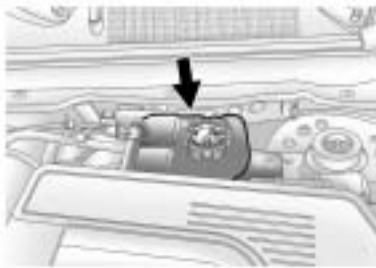
engine could get too hot but you would not get the overheat warning. The engine could catch fire and you or others could be burned. Use a 50/50 mixture of clean, drinkable water and DEX-COOL[®] coolant.

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 water in the mixture can freeze and crack the engine, radiator, heater core, and other parts.

If you have to add coolant more than four times a year, have your dealer/retailer check your cooling system.

Notice: If extra inhibitors and/or additives are used in the vehicle's cooling system, the vehicle could be damaged. Use only the proper mixture of the engine coolant listed in this manual for the cooling system. See *Recommended Fluids and Lubricants* on page 11-7 for more information.

Checking Coolant



The surge tank is located on the driver side of the engine compartment. See *Engine Compartment Overview* on page 10-6 for more information on location.

WARNING

Turning the surge tank pressure cap when the engine and radiator are hot can allow steam and scalding liquids to blow out and burn you badly. Never turn the surge tank pressure cap — even a little — when the engine and radiator are hot.

The vehicle must be on a level surface. When your engine is cold, the coolant level should be between the MIN and MAX lines.

Adding Coolant

If you need more coolant, add the proper DEX-COOL[®] coolant mixture at the surge tank, but only when the engine is cool. See below for instructions on “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.

When replacing the pressure cap, make sure it is hand-tight and fully seated.

How to Add Coolant to the Coolant Surge Tank

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

If you have not found a problem yet, check to see if coolant is visible in the surge tank. If coolant is visible but the coolant level is not at between the MIN and MAX lines, add a 50/50 mixture of clean, drinkable water and DEX-COOL® coolant at the coolant surge tank, but be sure the cooling system, including the coolant surge tank pressure cap, is cool before you do it. See *Engine Coolant* on page 10-15 for more information.



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 coolant surge tank pressure cap — even a little — they can come out at high speed. Never turn the cap when the cooling system, including the coolant surge tank pressure cap, is hot. Wait for the cooling system and coolant surge tank pressure cap to cool if you ever have to turn the pressure cap.



WARNING

Adding only plain water to the cooling system can be dangerous. Plain water, or some other liquid such as alcohol, can boil before the proper coolant mixture will. The vehicle's coolant warning system is set for the proper coolant mixture. With plain water or the wrong mixture, the engine could get too hot but you would not get the overheat warning. The engine could catch fire and you or others could be burned. Use a 50/50 mixture of clean, drinkable water and DEX-COOL® coolant.

Notice: In cold weather, water can freeze and crack the engine, radiator, heater core and other parts. Use the recommended coolant and the proper coolant mixture.

⚠ 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.



1. You can remove the coolant surge tank pressure cap when the cooling system, including the coolant surge tank pressure cap and upper radiator hose, is no longer hot.

Turn the pressure cap slowly counterclockwise about one-quarter of a turn. If you hear a hiss, wait for that to stop.

This will allow any pressure still left to be vented out the discharge hose.

2. Then keep turning the pressure cap slowly, and remove it.



3. Fill the coolant surge tank with the proper DEX-COOL® coolant mixture, to between the MIN and MAX lines.

4. With the coolant surge tank pressure cap off, start the engine and let it run until you can feel the upper radiator hose getting hot. Watch out for the engine cooling fan.

By this time, the coolant level inside the coolant surge tank may be lower. If the level is lower, add more of the proper DEX-COOL® coolant mixture to the coolant surge tank until the level reaches between the MIN and MAX lines.

5. Then replace the pressure cap. Be sure the pressure cap is hand-tight.

Check the level in the surge tank when the cooling system has cooled down. If the coolant is not at the proper level, repeat Steps 1 through 3 and reinstall the pressure cap. If the coolant still is not at the proper level when the system cools down again, see your dealer/retailer.

Engine Overheating

There is a coolant temperature warning light on your vehicle's instrument panel. See *Engine Coolant Temperature Warning Light* on page 5-21.

If Steam Is Coming From Your Engine

WARNING

Steam from an overheated engine can cause serious injury, even if the hood is opened just a little. Stay away from the engine if steam is seen or heard coming from it. Just turn it off and get everyone away from the vehicle

(Continued)

WARNING (Continued)

until it cools down. Wait until there is no sign of steam or coolant before opening the hood.

If driving continues when the engine is overheated, the liquids in it can catch fire. Someone could get badly burned. Stop the engine if it overheats, and get out of the vehicle until the engine has cooled.

Notice: Driving the vehicle when there is no coolant in the coolant overflow recovery bottle, can badly damage the engine. The costly repairs would not be covered by the vehicle warranty.

If No Steam Is Coming From The Engine

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

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

If there is an overheat warning with no sign of steam, try this for a minute or so:

1. If there is an air conditioner and it is on, turn it off.
2. Turn on the heater to full hot at the highest fan speed and open the windows as necessary.
3. Try to minimize engine load. If in a traffic jam, shift to N (Neutral); otherwise, shift to the highest gear possible while driving.

If the overheat warning is no longer on, the vehicle can be driven. Just to be safe, drive slower for about ten minutes. If the warning does not come back on, drive normally.

If the warning continues and the vehicle is not stopped, pull over, stop, and park the vehicle right away.

If there is still no sign of steam, idle the engine for three minutes while parked. If the warning continues, turn off the engine and get everyone out of the vehicle until it cools down.

The decision may be made to not lift the hood but to get service help right away.

Power Steering Fluid



See *Engine Compartment Overview on page 10-6* for reservoir location.

When to Check Power Steering Fluid

Power steering fluid is used in all vehicles with V6 engines. Vehicles with the 4-cylinder engine have electric power steering and does not use power steering fluid.

It is not necessary to regularly check power steering fluid unless you suspect there is a leak in the system or you hear an unusual noise. A fluid loss in this system could indicate a problem. Have the system inspected and repaired.

How to Check Power Steering Fluid

To check the power steering fluid, do the following:

1. Turn the key off and let the engine compartment cool down.
2. Remove engine oil fill cap.
3. Slide engine cover rearward and lift to remove.
4. Wipe the cap and the top of the reservoir clean.
5. Unscrew the cap and wipe the dipstick with a clean rag.
6. Replace the cap and completely tighten it.
7. Remove the cap again and look at the fluid level on the dipstick.

The fluid level should be within the area indicated on the dipstick when the engine is cold.

What to Use

To determine what kind of fluid to use, *Recommended Fluids and Lubricants* on page 11-7. Always use the proper fluid.

Notice: Use of the incorrect fluid may damage the vehicle and the damages may not be covered by the vehicle's warranty. Always use the correct fluid listed in *Recommended Fluids and Lubricants* on page 11-7.

Washer Fluid

What to Use

When you need windshield or rear window washer fluid, be sure to read the manufacturer's instructions before use. If operating the vehicle in an area where the temperature can fall below freezing, use a fluid that has sufficient protection against freezing.

Adding Windshield 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 your 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 your windshield washer. It can damage the vehicle's 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 an accident. 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/retailer 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.

- 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 5-18*.

What to Add

Use only new DOT 3 brake fluid from a sealed container. See *Recommended Fluids and Lubricants on page 11-7*.

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

Refer to the replacement number shown on the original battery label when a new battery is needed. See *Engine Compartment Overview* on page 10-6 for battery location.

 DANGER

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* on page 10-74 for tips on working around a battery without getting hurt.

Infrequent Usage: Remove the black, negative (–) cable from the battery to keep the battery from running down.

Extended Storage: Remove the black, negative (–) cable from the battery or use a battery trickle charger.

All-Wheel Drive

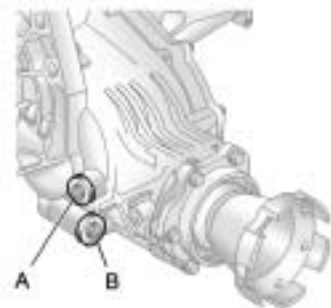
It is recommended that the all-wheel drive lubricants be checked and filled by the dealer/retailer.

Transfer Case

When to Check and Change Lubricant

Refer to the Maintenance Schedule to determine how often to check the lubricant and when to change it. See *Scheduled Maintenance* on page 11-2.

How to Check Lubricant



- A. Fill Plug
- B. Drain Plug

To get an accurate reading, the vehicle should be on a level surface.

If the level is below the bottom of the filler plug hole, located on the transfer case, you'll need to add some lubricant. Add enough lubricant to raise the level to the bottom of the filler plug hole.

A fluid loss could indicate a problem; check and have it repaired, if needed.

What to Use

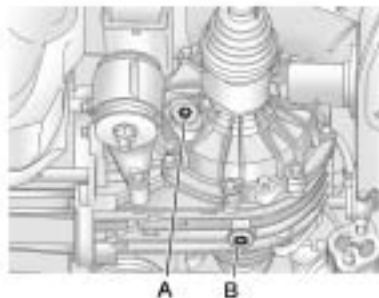
Refer to the Maintenance Schedule to determine what kind of lubricant to use. See *Recommended Fluids and Lubricants* on page 11-7.

Carrier Assembly-Differential (Rear Drive Module)

When to Check and Change Lubricant

Refer to the Maintenance Schedule to determine how often to check the lubricant and when to change it. See *Scheduled Maintenance* on page 11-2.

How to Check Lubricant



AWD Differential Case

- A. Fill Plug
- B. Drain Plug

To get an accurate reading, the vehicle should be on a level surface.

If the level is below the bottom of the filler plug hole, you'll need to add some lubricant. Add enough lubricant to raise the level to the bottom of the filler plug hole.

A fluid loss could indicate a problem; check and have it repaired, if needed.

What to Use

Refer to the Maintenance Schedule to determine what kind of lubricant to use. See *Recommended Fluids and Lubricants* on page 11-7.

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 9-39.

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/retailer for service.

Automatic Transmission Shift Lock Control System 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 9-39.

Be ready to apply the regular brake immediately if the vehicle begins to move.

3. With the engine off, turn the ignition to ON/RUN, 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/retailer 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.

- For automatic transmission vehicles, the ignition should turn to LOCK/OFF only when the shift lever is in P (Park). The ignition key should come out only in LOCK/OFF.
- For manual transmission vehicles, the ignition key should come out only in LOCK/OFF.

Contact your dealer/retailer 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/retailer if service is required.

Wiper Blade Replacement

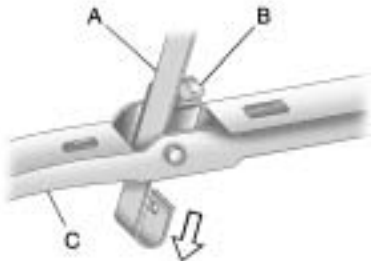
Windshield wiper blades should be inspected for wear and cracking. See *Scheduled Maintenance* on page 11-2 for more information.

Replacement blades come in different types and are removed in different ways. For proper type and length, see *Maintenance Replacement Parts* on page 11-9.

To replace the windshield wiper blade:

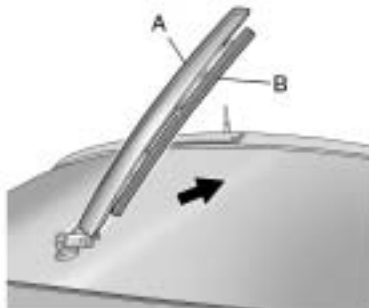


1. Lift the wiper arm away from the windshield.



2. Push the release lever (B) to disengage the hook and push the wiper arm (A) out of the blade (C).
3. Push the new wiper blade securely on the wiper arm until you hear the release lever click into place.
4. Return the wiper arm and blade assembly to the rest position on the windshield.

To replace the rear wiper blade:



1. Lift the rear wiper arm (A) from the window.
2. Turn the bottom edge of the blade assembly (B) slightly away from the underside of the wiper arm.
3. Apply downward pressure to the blade assembly and remove from the wiper arm.
4. Install the new wiper blade.
5. Return the wiper arm and blade assembly to the rest position on the window.

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/retailer adjust the headlamps. To re-aim the headlamps yourself, use the following procedure.

The vehicle should be properly prepared as follows:

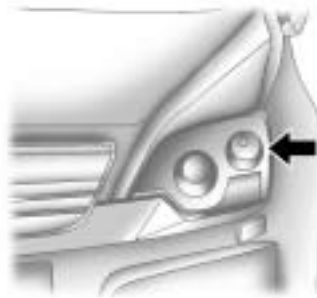
- The vehicle should be placed so the headlamps are 7.6 m (25 ft) from a light colored wall.
- The vehicle must have all four tires on a level surface which is level all the way to the wall.

- 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 on the driver's seat.
- Tires should be properly inflated.

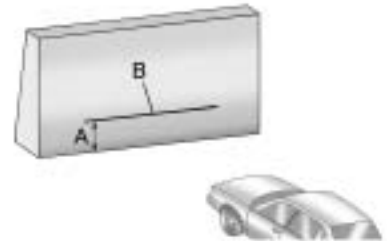
Headlamp aiming is done with the vehicle's low-beam headlamps. The high-beam headlamps will be correctly aimed if the low-beam headlamps are aimed properly.

To adjust the vertical aim, do the following:

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



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.

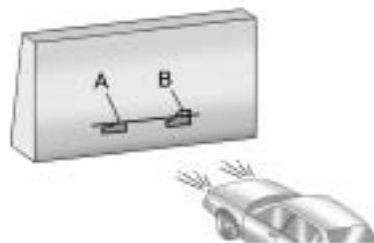
10-32 Vehicle Care

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.



7. Locate the vertical headlamp aiming screws, which are under the hood near each headlamp assembly.
The adjustment screw can be turned with a E8 Torx® socket.
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 10-36.

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

Halogen Bulbs



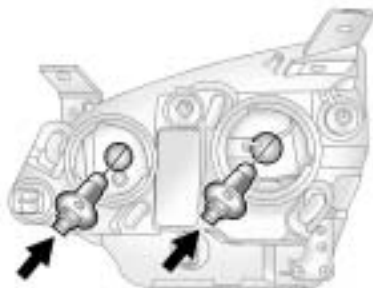
WARNING

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.

Headlamps

To replace one of the headlamp bulbs, use the following procedure. To replace the parking/turn signal lamp bulb, see *Front Turn Signal and Parking Lamps* on page 10-34.

1. Open the hood. See *Hood* on page 10-5 for more information.
2. Remove the two screws from the top of the front fascia and grille. They are inboard of the headlamp assembly.
3. Remove the three screws retaining the headlamp assembly.
4. Insert a flat blade tool through the opening in the top. Make sure the tool fits through the opening in the headlamp bracket lower arm.
5. Push the locking tab toward the rear of the vehicle with the tool to lift the headlamp bracket lower arm.
6. Pull back on the front fascia and then pull the headlamp assembly out from the vehicle. Another person might be needed to assist with this step.

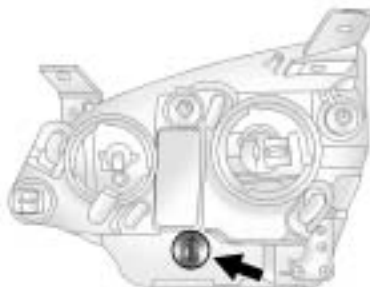


7. Disconnect the electrical connector from the bulb assembly.
8. Turn the bulb assembly counterclockwise to remove it from the housing.
9. Replace the old bulb with a new one.
10. Reverse Steps 1 through 8 to reinstall.

Front Turn Signal and Parking Lamps

To replace a front turn signal or parking lamp bulb:

1. Follow Steps 1 through 6 under *Headlamps* on page 10-33 to access the front turn signal or parking lamp.

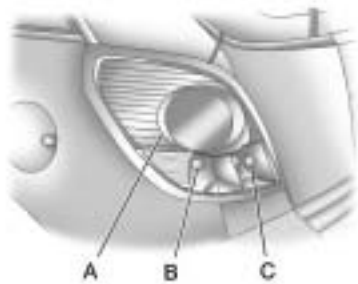


2. Turn the bulb to be replaced counterclockwise to remove it from the headlamp assembly.

3. Pull the bulb out of the bulb socket assembly.
4. Push the new bulb into the bulb socket assembly.
5. Insert the bulb assembly into the headlamp assembly.
6. Turn the bulb assembly clockwise until seated.
7. Reverse the steps to reinstall the headlamp assembly.

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

To replace one of these bulbs:



- A. Taillamp/Stoplamp
- B. Turn Signal Lamp
- C. Back-up Lamp

1. Open the liftgate.



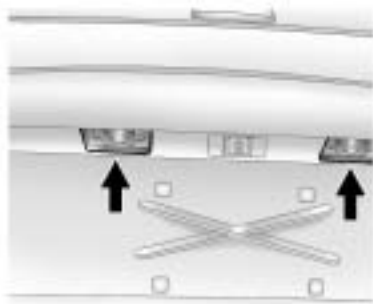
2. Remove the two screws holding in the taillamp assembly.
3. Slide the taillamp assembly rearward and away from the vehicle.

4. Turn the bulb socket being replaced counterclockwise to disconnect it.
5. Pull the bulb out of the bulb socket.
6. Push the new bulb into the bulb socket.
7. Reverse Steps 2 through 4 to reinstall the taillamp assembly.

License Plate Lamp

To replace one of these bulbs:

1. Remove the two screws holding each of the license plate lamps to the fascia.



2. Turn and pull the license plate lamp forward through the fascia opening.

3. Turn the bulb socket counterclockwise and pull the bulb straight out of the socket.
4. Push the new bulb into the bulb socket and turn it clockwise to lock it into place.
5. Push and turn the license plate back through the fascia opening.
6. Reinstall the two screws holding the license plate lamps to the fascia.

Replacement Bulbs

Exterior Lamp	Bulb Number
Back-up Lamp	3156
Front Turn Signal/ Parking	3157K
Headlamps	
High-beam	9005 or HB3
Low-beam/DRL	9006 or HB4
Rear Turn Signal, Stoplamp and Taillamp	3057

For replacement bulbs not listed here, contact your dealer/retailer.

Electrical System

Electrical System Overload

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

When the current electrical load is too heavy, the circuit breaker opens and closes, protecting the circuit until the current load returns to normal or the problem is fixed.

This greatly reduces the chance of circuit overload and fire caused by electrical problems.

Fuses and circuit breakers protect the following in the vehicle:

- Headlamp Wiring
- Windshield Wiper Motor
- Power Windows and other Power Accessories

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 fuses. This greatly reduces the chance of circuit overload and fire caused by electrical problems.

There are two fuse blocks — the engine compartment fuse block, and the instrument panel fuse block.

To identify and check fuses and relays, refer to the Fuse Usage Chart on the inside surface of the fuse panel door.

Fuses	Usage
ECM	Engine Control Module
ENG-3	Engine 3
ENG-2	Engine 2
ENG-1	Engine 1
HYBRID BEC	Not Used
RUN	Run
S/ROOF	Sunroof Module
HTD/SEAT	Heated Seat Control Module
BCM	Body Control Module
STRTR	Starter Motor
WPR	Windshield Wiper
4WD/ESCM	All-Wheel Drive System
ABS	Antilock Brake System Module

Fuses	Usage
A/C CLTCH	Air Conditioning Compressor
BLWR MTR	Blower Motor
AMP	Amplifier
HORN	Horn
ABS	Antilock Brake System Module
I/P BEC	Instrument Panel Bussed Electrical Center
FRT FOG	Front Fog Lamps
I/P BEC	Instrument Panel Bussed Electrical Center
DRL	Daytime Running Light
T/LAMP RT	Right Marker and Parking Lamps
T/LAMP LT	Left Marker and Parking Lamps

Fuses	Usage
TRLR T/LAMP	Trailer Parking Lamps
HDLP HI LT	Passenger Side High-Beam Headlamp
STOP LP	Stoplamps
DEFOG	Defroster Fog
HDLP LO RT	Driver Side Low-Beam Headlamp
HDLP LO LT	Passenger Side Low-Beam Headlamp
HDLP HI RT	Driver Side High-Beam Headlamp
OSRVM HTR	Outside Rearview Mirror Heating

Relays	Usage
FAN MAIN RLY	Cooling Fan Main Relay
FAN CTRL RLY	Cooling Fan Control Relay
FAN AUX RLY	Cooling Fan Auxiliary Relay
PWR/ TRN RLY	Engine Control Module/CAM, Canister, Injectors, Electronic Throttle Control Relay
STRTR RLY	Starter Relay
RUN RLY	Run Relay
A/C CLTCH RLY	Air Conditioning Compressor Relay
WPR SPD RLY	Windshield Wiper Speed Relay

Relays	Usage
HORN RLY	Horn Relay
WPR CNTRL RLY	Windshield Wiper Control Relay
T/LAMP RLY	Parking Lamp Relay
HDLP HI RLY	High-Beam Headlamp Relay
HDLP LO RLY	Low-Beam Headlamp Relay
FRT FOG RLY	Front Foglamp Relay
STOP LP RLY	Stoptlamp Relay
DEFOG RLY	Defogger Relay

Instrument Panel Fuse Block

The instrument panel fuse block is located on the passenger side of the lower console.



Pull the latch of the fuse box cover straight back to access the fuses.



Fuses	Usage
PWR SEAT	Power Seat
PASS P/WIN	Passenger Side Power Window

Fuses	Usage
DRIV P/WIN	Driver Side Power Window
S/ROOF	Sunroof Module

Fuses	Usage
CIGAR	Cigarette Lighter
ECM/TCM	Engine Control Module (ECM)/ Transmission Control Module (TCM)
FSCM	Fuel Storage Control Module
ISRVM	Inside Rearview Mirror
CLUSTER	Instrument Panel Cluster
AIR BAG	Airbag System
OSRVM	Outside Rearview Mirror
KEY CAP	Key Capture Solenoid
WHL S/W	Steering Wheel Switch

10-42 Vehicle Care

Fuses	Usage
F/DR LCK	Front Driver Door Lock
APO2	Accessory Power Outlet 2
BCM (VB3)	Body Control Module (BCM) (VB3)
DR LCK	Door Lock
BCM (VB6)	Body Control Module (VB6)
BCM (VB4)	Body Control Module (VB4)
BCM (VB5)	Body Control Module (VB5)
TRL	Trailer
AIRCON	Air Conditioner
AUDIO	Audio

Fuses	Usage
BCM (VB7)	Body Control Module (VB7)
IGN SW	Ignition Switch
AIR BAG	Air Bag System
WASHER	Washer Pump
APO1	Accessory Power Outlet 1
FSCM	Fuel Storage Control Module
RR CLR	Rear Closure
BCM (VB2)	Body Control Module (VB2)
DRL	Daytime Running Light
BCM (VB1)	Body Control Module (VB1)
ONSTAR	OnStar®

Relays	Usage
RELAY ACC/RAP	Accessory, Retained Accessory Power (RAP) Relay
RELAY RUN/CRANK	Run/Crank Relay

Wheels and Tires

Tires

Your new vehicle comes with high-quality tires made by a leading tire manufacturer. If you ever have questions about your tire warranty and where to obtain service, see your vehicle Warranty booklet for details. For additional information refer to the tire manufacturer.



WARNING

Poorly maintained and improperly used tires are dangerous.

- Overloading your tires can cause overheating as a result of too much flexing. You could have an air-out and a serious accident. See *Vehicle Load Limits* on page 9-22.
- Underinflated tires pose the same danger as overloaded tires. The resulting accident could cause serious injury. Check all tires frequently to maintain the recommended pressure. Tire pressure should be checked when your tires are cold. See *Tire Pressure* on page 10-50.

(Continued)

WARNING (Continued)

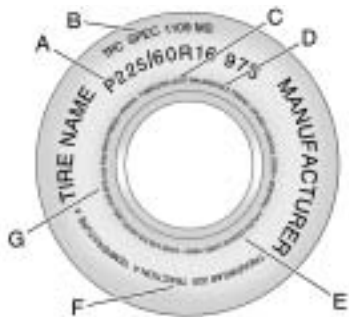
- Overinflated tires are more likely to be cut, punctured or broken by a sudden impact — such as when you hit a pothole. Keep tires at the recommended pressure.
- Worn, old tires can cause accidents. If your tread is badly worn, or if your tires have been damaged, replace them.

See *Tire Pressure for High-Speed Operation* on page 10-52 for inflation pressure adjustment for high speed driving.

Tire Sidewall Labeling

Useful information about a tire is molded into its sidewall.

The examples below 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 is 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 miles) 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 your vehicle has a compact spare tire, see *Compact Spare Tire on page 10-73* and *If a Tire Goes Flat on page 10-65*.

(C) Tire Identification Number (TIN): The letters and numbers following the DOT (Department of Transportation) code is 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 10-50*.

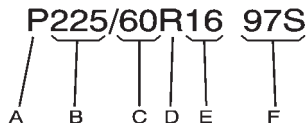
(F) Tire Size : A combination of letters and numbers define a tire's width, height, aspect ratio, construction type, and service description. The letter T as the first character in the tire size means the tire is for temporary use only.

(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 illustration shows 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 carry 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 psi (pounds per square inch) or kPa (kilopascal).

Accessory Weight: This means 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 psi (pounds per square inch) or kPa (kilopascal) before a tire has built up heat from driving. See *Tire Pressure on page 10-50*.

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 9-22*.

GAWR FRT: Gross Axle Weight Rating for the front axle. See *Vehicle Load Limits on page 9-22* .

GAWR RR: Gross Axle Weight Rating for the rear axle. See *Vehicle Load Limits on page 9-22* .

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 9-22* .

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 10-50* and *Vehicle Load Limits on page 9-22* .

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 inch) of tread remains. See *When It Is Time for New Tires* on page 10-58 .

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 9-22 .

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's capacity weight and the original equipment tire size and recommended inflation pressure. See "Tire and Loading Information Label" under *Vehicle Load Limits* on page 9-22 .

Tire Pressure

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

Notice: Do not let anyone tell you that under-inflation or over-inflation is all right. It is not. If your tires do not have enough air (under-inflation), you can get the following:

- Too much flexing
- Too much heat
- Tire overloading
- Premature or irregular wear
- Poor handling
- Reduced fuel economy

If your tires have too much air (over-inflation), you can get the following:

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

A vehicle specific Tire and Loading Information label is attached to your vehicle.

This label shows your vehicle's original equipment tires and the correct inflation pressures for your tires when they are cold.

The recommended cold tire inflation pressure, shown on the label, is the minimum amount of air pressure needed to support your vehicle's maximum load carrying capacity.

For additional information regarding how much weight your vehicle can carry, and an example of the Tire and Loading Information label, see *Vehicle Load Limits on page 9-22*. How you load your vehicle affects vehicle handling and ride comfort. Never load your vehicle with more weight than it was designed to carry.

When to Check

Check your tires once a month or more. Do not forget to check the compact spare tire, if the vehicle has one. The compact spare should be at 60 psi (420 kPa). For additional information regarding the compact spare tire, see *Compact Spare Tire* on page 10-73 .

How to Check

Use a good quality pocket-type gage to check tire pressure. You cannot tell if your tires are properly inflated simply by looking at them. Radial tires may look properly inflated even when they are under-inflated.

Check the tire's inflation pressure when the tires are cold. Cold means your vehicle has been sitting for at least three hours or driven no more than 1.6 km (1 mile).

Remove the valve cap from the tire valve stem. Press the tire gage 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 you reach the recommended amount.

If you overfill the tire, release air by pushing on the metal stem in the center of the tire valve. Re-check the tire pressure with the tire gage.

Be sure to put the valve caps back on the valve stems. They help prevent leaks by keeping out dirt and moisture.

Tire Pressure for High-Speed Operation

WARNING

Driving at high speeds, 160 km/h (100 mph) or higher, puts an additional strain on tires. Sustained high-speed driving causes excessive heat build up and can cause sudden tire failure. You could have a crash and you or others could be killed. Some high-speed rated tires require inflation pressure adjustment for high speed operation. When speed limits and road conditions are such that a vehicle can be driven at high speeds, make sure the tires are rated for high speed operation, in excellent condition, and set to the correct cold tire inflation pressure for the vehicle load.

If your vehicle has P235/55R18 size tires, they will require inflation pressure adjustment when driving your vehicle at speeds of 160 km/h (100 mph) or higher. Set the cold inflation pressure to the maximum inflation pressure shown on the tire sidewall, or 262 kPa (38 psi), whichever is lower. See the example following. When you end this high-speed driving, return the tires to the cold tire inflation pressure shown on the Tire and Loading Information label. See *Vehicle Load Limits* on page 9-22 and *Tire Pressure* on page 10-50.

Example:

You will find the maximum load and inflation pressure molded on the tire's sidewall, in small letters, near the rim flange. It will read something like this: Maximum load 690 kg (1521 lbs) 300 kPa (44 psi) Max. Press.

For this example, you would set the inflation pressure for high-speed driving at 262 kPa (38 psi).

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 vehicle's tires and transmit tire pressure readings to a receiver located in the vehicle.

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

As an added safety feature, your vehicle has been equipped with a tire pressure monitoring system (TPMS) that illuminates a low tire pressure telltale when one or more of your tires is significantly under-inflated.

Accordingly, when the low tire pressure telltale illuminates, you should stop and check your tires as soon as possible, and inflate them to the proper pressure. Driving on a significantly under-inflated tire causes the tire to overheat and can lead to tire 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) and Industry and Science Canada

See *Radio Frequency Statement* on page 13-16 for information regarding Part 15 of the Federal Communications Commission (FCC) Rules and RSS-210/211 of Industry and Science Canada.

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 vehicle's tires and transmit the tire pressure readings to a receiver located in the vehicle.



When a low tire pressure condition is detected, the TPMS illuminates the low tire pressure warning light on the instrument panel cluster.

The low tire pressure warning light comes on at each ignition cycle until the tires are inflated to the correct inflation pressure.

The low tire pressure warning light may come on in cool weather when the vehicle is first started, and then turn off as you start to drive. This may be an early indicator that the air pressure in the tire(s) are getting low and need to be inflated to the proper pressure.

A Tire and Loading Information label, attached to your vehicle, shows the size of your vehicle's original equipment tires and the correct inflation pressure for your vehicle's tires when they are cold.

See *Vehicle Load Limits* on page 9-22, for an example of the Tire and Loading Information label and its location on your vehicle. Also see *Tire Pressure* on page 10-50.

Your vehicle's TPMS system can warn you 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 10-57 and *Tires* on page 10-43.

Notice: Liquid tire sealants could damage the Tire Pressure Monitor System (TPMS) sensors. Sensor damage caused by using a tire sealant is not covered by your warranty. Do not use liquid tire sealants.

TPMS Malfunction Light

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. The TPMS malfunction light comes on at each ignition cycle until the problem is corrected. Some of the conditions that can cause the malfunction light 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 TPMS malfunction light should go off once you re-install the road tire containing the TPMS sensor.
- The TPMS sensor matching process was started but not completed or not completed successfully after rotating the vehicle's tires. The TPMS malfunction light should go off once the TPMS sensor matching process is performed successfully. See "TPMS Sensor Matching Process" later in this section.
- One or more TPMS sensors are missing or damaged. The TPMS malfunction light should go off when the TPMS sensors are installed and the sensor matching process is performed successfully. See your dealer/retailer for service.
- Replacement tires or wheels do not match your vehicle's original equipment tires or wheels. Tires and wheels other than those recommended for your vehicle could prevent the TPMS from functioning properly. See *Buying New Tires* on page 10-59.
- Operating electronic devices or being near facilities using radio wave frequencies similar to the TPMS could cause the TPMS sensors to malfunction.

TPMS Sensor Matching Process

Each TPMS sensor has a unique identification code. Any time you replace one or more of the TPMS sensors or rotate the vehicle's tires, the identification codes will need to be matched to the new tire/wheel position. The sensors are matched, to the tire/wheel positions, in the following order: driver side front tire, passenger side front tire, passenger side rear tire, and driver side rear tire using a TPMS diagnostic tool. See your dealer/retailer for service.

The TPMS sensors can also be matched to each tire/wheel position by increasing or decreasing the tire's air pressure. When increasing the tire's pressure, do not exceed the maximum inflation pressure indicated on the tire's sidewall.

To decrease the tire's air-pressure use the pointed end of the valve cap, a pencil-style air pressure gage, or a key.

You have two minutes to match each tire and wheel position. If it takes longer than two minutes to match any tire and wheel position, the matching process stops and you will need to start over.

The TPMS matching process is outlined below:

1. Set the parking brake.
2. Turn the ignition switch to ON/RUN with the engine off.
3. Press and hold the RKE transmitter's Lock and Unlock buttons at the same time, for about three seconds. The horn will sound twice to indicate the receiver is ready for the sensor matching process to begin.
4. Start with the driver side front tire. The driver side turn signal lamp comes on.
5. Remove the valve cap from the tire's valve stem. Activate the TPMS sensor by increasing or decreasing the tire's air pressure for five seconds, or until a horn chirp sounds. The horn chirp, which may take up to 30 seconds to sound, confirms that the sensor identification code has been matched to the tire/wheel position.
6. Proceed to the passenger side front tire. The passenger side front turn signal lamp comes on. Repeat the procedure in Step 5.
7. Proceed to the passenger side rear tire. The passenger side rear turn signal lamp comes on. Repeat the procedure in Step 5.

8. Proceed to the driver side rear tire. The driver side rear turn signal lamp comes on. Repeat the procedure in Step 5. 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.
9. Turn the ignition switch to LOCK/OFF.
10. Set all four tires to the recommended air pressure level as indicated on the Tire and Loading Information label.
11. Put the valve caps back on the valve stems.

Tire Inspection

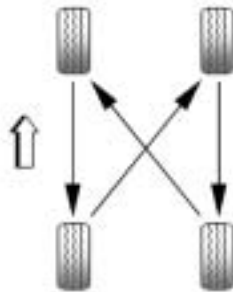
We recommend that you regularly inspect your vehicle's tires, including the spare tire, if the vehicle has one, for signs of wear or damage. See *When It Is Time for New Tires* on page 10-58 for more information.

Tire Rotation

Tires should be rotated every 8 000 to 13 000 km (5,000 to 8,000 miles). See *Scheduled Maintenance* on page 11-2 .

The purpose of a regular tire rotation is to achieve a uniform wear for all tires on the vehicle. This will ensure that the vehicle continues to perform most like it did when the tires were new.

Any time you notice unusual wear, rotate the tires as soon as possible and check wheel alignment. Also check for damaged tires or wheels. See *When It Is Time for New Tires* on page 10-58 and *Wheel Replacement* on page 10-64 .



When rotating the vehicle's tires, always use the correct rotation pattern shown here.

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

After the tires have been rotated, adjust the front and rear inflation pressures as shown on the Tire and Loading Information label. See *Tire Pressure on page 10-50* and *Vehicle Load Limits on page 9-22*.

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

Make certain 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, use a cloth or a paper towel to do this; but be sure to use a scraper or wire brush later, if needed, to get all the rust or dirt off. See *If a Tire Goes Flat on page 10-65*.

When It Is Time for New Tires

Various factors, such as maintenance, temperatures, driving speeds, vehicle loading, and road conditions influence when you need new tires.



One way to tell when it is time for new tires is to check the treadwear indicators, which appear when the tires have only 1.6 mm (1/16 inch) or less of tread remaining.

The vehicle needs new tires if any of the following statements are true:

- You can see the indicators at three or more places around the tire.
- You can see 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.

The rubber in tires degrades over time. This is also true for the spare tire, if the vehicle has one, even if it is not being used. Multiple conditions affect how fast this aging takes place, including

temperatures, loading conditions, and inflation pressure maintenance. With proper care and maintenance tires typically wear out before they degrade due to age. If you are unsure about the need to replace the tires as they get older, consult the tire manufacturer for more information.

Buying New Tires

GM has developed and matched specific tires for your vehicle. The original equipment tires installed on your vehicle, when it was new, were designed to meet General Motors Tire Performance Criteria Specification (TPC Spec) system rating. If you need replacement tires, GM strongly recommends that you get tires with the same TPC Spec rating.

This way, your vehicle will continue to have tires that are designed to give the same performance and vehicle safety, during normal use, as the original tires.

GM's exclusive TPC Spec system considers over a dozen critical specifications that impact the overall performance of your 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 an MS for mud and snow. See *Tire Sidewall Labeling* on page 10-44 for additional information.

GM recommends replacing tires in sets of four. This is because uniform tread depth on all tires will help keep your vehicle performing most like it did when the tires were new. Replacing less than a full set of tires can affect the braking and handling performance of your vehicle. See *Tire Inspection* on page 10-57 and *Tire Rotation* on page 10-57 for information on proper tire rotation.



WARNING

Mixing tires could cause you to lose control while driving. If you mix tires of different sizes, brands, or types (radial and bias-belted tires), the vehicle may not handle properly, and you could have a crash. Using tires of different sizes, brands, or types may also cause damage to your vehicle. Be sure to use the correct size, brand, and type of tires on all wheels. It is all right to drive with your compact spare temporarily, as it was developed for use on your vehicle. See *Compact Spare Tire* on page 10-73.



WARNING

If you use bias-ply tires on the vehicle, the wheel rim flanges could develop cracks after many miles of driving. A tire and/or wheel could fail suddenly, causing a crash. Use only radial-ply tires with the wheels on the vehicle.

If you must replace your vehicle's tires with those that do not have a TPC Spec number, make sure they are the same size, load range, speed rating, and construction type (radial and bias-belted tires) as your vehicle's 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 on your vehicle. Non-TPC Spec rated tires may give a low-pressure warning that is higher or lower than the proper warning level you would get with TPC Spec rated tires. See *Tire Pressure Monitor System* on page 10-52 .

Your vehicle's original equipment tires are listed on the Tire and Loading Information Label. See *Vehicle Load Limits* on page 9-22 , for more information about the Tire and Loading Information Label and its location on your vehicle.

Different Size Tires and Wheels

If you add wheels or tires that are a different size than your original equipment wheels and tires, this may affect the way your vehicle performs, including its braking, ride and handling characteristics, stability, and resistance to rollover. Additionally, if your vehicle has electronic systems such as, anti-lock brakes, rollover airbags, traction control, and stability control, the performance of these systems can be affected.

WARNING

If you add different sized wheels, your vehicle may not provide an acceptable level of performance and safety if tires not recommended for those wheels are selected. You may increase the chance that you will crash and suffer serious injury. Only use Saturn specific wheel and tire systems developed for your vehicle, and have them properly installed by a Saturn certified technician.

See *Buying New Tires* on page 10-59 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 25 to 30 cm (10 to 12 inches), 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.

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 (1.5) 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.

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 Vehicle Safety Standard No. 109. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law. It should be noted that 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 on the vehicle were aligned and balanced carefully at the factory to give the longest tire life and best overall performance. Adjustments to wheel alignment and tire balancing will not be necessary on a regular basis. However, if there is unusual tire wear or the vehicle pulls to one side or the other, the alignment should be checked. If the vehicle vibrates when driving on a smooth road, the tires and wheels might need to be rebalanced. See your dealer/retailer 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 (except some aluminum wheels, which can sometimes be repaired). See your dealer/retailer if any of these conditions exist.

Your dealer/retailer will know the kind of wheel you need.

Each new wheel should have the same load-carrying capacity, diameter, width, offset and be mounted the same way as the one it replaces.

If you need to replace any of your wheels, wheel bolts or wheel nuts, replace them only with new Saturn original equipment parts. This way, you will be sure to have the right wheel, wheel bolts and wheel nuts for your vehicle.



WARNING

Using the wrong replacement wheels, wheel bolts, or wheel nuts on your vehicle can be dangerous. It could affect the braking and handling of your vehicle, make your tires lose air and make you lose control. You could have a collision in which you or others could be injured. 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 10-65* for more information.

Used Replacement Wheels



WARNING

Putting a used wheel on your vehicle is dangerous. You cannot know how it has been used or how far it has been driven. It could fail suddenly and cause a crash. If you have to replace a wheel, use a new Saturn 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,

(Continued)

WARNING (Continued)

suspension or other vehicle parts. The area damaged by the tire chains could cause you to lose control of the vehicle and you or others may be injured in a crash.

Use another type of traction device only if its manufacturer recommends it for use on the vehicle and tire size combination and road conditions. Follow that manufacturer's instructions. To help avoid damage to the vehicle, drive slowly, readjust or remove the device if it is contacting the vehicle, and do not spin the vehicle's wheels. If you do find traction devices that will fit, install them on the front tires.

If a Tire Goes Flat

It is unusual for a tire to blowout while you are driving, especially if you maintain your vehicle's tires properly. If air goes out of a tire, it is much more likely to leak out slowly. But if you should ever have 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 out of the traffic lane.

A rear blowout, particularly on a curve, acts much like a skid and may require the same correction you would use in a skid. In any rear blowout remove your foot from the

accelerator pedal. Get the vehicle under control by steering the way you want the vehicle to go. It may be very bumpy and noisy, but you can still steer. Gently brake to a stop, well off the road if possible.

**WARNING**

Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the appropriate safety equipment and training. If a jack is provided with the vehicle, it is designed only for changing a flat 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.

10-66 Vehicle Care

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 6-3*.

WARNING

Changing a tire can be dangerous. The vehicle can slip off the jack and roll over or fall on you or other people. You and they could be badly injured or even killed. Find a level place to change your tire. To help prevent the vehicle from moving:

1. Set the parking brake firmly.
2. Put an automatic transmission shift lever in P (Park), or shift a manual transmission to 1 (First) or R (Reverse).

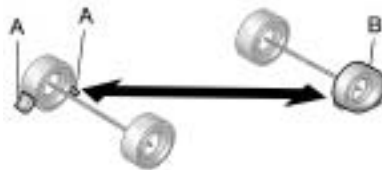
(Continued)

WARNING (Continued)

3. Turn off the engine and do not restart while the vehicle is raised.
4. Do not allow passengers to remain in the vehicle.

To be certain the vehicle will not move, put blocks at the front and rear of the tire farthest away from the one being changed. That would be the tire on the other side, at the opposite end of the vehicle.

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

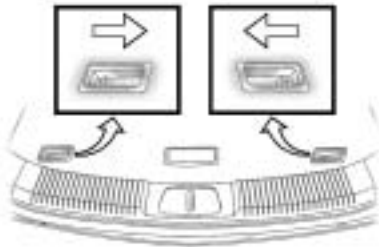
The following information explains how to repair or change a tire.

Tire Changing

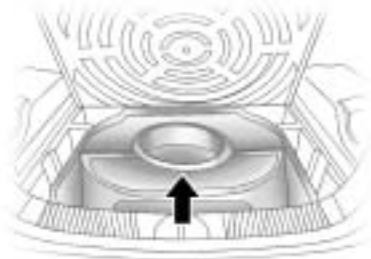
Removing the Spare Tire and Tools

To access the spare tire:

1. Open the liftgate.



2. Push the levers on the load floor.
3. Lift the load floor and hang the hook to the tailgate opening.



4. Remove the tire protector foam.



5. Remove the wheel retainer bolt holding down the spare tire by turning it counterclockwise.
6. Remove the compact spare tire. See *Compact Spare Tire* on page 10-73 for more information.

10-68 Vehicle Care

The tools are located between the compact spare tire and the liftgate. To access the tools:



A. Tool Bag

B. Wing-bolt

C. Jack

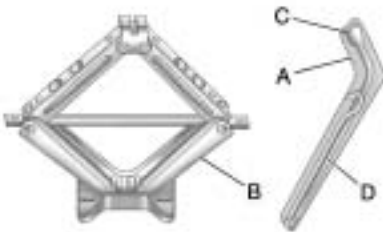
1. Remove the wing-bolt (B) from the jack.

2. Remove the jack (C) and tool bag (A).

3. Remove the straps holding the bag containing the wheel wrench and extension jack handle.

Remove the wheel wrench and extension jack handle from the bag.

The tools you will be using include:



A. Tool Bag

B. Jack

C. Wheel Wrench

D. Extension Jack Handle

Removing the Flat Tire and Installing the Spare Tire

1. Do a safety check before proceeding. See *If a Tire Goes Flat* on page 10-65 for more information.



2. Use the wheel wrench to loosen all the wheel nuts. Do not remove them yet.

3. Attach the wheel wrench to the jack bolt head and rotate the wheel wrench clockwise to raise the lift head a little.



4. Position the lift head at the jack location nearest the flat tire. Make sure all of the jack lift head is touching the jacking flange under the body. Do not place the jack under a body panel. The lower body panel has an arrow to aid in locating the jacking location.
5. Put the compact spare tire near you.



6. Raise the vehicle by turning the jack handle clockwise. Raise the vehicle far enough off the ground so there is enough room for the road tire to be removed.

⚠ 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 your 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.

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.

7. Remove all of the wheel nuts.
8. Remove the flat tire.
9. Remove any rust or dirt from the wheel bolts, mounting surfaces and spare wheel.

WARNING

Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after time. The wheel could come off and cause an accident. When changing a wheel, remove any rust or dirt from places where the wheel attaches to the vehicle. In an emergency, use a cloth or a paper towel to do this; but be sure to use a scraper or wire brush later, if needed, to get all the rust or dirt off. See *If a Tire Goes Flat* on page 10-65.

10. Place the compact spare tire on the wheel-mounting surface.
11. Reinstall the wheel nuts. Tighten each nut by hand until the wheel is held against the hub.

WARNING

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



12. Lower the vehicle by turning the jack handle counterclockwise.



13. Tighten the wheel nuts firmly in a crisscross sequence, as shown.



WARNING

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

(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.

14. Lower the jack all the way and remove the jack from under the vehicle.
15. Tighten the bolts firmly with the wheel wrench.

When reinstalling full plastic covers or center caps, tighten all the plastic caps hand snug, then tighten with the wheel wrench an additional one-quarter of a turn.

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

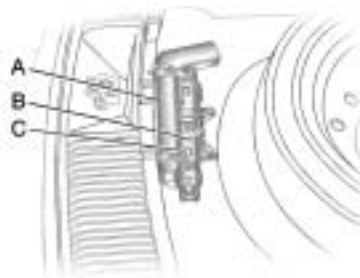
Storing a Flat or Spare Tire and Tools

WARNING

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

To store the flat or spare tire and tools, do the following:

1. Place the wheel wrench into the bag and use the straps to secure the bag to the fully collapsed jack.



2. Install the jack between the back of the trunk and the compact spare tire and secure with the wing bolt.
3. Reverse Steps 1 through 3 under "Removing the Spare Tire and Tools" to replace the floor and lock in place.
4. Place the flat, or damaged tire, face down, on the bottom of the spare tire compartment.



Before



After

5. Remove the disk (A) from the retainer bolt. Turn the disk (A) over and place it back on the retainer bolt.

Return the disk back to its original position after removing the flat tire from the spare tire compartment and before storing the spare tire.



6. Place the wheel retainer bolt onto the wheel stow rod and tighten by turning it clockwise.

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

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.

The compact spare tire was fully inflated when the vehicle was new, but it can lose air after a time. Check the inflation pressure regularly. See *Vehicle Load Limits on page 9-22* for the correct inflation pressure.

Do not exceed 80 km/h (50 mph) when driving with a spare tire.

The spare tire is for temporary emergency use only. Replace it with a regular tire as soon as possible.

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 temporary spare on other vehicles.

Do not mix the temporary 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

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



WARNING

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.

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

Notice: If the other vehicle's system is not a 12-volt system with a negative ground, both vehicles can be damaged. Only use vehicles with 12-volt systems with negative grounds to jump start your vehicle.

2. Get the vehicles close enough so the jumper cables can reach, but be sure the vehicles are not touching each other. If they are, it could cause a ground connection you do not want. You would not be able to start your vehicle, and the bad grounding could damage the electrical systems.

To avoid the possibility of the vehicles rolling, set the parking brake firmly on both vehicles involved in the jump start procedure. Put the transmission in P (Park) before setting the parking brake.

Notice: If you leave the radio or other accessories on during the jump starting procedure, they could be damaged. The repairs would not be covered by the warranty. Always turn off the radio and other accessories when jump starting the vehicle.

3. Turn off the ignition on both vehicles. Unplug unnecessary accessories plugged into the cigarette lighter or the accessory power outlet. Turn off the radio and all lamps that are not needed. This will avoid sparks, helping save both batteries and the radio.

4. Open the hood on the other vehicle and locate the positive (+) and negative (-) terminal locations on that vehicle.

Open the hood on your vehicle and find the remote positive (+) and remote negative (-) jump starting terminals.



Your vehicle is equipped with a remote positive (+) terminal. This is located in the engine compartment on the driver side

of the vehicle, on the underhood fuse block. See *Engine Compartment Overview* on page 10-6 for more information on location.

To uncover the remote positive (+) terminal, press the tab on the bottom of the fuse block and lift the cover up.

The remote negative (-) terminal is a stud on the driver side near the underhood fuse block.

Place the negative (-) jumper cable clamp on the negative (-) terminal on top of the battery.

⚠ 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 an open flame 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 do not, 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. Check that the jumper cables do not have loose or missing insulation. If they do, you could get a shock. The vehicles could also be damaged.

Before you connect the cables, here are some basic things you should know. Positive (+) will go to positive (+) or to a remote positive (+) terminal if the vehicle has one. Negative (-) will go to a heavy, unpainted metal engine part or to a remote negative (-) terminal if the vehicle has one.

Do not connect positive (+) to negative (-) or you will get a short that would damage the battery and maybe other parts. Do not connect the negative (-) cable to the negative (-) terminal on the dead battery because this can cause sparks.

6. Connect the red positive (+) cable to the positive (+) terminal on the vehicle with the dead battery. Use a remote positive (+) terminal if the vehicle has one.
7. Do not let the other end touch metal. Connect it to the positive (+) terminal of the good battery. Use a remote positive (+) terminal if the vehicle has one.

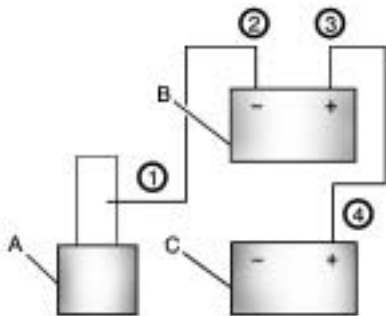
8. Now connect the black negative (-) cable to the negative (-) terminal of the good battery. Use a remote negative (-) terminal if the vehicle has one.

Do not let the other end touch anything until the next step. 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.

9. Connect the other end of the negative (-) cable away from the dead battery, but not near engine parts that move. The electrical connection is just as good there, and the chance of sparks getting back to the battery is much less.

10. Now start the vehicle with the good battery and run the engine for a while.
11. Press the unlock symbol on the remote keyless entry transmitter to disarm your security system, if equipped.
12. 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, do the following:

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 underhood fuse block cover to its original position, if applicable.

Towing

Towing the Vehicle

To avoid damage, the disabled vehicle should be towed with all four wheels off the ground. Consult your dealer/retailer or a professional towing service if the disabled vehicle must be towed.

To tow the vehicle behind another vehicle for recreational purposes — such as behind a motorhome, see Recreational Vehicle Towing following.

Recreational Vehicle Towing

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

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

- What is the towing capacity of the towing vehicle? Be sure to read the tow vehicle manufacturer's recommendations.
- What is the distance that will be travelled? Some vehicles have restrictions on how far and how long they can tow.
- Is the proper towing equipment going to be used? See your dealer/retailer 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

Front-wheel-drive and all-wheel-drive vehicles may be dinghy towed from the front. These vehicles can also be towed by placing them on a platform trailer with all four wheels off of the ground. For other towing options, see "Dolly Towing" following in this section.

For vehicles being dinghy towed, 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.



To tow the vehicle from the front with all four wheels on the ground:

1. Position the vehicle that will be towed and secure it to the towing vehicle.
2. Turn the ignition key to ACC/ACCESSORY.
3. Shift the transmission to N (Neutral).
4. Turn fog lamps and all accessories off.
5. To prevent the battery from draining while the vehicle is being towed, remove the 2 amp IGN SW fuse from the instrument panel fuse block and store it in a safe location. See *Instrument Panel Fuse Block* on page 10-40

Notice: If the vehicle is towed without performing each of the steps listed under “Dinghy Towing,” the automatic transmission could be damaged. Be sure to follow all steps of the dinghy towing procedure prior to and after towing the vehicle.

Notice: If the vehicle has a four-speed automatic transmission, it can be dinghy towed from the front for unlimited miles at 105 km/h (65 mph). The vehicle could be damaged if 105 km/h (65 mph) is exceeded while towing the vehicle. The repairs would not be covered by the vehicle warranty. Never exceed 105 km/h (65 mph) while towing the vehicle.

Once the destination has been reached:

1. Set the parking brake.
2. Shift the transmission to P (Park).
3. Reinstall the 2 amp IGN SW fuse to the instrument panel fuse block.
4. Turn the ignition key to LOCK/OFF and remove the key from the ignition.

Notice: Too much or too little fluid can damage the transmission. Be sure that the transmission fluid is at the proper level before towing with all four wheels on the ground.

Notice: Do not tow a vehicle with the front drive wheels on the ground if one of the front tires is a compact spare tire. Towing with two different tire sizes on the front of the vehicle can cause severe damage to the transmission.

Dolly Towing (All-Wheel-Drive Vehicles)

All-wheel-drive vehicles should not be towed with two wheels on the ground. To properly tow these vehicles, they should be placed on a platform trailer with all four wheels off of the ground or dinghy towed from the front.

Dolly Towing (Front-Wheel-Drive Vehicles)



To tow the vehicle from the front with the rear wheels on the ground, do the following:

1. Put the front wheels on a dolly.
2. Move the shift lever to P (Park).
3. Set the parking brake.
4. Clamp the steering wheel in a straight-ahead position with a clamping device designed for towing.

5. Remove the key from the ignition.
6. Secure the vehicle to the dolly.
7. Release the parking brake.

Towing the Vehicle From the Rear



Notice: Towing the vehicle from the rear could damage it. Also, repairs would not be covered by the vehicle warranty. Never have the vehicle towed from the rear.

Appearance Care

Exterior Care

Cleaning Exterior Lamps/Lenses

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.

Finish Care

Occasional waxing or mild polishing of the vehicle by hand may be necessary to remove residue from the paint finish. Approved cleaning products can be obtained from your dealer/retailer.

If the vehicle has a basecoat/clearcoat paint finish, the clearcoat gives more depth and gloss to the colored basecoat. Always use waxes and polishes that are non-abrasive and made for a basecoat/clearcoat paint finish.

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.

Exterior painted surfaces are subject to aging, weather and chemical fallout that can take their toll over a period of years. To keep the paint finish looking new, keep the vehicle garaged or covered whenever possible.

Protecting Exterior Bright Metal Parts

Bright metal parts should be cleaned regularly to keep their luster. Wash with water or use chrome polish on chrome or stainless steel trim, if necessary.

Use special care with aluminum trim. To avoid damaging protective trim, never use auto or chrome polish, steam or caustic soap to clean aluminum. A coating of wax, rubbed to high polish, is recommended for all bright metal parts.

Washing the Vehicle

To preserve the vehicle's finish, keep it clean by washing it often.

Do not wash the vehicle in direct sunlight and use a car washing soap.

Notice: Certain cleaners contain chemicals that can damage the emblems or nameplates on the vehicle. Check the cleaning product label. If it states that it should not be used on plastic parts, do not use it on the vehicle or damage may occur and it would not be covered by the warranty.

Do not use cleaning agents that are petroleum based or that contain acid or abrasives, as they can damage the paint, metal or plastic on the vehicle. Approved cleaning products can be obtained from your dealer/retailer. Follow all manufacturer directions regarding correct product usage, necessary safety precautions and appropriate disposal of any vehicle care product.

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.

High pressure car washes could cause water to enter the vehicle. Avoid using high pressure washes closer than 30 cm (12 inches) 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.

Notice: Conveyor systems on some automatic car washes could damage the vehicle. There may not be enough clearance for the undercarriage. Check with the car wash manager before using the automatic car wash.

Weatherstrips

Silicone grease on weatherstrips will make them last longer, seal better, and not stick or squeak. Apply silicone grease with a clean cloth. During very cold, damp weather frequent application may be required. See "Fluids and Lubricants" in the Index of the "Maintenance and Warranty and Owner assistance Information" manual.

Aluminum Wheels

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 vehicle's chrome with soap and water after exposure.

Notice: Using strong soaps, chemicals, abrasive polishes, cleaners, brushes, or cleaners that contain acid on aluminum or chrome-plated wheels, could damage the surface of the wheel(s). The repairs would not be covered by the vehicle warranty. Use only approved cleaners on aluminum or chrome-plated wheels.

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: Using chrome polish on aluminum wheels could damage the wheels. The repairs would not be covered by the vehicle warranty. Use chrome polish on chrome wheels only.

The surface of these wheels is similar to the painted surface of the vehicle. Do not use strong soaps, chemicals, abrasive polishes, abrasive cleaners, cleaners with acid, or abrasive cleaning brushes on them because the surface could be damaged. Do not use chrome polish on aluminum wheels.

Notice: Driving the vehicle through an automatic car wash that has silicone carbide tire cleaning brushes, could damage the aluminum or chrome-plated wheels. The repairs would not be covered by the vehicle warranty.

Never drive a vehicle that has aluminum or chrome-plated wheels through an automatic car wash that uses silicone carbide tire cleaning brushes.

Windshield and Wiper Blades

Clean the outside of the windshield with glass cleaner.

Clean the 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.

Wipers can be damaged by:

- Extreme dusty conditions
- Sand and salt
- Heat and sun
- Snow and ice, without proper removal

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.

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

Any stone chips, fractures or deep scratches in the finish should be repaired right away. Bare metal will corrode quickly and may develop into major repair expense.

Minor chips and scratches can be repaired with touch-up materials available from your dealer/retailer. Larger areas of finish damage can be corrected in your dealer's/retailer's body and paint shop.

Underbody Maintenance

Chemicals used for ice and snow removal and dust control can collect on the underbody. If these are not removed, corrosion and rust can develop on the underbody parts such as fuel lines, frame, floor pan, and exhaust system even though they have corrosion protection.

At least every spring, flush these materials from the underbody with plain water. Clean any areas where mud and debris can collect. Dirt packed in close areas of the frame should be loosened before being flushed. Your dealer/retailer or an underbody car washing system can do this.

Chemical Paint Spotting

Some weather and atmospheric conditions can create a chemical fallout. Airborne pollutants can fall upon and attack painted surfaces on the vehicle. This damage can take two forms: blotchy, ring-shaped discolorations, and small, irregular dark spots etched into the paint surface.

Interior Care

The vehicle's interior will continue to look its best if it is cleaned often. Dust and dirt can accumulate on the upholstery and cause damage to the carpet, fabric, leather, and plastic surfaces. Stains should be removed quickly as extreme heat could cause them to set rapidly.

Lighter colored interiors may require more frequent cleaning.

Newspapers and garments that can transfer color to home furnishings can also transfer color to the vehicle's interior.

Remove dust from small buttons and knobs with a small brush with soft bristles.

Your dealer/retailer has products for cleaning the vehicle's interior. When cleaning the vehicle's interior, only use cleaners specifically designed for the surfaces that are being cleaned. Permanent damage can result from using cleaners on surfaces for which they were not intended. Apply the cleaner directly to the cleaning cloth to prevent over-spray. Remove any accidental over-spray from other surfaces immediately.

Notice: Using abrasive cleaners when cleaning glass surfaces on the vehicle, could scratch the glass and/or cause damage to the rear window defogger. When cleaning the glass on the vehicle, use only a soft cloth and glass cleaner.

Cleaners can contain solvents that can become concentrated in the vehicle's interior. Before using cleaners, read and adhere to all safety instructions on the label. While cleaning the vehicle's interior, maintain adequate ventilation by opening the vehicle's doors and windows.

Do not clean the interior using the following cleaners or techniques:

- Never use a knife or any other sharp object to remove a soil from any interior surface.
- Never use a stiff brush. It can cause damage to the vehicle's interior surfaces.
- Never apply heavy pressure or rub aggressively with a cleaning cloth. Use of heavy pressure can damage the interior and does not improve the effectiveness of soil removal.

- Use only mild, neutral-pH soaps. Avoid laundry detergents or dishwashing soaps with degreasers. Using too much soap will leave a residue that leaves streaks and attracts dirt. For liquid cleaners, about 20 drops per 3.78 L (1 gal) of water is a good guide.
- Do not heavily saturate the upholstery while cleaning.
- Damage to the vehicle's interior may result from the use of many organic solvents such as naphtha, alcohol, etc.

Fabric/Carpet

Use a vacuum cleaner with a soft brush attachment to remove dust and loose dirt. A canister vacuum with a beater bar in the nozzle may only be used on floor carpet and carpeted floor mats. For soils, always try to remove them first with plain water or club soda.

Before cleaning, gently remove as much of the soil as possible using one of the following techniques:

- For liquids: gently blot the remaining soil with a paper towel. Allow the soil to absorb into the paper towel until no more can be removed.
- For solid dry soils: remove as much as possible and then vacuum.

To clean:

1. Saturate a lint-free, clean white cloth with water or club soda.
2. Remove excess moisture.
3. Start on the outside edge of the soil and gently rub toward the center. Continue cleaning, using a clean area of the cloth each time it becomes soiled.

4. Continue to gently rub the soiled area.
5. If the soil is not completely removed, use a mild soap solution and repeat the cleaning process with plain water.

If any of the soil remains, a commercial fabric cleaner or spot lifter may be necessary. Test a small hidden area for colorfastness before using a commercial upholstery cleaner or spot lifter. If the locally cleaned area gives any impression that a ring formation may result, clean the entire surface.

A paper towel can be used to blot excess moisture from the fabric or carpet after the cleaning process.

Leather

To remove dust, a soft cloth dampened with water can be used. If a more thorough cleaning is necessary, a soft cloth dampened with a mild soap solution can be used. Allow the leather to dry naturally. Do not use heat, steam, or spot lifters or spot removers, or shoe polish on leather. Many commercial leather cleaners and coatings that are sold to preserve and protect leather may permanently change the appearance and feel of the leather and are not recommended. Do not use silicone or wax-based products, or those containing organic solvents to clean the vehicle's interior because they can alter the appearance by increasing the gloss in a non-uniform manner.

Instrument Panel, Vinyl, and Other Plastic Surfaces

To remove dust, a soft cloth dampened with water can be used. If a more thorough cleaning is necessary, a clean soft cloth dampened with a mild soap solution can be used to gently remove dust and dirt. Never use spot lifters or removers on plastic surfaces. Many commercial cleaners and coatings that are sold to preserve and protect soft plastic surfaces may permanently change the appearance and feel of the interior and are not recommended. Do not use silicone or wax-based products, or those containing organic solvents to clean the vehicle's interior because they can alter the appearance by increasing the gloss in a non-uniform manner.

Some commercial products may increase gloss on the instrument panel. The increase in gloss may cause annoying reflections in the windshield and even make it difficult to see through the windshield under certain conditions.

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.

Service and Maintenance

General Information

General Information 11-1

Scheduled Maintenance

Scheduled Maintenance 11-2

Recommended Fluids, Lubricants, and Parts

Recommended Fluids and Lubricants 11-7

Maintenance Replacement Parts 11-9

Maintenance Records

Maintenance Records 11-10

General Information

Notice: Maintenance intervals, checks, inspections, recommended fluids, and lubricants are necessary to keep this vehicle in good working condition. Damage caused by failure to follow scheduled maintenance might not be covered by the vehicle warranty.

Proper vehicle maintenance helps to keep the vehicle in good working condition, improves fuel economy, and reduces vehicle emissions for better air quality.

Because of all the different ways people use vehicles, maintenance needs vary. The vehicle might need more frequent checks and services. Please read the information under Scheduled Maintenance. To keep the vehicle in good condition, see your dealer/retailer.

The maintenance schedule is for vehicles that:

- carry passengers and cargo within recommended limits on the Tire and Loading Information label. See *Vehicle Load Limits on page 9-22*.
- are driven on reasonable road surfaces within legal driving limits.
- are driven off-road in the recommended manner. See *Off-Road Driving on page 9-8*.
- use the recommended fuel. See *Recommended Fuel on page 9-48*.

WARNING

Performing maintenance work can be dangerous. Some jobs can cause serious injury. Perform maintenance work only if you have the required know-how and the proper tools and equipment. If in doubt, see your dealer/retailer to have a qualified technician do the work. See *Doing Your Own Service Work* on page 10-4.

At your General Motors dealer/retailer, you can be certain that you will receive the highest level of service available. Your dealer/retailer has specially trained service technicians, uses genuine GM replacement parts, as well as, up to date tools and equipment to ensure fast and accurate diagnostics.

The proper replacement parts, fluids, and lubricants to use are listed in *Recommended Fluids and Lubricants* on page 11-7 and *Maintenance Replacement Parts* on page 11-9. We recommend the use of genuine parts from your dealer/retailer.

Rotation of New Tires

To maintain ride, handling, and performance of the vehicle, it is important that the first rotation service for new tires be performed when they have 8 000 to 13 000 km (5,000 to 8,000 miles). See *Tire Rotation* on page 10-57.

Scheduled Maintenance

When the Change Engine Oil Light Displays

Change engine oil and filter. See *Engine Oil* on page 10-8. An *Emission Control Service*.

When the change engine oil light displays, service is required for the vehicle as soon as possible, within the next 1 000 km/600 miles. If driving 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 dealer/retailer has trained service technicians who will perform this work and reset the system. If the engine oil life system is reset accidentally, service the vehicle within 5 000 km/3,000 miles since the last service. Reset the oil

life system whenever the oil is changed. See *Engine Oil Life System* on page 10-10.

When the change engine oil light displays, certain services, checks, and inspections are required. The services described for Maintenance I should be performed at every engine oil change. The services described for Maintenance II should be performed when:

- Maintenance I was performed the last time the engine oil was changed.
- It has been 10 months or more since the change engine oil light has displayed or since the last service.

Maintenance I

- Change engine oil and filter. See *Engine Oil* on page 10-8. *An Emission Control Service*.
- Engine coolant level check. See *Engine Coolant* on page 10-15.

- Windshield washer fluid level check. See *Washer Fluid* on page 10-22.
- Tire inflation check. See *Tire Pressure* on page 10-50.
- Tire wear inspection. See *Tire Inspection* on page 10-57.
- Rotate tires. See *Tire Rotation* on page 10-57.
- Fluids visual leak check (or every 12 months, whichever occurs first). A leak in any system must be repaired and the fluid level checked.
- Engine air cleaner filter inspection (vehicles driven in dusty conditions only). See *Engine Air Cleaner/Filter* on page 10-12.
- Brake system inspection (or every 12 months, whichever occurs first).

Maintenance II

- Perform all services described in Maintenance I.
- Steering and suspension inspection. Visual inspection for damaged, loose, or missing parts or signs of wear.
- Engine cooling system inspection. Visual inspection of hoses, pipes, fittings, and clamps and replacement, if needed.
- Windshield wiper blade inspection for wear, cracking, or contamination and windshield and wiper blade cleaning, if contaminated. See *Exterior Care* on page 10-82. Worn or damaged wiper blade replacement. See *Wiper Blade Replacement* on page 10-29.

11-4 Service and Maintenance

- Body hinges and latches, key lock cylinders, folding seat hardware, and sunroof (if equipped) lubrication. See *Recommended Fluids and Lubricants* on page 11-7. More frequent lubrication may be required when vehicle is exposed to a corrosive environment. Applying silicone grease on weatherstrips with a clean cloth makes them last longer, seal better, and not stick or squeak.
- Restraint system component check. See *Safety System Check* on page 3-23.
- Automatic transmission fluid level check and adding fluid, if needed. See *Automatic Transmission Fluid* on page 10-12.
- Engine air cleaner filter inspection. See *Engine Air Cleaner/Filter* on page 10-12.

- Passenger compartment air filter replacement (or every 12 months, whichever occurs first). More frequent replacement may be required if vehicle is driven regularly under dusty conditions.

Additional Required Services

At Each Fuel Stop

- Engine oil level check. See *Engine Oil* on page 10-8.
- Engine coolant level check. See *Engine Coolant* on page 10-15.
- Windshield washer fluid level check. See *Washer Fluid* on page 10-22.

Once a Month

- Tire inflation check. See *Tire Pressure* on page 10-50.
- Tire wear inspection. See *Tire Inspection* on page 10-57.

Once a Year

- See *Starter Switch Check* on page 10-27.
- See *Automatic Transmission Shift Lock Control System Check* on page 10-28.
- See *Ignition Transmission Lock Check* on page 10-28.
- See *Park Brake and P (Park) Mechanism Check* on page 10-29.
- Engine cooling system and pressure cap pressure check. Radiator and air conditioning condenser outside cleaning. See *Cooling System* on page 10-14.
- Exhaust system and nearby heat shields inspection for loose or damaged components.
- Accelerator pedal check for damage, high effort, or binding. Replace if needed.

First Engine Oil Change After Every 40 000 km/25,000 Miles

- Fuel system inspection for damage or leaks.

First Engine Oil Change After Every 80 000 km/50,000 Miles

- Engine air cleaner filter replacement. See *Engine Air Cleaner/Filter* on page 10-12.
- Automatic transmission fluid change (severe service) for vehicles mainly driven in heavy city traffic in hot weather, in hilly or mountainous terrain, when frequently towing a trailer, or used for taxi, police, or delivery service. See *Automatic Transmission Fluid* on page 10-12.
- Transfer case fluid change (severe service) for vehicles mainly driven in hilly or mountainous terrain, when frequently towing a trailer, or used for taxi, police, or delivery service.

First Engine Oil Change After Every 160 000 km/100,000 Miles

- Automatic transmission fluid change (normal service). See *Automatic Transmission Fluid* on page 10-12.
- Transfer case fluid change (normal service).
- Spark plug replacement. See *Emission Control Service*.

First Engine Oil Change After Every 240 000 km/150,000 Miles

- Engine cooling system drain, flush, and refill, cooling system and cap pressure check, and cleaning of outside of radiator and air conditioning condenser (or every 5 years, whichever occurs first). See *Cooling System* on page 10-14. See *Emission Control Service*.
- Engine accessory drive belt inspection for fraying, excessive cracks, or obvious damage and replacement, if needed. See *Emission Control Service*.

11-6 Service and Maintenance

Service	Maintenance I	Maintenance II
Change engine oil and filter. Reset oil life system.	•	•
Engine coolant level check.	•	•
Windshield washer fluid level check.	•	•
Tire inflation pressures check.	•	•
Tire wear inspection.	•	•
Rotate tires.	•	•
Fluids visual leak check.	•	•
Engine air cleaner filter inspection (vehicles driven in dusty conditions only).	•	•
Brake system inspection.	•	•
Steering and suspension inspection.		•
Engine cooling system inspection.		•
Windshield wiper blades inspection.		•
Body components lubrication.		•
Restraint system components check.		•
Automatic transmission fluid level check.		•
Engine air cleaner filter inspection (vehicles not driven in dusty conditions).		•
Passenger compartment air filter replacement.		•

Recommended Fluids, Lubricants, and Parts

Recommended Fluids and Lubricants

Usage	Fluid/Lubricant
Engine Oil	Engine oil which meets GM Standard GM6094M and displays the American Petroleum Institute Certified for Gasoline Engines starburst symbol. To determine the proper viscosity for the vehicle's engine, see <i>Engine Oil</i> on page 10-8.
Engine Coolant	50/50 mixture of clean, drinkable water and use only DEX-COOL [®] Coolant. See <i>Engine Coolant</i> on page 10-15.
Hydraulic Brake System	DOT 3 Hydraulic Brake Fluid (GM Part No. U.S. 88863461, in Canada 88863462).
Windshield Washer	Optikleen [®] Washer Solvent.
Hydraulic Power Steering System	GM Power Steering Fluid (GM Part No. U.S. 89021184, in Canada 89021186).
Parking Brake Cable Guides	Chassis Lubricant (GM Part No. 12377985, in Canada 88901242) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.
Automatic Transmission	DEXRON [®] -VI Automatic Transmission Fluid.
Transfer Case and Carrier Assembly - Differential	SAE 75W-90 Synthetic Axle Lubricant (GM Part No. U.S. 89021677, in Canada 89021678).

11-8 Service and Maintenance

Usage	Fluid/Lubricant
Key Lock Cylinders	Multi-Purpose Lubricant, Superlube (GM Part No. U.S. 12346241, in Canada 10953474).
Hood Latch Assembly, Secondary Latch, Pivots, Spring Anchor, and Release Pawl	Lubriplate Lubricant Aerosol (GM Part No. U.S. 12346293, in Canada 992723) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.
Hood, Liftgate Door, and Rear Folding Seat Hinges	Multi-Purpose Lubricant, Superlube (GM Part No. U.S. 12346241, in Canada 10953474).
Sunroof Track	Lubriplate Lubricant Aerosol (Saturn Part No. 21038869 or GM Part No. U.S. 12346293, in Canada 992723) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.
Weatherstrip Conditioning	Weatherstrip Lubricant (GM Part No. U.S. 3634770, in Canada 10953518) or Dielectric Silicone Grease (GM Part No. U.S. 12345579, in Canada 992887).

Maintenance Replacement Parts

Replacement parts identified below by name, part number, or specification can be obtained from your retailer.

Part	GM Part Number	ACDelco Part Number
Engine Air Cleaner/Filter	96815102	—
Engine Oil Filter		
2.4L L4 Engine	12605566	PF457G
3.5L V6 Engine	89017342	PF61
3.6L V6 Engine	89017524	PF48
Passenger Compartment Air Filter Element	19130294	—
Spark Plugs		
2.4L L4 Engine	12625058	41-103
3.5L V6 Engine	12591131	41-100
3.6L V6 Engine	12622561	41-109
Wiper Blades		
Driver Side – 60.0 cm (24.0 in)	25925618	—
Passenger Side – 40.0 cm (16.0 in)	25925620	—
Rear – 30.0 cm (12.0 in)	96624648	—

11-10 Service and Maintenance

Maintenance Records

After the scheduled services are performed, record the date, odometer reading, who performed the service, and the type of services performed in the boxes provided. Retain all maintenance receipts.

Maintenance Record

[illegible]

11-12 Service and Maintenance

Maintenance Record (cont'd)

[illegible]

Technical Data

Vehicle Identification

Vehicle Identification	
Number (VIN)	12-1
Service Parts Identification	
Label	12-1

Vehicle Data

Capacities and	
Specifications	12-2
Engine Drive Belt Routing ...	12-4

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, on the inside of the glove box, has the following information:

- Vehicle Identification Number (VIN)
- Model designation
- Paint information
- Production options and special equipment

Do not remove this label from the vehicle.

Vehicle Data

Capacities and Specifications

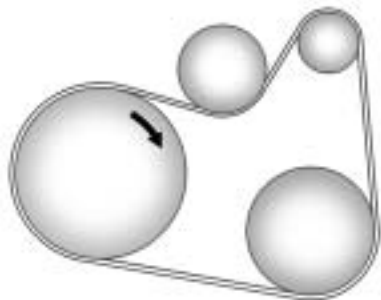
Application	Capacities	
	Metric	English
Air Conditioning Refrigerant R134a	For the air conditioning system refrigerant charge amount, see the refrigerant caution label located under the hood. See your dealer/retailer for more information.	
Engine Cooling System		
2.4L L4 Engine	8.5 L	9.0 qt
3.5L V6 Engine	10.4 L	11.0 qt
3.6L V6 Engine	10.9 L	11.5 qt
Engine Oil with Filter		
2.4L L4 Engine	4.7 L	5.0 qt
3.5L V6 Engine	3.8 L	4.0 qt
3.6L V6 Engine	5.2 L	5.5 qt

Application	Capacities	
	Metric	English
Fuel Tank		
All Wheel Drive	63.0 L	16.7 gal
Front Wheel Drive	73.0 L	19.2 gal
Transmission Fluid*		
Four-Speed Automatic (Bottom Pan Removal)	6.5 L	6.9 qt
Six-Speed Automatic (Drain and Refill)	9.0 L	9.5 qt
Wheel Nut Torque	140 N•m	100 ft lb
*See <i>Automatic Transmission Fluid</i> on page 10-12 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.		

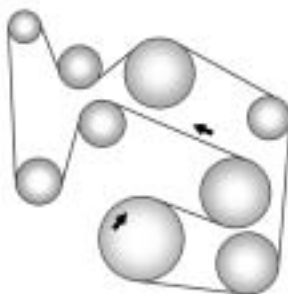
Engine Specifications

Engine	VIN Code	Transmission	Spark Plug Gap
2.4L L4 (LE5)	1	Automatic	1.01 mm (0.040 in)
3.5L V6 (LZ4)	N	Automatic	1.01 mm (0.040 in)
3.6L V6 (LY7)	7	Automatic	1.1 mm (0.044 in)

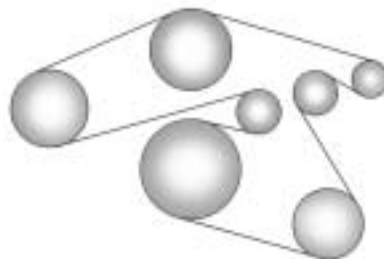
Engine Drive Belt Routing



2.4L L4 (LE5) Engine



3.5L V6 (LZ4) Engine



3.6L V6 (LY7) Engine

Customer Information

Customer Information

Customer Satisfaction Procedure	13-1
Customer Assistance	
Offices	13-4
Customer Assistance for Text Telephone (TTY) Users	13-4
Online Owner Center	13-5
GM Mobility Reimbursement Program	13-5
Roadside Assistance Program	13-6
Scheduling Service	
Appointments	13-8
Courtesy Transportation Program	13-8
Collision Damage Repair ...	13-10
Service Publications	
Ordering Information	13-12

Reporting Safety Defects

Reporting Safety Defects to the United States Government	13-13
Reporting Safety Defects to the Canadian Government	13-14
Reporting Safety Defects to Saturn	13-14

Vehicle Data Recording and Privacy

Vehicle Data Recording and Privacy	13-15
Event Data Recorders	13-15
OnStar®	13-16
Navigation System	13-16
Radio Frequency Identification (RFID)	13-16
Radio Frequency Statement	13-16

Customer Information

Customer Satisfaction Procedure

Your satisfaction and goodwill are important to your retailer and to Saturn. Together we are committed to providing our customers with unparalleled service, before, during, and after the purchase of a Saturn vehicle, for total customer satisfaction. We call this the Saturn Difference. Normally, any concerns with the sales transaction or the operation of the vehicle are resolved by the retailer's sales or service departments. If, for any reason, your ownership experience falls below your expectations, we suggest you take the following action:

STEP ONE: Contact the Retail Customer Assistance Liaison. Any member of the retail management team has the authority and the desire to resolve your concerns. Normally, concerns can be quickly resolved at this level.

13-2 Customer Information

STEP TWO : Should you need additional assistance, in the U.S., contact the Saturn Customer Assistance Center by calling 1-800-553-6000. In Canada, call the Saturn Customer Communication Centre at 1-800-263-1999. A Saturn Customer Assistance Center team member will handle your call and assist in providing product and warranty information, the nearest retailer location, roadside assistance, brochures, literature and discuss any concerns you may have.

We encourage you to call the toll-free number in order to give your inquiry prompt attention. Please have the following information available to give the Customer Assistance Representative:

- Vehicle Identification Number (VIN). This 17-digit number can be found on the vehicle registration or title, on the upper driver side corner of the instrument panel, or on your roadside assistance key card.

- The name of your selling and servicing retail facility.
- Vehicle delivery date and present mileage.
- Your daytime and evening phone numbers.

When contacting Saturn, please remember that your concern will likely be resolved at a retailer's facility. That is why we suggest you follow Step One first.

STEP THREE (U.S. Owners): Both Saturn and its retailers are committed to making sure you are completely satisfied with your Saturn vehicle. However, if you continue to remain unsatisfied after following the procedure outlined in Steps One and Two, Saturn and its retailers offer the additional assistance of a neutral party through our voluntary participation in a mediation/arbitration program called Better Business Bureau (BBB) Auto Line.

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. This program is available at no cost to you, our customer.

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 is generally heard within 40 days. If you do not agree with the decision given in your case, you can reject it and proceed with any other venue for relief available to you.

Contact the BBB Auto Line Program by using the toll-free telephone number or by writing 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
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. Saturn Corporation reserves the right to change eligibility limitations and/or discontinue its participation in this program.

STEP THREE (Canadian Owners):

General Motors Participation in the Mediation/Arbitration Program

In the event that you do not feel your concerns have been addressed after following the procedure outlined in Steps 1 and 2, 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. Alternatively, you may call the Saturn Customer Communication Centre, 1-800-263-1999, or you may write to:

Mediation/Arbitration Program
c/o Customer Communication
Centre
General Motors of Canada Limited
Mail Code: CA1-163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7
Telephone: 1-800-955-5100

Your inquiry should be accompanied by the Vehicle Identification Number (VIN).

13-4 Customer Information

Customer Assistance Offices

Saturn encourages customers to call the toll-free number for assistance. If a customer wishes to write to Saturn, the letter should be addressed to:

Saturn Customer Assistance Center
P.O. Box 33173
Detroit, MI 48232-5173

1-800-553-6000
1-800-833-6000 (For Text
Telephone devices (TTYs))
Roadside Assistance:
1-800-553-6000

In Canada, write to:

Saturn Customer Communication
Centre
General Motors of Canada Ltd.
CA1-163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7
GMcanada.com

1-800-263-1999
1-800-263-3830 (For Text
Telephone devices (TTYs))
Roadside Assistance:
1-800-268-6800

Customer Assistance for Text Telephone (TTY) Users

To assist owners who have hearing difficulties, Saturn has installed special TDD (Telecommunication Devices for the Deaf) equipment in its Saturn Customer Assistance Center.

Any hearing or speech-impaired customer who has access to a TDD or to a conventional Text Telephone (TTY) can communicate with Saturn by dialing 1-800-TDD-6000. TTY users in Canada may dial 1-800-263-3830.

Online Owner Center

**Online Owner Center (U.S.) —
www.gmownercenter.com/saturn**

Information and services customized for your specific vehicle — all in one convenient place.

- Digital owner manual, warranty information, and more
- Online service and maintenance records
- Find Saturn retailers for service nationwide
- Exclusive privileges and offers
- Recall notices for your specific vehicle
- OnStar® and GM Cardmember Services Earnings summaries

Other Helpful Links:

Saturn — www.saturn.com

Saturn Merchandise —
www.saturncollection.com

Help Center — www.saturn.com/helpcenter

- FAQ
- Contact Us

GM Mobility Reimbursement Program



This program, available to qualified applicants, can reimburse you up to \$1,000 of the cost of eligible aftermarket adaptive equipment required for your vehicle, such as hand controls or a wheelchair/scooter lift.

The offer is available for a very limited period of time from the date of vehicle purchase/lease. For more details, or to determine your vehicle's eligibility, visit 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

For U.S. purchased vehicles, call **1-800-553-6000**; (Text Telephone (TTY): **1-800-889-2438**).

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/100,000 miles (160 000 km), 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. Saturn and General Motors of Canada Limited reserve the right to make any changes or discontinue the Roadside Assistance program at any time without notification.

Saturn 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 is provided to unlock the vehicle if you are locked out. A remote unlock may be available if you have OnStar[®]. For security reasons, the driver must present identification before this service is given.
- **Emergency Tow From a Public Road or Highway:** Tow to the nearest Saturn retailer 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 is provided 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 is provided 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 limit of six requests per year. Additional travel information is also available. Allow three weeks for delivery.

- **Trip Interruption Benefits and Assistance:** Must be over 250 kilometres 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 you 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.

Scheduling Service Appointments

When your vehicle requires warranty service, contact your dealer/retailer and request an appointment. By scheduling a service appointment and advising your service consultant of your transportation needs, your dealer/retailer can help minimize your inconvenience.

If your 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/retailer, let them know this, and ask for instructions.

If the dealer/retailer 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 the same day repair.

Courtesy Transportation Program

To enhance your ownership experience, we and our participating retailers 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 hybrid specific warranties in both the U.S. and Canada.

Several courtesy transportation options are available to assist in reducing your 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, Saturn helps to minimize your inconvenience by providing several transportation options. Depending on the circumstances, your retailer can offer you one of the following:

Shuttle Service

Shuttle service is the preferred means of offering Courtesy Transportation. Retailers may provide you with 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 the retailer's area.

Public Transportation or Fuel Reimbursement

If your vehicle requires overnight warranty repairs, and public transportation is used instead of the retailer's shuttle service, the expense must be supported by original receipts and can only be up to the maximum amount allowed by Saturn 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 retailer for information regarding the allowance amounts for reimbursement of fuel or other transportation costs.

Courtesy Rental Vehicle

Your retailer may arrange to provide you with a courtesy rental vehicle or reimburse you for a rental vehicle that you obtain if your 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. 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 retailer. Please contact your retailer for specific information about availability. All Courtesy Transportation arrangements will be administered by appropriate retailer personnel.

Saturn reserves the right to unilaterally modify, change or discontinue Courtesy Transportation at any time and to resolve all questions of claim eligibility pursuant to the terms and conditions described herein at its sole discretion.

Collision Damage Repair

If your 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 your vehicle's 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 your vehicle was originally built. Genuine GM Collision parts are your best choice to ensure that your vehicle's designed appearance, durability, and safety are preserved. The use of Genuine GM parts can help maintain your 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 your vehicle's originally designed appearance and safety performance, however, the history of these parts is not known. Such parts are not covered by your 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 your 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 your GM New Vehicle Limited Warranty, and any vehicle failure related to such parts are not covered by that warranty.

Repair Facility

We recommend that you choose a collision repair facility that meets your needs before you ever need collision repairs. Your dealer/retailer 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 Your Vehicle

Protect your investment in your 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 your 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 assure your 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 your vehicle is leased, the leasing company may require you to have insurance that assures repairs with Genuine GM Original Equipment Manufacturer (OEM) parts or Genuine Manufacturer replacement parts. Read your lease carefully, as you may be charged at the end of your 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* on page 13-6.

Gather the following information:

- Driver's name, address, phone number
- Driver's license number
- Owner's name, address, phone number
- Vehicle license plate
- 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 3-32.

Managing the Vehicle Damage Repair Process

In the event that your 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 your 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 your 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 your repair professional, and insist on Genuine GM parts. Remember if your 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 cost stays within reasonable limits.

Service Publications Ordering Information

Service Manuals

A variety of publications are available to you. Saturn service manuals are written for trained technicians, and in some cases, specialized tools and equipment are necessary to complete certain repairs. However, the manuals are available to owners who either have the training, or wish to gain a greater understanding of the technical aspect of their Saturn.

For additional publications information or to order publications in the United States, call toll free 1-800-2-SATURN or visit Saturn-publications.com to order on-line.

In Canada, Saturn service manuals are available by calling toll free 1-800-551-4123.

Owner Publications

Information on how to obtain product bulletins and as described below is applicable only in the fifty U.S. states and the District of Columbia, and only for cars and light trucks with a Gross Vehicle Weight Rating (GVWR) less than 10,000 pounds (4 536 kg). Copies of individual bulletins are also at your participating Saturn retailer. You can ask to see them.

In Canada, information relating to product service bulletins can be obtained by contacting your Saturn retailer.

Service Bulletins

Saturn regularly sends its retailers useful service bulletins about Saturn products. Saturn monitors product performance in the field. We then prepare bulletins for servicing our products better. You can get these bulletins, too.

Bulletins cover various subjects. Some pertain to the proper use and care of your vehicle. Some describe costly repairs. Others describe inexpensive repairs which, if done on time with the latest parts, may avoid future costly repairs.

Some bulletins tell a technician how to repair a new or unexpected condition. Others describe a quicker way to fix your vehicle. They can help a technician service your vehicle better.

Most bulletins apply to conditions affecting a small number of vehicles. Your Saturn retailer or a qualified technician may have to determine if a specific bulletin applies to your vehicle. To order Saturn bulletins, call Saturn Publications at 1-800-2-SATURN or visit saturn-publications.com to order online.

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 Saturn Corporation.

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 Saturn Corporation.

13-14 Customer Information

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 your vehicle has a safety defect, notify Transport Canada immediately, in addition to notifying General Motors of Canada Limited. Call them at 1-800-333-0510 or write to:

Transport Canada
Road Safety Branch
2780 Sheffield Road
Ottawa, Ontario K1B 3V9

Reporting Safety Defects to Saturn

In addition to notifying NHTSA (or Transport Canada) in a situation like this, please notify Saturn.

Call 1-800-553-6000, or write:

Saturn Corporation
P.O. Box 33173
Detroit,, MI 48232-5183

In Canada, call 1-800-263-1999, or write:

Saturn Customer Communication Centre
General Motors of Canada Limited
CA1-163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7

Vehicle Data Recording and Privacy

Your GM vehicle has a number of sophisticated computers that record information about the vehicle's performance and how it is driven. For example, your 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/retailer technician service your 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 your 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 your 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 of 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 your vehicle has OnStar and you subscribe to the OnStar services, please refer to the OnStar Terms and Conditions for information on data collection and use. See also the OnStar® owner guide in this manual for more information.

Navigation System

If your 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 system operating 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 RSS-210/211 of Industry and Science Canada.

Operation is subject to the following two conditions:

1. The device may not cause 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.

A

Accessories and Modifications	10-3
Accessory Power	9-29
Add-On Electrical Equipment	9-61
Adding Equipment to the Airbag-Equipped Vehicle	3-40
Adjustments Lumbar, Front Seats	3-5
Air Cleaner/Filter, Engine	10-12
Air Filter, Passenger Compartment	8-9
Air Vents	8-9
Airbag System Check	3-41
How Does an Airbag Restrain?	3-31
Passenger Sensing System	3-34
What Makes an Airbag Inflate?	3-31

Airbag System (cont.) What Will You See After an Airbag Inflates?	3-32
When Should an Airbag Inflate?	3-29
Where Are the Airbags?	3-27
Airbags Adding Equipment to the Vehicle	3-40
Passenger Status Indicator	5-14
Readiness Light	5-13
Servicing Airbag-Equipped Vehicles	3-39
System Check	3-25
Alarm System Anti-Theft	2-9
All-Wheel Drive	10-26, 9-38
Light	5-19
AM-FM Radio	7-4
Antenna Satellite Radio	7-11
Anti-Theft Alarm System	2-9
Antilock Brake System (ABS)	9-38
Warning Light	5-19

Appearance Care Exterior	10-82
Interior	10-86
Armrest Storage	4-2
Assistance Program, Roadside	13-6
Audio Players	7-11
CD	7-11
MP3	7-13
Audio System Fixed Mast Antenna	7-11
Radio Reception	7-10
Theft-Deterrent Feature	7-2
Automatic Door Locks	2-7
Headlamp System	6-3
Automatic Climate Control System	8-5
Automatic Transmission	9-35
Fluid	10-12
Manual Mode	9-37
Shiftlock Control System Check	10-28
Auxiliary Devices	7-17

B

- Battery 10-25
 - Jump Starting 10-74
 - Load Management 6-6
 - Power Protection 6-6
 - Voltage and Charging
 - Messages 5-31
- Blade Replacement, Wiper ... 10-29
- Bluetooth 7-18
- Brakes 10-23
 - Antilock 9-38
 - Fluid 10-24
 - Parking 9-39
 - System Messages 5-31
- Braking 9-4
- Break-In, New Vehicle 9-27
- Bulb Replacement 10-36
 - Fog Lamps 6-4
 - Front Turn Signal and
 - Parking Lamps 10-34
 - Halogen Bulbs 10-33
 - Headlamp Aiming 10-30

Bulb Replacement (cont.)

- Headlamps 10-33
- License Plate Lamps 10-36
- Taillamps, Turn Signal,
 - Stoplamps, and
 - Back-Up Lamps 10-35
- Buying New Tires 10-59

C

- Calibration 5-5
- California
 - Fuel Requirements 9-48
 - Perchlorate Materials
 - Requirements 10-3
 - Warning 10-2
- Camera, Rear Vision 9-44
- Canadian Vehicle Owners iii
- Capacities and
 - Specifications 12-2
- Carbon Monoxide
 - Engine Exhaust 9-34
 - Liftgate 2-8
 - Winter Driving 9-20

Cargo

- Cover 4-3
- Management System 4-3
- Tie Downs 4-3
- Cautions, Danger, and
 - Warnings iv
- CD Player 7-11
- Center Console Storage 4-2
- Chains, Tire 10-64
- Charging System Light 5-15
- Check
 - Engine Lamp 5-15
 - Ignition
 - Transmission Lock 10-28
- Child Restraints
 - Infants and Young
 - Children 3-44
 - Lower Anchors and
 - Tethers for Children 3-50
 - Older Children 3-42
 - Securing 3-56, 3-58
 - Systems 3-47
 - Where to Put the Restraint ... 3-48
- Circuit Breakers 10-37

Cleaning	
Exterior Care	10-82
Interior Care	10-86
Climatic Control Systems	8-1
Automatic	8-5
Clock	5-8
Cluster, IP	5-10
Collision Damage Repair	13-10
Compact Spare Tire	10-73
Compass	5-5
Compass Messages	5-31
Control of a Vehicle	9-4
Convenience Net	4-4
Convex Mirrors	2-12
Coolant	
Engine	10-15
Engine Temperature	
Warning Light	5-21
Cooling System	10-14
Engine Messages	5-32
Courtesy Transportation	
Program	13-8
Covers	
Cargo	4-3

Cruise Control	9-42
Light	5-25
Messages	5-32
Cupholders	4-1
Customer Assistance	13-4
Offices	13-4
Text Telephone (TTY)	
Users	13-4
Customer Information	
Service Publications	
Ordering Information	13-12
Customer Satisfaction	
Procedure	13-1

D

Damage Repair, Collision	13-10
Danger, Warnings, and	
Cautions	iv
Data Recorders, Event	13-15
Daytime Running	
Lamps (DRL)	6-2
Defensive Driving	9-3
Delayed Locking	2-7
Devices, Auxiliary	7-17
Dome Lamps	6-5

Door	
Ajar Light	5-25
Ajar Messages	5-32
Delayed Locking	2-7
Locks	2-6
Power Locks	2-6
Drive Systems	
All-Wheel Drive	10-26, 9-38
Driver Behavior	9-2
Driver Information	
Center (DIC)	5-25
Driving	
Characteristics and	
Towing Tips	9-53
Defensive	9-3
Drunk	9-3
Environment	9-2
Highway Hypnosis	9-18
Hill and Mountain Roads	9-19
If the Vehicle is Stuck	9-22
Loss of Control	9-7
Off-Road	9-8

- Driving (cont.)
Off-Road Recovery 9-6
Vehicle Load Limits 9-22
Winter 9-20
Driving for Better Fuel
Economy 1-19

E

- Electrical Equipment,
Add-On 9-61
Electrical System
Engine Compartment
Fuse Block 10-38
Fuses and Circuit
Breakers 10-37
Instrument Panel Fuse
Block 10-40
Overload 10-37
Engine
Air Cleaner/Filter 10-12
Change Engine Oil Light 5-22
Check and Service Engine
Soon Lamp 5-15

- Engine (cont.)
Compartment Overview 10-6
Coolant 10-15
Coolant Heater 9-30
Coolant Temperature
Warning Light 5-21
Cooling System 10-14
Cooling System Messages 5-32
Drive Belt Routing 12-4
Exhaust 9-34
Overheating 10-20
Power Messages 5-34
Pressure Light 5-22
Reduced Power Light 5-23
Running While Parked 9-34
Starting 9-29
Engine Oil
Life System 10-10
Messages 5-33
Entry Lighting 6-5
Equipment, Towing 9-60
Event Data Recorders 13-15
Extender, Safety Belt 3-23
Exterior Lamp Controls 6-1

F

- Filter
Engine Air Cleaner 10-12
Flash-to-Pass 6-2
Flashers, Hazard Warning 6-3
Flat Tire 10-65
Flat Tire, Changing 10-67
Fluid
Automatic Transmission 10-12
Brakes 10-24
Power Steering 10-21
Washer 10-22
Fog Lamps
Bulb Replacement 6-4
Light 5-24
Folding Seatback 3-8
Front Seats
Adjustment 3-3
Heated 3-7
Front Storage 4-2
Fuel 9-47
Additives 9-49
Filling a Portable Fuel
Container 9-52
Filling the Tank 9-50
Fuels in Foreign Countries 9-49

Fuel (cont.)	
Gage	5-11
Gasoline Specifications	9-48
Low Fuel Warning Light	5-23
Recommended	9-48
Requirements, California	9-48
System Messages	5-34
Fuel Economy	
Driving for Better	1-19
Fuses	
Engine Compartment	
Fuse Block	10-38
Fuses and Circuit	
Breakers	10-37
Instrument Panel Fuse	
Block	10-40

G

Gages	
Fuel	5-11
Odometer	5-11
Speedometer	5-11

Gages (cont.)	
Tachometer	5-11
Trip Odometer	5-11
Warning Lights and	
Indicators	5-9
Garage Door Opener	5-45
Programming	5-46
Gasoline	
Specifications	9-48
Gate Ajar Light	5-25
General Information	
Service and Maintenance	11-1
Towing	9-52
Vehicle Care	10-2
Glove Box	4-1
GM Mobility Reimbursement	
Program	13-5

H

Halogen Bulbs	10-33
Hazard Warning Flashers	6-3
Head Restraints	3-2

Head Restraints (cont.)	
Active	3-3
Headlamps	10-33
Aiming	10-30
Automatic	6-3
Bulb Replacement	10-33
Daytime Running	
Lamps (DRL)	6-2
Flash-to-Pass	6-2
High-Beam On Light	5-24
High/Low Beam Changer	6-2
Heated Front Seats	3-7
Heated Mirrors	2-12
Heater	
Engine Coolant	9-30
High-Beam On Light	5-24
High-Speed Operation	10-52
Highway Hypnosis	9-18
Hill and Mountain Roads	9-19
Hood	10-5
Horn	5-3
How to Wear Safety Belts	
Properly	3-13

I

- Ignition Positions 9-28
- Ignition Transmission Lock
 - Check 10-28
- Illumination Control 6-5
- Immobilizer 2-10
- Infants and Young Children,
 - Restraints 3-44
- Instrument Cluster 5-10
- Instrument Panel 6-5
 - Storage Area 4-1
- Introduction iii, 7-1

J

- Jump Starting 10-74

K

- Key and Lock Messages 5-35
- Keyless Entry
 - Remote (RKE) System 2-3
- Keyless Entry System 2-2
- Keys 2-2

L

- Labeling, Tire Sidewall 10-44
- Lamps
 - Daytime Running (DRL) 6-2
 - Dome 6-5
 - Exterior Controls 6-1
 - Front Turn Signal and
 - Parking Lamps 10-34
 - License Plate 10-36
 - Malfunction Indicator 5-15
 - Reading 6-5
- Lap-Shoulder Belt 3-19
- LATCH System
 - Replacing Parts After a
 - Crash 3-55
- Latch, Lower Anchors and
 - Tethers for Children 3-50
- Liftgate
 - Carbon Monoxide 2-8
- Lighting
 - Entry 6-5
- Lights
 - Airbag Readiness 5-13
 - All-Wheel Drive 5-19
 - Antilock Brake System
 - (ABS) Warning 5-19

Lights (cont.)

- Change Engine Oil 5-22
- Charging System 5-15
- Cruise Control 5-25
- Door Ajar 5-25
- Engine Coolant
 - Temperature Warning 5-21
- Engine Oil Pressure 5-22
- Flash-to-Pass 6-2
- Fog Lamps 5-24
- Gate Ajar 5-25
- High-Beam On 5-24
- High/Low Beam Changer 6-2
- Low Fuel Warning 5-23
- Low Washer Fluid Warning 5-24
- Reduced Engine Power 5-23
- Safety Belt Reminders 5-12
- Security 5-23
- Service Vehicle Soon 5-18
- StabiliTrak[®] Indicator 5-20
- Tire Pressure 5-21
- Traction Control System
 - (TCS) Warning 5-20
- Warning, Power Steering 5-20

Locks	
Automatic Door	2-7
Delayed Locking	2-7
Door	2-6
Lockout Protection	2-7
Power Door	2-6
Safety	2-7
Loss of Control	9-7
Low Fuel Warning Light	5-23
Low Washer Fluid Warning Light	5-24
Lower Anchors and Tethers for Children (LATCH SYSTEM)	3-50
Lumbar Adjustment	3-5
Front Seats	3-5

M

Maintenance	
Records	11-10
Maintenance Schedule	
Recommended Fluids and Lubricants	11-7
Scheduled Maintenance	11-2
Malfunction Indicator Lamp	5-15

Manual Mode	9-37
Messages	
Airbag System	5-36
Battery Voltage and Charging	5-31
Brake System	5-31
Compass	5-31
Door Ajar	5-32
Engine Cooling System	5-32
Engine Oil	5-33
Engine Power	5-34
Fuel System	5-34
Key and Lock	5-35
Ride Control System	5-35
Service Vehicle	5-37
Tire	5-37
Transmission	5-38
Vehicle	5-31
Vehicle Reminder	5-39
Mirrors	
Convex	2-12
Heated	2-12
Manual Rearview	2-13

Mirrors (cont.)	
Outlets	5-8
Power	2-12
Monitor System, Tire Pressure	10-52
MP3	7-13

N

Navigation System	
Vehicle Data Recording and Privacy	13-16
Net, Convenience	4-4
New Vehicle Break-In	9-27

O

Odometer	5-11
Trip	5-11
Off-Road	9-8
Driving	9-8
Recovery	9-6

Oil
Change Engine Oil Light 5-22
Engine 10-8
Engine Oil Life System 10-10
Messages 5-33
Pressure Light 5-22
Older Children, Restraints 3-42
Online Owner Center 13-5
OnStar® System 1-20
Operation, Infotainment
System 7-2
Outlets
Power 5-8
Overheating, Engine 10-20

P

Park
Shifting Into 9-31
Shifting Out of 9-33
Parking
Brake 9-39
Brake and P (Park)
Mechanism Check 10-29
Over Things That Burn 9-33

Passenger Airbag Status
Indicator 5-14
Passenger Compartment Air
Filter 8-9
Passenger Sensing System ... 3-34
Perchlorate Materials
Requirements, California 10-3
Phone
Bluetooth 7-18
Power
Door Locks 2-6
Mirrors 2-12
Protection, Battery 6-6
Reduced Engine Light 5-23
Retained Accessory (RAP) ... 9-29
Seat Adjustment 3-4
Steering Fluid 10-21
Windows 2-14
Power Steering Warning
Lights 5-20
Pregnancy, Using Safety
Belts 3-23

Privacy
Radio Frequency
Identification (RFID) 13-16
Program
Courtesy Transportation 13-8
Proposition 65 Warning,
California 10-2

R

Radio Frequency
Identification (RFID) 13-16
Statement 13-16
Radios
AM-FM Radio 7-4
Reception 7-10
Satellite 7-6
Reading Lamps 6-5
Rear Seats 3-9
Rear Vision Camera (RVC) 9-44
Rear Window Washer/Wiper 5-5
Rearview Mirrors 2-13
Reclining Seatbacks 3-5
Recommended Fluids and
Lubricants 11-7
Recommended Fuel 9-48

Records	
Maintenance	11-10
Recreational Vehicle	
Towing	10-78
Reduced Engine Power	
Light	5-23
Reimbursement Program,	
GM Mobility	13-5
Remote Keyless Entry	
(RKE) System	2-2, 2-3
Remote Vehicle Start	2-4
Replacement Bulbs	10-36
Replacement Parts	
Airbags	3-41
Maintenance	11-9
Replacing Airbag System	3-41
Replacing LATCH System	
Parts After a Crash	3-55
Replacing Safety Belt	
System Parts After a	
Crash	3-24
Reporting Safety Defects	
Canadian Government	13-14
Saturn	13-14
U.S. Government	13-13

Retained Accessory	
Power (RAP)	9-29
Ride Control Systems	
Messages	5-35
Roadside Assistance	
Program	13-6
Roof	
Sunroof	2-15
Roof Rack System	4-4
Rotation, Tires	10-57
Routing, Engine Drive Belt	12-4
Running the Vehicle While	
Parked	9-34

S

Safety Belts	3-10
Care	3-24
Extender	3-23
How to Wear Safety Belts	
Properly	3-13
Lap-Shoulder Belt	3-19
Reminders	5-12
Replacing After a Crash	3-24
Use During Pregnancy	3-23

Safety Defects Reporting	
Canadian Government	13-14
Saturn	13-14
U.S. Government	13-13
Safety Locks	2-7
Safety System Check	3-23
Satellite Radio	7-6
Scheduled Maintenance	11-2
Scheduling Appointments	13-8
Seats	
Adjustment, Front	3-3
Folding Seatback	3-8
Head Restraints	3-2
Heated Front	3-7
Lumbar Adjustment, Front	3-5
Power Adjustment, Front	3-4
Rear	3-9
Reclining Seatbacks	3-5
Securing Child	
Restraints	3-56, 3-58
Security	
Light	5-23
Vehicle	2-9

Service	
Accessories and	
Modifications	10-3
Doing Your Own Work	10-4
Engine Soon Lamp	5-15
Maintenance Records	11-10
Maintenance, General	
Information	11-1
Parts Identification Label	12-1
Publications Ordering	
Information	13-12
Scheduling Appointments	13-8
Vehicle Messages	5-37
Vehicle Soon Light	5-18
Servicing the	
Airbag-Equipped Vehicle	3-39
Shifting	
Into Park	9-31
Out of Park	9-33
Signals, Turn and	
Lane-Change	6-4
Spare Tire	
Compact	10-73
Specifications and	
Capacities	12-2
Speedometer	5-11

StabiliTrak System	9-41
StabiliTrak [®] Indicator Light	5-20
Start Vehicle, Remote	2-4
Starter Switch Check	10-27
Starting the Engine	9-29
Steering	9-5
Fluid, Power	10-21
Power, Warning Lights	5-20
Wheel Adjustment	5-2
Wheel Controls	5-3
Stoplamps and Back-Up Lamps	
Bulb Replacement	10-35
Storage Areas	
Armrest	4-2
Cargo Cover	4-3
Cargo Management System	4-3
Center Console	4-2
Convenience Net	4-4
Front	4-2
Glove Box	4-1
Instrument Panel	4-1
Roof Rack System	4-4
Sunglasses	4-2
Stuck Vehicle	9-22
Sun Visors	2-15
Sunglass Storage	4-2

Sunroof	2-15
Symbols	iv
System	
Roof Rack	4-4
System Check	
Automatic Transmission	
Shiftlock Control	10-28

T

Tachometer	5-11
Taillamps	
Bulb Replacement	10-35
Text Telephone (TTY) Users	13-4
Theft-Deterrent Systems	2-10
Immobilizer	2-10
Time	5-8
Tires	
Buying New Tires	10-59
Chains	10-64
Changing	10-67
Compact Spare	10-73
Designations	10-46
Different Size	10-61
If a Tire Goes Flat	10-65
Inflation Monitor System	10-54
Inspection	10-57

Tires (cont.)	
Messages	5-37
Pressure	10-52
Pressure Light	5-21
Pressure Monitor System ...	10-52
Rotation	10-57
Sidewall Labeling	10-44
Terminology and	
Definitions	10-47
Uniform Tire Quality	
Grading	10-62
Wheel Alignment and Tire	
Balance	10-63
Wheel Replacement	10-64
When It Is Time for New	
Tires	10-58
Towing	
Driving Characteristics	9-53
Equipment	9-60
General Information	9-52
Recreational Vehicle	10-78
Trailer	9-56
Trailer Sway Control (TSC) ...	9-60
Vehicle	10-78

Traction	
Control System (TCS)	9-40
Control System Warning	
Light	5-20
Trailer	
Sway Control (TSC)	9-60
Trailer Towing	9-56
Transmission	
Automatic	9-35
Fluid, Automatic	10-12
Messages	5-38
Transportation Program,	
Courtesy	13-8
Trip Odometer	5-11
Turn and Lane-Change	
Signals	6-4
Turn Signal	
Bulb Replacement	10-35

U

Uniform Tire Quality	
Grading	10-62
Universal Remote System	5-45
Operation	5-49
Programming	5-46
Using this Manual	iv

V

Vehicle	
Canadian Owners	iii
Control	9-4
Design	9-2
Load Limits	9-22
Messages	5-31
Personalization	5-39
Remote Start	2-4
Security	2-9
Service Soon Light	5-18
Towing	10-78
Vehicle Care	
Tire Pressure	10-50
Vehicle Identification	
Number (VIN)	12-1
Service Parts Identification	
Label	12-1
Vehicle Reminder	
Messages	5-39
Ventilation, Air	8-9
Visors	2-15

W

Warning Lights, Gages, and Indicators	5-9
Warnings	iv
Cautions and Danger	iv
Hazard Flashers	6-3
Washer Fluid	10-22
Washer Fluid, Low Warning Light	5-24
Wheels	
Alignment and Tire Balance	10-63
Different Size	10-61
Replacement	10-64
When It Is Time for New Tires	10-58
Where to Put the Child Restraint	3-48
Windows	2-13
Power	2-14
Windshield	
Wiper/Washer	5-3
Winter Driving	9-20
Wiper Blade Replacement	10-29
Wipers	
Rear Washer	5-5