2007 Chevrolet Impala Owner Manual

Seats and Restraint Systems 7
- Front Seats 9
- Rear Seats 16
- Safety Belts 20
- Child Restraints 43
- Airbag System 69
- Restraint System Check 86

Features and Controls 89
- Keys 91
- Doors and Locks 100
- Windows 105
- Theft-Deterrent Systems 107
- Starting and Operating Your Vehicle 111
- Mirrors 126
- OnStar® System 128
- Universal Home Remote System 132
- Storage Areas 142
- Sunroof 144

Instrument Panel 145
- Instrument Panel Overview 148
- Climate Controls 166
- Warning Lights, Gages, and Indicators 172
- Driver Information Center (DIC) 188
- Audio System(s) 213

Driving Your Vehicle 247
- Your Driving, the Road, and Your Vehicle 248
- Towing 284

Service and Appearance Care 295
- Service 297
- Fuel 299
- Checking Things Under the Hood 306
- Headlamp Aiming 346
- Bulb Replacement 346
- Windshield Wiper Blade Replacement 352

Tires 354
Appearance Care 390
Vehicle Identification 399
Electrical System 400
Capacities and Specifications 405

Maintenance Schedule 407
Maintenance Schedule 408

Customer Assistance Information 427
Customer Assistance and Information 428
Reporting Safety Defects 446

Index 449

GENERAL MOTORS, GM, the GM Emblem, CHEVROLET, the CHEVROLET Emblem, the IMPALA Emblem, and the name IMPALA are registered trademarks of General Motors Corporation.

This manual includes the latest information at the time it was printed. We reserve the right to make changes after that time without further notice. For vehicles first sold in Canada, substitute the name “General Motors of Canada Limited” for Chevrolet Motor Division whenever it appears in this manual.

This manual describes features that may be available in this model, but your vehicle may not have all of them. For example, more than one entertainment system may be offered or your vehicle may have been ordered without a front passenger or rear seats.

Keep this manual in the vehicle, so it will be there if it is needed while you are on the road. If the vehicle is sold, leave this manual in the vehicle.

Canadian Owners

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

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

Litho in U.S.A.
Part No. 15863014 A First Printing

©2006 General Motors Corporation. All Rights Reserved.

How to Use This Manual

Many people read the owner manual from beginning to end when they first receive their new vehicle. If this is done, it can help you learn about the features and controls for the vehicle. Pictures and words work together in the owner manual to explain things.

Index

A good place to quickly locate information about the vehicle is 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.

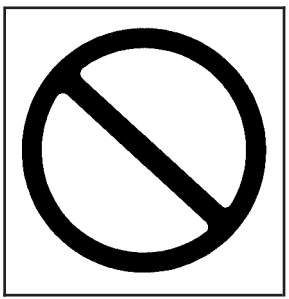
Safety Warnings and Symbols

There are a number of safety cautions in this book. We use a box and the word CAUTION to tell about things that could hurt you if you were to ignore the warning.

⚠ CAUTION:

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

In the caution area, we tell you what the hazard is. Then we tell you what to do to help avoid or reduce the hazard. Please read these cautions. If you do not, you or others could be hurt.



You will also find a circle with a slash through it in this book. This safety symbol means “Do Not,” “Do Not do this” or “Do Not let this happen.”

Vehicle Damage Warnings

Also, in this manual you will find these notices:

Notice: **These mean there is something that could damage your vehicle.**

A notice tells about something that can damage the vehicle. Many times, this damage would not be covered by your vehicle's warranty, and it could be costly. But the notice will tell what to do to help avoid the damage.

When you read other manuals, you might see CAUTION and NOTICE warnings in different colors or in different words.

There are also warning labels on the vehicle. They use the same words, CAUTION or NOTICE.

Vehicle 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.

If you need help figuring out a specific name of a component, gage, or indicator, reference the following topics:

- Seats and Restraint Systems in Section 1
- Features and Controls in Section 2
- Instrument Panel Overview in Section 3
- Climate Controls in Section 3
- Warning Lights, Gages, and Indicators in Section 3
- Audio System(s) in Section 3
- Engine Compartment Overview in Section 5

These are some examples of symbols that may be found on the vehicle:

CAUTION POSSIBLE INJURY	LATCH BOTH LAP AND SHOULDER BELTS TO PROTECT OCCUPANT DO NOT TWIST SAFETY BELT WHEN ATTACHING		MASTER LIGHTING SWITCH	ENGINE COOLANT TEMP	TIRE PRESSURE
PROTECT EYES BY SHIELDING	FASTEN SEAT BELTS	AIRBAG	TURN SIGNALS	BATTERY CHARGING SYSTEM	FUSE BOX ACCESS
CAUSTIC BATTERY ACID COULD CAUSE BURNS	MOVE SEAT FULLY REARWARD SECURE CHILD SEAT	DO NOT INSTALL A REAR-FACING CHILD RESTRAINT IN THIS SEATING POSITION	PARKING LAMPS	BRAKE	ENGINE COOLANT FAN
AVOID SPARKS OR FLAMES	PULL BELT OUT COMPLETELY THEN SECURE CHILD SEAT	DO NOT INSTALL A FORWARD-FACING CHILD RESTRAINT IN THIS SEATING POSITION	HAZARD WARNING FLASHER	COOLANT	FUEL
SPARK OR FLAME COULD EXPLODE BATTERY	POWER WINDOW	DOOR LOCK UNLOCK	DAYTIME RUNNING LAMPS	ENGINE OIL PRESSURE	OWNER MANUAL
			FOG LAMPS	ANTI-LOCK BRAKE SYSTEM	SERVICE MANUAL

Section 1 Seats and Restraint Systems

Front Seats 9
Manual Passenger Seat 9
Power Seats 10
Manual Lumbar 11
Heated Seats 11
Reclining Seatbacks 12
Head Restraints 15
Center Seat 16

Rear Seats 16
Split Folding Rear Seat 16

Safety Belts 20
Safety Belts: They Are for Everyone 20
Questions and Answers About Safety Belts 24
How to Wear Safety Belts Properly 25
Driver Position 25
Shoulder Belt Height Adjustment 34
Safety Belt Use During Pregnancy 35
Right Front Passenger Position 35
Center Front Passenger Position 36
Rear Seat Passengers 37
Rear Safety Belt Comfort Guides 39
Safety Belt Pretensioners 42
Safety Belt Extender 42

Child Restraints 43
Older Children 43
Infants and Young Children 46
Child Restraint Systems 50
Where to Put the Restraint 54
Lower Anchors and Tethers for Children (LATCH) 55
Securing a Child Restraint in a Rear Seat Position 62
Securing a Child Restraint in the Center Front Seat Position 64
Securing a Child Restraint in the Right Front Seat Position 65

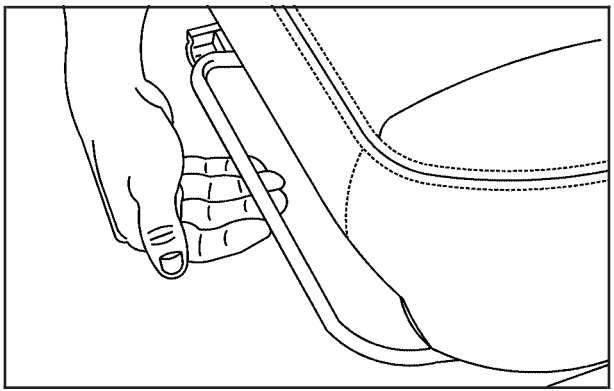
Section 1 Seats and Restraint Systems

Airbag System 69
Where Are the Airbags? 72
When Should an Airbag Inflate? 75
What Makes an Airbag Inflate? 77
How Does an Airbag Restrain? 77
What Will You See After an Airbag Inflates? 78
Passenger Sensing System 79
Servicing Your Airbag-Equipped Vehicle 84
Adding Equipment to Your Airbag-Equipped Vehicle 85
Restraint System Check 86
Checking the Restraint Systems 86
Replacing Restraint System Parts After a Crash 87

Front Seats

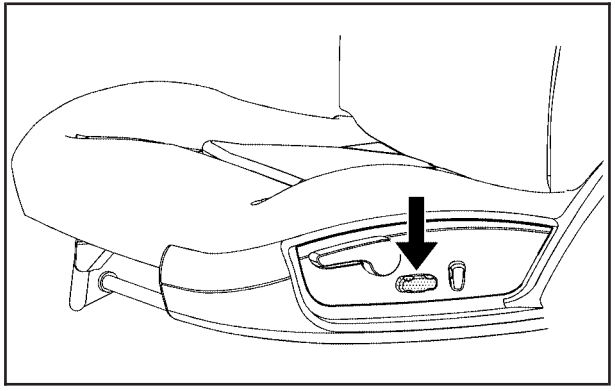
Manual Passenger Seat

Your vehicle may have a manual passenger seat.



Lift the bar located under the front of the seat to unlock it. Slide the seat to where you want it and release the bar. Try to move the seat with your body to be sure the seat is locked in place.

Power Seats



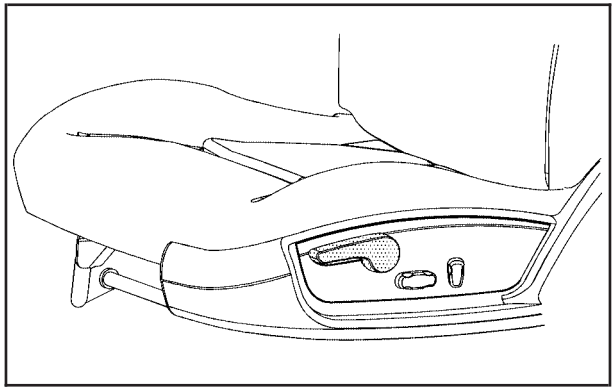
Driver's Seat with Manual Lumbar, Power Seat Control, and Power Recline shown

If the vehicle has power seats, the controls used to operate them are located on the outboard side of the seats. To adjust the seat, do any of the following:

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

Your driver's seat may have power reclining seatbacks. See "Power Reclining Seatbacks" under *Reclining Seatbacks on page 12* for more information.

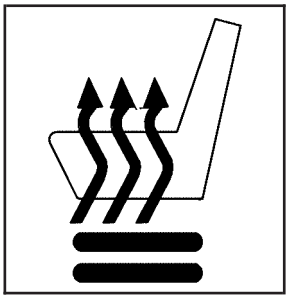
Manual Lumbar



Driver's Seat with Manual Lumbar and 8-way Power Controls shown

If your vehicle has manual lumbar, the lever is located on the outboard side of the driver's seat near the front of the seat cushion. Lift up on the lever repeatedly to increase lumbar support. Push down on the lever repeatedly to decrease lumbar support.

Heated Seats



If your vehicle has this feature, the buttons that control temperature for the driver's and front passenger's seats are located on the climate control panel. See *Climate Control System on page 166*.

Press the button once to warm the seat to a high temperature. Both lights below the heated seat symbol will come on. Press the button a second time to reduce the seat to a lower temperature. The bottom light will be lit. Press the button a third time to turn the heated seat off.

The heated seat feature will need to be turned on each time the ignition is turned off and back on again.

Reclining Seatbacks

Manual Reclining Seatbacks

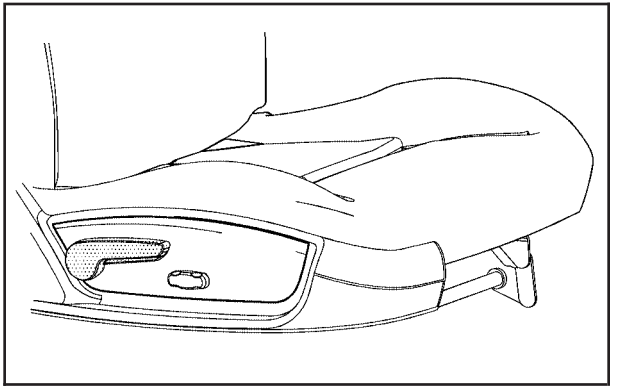
⚠ CAUTION:

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.

⚠ CAUTION:

If the 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 seatback to be sure it is locked.

The vehicle may have a manual recline on the front passenger's seat. There may be manual recline on the driver's seat.



Passenger's Seat with Manual Recline and Power Seat Control shown

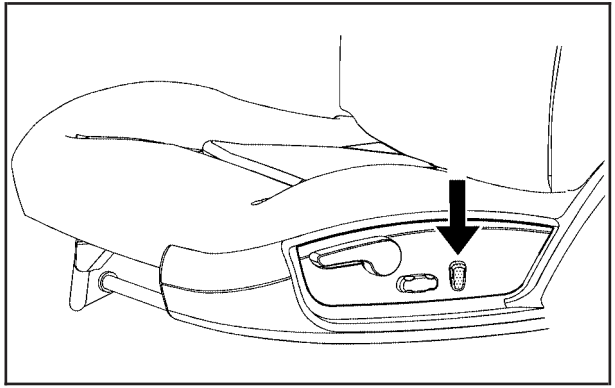
To recline the seatback, do the following:

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, do the following:

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

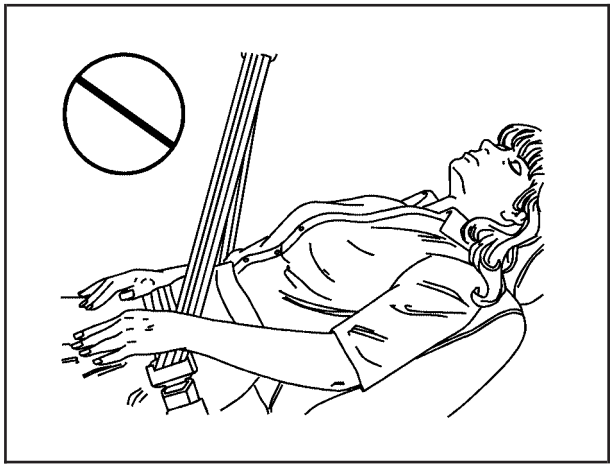
Power Reclining Seatback



Driver's Seat with Manual Lumbar, Power Seat Control, and Power Recline shown

The driver's seat may have a power reclining seatback. The control used to operate it is located on the outboard side of the seat cushion rear of the horizontal power seat control.

- Press the control rearward to recline the seatback.
- Press the control forward to raise the seatback.



⚠ CAUTION:

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.

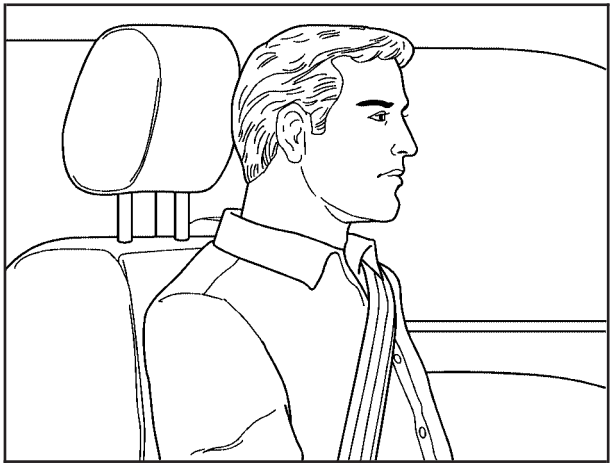
The shoulder belt cannot do its job because it will not be against your body. Instead, it will be in front of you. In a crash, you could go into it, receiving neck or other injuries.

The lap belt 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.

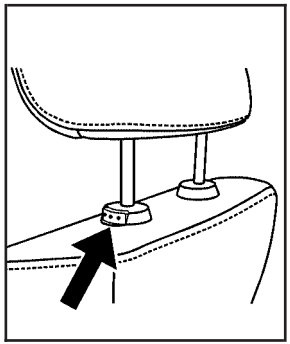
For proper protection when the vehicle is in motion, have the seatback upright. Then sit well back in the seat and wear your safety belt properly.

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

Head Restraints

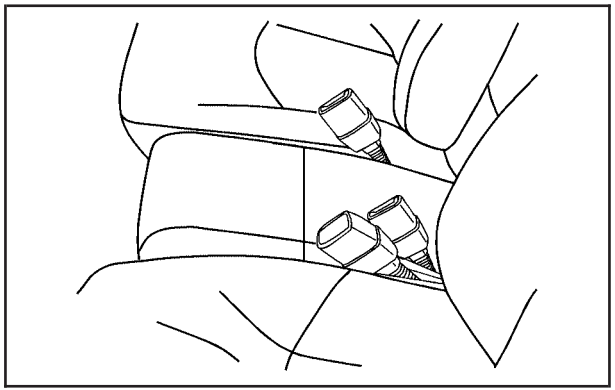


Adjust the head restraint so that the top of the restraint is at the same height as the top of the occupant's head. This position reduces the chance of a neck injury in a crash.



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.

Center Seat



Your vehicle may have a front center seat. There are cupholders on the underside of the seat cushion. To use them, flip the seat cushion forward. This seat can also be used as a storage area by lowering the seatback. See *Center Console Storage Area on page 143*. The seatback doubles as an armrest for the driver or front passenger when the center seat is unoccupied.

For information on safety belts for this position, see *Center Front Passenger Position on page 36*.

Rear Seats

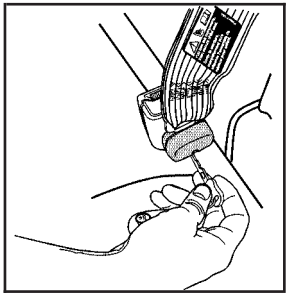
Split Folding Rear Seat

Flip and Fold Feature

If your vehicle has this feature, you can flip the bottom seat cushion(s) forward and fold the seatback(s) down for an extended flat cargo area.

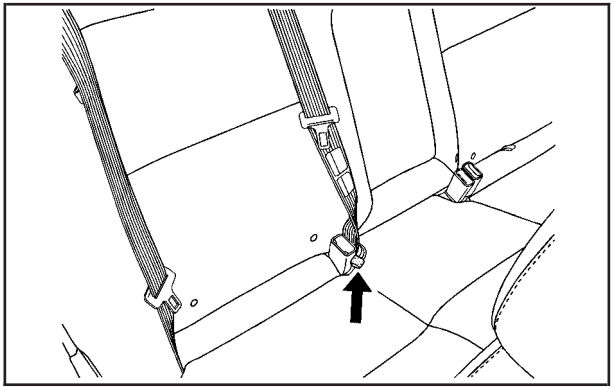
To use this feature, do the following:

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.**



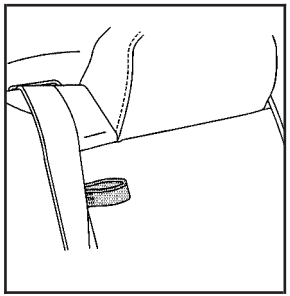
1. Disconnect the rear center safety belt latch from the mini buckle, if your vehicle has this, by using an object such as a car key.

   Insert the key into the slot in the mini buckle and press the release button.



2. Flip the bottom seat cushion forward by pulling up on the tab located in the center of the seat cushion where the seatback meets the seat cushion. There is a tab on both rear seats.

   Make sure the front seats are not reclined. If they are, the seat cushion will not flip forward completely.



3. Lower the seatback(s) by pulling forward on the tab located on the outboard side of the seatback(s).

Make sure the front seats are not reclined. If they are, the rear seatbacks will not fold down all the way.

To return the seats to the normal position, do the following:

⚠ CAUTION:

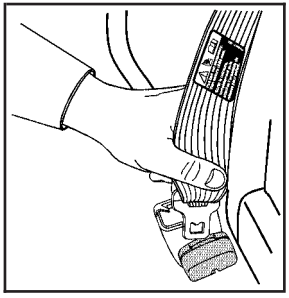
If the seatback is not locked, it could move forward in a sudden stop or crash. That could cause injury to the person sitting there. Always push and pull on the seatback to be sure it is locked.

1. Raise the seatback up and make sure it latches.

⚠ CAUTION:

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.

2. Ensure that the safety belts are properly stowed over the seatback in all three positions.



3. Reconnect the rear center safety belt latch plate to the mini buckle, if your vehicle has this.

   Make sure the safety belt label is facing the same direction as the release button of the mini buckle. Make sure the belt is not twisted. Push and pull on the latch plate to be sure it is secure.

4. Flip the bottom seat cushion back into place. Push firmly on the seat cushion to make sure it is secure.

When the seat is not in use, the seatback should be placed in upright, locked position, and the seat cushion should be in the down position.

Under Seat Storage

Your vehicle has under seat storage.

To get to the storage area, lift up on the tab located in the center of the bottom seat cushion where the seat cushion meets the seatback. See *Rear Storage Area on page 143* for more information.

Safety Belts

Safety Belts: They Are for Everyone

This part of the manual tells you how to use safety belts properly. It also tells you some things you should not do with safety belts.

⚠ CAUTION:

Do not let anyone ride where he or she cannot wear a safety belt properly. If you are in a crash and you are not wearing a safety belt, your injuries can be much worse. You can hit things inside the vehicle or be ejected from it. You 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 passengers' belts are fastened properly too.

⚠ CAUTION:

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.

Your vehicle has indicators to remind you and your passengers to buckle your safety belts. See *Safety Belt Reminder Light on page 175* and *Passenger Safety Belt Reminder Light on page 175*.

In most states and in all Canadian provinces, the law says to wear safety belts. Here is why: *They work*.

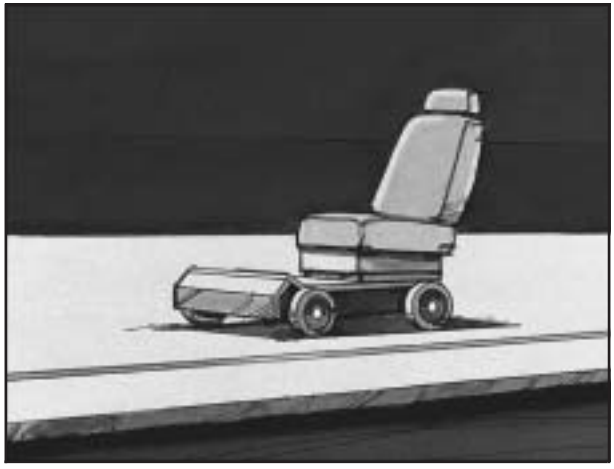
You never know if you will be in a crash. If you do have a crash, you do not know if it will be a bad one.

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 belts they could have been badly hurt or killed.

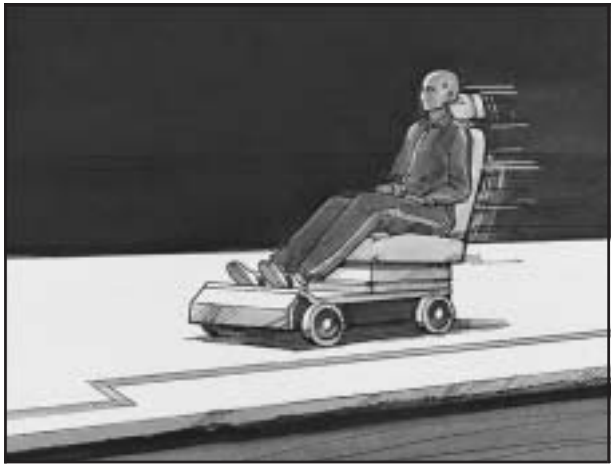
After more than 40 years of safety belts in vehicles, the facts are clear. In most crashes buckling up does matter... a lot!

Why Safety Belts Work

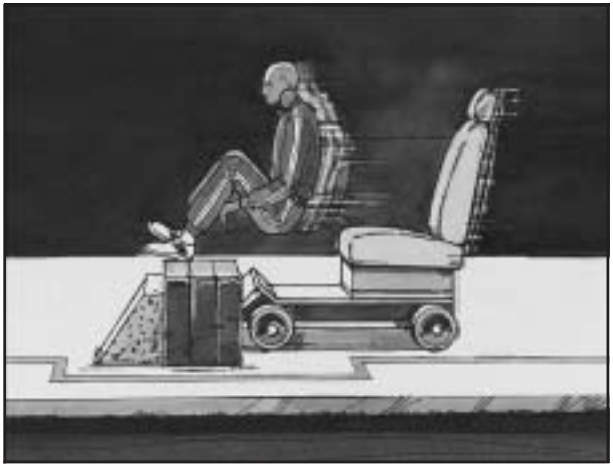
When you ride in or on anything, you go as fast as it goes.



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

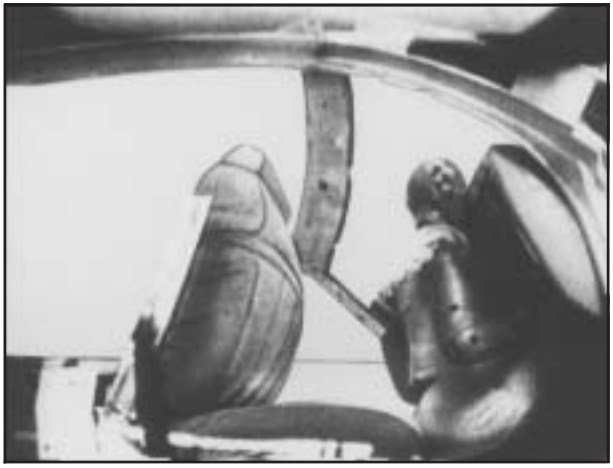


Put someone on it.



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

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 an accident if I am wearing a safety belt?

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

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

A: Airbags are supplemental systems only; so they work *with* safety belts — not instead of them. Every airbag system ever offered for sale has required the use of safety belts. Even if you are in a vehicle that has airbags, you 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 an accident — even one that is not your fault — you and your passengers can be hurt. Being a good driver does not protect you from things beyond your control, such as bad drivers.

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

Safety belts are for everyone.

How to Wear Safety Belts Properly

This part 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 babies. If a child will be riding in your vehicle, see *Older Children on page 43* or *Infants and Young Children on page 46*. Follow those rules for everyone's protection.

First, you will want to know which restraint systems your vehicle has.

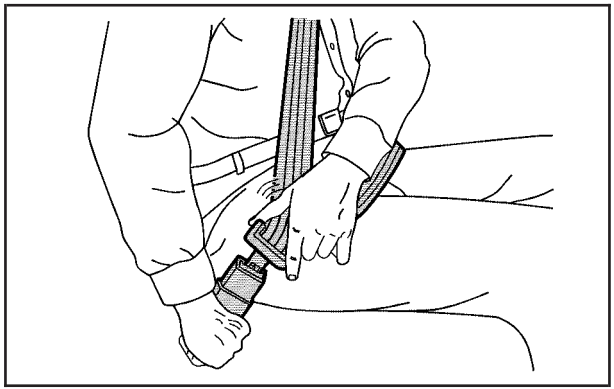
We will start with the driver position.

Driver Position

Lap-Shoulder Belt

The driver has a lap-shoulder belt. Here is how to wear it properly.

1. Close and lock the door.
2. Adjust the seat so you can sit up straight. To see how, see "Seats" in the Index.



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

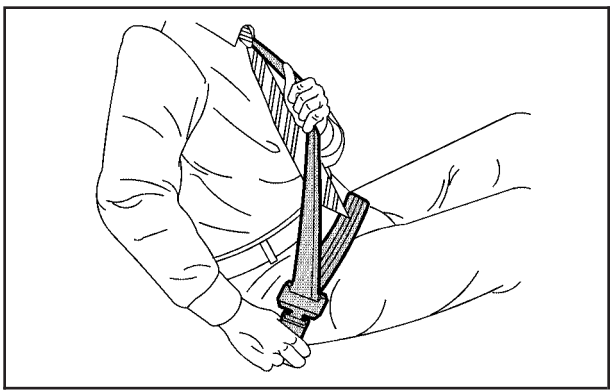
   The lap-shoulder belt may lock if you pull the belt across you very quickly. If this happens, let the belt go back slightly to unlock it. Then pull the belt across you more slowly.

4. 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 42*.

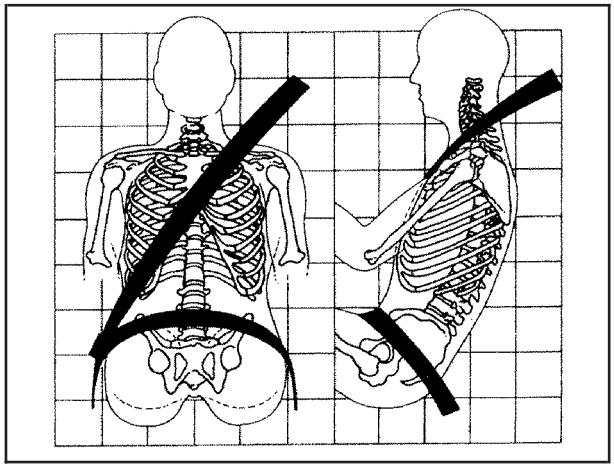
   Make sure the release button on the buckle is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.

5. Move the shoulder belt height adjuster to the height that is right for you. Improper shoulder belt height adjustment could reduce the effectiveness of the safety belt in a crash. See *Shoulder Belt Height Adjustment on page 34*.



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

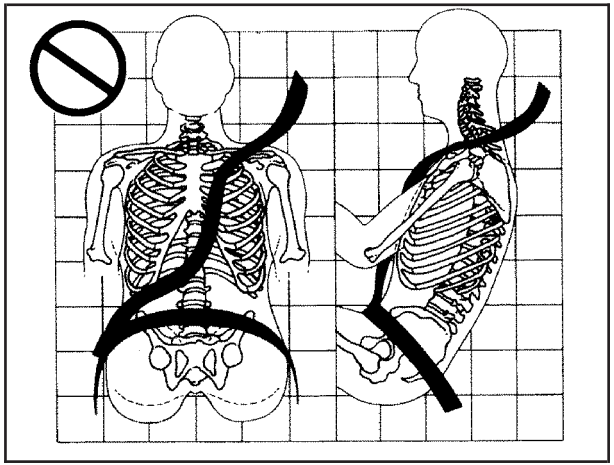
   It may be necessary to pull stitching on the safety belt through the latch plate to fully tighten the lap belt on smaller occupants.



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 at 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 safety belt locks if there is a sudden stop or crash.

Q: What is wrong with this?

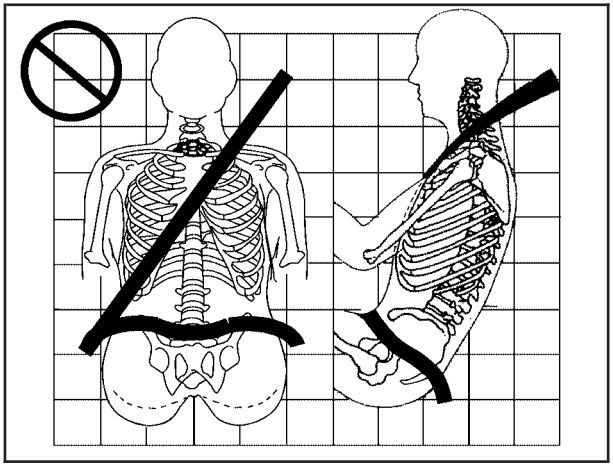


A: The shoulder belt is too loose. It will not give nearly as much protection this way.

⚠ CAUTION:

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 against your body.

Q: What is wrong with this?

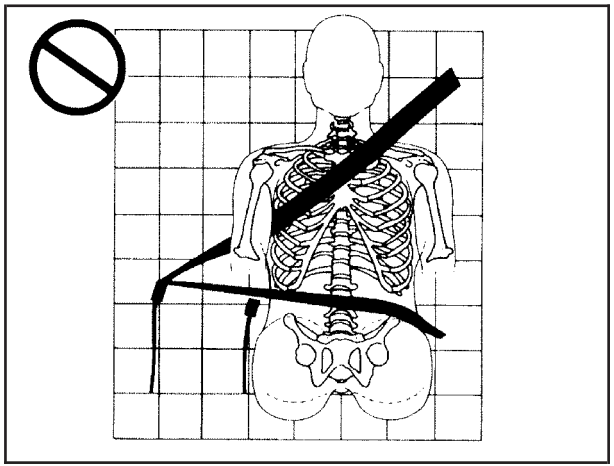


A: The lap belt is too loose. It will not give nearly as much protection this way.

⚠ CAUTION:

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 at 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.

Q: What is wrong with this?

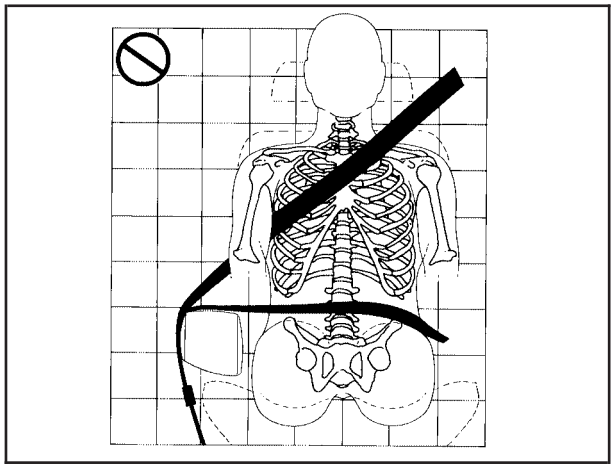


A: The belt is buckled in the wrong place.

⚠ CAUTION:

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 at the pelvic bones. This could cause serious internal injuries. Always buckle your belt into the buckle nearest you.

Q: What is wrong with this?

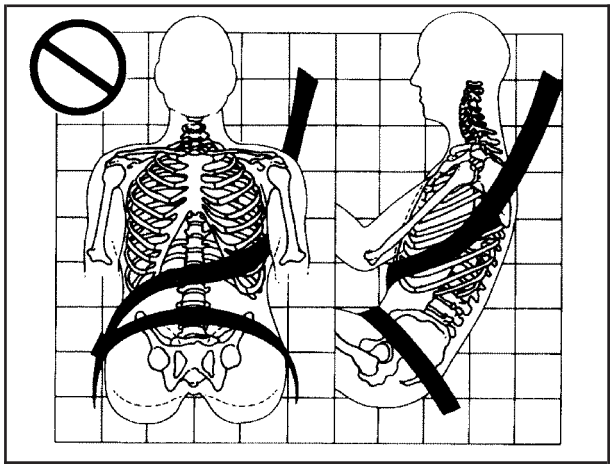


A: The belt is over an armrest.

⚠ CAUTION:

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 at the abdomen, not at 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?

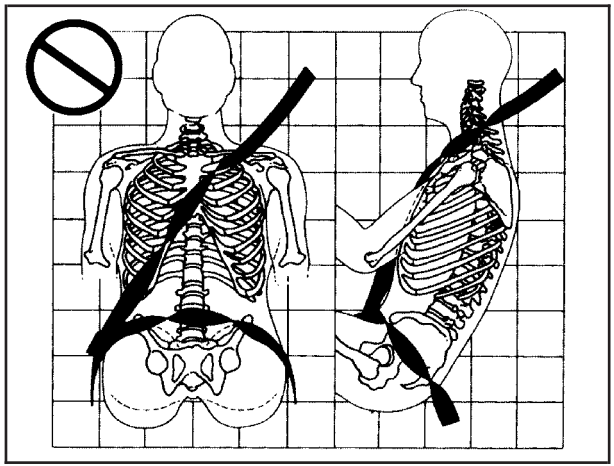


A: The shoulder belt is worn under the arm. It should be worn over the shoulder at all times.

⚠ CAUTION:

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.

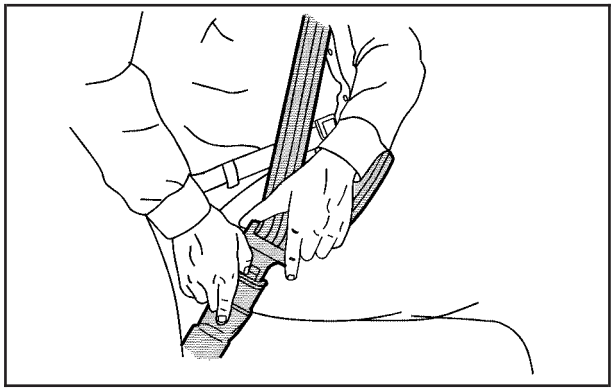
Q: What is wrong with this?



A: The belt is twisted across the body.

⚠ CAUTION:

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 to fix it.



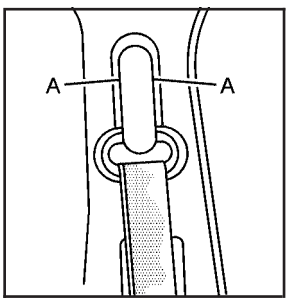
To unlatch the belt, push the button on the buckle. The belt should go back out of the way.

Before you close the door, be sure the belt is out of the way. If you slam the door on it, you can damage both the belt and your vehicle.

Shoulder Belt Height Adjustment

Before you begin to drive, move the shoulder belt adjuster to the height that is right for you.

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



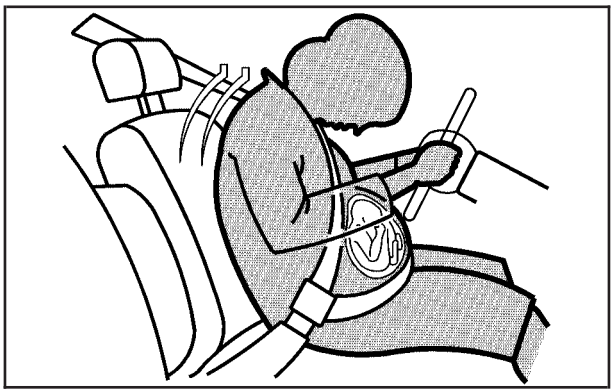
To move it down, squeeze the buttons (A) on the sides of the height adjuster and move the height adjuster to the desired position.

You can move the adjuster up just by pushing up on the shoulder belt guide.

After you move the adjuster to where you want it, try to move it down without squeezing the buttons to make sure it has locked into position.

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.

Right Front Passenger Position

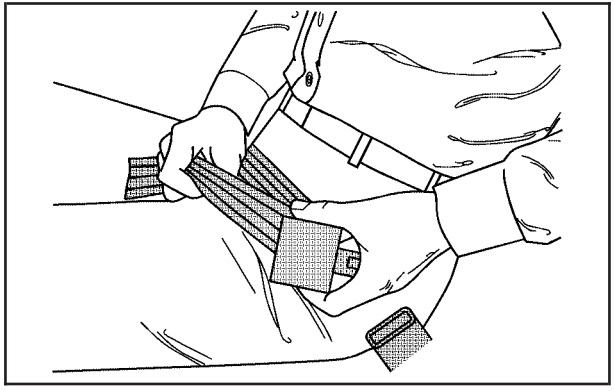
To learn how to wear the right front passenger's safety belt properly, see *Driver Position on page 25*.

The right front passenger's safety belt works the same way as the driver's safety belt — except for one thing. If you ever pull the shoulder portion of the belt out all the way, you will engage the child restraint locking feature. If this happens, let the belt go back all the way and start again.

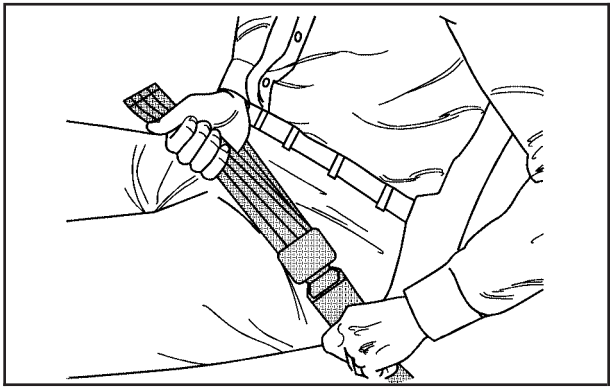
Center Front Passenger Position

Lap Belt

If your vehicle has a front bench seat, someone can sit in the center position.



When you sit in the center front seating position, you have a lap safety belt, which has no retractor. To make the belt longer, tilt the latch plate and pull it along the belt.



To make the belt shorter, pull its free end as shown until the belt is snug.

Buckle, position and release it the same way as the lap part of a lap-shoulder belt. If the belt is not long enough, see *Safety Belt Extender on page 42*.

Make sure the release button on the buckle is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.

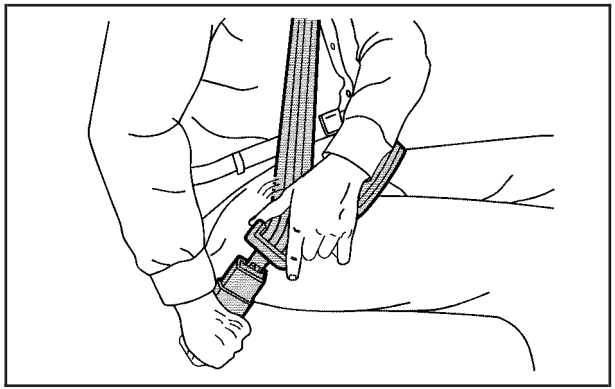
Rear Seat Passengers

It is very important for rear seat passengers to buckle up! Accident statistics show that unbelted people in the rear seat are hurt more often in crashes than those who are wearing safety belts.

Rear passengers who are not safety belted can be thrown out of the vehicle in a crash. And they can strike others in the vehicle who are wearing safety belts.

Lap-Shoulder Belt

All rear seat positions have lap-shoulder belts. Here is how to wear one properly.



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

   The 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.

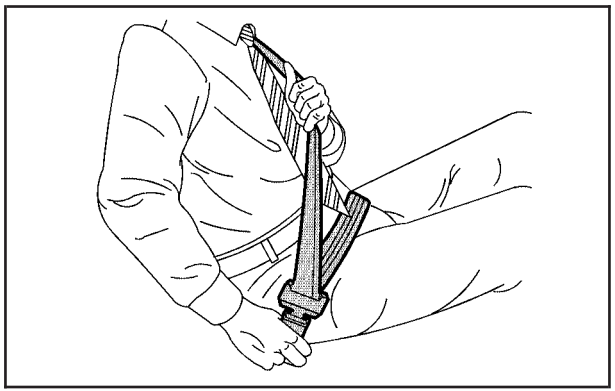
2. Push the latch plate into the buckle until it clicks.

   Pull up on the latch plate to make sure it is secure.

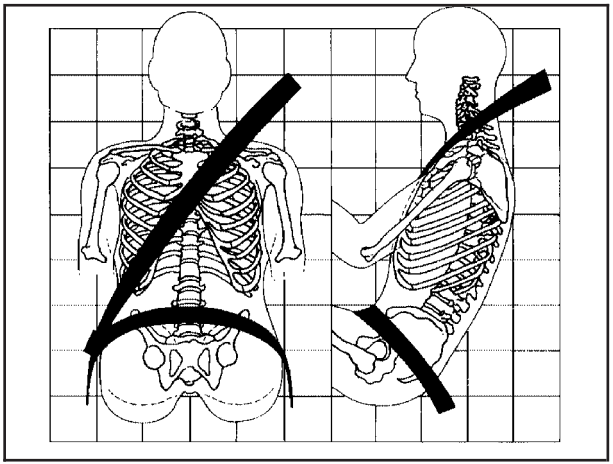
   When the shoulder belt is pulled out all the way, it will lock. If it does, let it go back all the way and start again.

If the belt is not long enough, see *Safety Belt Extender on page 42*.

Make sure the release button on the buckle is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.



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

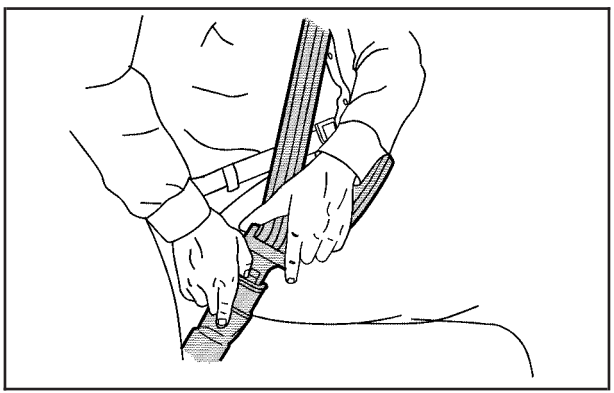


The lap part of the belt should be worn low and snug on the hips, just touching the thighs. In a crash, this applies force to the strong pelvic bones. And you would be less likely to slide under the lap belt. If you slid under it, the belt would apply force at your abdomen. This could cause serious or 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 safety belt locks if there is a sudden stop or a crash.

⚠ CAUTION:

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 against your body.



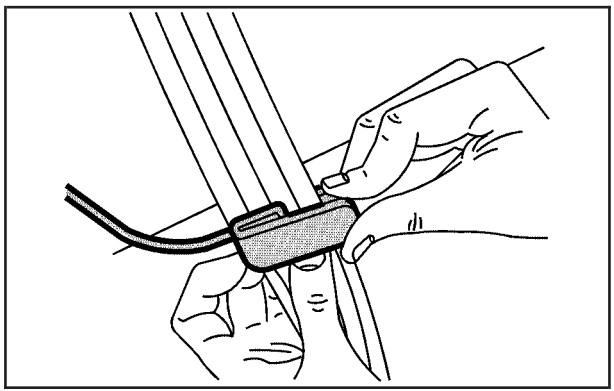
To unlatch the belt, push the button on the buckle.

Rear Safety Belt Comfort Guides

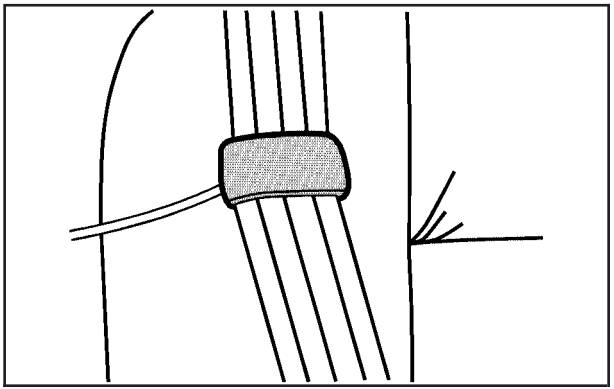
Rear shoulder belt comfort guides may provide added safety belt comfort for older children who have outgrown booster seats and for some adults. When installed on a shoulder belt, the comfort guide positions the belt away from the neck and head.

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

1. Pull the guide out from the pocket on the edge of the seatback.



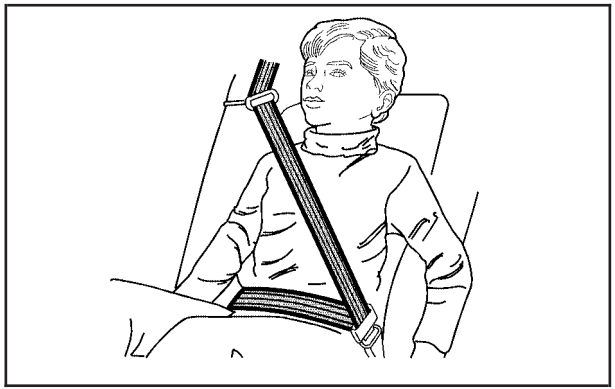
2. Slide the guide under and past the belt. The elastic cord must be under the belt. Then, place the guide over the belt, and insert the two edges of the belt into the slots of the guide.



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

⚠ CAUTION:

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 in *Rear Seat Passengers on page 37*. Make sure that the shoulder belt crosses the shoulder.

To remove and store the comfort guide, squeeze the belt edges together so that you can take them out of the guide. Slide the guide into the storage pocket on the edge of the seatback.

Safety Belt Pretensioners

Your vehicle has safety belt pretensioners for the driver and right front passenger. Although you cannot see them, they are part of the safety belt assembly. They help tighten the safety belts during the early stages of a moderate to severe frontal or near frontal crash if the threshold conditions for pretensioner activation are met.

Pretensioners work only once. If they activate in a crash, you will need to get new ones, and probably other new parts for your safety belt system. See *Replacing Restraint System Parts After a Crash on page 87*.

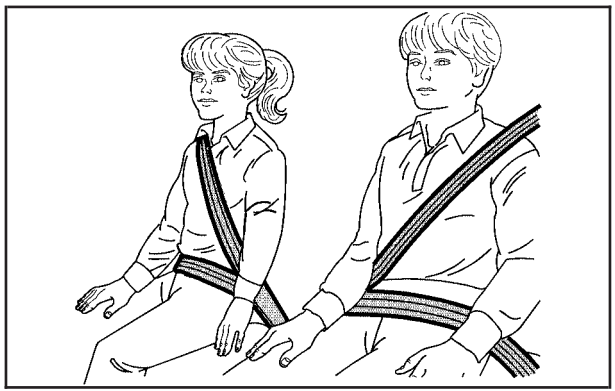
Safety Belt Extender

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

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

Child Restraints

Older Children



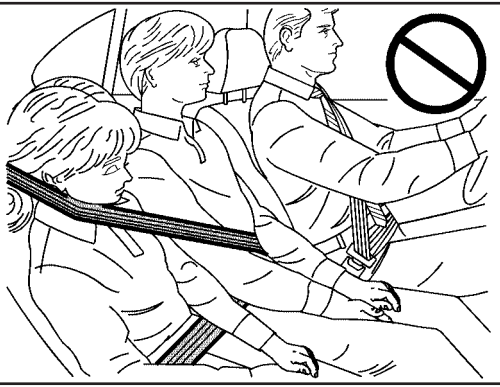
Older children who have outgrown booster seats should wear the vehicle's safety belts.

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. It should never be worn over the abdomen, which could cause severe or even fatal internal injuries in a crash.

According to accident statistics, children are safer when properly restrained in the rear seating positions than in the front seating positions.

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.



⚠ CAUTION:

Never do this.

Here two children are wearing the same belt. The belt can not properly spread the impact forces. In a crash, the two children can be crushed together and seriously injured. A belt must be used by only one person at a time.

Q: What if a child is wearing a lap-shoulder belt, but the child is so small that the shoulder belt is very close to the child's face or neck?

A: If the child is sitting in a seat next to a window, move the child toward the center of the vehicle. Also see *Rear Safety Belt Comfort Guides on page 39*. If the child is sitting in the center rear seat passenger position, move the child toward the safety belt buckle. In either case, be sure that the shoulder belt still is on the child's shoulder, so that in a crash the child's upper body would have the restraint that belts provide.

⚠ CAUTION:

Never do this.

Here a child is sitting in a seat that has a lap-shoulder belt, but the shoulder part is behind the child. If the child wears the belt in this way, in a crash the child might slide under the belt. The belt's force would then be applied right on the child's abdomen. That could cause serious or fatal injuries.

Wherever the child sits, the lap portion of the belt should be worn low and snug on the hips, just touching the child's thighs. This applies belt force to the child's pelvic bones in a crash.

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.

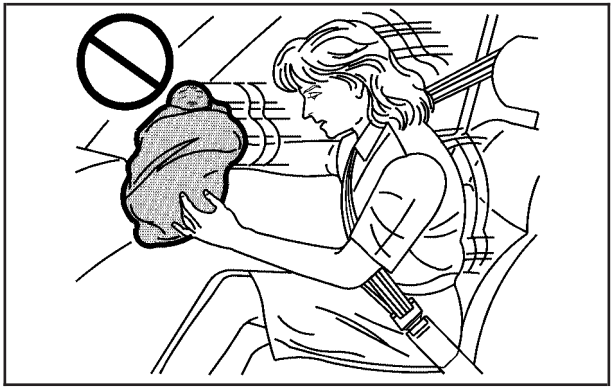
⚠ CAUTION:

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.

Every time infants and young children ride in vehicles, they should have the protection provided by appropriate restraints. Young children should not use the vehicle's adult safety belts alone, unless there is no other choice. Instead, they need to use a child restraint.

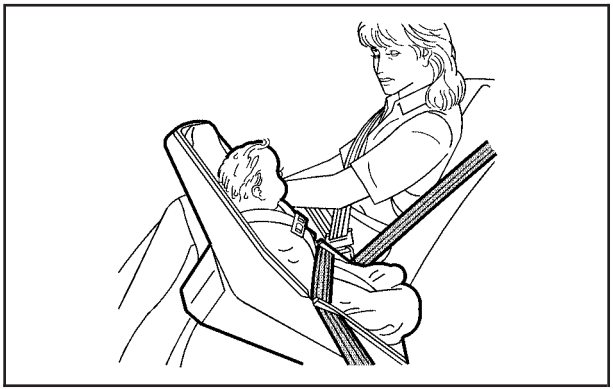
⚠ CAUTION:

People should never hold a baby in their arms while riding in a vehicle. A baby does not weigh much — until a crash. During a crash a baby will become so heavy it is not possible to hold it. For example, in a crash at only 25 mph (40 km/h), a 12 lb (5.5 kg) baby will suddenly become a 240 lb (110 kg) force on a person's arms. A baby should be secured in an appropriate restraint.



⚠ CAUTION:

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.



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.

⚠ CAUTION:

Newborn infants need complete support, including support for the head and neck. This is necessary because a newborn infant's neck is weak and its head weighs so much compared with the rest of its body. In a crash, an infant in a rear-facing seat settles into the restraint, so the crash

CAUTION: (Continued)

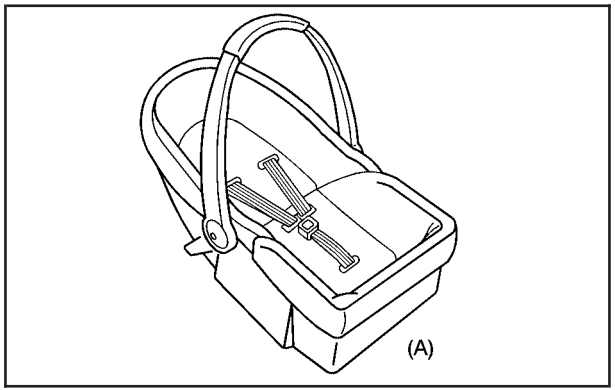
CAUTION: (Continued)

forces can be distributed across the strongest part of an infant's body, the back and shoulders. Infants always should be secured in appropriate infant restraints.

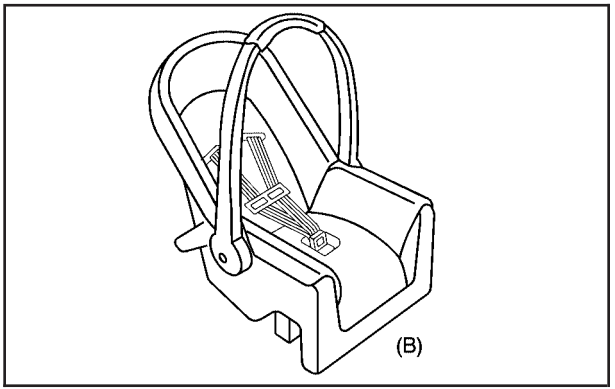
⚠ CAUTION:

The body structure of a young child is quite unlike that of an adult or older child, for whom the safety belts are designed. 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. Young children always should be secured in appropriate child restraints.

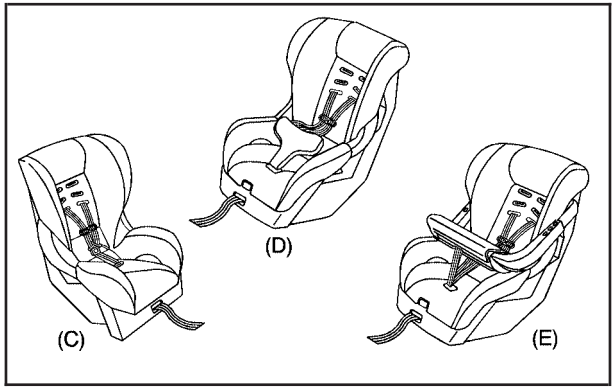
Child Restraint Systems



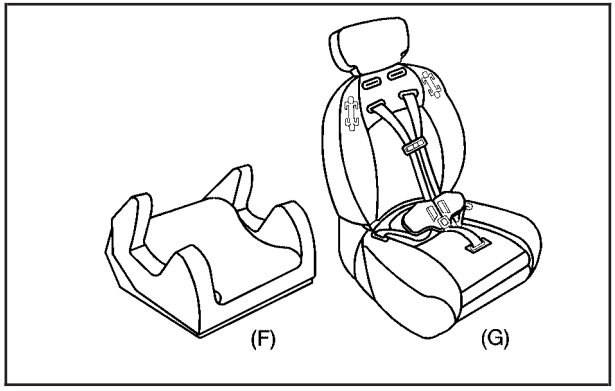
An infant car bed (A), a special bed made for use in a motor vehicle, is an infant restraint system designed to restrain or position a child on a continuous flat surface. Make sure that the infant's head rests toward the center of the vehicle.



A rear-facing infant seat (B) 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.



A forward-facing child seat (C-E) provides restraint for the child's body with the harness and also sometimes with surfaces such as T-shaped or shelf-like shields.



A booster seat (F-G) is a child restraint designed to improve the fit of the vehicle's safety belt system. Some booster seats have a shoulder belt positioner, and some high-back booster seats have a five-point harness. A booster seat can also help a child to see out the window.

Q: How Should I Use a Child Restraint?

A: A child restraint system is any device designed for use in a motor vehicle to restrain, seat, or position children. A built-in child restraint system is a permanent part of the motor vehicle. An add-on child restraint system is a portable one, which is purchased by the vehicle's owner. To help reduce injuries, an add-on child restraint must be secured in the vehicle. With built-in or add-on child restraints, the child has to be secured within the child restraint.

When choosing an add-on child restraint, be sure the child restraint is designed to be used in a vehicle. If it is, it will have a label saying that it meets federal motor vehicle safety standards. Then follow the instructions for the restraint. You may find these instructions on the restraint itself or in a booklet, or both.

Securing an Add-on Child Restraint in the Vehicle

⚠ CAUTION:

A child can be seriously injured or killed in a crash if the child restraint is not properly secured in the vehicle. Make sure the child restraint is properly installed in the vehicle using the vehicle's safety belt or LATCH system, following the instructions that came with that restraint, and also 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) on page 55* for more information.
A child 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 your vehicle — even when no child is in it.

Securing the Child Within the Child Restraint

There are several systems for securing the child within the child restraint. One system, the three-point harness, has straps that come down over each of the infant's shoulders and buckle together at the crotch. The five-point harness system has two shoulder straps, two hip straps, and a crotch strap. A shield may take the place of hip straps. A T-shaped shield has shoulder straps that are attached to a flat pad which rests low against the child's body.

A shelf- or armrest-type shield has straps that are attached to a wide, shelf-like shield that swings up or to the side.

⚠ CAUTION:

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

Because there are different systems, it is important to refer to the instructions that come with the restraint. A child can be endangered in a crash if the child is not properly secured in the child restraint.

Where to Put the Restraint

Accident statistics show that children are safer if they are restrained in the rear rather than the front seat. We recommend that child restraints be secured in a rear seat, including an infant riding in a rear-facing infant seat, a child riding in a forward-facing child seat and an older child riding in a booster seat.

Your vehicle has a rear seat that will accommodate a rear-facing child restraint. A label on your 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.

⚠ CAUTION:

A child in a rear-facing child restraint can be seriously injured or killed if the right front passenger’s airbag inflates.

CAUTION: (Continued)

CAUTION: (Continued)

This is because the back of the rear-facing child restraint would be very close to the inflating airbag.

Even though the passenger sensing system is designed to turn off the passenger’s frontal airbag if the system detects a rear-facing child restraint, no system is fail-safe, and no one can guarantee that an airbag will not deploy under some unusual circumstance, even though it is turned off. We recommend that rear-facing child restraints be secured in the rear seat, even if the airbag is off.

If you need to 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.

⚠ CAUTION:

A child in a child restraint in the center front seat can be badly injured or killed by the right front passenger's airbag if it inflates. Never secure a child restraint in the center front seat. It is always better to secure a child restraint in the rear seat.

Wherever you install a child restraint, 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 your vehicle — even when no child is in it.

Lower Anchors and Tethers for Children (LATCH)

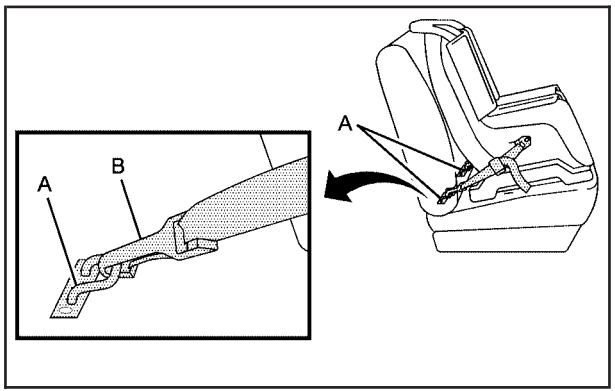
The LATCH system holds a child restraint during driving or in a crash. This system is designed to make installation of a child restraint easier. The LATCH system uses anchors in the vehicle and attachments on the child restraint that are made for use with the LATCH system

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.

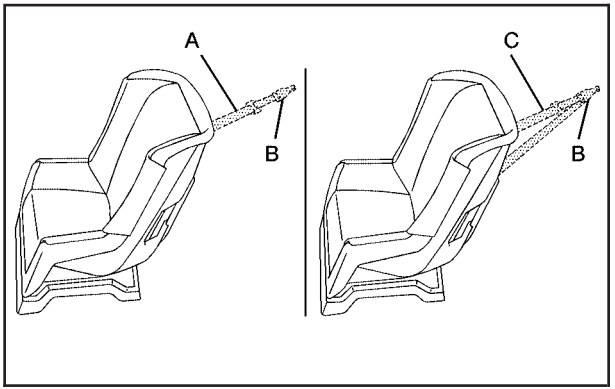
Not all vehicle seating positions or child restraints have lower anchors and attachments or top tether anchors and attachments.

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



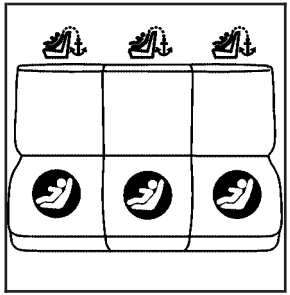
A top tether (A, C) anchors the top of the child restraint to the vehicle. A top tether anchor is built into the vehicle. The top tether attachment (B) on the child restraint connects to the top tether anchor in the vehicle in order to reduce the forward movement and rotation of the child restraint during 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 a top tether 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. In the United States, some child restraints also have a top tether. 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

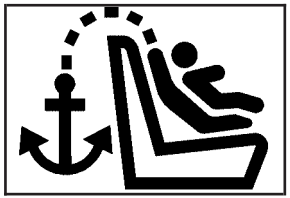


Rear Seat

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

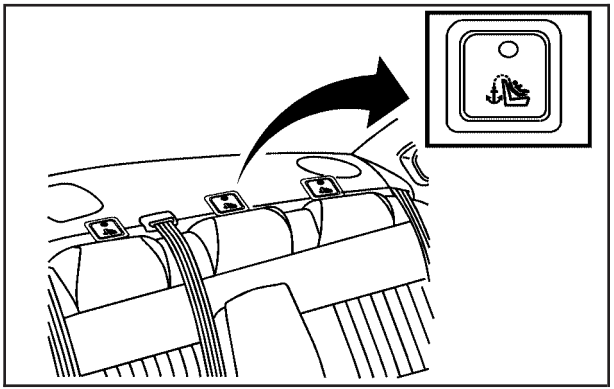
(Lower Anchor): Seating positions with two lower anchors.

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 on the trim cover.

The top tether anchors are located under the trim covers on the rear seatback filler panel behind each head restraint. 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 the right front passenger's position 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. There is no place to attach the top tether in this position.

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 54* for additional information.

Securing a Child Restraint Designed for the LATCH System

⚠ CAUTION:

If a LATCH-type child restraint is not attached to anchors, the restraint will not be able to protect the child correctly. In a crash, the child could be seriously injured or killed. Make sure that a LATCH-type 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.

⚠ CAUTION:

Each top tether anchor and lower anchor in the vehicle is designed to hold only one child restraint. 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 if this happens. To help prevent injury to people and damage to your vehicle, attach only one child restraint per anchor.

⚠ CAUTION:

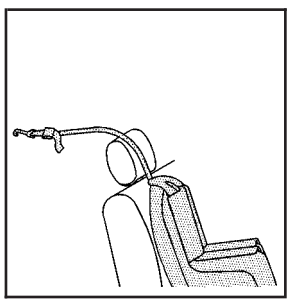
Children can be seriously injured or strangled if a shoulder belt is wrapped around their neck and the safety belt continues to tighten. Secure any unused safety belts behind the child restraint so children cannot reach them. Pull the shoulder belt all the way out of the retractor to set the lock, if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

Notice: **Contact between the child restraint or the LATCH attachment parts and the vehicle's safety belt assembly may cause damage to these parts. Make sure when securing unused safety belts behind the child restraint that there is no contact between the child restraint or the LATCH attachment parts and the vehicle's safety belt assembly.**

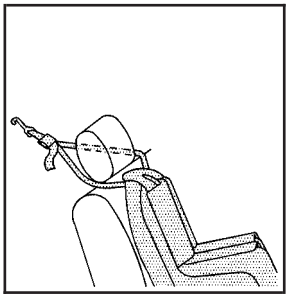
Folding an empty rear seat with the safety belts secured may cause damage to the safety belt or the seat. When removing the child restraint, always remember to return the safety belts to their normal, stowed position before folding the rear seat.

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. Refer to the child restraint instructions and the following steps:
   2.1. Find the top tether anchor.
   2.2. Push on the depression at the rear of the trim cover lid and swing the lid open to expose the top tether anchor.
   2.3. Route, attach, and tighten the top tether according to your child restraint instructions and the following instructions:



If the position you are using has a fixed headrest and you are using a single tether, route the tether over the head restraint.



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

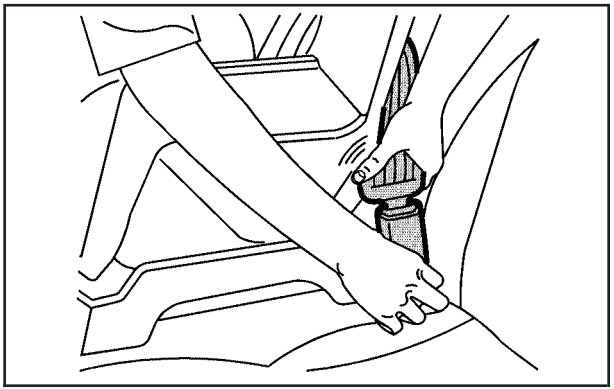
3. Push and pull the child restraint in different directions to be sure it is secure.

Securing a Child Restraint in a Rear Seat Position

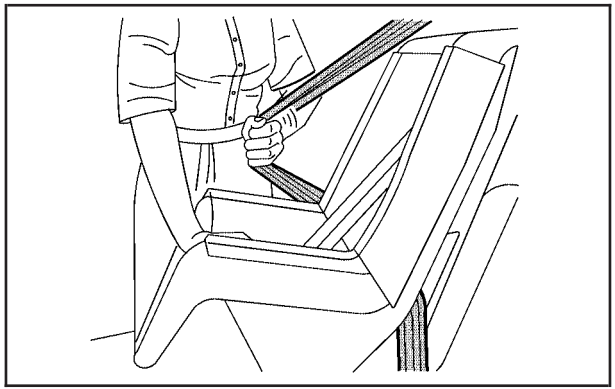
If your child restraint has the LATCH system, see *Lower Anchors and Tethers for Children (LATCH) on page 55*.

If your child restraint does not have the LATCH system, you will be using the lap-shoulder 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.

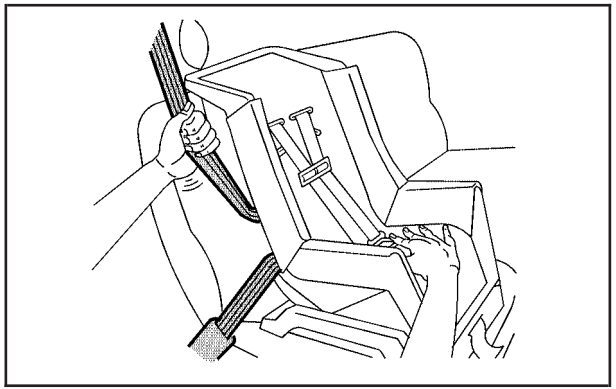
1. Put the child restraint on the seat.
2. Pick up the latch plate, and run the lap and shoulder portions of the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.



3. Buckle the belt. Make sure the release button is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.



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. If you are using a forward-facing child restraint, you may find it helpful to use your knee to push down on the child restraint as you tighten the belt.

6. If your child restraint manufacturer recommends using a top tether, attach and tighten the top tether to the top tether anchor. Refer to the instructions that came with the child restraint and see *Lower Anchors and Tethers for Children (LATCH) on page 55*.
7. Push and pull the child restraint in different directions to be sure it is secure.

To remove the child restraint, if the top tether is attached to the top tether anchor, disconnect it. Unbuckle the vehicle's safety belt and let it go back all the way. The safety belt will move freely again and be ready to work for an adult or larger child passenger.

Securing a Child Restraint in the Center Front Seat Position

⚠ CAUTION:

A child in a child restraint in the center front seat can be badly injured or killed by the right front passenger's airbag if it inflates. Never secure a child restraint in the center front seat. It is always better to secure a child restraint in the rear seat.

Do not secure a child restraint in the center front seat position.

Securing a Child Restraint in the Right Front Seat Position

Your vehicle has a right front passenger's airbag. A rear seat is a safer place to secure a forward-facing child restraint. See *Where to Put the Restraint on page 54*.

In addition, your vehicle has a passenger sensing system. The passenger sensing system is designed to turn off the right front passenger's frontal airbag when an infant in a rear-facing infant seat or a small child in a forward-facing child restraint or booster seat is detected. See *Passenger Sensing System on page 79* and *Passenger Airbag Status Indicator on page 177* for more information on this including important safety information.

A label on your 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.

⚠ CAUTION:

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

Even though the passenger sensing system is designed to turn off the right front passenger's frontal airbag if the system detects a rear-facing child restraint, no system is fail-safe, and no one can guarantee that an airbag will not deploy under some unusual circumstance, even though it is turned off. We recommend that rear-facing child restraints be secured in the rear seat, even if the airbag is off.

If you need to 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 you need to secure a forward-facing child restraint in the right front seat position, move the seat as far back as it will go before securing the forward-facing child restraint. See *Manual Passenger Seat on page 9* or *Power Seats on page 10*.

If your child restraint has the LATCH system, see *Lower Anchors and Tethers for Children (LATCH) on page 55*.

There is no top tether anchor at the right front seating position. Do not secure a child restraint in this position 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 tether must be anchored. See *Lower Anchors and Tethers for Children (LATCH) on page 55* if your child restraint has a top tether.

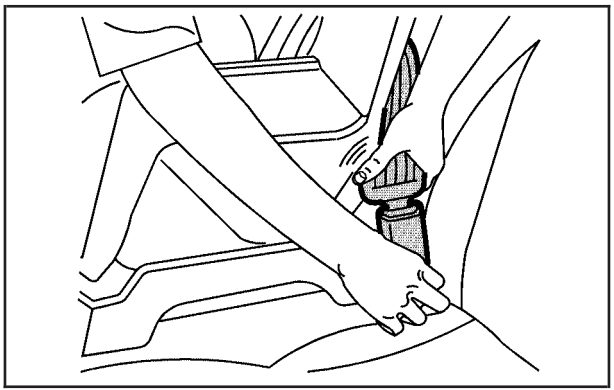
You will be using the lap-shoulder belt to secure the child restraint in this position. Be sure to follow the instructions that came with the child restraint. Secure the child in the child restraint when and as the instructions say.

1. Your vehicle has a right front passenger's frontal airbag. See *Passenger Sensing System on page 79*. We recommend that rear-facing child restraints be secured in a rear seat, even if the airbag is off. If your child restraint is forward-facing, move the seat as far back as it will go before securing the child restraint in this seat. See *Manual Passenger Seat on page 9* or *Power Seats on page 10*.

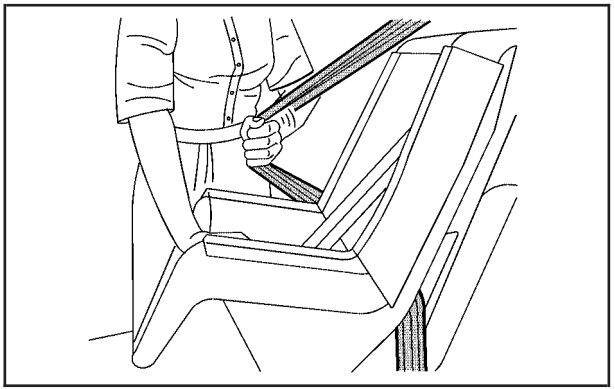
   When the passenger sensing system has turned off the right front passenger's frontal airbag, the off indicator in the passenger airbag status indicator should light and stay lit when you turn the ignition to RUN or START. See *Passenger Airbag Status Indicator on page 177*.

2. Put the child restraint on the seat.

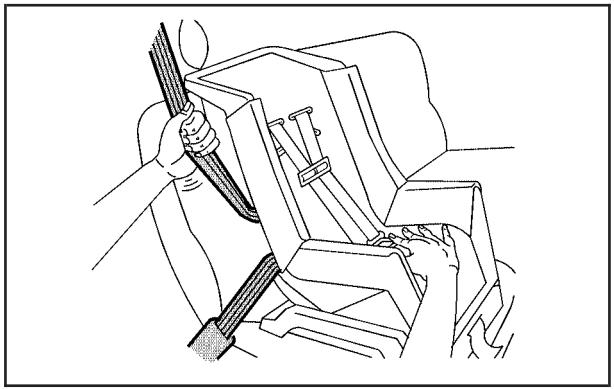
3. Pick up the latch plate, and run the lap and shoulder portions of the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.



4. Buckle the belt. Make sure the release button is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.



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.

   If you are using a forward-facing child restraint, you may find it helpful to use your knee to push down on the child restraint as you tighten the belt. You should not be able to pull more of the belt from the retractor once the lock has been set.

7. Push and pull the child restraint in different directions to be sure it is secure.
8. If the airbag is off, the off indicator on the instrument panel will be lit and stay lit when the key is turned to RUN or START.

If a child restraint has been installed and the on indicator is lit, turn the vehicle off. Remove the child restraint from the vehicle and reinstall the child restraint.

If, after reinstalling the child restraint and restarting the vehicle, the on indicator is still lit, check to make sure that the vehicle's seatback is not pressing the child restraint into the seat cushion. If this happens, slightly recline the vehicle's seatback and adjust the seat cushion if possible. Also make sure the child restraint is not trapped under the vehicle head restraint. If this happens, adjust the head restraint.

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.

To remove the child restraint, just unbuckle the vehicle's safety belt and let it go back all the way. The safety belt will move freely again and be ready to work for an adult or larger child passenger.

Airbag System

Your vehicle has a frontal airbag for the driver and a frontal airbag for the right front passenger. Your vehicle may also have roof-mounted side impact airbags. Roof-mounted side impact airbags are available for the driver and the passenger seated directly behind the driver and for the right front passenger and the passenger seated directly behind that passenger.

If your vehicle has roof-mounted side impact airbags, the word AIRBAG will appear on the airbag covering on the ceiling near the side windows.

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

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

⚠ CAUTION:

You can be severely injured or killed in a crash if you are not wearing your safety belt — even if you have airbags. 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. All airbags are designed to work with safety belts but do not replace them.

Frontal airbags for the driver and right front passenger are designed to deploy in moderate to severe frontal and near frontal crashes. They are not designed to

CAUTION: (Continued)

CAUTION: (Continued)

inflate in rollover, rear crashes, or in many side crashes. And, for some unrestrained occupants, frontal airbags may provide less protection in frontal crashes than more forceful airbags have provided in the past.

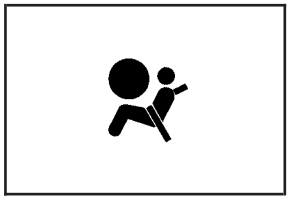
Roof-mounted side impact airbags are designed to inflate in moderate to severe crashes where something hits the side of your vehicle. They are not designed to inflate in frontal, in rollover or in rear crashes. Everyone in your vehicle should wear a safety belt properly — whether or not there is an airbag for that person.

⚠ CAUTION:

Both frontal and side impact airbags inflate with great force, faster than the blink of an eye. If you are too close to an inflating airbag, as you would be if you were leaning forward, it could seriously injure you. Safety belts help keep you in position for airbag inflation before and during a crash. Always wear your safety belt even with frontal 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.

⚠ CAUTION:

Anyone who is up against, or very close to, any airbag when it inflates can be seriously injured or killed. Airbags plus lap-shoulder belts offer the best protection for adults, 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 43* or *Infants and Young Children on page 46*.



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 176* for more information.

Where Are the Airbags?

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

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

If your vehicle has a roof-mounted side impact airbag for the driver and the person seated directly behind the driver, it is in the ceiling above the side windows.

If your vehicle has a roof-mounted side impact airbag for the right front passenger and the person seated directly behind that passenger, it is in the ceiling above the side windows.

⚠ CAUTION:

If something is between an occupant and an airbag, the bag 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. And, if your vehicle has roof-mounted side impact airbags, never secure anything to the roof of your vehicle by routing the rope or tie down through any door or window opening. If you do, the path of an inflating side impact airbag will be blocked. The path of an inflating airbag must be kept clear.

When Should an Airbag Inflate?

The driver's and right front passenger's frontal airbags are designed to inflate in moderate to severe frontal or near-frontal crashes. But they are designed to inflate only if the impact exceeds a predetermined deployment threshold. Deployment thresholds take into account a variety of desired deployment and non-deployment events and 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 your 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.

In addition, your vehicle has "dual-stage" frontal airbags, which adjust the restraint according to crash severity. Your 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, these airbags inflate at a level less than full deployment. For more severe frontal impacts, full deployment occurs. If the front of your vehicle goes straight into a wall that does not move or deform, the threshold level for the reduced deployment is about 12 to 16 mph (19 to 26 km/h), and the threshold level for a full deployment is about 18 to 22 mph (29 to 35.4 km/h). The threshold level can vary, however, with specific vehicle design, so that it can be somewhat above or below this range.

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.

Frontal airbags (driver and right front passenger) are not intended to inflate during vehicle rollovers, rear impacts, or in many side impacts.

Your vehicle may or may not have side impact airbags. See *Airbag System on page 69*. Side impact airbags are intended to inflate in moderate to severe side crashes. A side impact airbag will inflate if the crash severity is above the system's designed threshold level. The threshold level can vary with specific vehicle design. Side impact airbags are not intended to inflate in frontal or near-frontal impacts, rollovers, or rear impacts. Both side impact airbags will deploy when either side is struck.

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 in frontal or near-frontal impacts. For side impact airbags, inflation is determined by the location and severity of the impact.

What Makes an Airbag Inflate?

In an impact of sufficient severity, the airbag sensing system detects that the vehicle is in a crash. The sensing system triggers a release of gas from the inflator, which inflates the airbag. The inflator, airbag, and related hardware are all part of the airbag modules inside the steering wheel and in the instrument panel in front of the right front passenger. For vehicles with roof-mounted side impact airbags, there are also airbag modules in the ceiling of the vehicle, near the side windows.

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. Airbags distribute the force of the impact more evenly over the occupant's upper body, stopping the occupant more gradually. But the frontal airbags would not help you in many types of collisions, including rollovers, rear impacts, and many side impacts, primarily because an occupant's motion is not toward the airbag. Side impact airbags would not help you in many types of collisions, including many frontal or near frontal collisions, rollovers, and rear impacts.

Airbags should never be regarded as anything more than a supplement to safety belts, and then only in moderate to severe frontal or near-frontal collisions for the driver's and right front passenger's frontal airbags, and only in moderate to severe side collisions for vehicles with side impact airbags.

What Will You See After an Airbag Inflates?

After a frontal airbag inflates, it quickly deflates, so quickly that some people may not even realize the airbag inflated. Roof-mounted side impact airbags may still be at least partially inflated minutes after the vehicle comes to rest. Some components of the airbag module — the steering wheel hub for the driver's airbag, the instrument panel for the right front passenger's airbag, or the garnish trim and ceiling of your vehicle near the side windows for vehicles with roof–mounted side impact airbags — may be hot for a short time. 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.

⚠ CAUTION:

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

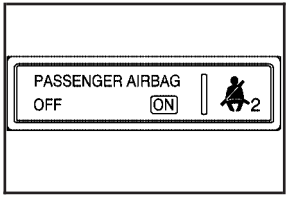
Your vehicle has a feature that may automatically unlock the doors, turn the interior lamps on, and turn the hazard warning flashers when the airbags inflate. You can lock the doors again, turn the interior lamps off, and turn the hazard warning flashers off by using the controls for those features.

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

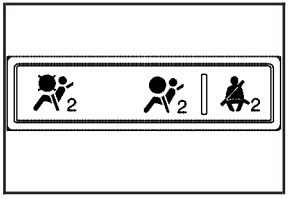
- Airbags are designed to inflate only once. After an airbag inflates, you will need some new parts for the airbag system. If you do not get them, the airbag system will not be there to help protect you in another crash. A new system will include airbag modules and possibly other parts. The service manual for your vehicle covers the need to replace other parts.
- Your vehicle has a crash sensing and diagnostic module which records information after a crash. See *Vehicle Data Collection and Event Data Recorders on page 440*.
- Let only qualified technicians work on the airbag system. Improper service can mean that your airbag system will not work properly. See your dealer for service.

Passenger Sensing System

Your vehicle has a passenger sensing system. The passenger airbag status indicator on the instrument panel will be visible when you turn your ignition key to RUN or START. The words ON and OFF or the symbol for on and off, will be visible during the system check.



United States



Canada

If you use remote start to start your vehicle from a distance, if your vehicle has this feature, you may not see the system check. When the system check is complete, either the word ON or the word OFF, or the symbol for on or the symbol for off will be visible. See *Passenger Airbag Status Indicator on page 177*.

The passenger sensing system will turn off the right front passenger's frontal airbag under certain conditions. The driver's airbags are not part of the passenger sensing system.

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

Accident statistics show that children are safer if they are restrained in the rear rather than the front seat. We recommend that child restraints be secured in a rear seat, including an infant riding in a rear-facing infant seat, a child riding in a forward-facing child seat and an older child riding in a booster seat.

There is a label on your sun visor that 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. Never put a rear facing child restraint in the right front passenger seat unless the airbag is off.

Here is why:

⚠ CAUTION:

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

Even though the passenger sensing system is designed to turn off the passenger's frontal airbag if the system detects a rear-facing child restraint, no system is fail-safe, and no one can guarantee that an airbag will not deploy under some unusual circumstance, even though it is turned off. We recommend that rear-facing child restraints be secured in the rear seat, even if the airbag is off.

CAUTION: (Continued)

CAUTION: (Continued)

If you need to 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.

The passenger sensing system is designed to turn off the right front passenger's frontal 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 forward-facing 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's frontal airbag has been turned off by the passenger sensing system, the off indicator on the instrument panel will light and stay lit to remind you that the airbag is off.

If a child restraint has been installed and the on indicator is lit, turn the vehicle off. Remove the child restraint from the vehicle and reinstall the child restraint following the child restraint manufacturer's directions and refer to *Securing a Child Restraint in the Right Front Seat Position on page 65*.

If, after reinstalling the child restraint and restarting the vehicle, the on indicator is still lit, check to make sure that the vehicle's seatback is not pressing the child restraint into the seat cushion. If this happens, slightly recline the vehicle's seatback and adjust the seat cushion if possible. Also make sure the child restraint is not trapped under the vehicle head restraint. If this happens, adjust the head restraint.

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

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

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

If a person of adult-size is sitting in the right front passenger's seat, but the off indicator is lit, it could be because that person is not sitting properly in the seat. If this happens, turn the vehicle off and ask the person to place the seatback in the fully upright position, then sit upright in the seat, centered on the seat cushion, with the person's legs comfortably extended.

Restart the vehicle and have the person remain in this position for about two minutes. This will allow the system to detect that person and then enable the passenger's airbag.

⚠ CAUTION:

If the airbag readiness light in the instrument panel cluster ever comes on and stays on, it means that something may be wrong with the airbag system. If this ever happens, have the vehicle serviced promptly, because an adult-size person sitting in the right front passenger's seat may not have the protection of the frontal airbag. See *Airbag Readiness Light on page 176* for more on this, including important safety information.

Aftermarket equipment, such as seat covers, can affect how well the passenger sensing system operates. You may want to consider not using seat covers or other aftermarket equipment if your vehicle has the passenger sensing system. See *Adding Equipment to Your Airbag-Equipped Vehicle on page 85* for more information about modifications that can affect how the system operates.

⚠ CAUTION:

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

Servicing Your Airbag-Equipped Vehicle

Airbags affect how your vehicle should be serviced. There are parts of the airbag system in several places around your vehicle. You do not want the system to inflate while someone is working on your vehicle. Your dealer and the service manual have information about servicing your vehicle and the airbag system. To purchase a service manual, see *Service Publications Ordering Information on page 447*.

⚠ CAUTION:

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.

The airbag system does not need regular maintenance.

Adding Equipment to Your Airbag-Equipped Vehicle

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

A: Yes. If you add things that change your vehicle's frame, bumper system, height, front end or side sheet metal, they may keep the airbag system from working properly. Also, the airbag system may not work properly if you relocate any of the airbag sensors. If you have any questions about this, you should contact Customer Assistance before you modify your vehicle. The phone numbers and addresses for Customer Assistance are in Step Two of the Customer Satisfaction Procedure in this manual. See *Customer Satisfaction Procedure on page 428*.

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: Changing or moving any parts of the front seats, safety belts, the airbag sensing and diagnostic module, steering wheel, instrument panel, ceiling headliner, ceiling and pillar garnish trim, roof-mounted airbag modules, or airbag wiring can affect the operation of the airbag system. 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. See *Customer Satisfaction Procedure on page 428*.

Restraint System Check

Checking the Restraint Systems

Now and then, make sure the safety belt reminder light and all your belts, buckles, latch plates, retractors and anchorages are working properly. Look for any other loose or damaged safety belt system parts. If you see anything that might keep a safety belt system from doing its job, have it repaired. See *Care of Safety Belts on page 393* for more information.

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.

Also look for any opened or broken airbag covers, and have them repaired or replaced. The airbag system does not need regular maintenance.

Notice: **If you damage the covering for the driver's or the right front passenger's airbag, or the side impact airbag covering (if equipped) on the ceiling near the side windows, the airbag may not work properly. You may have to replace the airbag module in the steering wheel, both the airbag module and the instrument panel for the right front passenger's airbag, or side impact airbag module and ceiling covering for roof-mounted side impact airbags (if equipped.) Do not open or break the airbag coverings.**

Replacing Restraint System Parts After a Crash

⚠ CAUTION:

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

If you have had a crash, do you need new belts or LATCH system parts?

After a very minor collision, nothing may be necessary. But if the belts were stretched, as they would be if worn during a more severe crash, then you need new parts.

If the LATCH system was being used during a more severe crash, you may need new LATCH system parts.

If belts are cut or damaged, replace them. Collision damage also may mean you will need to have LATCH system, safety belt or seat parts repaired or replaced. New parts and repairs may be necessary even if the belt or LATCH system was not being used at the time of the collision.

If an airbag inflates, you will need to replace airbag system parts. See the part on the airbag system earlier in this section.

If the frontal or side airbags inflate you will also need to replace the driver and front passenger's safety belt retractor assembly. Be sure to do so. Then the new retractor assembly will be there to help protect you in a collision.

After a crash you may need to replace the driver and front passenger's safety belt retractor assemblies, even if the frontal airbags have not deployed. The driver and front passenger's safety belt retractor assemblies contain the safety belt pretensioners. Have your safety belt pretensioners checked if your vehicle has been in a collision, or if your airbag readiness light stays on after you start your vehicle or while you are driving. See *Airbag Readiness Light on page 176*.

NOTES

Section 2 Features and Controls

Keys 91
Remote Keyless Entry (RKE) System 92
Remote Keyless Entry (RKE) System Operation 93

Doors and Locks 100
Door Locks 100
Power Door Locks 101
Automatic Door Lock 102
Programmable Automatic Door Unlock 102
Rear Door Security Locks 102
Lockout Protection 103
Trunk 103

Windows 105
Power Windows 106
Sun Visors 107

Theft-Deterrent Systems 107
Content Theft-Deterrent 107
PASS-Key® III+ 108
PASS-Key® III+ Operation 109

Starting and Operating Your Vehicle 111
New Vehicle Break-In 111
Ignition Positions 112
Retained Accessory Power (RAP) 113
Starting the Engine 114
Engine Coolant Heater 115
Active Fuel Management™ (3.9L V6 and 5.3L V8 Engines) 116
Automatic Transaxle Operation 117
Parking Brake 120
Shifting Into Park (P) 121
Shifting Out of Park (P) 123
Parking Over Things That Burn 123
Engine Exhaust 124
Running the Engine While Parked 125

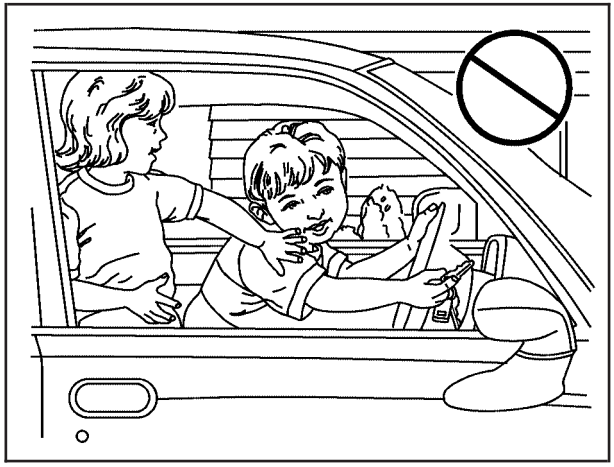
Mirrors 126
Manual Rearview Mirror 126
Manual Rearview Mirror with OnStar® 126
Automatic Dimming Rearview Mirror with OnStar® 126
Outside Power Mirrors 127
Outside Convex Mirror 127

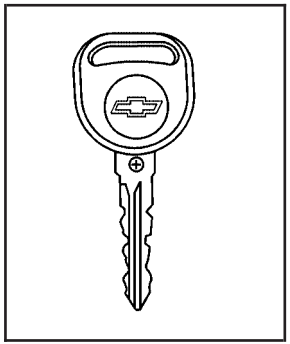
OnStar® System 128
Universal Home Remote System 132
Universal Home Remote System (With Three Round LED) 132
Universal Home Remote System (With One Triangular LED) 132
Universal Home Remote System Operation (With three round LED) 133
Universal Home Remote System Operation (With one triangular LED) 139
Storage Areas 142
Glove Box 142
Cupholder(s) 143
Sunglasses Storage Compartment 143
Center Console Storage Area 143
Rear Storage Area 143
Rear Seat Armrest 143
Convenience Net 144
Sunroof 144

Keys

⚠ CAUTION:

Leaving children in a vehicle with the ignition key is dangerous for many reasons. They could operate the power windows or other controls or even make the vehicle move. The children or others could be badly injured or even killed. Do not leave the keys in a vehicle with children.





One key is used for the ignition and the driver's door.

If you need a new key, contact your dealer for assistance. In an emergency, contact Roadside Assistance. See *Roadside Assistance Program on page 434* for more information.

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

Remote Keyless Entry (RKE) System

The remote keyless entry system operates on a radio frequency subject to Federal Communications Commission (FCC) Rules and with Industry Canada.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation of the device.

This device complies with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

- This device may not cause interference.
- This device must accept any interference received, including interference that may cause undesired operation of the device.

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

At times you may notice a decrease in range. This is normal for any remote keyless entry system. If the transmitter does not work or if you have to stand closer to your vehicle for the transmitter to work, try this:

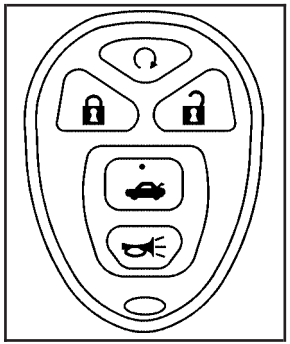
- Check the distance. You may be too far from your vehicle. You may need to stand closer during rainy or snowy weather.
- Check the location. Other vehicles or objects may be blocking the signal. Take a few steps to the left or right, hold the transmitter higher, and try again.
- Check to determine if battery replacement or resynchronization is necessary. See “Battery Replacement” and “Resynchronization” under *Remote Keyless Entry (RKE) System Operation on page 93*.
- If you are still having trouble, see your dealer or a qualified technician for service.

Remote Keyless Entry (RKE) System Operation

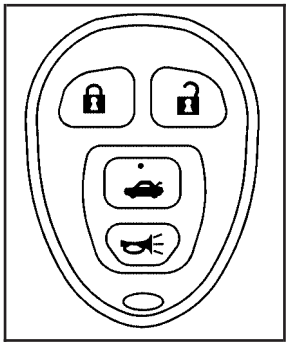
The vehicle’s doors can be locked and unlocked, and the trunk can be unlatched from about 3 feet (1 m) up to 65 feet (20 m) away with the remote keyless entry transmitter.

If your vehicle has the remote start feature you can also start your vehicle with the remote keyless entry transmitter. Your remote keyless entry transmitter, with the remote start button, provides an increased range of 195 feet (60 m) away. However, the range may be less while the vehicle is running. As a result, you may need to be closer to your vehicle to turn it off than you were to turn it on.

There are other conditions which can affect the performance of the transmitter. See *Remote Keyless Entry (RKE) System on page 92*.



Remote Keyless Entry with Remote Start



Remote Keyless Entry without Remote Start

The following functions may be available if your vehicle has the remote keyless entry system:

(Remote Vehicle Start): If your vehicle has this feature, it may be started from outside the vehicle using the remote keyless entry transmitter. See “Remote Vehicle Start” following for more detailed information.

(Lock): Press the lock button to lock all the doors. If enabled through the Driver Information Center (DIC), the parking lamps will flash once to indicate locking has occurred. If enabled through the DIC, the horn will chirp when the lock button is pressed again within five seconds of the previous press of the lock button. See *DIC Vehicle Customization on page 206* for additional information. Pressing the lock button may arm the content theft-deterrent system. See *Content Theft-Deterrent on page 107*.

(Unlock): Press the unlock button to unlock the driver’s door. If the button is pressed again within five seconds, all remaining doors will unlock. The interior lamps will come on and stay on for 20 seconds or until the ignition is turned on. If enabled through the DIC, the parking lamps will flash once to indicate unlocking has occurred. See *DIC Vehicle Customization on page 206*. Pressing the unlock button on the remote keyless entry transmitter will disarm the content theft-deterrent system. See *Content Theft-Deterrent on page 107*.

(Remote Trunk Release): Press and hold this button for about one second to release the trunk lid. The transaxle must be in PARK (P) for this feature to operate.

(Vehicle Locator/Panic Alarm): Press and release this button to locate your vehicle. The turn signal lamps will flash and the horn will sound three times. Press and hold this button for more than two seconds to activate the panic alarm. The turn signal lamps will flash and the horn will sound repeatedly for 30 seconds. The alarm will turn off when the ignition is turned to RUN or the alarm button is pressed again. The ignition must be in OFF for the panic alarm to work.

Matching Transmitter(s) to Your Vehicle

Each remote keyless entry transmitter is coded to prevent another transmitter from unlocking your vehicle. If a transmitter is lost or stolen, a replacement can be purchased through your GM dealer. Remember to bring any additional transmitters so they can also be re-coded to match the new transmitter. Once your dealer has coded the new transmitter, the lost transmitter will not unlock your vehicle. The vehicle can have a maximum of eight transmitters matched to it. See Remote Key under *DIC Operation and Displays on page 189*.

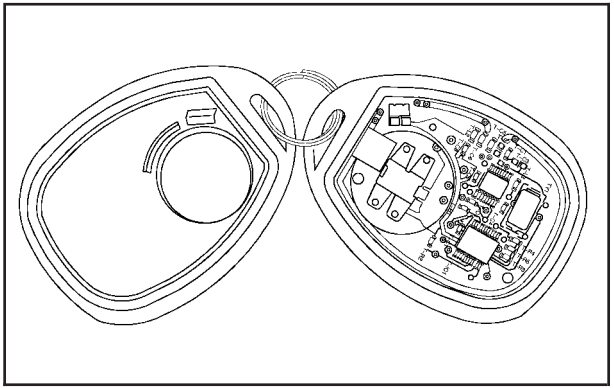
Battery Replacement

Under normal use, the battery in your remote keyless entry transmitter should last about four years.

You can tell the battery is weak if the transmitter will not work at the normal range in any location. If you have to get close to your vehicle before the transmitter works, it is probably time to change the battery.

The REPLACE BATTERY IN REMOTE KEY message in the vehicle's DIC will display if the remote keyless entry transmitter battery is low. See "REPLACE BATTERY IN REMOTE KEY" under *DIC Warnings and Messages on page 197* for additional information.

Notice: **When replacing the battery, use care not to touch any of the circuitry. Static from your body transferred to these surfaces may damage the transmitter.**



To replace the battery in the remote keyless entry transmitter do the following:

1. Use a flat object with a thin edge into the notch, located below the trunk release button, and separate the bottom half from the top half of the transmitter.
2. Remove the old battery, but do not use a metal object to do this.

3. Slide the new battery into the transmitter with the positive side of the battery facing down. Use a type CR2032 battery, or equivalent type. Make sure the cover is on tightly, so water will not get in.
4. Snap the front and the back of the transmitter together.
5. Test the operation of the transmitter with the vehicle.

Remote Vehicle Start

Your vehicle may have a remote starting feature. This feature allows you to start the engine from outside of the vehicle.

If your vehicle has an outside temperature display, during remote start this feature allows the climate control system to default to a heating mode during colder outside temperatures and a cooling mode during warmer outside temperatures. If your vehicle does not have an outside temperature display, during remote start the climate control system will turn on at the setting the vehicle was set to when the vehicle was last turned off.

Laws in some communities may restrict the use of remote starters. For example, requiring a person using 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 your vehicle is low on fuel. Your vehicle may run out of fuel.

Your remote keyless entry transmitter, with the remote start button, provides an increased range of operation. However, the range may be less while the vehicle is running. As a result, you may need to be closer to your vehicle to turn it off, than you were to turn it on.

There are other conditions which can affect the performance of the transmitter, see *Remote Keyless Entry (RKE) System on page 92* for additional information.

(Remote Start): Press and release the lock button and then press and hold this button to use the remote start feature.

To start the vehicle using the remote start feature, do the following:

1. Aim the transmitter at the vehicle.
2. Press and release the transmitter's lock button, then immediately press and hold the transmitter's remote start button until the turn signal lights flash or if the vehicle's lights are not visible, press and hold the remote start button for at least four seconds. The vehicle's doors will lock. Pressing the remote start button again after the vehicle has started will turn off the ignition.
3. When the vehicle starts, the parking lamps will turn on and remain on while the vehicle is running.
4. If it is your first remote start since last driving, repeat these steps while the engine is still running for a 10 minute time extension.

When you enter the vehicle during a remote start, and the engine is still running, turn the key to the RUN position to drive the vehicle.

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

To manually shut off a remote start, do any of the following:

- Aim the remote keyless entry transmitter at the vehicle and press the remote start button until the parking lamps turn off.
- Turn on the hazards warning flashers.
- Turn the ignition switch on and then off.

The remote vehicle start feature provides two separate starts, each with 10 minutes of engine running, or it provides one start with 10 minutes of engine running that may be extended with 10 more minutes. If you press and release the transmitter lock button and then press and hold the remote start button, on the remote keyless entry transmitter, again before the first 10 minutes of engine running time has expired, 10 minutes are added to the remaining minutes. For example, if the lock button and then the remote start buttons are pressed again after five minutes of the engine run time, 10 minutes are added and you now have 15 minutes of engine running. The added ten minutes are considered a second remote vehicle start.

Once two remote starts or a single start with a time extension have been provided, the vehicle must be started normally with the ignition key to get more remote vehicle starts.

The remote vehicle start feature will not operate if the key is in the ignition, the hood is not closed or if there is an emission control system malfunction.

Also, the engine will turn off during a remote vehicle start if the coolant temperature gets too high or if the oil pressure gets low.

Vehicles equipped with the remote vehicle start feature are shipped from the factory with the remote vehicle start system enabled. The system may be enabled or disabled through the DIC. See “REMOTE START” under *DIC Vehicle Customization on page 206* for additional information.

Remote Start Ready

If your vehicle does not have the remote vehicle start feature, it may have the remote start ready feature. This feature allows your dealer to add the manufacturer’s remote vehicle start feature.

If your vehicle has the remote start ready feature, your remote keyless entry transmitter will have extended range that will allow you to lock or unlock your vehicle from about 195 feet (60 m) away.

See your dealer if you would like to add the manufacturer’s remote vehicle start feature to your vehicle.

Doors and Locks

Door Locks

⚠ CAUTION:

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. You increase the chance of being thrown out of the vehicle in a crash if the doors are not locked. So, wear safety belts properly and lock the doors whenever you drive.**

CAUTION: (Continued)

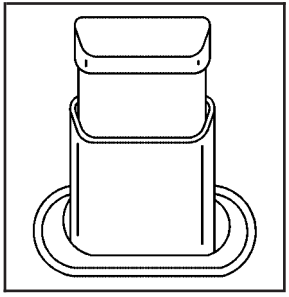
CAUTION: (Continued)

- **Young children who get into unlocked vehicles may be unable to get out. A child can be overcome by extreme heat and can suffer permanent injuries or even death from heat stroke. Always lock your vehicle whenever you leave 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.**

There are several ways to lock and unlock your vehicle.

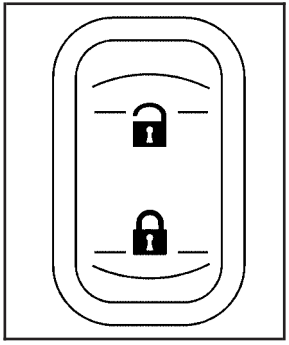
From the outside, use your key in the driver's door or use the remote keyless entry transmitter. From the inside, use the manual or power door locks.

To unlock the driver's side door from the outside with the key, insert the key and turn it counterclockwise. To lock the driver's side door from the outside with your key, insert the key and turn it clockwise.



To lock the door from the inside, push the manual lock knob down. To unlock the door, pull the knob up.

Power Door Locks



A power door lock switch is located on both front doors next to the door handle.

Press the top of the switch to unlock all doors, or press the bottom of the switch to lock all doors.

If your vehicle has the optional content theft-deterrent system and it is armed, the power door lock switches will be disabled. You must use your remote keyless entry transmitter or your key to unlock the doors when the system is armed. See *Content Theft-Deterrent on page 107*.

Automatic Door Lock

The doors will automatically lock when the shift lever is moved out of PARK (P). The automatic door locking feature cannot be disabled.

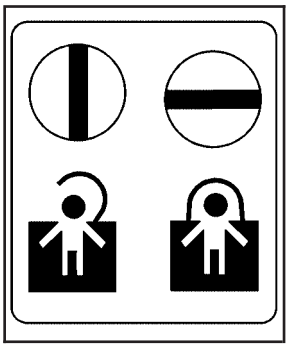
Programmable Automatic Door Unlock

Your vehicle is programmed so that when the shift lever is moved into PARK (P) all doors will unlock.

With the vehicle stopped and the engine running, door unlocking can be programmed through prompts displayed on the Driver Information Center (DIC). These prompts allow the driver to choose various unlock settings. For programming information, see *DIC Vehicle Customization on page 206*.

Rear Door Security Locks

Your vehicle has rear door security locks. These prevent passengers from opening the rear doors from the inside.



Security Lock Label shown

The rear door security locks are located on the inside edge of each rear door. You must open the rear doors to access them. The label depicting lock and unlock positions is located near the lock.

To set the locks, do the following:

1. Insert the key into the security lock slot and turn it so the slot is in the horizontal position.
2. Close the door.

When you want to open a rear door when the security lock is on, do the following:

1. Unlock the door using the remote keyless entry transmitter, if the vehicle has one, the power door lock switch, or by lifting the rear door manual lock.
2. Open the door from the outside.

To cancel the rear door security lock, do the following:

1. Unlock the door and open it from the outside.
2. Insert the key into the security lock slot and turn it so the slot is in the vertical position.

Lockout Protection

This feature helps prevent you from locking the doors while your key is in the ignition. Always remember to take your key with you when exiting your vehicle.

If the lock switch is pressed on the door that is open and the key is in the ignition, all of the doors will lock and then the driver's door will unlock. A chime will sound continuously until all doors are closed.

Trunk

⚠ CAUTION:

It can be dangerous to drive with the trunk lid open because carbon monoxide (CO) gas can come into your vehicle. You cannot see or smell CO. It can cause unconsciousness and even death. If you must drive with the trunk lid open or if electrical wiring or other cable connections must pass through the seal between the body and the trunk lid:

- **Make sure all other windows are shut.**
- **Turn the fan on your heating or cooling system to its highest speed and select the control setting that will force outside air into your vehicle. See Climate Control System.**
- **If you have air outlets on or under the instrument panel, open them all the way.**

See *Engine Exhaust on page 124*.

Trunk Release

To open the trunk from the outside, press the open trunk button on the remote keyless entry transmitter, if equipped.

Remote Trunk Release

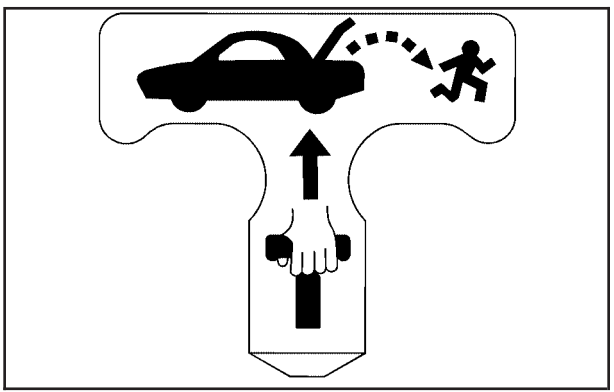
You can also open the trunk from inside the vehicle.

(Remote Trunk Release): Press the button with the open trunk symbol on it. The button is located next to the exterior lamps control on the left side of the instrument panel. The shift lever must be in PARK (P) for the remote trunk release button to work.

If your vehicle ever loses power, you can open the trunk by lowering the rear seat and pulling the emergency trunk release handle located inside the trunk. See *Split Folding Rear Seat on page 16* and “Emergency Trunk Release Handle” following.

Emergency Trunk Release Handle

Notice: **Do not use the emergency trunk release handle as a tie-down or anchor point when securing items in the trunk as it could damage the handle. The emergency trunk release handle is only intended to aid a person trapped in a latched trunk, enabling them to open the trunk from the inside.**

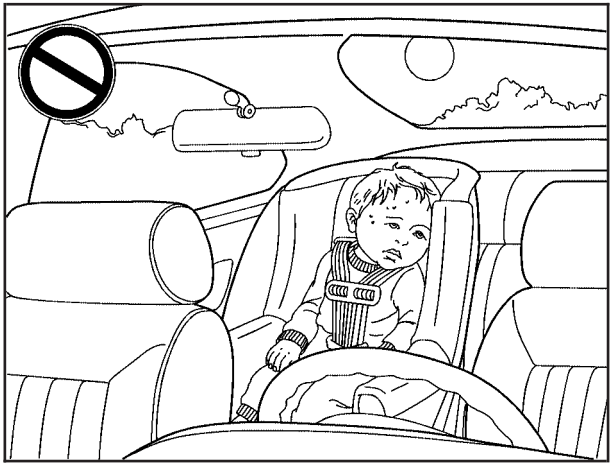


There is a glow-in-the-dark trunk release handle located on the latch inside the trunk. This handle will glow following exposure to light. Pull the release handle to open the trunk from the inside.

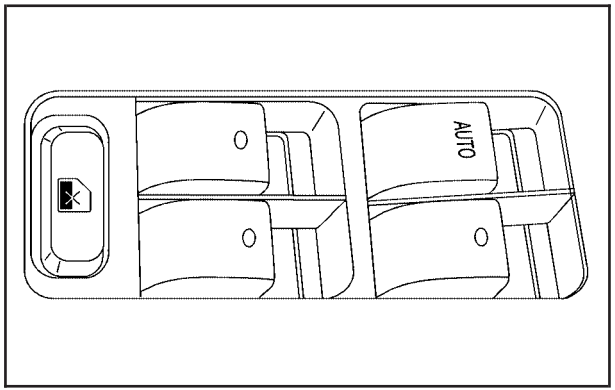
Windows

⚠ CAUTION:

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



The switches on the driver's door armrest are used to control each of the windows. The power window switches work while the ignition is in RUN, ACCESSORY, or while Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP) on page 113*. Each passenger door has its own window switch.

To lower the window, press and hold the front of the switch to the first position until the window is at the desired level. To raise the window, pull up and hold the front of the switch.

Express-Down Window

The driver's window switch has an express-down feature labeled AUTO. This allows you to lower the window completely without holding the switch. Press the front of the switch to the second position and release.

To stop the window while it is lowering, briefly pull up on the switch.

Window Lockout

(Window Lockout): The driver's window switches also include a lockout switch. Press the right side of the switch to prevent the rear passengers from using their window switches. The driver can still control all the windows and the front passenger can control their own window with the lockout on. Press the left side of the switch to return to normal window operation. A visible red bar on the right side of the switch indicates that the lockout is off.

Sun Visors

To block out glare, swing down the sun visors. They can be detached from the center retainer and slid along the rod to cover different areas of the front window and turned to cover the side windows.

Visor Vanity Mirror

Swing down the sun visors and lift the cover to expose the vanity mirror. Do not drive with the cover lifted due to possible glare impeding other drivers behind or to the side of the vehicle.

Theft-Deterrent Systems

Vehicle theft is big business, especially in some cities. Although your vehicle has a number of theft-deterrent features, we know that nothing we put on it can make it impossible to steal.

Content Theft-Deterrent

Your vehicle may have the optional content theft-deterrent alarm system.

To activate the theft-deterrent system:

1. Open the door.
2. Lock the door with the power door lock switch or the remote keyless entry transmitter. If you are using the remote keyless entry transmitter, the door does not need to be open.
3. Close all doors.

Once armed, the alarm will go off if someone tries to enter the vehicle without using the remote keyless entry transmitter or a key or turns the ignition on with an incorrect key. The horn will sound and the turn signal lamps will flash for approximately two minutes.

When the alarm is armed, the trunk may be opened with the remote keyless entry transmitter. The power door lock switches are disabled and the doors remain locked. You must use your remote keyless entry transmitter or your key to unlock the doors when the system is armed.

Arming with the Power Lock Switch

The alarm system will arm when you use either power lock switch to lock the doors while any door or the trunk is open and the key is removed from the ignition.

Arming with the Remote Keyless Entry Transmitter

The alarm system will arm when you use your remote keyless entry transmitter to lock the doors, if the key is not in the ignition.

Disarming with the Remote Keyless Entry Transmitter

The alarm system will disarm when you use your remote keyless entry transmitter to unlock the doors.

The first time a remote unlock command is received, three flashes will be seen and three horn chirps heard to indicate an alarm condition has occurred since last arming.

Disarming with Your Key

The alarm system will disarm when you use your key to unlock the doors or insert your key in ignition and turn it from the OFF position.

PASS-Key® III+

The PASS-Key® III+ system operates on a radio frequency subject to Federal Communications Commission (FCC) Rules and with Industry Canada.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This device complies with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

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

PASS-Key® III+ uses a radio frequency transponder in the key that matches a decoder in your vehicle.

PASS-Key® III+ Operation

Your vehicle has PASS-Key® III+ (Personalized Automotive Security System) theft-deterrent system. PASS-Key® III+ is a passive theft-deterrent system. This means you do not have to do anything special to arm or disarm the system. It works when you transition the key to RUN, ACCESSORY or START from the OFF position.

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.

If the engine does not start and the security light on the instrument panel cluster comes on when trying to start the vehicle, the key may have a damaged transponder. Turn the ignition off and try again.

If the engine still does not start, and the key appears to be undamaged, try another ignition key. At this time, you may also want to check the fuse, see *Fuses and Circuit Breakers on page 400*. If the engine still does not start with the other key, your vehicle needs service. If your vehicle does start, the first key may be faulty. See your dealer who can service the PASS-Key® III+ to have a new key made. In an emergency, contact Roadside Assistance.

It is possible for the PASS-Key® III+ decoder to learn the transponder value of a new or replacement key. Up to nine additional 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 or a locksmith who can service PASS-Key® III+ to have keys made and programmed to the system.

See your dealer 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 additional key do the following:

1. Verify that the new key has a ⊕ stamped on it.
2. Insert the original, already programmed, key in the ignition and start the engine. If the engine will not start, see your dealer for service.
3. After the engine has started, turn the key to OFF, and remove the key.
4. Insert the new key to be programmed and turn it to the RUN position within five seconds of removing the original key.
5. The security light will turn off once the key has been programmed.
6. Repeat Steps 1 through 5 if additional keys are to be programmed.

If you are driving and the security light comes on and stays on, you may be able to restart your engine. Your PASS-Key® III+ system, however, may not be working properly and must be serviced by your dealer.

If you lose or damage your PASS-Key® III+ key, see your dealer or a locksmith who can service PASS-Key® III+ to have a new key made.

Starting and Operating Your Vehicle

New Vehicle Break-In

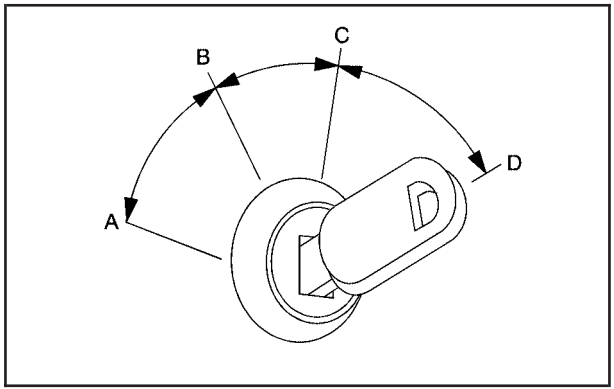
Notice: **Your vehicle does not need an elaborate break-in. But it will perform better in the long run if you follow these guidelines:**

- **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 your 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** ***Towing a Trailer on page 286*** **for the trailer towing capabilities of your vehicle and more information.**

Following break-in, engine speed and load can be gradually increased.

Ignition Positions

With the ignition key in the ignition, the key can be turned to four different positions:



Notice: **Using a tool to force the key from the ignition switch could cause damage or break the key. Use the correct key and turn the key only with your hand. Make sure the key is in all the way. If none of this works, then your vehicle needs service.**

A (OFF): This is the only position in which the ignition key can be inserted or removed. This position locks the ignition and transaxle. It is a theft-deterrent feature.

B (ACCESSORY): This position lets the radio and windshield wipers operate while the engine is off. To use ACCESSORY, turn the key clockwise.

C (RUN): This position is where the key returns to after the vehicle is started. This position displays some of the warning and indicator lights.

The battery could be drained if you leave the key in the ACCESSORY or RUN position with the engine off. You may not be able to start your vehicle if the battery is allowed to drain for an extended period of time.

D (START): This position starts the engine.

A warning chime will sound and the Driver Information Center (DIC) will display DRIVER DOOR OPEN when the driver's door is opened if the ignition is in OFF, ACCESSORY and the key is in the ignition. See *DIC Warnings and Messages on page 197* for more information.

Key In the Ignition

Never leave your vehicle with the keys inside, as it is an easy target for joy riders or thieves. If you leave the key in the ignition and park your vehicle, a chime will sound, when you open the driver's door. Always remember to remove your key from the ignition and take it with you. This will lock your ignition and transaxle. Also, always remember to lock the doors.

The battery could be drained if you leave the key in the ignition while your vehicle is parked.
You may not be able to start your vehicle after it has been parked for an extended period of time.

Retained Accessory Power (RAP)

The vehicle has Retained Accessory Power (RAP), which will allow your vehicle's radio to work when the ignition key is in RUN or ACCESSORY. Once the key is turned from RUN to OFF the radio will continue to work 10 minutes or until the driver's door is opened. Also, the power windows will continue to work for up to 10 minutes or until any door is opened.

Starting the Engine

Place the transaxle in the proper gear.

Move your shift lever to PARK (P) or NEUTRAL (N). Your engine will not start in any other position -- this is a safety feature. To restart when you are already moving, use NEUTRAL (N) only.

Notice: **Shifting into PARK (P) with the vehicle moving could damage the transaxle. Shift into PARK (P) only when your vehicle is stopped.**

Starting Procedure

1. With your foot off the accelerator pedal, turn the ignition key to START. When the engine starts, let go of the key. The idle speed will go down as your engine gets warm. Do not race the engine immediately after starting it. Operate the engine and transaxle gently for the first 2 minutes to allow the oil to warm up and lubricate all moving parts.

   Your 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 for many seconds, 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 ACCESSORY or 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 allow the cranking motor to cool down.**

2. If the engine does not start after 5-10 seconds, especially in very cold weather (below 0°F or –18°C), 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, do the same thing. This clears the extra gasoline from the engine. Do not race the engine immediately after starting it. Operate the engine and transaxle gently until the oil warms up and lubricates all moving parts.

Notice: **Your engine is designed to work with the electronics in your vehicle. If you add electrical parts or accessories, you could change the way the engine operates. Before adding electrical equipment, check with your dealer. If you do not, your engine might not perform properly. Any resulting damage would not be covered by your vehicle's warranty.**

Engine Coolant Heater

Your vehicle may have this feature. In very cold weather, 0°F (–18°C) or colder, the engine coolant heater can help. You will get easier starting and better fuel economy during engine warm-up. Usually, the coolant heater should be plugged in a minimum of four hours prior to starting your vehicle. At temperatures above 32°F (0°C), use of the coolant heater is not required.

To Use the Engine Coolant Heater

1. Turn off the engine.
2. Open the hood and unwrap the electrical cord. The cord is attached to the underside of the diagonal brace, which is located above the engine air cleaner/filter assembly.
3. Plug it into a normal, grounded 110-volt AC outlet.

⚠ CAUTION:

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.

How long should you keep the coolant heater plugged in? The answer depends on the outside temperature, the kind of oil you have, and some other things. Instead of trying to list everything here, we ask that you contact your dealer in the area where you will be parking your vehicle. The dealer can give you the best advice for that particular area.

Active Fuel Management™ (3.9L V6 and 5.3L V8 Engines)

Your vehicle's engine may be equipped with Active Fuel Management™. This system allows the engine to operate on either all or half of its cylinders, depending on your driving conditions.

When less power is required, such as cruising at a constant vehicle speed, the system will operate in the half cylinder mode, allowing your vehicle to achieve better fuel economy. When greater power demands are required, such as accelerating from a stop, passing, or merging onto a freeway, the system will maintain full-cylinder operation.

Automatic Transaxle Operation

Your automatic transaxle has a shift lever on the steering column or on the console between the seats.

There is a display, located on the instrument panel cluster that will indicate the gear the vehicle is in.

Maximum engine speed is limited on automatic transaxle vehicles while you are in PARK (P) or NEUTRAL (N) to protect driveline components from improper operation.

There are several different positions for the shift lever.

PARK (P): This position locks your front wheels. It is the best position to use when the engine is started because your vehicle cannot move easily.

⚠ CAUTION:

It can be dangerous to get out of your vehicle if the shift lever is not fully in PARK (P) with the parking brake firmly set. Your vehicle can roll. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure your vehicle will not move, even when you are on fairly level ground, use the steps that follow. If you are pulling a trailer, see *Towing a Trailer on page 286*.

Make sure the shift lever is fully in PARK (P) before starting the engine. Your vehicle has an automatic transaxle shift lock control system. You must fully apply your regular brakes first and then press the shift lever button before you can shift from PARK (P) while the ignition is in RUN. If you cannot shift out of PARK (P), ease pressure on the shift lever and push the shift lever all the way into PARK (P) as you maintain brake application. Then press the shift lever button and move the shift lever into another gear. See *Shifting Out of Park (P) on page 123*.

REVERSE (R): Use this gear to back up.

Notice: **Shifting to REVERSE (R) while your vehicle is moving forward could damage the transaxle. The repairs would not be covered by your warranty. Shift to REVERSE (R) only after your vehicle is stopped.**

To rock your vehicle back and forth to get out of snow, ice, or sand without damaging your transaxle, see *If Your Vehicle is Stuck in Sand, Mud, Ice, or Snow on page 278*.

NEUTRAL (N): In this position, your engine does not connect with the wheels. To restart when you are already moving, use NEUTRAL (N) only. Also, use NEUTRAL (N) when your vehicle is being towed.

⚠ CAUTION:

Shifting into a drive gear while your engine is running at high speed is dangerous. Unless your foot is firmly on the brake pedal, your vehicle could move

CAUTION: (Continued)

CAUTION: (Continued)

very rapidly. You could lose control and hit people or objects. Do not shift into a drive gear while your engine is running at high speed.

Notice: **Shifting out of PARK (P) or NEUTRAL (N) while the engine is running at high speed may damage the transaxle. The repairs would not be covered by your warranty. Be sure the engine is not running at high speeds when shifting your vehicle.**

DRIVE (D): This position is for normal driving. It provides the best fuel economy for your vehicle. If you need more power for passing, and you are:

- Going less than 35 mph (55 km/h), push the accelerator pedal about halfway down.
- Going about 35 mph (55 km/h) or more, push the accelerator pedal all the way down.

  You will shift down to the next gear and have more power.

Downshifting the transaxle in slippery road conditions could result in skidding, see “Skidding” under *Loss of Control on page 262*.

Notice: **Driving your vehicle if you notice that it is moving slowly or not shifting gears as you increase speed may damage the transaxle. Have your vehicle serviced right away. You can drive in SECOND (2) when you are driving less than 35 mph (55 km/h) and DRIVE (D) for higher speeds until then.**

THIRD (3): This position is also used for normal driving. However, it reduces vehicle speed more than DRIVE (D) without using your brakes. You might choose THIRD (3) instead of DRIVE (D) when driving on hilly, winding roads, when towing a trailer, so there is less shifting between gears and when going down a steep hill.

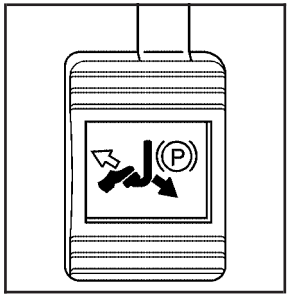
SECOND (2): This position reduces vehicle speed even more than THIRD (3) without using your brakes. You can use SECOND (2) on hills. It can help control your speed as you go down steep mountain roads. You would also then want to use your brakes off and on.

Notice: **Driving in SECOND (2) for more than 25 miles (40 km) or at speeds over 55 mph (90 km/h) may damage the transaxle. Also, shifting into SECOND (2) at speeds above 65 mph (105 km/h) can cause damage. Drive in THIRD (3) or DRIVE (D) instead of SECOND (2).**

FIRST (1): This position reduces vehicle speed even more than SECOND (2) without using your brakes. You can use it on very steep hills, or in deep snow or mud. If the shift lever is in FIRST (1) while the vehicle is moving forward, the transaxle will not shift into first gear until the vehicle is going slowly enough.

Notice: **Spinning the tires or holding the vehicle in one place on a hill using only the accelerator pedal may damage the transaxle. If you are stuck, do not spin the tires. When stopping on a hill, use the brakes, or parking brake to hold the vehicle in place.**

Parking Brake



The parking brake is located to the left of the brake pedal, near the driver's door.

To set the parking brake, hold the brake pedal down with your right foot. Push down the parking brake pedal with your left foot.

To release the parking brake, hold the brake pedal down with your right foot and push the parking brake pedal with your left foot. When you lift your left foot, the parking brake pedal will follow it to the released position.

A warning chime will sound and a brake warning light located on the instrument panel cluster will come on, if the parking brake is set, the ignition is on and the vehicle speed is greater than 5 mph (8 km/h).

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

If you are towing a trailer and parking on any hill, see *Towing a Trailer on page 286*.

Shifting Into Park (P)

⚠ CAUTION:

It is dangerous to get out of your vehicle if the shift lever is not fully in PARK (P) with the parking brake firmly set. Your vehicle can roll.

Do not leave your 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 your vehicle will not move, even when you are on fairly level ground, always set your parking brake and move the shift lever to PARK (P). See *Shifting Into Park (P) on page 121*. If you are pulling a trailer, see *Towing a Trailer on page 286*.

Steering Column Shift Lever

1. Hold the brake pedal down with your right foot and set the parking brake.
2. Move the shift lever into PARK (P) by pulling the shift lever toward you and moving it up as far as it will go.
3. Turn the ignition key to OFF.
4. Remove the key and take it with you. If you can leave your vehicle with the ignition key in your hand, your vehicle is in PARK (P).

Console Shift Lever

1. Hold the brake pedal down with your right foot and set the parking brake.
2. Move the shift lever into PARK (P) 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 OFF.
4. Remove the key and take it with you. If you can leave your vehicle with the ignition key in your hand, your vehicle is in PARK (P).

Leaving Your Vehicle With the Engine Running

⚠ CAUTION:

It can be dangerous to leave your vehicle with the engine running. Your vehicle could move suddenly if the shift lever is not fully in PARK (P) 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 your vehicle with the engine running.

If you have to leave your vehicle with the engine running, be sure your vehicle is in PARK (P) and your parking brake is firmly set before you leave it. After you have moved the shift lever into the PARK (P) position, hold the regular brake pedal down. Then, see if you can move the shift lever away from PARK (P) without first pulling it toward you or if you have the console shift lever, without first pushing the button. If you can, it means that the shift lever was not fully locked into PARK (P).

Torque Lock

If you are parking on a hill and you do not shift your transaxle into PARK (P) properly, the weight of the vehicle may put too much force on the parking pawl in the transaxle. You may find it difficult to pull the shift lever out of PARK (P). This is called “torque lock.” To prevent torque lock, set the parking brake and then shift into PARK (P) properly before you leave the driver’s seat. To find out how, see *Shifting Into Park (P) on page 121*.

When you are ready to drive, move the shift lever out of PARK (P) 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 transaxle, so you can pull the shift lever out of PARK (P).

Shifting Out of Park (P)

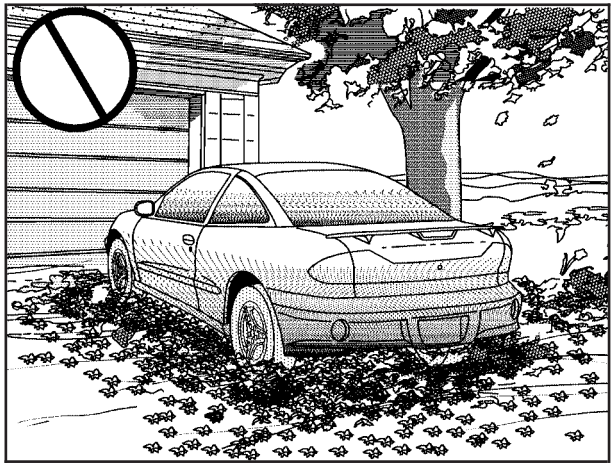
Your vehicle has an automatic transaxle shift lock control system. You must fully apply your regular brakes before you can shift from PARK (P) when the ignition is in RUN. See *Automatic Transaxle Operation on page 117*.

If you cannot shift out of PARK (P), ease pressure on the shift lever by pushing it all the way into PARK (P) while keeping the brake pedal pushed down. Release the shift lever button if you have a console shift. Then move the shift lever out of PARK (P), being sure to press the shift lever button if you have a console shift.

If you ever hold the brake pedal down but still cannot shift out of PARK (P), try this:

1. Turn the ignition key to RUN.
2. Apply and hold the brake pedal down until the end of Step 4.
3. Shift to NEUTRAL.
4. Start the engine and shift to the drive gear you want.
5. Have the vehicle fixed as soon as you can.

Parking Over Things That Burn



⚠ CAUTION:

Things that can burn could touch hot exhaust parts under your vehicle and ignite. Do not park over papers, leaves, dry grass, or other things that can burn.

Engine Exhaust

⚠ CAUTION:

Engine exhaust can kill. It contains the gas carbon monoxide (CO), which you cannot see or smell. It can cause unconsciousness and death.

You might have exhaust coming in if:

- **Your exhaust system sounds strange or different.**
- **Your vehicle gets rusty underneath.**
- **Your vehicle was damaged in a collision.**
- **Your vehicle was damaged when driving over high points on the road or over road debris.**

CAUTION: (Continued)

CAUTION: (Continued)

- **Repairs were not done correctly.**
- **Your vehicle or exhaust system has been modified improperly.**

If you ever suspect exhaust is coming into your vehicle:

- **Drive it only with all the windows down to blow out any CO; and**
- **Have your vehicle fixed immediately.**

Running the Engine While Parked

It is better not to park with the engine running. But if you ever have to, here are some things to know.

⚠ CAUTION:

Idling the engine with the climate control system off could allow dangerous exhaust into your vehicle. See the earlier caution under *Engine Exhaust on page 124*.

Also, idling in a closed-in place can let deadly carbon monoxide (CO) into your vehicle even if the climate control fan is at the highest setting. One place this can happen is a garage. Exhaust — with CO — can come in easily. NEVER park in a garage with the engine running.

Another closed-in place can be a blizzard. See *Winter Driving on page 272*.

⚠ CAUTION:

It can be dangerous to get out of your vehicle if the shift lever is not fully in PARK (P) with the parking brake firmly set. Your vehicle can roll. Do not leave your 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 your vehicle will not move, even when you are on fairly level ground, always set your parking brake and move the shift lever to PARK (P).

Follow the proper steps to be sure your vehicle will not move. See *Shifting Into Park (P) on page 121*.

If you are parking on a hill and if you are pulling a trailer, also see *Towing a Trailer on page 286*.

Mirrors

Manual Rearview Mirror

If the vehicle has this mirror, it has a lever located at the bottom of the mirror between the two lamps. The lever is used to change the mirror from the day to the night position. To reduce glare from headlamps behind you while driving at night, pull the lever toward you. To return the mirror to the day position, return the lever to its original position.

There are two map lamps located on the bottom of the mirror. Press the button next to each lamp to turn it on and off.

Manual Rearview Mirror with OnStar®

If the vehicle has this mirror, it has a lever located at the bottom of the mirror between the two lamps. The lever is used to change the mirror from the day to the night position. To reduce glare from headlamps behind you while driving at night, pull the lever toward you. To return the mirror to the day position, return the lever to its original position.

There are two map lamps located on the bottom of the mirror. Press the button next to each lamp to turn it on and off.

There are also OnStar® buttons located at the bottom of the mirror face. See your dealer for more information on the system and how to subscribe to OnStar®. See *OnStar® System on page 128* for more information about the services OnStar® provides.

Automatic Dimming Rearview Mirror with OnStar®

The vehicle may have an automatic dimming rearview mirror with the OnStar® System.

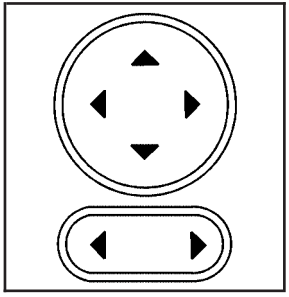
Press the button located below the mirror, on the far left, for up to three seconds to turn the automatic dimming feature off and on.

There are two map lamps located on the bottom of the mirror. Press the button next to each lamp to turn it on and off.

There are also OnStar® buttons located at the bottom of the mirror. See your dealer for more information on the system and how to subscribe to

OnStar®. See *OnStar® System on page 128* for more information about the service OnStar® provides.

Outside Power Mirrors



The controls for the outside power mirrors are located on the driver's door armrest.

Use the selector switch located below the four-way control panel to choose either the left or right outside mirror. Then press any of the four arrows located on the control pad to move each mirror in the desired direction.

Adjust each mirror so you can see the side of your vehicle and the area beside and behind your vehicle.

Heated Outside Mirrors

If your vehicle has this feature, the surface of the outside mirrors will heat when the rear window defogger is activated. See "Rear Window Defogger" under *Climate Control System on page 166* for more information.

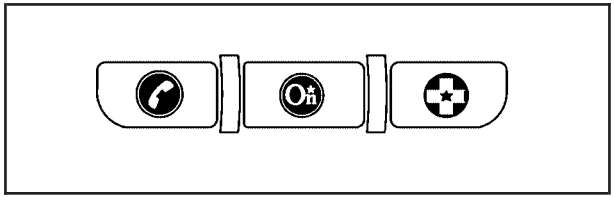
Outside Convex Mirror

Your passenger's side mirror is convex. A convex mirror's surface is curved so you can see more from the driver's seat.

⚠ CAUTION:

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 your right. Check your inside mirror or glance over your shoulder before changing lanes.

OnStar® System



OnStar® uses several innovative technologies and live advisors to provide you with a wide range of safety, security, information, and convenience services. If your airbags deploy, the system is designed to make an automatic call to OnStar® Emergency advisors who can request emergency services be sent to your location. If you lock your keys in the vehicle, call OnStar® at 1-888-4-ONSTAR and they can send a signal to unlock your doors. If you need roadside assistance, press the OnStar® button and they can contact Roadside Service for you.

OnStar® service is provided to you subject to the OnStar® Terms and Conditions. You may cancel your OnStar® service at any time by contacting OnStar® as provided below. A complete OnStar® Owner's Guide and the OnStar® Terms and Conditions are included in the vehicle's OnStar® Subscriber glove box literature. For more information, visit onstar.com or onstar.ca, contact OnStar® at 1–888–4–ONSTAR (1–888–466–7827) or TTY 1–877–248–2080, or press the OnStar® button to speak with an OnStar® advisor 24 hours a day, 7 days a week.

Not all OnStar® features are available on all vehicles. To check if your vehicle is equipped to provide the services described below, or for a full description of OnStar® services and system limitations, see the OnStar® Owner's Guide in your glove box or visit onstar.com.

OnStar® Services

For new vehicles equipped with OnStar®, the Safe & Sound Plan, or the Directions & Connections® Plan is included for one year from the date of purchase. You can extend this plan beyond the first year, or upgrade to the Directions & Connections® Plan. For more information, press the OnStar® button to speak with an advisor. Some OnStar® services (such as Remote Door Unlock or Stolen Vehicle Location Assistance) may not be available until you register with OnStar®.

Available Services with Safe & Sound® Plan

- Automatic Notification of Airbag Deployment
- Advanced Automatic Crash Notification (AACN) (If equipped)
- Link to Emergency Services
- Roadside Assistance
- Stolen Vehicle Location Assistance
- AccidentAssist
- Remote Door Unlock/Vehicle Alert
- OnStar® Vehicle Diagnostics
- GM® Goodwrench® On Demand Diagnostics
- OnStar® Hands-Free Calling with 30 complimentary minutes
- OnStar® Virtual Advisor

Available Services included with Directions & Connections® Plan

- All Safe and Sound Plan Services
- Driving Directions - Advisor delivered or OnStar® Turn-by-Turn Navigation (If equipped)
- RideAssist
- Information and Convenience Services

OnStar® Hands-Free Calling

OnStar® Hands-Free Calling allows eligible OnStar® subscribers to make and receive calls using voice commands. Hands-Free Calling is fully integrated into the vehicle, and can be used with OnStar® Pre-Paid Minute Packages. Hands-Free Calling may also be linked to a Verizon Wireless service plan, depending on eligibility. To find out more, refer to the OnStar® Owner's Guide in the vehicle's glove box, visit www.onstar.com or www.onstar.ca, or speak with an OnStar® advisor by pressing the OnStar® button or calling 1-888-4-ONSTAR (1-888-466-7827).

OnStar® Virtual Advisor

OnStar® Virtual Advisor is a feature of OnStar® Hands-Free Calling that uses your minutes to access location-based weather, local traffic reports, and stock quotes. By pressing the phone button and giving a few simple voice commands, you can browse through the various topics. See the OnStar® Owner's Guide for more information.

OnStar® Steering Wheel Controls

Your vehicle may have a Talk/Mute button that can be used to interact with OnStar® Hands-Free Calling. See *Audio Steering Wheel Controls on page 242* for more information.

On some vehicles, you may have to hold the button for a few seconds and give the command "ONSTAR" in order to activate the OnStar® Hands-Free Calling feature.

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

How OnStar® Service Works

In order to provide you with OnStar® services, your vehicle's OnStar® system has the capability of recording and transmitting vehicle information. This information is automatically sent to an OnStar® Call Center at the time of an OnStar® button press, Emergency button press or if your airbags or AACN system deploys. The vehicle information usually includes your GPS location and, in the event of a crash, additional information regarding the accident that your vehicle has been involved in (e.g. the direction from which your vehicle was hit). When you use the Virtual Advisor feature of OnStar® Hands-Free Calling, your vehicle also sends OnStar® your GPS location so that we can provide you with location-based services.

OnStar® service cannot work unless your vehicle is in a place where OnStar® has an agreement with a wireless service provider for service in that area. OnStar® service also cannot work unless you are 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.

OnStar® service that involves location information about your vehicle cannot work unless GPS satellite signals are unobstructed and available in that place as well.

Your 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 to you at any particular time or place. Some examples are damage to important parts of your vehicle in an accident, hills, tall buildings, tunnels, weather or wireless phone network congestion.

Your Responsibility

You may need to increase the volume of your radio to hear the OnStar® advisor. If the light next to the OnStar® buttons is red, this means that your system is not functioning properly and should be checked by a dealer. If the light appears clear (no light is appearing), your OnStar® subscription has expired. You can always press the blue OnStar® button to confirm that your OnStar® equipment is active.

Universal Home Remote System

Universal Home Remote System (With Three Round LED)

The Universal Home Remote System provides a way to replace up to three hand-held Radio-Frequency (RF) transmitters used to activate devices such as garage door openers, security systems, and home lighting.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

The FCC Grant of Equipment Authorization Certificate number is KOBGTE05A.

This device complies with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

The Canadian Registration ID number is 3521A-GTE05A.

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

Universal Home Remote System (With One Triangular LED)

The Universal Home Remote System provides a way to replace up to three hand-held radio-frequency (RF) transmitters used to activate devices such as garage door openers, security systems, and home lighting.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

The FCC Grant of Equipment Authorization Certificate number is CB2SAHL3.

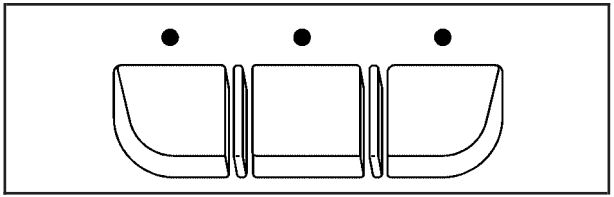
This device complies with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

The Canadian Registration ID number is 2791021849A.

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

Universal Home Remote System Operation (With three round LED)



Your vehicle may have the Universal Home Remote System. If there are three round Light Emitting Diode (LED) above the Universal Home Remote System buttons, follow the instructions below. If there is one triangular LED above the Universal Home Remote System buttons, follow the instructions under Universal Home Remote System Operation (with one triangular LED).

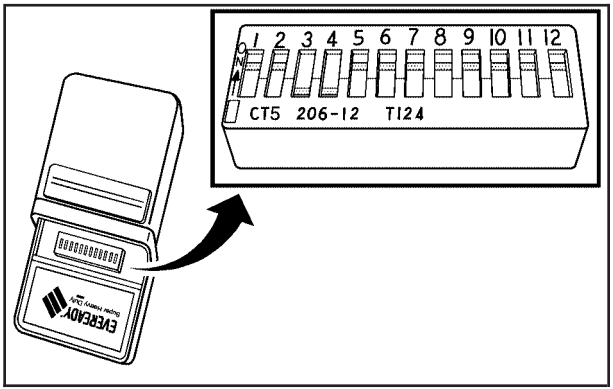
This system provides a way to replace up to three remote control transmitters used to activate devices such as garage door openers, security systems, and home lighting.

Do not use the this system with any garage door opener that does not have the stop and reverse feature. This includes any garage door opener model manufactured before April 1, 1982.

Read the instructions completely before attempting to program the transmitter. Because of the steps involved, it may be helpful to have another person available to assist you in programming the transmitter.

Be sure to keep the original remote control transmitter for use in other vehicles, as well as, for future programming. You only need the original remote control transmitter for fixed code programming. It is also recommended that upon the sale or lease termination of the vehicle, the programmed buttons should be erased for security purposes. See “Erasing your Universal Home Remote Buttons” later in this section.

Be sure that people and objects are clear of the garage door or security device you are programming. When programming a garage door, it is advised to park outside of the garage.



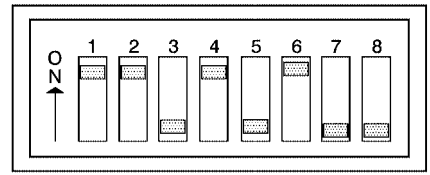
If you do not know if your garage door opener is a fixed code or rolling code device, open your garage door opener’s remote control battery cover. Your garage door opener is a fixed code device if there is a panel of switches. If not, your garage door opener is a rolling code device.

Programming Universal Home Remote — Fixed Code

Fixed Code garage door openers are used for garage doors produced prior to 1996. Fixed code uses the same coded signal every time, which is manually programmed by setting DIP switches for a unique personal code.

Follow these steps to program up to three channels:

1. Remove the battery cover of the hand-held transmitter.



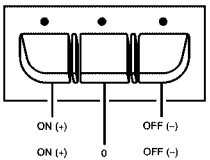
Switch Number	1	2	3	4	5	6	7	8
Switch Position	On	On	Off	On	Off	On	Off	Off

Example of Switch Settings

2. Write down the eight to 12 coding switch settings from left to right. When the switch is in the up position, write “on,” and when a switch is in the down position, write “off”. If a switch is set between the up and down position, write “middle”.
3. Enter these positions into the Universal Home Remote System as follows.

   Press and release all three buttons at the same time to put the device into programming mode.

Switch Number	1	2	3	4	5	6	7	8
Switch Position	On	On	Off	On	Off	On	Off	Off
Your UHR Button	Left	Left	Right	Left	Right	Left	Right	Right



4. The indicator light will blink slowly.
   In order from left to right, and within two and one-half minutes, enter each switch setting into the Universal Home Remote System. Push one button for each switch as follows:
   - Left button = “on” switch position.
   - Right button = “off” switch position.
   - Middle button = “middle” switch position.
5. After entering the switch settings, press and release all three buttons at the same time. The indicator lights will turn on.
6. Press and hold the button you would like to use to control the garage door until the garage door moves. The indicator light above the selected button should slowly blink. You may need to hold the button from five to 55 seconds.
7. Immediately release the button when the garage door moves. The indicator light will blink rapidly until programming is complete.
8. Press and release the button again. The garage door should move, confirming that programming is successful and complete.

To program another device such as an additional garage door opener, a security device, or home lighting, repeat Steps 1–8, choosing a different function button in Step 7 than what you used for the garage door opener.

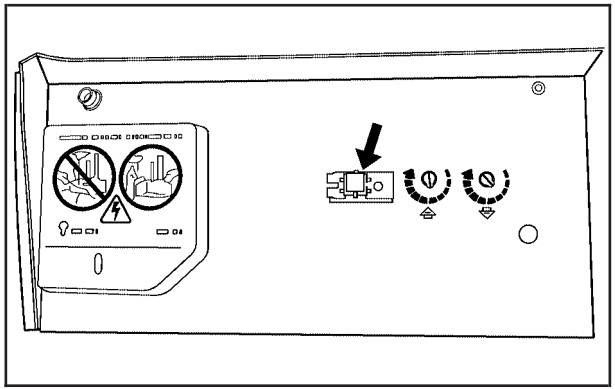
Programming Universal Home Remote — Rolling Code

Rolling code garage door openers are used for garage doors produced after 1996 and are code protected. Rolling code means the coded signal is changed every time your remote control garage door opener is used.

Programming a rolling code garage door opener involves time-sensitive actions, so read the entire procedure before you begin. If you do not follow these actions, the device will time out and you will have to repeat the procedure.

Follow these steps to program up to three channels:

1. Press the two outside buttons at the same time for one to two seconds, and immediately release them.



2. Go to the garage. Locate the garage door motor head and press and release the “learn” button.

   After pressing the “learn” button, you have 10 to 30 seconds to complete Step 4 depending on your garage control unit. If you cannot locate the “learn” button, refer to the owners guide for your garage door opener.

3. Press and hold the button you would like to use to control the garage door until the garage door moves. The indicator light, above the selected button, should slowly blink. You may need to hold the button from five to 20 seconds.
4. Immediately release the button when the garage door moves. The indicator light will blink rapidly until programming is complete.
5. Press and release the button again. The garage door should move, confirming that programming is successful and complete.

To program another device such as an additional garage door opener, a security device, or home lighting, repeat Steps 1–6, choosing a different function button in Step 4 than what you used for the garage door opener.

Using Universal Home Remote

Press and hold the appropriate button for at least half of a second. The indicator light will come on while the signal is being transmitted.

Reprogramming Universal Home Remote Buttons

You can reprogram any of the three buttons by repeating the instructions.

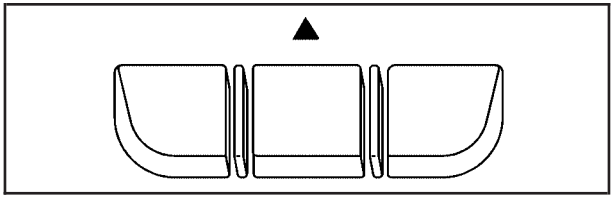
Erasing Universal Home Remote Buttons

You should erase the programmed buttons when you sell the vehicle or terminate your lease.

To erase either rolling code or fixed code on the Universal Home Remote device, do the following:

1. Press and hold the two outside buttons at the same time for approximately 20 seconds, until the indicator lights, located directly above the buttons, begin to blink rapidly.
2. Once the indicator lights begin to blink, release both buttons. The codes from all button will be erased.

Universal Home Remote System Operation (With one triangular LED)



Your vehicle may have the Universal Home Remote System. If there is one triangular Light Emitting Diode (LED) above the Universal Home Remote buttons, follow the instructions below. If your vehicle has three round LED above the Universal Home Remote buttons, follow the instructions under Universal Home Remote System Operation (With three round LED).

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. If you have a newer garage door opener with rolling codes, please be sure to follow Steps 6 through 8 to complete the programming of your Universal Home Remote Transmitter.

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 steps.

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 or, for assistance, see *Customer Assistance Offices on page 432*.

Be sure that people and objects are clear of the garage door or gate operator you are programming. When programming a garage door, it is advised to park outside of the garage.

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 Universal Home Remote

Follow these steps to program up to three channels:

1. Press and hold down the two outside Universal Home Remote buttons, releasing only when the Universal Home Remote indicator light begins to flash, after 20 seconds. Do not hold down the buttons for longer than 30 seconds and do not repeat this step to program a second and/or third hand-held transmitter to the remaining two Universal Home Remote buttons.
2. Position 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.
3. Simultaneously press and hold both the desired Universal Home Remote button and the hand-held transmitter button. Do not release the buttons until Step 4 has been completed.

   Some entry gates and garage door openers may require you to substitute Step 3 with the procedure noted in “Gate Operator and Canadian Programming” later in this section.
4. The indicator light 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, programming is complete and your device should activate when the Universal Home Remote button is pressed and released.

   To program the remaining two Universal Home Remote buttons, begin with Step 2 under “Programming Universal Home Remote.” Do not repeat Step 1 as this will erase all of the programmed channels.

   If the indicator light blinks rapidly for two seconds and then turns to a constant light, continue with Steps 6 through 8 following to complete the programming of a rolling-code device, most commonly, a garage door opener.

6. Locate in the garage, the garage door opener receiver (motor-head unit). Locate the “Learn” or “Smart” button. This can usually be found where the hanging antenna wire is attached to the motor-head unit.
7. Firmly press and release the “Learn” or “Smart” button. The name and color of the button may vary by manufacturer.

   You will have 30 seconds to start Step 8.
8. Return to the vehicle. Firmly press and hold the programmed Universal Home Remote button for two seconds, then release. Repeat the press/hold/release sequence a second time, and depending on the brand of the garage door opener, or other rolling code device, repeat this sequence a third time to complete the programming.

   The Universal Home Remote should now activate the rolling-code device.

To program the remaining two Universal Home Remote buttons, begin with Step 2 of “Programming Universal Home Remote.” You do not want to repeat Step 1, as this will erase all previous programming from the Universal Home Remote buttons.

Gate Operator and Canadian Programming

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.

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

To erase programming from the three Universal Home Remote buttons do the following:

1. Press and hold down the two outside buttons until the indicator light begins to flash, after 20 seconds. Do not hold the two outside buttons for longer than 30 seconds.
2. Release both buttons.

The Universal Home Remote is now in the training (learning) mode and can be programmed at any time beginning with Step 2 under “Programming Universal Home Remote” shown earlier in this section.

Individual buttons cannot be erased, but they can be reprogrammed. See “Reprogramming a Single Universal Home Remote Button” following this section.

Reprogramming a Single Universal Home Remote Button

To program a device to Universal Home Remote using a Universal Home Remote button previously trained, follow these steps:

1. Press and hold the desired Universal Home Remote button. Do not release the button.
2. The indicator light will begin to flash after 20 seconds. While still holding the Universal Home Remote button, proceed with Step 2 under “Programming Universal Home Remote” shown earlier in this section.

For additional information on Universal Home Remote, see *Customer Assistance Offices on page 432*.

Storage Areas

Glove Box

To open the glove box, lift up on the lever.

Cupholder(s)

Your vehicle may have cupholders built into the front center console, front portion of the front center seat and rear armrest. To access the front cupholders, on the five-passenger model, pull out the divider in front of the front center console to separate the opening into two cupholders. To access the front cupholders, on the six-passenger model, fold the front portion of the front center seat forward.

Sunglasses Storage Compartment

Your vehicle may have a sunglass storage compartment located above the rearview mirror. To open, push on cover.

Do not operate the vehicle with the sunglasses storage compartment cover open, it could obstruct your view.

Center Console Storage Area

Your vehicle may have a front center console storage area. To open the front center console storage area, pull up on the latch located in the front of the console lid. Inside is a removable tray and an accessory power outlet.

Rear Storage Area

If your vehicle has the split folding rear seat, there will be two storage areas underneath. To access these storage areas, pull the tab(s) located by the seatbelt buckle on the passenger side and the center of the rear seat on the driver side. See *Split Folding Rear Seat on page 16* for more information.

Rear Seat Armrest

Your vehicle may have a rear seat armrest. To access, pull the tab on the armrest forward.

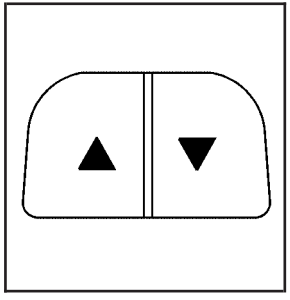
Convenience Net

The vehicle may have a convenience net located on the back wall of the trunk.

The net is not for larger, heavier loads. Store those in the trunk as far forward as possible.

Unhook the net so that it will lie flat when not in use.

Sunroof



If your vehicle is equipped with a sunroof, the sunroof switches are located on the overhead console.

The sunroof can only be operated when the ignition is in ACCESSORY, RUN, or when Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP) on page 113*.

▲ **(Vent/Express-Open):** To vent the sunroof when it is closed, press this switch once. When using the vent, the sunshade should be fully opened. The sunshade can be opened or closed manually by sliding it rearward or forward.

From the vent position, press this switch again to activate the express-open feature. Press the close switch to stop movement of the sunroof. The sunshade will automatically open when using express-open.

A deflector will automatically pop up when the sunroof is opened. The deflector will retract when the sunroof is closed.

▼ **(Close):** To close the sunroof, press and hold this switch until the sunroof motor stops, or release the switch when the desired position has been reached.

Section 3 Instrument Panel

Instrument Panel Overview 148
Hazard Warning Flashers 150
Other Warning Devices 150
Horn 150
Tilt Wheel 150
Turn Signal/Multifunction Lever 151
Turn and Lane-Change Signals 152
Headlamp High/Low-Beam Changer 153
Flash-to-Pass 153
Windshield Wipers 153
Windshield Washer 154
Cruise Control 155
Exterior Lamps 158
Delayed Headlamps 160
Daytime Running Lamps (DRL)/
Automatic Headlamp System 160
Fog Lamps 161
Instrument Panel Brightness 161
Courtesy Lamps 161
Dome Lamp 162
Entry Lighting 162
Delayed Entry Lighting 162
Delayed Exit Lighting 163
Parade Dimming 163
Reading Lamps 163
Electric Power Management 163
Battery Run-Down Protection 164
Accessory Power Outlet(s) 165
Ashtray(s) and Cigarette Lighter 166

Climate Controls 166
Climate Control System 166
Outlet Adjustment 170
Passenger Compartment Air Filter 171

Warning Lights, Gages, and Indicators 172
Instrument Panel Cluster 173
Speedometer and Odometer 174
Tachometer 174
Safety Belt Reminder Light 175
Passenger Safety Belt Reminder Light 175
Airbag Readiness Light 176
Passenger Airbag Status Indicator 177
Charging System Light 179
Brake System Warning Light 179
Anti-Lock Brake System
Warning Light 180
Traction Control System (TCS)
Warning Light 181
Engine Coolant Temperature
Warning Light 181

Section 3 Instrument Panel

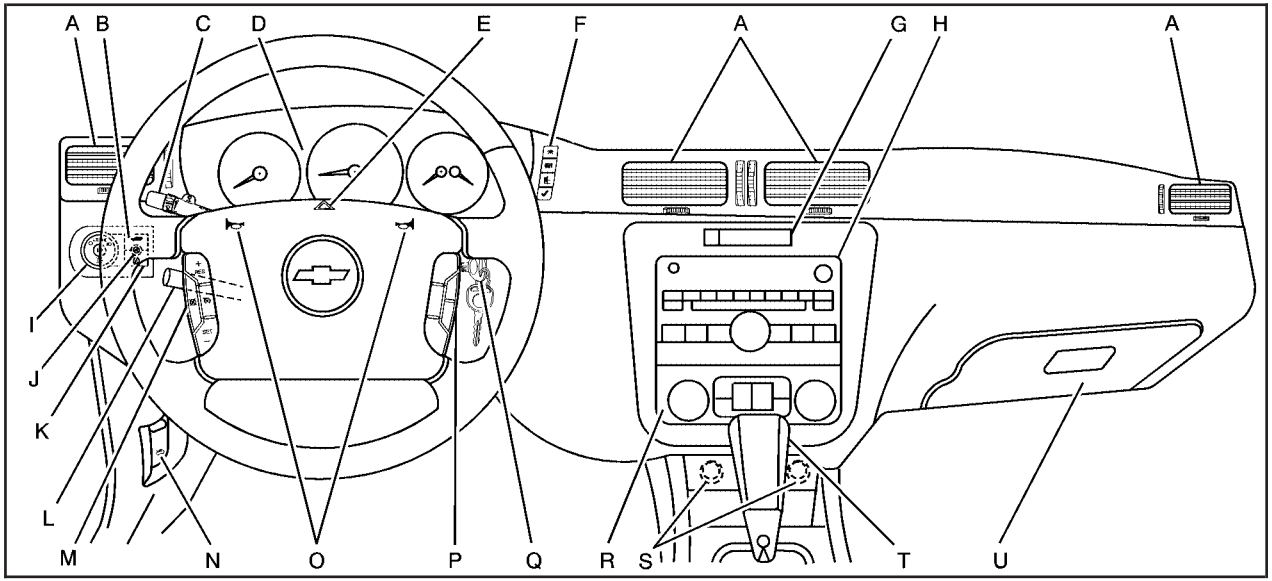
Engine Coolant Temperature Gage 182
Tire Pressure Light 182
Malfunction Indicator Lamp 183
Oil Pressure Light 186
Security Light 187
Fog Lamp Light 187
Cruise Control Light 187
Highbeam On Light 187
Fuel Gage 188

Driver Information Center (DIC) 188
DIC Operation and Displays 189
DIC Compass 195
DIC Warnings and Messages 197
DIC Vehicle Customization 206

Audio System(s) 213
Setting the Time (Without Date Display) 214
Setting the Time (With Date Display) 215
Radio with CD (Base) 217
Radio with CD (MP3) 223
Using an MP3 233
XM Radio Messages 240
Theft-Deterrent Feature 241
Audio Steering Wheel Controls 242
Radio Reception 243
Care of Your CDs 244
Care of the CD Player 244
Backglass Antenna 244
XM™ Satellite Radio Antenna System 245

NOTES

Instrument Panel Overview



The main components of your instrument panel are listed here:

A. Air Vent. See *Outlet Adjustment on page 170*.

B. Remote Trunk Release Button. See “Remote Trunk Release” under *Trunk on page 103*.

C. Multifunction Lever. See *Turn Signal/Multifunction Lever on page 151*.

D. Instrument Panel Cluster. See *Instrument Panel Cluster on page 173*.

E. Hazard Warning Flasher Button. See *Hazard Warning Flashers on page 150*.

F. Driver Information Center. See *Driver Information Center (DIC) on page 188*.

G. Passenger Air Bag status Indicator. See *Passenger Airbag Status Indicator on page 177*.

H. Audio System. See *Audio System(s) on page 213*.

I. Exterior Lamps Control. See *Exterior Lamps on page 158*.

J. Instrument Panel Brightness. See *Instrument Panel Brightness on page 161*.

K. Traction Control On/Off Button (If Equipped). See *Traction Control System (TCS) on page 256*.

L. Tilt Steering Wheel Lever. See *Tilt Wheel on page 150*.

M. Steering Wheel Cruise Control. See *Cruise Control on page 155*.

N. Hood Release. See *Hood Release on page 307*.

O. Horn. See *Horn on page 150*.

P. Audio Steering Wheel Controls (If Equipped). See *Audio Steering Wheel Controls on page 242*.

Q. Ignition Switch. See *Ignition Positions on page 112*.

R. Climate Controls. See *Climate Control System on page 166*.

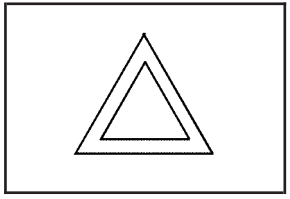
S. Accessory Power Outlets. See *Accessory Power Outlet(s) on page 165*.

T. Center Console Shift Lever (If Equipped). See “Console Shift Lever” under *Shifting Into Park (P) on page 121*.

U. Glove Box. See *Glove Box on page 142*.

Hazard Warning Flashers

Your hazard warning flashers let you warn others. They also let police know you have a problem. Your front and rear turn signal lamps will flash on and off.



The hazard warning flasher button is located on top of the steering column.

Your hazard warning flashers work no matter what position your key is in, and even if the key is not in.

Press the button to make the front and rear turn signal lamps flash on and off. Press the button again to turn the flashers off.

When the hazard warning flashers are on, your turn signals will not work.

Other Warning Devices

If you carry reflective triangles, you can set them up at the side of the road about 300 feet (100 m) behind your vehicle.

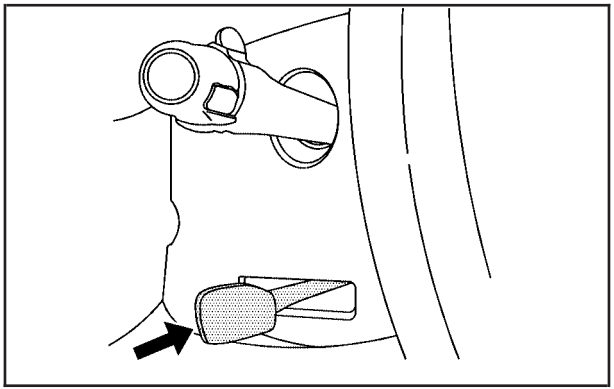
Horn

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

Tilt Wheel

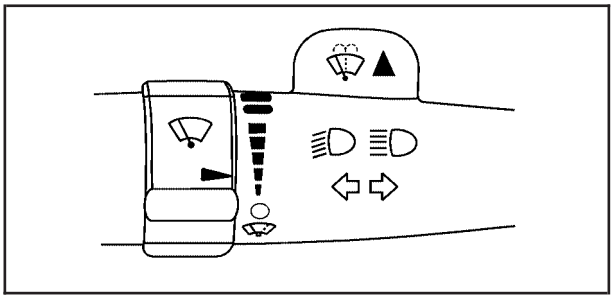
A tilt wheel allows you to adjust the steering wheel before you drive. The steering wheel can be raised to the highest level to give your legs more room when you enter and exit the vehicle.

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



To tilt the wheel, hold the wheel and pull the lever. Then move the wheel to a comfortable position and release the lever to lock the wheel in place.

Turn Signal/Multifunction Lever



The lever on the left side of the steering column includes the following:

- Turn and Lane Change Signals. See *Turn and Lane-Change Signals on page 152*.
- Headlamp High/Low-Beam Changer. See *Headlamp High/Low-Beam Changer on page 153*.
- Flash-to-Pass. See *Flash-to-Pass on page 153*.

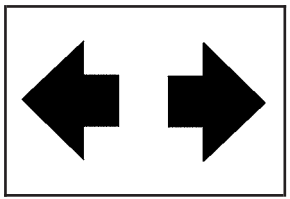
- Windshield Wipers. See *Windshield Wipers on page 153*.
- ▲ Windshield Washer. See *Windshield Washer on page 154*.

For information on the headlamps, see *Exterior Lamps on page 158*.

Turn and Lane-Change Signals

The turn signal has two upward (for right) and two downward (for left) positions. These positions allow you to signal a turn or a lane change.

To signal a turn, move the lever all the way up or down. When the turn is finished, the lever will return automatically.



An arrow on the instrument panel cluster will flash in the direction of the turn or lane change.

To signal a lane change, just raise or lower the lever until the arrow starts to flash. Hold it there until you complete your lane change. The lever will return by itself when you release it. If you momentarily press and release the lever, the turn signal will flash three times.

If the arrow flashes faster than normal as you signal a turn or a lane change, a signal bulb may be burned out and other drivers won't see your turn signal.

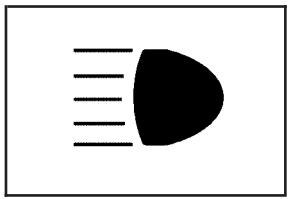
If a bulb is burned out, replace it to help avoid an accident. If the arrows don't go on at all when you signal a turn, check for burned-out bulbs and then check the fuse. See *Fuses and Circuit Breakers on page 400*.

Turn Signal On Chime

If you leave either one of your turn signals on and drive more than 3/4 mile (1.2 km), a chime will sound to alert you.

Headlamp High/Low-Beam Changer

To change the headlamps from low beam to high beam, push the turn signal/multifunction lever away from you.



When the high beams are on, a light on the instrument panel cluster also will be on if the ignition is on.

To change the headlamps from high beam to low beam, pull the turn signal lever toward you.

Flash-to-Pass

With the turn signal lever in the low-beam position, pull the lever toward you momentarily to switch to high-beams (to signal that you are going to pass).

If you have the headlamps on, they will return to low-beams when you release the lever.

This feature operates even when the headlamps are off.

Windshield Wipers

Be sure to clear ice and snow from the wiper blades before using them. If they are frozen to the windshield, gently loosen or thaw them. Damaged wiper blades may not clear the windshield well, making it harder to see and drive safely. If the blades do become damaged, install new blades or blade inserts. For more information, see *Windshield Wiper Blade Replacement on page 352*.

Heavy snow or ice can overload the wiper motor. A circuit breaker will stop the motor until it cools down. Clear away snow or ice to prevent an overload.

You control the windshield wipers by turning the band with the wiper symbol on it.

(Mist): For a single wiping cycle, turn the band to mist. Hold it there until the wipers start. Then let go. The wipers will stop after one wipe. If you want more wipe cycles, hold the band on mist longer.

(Delay): You can set the wiper speed for a long or short delay between wiping cycles. This can be very useful in light rain or snow. Turn the band to choose the delay time. The closer to the top of the lever, the shorter the delay.

(Low Speed): For steady wiping at low speed, turn the band away from you to the first solid band past the delay settings.

(High Speed): For high-speed wiping, turn the band further, to the second solid band past the delay settings.

(Off): To stop the wipers, move the band to off.

Windshield Washer

At the top of the multifunction lever, there is a paddle with the windshield washer symbol on it. Push the paddle to spray washer fluid on the windshield. The wipers run for several sweeps and then either stop or return to the preset speed. The ignition key must be in ACCESSORY or RUN for this to work. See *Windshield Washer Fluid on page 336*.

⚠ CAUTION:

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.

When the vehicle is low on washer fluid, the WASHER FLUID LOW ADD FLUID displays in the Driver Information Center (DIC) for 60 seconds. When the ignition is turned off, this message displays again for three seconds to remind you that the fluid level is low.

Until the fluid reservoir is refilled, every time the vehicle is started, the WASHER FLUID LOW ADD FLUID message displays in the DIC for 60 seconds. Be sure to refill the tank right away. See *DIC Warnings and Messages on page 197*.

Cruise Control

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

⚠ CAUTION:

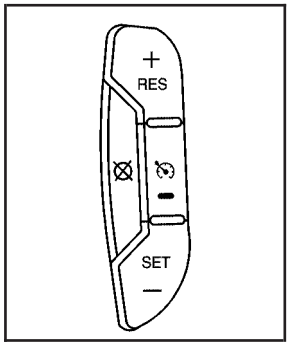
Cruise control can be dangerous where you cannot drive safely at a steady speed. So, do not use your cruise control on winding roads or in heavy traffic.

CAUTION: (Continued)

CAUTION: (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.

If your vehicle is in cruise control when the traction control system, if your vehicle has this feature, begins to limit wheel spin, the cruise control will automatically disengage. See *Traction Control System (TCS) on page 256*. When road conditions allow you to safely use it again, the cruise control can be turned back on.



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

(On/Off): Press this button to turn cruise control on and off. The indicator will be lit when cruise control is on.

+ RES (Resume/Accelerate): Press this button to make the vehicle accelerate or resume to a previously set speed.

SET–: Press this button to set the speed or make the vehicle decelerate.

(Cancel): Press this button to cancel cruise control.

Setting Cruise Control

Cruise control will not work if the parking brake is set, or if the master cylinder brake fluid level is low.

The cruise control light on the instrument panel cluster will come on after the cruise control has been set to the desired speed.

⚠ CAUTION:

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.

1. Press the cruise control on/off button.
2. Get up to the speed you want.
3. Press and release the SET– button located on the steering wheel.
4. Take your foot off the accelerator.

Resuming a Set Speed

Suppose you set the cruise control at a desired speed and then you apply the brake. This shuts off the cruise control, but it does not need to be reset.

Once you are driving about 25 mph (40 km/h) or more, press the +RES button on the steering wheel. The vehicle will go back to your chosen speed and stay there.

Increasing Speed While Using Cruise Control

To increase the cruise speed while using cruise control:

- Press and hold the +RES button on the steering wheel until you reach your new desired speed, then release it.
- To increase vehicle speed in small increments, press the +RES button.

Reducing Speed While Using Cruise Control

To reduce your speed while using cruise control:

- Press and hold the SET– button on the steering wheel until you reach the lower speed you want, then release it.
- To slow down in very small amounts, press the SET– button on the steering wheel briefly. Each time this is done, you will go about 1 mph (1.6 km/h) slower.

Passing Another Vehicle While Using Cruise Control

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

Using Cruise Control on Hills

How well the cruise control will work on hills depends upon the vehicle speed, load and the steepness of the hills. When going up steep hills, you may have to step on the accelerator pedal to maintain your speed. When going downhill, you may have to brake or shift to a lower gear to keep your speed down. Of course, applying the brake ends the cruise control. Many drivers find this to be too much trouble and do not use cruise control on steep hills.

Ending Cruise Control

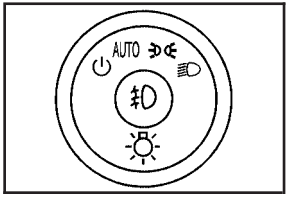
There are three ways to end cruise control:

- Step lightly on the brake pedal.
- Press the ⊗ (cancel) button on the steering wheel.
- Press the (on/off) button on the steering wheel.

Erasing Speed Memory

The cruise control set speed memory is erased by turning off the cruise control or the ignition.

Exterior Lamps



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

It controls the following systems:

- Headlamps
- Taillamps
- Parking Lamps
- License Plate Lamps
- Instrument Panel Lights
- Fog Lamps (if equipped)

The exterior lamps control has four positions:

(Off): Briefly turn the control to this position to turn off the automatic light control. Briefly turn to this position again to turn automatic light control on again.

AUTO (Automatic): Turn the control to this position to automatically turn on the headlamps at normal brightness, together with the following:

- Parking Lamps
- Taillamps
- License Plate Lamps
- Instrument Panel Lights

(Parking Lamps): Turn the control to this position to turn on the parking lamps together with the following:

- Taillamps
- License Plate Lamps
- Instrument Panel Lights

(Headlamps): Turn the control to this position to turn on the headlamps together with the following lamps listed below. A warning chime will sound if you open the driver's door when the ignition switch is off and the headlamps are on.

- Parking Lamps
- Taillamps
- License Plate Lamps
- Instrument Panel Lights

(Fog Lamps, If Equipped): Push the fog lamps control in to turn on the fog lamps.

See *Fog Lamps on page 161*.

Delayed Headlamps

The delayed headlamps feature provides a period of exterior lighting as you leave the area around your vehicle. The feature is activated when the headlamps are on due to the automatic headlamps control feature described previously in this section, and when the ignition is turned off. Your headlamps will then remain on until the exterior lamps control is moved to the parking lamps position or until the pre-selected delayed headlamp lighting period has ended.

If you turn off the ignition with the headlamps switch in the parking lamps or headlamps position, the delayed headlamps cycle will not occur.

To disable the delayed headlamps feature or change the time of delay, see *DIC Vehicle Customization on page 206*.

Daytime Running Lamps (DRL)/ Automatic Headlamp System

Daytime Running Lamps (DRL) can make it easier for others to see the front of your vehicle during the day. DRL can be helpful in many different driving conditions, but they can be especially helpful in the short periods after dawn and before sunset. Fully functional daytime running lamps are required on all vehicles first sold in Canada.

A light sensor on top of the instrument panel makes the DRL work, so be sure it is not covered.

The DRL system's automatic headlamp control will make the low-beam headlamps come on at a reduced brightness when the following conditions are met:

- The ignition is in RUN.
- The exterior lamps control is in AUTO.
- The engine is running.

When the DRL are on, only the low-beam headlamps, at a reduced level of brightness, will be on. The headlamps, taillamps, sidemarker, and other lamps will not be on. The instrument panel and cluster will also not be lit.

When it is dark enough outside, your low-beam headlamps will turn off and the headlamps and parking lamps will turn on. The other lamps that come on with the headlamps will also come on.

When it is bright enough outside, the headlamps will go off and the DRL will come on.

As with any vehicle, you should turn on the regular headlamp system when you need it.

Fog Lamps

(Fog Lamps): If your vehicle has fog lamps, the control is located on the exterior lamps control. The exterior lamps control is located on the instrument panel to the left of the steering column.

Your ignition must be in the RUN position for the fog lamps to come on.

To turn the fog lamps on, press the exterior lamps button. A light will come on in the instrument panel cluster to let you know that the fog lamps are on. Press the exterior lamps button again to turn the fog lamps off.

When the headlamps are changed to high-beam, the fog lamps also go off.

Some localities have laws that require the headlamps to be on along with the fog lamps.

Instrument Panel Brightness

(Instrument Panel Brightness): The knob with this symbol on it is located next to the exterior lamps control. Press the knob until it pops out and then turn the knob clockwise to brighten or counterclockwise to dim the lights.

Courtesy Lamps

When a door is opened, the courtesy lamps automatically come on. They make it easy for you to enter and leave your vehicle. You can also manually turn these lamps on by turning the instrument panel brightness control clockwise all the way.

The reading lamps, located on the rearview mirror, can be turned on or off independent of the automatic courtesy lamps, when the doors are closed.

Dome Lamp

The dome lamp will come on when you open a door. You can also turn this lamp on by turning the instrument panel brightness control clockwise.

Entry Lighting

Your vehicle may have courtesy lamps that will come on and stay on for a set time whenever UNLOCK is pressed on the remote keyless entry transmitter, if you have one.

If a door is opened, the lamps will stay on while it is open and then turn off automatically about 25 seconds after the door is closed. If UNLOCK is pressed and you do not open a door, the lamps will turn off after about 40 seconds.

Entry lighting includes a feature called theater dimming. With theater dimming, the lamps do not turn off at the end of the delay time. Instead, they slowly dim after the delay time until they go out. The delay time is canceled if you turn the ignition key to ON or press the power door lock switch. The lamps will dim right away.

When the ignition is on, illuminated entry is inactive, which means the courtesy lamps will not come on unless a door is opened.

Delayed Entry Lighting

Delayed entry lighting illuminates the interior for a period of time after all the doors have been closed.

The ignition must be off for delayed entry lighting to work. Immediately after all the doors have been closed, the delayed entry lighting feature will continue to work until one of the following occurs:

- The ignition is in RUN.
- The doors are locked.
- An illumination period of 25 seconds has elapsed.

If during the illumination period a door is opened, the timed illumination period will be canceled and the interior lamps will remain on because a door is open.

Delayed Exit Lighting

This feature illuminates the interior for a period of time after the key is removed from the ignition.

The ignition must be off for delayed exit lighting to work. When the key is removed, interior illumination will activate and remain on until one of the following occurs:

- The ignition is in RUN.
- The power door locks are activated.
- An illumination period of 20 seconds has elapsed.

If during the illumination period a door is opened, the timed illumination period will be canceled and the interior lamps will remain on because a door is open.

Parade Dimming

The instrument panel has an added feature called parade mode. This feature prohibits the dimming of your instrument panel displays during the daylight while the headlamps are on so that you will still be able to see the displays.

Reading Lamps

Your vehicle may have reading lamps that are located in the dome lamp. Press the button to turn them on and off.

Electric Power Management

This vehicle has Electric Power Management (EPM), an advanced control system. It estimates the battery's temperature and state of charge and 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 put the charge back in. When the state of charge is high, the voltage is lowered slightly to prevent overcharging. If the vehicle has a voltmeter gage or 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 loads are on: 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 or Service Battery Charging System.

If this message is displayed, it is recommended that the driver reduce the electrical loads as much as possible. See *DIC Warnings and Messages on page 197*.

Battery Run-Down Protection

This vehicle has a feature to help prevent the battery from being drained, if the interior courtesy lamps, reading/map lamps, visor vanity lamps or trunk lamp are accidentally left on. If any of these lamps are left on, they will automatically turn off after 10 minutes, if the ignition is off. The lamps will not come back on again until you do the following:

- Turn the ignition on, or
- turn the exterior lamps control off, then on again.

The headlamps will timeout after 10 minutes, if they are manually turned on before the ignition is off.

Accessory Power Outlet(s)

Your vehicle has three 12-volt outlets which can be used to plug in electrical equipment such as a cellular telephone, a compact disc player, etc.

On vehicles with a center console, one outlet is located at the rear of the console in the bottom of the bin and two outlets are located at the front of the console bin under the instrument panel. Lift the cover to access the outlet. Close the cover when not using the outlet.

On vehicles without a center console, two are located under the climate controls and another outlet for the rear seat passengers is at the rear of the center front seat. Remove the rubber cover to access the outlets. When not using the outlet, make sure the cover is on it.

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

Certain accessory plugs may not be compatible to the accessory power outlet and could result in blown vehicle and adapter fuses. If you experience a problem, see your dealer for additional information on the power accessory plugs.

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. Do not use equipment exceeding maximum amperage rating of 20 amperes. Check with your dealer before adding electrical equipment.**

When adding electrical equipment, be sure to follow the proper installation instructions included with the equipment. Check with your dealer before adding electrical equipment, and never use anything that exceeds the maximum amperage rating of 20 amps.

Notice: **Improper use of the power outlet can cause damage not covered by your 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.**

Ashtray(s) and Cigarette Lighter

Your vehicle may have an ashtray and a cigarette lighter. The ashtray and cigarette lighter may be located in the console, if your vehicle has one, otherwise, they may be located in the center armrest of the front seat.

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

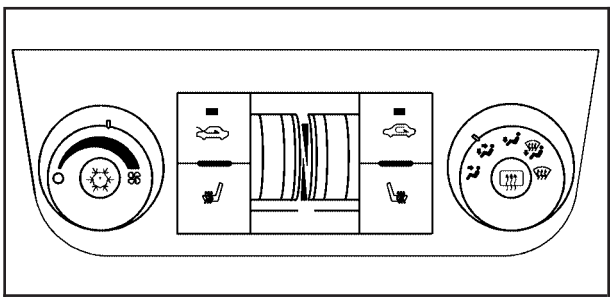
Notice: **Holding a cigarette lighter in while it is heating will not allow the lighter to back away from the heating element when it is hot. Damage from overheating may occur to the lighter or heating element, or a fuse could be blown. Do not hold a cigarette lighter in while it is heating.**

To use the lighter, just push it in all the way and let go. When it's ready, it will pop back out by itself.

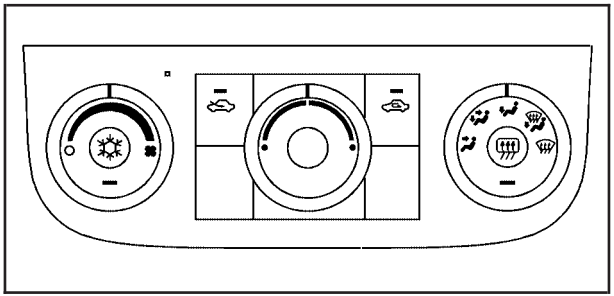
Climate Controls

Climate Control System

This vehicle may have a dual or single climate control system. With this system you can control the heating, cooling, defrost, defog and ventilation for your vehicle. If this vehicle has heated seats, see *Heated Seats on page 11*.



Dual Zone with Optional Heated Seat Controls



Single Zone

Manual Operation

Turn the right knob clockwise or counterclockwise to direct the airflow inside of your vehicle.

To change the current mode, select one of the following:

(Vent): This mode directs air to the instrument panel outlets.

(Bi-Level): This mode directs half of the air to the instrument panel outlets and the other half to the floor outlets.

(Floor): This mode directs most of the air to the floor outlets, with some of the air directed to the windshield and side window outlets. In this mode, the system will automatically select Outside Air.

The right knob can also be used to select defog or defrost mode. For more information, see “Defogging and Defrosting” later in this section.

By positioning the right knob between two modes, a combination of those two modes is selected.

The air conditioning compressor will operate unless the outside temperature is 40°F (4°C) or below.

(Fan): Turn the left knob clockwise or counterclockwise to increase or decrease the fan speed. If the airflow seems low when the fan is at the highest setting, the passenger compartment air filter may need to be replaced. For more information, see *Passenger Compartment Air Filter on page 171* and *Scheduled Maintenance on page 410*.

(Outside Air): Press this button to turn on outside air. When this mode is on, outside air will circulate throughout your vehicle. When the button is pressed, an indicator light will come on to show that it is on.

(Recirculation): Press this button to turn on the recirculation mode. When the button is pressed, an indicator light will come on to show that it is on.

This mode keeps outside air from entering the vehicle. It can be used to prevent outside air and odors from entering your vehicle. Recirculation may also help heat or cool the air inside your vehicle more quickly once the temperature inside the vehicle is equal to or better than the outside temperature. The recirculation mode cannot be used with outside air, floor, defrost, or defogging modes.

Temperature Control: Turn the thumbwheels up or down to increase or decrease the temperature on the driver's side or the passenger side of the vehicle for the dual zone system. Turn the center knob clockwise or counterclockwise to increase or decrease the temperature for the single zone system.

(Air Conditioning): Press this button to turn the air conditioning system on or off. When A/C is pressed, an indicator light will come on to let you know that the air conditioning is on.

On hot days, open the windows to let hot inside air escape; then close them. This helps to reduce the time it takes for your vehicle to cool down. It also helps the system to operate more efficiently.

For quick cool down on hot days, do the following:

1. Select the vent mode.
2. Select A/C.
3. Select the coolest temperature for both zones.
4. Select the highest fan speeds.
5. When the coolest temperature is selected in the A/C mode, the system will automatically go into the recirculation mode to improve cooling. Press the Outside Air or Recirculation button to turn off the automatic recirculation. This feature will stay off until the climate control system is powered on again or the vehicle has been turned off and on again.

Using these settings together for long periods of time may cause the air inside of your vehicle to become too dry. To prevent this from happening, after the air inside of your vehicle has cooled, turn the recirculation mode off.

The air conditioning system removes moisture from the air, so you may sometimes notice a small amount of water dripping underneath your vehicle while idling or after turning off the engine. This is normal.

Defogging and Defrosting

Fog on the inside of the windows is a result of high humidity (moisture) condensing on the cool window glass. This can be minimized if the climate control system is used properly. There are two modes to clear fog or frost from your windshield. Use the defog mode to clear the windows of fog or moisture and warm the passengers. Use the defrost mode to remove fog or frost from the windshield more quickly.

Do not drive the vehicle until all the windows are clear.

Turn the right knob clockwise to select the defog or defrost mode.

(Defog): This mode directs air equally to the windshield and the floor outlets. When defog is selected, the system turns off recirculation and runs the air conditioning compressor unless the outside temperature is below 40°F (4°C).

(Defrost): This mode directs most of the air to the windshield with some air to the side window vents and to the floor vents. When defrost is selected, the system will automatically force outside air into the vehicle. The air conditioning compressor will run automatically in this setting, unless the outside temperature is below 40°F (4°C).

Rear Window Defogger

The rear window defogger uses a warming grid to remove fog from the rear window.

(Rear Window Defogger): The rear window defogger will turn off automatically after it has been activated for 10 minutes. It can be turned off manually, by pressing the button again or by turning the ignition to the OFF position. If additional window clearing is required, the rear window defogger can be turned on again for additional window clearing. The length of defogger operation will increase if the vehicle is being driven.

If your vehicle has heated outside rearview mirrors, the mirrors will heat to help clear fog or frost from the surface of the mirror when the rear window defog button is pressed. See *Outside Power Mirrors on page 127*.

Do not drive the vehicle until all the windows are clear.

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 your warranty. Do not attach a temporary vehicle license, tape, a decal or anything similar to the defogger grid.**

Outlet Adjustment

Use the thumbwheel located below or to the side of the outlet, to change the direction of the air flow.

Operation Tips

- Clear away any ice, snow or leaves from the air inlets at the base of the windshield that may block the flow of air into your vehicle.
- Use of non-GM approved hood deflectors may adversely affect the performance of the system.
- Keep the path under the front seats clear of objects to help circulate the air inside your vehicle more effectively.
- If the airflow seems low when the fan is at the highest setting, the passenger compartment air filter, if equipped, may need to replaced. For more information, see *Passenger Compartment Air Filter on page 171* and *Scheduled Maintenance on page 410*.
- If fogging reoccurs while in vent or bi-level modes with mild temperature throughout the vehicle, turn on the air conditioner to reduce windshield fogging.

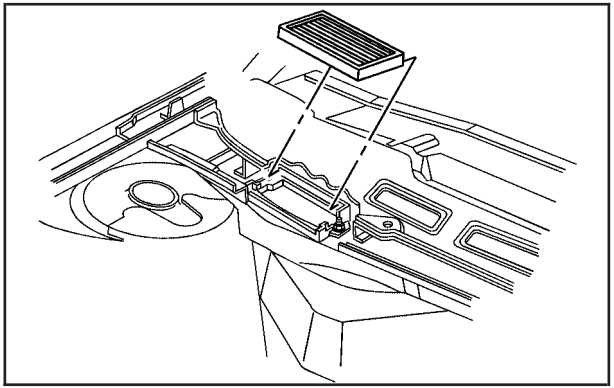
Passenger Compartment Air Filter

This vehicle has a passenger compartment particulate air filter. It is located underneath the hood just below the windshield wiper arm on the passenger's side of the vehicle, under the air inlet grille.

The filter traps most of the pollen from air entering the Climate Control System. Like your engine's air cleaner/filter, it may need to be changed periodically to ensure system performance. For information on how often to change the passenger compartment air filter, see *Scheduled Maintenance on page 410*.

To change the passenger compartment air filter, use the following steps:

1. Turn off the ignition when the windshield wipers are in the up position.
2. Raise the vehicle hood.
3. Peel back the hood weatherstrip from the passenger's side of the vehicle halfway to center.



4. Remove the air inlet grille retainers.
5. Lift the air inlet grille and disconnect the washer hose at the quick-connect.
6. Remove the air inlet grille.
7. Remove the water deflector plate.
8. Remove the old passenger compartment air filter.
9. Reverse the steps to install the new air filter.

For best climate control system performance, be sure to re-install the air filter.

For the type of filter to use, see *Normal Maintenance Replacement Parts on page 421*.

Warning Lights, Gages, and Indicators

This part describes the warning lights and gages that may be on your vehicle. The pictures will help you locate them.

Warning lights and gages can signal that something is wrong before it becomes serious enough to cause an expensive repair or replacement. Paying attention to your warning lights and gages could also save you or others from injury.

Warning lights come on when there may be or is a problem with one of your vehicle's functions. As you will see in the details on the next few pages, some warning lights come on briefly when you start the engine just to let you know they're working. If you are familiar with this section, you should not be alarmed when this happens.

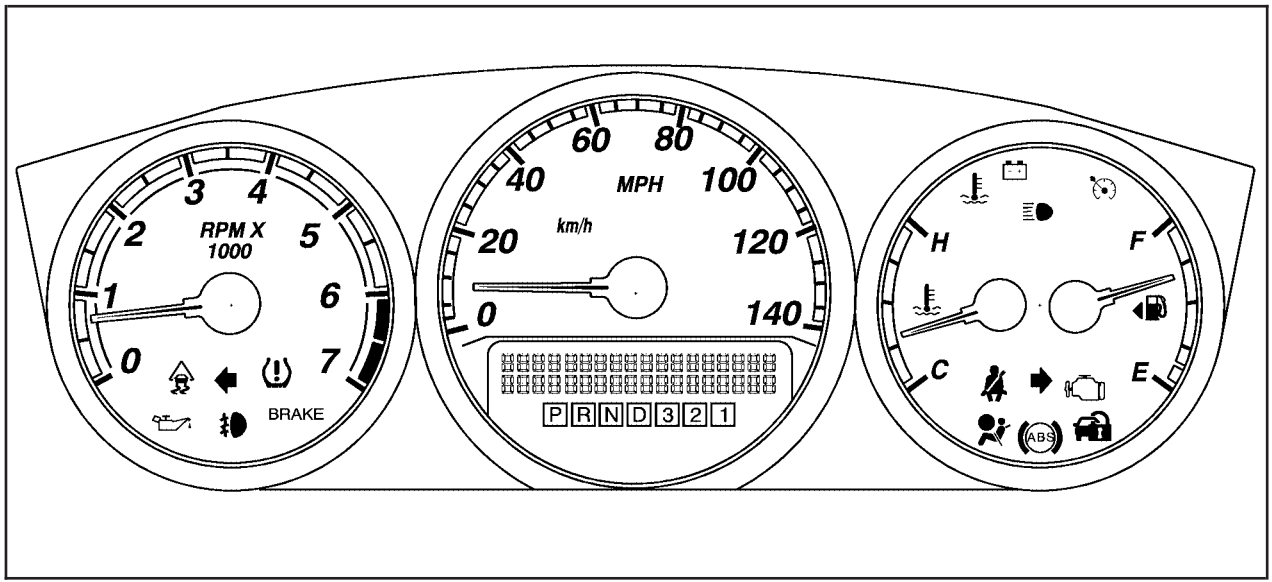
Gages can indicate when there may be or is a problem with one of your vehicle's functions. Often gages and warning lights work together to let you know when there's a problem with your vehicle.

When one of the warning lights comes on and stays on when you are driving, or when one of the gages shows there may be a problem, check the section that tells you what to do about it. Please follow this manual's advice. Waiting to do repairs can be costly – and even dangerous. So please get to know your warning lights and gages. They're a big help.

Your vehicle may also have a Driver Information Center (DIC) that works along with the warning lights and gages. See *Driver Information Center (DIC) on page 188*.

Instrument Panel Cluster

Your instrument panel cluster is designed to let you know at a glance how your vehicle is running. You will know how fast you are going, about how much fuel is in your tank and many other things you need to drive safely and economically.



United States Uplevel shown, Base and Canada similar

Speedometer and Odometer

Your speedometer lets you see your speed in both miles per hour (mph) and kilometers per hour (km/h). Your odometer shows how far your vehicle has been driven in either miles (used in the United States) or in kilometers (used in Canada).

Your vehicle has a tamper-resistant odometer. If you see ERROR, you'll know someone has probably tampered with it and the numbers may not be accurate.

You may wonder what happens if your vehicle needs a new odometer installed. If the new one can be set to the mileage total of the old odometer, then that will be done. But if it can't, then it will be set at zero and a label must be put on the driver's door to show the old mileage reading when the new odometer was installed.

Tachometer

Notice: **If you operate the engine with the tachometer in the shaded warning area, your vehicle could be damaged, and the damages would not be covered by your warranty. Do not operate the engine with the tachometer in the shaded warning area.**

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

Safety Belt Reminder Light

When the key is turned to RUN or START, a chime will be provided for several seconds to remind people to buckle their safety belts. The driver safety belt light will also be provided and stay on for several seconds, then it will flash for several more. You should buckle your seat belt.

This chime and light will be repeated if the driver remains unbuckled and the vehicle is in motion.

If the driver's belt is buckled, neither the chime nor the light will be provided.

Passenger Safety Belt Reminder Light

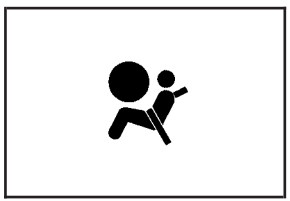
Several seconds after the key is turned to RUN or START, a chime will sound for several seconds to remind the front passenger to buckle their safety belt. This would only occur if the passenger airbag is enabled. See *Passenger Sensing System on page 79* for more information. The passenger safety belt light will also come on and stay on for several seconds, then it will flash for several more.

This chime and light will be repeated if the passenger remains unbuckled and the vehicle is in motion.

If the passenger's safety belt is buckled, neither the chime nor the light will come on.

Airbag Readiness Light

There is an airbag readiness light on the instrument panel, which shows the airbag symbol. The system checks the airbag's electrical system for malfunctions. The light tells you if there is an electrical problem. The system check includes the airbag sensors, the airbag modules, the wiring and the crash sensing and diagnostic module. For more information on the airbag system, see *Airbag System on page 69*.



This light will come on when you start your vehicle, and it will flash for a few seconds. Then the light should go out. This means the system is ready.

If the airbag readiness light stays on after you start the vehicle or comes on when you are driving, your airbag system may not work properly. Have your vehicle serviced right away.

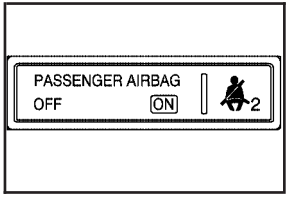
⚠ CAUTION:

If the airbag readiness light stays on after you start your vehicle, it means the airbag system may not be working properly. The airbags in your vehicle may not inflate in a crash, or they could even inflate without a crash. To help avoid injury to yourself or others, have your vehicle serviced right away if the airbag readiness light stays on after you start your vehicle.

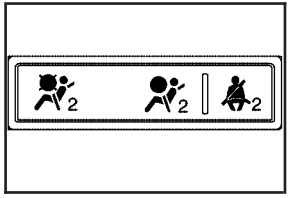
The airbag readiness light should flash for a few seconds when you turn the ignition key to RUN. If the light does not come on then, have it fixed so it will be ready to warn you if there is a problem.

Passenger Airbag Status Indicator

Your vehicle has the passenger sensing system. Your instrument panel has a passenger airbag status indicator.



United States



Canada

When the ignition key is turned to RUN or START, 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 use remote start to start your vehicle from a distance (if equipped), 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's frontal airbag.

There is a label on your sun visor that 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. Never put a rear facing child restraint in the right front passenger seat unless passenger airbag status indicator shows off and the airbag is off. Here is why:

⚠ CAUTION:

Even though the passenger sensing system is designed to turn off the passenger's frontal airbag if the system detects a rear-facing child restraint, no system is failsafe, and no one can guarantee that an airbag will not deploy under some unusual circumstance, even though it is turned off. We recommend that rear-facing child restraints be secured in the rear seat, even if the airbag is off.

If the word ON or the on symbol is lit on the passenger airbag status indicator, it means that the right front passenger's frontal airbag is enabled (may inflate).

⚠ CAUTION:

If the on indicator comes on when you have a rear-facing child restraint installed in the right front passenger's seat, it means that the passenger sensing system has not turned off the passenger's frontal airbag. A child in a rear-facing child restraint can be seriously injured or killed if the right front passenger's airbag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating airbag. Do not use a rear-facing child restraint in the right front passenger's seat if the airbag is turned on.

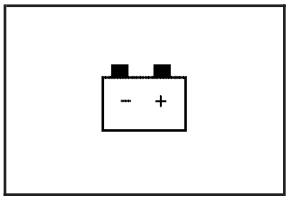
If the word OFF or the off symbol is lit on the airbag status indicator, it means that the passenger sensing system has turned off the right front passenger's frontal airbag. See *Passenger Sensing System on page 79* for more on this, including important safety information.

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

⚠ CAUTION:

If the off indicator and the airbag readiness light ever come on together, it means that something may be wrong with the airbag system. If this ever happens, have the vehicle serviced promptly, because an adult-size person sitting in the right front passenger seat may not have the protection of the frontal airbag. See *Airbag Readiness Light on page 176*.

Charging System Light



The charging system light will come on briefly when you turn on the ignition, but the engine is not running, as a check to show you it is working.

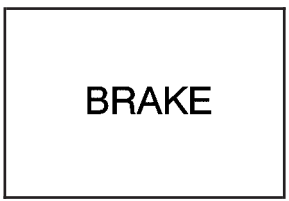
It should go out once the engine is running. If it stays on, or comes on while you are driving, you may have a problem with the charging system. It could indicate that you have problems with a generator drive belt, or another electrical problem. Have it checked right away. Driving while this light is on could drain your battery.

If you must drive a short distance with the light on, be certain to turn off all your accessories, such as the radio and air conditioner.

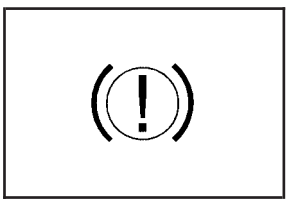
Brake System Warning Light

Your vehicle's hydraulic brake system is divided into two parts. If one part is not working, the other part can still work and stop you. For good braking, though, you need both parts working well.

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



United States



Canada

This light should come on briefly when you turn the ignition key to RUN. If it does not come on then, have it fixed so it will be ready to warn you if there is a problem.

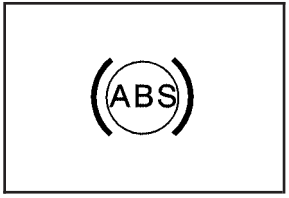
When the ignition is on, the brake system warning light will also come on when you set your parking brake. The light will stay on if your parking brake does not release fully. If it stays on after your parking brake is fully released, it means you have a brake problem.

If the light comes on while you are driving, pull off the road and stop carefully. You may notice that the pedal is harder to push, or the pedal may go closer to the floor. It may take longer to stop. If the light is still on, have the vehicle towed for service. See *Towing Your Vehicle on page 284*.

⚠ CAUTION:

Your brake system may not be working properly if the brake system warning light is on. Driving with the brake system warning light on can lead to an accident. If the light is still on after you have pulled off the road and stopped carefully, have the vehicle towed for service.

Anti-Lock Brake System Warning Light



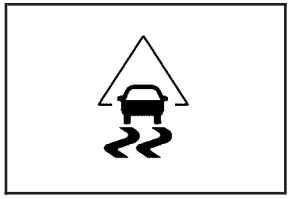
Your vehicle may have an Anti-Lock Brake System (ABS) warning light.

It should come on for a few seconds when you turn the ignition key to RUN.

If the ABS warning light stays on longer than normal after you have started your engine, turn the ignition off or, if the light comes on and stays on when you are driving, stop as soon as possible and turn the ignition off. Then start the engine again to reset the system. If the light still stays on, or comes on again while you are driving, the ABS needs service and you do not have anti-lock brakes.

The ABS warning light should come on briefly when you turn the ignition key to RUN. This is normal. If the light does not come on then, have it fixed so it will be ready to warn you if there is a problem.

Traction Control System (TCS) Warning Light

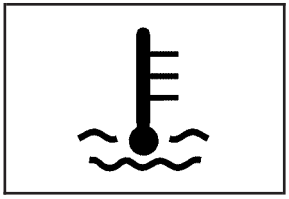


For vehicles equipped with the traction control system, this warning light should come on briefly when the engine is started.

If the warning light does not come on then, have it fixed so it will be ready to warn you if there is a problem. If it stays on, or comes on when you are driving, there may be a problem with your traction control system and your vehicle may need service. When this warning light is on, the system will not limit wheel spin. Adjust your driving accordingly.

If the traction control system warning light comes on and stays on for an extended period of time when the system is turned on, your vehicle needs service. See *Traction Control System (TCS) on page 256* for more information.

Engine Coolant Temperature Warning Light



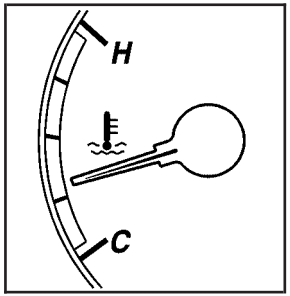
The engine coolant temperature warning light will come on when the engine has overheated.

If this happens you should pull over and turn off the engine as soon as possible. See *Engine Overheating on page 326* for more information.

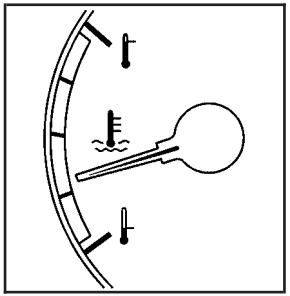
Notice: **Driving with the engine coolant temperature warning light on could cause your vehicle to overheat. See *Engine Overheating on page 326*. Your vehicle could be damaged, and it might not be covered by your warranty. Never drive with the engine coolant temperature warning light on.**

This light will also come on when starting your vehicle. If it doesn't, have your vehicle serviced.

Engine Coolant Temperature Gage



United States

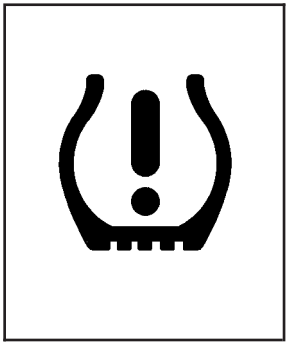


Canada

This gage shows the engine coolant temperature. If the gage pointer moves towards the “H” (United States) or the shaded in thermostat (Canada), it means that your engine coolant has overheated. If you have been operating your vehicle under normal driving conditions, you should pull off the road, stop your vehicle and turn off the engine as soon as possible.

See *Engine Overheating on page 326* for more information.

Tire Pressure Light



This light comes on briefly when you turn the ignition to RUN.

This light will also come on when one or more of your tires are significantly underinflated.

A CHECK TIRE PRESSURE message in the Driver Information Center (DIC) will accompany the light. See *DIC Warnings and Messages on page 197* for more information.

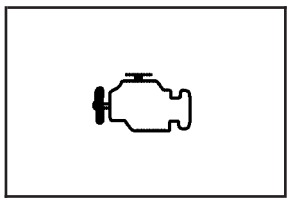
Stop and check your tires as soon as it is safe to do so. If underinflated, inflate to the proper pressure. See *Tires on page 354* for more information.

This light will flash for approximately 60 seconds and then stay on if a problem is detected with the Tire Pressure Monitor system.

See *Tire Pressure Monitor System on page 363* for more information.

Malfunction Indicator Lamp

Check Engine Light



Your vehicle has a computer which monitors operation of the fuel, ignition, and emission control systems.

This system is called OBD II (On-Board Diagnostics-Second Generation) and is intended to assure that emissions are at acceptable levels for the life of the vehicle, helping to produce a cleaner environment. The check engine light comes on to indicate that there is a problem and service is required. Malfunctions often will be indicated by the system before any problem is apparent.

This may prevent more serious damage to your vehicle. This system is also designed to assist your service technician in correctly diagnosing any malfunction.

Notice: **If you keep driving your vehicle with this light on, after awhile, your emission controls may not work as well, your fuel economy may not be as good, and your engine may not run as smoothly. This could lead to costly repairs that may not be covered by your warranty.**

Notice: **Modifications made to the engine, transaxle, exhaust, intake, or fuel system of your vehicle or the replacement of the original tires with other than those of the same Tire Performance Criteria (TPC) can affect your vehicle's emission controls and may cause this light to come on. Modifications to these systems could lead to costly repairs not covered by your warranty. This may also result in a failure to pass a required Emission Inspection/Maintenance test. See *Accessories and Modifications on page 297*.**

This light should come on, as a check to show you it is working, when the ignition is on and the engine is not running. If the light does not come on, have it repaired. This light will also come on during a malfunction in one of two ways:

- **Light Flashing** — A misfire condition has been detected. A misfire increases vehicle emissions and may damage the emission control system on your vehicle. Diagnosis and service may be required.
- **Light On Steady** — An emission control system malfunction has been detected on your vehicle. Diagnosis and service may be required.

If the Light is Flashing

The following may prevent more serious damage to your vehicle:

- Reducing vehicle speed
- Avoiding hard accelerations
- Avoiding steep uphill grades
- If you are towing a trailer, reduce the amount of cargo being hauled as soon as it is possible

If the light stops flashing and remains on steady, see “If the Light Is On Steady” following.

If the light continues to flash, when it is safe to do so, stop the vehicle. Find a safe place to park your vehicle. Turn the key off, wait at least 10 seconds and restart the engine. If the light remains on steady, see “If the Light Is On Steady” following. If the light is still flashing, follow the previous steps, and see your dealer for service as soon as possible.

If the Light Is On Steady

You may be able to correct the emission system malfunction by considering the following:

Did you recently put fuel into your vehicle?

If so, reinstall the fuel cap, making sure to fully install the cap. See *Filling the Tank on page 303*. The diagnostic system can determine if the fuel cap has been left off or improperly installed. A loose or missing fuel cap will allow fuel to evaporate into the atmosphere. A few driving trips with the cap properly installed should turn the light off.

Did you just drive through a deep puddle of water?

If so, your electrical system may be wet. The condition will usually be corrected when the electrical system dries out. A few driving trips should turn the light off.

Have you recently changed brands of fuel?

If so, be sure to fuel your vehicle with quality fuel. See *Gasoline Octane on page 299*. Poor fuel quality will cause your engine not to run as efficiently as designed. You may notice this as stalling after start-up, stalling when you put the vehicle into gear, misfiring, hesitation on acceleration, or stumbling on acceleration. (These conditions may go away once the engine is warmed up.) This will be detected by the system and cause the light to turn on.

If you experience one or more of these conditions, change the fuel brand you use. It will require at least one full tank of the proper fuel to turn the light off.

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

Emissions Inspection and Maintenance Programs

Some state/provincial and local governments have or may begin programs to inspect the emission control equipment on your vehicle. Failure to pass this inspection could prevent you from getting a vehicle registration.

Here are some things you need to know to help your vehicle pass an inspection:

Your vehicle will not pass this inspection if the check engine light is on or not working properly.

Your vehicle will not pass this inspection if the OBD (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 you have recently replaced your battery or if your battery has run down.

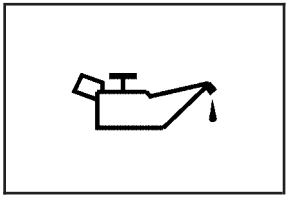
The diagnostic system is designed to evaluate critical emission control systems during normal driving. This may take several days of routine driving. If you have done this and your vehicle still does not pass the inspection for lack of OBD system readiness, your dealer can prepare the vehicle for inspection.

Oil Pressure Light

⚠ CAUTION:

Do not keep driving if the oil pressure is low. If you do, your engine can become so hot that it catches fire. You or others could be burned. Check your oil as soon as possible and have your vehicle serviced.

Notice: **Lack of proper engine oil maintenance may damage the engine. The repairs would not be covered by your warranty. Always follow the maintenance schedule in this manual for changing engine oil.**

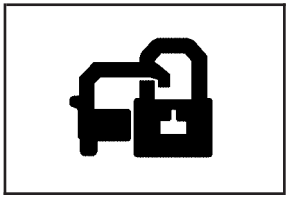


This light tells you there could be a problem with the engine oil pressure.

The light goes on when you turn your key to RUN or START. It goes off once you start your engine. That is a check to be sure the light works. If it does not come on, be sure to have it fixed so it will be there to warn you if something goes wrong.

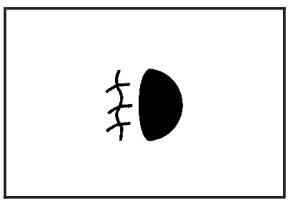
When the light comes on and stays on, it means that oil is not flowing through your engine properly. You could be low on oil and you might have some other system problem.

Security Light



For information regarding this light, see *Theft-Deterrent Systems on page 107*.

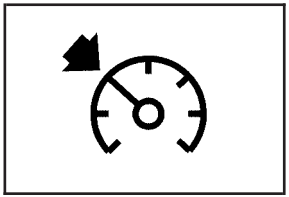
Fog Lamp Light



The fog lamp light will come on when the fog lamps are in use.

The light will go out when the fog lamps are turned off. See *Fog Lamps on page 161* for more information.

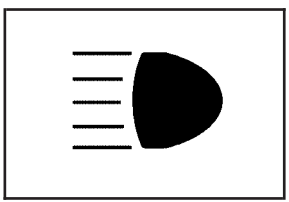
Cruise Control Light



This light comes on whenever you set the cruise control.

The light goes out when the cruise control is turned off. See *Cruise Control on page 155* for more information.

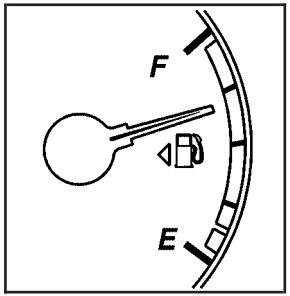
Highbeam On Light



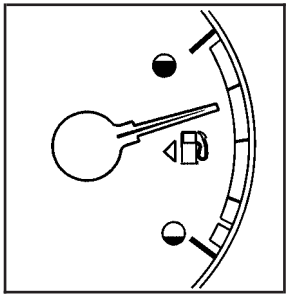
This light comes on when the high-beam headlamps are in use.

See *Headlamp High/Low-Beam Changer on page 153*.

Fuel Gage



United States



Canada

When the ignition is on, the fuel gage tells you about how much fuel you have remaining.

Here are four things that some owners ask about. None of these show a problem with your fuel gage:

- At the gas station, the gas 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 when you turn a corner or speed up.
- The gage doesn't go back to empty when you turn off the ignition.

Driver Information Center (DIC)

Your vehicle has a Driver Information Center (DIC).

All messages will appear in the DIC display located below the speedometer in the instrument panel cluster. The DIC buttons are located on the instrument panel, to the right of the instrument panel cluster.

The DIC comes on when the ignition is on. After a short delay, the DIC will display 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 bottom line of the DIC shows the shift lever position indicator. See *Automatic Transaxle Operation on page 117* for more information.

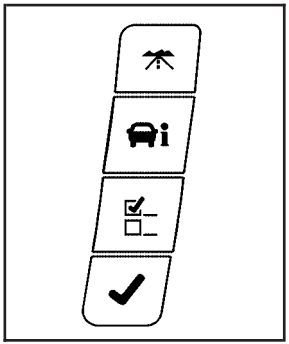
If your vehicle has these features, the DIC also displays the compass direction and the outside air temperature when viewing the trip and fuel information. The compass direction appears on the top right corner of the DIC display. The outside air temperature automatically appears in the bottom right corner 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.

The DIC also allows some features to be customized. See *DIC Vehicle Customization on page 206* for more information.

DIC Operation and Displays

The DIC has different displays which can be accessed by pressing the DIC buttons located on the instrument panel, to the right of the instrument panel cluster.

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 odometers, fuel range, average economy, instantaneous economy, Active Fuel Management™ indicator on vehicles with this feature, and average speed.

(Vehicle Information): Press this button to display the oil life, units, tire pressure readings and Tire Pressure Monitor (TPM) system programming, compass zone and compass calibration on vehicles with this feature, and Remote Keyless Entry (RKE) transmitter programming.

(Customization): Press this button to customize the feature settings on your vehicle. See *DIC Vehicle Customization on page 206* 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).

Trip A and Trip B

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 each trip odometer. Both trip odometers can be used at the same time.

Each trip odometer can be reset to zero separately by pressing the set/reset button while the desired trip odometer is displayed.

The trip odometer has a feature called the retro-active reset. This can be used to set the trip odometer to the number of miles (kilometers) driven since the ignition was last turned on. This can be used if the trip odometer is not reset at the beginning of the trip.

To use the retro-active reset feature, press and hold the set/reset button for at least four seconds. The trip odometer will display the number of miles (mi) or kilometers (km) driven since the ignition was last turned on and the vehicle was moving. Once the vehicle begins moving, the trip odometer will accumulate mileage. For example, if the vehicle was driven 5 miles (8 km) before it is started again, and then the retro-active reset feature is activated, the display will show 5 miles (8 km). As the vehicle begins moving, the display will then increase to 5.1 miles (8.2 km), 5.2 miles (8.4 km), etc.

If the retro-active reset feature is activated after the vehicle is started, but before it begins moving, the display will show the number of miles (mi) or kilometers (km) that were driven during the last ignition cycle.

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 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.

If your vehicle is low on fuel, the FUEL LEVEL LOW message will be displayed. See "FUEL LEVEL LOW" under *DIC Warnings and Messages on page 197* for more information.

Average Economy

Press the trip/fuel button until AVG ECONOMY displays. This display shows the approximate average miles per gallon (mpg) or liters per 100 kilometers (L/100 km). This number is calculated based on the number of mpg (L/100 km) recorded since the last time this menu item was reset. To reset AVG ECONOMY, press and hold the set/reset button. The display will return to zero.

Instantaneous Economy and Active Fuel Management™ Indicator

Press the trip/fuel button until INST ECONOMY displays. If your vehicle has the Active Fuel Management™ feature, INST ECONOMY 8CYL MODE will display on vehicles with a V8 engine or INST ECONOMY 6CYL MODE will display on vehicles with a V6 engine. 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 economy, this screen cannot be reset.

If your vehicle has the Active Fuel Management™ feature, an Active Fuel Management™ indicator will display on the right side of the DIC, while INST ECONOMY displays on the left side. Active Fuel Management™ allows the engine to operate on either all or half of its cylinders, depending on your driving demands.

For vehicles with a V8 engine, when Active Fuel Management™ is active, 4CYL MODE will display. When Active Fuel Management™ is inactive, 8CYL MODE will display.

For vehicles with a V6 engine, when Active Fuel Management™ is active, 3CYL MODE will display. When Active Fuel Management™ is inactive, 6CYL MODE will display.

See *Active Fuel Management™ (3.9L V6 and 5.3L V8 Engines) on page 116* for more information.

Average Speed

Press the trip/fuel button until AVERAGE SPEED displays. This display shows the average speed of the vehicle in miles per hour (mph) or kilometers per hour (km/h). This average is calculated based on the various vehicle speeds recorded since the last reset of this value. To reset the value, press and hold the set/reset button. The display will return to zero.

Blank Display

This display shows no information.

Vehicle Information Menu Items

(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 *DIC Warnings and Messages on page 197*. You should change the oil as soon as possible. See *Engine Oil on page 312*. 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 410* for more information.

Remember, you must reset the OIL LIFE yourself after each oil change. It will not reset itself. Also, be careful not to reset the OIL LIFE accidentally at any time other than when the oil has just been changed. It cannot be reset accurately until the next oil change. To reset the engine oil life system, see *Engine Oil Life System on page 316*.

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.

Tire Pressure

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 *Inflation - Tire Pressure on page 362* and *DIC Warnings and Messages on page 197* 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 for service.

Learn Tire Positions

To access this display, the vehicle must be in PARK (P). After rotating the tires or after replacing a tire or sensor, the Tire Pressure Monitor (TPM) system must re-learn the tire positions. To re-learn the tire positions, see *Tire Pressure Monitor System on page 363*. See *Tire Inspection and Rotation on page 368* and *DIC Warnings and Messages on page 197* for more information.

Compass Zone

Your vehicle may have this feature. Under certain circumstances, such as during a long distance cross-country trip, it will be necessary to compensate for compass variance and reset the zone. To change the compass zone through the DIC, see *DIC Compass on page 195*.

Compass Calibration

The compass can be manually calibrated. To calibrate the compass through the DIC, see *DIC Compass on page 195*.

Remote Key

To access this display, the vehicle must be in PARK (P). This display allows you to match the Remote Keyless Entry (RKE) transmitter to your vehicle. To match an RKE transmitter to your vehicle, do the following:

1. Press the vehicle information button until PRESS ✓ TO RELEARN REMOTE KEY displays.
2. Press the set/reset button.

   The message REMOTE KEY LEARNING ACTIVE will display.

3. Press and hold the lock and unlock buttons on the first transmitter at the same time for approximately 15 seconds.

   A chime will sound indicating that the transmitter is matched.

4. To match additional transmitters at this time, repeat Step 3.

   Each vehicle can have a maximum of eight transmitters matched to it.

5. To exit the programming mode, you must cycle the key to OFF.

Blank Display

This display shows no information.

Customization Menu Items

(Customization): Press this button to enter the feature settings menu. This display allows you to customize the feature settings on your vehicle. See *DIC Vehicle Customization on page 206* for more information.

DIC Compass

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

Compass Zone

Under certain circumstances, such as during a long distance cross-country trip, it will be necessary to compensate for compass variance and reset the zone through the DIC.

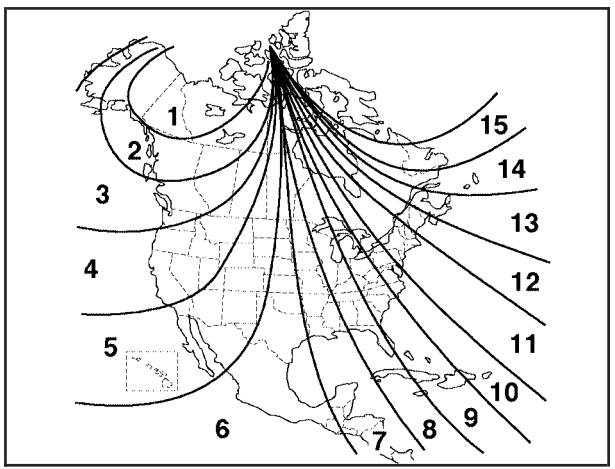
Compass variance is the difference between the earth's magnetic north and true geographic north. If not adjusted to account for compass variance, the compass in the vehicle could give false readings.

In order to do this, the compass must be set or calibrated to the variance zone in which the vehicle is traveling.

To adjust for compass variance, use the following procedure:

Compass Variance Procedure

1. Press the vehicle information button until PRESS ✓ TO CHANGE 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 the set/reset button to scroll through and select the appropriate variance zone.

   Navigate to one of the trip/fuel menu screens to view the direction the vehicle is moving. This will be shown in the top right corner of the DIC display.

4. If you need to calibrate the compass, use the compass calibration procedure. See "Compass Calibration Procedure" following.

Compass Calibration

The compass can be manually calibrated. Only calibrate the compass in a safe location where driving the vehicle in circles is not a problem. If "CAL" should ever appear in the DIC display, the compass may need calibration.

To calibrate the compass, use the following procedure:

Compass Calibration Procedure

1. Before calibrating the compass, make sure the compass zone is set to the variance zone in which the vehicle is traveling. See “Compass Variance Procedure” earlier in this section.
2. Press the vehicle information button until the PRESS ✓ TO CALIBRATE COMPASS screen is displayed.
3. Press the set/reset button to start the compass calibration.
4. The DIC will display CALIBRATING: DRIVE IN CIRCLES. Drive the vehicle in circles at less than 5 mph (8 km/h) to complete the calibration. The DIC will display CALIBRATION COMPLETE when the calibration is complete.

DIC Warnings and 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 the set/reset button to acknowledge that you received the message and clear it from the DIC display. Pressing any of the DIC buttons also acknowledges and clears any messages. Some messages cannot be cleared from the DIC display because they are more urgent. These messages require action before they can be cleared.
You should take any messages that appear on the display seriously and remember that clearing the messages will only make the messages disappear, not correct the problem. The following are the possible messages that can be displayed and some information about them.

AUTOMATIC LIGHT CONTROL OFF

This message displays when the automatic headlamps are turned off. See *Exterior Lamps on page 158* for more information.

AUTOMATIC LIGHT CONTROL ON

This message displays when the automatic headlamps are turned on. See *Exterior Lamps on page 158* for more information.

BATTERY SAVER ACTIVE

This message displays when the system detects that the battery voltage is dropping beyond a reasonable level. The battery saver system starts reducing certain features of the vehicle that you may be able to notice. At the point that the features are disabled, this message is displayed. It means that the vehicle is trying to save the charge in the battery.

Turn off all unnecessary accessories to allow the battery to recharge.

The normal battery voltage range is 11.5 to 15.5 volts.

CHANGE ENGINE OIL SOON

This message displays when service is required for the vehicle. See your dealer. See *Engine Oil on page 312* and *Scheduled Maintenance on page 410* for more information.

Acknowledging the CHANGE ENGINE OIL SOON message will not reset the OIL LIFE REMAINING. That must be done at the OIL LIFE screen under the vehicle information menu. See “Oil Life” under *DIC Operation and Displays on page 189* and *Engine Oil Life System on page 316*.

CHECK TIRE PRESSURE

This message displays when the tire pressure in one of the 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 354*, *Loading Your Vehicle on page 279*, and *Inflation - Tire Pressure on page 362*. The DIC display also shows the tire pressure values for the front and rear tires by pressing the vehicle information button. See *DIC Operation and Displays on page 189*. If the tire pressure is low, the low tire pressure warning light comes on. See *Tire Pressure Light on page 182*.

DRIVER DOOR OPEN

This message displays when the driver's door is not closed properly. When this message appears, make sure that the driver's door is closed completely.

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. If this message continues to appear, have the system repaired by your dealer as soon as possible to avoid compressor damage.

ENGINE OIL LOW ADD OIL

This message displays when the vehicle's engine oil is low. Fill the oil to the proper level as soon as possible. See *Engine Compartment Overview on page 308* for the engine oil fill location. Also, see *Engine Oil on page 312* for information on the kind of oil to use and the proper oil level.

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 326* 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. See *Engine Overheating on page 326* 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 326*.

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 acceleration and speed may be reduced. Anytime this message stays on, the vehicle should be taken to your dealer for service as soon as possible.

ERROR

This message displays while viewing the odometer or trip odometers if there is a problem with the instrument panel cluster. See your dealer for service.

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 188* and *Filling the Tank on page 303* for more information.

HOOD OPEN

If your vehicle has the remote start feature, this message displays when the hood is not closed properly. When this message appears, make sure that the hood is closed completely. See *Hood Release on page 307*.

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.

LEFT REAR DOOR OPEN

This message displays when the driver's side rear door is not closed properly. When this message appears, make sure that the driver's side rear door is closed completely.

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 Driver Information Center (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 312* 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 *Oil Pressure Light on page 186*.

Stop the vehicle immediately, as engine damage can result from driving a vehicle with low oil pressure. Have the vehicle serviced by your dealer as soon as possible when this message is displayed.

PASSENGER DOOR OPEN

This message displays when the front passenger's door is not closed properly. When this message appears, make sure that the front passenger's door is closed completely.

REMOTE KEY LEARNING ACTIVE

This message displays while you are matching a Remote Keyless Entry (RKE) transmitter to your vehicle. See "Matching Transmitter(s) to Your Vehicle" under *Remote Keyless Entry (RKE) System Operation on page 93* and *DIC Operation and Displays on page 189* for more information.

REPLACE BATTERY IN REMOTE KEY

This message displays when the battery in the Remote Keyless Entry (RKE) transmitter needs to be replaced. To replace the battery, see "Battery Replacement" under *Remote Keyless Entry (RKE) System Operation on page 93*.

RIGHT REAR DOOR OPEN

This message displays when the passenger's side rear door is not closed properly. When this message appears, make sure that the passenger's side rear door is closed completely.

SERVICE A/C (Air Conditioning) SYSTEM

This message displays when the electronic sensors that control the air conditioning and heating systems are no longer working. Have the climate control system serviced by your dealer if you notice a drop in heating and air conditioning efficiency.

SERVICE AIR BAG

This message displays when there is a problem with the airbag system. Have your vehicle serviced by your dealer immediately. See *Airbag Readiness Light on page 176* for more information.

SERVICE BATTERY CHARGING SYSTEM

This message displays when there is a problem with the generator and battery charging systems. Driving with this problem could drain the battery. Turn off all unnecessary accessories. Stop and turn off the vehicle as soon as it is safe to do so. Have the electrical system checked by your dealer immediately.

SERVICE BRAKE SYSTEM

This message displays when service is required on the brake system. Have the brake system serviced by your dealer as soon as possible. The brake system warning light also appears on the instrument panel cluster when this message appears on the DIC. See *Brake System Warning Light on page 179*.

SERVICE POWER STEERING

This message displays when a problem is detected with the power steering system. When this message is displayed, you may notice that the effort required to steer the vehicle increases or feels heavier, but you will still be able to steer the vehicle. Have your vehicle serviced by your dealer immediately.

SERVICE THEFT SYSTEM

This message displays when there is a problem with the theft-deterrent system programmed in the key. A fault has been detected in the system which means that the system is disabled and it is not protecting the vehicle. The vehicle usually restarts; however, you may want to take the vehicle to your dealer before turning off the engine. See *PASS-Key® III+ Operation on page 109* for more information.

SERVICE TIRE MONITOR SYSTEM

This message displays if a part on the Tire Pressure Monitor (TPM) system is not working properly. If you drive your vehicle while any of the four sensors are missing or inoperable, the warning comes on in about 20 minutes. A sensor would be missing, for example, if you put different wheels on your vehicle without transferring the sensors. If the warning comes on and stays on, there may be a problem with the TPM. See your dealer.

SERVICE TRACTION CONTROL

If your vehicle has the Traction Control System (TCS), this message displays when the system is not functioning properly. A warning light also appears on the instrument panel cluster. See *Traction Control System (TCS) Warning Light on page 181*. See *Traction Control System (TCS) on page 256* for more information. Have the TCS serviced by your dealer as soon as possible.

SERVICE TRANSMISSION

This message displays when there is a problem with the transaxle. See your dealer for service.

SERVICE VEHICLE SOON

This message displays when a non-emissions related malfunction occurs. Have the vehicle serviced by your dealer as soon as possible.

STARTING DISABLED SERVICE THROTTLE

This message displays if the starting of the engine is disabled due to the electronic throttle control system. Have your vehicle serviced by your dealer immediately.

This message only appears while the ignition is in RUN, and will not disappear until the problem is resolved.

This message cannot be acknowledged.

THEFT ATTEMPTED

This message displays if the content theft-deterrent system has detected a break-in attempt while you were away from your vehicle. See *Content Theft-Deterrent on page 107* for more information.

TIGHTEN GAS CAP

This message may be displayed if the gas cap is not on, or is not fully tightened. Check the gas cap to ensure that it is on properly. See *Filling the Tank on page 303* for more information.

TIRE LEARNING ACTIVE

This message displays when the Tire Pressure Monitor (TPM) system is re-learning the tire positions. See *Tire Pressure Monitor System on page 363*. The tire positions must be re-learned after rotating the tires or after replacing a tire or sensor. See *Tire Inspection and Rotation on page 368* and *Inflation - Tire Pressure on page 362* for more information.

TRACTION CONTROL OFF

If your vehicle has the Traction Control System (TCS), this message displays when the TCS turns off. See *Traction Control System (TCS) on page 256* for more information.

This message only displays while the ignition is in 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 traction control button. See *Traction Control System (TCS) on page 256* for more information.
- The battery is low.
- There is a TCS failure. See your dealer for service.

TRACTION CONTROL ON

If your vehicle has the Traction Control System (TCS), this message displays when the TCS is turned on. See *Traction Control System (TCS) on page 256* for more information.

TRANSMISSION HOT IDLE ENGINE

This message displays when the transaxle fluid in your vehicle is too hot. Stop the vehicle and allow it to idle until it cools down. If the warning message continues to display, have the vehicle serviced by your dealer as soon as possible.

TRUNK OPEN

This message displays when the trunk is not closed completely. Make sure that the trunk is closed completely. See *Trunk on page 103*.

TURN SIGNAL ON

This message displays as a reminder to turn off the turn signal if you drive your vehicle for more than about 0.75 mile (1.2 km) with a turn signal on. See *Turn Signal/Multifunction Lever on page 151*.

This message displays and a chime sounds only when the ignition is in RUN. The message will not disappear until the turn signal is manually turned off, or a turn is completed.

WASHER FLUID LOW ADD FLUID

This message displays when the windshield washer fluid is low. Fill the windshield washer reservoir as soon as possible. See *Engine Compartment Overview on page 308* for the location of the windshield washer reservoir. Also, see *Windshield Washer Fluid on page 336* for more information.

DIC Vehicle Customization

Your vehicle has 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 your 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 PARK (P).

   To avoid excessive drain on the battery, it is recommended that the headlamps are turned off.

2. Press the customization button to enter the feature settings menu.

   If the menu is not available, FEATURE SETTINGS AVAILABLE IN PARK will display. Before entering the menu, make sure the vehicle is in PARK (P).

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 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 DISPLAY LANGUAGE screen appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the customization button to scroll through the following choices:

ENGLISH (default): All messages will appear in English.

FRANCAIS (French): All messages will appear in French.

ESPANOL (Spanish): All messages will appear in Spanish.

NO CHANGE: No change will be made to this feature. The current setting will remain.

Select one of the available choices and press the set/reset button while it is displayed on the DIC to select it.

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 *Programmable Automatic Door Unlock on page 102* for more information.

Press the customization button until AUTO DOOR UNLOCK appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the customization button to scroll through the following choices:

OFF: None of the doors will automatically unlock.

DRIVER AT KEY OUT: Only the driver's door will unlock when the key is taken out of the ignition.

DRIVER IN PARK: Only the driver's door will unlock when the vehicle is shifted into PARK (P).

ALL AT KEY OUT: All of the doors will unlock when the key is taken out of the ignition.

ALL IN PARK (default): All of the doors will unlock when the vehicle is shifted into PARK (P).

NO CHANGE: No change will be made to this feature. The current setting will remain.

Select one of the available choices and press the set/reset button while it is displayed on the DIC to select it.

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 any of the doors are open. See *Remote Keyless Entry (RKE) System Operation on page 93* for more information.

Press the customization button until REMOTE DOOR LOCK appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the customization button to scroll through the following choices:

HORN & LIGHTS OFF: There will be no feedback when you press the lock button on the RKE transmitter.

LIGHTS ONLY: The exterior lamps will flash when you press the lock button on the RKE transmitter.

HORN ONLY: The horn will sound on the second press of the lock button on the RKE transmitter.

HORN & LIGHTS ON (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.

NO CHANGE: No change will be made to this feature. The current setting will remain.

Select one of the available choices and press the set/reset button while it is displayed on the DIC to select it.

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 93* for more information.

Press the customization button until REMOTE DOOR UNLOCK appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the customization button to scroll through the following choices:

LIGHTS OFF: The exterior lamps will not flash when you press the unlock button on the RKE transmitter.

LIGHTS ON (default): The exterior lamps will flash when you press the unlock button on the RKE transmitter.

NO CHANGE: No change will be made to this feature. The current setting will remain.

Select one of the available choices and press the set/reset button while it is displayed on the DIC to select it.

EXIT LIGHTING

If it is dark enough outside, this feature allows you to select the amount of time you want the exterior lamps to remain on. This happens after the key is turned from RUN to OFF.

Press the customization button until EXIT LIGHTING appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the customization button to scroll through the following choices:

OFF: The exterior lamps will not turn on.

30 SECONDS (default): The exterior lamps will stay on for 30 seconds.

1 MINUTE: The exterior lamps will stay on for one minute.

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.

Select one of the available choices and press the set/reset button while it is displayed on the DIC to select it.

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 APPROACH LIGHTING appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the customization button to scroll through the following choices:

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 93* for more information.

NO CHANGE: No change will be made to this feature. The current setting will remain.

Select one of the available choices and press the set/reset button while it is displayed on the DIC to select it.

CHIME VOLUME

This feature allows you to select the volume level of the chime.

Press the customization button until CHIME VOLUME appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the customization button to scroll through the following choices:

NORMAL (default): 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.

Select one of the available choices and press the set/reset button while it is displayed on the DIC to select it.

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 your Remote Keyless Entry (RKE) transmitter. See “Remote Vehicle Start” under *Remote Keyless Entry (RKE) System Operation on page 93* for more information.

Press the customization button until REMOTE START appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the customization button to scroll through the following choices:

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.

Select one of the available choices and press the set/reset button while it is displayed on the DIC to select it.

FACTORY SETTINGS

This feature allows you to set all of the customization features back to their factory default settings.

Press the customization button until FACTORY SETTINGS appears on the DIC display. Press the set/reset button to access the settings for this feature. Then press the customization button to scroll through the following choices:

RESTORE ALL (default): The customization features will be set to their factory default settings.

DO NOT RESTORE: The customization features will not be set to their factory default settings.

Select one of the available choices and press the set/reset button while it is displayed on the DIC to select it.

EXIT FEATURE SETTINGS

This feature allows you to exit the FEATURE SETTINGS menu.

Press the customization button until FEATURE SETTINGS PRESS ✓ TO EXIT appears in the DIC display. Press the set/reset button 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 shifted out of PARK (P).
- The vehicle is no longer in 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.

Audio System(s)

Determine which radio your vehicle has and then read the pages following to familiarize yourself with its features.

Driving without distraction is a necessity for a safer driving experience. See *Defensive Driving on page 248*. By taking a few moments to read this manual and get familiar with your vehicle's audio system, you can use it with less effort, as well as take advantage of its features. While your vehicle is parked, set up your audio system by presetting your favorite radio stations, setting the tone and adjusting the speakers. Then, when driving conditions permit, you can tune to your favorite stations using the presets and steering wheel controls if the vehicle has them.

⚠ CAUTION:

This system provides you with a far greater access to audio stations and song listings. Giving extended attention to entertainment tasks while driving can cause a crash and you or others can be injured or killed. Always keep your eyes on the road and your mind on the drive — avoid engaging in extended searching while driving.

Keeping your mind on the drive is important for safe driving. For more information, see *Defensive Driving on page 248*.

Here are some ways in which you can help avoid distraction while driving.

While your vehicle is parked:

- Familiarize yourself with all of its controls.
- Familiarize yourself with its operation.

- Set up your audio system by presetting your favorite radio stations, setting the tone, and adjusting the speakers. Then, when driving conditions permit, you can tune to your favorite radio stations using the presets and steering wheel controls if the vehicle has them.

Notice: **Before adding any sound equipment to your vehicle, such as an audio system, CD player, CB radio, mobile telephone, or two-way radio, make sure that it can be added by checking with your dealer. Also, check federal rules covering mobile radio and telephone units. If sound equipment can be added, it is very important to do it properly. Added sound equipment may interfere with the operation of your vehicle's engine, radio, or other systems, and even damage them. Your vehicle's systems may interfere with the operation of sound equipment that has been added.**

Your vehicle has a feature called Retained Accessory Power (RAP). With RAP, the audio system can be played even after the ignition is turned off. See *Retained Accessory Power (RAP) on page 113* for more information.

Setting the Time (Without Date Display)

If your vehicle has an AM/FM base radio with a single CD player and preset buttons numbered one through six, the radio will have a clock button for setting the time. You can set the time by following these steps:

1. Press the clock button until the hour numbers begin flashing on the display. Press the clock button a second time and the minute numbers will begin flashing on the display.
2. While either the hour or the minute numbers are flashing, turn the tune knob, located on the upper right side of the radio, clockwise or counterclockwise to increase or decrease the time. Instead of using the tune knob, you can also press the SEEK, FWD (forward), or REV (reverse) buttons to adjust the time.
3. Press the clock button again until the clock display stops flashing to set the currently displayed time; otherwise, the flashing will stop after five seconds and the current time displayed will be automatically set.

To change the time default setting from 12 hour to 24 hour, press the clock button and then the pushbutton located under the forward arrow label. Once the time 12H and 24H are displayed, press the pushbutton located under the desired option to select the default. Press the clock button again to apply the selected default, or let the screen time out.

Setting the Time (With Date Display)

If your vehicle has a radio with a single CD player, the radio has a clock button for setting the time and date.

To set the time and date, follow these instructions:

1. Turn the radio on.
2. Press the clock button and the HR, MIN, MM, DD, YYYY (hour, minute, month, day, and year) displays.
3. Press the pushbutton located under any one of the labels that you want to change. Every time the pushbutton is pressed again, the time or the date if selected, increases by one.
   - Another way to increase the time or date, is to press the right SEEK arrow or FWD (forward) button.
   - To decrease, press the left SEEK arrow or REV (reverse) button. You can also turn the tune knob, located on the upper right side of the radio, to adjust the selected setting.

The date does not automatically display. The only way to see the date is by pressing the clock button when the radio is on. The date with display times out after a few seconds and goes back to the normal radio and time display.

If your vehicle has a radio with a six-disc CD player, the radio has a MENU button instead of the clock button to set the time and date.

To set the time and date, follow these instructions:

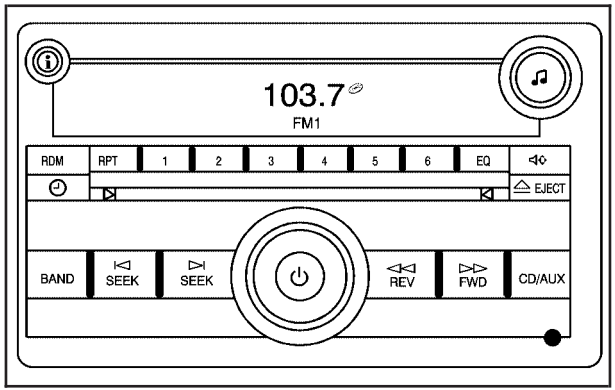
1. Turn the radio on.
2. Press the MENU button. Once the clock option is displayed.
3. Press the pushbutton located under that label. The HR, MIN, MM, DD, YYYY displays.
4. Press the pushbutton located under any one of the labels that you want to change. Every time the pushbutton is pressed again, the time or the date if selected, increases by one.
   - Another way to increase the time or date, is to press the right SEEK arrow or FWD (forward) button.
   - To decrease, press the left SEEK arrow or REV (reverse) button. You can also turn the tune knob, located on the upper right side of the radio, to adjust the selected setting.

The date does not automatically display. The only way to see the date is by pressing the MENU button and then the clock button when 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, follow these instructions:

1. Press the clock button and then the pushbutton located under 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 pushbutton located under the desired option.
3. Press the clock or MENU button again to apply the selected default, or let the screen time out.

Radio with CD (Base)



Playing the Radio

⏻ **(Power/Volume):** Press this knob to turn the system on and off.

Turn this knob clockwise or counterclockwise to increase or decrease the volume.

The radio goes to the previous volume setting whenever the radio is turned on. The volume can still be adjusted by using the volume knob.

Finding a Station

BAND: Press this button to switch between FM1, FM2, or AM. The selection displays.

♫ **(Tune):** Turn this knob to select radio stations.

⏮ **SEEK** ⏭ **:** Press the right or left SEEK arrow to go to the next or to the previous station and stay there.

To scan stations, press and hold either SEEK 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 SEEK arrow again to stop scanning.

The radio only seeks and scans stations with a strong signal that are in the selected band.

i (Information): Press this button to switch the display between the radio station frequency and the time. While the ignition is off, press this button to display the time.

Setting Preset Stations

Up to 18 stations (six FM1, six FM2, and six AM), can be programmed on the six numbered pushbuttons, by performing the following steps:

1. Turn the radio on.
2. Press BAND to select FM1, FM2, or AM.
3. Tune in the desired station.
4. Press and hold one of the six numbered pushbuttons for three seconds until a beep sounds. When that pushbutton is pressed and released, the station that was set, returns.
5. Repeat the Steps 2 through 4 for each pushbutton.

Setting the Tone (Bass/Treble)

BASS/TREB (Bass/Treble): To adjust the bass or treble, press the tune knob or the pushbuttons located under the BASS/TREB display, until the desired tone control label displays. Turn the tune knob clockwise or counterclockwise to increase or decrease the setting. Adjust the setting by pressing either the SEEK, FWD (forward), or REV (reverse) buttons. The current bass or treble level displays. If a station's frequency is weak, or has static, decrease the treble.

EQ (Equalization): Press this button to select preset equalization settings.

To return to the manual mode, press the EQ button until Manual appears on the display or start to manually adjust the bass or treble by pressing the tune knob.

Adjusting the Speakers (Balance/Fade)

BAL/FADE (Balance/Fade): To adjust the balance or fade, press this button or the tune knob until the desired speaker control label displays. Turn the tune knob clockwise or counterclockwise to adjust the setting. The setting can also be adjusted by pressing either the SEEK, FWD, or REV buttons.

Radio Messages

Calibration Error: The audio system has been calibrated for your vehicle from the factory. If Calibration Error displays, it means that the radio has not been configured properly for your vehicle and it must be returned to your dealer for service.

Loc (Locked): This message displays while the THEFTLOCK® system has locked up the radio. Take the vehicle to your dealer for service.

If any error occurs repeatedly or if an error cannot be corrected, contact your dealer.

Playing a CD (Single CD Player)

Insert a CD partway into the slot, label side up. The player pulls it in and the CD should begin playing.

If the ignition or radio is turned off with a CD in the player, it stays in the player. When the ignition or radio is turned on, the CD starts playing where it stopped, if it was the last selected audio source.

When a CD is inserted, the CD symbol displays. As each new track starts to play, the track number displays.

The CD player can play the smaller 3 inch (8 cm) single CDs with an adapter ring. Full-size CDs and the smaller CDs are loaded in the same manner.

If playing a CD-R, the sound quality can be reduced due to CD-R quality, the method of recording, the quality of the music that has been recorded, and the way the CD-R has been handled.

There can be an increase in skipping, difficulty in finding tracks, and/or difficulty in loading and ejecting. If these problems occur, check the bottom surface of the CD. If the surface of the CD is damaged, such as cracked, broken, or scratched, the CD will not play properly. If the surface of the CD is soiled, see *Care of Your CDs on page 244* for more information.

If there is no apparent damage, try a known good CD.

Notice: **If you add any label to a CD, insert more than one CD into the slot at a time, or attempt to play scratched or damaged CDs, you could damage the CD player. When 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.**

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.

If an error displays, see “CD Messages” later in this section.

⏏ **EJECT:** Press the CD eject button to eject the CD. If the CD is not removed, after several seconds, the CD automatically pulls back into the player.

♫ **(Tune):** Turn this knob to select tracks on the CD currently playing.

⏮ **SEEK** ⏭ **:** Press the left SEEK arrow to go to the start of the current track, if more than ten seconds have played. Press the right SEEK arrow to go to the next track. If either SEEK arrow is held or pressed multiple times, the player continues moving backward or forward through the CD.

◁◁ **REV (Reverse):** Press and hold this button to reverse playback quickly within a track. You will hear sound at a reduced volume. Release this pushbutton to resume playing the track. The elapsed time of the track displays.

▷▷ **FWD (Fast Forward):** Press and hold this pushbutton to advance playback quickly within a track. You will hear sound at a reduced volume. Release this pushbutton to resume playing the track. The elapsed time of the track displays.

RDM (Random): With the random setting, you can listen to CD tracks in random, rather than sequential order. To use random, do the following:

1. Press this button to play tracks from the CD you are listening to in random order. The random icon displays.
2. Press this button again to turn off random play. The random icon disappears from the display.

RPT (Repeat): With repeat, one track or an entire CD can be repeated.

- To repeat the track you are listening to, press and release the RPT button. An arrow symbol displays. Press RPT again to turn off repeat play.
- To repeat the CD you are listening to, press and hold the RPT button for a few seconds. An arrow symbol displays. Press RPT again to turn off repeat play. When repeat is off, the symbol no longer displays.

i (Information): Press this button to switch the display between the track number, elapsed time of the track, and the time. When the ignition is off, press this button to display the time.

BAND: Press this button to listen to the radio while a CD is playing. The CD remains inside the radio for future listening.

CD/AUX (CD/Auxiliary): Press this button to play a CD while listening to the radio. The CD icon and track number displays while a CD is in the player. Press this button again and the system automatically searches for an auxiliary input device such as a portable audio player.

CD Messages

CHECK DISC: If an error message displays and/or the CD ejects, it could be for one of the following reasons:

- It is very hot. When the temperature returns to normal, the CD should play.
- You are driving on a very rough road. 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-R.
- 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. If the radio displays an error message, write it down and provide it to your dealer while reporting the problem.

Using the Auxiliary Input Jack

Your 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. You can however, connect an external audio device such as an iPod, laptop computer, MP3 player, CD changer, or cassette tape player, etc. to the auxiliary input jack for use as another source for audio listening.

Drivers are encouraged to set up any auxiliary device while the vehicle is in PARK (P). See *Defensive Driving on page 248* for more information on driver distraction.

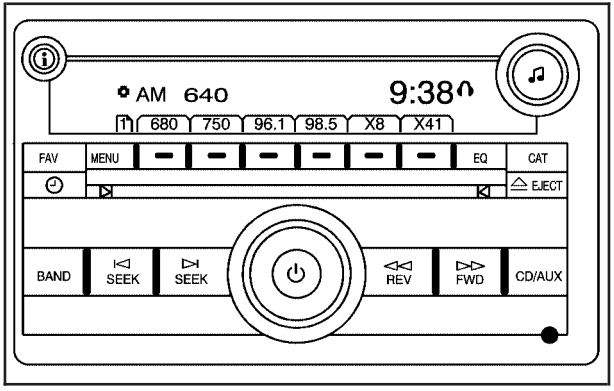
To use a portable audio player, connect a 3.5 mm (1/8 inch) cable to the radio's front auxiliary input jack. When a device is connected, press the radio CD/AUX button to begin playing audio from the device over the vehicle speakers.

⏻ **(Power/Volume):** Turn this knob clockwise or counterclockwise to increase or decrease the volume of the portable player. You might need to make additional volume adjustments from the portable device.

BAND: Press this button to listen to the radio while a portable audio device is playing. The portable audio device continues playing, so you might want to stop it or turn it off.

CD/AUX (CD/Auxiliary): Press this button to play a CD while a portable audio device is playing. Press this button 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.

Radio with CD (MP3)



Radio with CD (MP3) shown, Radio with Six-Disc CD (MP3) similar

Radio Data System (RDS)

The audio system has a Radio Data System (RDS). The 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 can broadcast incorrect information that causes the radio features to work improperly. If this happens, contact the radio station.

XM™ Satellite Radio Service

XM™ is a satellite radio service that is based in the 48 contiguous United States and Canada. XM™ offers a large variety of coast-to-coast channels including music, news, sports, talk, traffic/weather (U.S. subscribers), and children's programming. XM™ provides digital quality audio and text information that includes song title and artist name. A service fee is required in order to receive the XM™ service. For more information, contact XM™; In the U.S. at www.xmradio.com or call 1-800-852-XMXM (9696) or in Canada at www.xmradio.ca or call 1-877-GET-XMSR (438-9677).

Playing the Radio

⏻ **(Power/Volume):** Press this knob to turn the system on and off.

Turn this knob clockwise or counterclockwise to increase or decrease the volume.

Speed Compensated Volume (SCV): The radio has Speed Compensated Volume (SCV). When SCV is on, the radio volume automatically adjusts to compensate for road and wind noise as you speed up or slow down while driving. That way, the volume level should sound about the same as you drive. To activate SCV:

1. Set the radio volume to the desired level.
2. Press the MENU button to display the radio setup menu.
3. Press the pushbutton under the AUTO VOLUM (automatic volume) label on the radio display.
4. Press the pushbutton under the desired Speed Compensated Volume setting (OFF, Low, Med (medium), or High) to select the level of radio volume compensation. The display times out after approximately 10 seconds. Each higher setting allows for more radio volume compensation at faster vehicle speeds.

Finding a Station

BAND: Press this button to switch between AM, FM, or XM™ (if equipped). The selection displays.

♫ **(Tune):** Turn this knob to select radio stations.

⏮ **SEEK** ⏭ **:** Press the right or left SEEK arrow to go to the next or to the previous station and stay there.

To scan stations, press and hold either SEEK 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 SEEK 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 the information button to display additional text information related to the current FM-RDS or XM™ station, or MP3 song. A choice of additional information such as: Channel, Song, Artist, and CAT (category) can appear. Continue pressing the information button to highlight the desired label, or press the pushbutton positioned under any one of the labels and the information about that label displays.

While 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 PARK (P). Tune to your favorite stations using the presets, favorites button, and steering wheel controls if the vehicle has this feature. See *Defensive Driving on page 248*.

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 the FAV button 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™ (if equipped) stations. To store a station as a favorite, perform the following steps:

1. Tune to the desired radio station.
2. Press the FAV button to display the page where you want the station stored.
3. Press and hold one of the six pushbuttons until a beep sounds. Whenever that pushbutton is pressed and released, the station that was set, returns.
4. Repeat the steps for each pushbutton radio station you want stored as a favorite.

The number of favorites pages can be setup using the MENU button. To setup the number of favorites pages, perform the following steps:

1. Press the MENU button 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 the FAV button, 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 your favorites for the chosen amount of numbered pages.

Setting the Tone (Bass/Midrange/Treble)

BASS/MID/TREB (Bass, Midrange, or Treble): To adjust bass, midrange, or treble, press the tune knob until the tone control labels display. Continue pressing to highlight the desired label, or press the pushbutton positioned under the desired label.

Turn the tune knob clockwise or counterclockwise to adjust the highlighted setting. The highlighted setting can also be adjusted by pressing either the SEEK, FWD (forward) or REV (reverse) button until the desired levels are obtained. If a station's frequency is weak, or has static, decrease the treble.

To quickly adjust bass, midrange, or treble to the middle position, press the pushbutton positioned under the BASS, MID (midrange), or TREB (treble) label for more than two seconds. A beep sounds and the level adjusts to the middle position.

To quickly adjust all tone and speaker controls to the middle position, press the tune knob for more than two seconds until a beep sounds.

EQ (Equalization): Press this button to select preset equalization settings.

To return to the manual mode, press the EQ button until Manual displays or start to manually adjust the bass, midrange, or treble by pressing the tune knob.

Adjusting the Speakers (Balance/Fade)

BAL/FADE (Balance/Fade): To adjust balance or fade, press the tune knob until the speaker control labels display. Continue pressing to highlight the desired label, or press the pushbutton positioned under the desired label. Turn the tune knob clockwise or counterclockwise to adjust the highlighted setting. The highlighted setting can also be adjusted by pressing either the SEEK, FWD (forward), or REV (reverse) button until the desired levels are obtained.

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 tune knob for more than two seconds until a beep sounds.

Finding a Category (CAT) Station

CAT (Category): The CAT button is used to find XM™ stations while the radio is in the XM™ mode. To find XM™ channels within a desired category, perform the following:

1. Press the BAND button until the XM™ frequency displays. Press the CAT button to display the category labels on the radio display. Continue pressing the CAT button until the desired category name displays.
2. Press either of the two buttons below the desired category label to immediately tune to the first XM™ station associated with that category.
3. Turn the tune knob, press the buttons below the right or left arrows displayed, or press the right or left SEEK buttons to go to the next or previous XM™ station within the selected category.
4. To exit the category search mode, press the FAV button or BAND button to display your favorites again.

Undesired XM™ categories can be removed through the setup menu. To remove an undesired category, perform the following:

1. Press the MENU button to display the radio setup menu.
2. Press the pushbutton located below the XM CAT label.
3. Turn the tune knob to display the category you want removed.
4. Press the pushbutton located under the Remove label 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 displays or by pressing the pushbutton under the Restore All label.

The radio does not allow you to remove or add categories while the vehicle is moving faster than 5 mph (8 km/h).

Radio Messages

Calibration Error: The audio system has been calibrated for your vehicle from the factory. If Calibration Error displays, it means that the radio has not been configured properly for your vehicle and it must be returned to your dealer for service.

Locked: This message is displayed when the THEFTLOCK® system has locked up the radio. Take the vehicle to your dealer for service.

If any error occurs repeatedly or if an error cannot be corrected, contact your dealer.

Radio Messages for XM Only

See *XM Radio Messages on page 240* later in this section for further detail.

Playing a CD (Single CD Player)

Insert a CD partway into the slot, label side up. The player pulls it in and the CD should begin playing.

Playing a CD(s) (Six-Disc CD Player)

LOAD ⊽: Press this button to load CDs into the CD player. This CD player holds up to six CDs.

To insert one CD, do the following:

1. Press and release the load button.
2. Wait for the message to insert the disc.
3. Load a CD. Insert the CD partway into the slot, label side up. The player pulls the CD in.

To insert multiple CDs, do the following:

1. Press and hold the load button for two seconds. A beep sounds and Load All Discs displays.
2. Follow the displayed instruction on when to insert the discs. The CD player takes up to six CDs.
3. Press the Load button again to cancel loading more CDs.

If the ignition or radio is turned off, with a CD in the player, it stays in the player. When the ignition or radio is turned on, the CD starts playing where it stopped, if it was the last selected audio source.

When a CD is inserted, the CD symbol displays on the CD. As each new track starts to play, the track number displays.

The CD player can play the smaller 3 inch (8 cm) single CDs with an adapter ring. Full-size CDs and the smaller CDs are loaded in the same manner.

If playing a CD-R, the sound quality can be reduced due to CD-R quality, the method of recording, the quality of the music that has been recorded, and the way the CD-R has been handled. There can be an increase in skipping, difficulty in finding tracks, and/or difficulty in loading and ejecting. If these problems occur, check the bottom surface of the CD. If the surface of the CD is damaged, such as cracked, broken, or scratched, the CD will not play properly. If the surface of the CD is soiled, see *Care of Your CDs on page 244* for more information.

If there is no apparent damage, try a known good CD.

Notice: **If you add any label to a CD, insert more than one CD into the slot at a time, or attempt to play scratched or damaged CDs, you could damage the CD player. When 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.**

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.

If an error displays, see “CD Messages” later in this section.

⏏ **EJECT:** Press the CD eject button to eject CD(s). To eject the CD that is currently playing, press and release this button. A beep sounds and Ejecting Disc displays. Once the disc is ejected, Remove Disc displays. The CD can be removed. If the CD is not removed, after several seconds, the CD automatically pulls back into the player and begin playing.

For the Six-Disc CD player, press and hold the eject button for two seconds to eject all discs.

♫ **(Tune):** Turn this knob to select tracks on the CD currently playing.

⏮ **SEEK** ⏭ **:** Press the left SEEK arrow to go to the start of the current track, if more than ten seconds have played. Press the right SEEK arrow to go to the next track. If either SEEK arrow is held, or pressed multiple times, the player continues moving backward or forward through the tracks on the CD.

◁◁ **REV (Reverse):** Press and hold this button to reverse playback quickly within a track. You will hear sound at a reduced volume. Release this pushbutton to resume playing the track. The elapsed time of the track displays.

▷▷ **FWD (Fast Forward):** Press and hold this button to advance playback quickly within a track. You will hear sound at a reduced volume. Release this button to resume playing the track. The elapsed time of the track displays.

RDM (Random): With the random setting, the tracks can be played in random, rather than sequential order, on one CD or all CDs in a six-disc CD player. To use random, do one of the following:

- Press the CD/AUX button, or for a single CD player, insert a disc partway into the slot of the CD player. A RDM label displays.

  To play the tracks from the single CD in random order, press the pushbutton positioned under the RDM label until Random Current Disc displays. Press the pushbutton again to turn off random play.
- Press the CD/AUX button, or for a six-disc CD player, press and hold the LOAD button. A beep sounds and Load All Discs displays. Insert one or more discs partway into the slot of the CD player.

  To play tracks from all CDs loaded in a six-disc CD player in random order, press the pushbutton positioned under the RDM label until Randomize All Discs displays. Press the same pushbutton again to turn off random play.

BAND: Press this button to listen to the radio while a CD is playing. The CD remains safely inside the radio for future listening.

CD/AUX (CD/Auxiliary): Press this button to play a CD while listening to the radio. The CD icon and a message showing disc and/or track number displays when a CD is in the player. Press this button again and the system automatically searches for an auxiliary input device, such as a portable audio player. If a portable audio player is not connected, No Aux Input Device Found displays.

Playing an MP3 CD-R or CD-RW Disc

Your vehicle's radio system may have the MP3 feature. If it has this feature, it is capable 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 *Using an MP3 on page 233* later in this section.

CD Messages

CHECK DISC: If an error message displays and/or the CD comes out, it could be for one of the following reasons:

- It is very hot. When the temperature returns to normal, the CD should play.
- You are driving on a very rough road. 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. If the radio displays an error message, write it down and provide it to your dealer while reporting the problem.

Using the Auxiliary Input Jack

Your 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. You can however, connect an external audio device such as an iPod, laptop computer, MP3 player, CD changer, or cassette tape player, etc. to the auxiliary input jack for use as another source for audio listening.

Drivers are encouraged to set up any auxiliary device while the vehicle is in PARK (P). See *Defensive Driving on page 248* 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 this knob clockwise or counterclockwise to increase or decrease the volume of the portable player. You might need to make additional volume adjustments from the portable device.

BAND: Press this button to listen to the radio while a portable audio device is playing. The portable audio device continues playing, so you might want to stop it or turn it off.

CD/AUX (CD/Auxiliary): Press this button to play a CD while a portable audio device is playing. Press this button again and the system begins playing audio from the connected portable audio player. If a portable audio player is not connected, No Aux Input Device Found displays.

Using an 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 can display when files are 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/WMA 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 Format

If you burn your own MP3 disc on a personal computer:

- Make sure the MP3 files are recorded on a CD-R or CD-RW disc.
- Avoid mixing standard audio and MP3 files on one disc.
- Make sure the CD does not have more than 50 folders, 50 playlists, and 255 files to read and play.
- 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 8 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. If you wish 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 you burn it. Trying to add music to an existing disc can cause the disc not to function in the player.

Change playlists by using the previous and next folder buttons, the tuner knob, or the seek buttons. An MP3 CD-R that was recorded using no file folders can also be played. If a CD-R contains more than the maximum of 50 folders, 50 playlists, and 255 files, the player lets you access and navigate up to the maximum, but all items over the maximum cannot be accessed.

Root Directory

The root directory of the CD-R 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 is not numbered or displayed.

No Folder

When the CD-R contains only compressed files, the files are located under the root folder. The next and previous folder functions do not function on a CD-R that was recorded without folders or playlists. When displaying the name of the folder the radio displays ROOT.

When the CD-R contains only playlists and compressed audio files, but no folders, all files are located under the root folder. The folder down and the folder up buttons searches playlists (Px) first and then goes 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 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 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 you have chosen the folder mode as the default display. The new track name displays.

File System and Naming

The song name that displays 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. The display does not show parts of words on the last page of text and the extension of the filename is not displayed.

Preprogrammed Playlists

Preprogrammed playlists that were created using WinAmp™, MusicMatch™, or Real Jukebox™ software can be accessed, however, you do not have playlist editing capability using the radio. These playlists are treated as special folders containing compressed audio song files.

Playing an MP3

Insert a CD-R partway into the slot (Single CD Player), or press the load button and wait for the message to insert disc (Six-Disc CD Player), label side up. The player pulls it in, and the CD-R should begin playing.

If the ignition or radio is turned off with a CD-R in the player it stays in the player. When the ignition or radio is turned on, the CD-R starts to play where it stopped, if it was the last selected audio source.

As each new track starts to play, the track number and song title displays.

The CD player can play the smaller 3 inch (8 cm) single CD-Rs with an adapter ring. Full-size CD-Rs and the smaller CD-Rs are loaded in the same manner.

If playing a CD-R, the sound quality can be reduced due to CD-R quality, the method of recording, the quality of the music that has been recorded, and the way the CD-R has been handled. There can be an increase in skipping, difficulty in finding tracks, and/or difficulty in loading and ejecting. If these problems occur, check the bottom surface of the CD. If the surface of the CD is damaged, such as cracked, broken, or scratched, the CD will not play properly. If the surface of the CD is soiled, see *Care of Your CDs on page 244* for more information.

If there is no apparent damage, try a known good CD.

Notice: **If you add any label to a CD, insert more than one CD into the slot at a time, or attempt to play scratched or damaged CDs, you could damage the CD player. When 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.**

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.

If an error displays, see “CD Messages” later in this section.

⏏ **EJECT:** Press the CD eject button to eject CD-R(s). To eject the CD-R that is currently playing, press and release this button. A beep sounds and Ejecting Disc displays. Once the disc is ejected, Remove Disc displays. The CD-R can be removed. If the CD-R is not removed, after several seconds, the CD-R automatically pulls back into the player and begins playing. For the Six-Disc CD player, press and hold the eject button for two seconds to eject all discs.

♫ **(Tune):** Turn this knob to select MP3 files on the CD-R currently playing.

⏮ **SEEK** ⏭ **:** Press the left SEEK arrow to go to the start of the current MP3 file, if more than ten seconds have played. Press the right SEEK arrow to go to the next MP3 file. If either SEEK 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 this button to reverse playback quickly within an MP3 file. You will hear sound at a reduced volume. Release this button to resume playing the file. The elapsed time of the file displays.

▷▷ **FWD (Fast Forward):** Press and hold this button to advance playback quickly within an MP3 file. You will hear sound at a reduced volume. Release this button to resume playing the file. The elapsed time of the file displays.

RDM (Random): With the random setting, MP3 files can be played on the CD-R in random, rather than sequential order, on one CD-R or all discs in a six-disc CD player. To use random, do one of the following:

1. To play MP3 files in random order from the CD-R that is currently playing, press the pushbutton positioned under the RDM label until Random Current Disc displays. Press the same pushbutton again to turn off random play.
2. To play songs from all CDs loaded in a six-disc CD player in random order, press the pushbutton positioned under the RDM label until Randomize All Discs 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 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. The radio might begin playing while it is scanning the disc in the background. When the scan is finished, the CD-R begins playing again.

Once the disc has 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 and begins playing MP3 files by that artist. If you want to listen to MP3 files by another artist, press the pushbutton located below either arrow button. The CD goes to the next or previous artist in alphabetical order. Continue pressing either button until the desired artist displays.

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 displays on the second line between the arrows and songs from the current album begins to play. Once all songs from that album have played, the player moves to the next album in alphabetical order on the CD-R 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.

BAND: Press this button to listen to the radio while a CD is playing. The CD remains inside the radio for future listening.

CD/AUX (CD/Auxiliary): Press this button to play a CD while listening to the radio. The CD icon and a message showing disc and/or track number displays while a CD is in the player. Press this button again and the system automatically searches for an auxiliary input device such as a portable audio player. If a portable audio player is not connected, No Aux Input Device Found displays.

XM Radio Messages

Radio Display Message	Condition	Action Required
XL (Explicit Language Channels)	XL on the radio display, after the channel name, indicates content with explicit language.	These channels, or any others, can be blocked at a customer's request, by calling 1-800-852-XMXM (9696).
XM Updating	Updating encryption code	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	Loss of signal	The system is functioning correctly, but the vehicle is in a location that is blocking the XM™ signal. When you move into an open area, the signal should return.
Loading XM	Acquiring channel audio (after four second delay)	The audio system is acquiring and processing audio and text data. No action is needed. This message should disappear shortly.
Channel Off Air	Channel not in service	This channel is not currently in service. Tune to another channel.
Channel Unavail	Channel no longer available	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	Artist Name/Feature not available	No artist information is available at this time on this channel. The system is working properly.
No Title Info	Song/Program Title not available	No song title information is available at this time on this channel. The system is working properly.
No CAT Info	Category Name not available	No category information is available at this time on this channel. The system is working properly.
No Information	No Text/Informational message available	No text or informational messages are available at this time on this channel. The system is working properly.

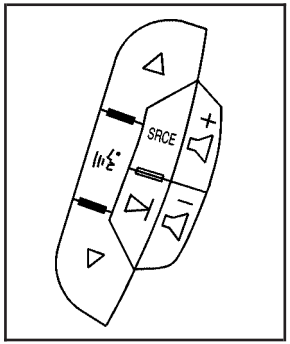
Radio Display Message	Condition	Action Required
CAT Not Found	No channel available for the chosen category	There are no channels available for the selected category. The system is working properly.
XM Theft Locked	Theftlock® active	The XM™ receiver in the vehicle may have previously been in another vehicle. For security purposes, XM™ receivers cannot be swapped between vehicles. If this message displays after having your vehicle serviced, check with your dealer.
XM Radio ID	Radio ID label (channel 0)	If tuned to channel 0, this message alternates with the XM™ Radio eight digit radio ID label. This label is needed to activate the service.
Unknown	Radio ID not known (should only be if hardware failure)	If this message is received when tuned to channel 0, there could be a receiver fault. Consult with your dealer.
Check XM Receivr	Hardware failure	If this message does not clear within a short period of time, the receiver could have a fault. Consult with your dealer.
XM Not Available	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.

Theft-Deterrent Feature

THEFTLOCK® is designed to discourage theft of your vehicle's radio. The feature works automatically by learning a portion of the Vehicle Identification Number (VIN). If the radio is moved to a different vehicle, it does not operate and LOCKED displays.

With THEFTLOCK® activated, the radio cannot operate if stolen.

Audio Steering Wheel Controls



The audio steering wheel controls may be different depending on your vehicle's options. Some audio controls can be adjusted at the steering wheel. They include the following:

▽△ **(Next/Previous):** Press the up or the down arrow to go to the next or to the previous radio station stored as a favorite.

When a CD is playing, press the up or the down arrow to go to the next or previous track.

(Mute/Voice Recognition): Press and release this button to silence the system. Press and release this button again, to turn the sound on.

If your vehicle has OnStar®, press and hold this button for longer than one second to interact with the OnStar system. See the *OnStar® System on page 128* in this manual for more information.

SRCE (Source): Press this button to switch between AM, FM, XM (if equipped), CD, and AUX jack.

+ – (Volume): Press the plus or minus button to increase or to decrease the radio volume.

(Seek): Press the seek arrow to go to the next radio station and stay there.

Radio Reception

You may experience frequency interference and static during normal radio reception if items such as cellphone 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.

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 will 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 your radio.

FM Stereo

FM stereo will give the best sound, but FM signals will reach only about 10 to 40 miles (16 to 65 km). Tall buildings or hills can interfere with FM signals, causing the sound to fade in and out.

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. The radio may display NO XM SIGNAL to indicate interference.

Care of Your CDs

Handle CDs carefully. Store them 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 will not play properly or not at all. 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.

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.

Care of the CD Player

Do not use CD lens cleaners for CD players because the lens of the CD optics can become contaminated by lubricants.

Backglass Antenna

The AM-FM antenna is integrated with the rear window defogger, located in the rear window. Make sure that the inside surface of the rear window is not scratched and that the lines on the glass are not damaged. If the inside surface is damaged, it could interfere with radio reception. Also, for proper radio reception, the antenna connector at the top-center of the rear window needs to be properly attached to the post on the glass.

Notice: **Do not apply aftermarket glass tinting with metallic film. The metallic film in some tinting materials will interfere with or distort the incoming radio reception. Any damage caused to your backglass antenna due to metallic tinting materials will not be covered by your warranty.**

Notice: **Using a razor blade or sharp object to clear the inside rear window may damage the rear window antenna and/or the rear window defogger. Repairs would not be covered by your warranty. Do not clear the inside rear window with sharp objects.**

Because this antenna is built into your rear window, there is a reduced risk of damage caused by car washes and vandals.

If static is heard on the radio, when the rear window defogger is turned on, it could mean that a defogger grid line has been damaged. If this is true, the grid line must be repaired.

If you choose to add a cellular telephone to your vehicle, and the antenna needs to be attached to the glass, make sure that you do not damage the grid lines for the AM-FM antenna. There is enough space between the lines to attach a cellular telephone antenna without interfering with radio reception.

XM™ Satellite Radio Antenna System

The XM™ Satellite Radio antenna is located on the roof of your vehicle. Keep this antenna clear of snow and ice build up for clear radio reception.

If your vehicle has a sunroof, the performance of the XM™ system may be affected if the sunroof is open.

Loading items onto the roof of your vehicle can interfere with the performance of the XM™ system. Make sure the XM™ Satellite Radio antenna is not obstructed.

NOTES

Section 4 Driving Your Vehicle

Your Driving, the Road, and Your Vehicle 248
Defensive Driving 248
Drunken Driving 249
Control of a Vehicle 252
Braking 252
Anti-Lock Brake System (ABS) 253
Braking in Emergencies 255
Traction Control System (TCS) 256
Steering 257
Off-Road Recovery 260
Passing 260
Loss of Control 262
Driving at Night 263
Driving in Rain and on Wet Roads 264
City Driving 267
Freeway Driving 268
Before Leaving on a Long Trip 269
Highway Hypnosis 270
Hill and Mountain Roads 270
Winter Driving 272
If Your Vehicle is Stuck in Sand, Mud, Ice, or Snow 278
Rocking Your Vehicle to Get It Out 278
Loading Your Vehicle 279
Towing 284
Towing Your Vehicle 284
Recreational Vehicle Towing 284
Towing a Trailer 286

Your Driving, the Road, and Your Vehicle

Defensive Driving

The best advice anyone can give about driving is: Drive defensively.

Please start with a very important safety device in your vehicle: Buckle up. See *Safety Belts: They Are for Everyone on page 20*.

⚠ CAUTION:

Defensive driving really means "Be ready for anything." On city streets, rural roads, or expressways, it means "Always expect the unexpected." Assume that pedestrians or other drivers are going to be careless and make mistakes. Anticipate what they might do and be ready. Rear-end collisions are about the most preventable of accidents. Yet they are common. Allow enough following distance. Defensive driving requires that a driver concentrate on the driving task. Anything that distracts from the driving task makes proper defensive driving more difficult and can even cause a collision, with resulting injury. Ask a passenger to help do these things, or pull off the road in a safe place to do them. These simple defensive driving techniques could save your life.

Drunken Driving

Death and injury associated with drinking and driving is a national tragedy. It is the number one contributor to the highway death toll, claiming thousands of victims every year.

Alcohol affects four things that anyone needs to drive a vehicle:

- Judgment
- Muscular Coordination
- Vision
- Attentiveness

Police records show that almost half 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 16,000 annual motor vehicle-related deaths have been associated with the use of alcohol, with more than 300,000 people injured.

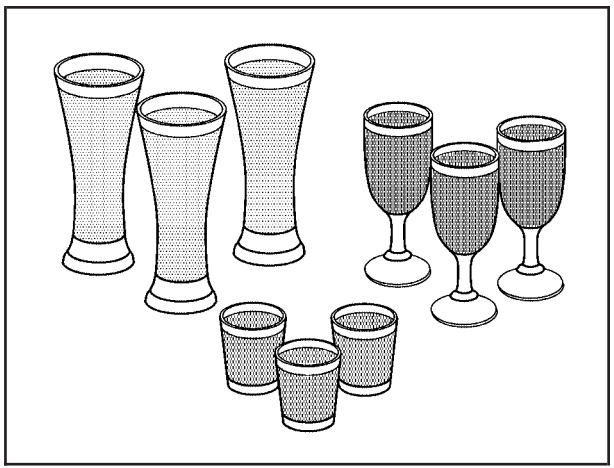
Many adults — by some estimates, nearly half the adult population — choose never to drink alcohol, so they never drive after drinking. For persons under 21, it is against the law in every U.S. state to drink alcohol. There are good medical, psychological, and developmental reasons for these laws.

The obvious way to eliminate the leading highway safety problem is for people never to drink alcohol and then drive. But what if people do? How much is “too much” if someone plans to drive? It is a lot less than many might think. Although it depends on each person and situation, here is some general information on the problem.

The Blood Alcohol Concentration (BAC) of someone who is drinking depends upon four things:

- The amount of alcohol consumed
- The drinker’s body weight
- The amount of food that is consumed before and during drinking
- The length of time it has taken the drinker to consume the alcohol

According to the American Medical Association, a 180 lb (82 kg) person who drinks three 12 ounce (355 ml) bottles of beer in an hour will end up with a BAC of about 0.06 percent. The person would reach the same BAC by drinking three 4 ounce (120 ml) glasses of wine or three mixed drinks if each had 1-1/2 ounces (45 ml) of liquors like whiskey, gin, or vodka.



It is the amount of alcohol that counts. For example, if the same person drank three double martinis (3 ounces or 90 ml of liquor each) within an hour, the person's BAC would be close to 0.12 percent. A person who consumes food just before or during drinking will have a somewhat lower BAC level.

There is a gender difference, too. Women generally have a lower relative percentage of body water than men. Since alcohol is carried in body water, this means that a woman generally will reach a higher BAC level than a man of her same body weight will when each has the same number of drinks.

The law in most U.S. states, and throughout Canada, sets the legal limit at 0.08 percent. In some other countries, the limit is even lower. For example, it is 0.05 percent in both France and Germany. The BAC limit for all commercial drivers in the United States is 0.04 percent.

The BAC will be over 0.10 percent after three to six drinks (in one hour). Of course, as we have seen, it depends on how much alcohol is in the drinks, and how quickly the person drinks them.

But the ability to drive is affected well below a BAC of 0.10 percent. Research shows that the driving skills of many people are impaired at a BAC approaching 0.05 percent, and that the effects are worse at night. All drivers are impaired at BAC levels above 0.05 percent. Statistics show that the chance of being in a collision increases sharply for drivers who have a BAC of 0.05 percent or above. A driver with a BAC level of 0.06 percent has doubled his or her chance of having a collision. At a BAC level of 0.10 percent, the chance of this driver having a collision is 12 times greater; at a level of 0.15 percent, the chance is 25 times greater!

The body takes about an hour to rid itself of the alcohol in one drink. No amount of coffee or number of cold showers will speed that up. "I will be careful" is not the right answer. What if there is an emergency, a need to take sudden action, as when a child darts into the street? A person with even a moderate BAC might not be able to react quickly enough to avoid the collision.

There is something else about drinking and driving that many people do not know. 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.

⚠ CAUTION:

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. Please do not drink and drive or ride with a driver who has been drinking. Ride home in a cab; or if you are with a group, designate a driver who will not drink.

Control of a Vehicle

You have three systems that make your vehicle go where you want it to go. They are the brakes, the steering, and the accelerator. All three systems have to do their work at the places where the tires meet the road.

Sometimes, as when you are driving on snow or ice, it is easy to ask more of those control systems than the tires and road can provide. That means you can lose control of your vehicle. See *Traction Control System (TCS) on page 256*.

Adding non-GM accessories can affect your vehicle's performance. See *Accessories and Modifications on page 297*.

Braking

See *Brake System Warning Light on page 179*.

Braking action involves perception time and reaction time.

First, you have to decide to push on the brake pedal. That is perception time. Then you have to bring up your foot and do it. That 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 60 mph (100 km/h) travels 66 feet (20 m). That could be a lot of distance in an emergency, so keeping enough space between your 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.

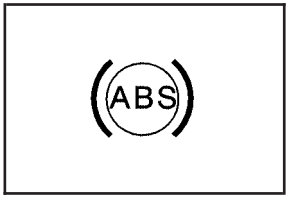
Avoid needless heavy braking. Some people drive in spurts — heavy acceleration followed by heavy braking — rather than keeping pace with traffic. This is a mistake. The brakes may not have time to cool between hard stops. The brakes will wear out much faster if you do a lot of heavy braking. If you keep pace with the traffic and allow realistic following distances, you will eliminate a lot of unnecessary braking. That means better braking and longer brake life.

If your vehicle's engine ever stops while you are driving, brake normally but do not pump the brakes. If you do, the pedal may get harder to push down. If the engine stops, you will still have some power brake assist. But you will use it when you brake. Once the power assist is used up, it may take longer to stop and the brake pedal will be harder to push.

Adding non-GM accessories can affect your vehicle's performance. See *Accessories and Modifications on page 297*.

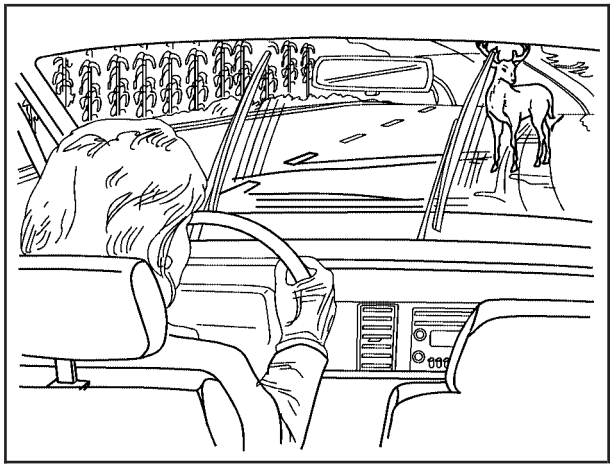
Anti-Lock Brake System (ABS)

Your vehicle may have the Anti-Lock Brake System (ABS), an advanced electronic braking system that will help prevent a braking skid.



If your vehicle has ABS, this warning light on the instrument panel cluster will come on briefly when you start your vehicle.

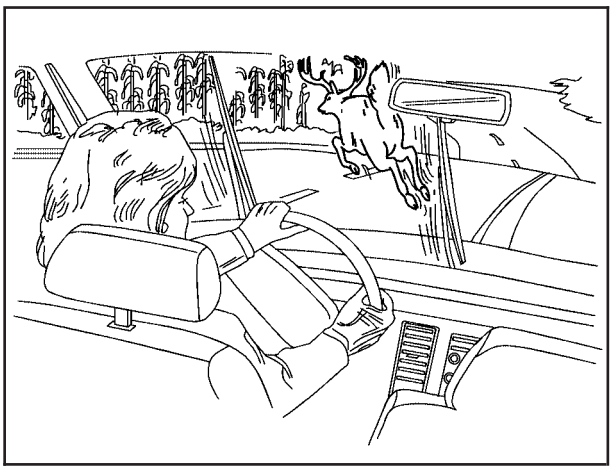
When you start your engine, or when you begin to drive away, ABS will check itself. You may hear a momentary motor or clicking noise while this test is going on, and you may even notice that your brake pedal moves or pulses a little. This is normal.



Let us say the road is wet and you are driving safely. Suddenly, an animal jumps out in front of you. You slam on the brakes and continue braking. Here is what happens with ABS:

A computer senses that wheels are slowing down. If one of the wheels is about to stop rolling, the computer will separately work the brakes at each front wheel and at both rear wheels.

ABS can change the brake pressure faster than any driver could. The computer is programmed to make the most of available tire and road conditions. This can help you steer around the obstacle while braking hard.



As you brake, your computer keeps receiving updates on wheel speed and controls braking pressure accordingly.

Remember: ABS does not change the time you need to get your foot up to the brake pedal or always decrease stopping distance. If you get too close to the vehicle in front of you, you will not have time to apply your brakes if that vehicle suddenly slows or stops. Always leave enough room up ahead to stop, even though you have ABS.

Using ABS

Do not pump the brakes. Just hold the brake pedal down firmly and let anti-lock work for you. You may feel a slight brake pedal pulsation or notice some noise, but this is normal.

Braking in Emergencies

At some time, nearly every driver gets into a situation that requires hard braking.

If you have ABS, you can steer and brake at the same time. However, if you do not have ABS, your first reaction — to hit the brake pedal hard and hold it down — may be the wrong thing to do. Your wheels can stop rolling. Once they do, the vehicle cannot respond to your steering. Momentum will carry it in whatever direction it was headed when the wheels stopped rolling. That could be off the road, into the very thing you were trying to avoid, or into traffic.

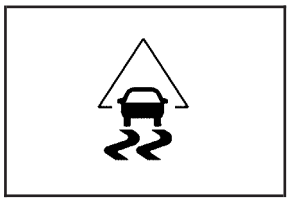
If you do not have ABS, use a “squeeze” braking technique. This will give you maximum braking while maintaining steering control. You can do this by pushing on the brake pedal with steadily increasing pressure.

In an emergency, you will probably want to squeeze the brakes hard without locking the wheels. If you hear or feel the wheels sliding, ease off the brake pedal. This will help you retain steering control. If you do have ABS, it is different. See *Anti-Lock Brake System (ABS) on page 253*.

In many emergencies, steering can help you more than even the very best braking.

Traction Control System (TCS)

Your vehicle may have a traction control system that limits wheel spin. This is especially useful in slippery road conditions. The system operates only if it senses that one or both of the front wheels are spinning or beginning to lose traction. When this happens, the system reduces engine power and may also upshift the transaxle and apply the front brakes to limit wheel spin.

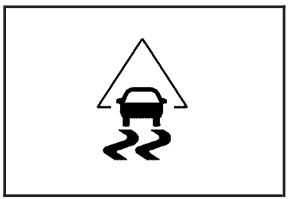


This light will flash when your traction control system is limiting wheel spin.

You may feel or hear the system working, but this is normal.

If your vehicle is in cruise control when the traction control system begins to limit wheel spin, the cruise control will automatically disengage. When road conditions allow you to safely use it again, you may re-engage the cruise control. See *Cruise Control on page 155*.

The traction control system operates in all transaxle shift lever positions. But the system can upshift the transaxle only as high as the shift lever position you've chosen, so you should use the lower gears only when necessary. See *Automatic Transaxle Operation on page 117*.

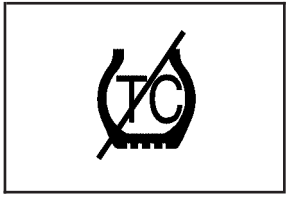


When the system is on, this warning light will come on and stay on to let you know if there's a problem.

A SERVICE TRACTION CONTROL message will also appear on the DIC. When this warning light is on, the system will not limit wheel spin. Adjust your driving accordingly. See *DIC Warnings and Messages on page 197* for more information.

To limit wheel spin, especially in slippery road conditions, you should always leave the traction control system on. But you can turn the system off if you ever need to. You should turn the system off if your vehicle ever gets stuck in sand, mud or snow and rocking the vehicle is required.

See *Rocking Your Vehicle to Get It Out on page 278* and *If Your Vehicle is Stuck in Sand, Mud, Ice, or Snow on page 278* for more information.



To turn the system on or off, press the traction control button located on the left side of the instrument panel.

When you turn the system off, a chime will sound, the traction control warning light will come on and stay on and a TRACTION CONTROL OFF message will appear on the DIC. If the traction control system is limiting wheel spin when you press the button to turn the system off, the warning light will come on and the system will turn off right away.

You can turn the system back on at any time by pressing the button again. The traction control light should go off.

Adding non-GM accessories can affect your vehicle's performance. See *Accessories and Modifications on page 297* for more information.

Steering

Power Steering

If you lose power steering assist because the engine stops or the system is not functioning, you can steer but it will take much more effort.

Steering Tips

It is important to take curves at a reasonable speed.

A lot of the "driver lost control" accidents mentioned on the news happen on curves.

Here is why:

Experienced driver or beginner, each of us is subject to the same laws of physics when driving on curves. The traction of the tires against the road surface makes it possible for the vehicle to change its path when you turn the front wheels. If there is no traction, inertia will keep the vehicle going in the same direction. If you have ever tried to steer a vehicle on wet ice, you will understand this.

The traction you can get in a curve depends on the condition of your tires and the road surface, the angle at which the curve is banked, and your speed. While you are in a curve, speed is the one factor you can control.

Suppose you are steering through a sharp curve. Then you suddenly apply the brakes. Both control systems — steering and braking — have to do their work where the tires meet the road. Unless you have four-wheel anti-lock brakes, adding the hard braking can demand too much of those places. You can lose control.

The same thing can happen if you are steering through a sharp curve and you suddenly accelerate. Those two control systems — steering and acceleration — can overwhelm those places where the tires meet the road and make you lose control.

What should you do if this ever happens? Ease up on the brake or accelerator pedal, steer the vehicle the way you want it to go, and slow down.

Speed limit signs near curves warn that you should adjust your speed. Of course, the posted speeds are based on good weather and road conditions. Under less favorable conditions you will want to go slower.

If you need to reduce your speed as you approach a curve, do it before you enter the curve, while your front wheels are straight ahead.

Try to adjust your speed so you can “drive” through the curve. Maintain a reasonable, steady speed. Wait to accelerate until you are out of the curve, and then accelerate gently into the straightaway.

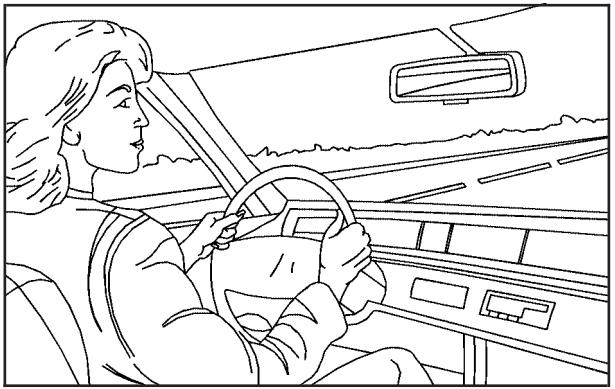
Adding non-GM accessories can affect your vehicle’s performance. See *Accessories and Modifications on page 297*.

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. You can avoid these problems by braking — if you can stop in time. But sometimes you cannot; there is not room. That is the time for evasive action — steering around the problem.

Your vehicle can perform very well in emergencies like these. First apply your brakes — but, unless you have anti-lock brakes, not enough to lock your wheels.

See *Braking on page 252*. It is better to remove as much speed as you can from a possible collision. Then steer around the problem, to the left or right depending on the space available.

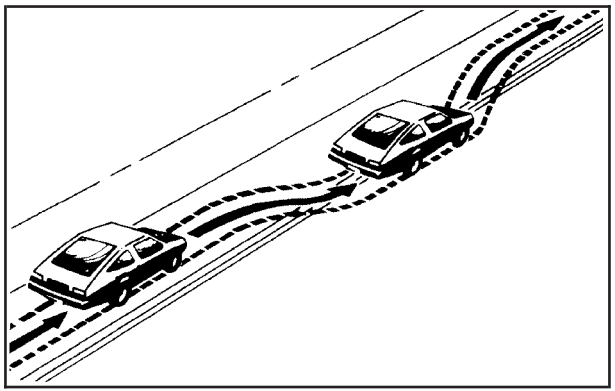


An emergency like this requires close attention and a quick decision. If you are holding the steering wheel at the recommended 9 and 3 o'clock positions, you can turn it a full 180 degrees very quickly without removing either hand. But you have to act fast, steer quickly, and just as quickly straighten 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

You may find that your right wheels have dropped off the edge of a road onto the shoulder while you are 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 your vehicle straddles the edge of the pavement.

You can turn the steering wheel up to one-quarter turn until the right front tire contacts the pavement edge. Then turn your steering wheel to go straight down the roadway.

Passing

The driver of a vehicle about to pass another on a two-lane highway waits for just the right moment, accelerates, moves around the vehicle ahead, then goes back into the right lane again. A simple maneuver?

Not necessarily! Passing another vehicle on a two-lane highway is a potentially dangerous move, since the passing vehicle occupies the same lane as oncoming traffic for several seconds. A miscalculation, an error in judgment, or a brief surrender to frustration or anger can suddenly put the passing driver face to face with the worst of all traffic accidents — the head-on collision.

So here are some tips for passing:

- Drive ahead. Look down the road, to the sides, and to crossroads for situations that might affect your passing patterns. If you have any doubt whatsoever about making a successful pass, wait for a better time.

- Watch for traffic signs, pavement markings, and lines. If you can see a sign up ahead that might indicate a turn or an intersection, delay your pass. A broken center line usually indicates it is all right to pass, providing the road ahead is clear. Never cross a solid line on your side of the lane or a double solid line, even if the road seems empty of approaching traffic.
- Do not get too close to the vehicle you want to pass while you are awaiting an opportunity. For one thing, following too closely reduces your area of vision, especially if you are following a larger vehicle. Also, you will not have adequate space if the vehicle ahead suddenly slows or stops. Keep back a reasonable distance.
- When it looks like a chance to pass is coming up, start to accelerate but stay in the right lane and do not get too close. Time your move so you will be increasing speed as the time comes to move into the other lane. If the way is clear to pass, you will have a running start that more than makes up for the distance you would lose by dropping back. And if something happens to cause you to cancel your pass, you need only slow down and drop back again and wait for another opportunity.
- If other vehicles are lined up to pass a slow vehicle, wait your turn. But take care that someone is not trying to pass you as you pull out to pass the slow vehicle. Remember to glance over your shoulder and check the blind spot.
- Check your vehicle's mirrors, glance over your shoulder, and start your left lane change signal before moving out of the right lane to pass. When you are far enough ahead of the passed vehicle to see its front in your vehicle's inside mirror, activate the right lane change signal and move back into the right lane. Remember that your vehicle's passenger side outside mirror is convex. The vehicle you just passed may seem to be farther away from you than it really is.
- Try not to pass more than one vehicle at a time on two-lane roads. Reconsider before passing the next vehicle.
- Do not overtake a slowly moving vehicle too rapidly. Even though the brake lamps are not flashing, it may be slowing down or starting to turn.
- If you are being passed, make it easy for the following driver to get ahead of you. Perhaps you can ease a little to the right.

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 your vehicle's three control systems. In the braking skid, your 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.

A cornering skid and an acceleration skid are best handled by easing your foot off the accelerator pedal.

If your 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, your 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, you will want to slow down and adjust your driving to these conditions. It is important to slow down on slippery surfaces because stopping distance will be 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 may not realize the surface is slippery until your 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.

If you have the Anti-Lock Brake System (ABS), remember: It helps avoid only the braking skid. If you do not have ABS, then in a braking skid, where the wheels are no longer rolling, release enough pressure on the brakes to get the wheels rolling again. This restores steering control. Push the brake pedal down steadily when you have to stop suddenly. As long as the wheels are rolling, you will have steering control.

Driving at Night

Night driving is more dangerous than day driving. One reason is that some drivers are likely to be impaired — by alcohol or drugs, with night vision problems, or by fatigue.

Here are some tips on night driving.

- Drive defensively.
- Do not drink and drive.
- Adjust the inside rearview mirror to reduce the glare from headlamps behind you.
- Since you cannot see as well, you may need to slow down and keep more space between you and other vehicles.
- Slow down, especially on higher speed roads. Your vehicle's headlamps can light up only so much road ahead.
- In remote areas, watch for animals.
- If you are tired, pull off the road in a safe place and rest.

No one can see as well at night as in the daytime. But as we get older these differences increase. A 50-year-old driver may require at least twice as much light to see the same thing at night as a 20-year-old.

What you do in the daytime can also affect your night vision. For example, if you spend the day in bright sunshine you are wise to wear sunglasses. Your eyes will have less trouble adjusting to night. But if you are driving, do not wear sunglasses at night. They may cut down on glare from headlamps, but they also make a lot of things invisible.

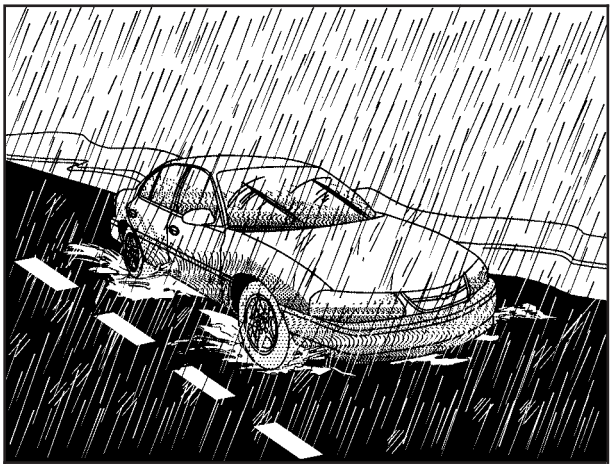
You can be temporarily blinded by approaching headlamps. It can take a second or two, or even several seconds, for your eyes to re-adjust to the dark.

When you are faced with severe glare, as from a driver who does not lower the high beams, or a vehicle with misaimed headlamps, slow down a little. Avoid staring directly into the approaching headlamps.

Keep the windshield and all the glass on your vehicle clean — inside and out. Glare at night is made much worse by dirt on the glass. Even the inside of the glass can build up a film caused by dust. Dirty glass makes lights dazzle and flash more than clean glass would, making the pupils of your eyes contract repeatedly.

Remember that the headlamps light up far less of a roadway when you are in a turn or curve. Keep your eyes moving; that way, it is easier to pick out dimly lighted objects. Just as the headlamps should be checked regularly for proper aim, so should your eyes be examined regularly. Some drivers suffer from night blindness — the inability to see in dim light — and are not even aware of it.

Driving in Rain and on Wet Roads



Rain and wet roads can mean driving trouble. On a wet road, you cannot stop, accelerate, or turn as well because your tire-to-road traction is not as good as on dry roads. And, if your tires do not have much tread left, you will get even less traction. It is always wise to go slower and be cautious if rain starts to fall while you are driving. The surface may get wet suddenly when your reflexes are tuned for driving on dry pavement.

The heavier the rain, the harder it is to see. Even if your windshield wiper blades are in good shape, a heavy rain can make it harder to see road signs and traffic signals, pavement markings, the edge of the road, and even people walking.

It is wise to keep your windshield wiping equipment in good shape and keep your windshield washer fluid reservoir filled with washer fluid. Replace your windshield wiper inserts when they show signs of streaking or missing areas on the windshield, or when strips of rubber start to separate from the inserts.

⚠ CAUTION:

Wet brakes can cause accidents. They may not work as well in a quick stop and may cause pulling to one side. You could lose control of the vehicle.

After driving through a large puddle of water or a car wash, apply your brake pedal lightly until your brakes work normally.

Driving too fast through large water puddles or even going through some car washes can cause problems, too. The water may affect your brakes. Try to avoid puddles. But if you cannot, try to slow down before you hit them.

Hydroplaning

Hydroplaning is dangerous. So much water can build up under your tires that they can 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.

Hydroplaning does not happen often. But it can if your tires do not have much tread or if the pressure in one or more is low. It can happen if a lot of water is standing on the road. If you can see reflections from trees, telephone poles, or other vehicles, and raindrops dimple the water's surface, there could be hydroplaning.

Hydroplaning usually happens at higher speeds. There just is not a hard and fast rule about hydroplaning. The best advice is to slow down when it is raining.

Driving Through Deep Standing Water

Notice: **If you drive too quickly through deep puddles or standing water, water can come in through your engine's air intake and badly damage your engine. Never drive through water that is slightly lower than the underbody of your vehicle. If you cannot avoid deep puddles or standing water, drive through them very slowly.**

Driving Through Flowing Water

⚠ CAUTION:

Flowing or rushing water creates strong forces. If you try to drive through flowing water, as you might at a low water crossing, your vehicle can be carried away.

CAUTION: (Continued)

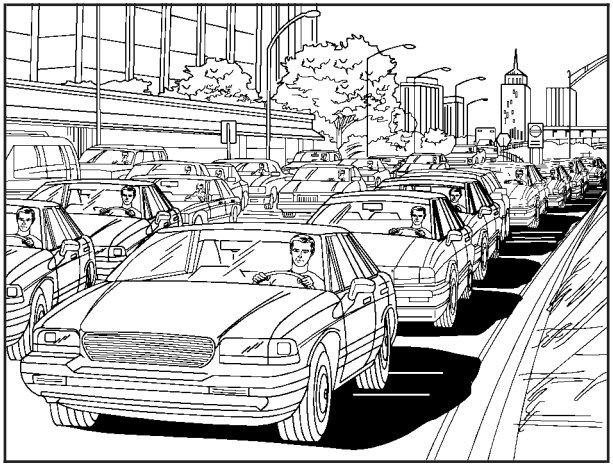
CAUTION: (Continued)

As little as six inches of flowing water can carry away a smaller vehicle. If this happens, you and other vehicle occupants could drown. Do not ignore police warning signs, and otherwise be very cautious about trying to drive through flowing water.

Some Other Rainy Weather Tips

- Besides slowing down, allow some extra following distance. And be especially careful when you pass another vehicle. Allow yourself more clear room ahead, and be prepared to have your view restricted by road spray.
- Have good tires with proper tread depth. See *Tires on page 354*.

City Driving



One of the biggest problems with city streets is the amount of traffic on them. You will want to watch out for what the other drivers are doing and pay attention to traffic signals.

Here are ways to increase your safety in city driving:

- Know the best way to get to where you are going. Get a city map and plan your trip into an unknown part of the city just as you would for a cross-country trip.
- Try to use the freeways that rim and crisscross most large cities. You will save time and energy. See *Freeway Driving on page 268*.
- Treat a green light as a warning signal. A traffic light is there because the corner is busy enough to need it. When a light turns green, and just before you start to move, check both ways for vehicles that have not cleared the intersection or may be running the red light.

Freeway Driving

Mile for mile, freeways — also called thruways, parkways, expressways, turnpikes, or superhighways — are the safest of all roads. But they have their own special rules.

The most important advice on freeway driving is: Keep up with traffic and keep to the right. Drive at the same speed most of the other drivers are driving. Too-fast or too-slow driving breaks a smooth traffic flow. Treat the left lane on a freeway as a passing lane.

At the entrance, there is usually a ramp that leads to the freeway. If you have a clear view of the freeway as you drive along the entrance ramp, you should begin to check traffic. Try to determine where you expect to blend with the flow. Try to merge into the gap at close to the prevailing speed. Switch on your turn signal, check your mirrors, and glance over your shoulder as often as necessary. Try to blend smoothly with the traffic flow.

Once you are on the freeway, adjust your speed to the posted limit or to the prevailing rate if it is slower. Stay in the right lane unless you want to pass.

Before changing lanes, check your mirrors. Then use your turn signal.

Just before you leave the lane, glance quickly over your shoulder to make sure there is not another vehicle in your blind spot.

Once you are moving on the freeway, make certain you allow a reasonable following distance.

Expect to move slightly slower at night.

When you want to leave the freeway, move to the proper lane well in advance. If you miss your exit, do not, under any circumstances, stop and back up. Drive on to the next exit.

The exit ramp can be curved, sometimes quite sharply. The exit speed is usually posted. Reduce your speed according to your speedometer, not to your sense of motion. After driving for any distance at higher speeds, you may tend to think you are going slower than you actually are.

Before Leaving on a Long Trip

Make sure you are ready. Try to be well rested. If you must start when you are not fresh — such as after a day's work — do not plan to make too many miles that first part of the journey. Wear comfortable clothing and shoes you can easily drive in.

Is your vehicle ready for a long trip? If you keep it serviced and maintained, it is ready to go. If it needs service, have it done before starting out. Of course, you will find experienced and able service experts in GM dealerships all across North America. They will be ready and willing to help if you need it.

Here are some things you can check before a trip:

- *Windshield Washer Fluid:* Is the reservoir full? Are all windows clean inside and outside?
- *Wiper Blades:* Are they in good shape?
- *Fuel, Engine Oil, Other Fluids:* Have you checked all levels?
- *Lamps:* Are they all working? Are the lenses clean?
- *Tires:* They are vitally important to a safe, trouble-free trip. Is the tread good enough for long-distance driving? Are the tires all inflated to the recommended pressure?
- *Weather Forecasts:* What is the weather outlook along your route? Should you delay your trip a short time to avoid a major storm system?
- *Maps:* Do you have up-to-date maps?

Highway Hypnosis

Is there actually such a condition as highway hypnosis? Or is it just plain falling asleep at the wheel? Call it highway hypnosis, lack of awareness, or whatever.

There is something about an easy stretch of road with the same scenery, along with the hum of the tires on the road, the drone of the engine, and the rush of the wind against the vehicle that can make you sleepy. Do not let it happen to you! If it does, your vehicle can leave the road in less than a second, and you could crash and be injured.

What can you do about highway hypnosis? First, be aware that it can happen.

Then here are some tips:

- Make sure your vehicle is well ventilated, with a comfortably cool interior.
- Keep your eyes moving. Scan the road ahead and to the sides. Check your rearview mirrors and your instruments frequently.
- If you get sleepy, pull off the road into a rest, service, or parking area and take a nap, get some exercise, or both. For safety, treat drowsiness on the highway as an emergency.

Hill and Mountain Roads

Driving on steep hills or mountains is different from driving in flat or rolling terrain.

If you drive regularly in steep country, or if you are planning to visit there, here are some tips that can make your trips safer and more enjoyable.

- Keep your vehicle in good shape. Check all fluid levels and also the brakes, tires, cooling system, and transaxle. These parts can work hard on mountain roads.

⚠ CAUTION:

If you do not shift down, your 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 your engine assist your brakes on a steep downhill slope.

⚠ CAUTION:

Coasting downhill in NEUTRAL (N) or with the ignition off is dangerous. Your brakes will have to do all the work of slowing down. They 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. Always have your engine running and your vehicle in gear when you go downhill.

- Know how to go down hills. The most important thing to know is this: let your engine do some of the slowing down. Shift to a lower gear when you go down a steep or long hill.
- Know how to go uphill. You may want to shift down to a lower gear. The lower gears help cool your engine and transaxle, and you can climb the hill better.

- Stay in your own lane when driving on two-lane roads in hills or mountains. Do not swing wide or cut across the center of the road. Drive at speeds that let you stay in your own lane.
- As you go over the top of a hill, be alert. There could be something in your lane, like a stalled car or an accident.
- You may see highway signs on mountains that warn of special problems. Examples are long grades, passing or no-passing zones, a falling rocks area, or winding roads. Be alert to these and take appropriate action.

Winter Driving

Here are some tips for winter driving:

- Have your vehicle in good shape for winter.
- You may want to put winter emergency supplies in the trunk.

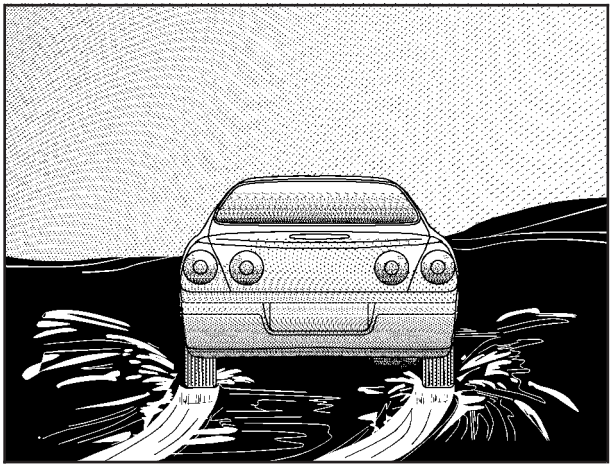
Also see *Tires on page 354*.

Include an ice scraper, a small brush or broom, a supply of windshield washer fluid, a rag, some winter outer clothing, a small shovel, a flashlight, a red cloth, and a couple of reflective warning triangles. And, if you will be driving under severe conditions, include a small bag of sand, a piece of old carpet, or a couple of burlap bags to help provide traction. Be sure you properly secure these items in your vehicle.

Driving on Snow or Ice

Most of the time, those places where the tires meet the road probably have good traction.

However, if there is snow or ice between the tires and the road, you can have a very slippery situation. You will have a lot less traction, or grip, and will need to be very careful.



What is the worst time for this? Wet ice. Very cold snow or ice can be slick and hard to drive on. But wet ice can be even more trouble because it may offer the least traction of all. You can get wet ice when it is about freezing, 32°F (0°C), and freezing rain begins to fall. Try to avoid driving on wet ice until salt and sand crews can get there.

Whatever the condition — smooth ice, packed, blowing, or loose snow — drive with caution.

If your vehicle has the Traction Control System (TCS), it will improve your ability to accelerate when driving on a slippery road. Even though your vehicle has a traction system you will want to slow down and adjust your driving to the road conditions. Under certain conditions, you may want to turn the TCS off, such as when driving through deep snow and loose gravel, to help maintain vehicle motion at lower speeds. See *Traction Control System (TCS) on page 256*.

If your vehicle does not have TCS, accelerate gently. 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.

Unless your vehicle has the Anti-Lock Brake System (ABS), you will want to brake very gently, too. If your vehicle does have ABS, see *Anti-Lock Brake System (ABS) on page 253*. ABS improves your vehicle's stability when you make a hard stop on a slippery road. Whether your vehicle has ABS or not, you will want to begin stopping sooner than you would on dry pavement. Without ABS, if you feel your vehicle begin to slide, let up on the brakes a little. Push the brake pedal down steadily to get the most traction you can.

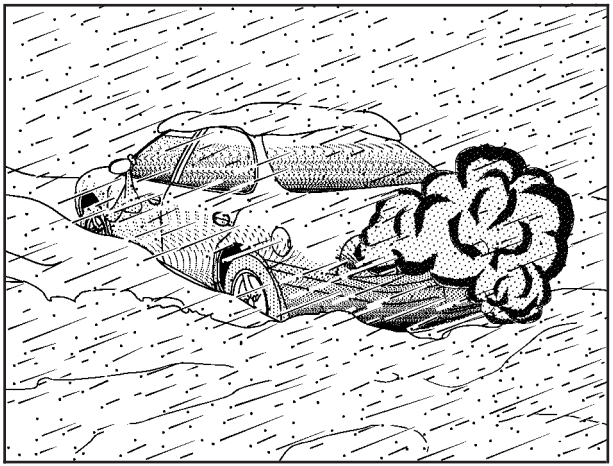
Remember, unless your vehicle has ABS, if you brake so hard that the wheels stop rolling, your vehicle will just slide. Brake so the wheels always keep rolling and you can still steer.

- Whatever your vehicle's braking system, allow greater following distance on any slippery road.
- Watch for slippery spots. The road might be fine until you hit a spot that is covered with ice. On an otherwise clear road, ice patches may appear in shaded areas where the sun cannot reach, such as around clumps of trees, behind buildings, or under bridges. Sometimes the surface of a curve or an overpass may remain icy when the surrounding roads are clear. If you see a patch of ice ahead of you, brake before you are on it. Try not to brake while you are actually on the ice, and avoid sudden steering maneuvers.

If You Are Caught in a Blizzard

If you are stopped by heavy snow, you could be in a serious situation. You should probably stay with your vehicle unless you know for sure that you are near help and you can hike through the snow. Here are some things to do to summon help and keep yourself and your passengers safe:

- Turn on the hazard flashers.
- Tie a red cloth to your vehicle to alert police that you have been stopped by the snow.
- Put on extra clothing or wrap a blanket around you. If you do not have blankets or extra clothing, make body insulators from newspapers, burlap bags, rags, floor mats — anything you can wrap around yourself or tuck under your clothing to keep warm.



You can run the engine to keep warm, but be careful.

⚠ CAUTION:

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 around the base of your vehicle, especially any that is blocking your exhaust pipe. And check around again from time to time to be sure snow does not collect there.

Open a window just a little on the side of the vehicle that is away from the wind. This will help keep CO out.

Run the engine only as long as you must. This saves fuel. When you run the engine, make it go a little faster than just idle. That is, push the accelerator slightly. This uses less fuel for the heat that you get and it keeps the battery charged. You will need a well-charged battery to restart the vehicle, and possibly for signaling later on with the headlamps. Let the heater run for a while.

Then, shut the engine off and close the window almost all the way to preserve the heat. Start the engine again and repeat this only when you feel really uncomfortable from the cold. But do it as little as possible. Preserve the fuel as long as you can. To help keep warm, you can get out of the vehicle and do some fairly vigorous exercises every half hour or so until help comes.

If Your Vehicle is Stuck in Sand, Mud, Ice, or Snow

In order to free your vehicle when it is stuck, you will need to spin the wheels, but you do not want to spin your wheels too fast. The method known as rocking can help you get out when you are stuck, but you must use caution.

⚠ CAUTION:

If you let your vehicle's tires spin at high speed, they can explode, and you or others could be injured. And, the transaxle or other parts of the vehicle can overheat. That could cause an engine compartment fire or other damage. When you are stuck, spin the wheels as little as possible. Do not spin the wheels above 35 mph (55 km/h) as shown on the speedometer.

Notice: **Spinning the wheels can destroy parts of your vehicle as well as the tires. If you spin the wheels too fast while shifting the transaxle back and forth, you can destroy the transaxle. See *Rocking Your Vehicle to Get It Out on page 278*.**

For information about using tire chains on your vehicle, see *Tire Chains on page 376*.

Rocking Your Vehicle to Get It Out

First, turn the steering wheel left and right. That will clear the area around the front wheels. If your vehicle has traction control, you should turn the traction control system off. See *Traction Control System (TCS) on page 256*. Then shift back and forth between REVERSE (R) and a forward gear, spinning the wheels as little as possible. Release the accelerator pedal while you shift, and press lightly on the accelerator pedal when the transaxle is in gear. By slowly spinning the wheels in the forward and reverse directions, you will cause a rocking motion that may free your vehicle. If that does not get your vehicle out after a few tries, it may need to be towed out. If your vehicle does need to be towed out, see *Towing Your Vehicle on page 284*.

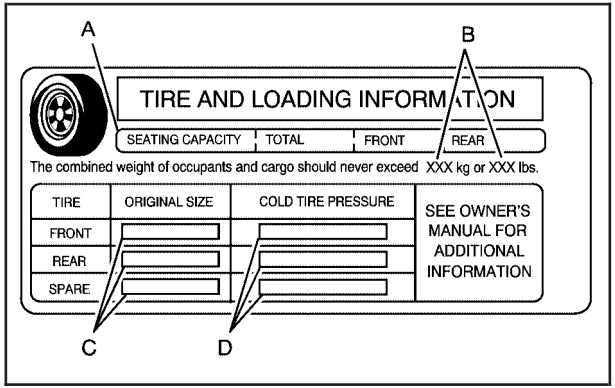
Loading Your Vehicle

It is very important to know how much weight your vehicle can carry. Two labels on your vehicle show how much weight it may properly carry, the Tire and Loading Information label and the Vehicle Certification label.

⚠ CAUTION:

Do not load your 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 your 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 your 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 below the door lock post (striker). The Tire and Loading Information label lists the number of occupant seating positions (A), and the maximum vehicle capacity weight (B) in kilograms and pounds. The vehicle capacity weight includes the weight of all occupants, cargo, and all nonfactory-installed options.

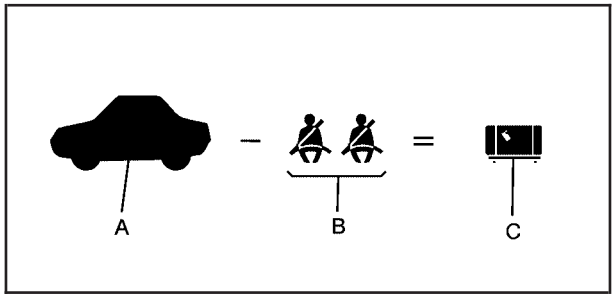
The Tire and Loading Information label also lists the tire size of the original equipment tires (C) and the recommended cold tire inflation pressures (D). For more information on tires and inflation, see *Tires on page 354* and *Inflation - Tire Pressure on page 362*.

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

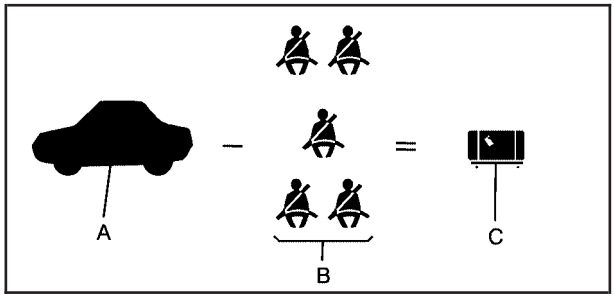
1. Locate the statement "The combined weight of occupants and cargo should never exceed XXX kg or XXX lbs" on your vehicle's placard.
2. Determine the combined weight of the driver and passengers that will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX 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 for your vehicle.

If your vehicle can tow a trailer, see *Towing a Trailer on page 286* for important information on towing a trailer, towing safety rules, and trailering tips.



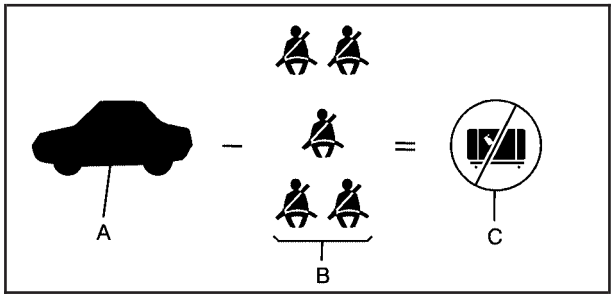
Example 1

Item	Description	Total
A	Maximum Vehicle Capacity Weight for Example 1 =	1,000 lbs (453 kg)
B	Subtract Occupant Weight 150 lbs (68 kg) × 2 =	300 lbs (136 kg)
C	Available Occupant and Cargo Weight =	700 lbs (317 kg)



Example 2

Item	Description	Total
A	Maximum Vehicle Capacity Weight for Example 2 =	1,000 lbs (453 kg)
B	Subtract Occupant Weight 150 lbs (68 kg) × 5 =	750 lbs (340 kg)
C	Available Cargo Weight =	250 lbs (113 kg)

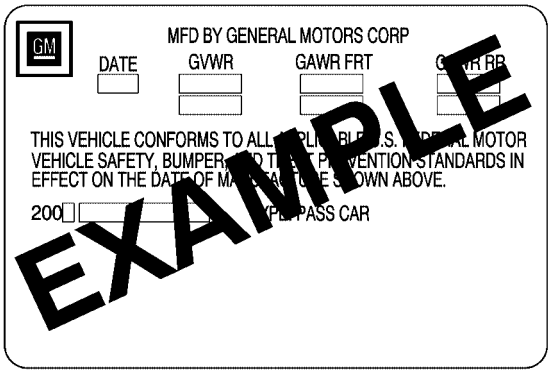


Example 3

Item	Description	Total
A	Maximum Vehicle Capacity Weight for Example 3 =	1,000 lbs (453 kg)
B	Subtract Occupant Weight 200 lbs (91 kg) × 5 =	1,000 lbs (453 kg)
C	Available Cargo Weight =	0 lbs (0 kg)

Refer to your vehicle's Tire and Loading Information label for specific information about your vehicle's maximum vehicle capacity weight and seating positions. The combined weight of the driver, passengers, and cargo should never exceed your vehicle's maximum vehicle capacity weight.

Certification Label



A vehicle specific Certification label is found on the rear edge of the driver's door.

The label shows the gross weight capacity of your 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 your vehicle or the Gross Axle Weight Rating (GAWR) for either the front or rear axle.

If the vehicle is going to carry a heavy load, spread it out. See “Steps for Determining Correct Load Limit” earlier in this section.

⚠ CAUTION:

Do not load your 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 your 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 your vehicle.

Notice: **Overloading your vehicle may cause damage. Repairs would not be covered by your warranty. Do not overload your vehicle.**

If things like suitcases, tools, packages, or anything else are put inside the vehicle, they will go as fast as the vehicle goes. If you have to stop or turn quickly, or if there is a crash, they will keep going.

⚠ CAUTION:

Things you put inside your vehicle can strike and injure people in a sudden stop or turn, or in a crash.

- **Put things in the trunk of your vehicle. In a trunk, put them as far forward as you can. Try to spread the weight evenly.**
- **Never stack heavier things, like suitcases, inside the vehicle so that some of them are above the tops of the seats.**
- **Do not leave an unsecured child restraint in your vehicle.**
- **When you carry something inside the vehicle, secure it whenever you can.**
- **Do not leave a seat folded down unless you need to.**

Towing

Towing Your Vehicle

Consult your dealer or a professional towing service if you need to have your disabled vehicle towed. See *Roadside Assistance Program on page 434*.

If you want to tow your 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 your vehicle behind another vehicle – such as behind a motorhome. The two most common types of recreational vehicle towing are known as “dinghy towing” (towing your vehicle with all four wheels on the ground) and “dolly towing” (towing your vehicle with two wheels on the ground and two wheels up on a device known as a “dolly”).

With the proper preparation and equipment, many vehicles can be towed in these ways. See “Dinghy Towing” and “Dolly Towing,” following.

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

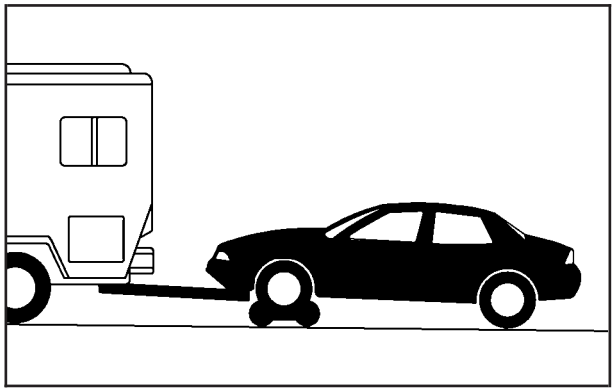
- What’s the towing capacity of the towing vehicle? Be sure you read the tow vehicle manufacturer’s recommendations.
- How far will you tow? Some vehicles have restrictions on how far and how long they can tow.
- Do you have the proper towing equipment? See your dealer or trailering professional for additional advice and equipment recommendations.
- Is your vehicle ready to be towed? Just as you would prepare your vehicle for a long trip, you’ll want to make sure your vehicle is prepared to be towed. See *Before Leaving on a Long Trip on page 269*.

Dinghy Towing

Notice: **If you tow your vehicle with all four wheels on the ground, the drivetrain components could be damaged. The repairs would not be covered by your warranty. Do not tow your vehicle with all four wheels on the ground.**

Your vehicle was not designed to be towed with all four wheels on the ground. If your vehicle must be towed, you should use a dolly. See “Dolly Towing” that follows for more information.

Dolly Towing



Your vehicle can be towed using a dolly. To tow your vehicle using a dolly, follow these steps:

1. Put the front wheels on a dolly.
2. Put the vehicle in PARK (P).
3. Set the parking brake and then remove the key.
4. Clamp the steering wheel in a straight-ahead position.
5. Release the parking brake.

Towing a Trailer

⚠ CAUTION:

If you do not use the correct equipment and drive properly, you can lose control when you pull a trailer. For example, if the trailer is too heavy, the brakes may not work well — or even at all. You and your passengers could be seriously injured. You may also damage your vehicle; the resulting repairs would not be covered by your warranty. Pull a trailer only if you have followed all the steps in this section. Ask your dealer for advice and information about towing a trailer with your vehicle.

Your vehicle can tow a trailer if it is equipped with the proper trailer towing equipment. To identify what the vehicle trailering capacity is for your vehicle, you should read the information in “Weight of the Trailer” that appears later in this section. But trailering is different than just driving your vehicle by itself. Trailering means changes in handling, durability and fuel economy. Successful, safe trailering takes correct equipment, and it has to be used properly.

That’s the reason for this part. In it are many time-tested, important trailering tips and safety rules. Many of these are important for your safety and that of your passengers. So please read this section carefully before you pull a trailer.

Load-pulling components such as the engine, transaxle, wheel assemblies and tires are forced to work harder against the drag of the added weight. The engine is required to operate at relatively higher speeds and under greater loads, generating extra heat. What’s more, the trailer adds considerably to wind resistance, increasing the pulling requirements.

If You Do Decide To Pull A Trailer

If you do, here are some important points:

- There are many different laws, including speed limit restrictions, having to do with trailering. Make sure your rig will be legal, not only where you live but also where you'll be driving. A good source for this information can be state or provincial police.
- Consider using a sway control. You can ask a hitch dealer about sway controls.
- Don't tow a trailer at all during the first 1,000 miles (1 600 km) your new vehicle is driven. Your engine, axle or other parts could be damaged.
- Then, during the first 500 miles (800 km) that you tow a trailer, don't drive over 50 mph (80 km/h) and don't make starts at full throttle. This helps your engine and other parts of your vehicle wear in at the heavier loads.
- Obey speed limit restrictions when towing a trailer. Don't drive faster than the maximum posted speed for trailers, or no more than 55 mph (90 km/h), to save wear on your vehicle's parts.

Three important considerations have to do with weight:

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

Weight of the Trailer

How heavy can a trailer safely be?

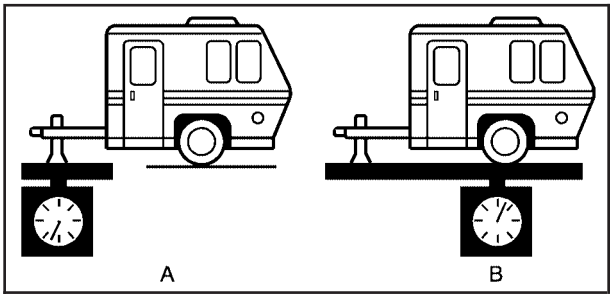
It should never weigh more than 1,000 lbs (454 kg). But even that can be too heavy.

It depends on how you plan to use your rig. For example, speed, altitude, road grades, outside temperature and how much your vehicle is used to pull a trailer are all important. And, it can also depend on any special equipment that you have on your vehicle.

You can ask your dealer for our trailering information or advice. Also, see *Customer Assistance Offices on page 432* 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 or gross weight of your vehicle. The Gross Vehicle Weight (GVW) includes the curb weight of the vehicle, any cargo you may carry in it, and the people who will be riding in the vehicle. And if you tow a trailer, you must add the tongue load to the GVW because your vehicle will be carrying that weight, too. See *Loading Your Vehicle on page 279* for more information about your vehicle's maximum load capacity.



If you're using a weight-carrying hitch or a weight-distributing hitch, the trailer tongue (A) should weigh 10 to 15 percent of the total loaded trailer weight (B).

After you've loaded your trailer, weigh the trailer and then the tongue, separately, to see if the weights are proper. If they aren't, you may be able to get them right simply by moving some items around in the trailer.

Total Weight on Your Vehicle's Tires

Be sure your vehicle's tires are inflated to the upper limit for cold tires. You'll find these numbers on the Tire and Loading Information label, See *Loading Your Vehicle on page 279*. Then be sure you don't go over the GVW limit for your vehicle, including the weight of the trailer tongue.

Hitches

It's important to have the correct hitch equipment. Crosswinds, large trucks going by and rough roads are a few reasons why you'll need the right hitch. Here are some rules to follow:

- The rear bumper on your 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 you have to make any holes in the body of your vehicle when you install a trailer hitch? If you do, then be sure to seal the holes later when you remove the hitch. If you don't seal them, deadly carbon monoxide (CO) from your exhaust can get into your vehicle. See *Engine Exhaust on page 124*. Dirt and water can, too.

Safety Chains

You should always attach chains between your vehicle and your trailer. Cross the safety chains under the tongue of the trailer so that the tongue will not drop to the road if it becomes separated from the hitch. Instructions about safety chains may be provided by the hitch manufacturer or by the trailer manufacturer. Follow the manufacturer's recommendation for attaching safety chains and do not attach them to the bumper. Always leave just enough slack so you can turn with your rig. And, never allow safety chains to drag on the ground.

Trailer Brakes

Does your trailer have its own brakes? Be sure to read and follow the instructions for the trailer brakes so you'll be able to install, adjust and maintain them properly.

- If your vehicle has anti-lock brakes, do not try to tap into your vehicle's brake system. If you do, both brake systems won't work well, or at all.
- Even if your vehicle doesn't have anti-lock brakes, don't tap into your vehicle's brake system if the trailer's brake system will use more than 0.02 cubic inch (0.3 cc) of fluid from your vehicle's master cylinder. If it does, both braking systems won't work well. You could even lose your brakes.
- Will the trailer brake parts take 3,000 psi (20 650 kPa) of pressure? If not, the trailer brake system must not be used with your vehicle.
- If everything checks out this far, then make the brake fluid tap at the upper rear master cylinder port. But don't use copper tubing for this. If you do, it will bend and break off. Use steel brake tubing.

Driving with a Trailer

Towing a trailer requires a certain amount of experience. Before setting out for the open road, you'll want to get to know your rig. Acquaint yourself with the feel of handling and braking with the added weight of the trailer. And always keep in mind that the vehicle you are driving is now a good deal longer and not nearly as responsive as your vehicle is by itself.

Before you start, check the trailer hitch and platform (and attachments), safety chains, electrical connector, lamps, tires and mirror adjustment. If the trailer has electric brakes, start your vehicle and trailer moving and then apply the trailer brake controller by hand to be sure the brakes are working. This lets you check your electrical connection at the same time.

During your trip, check occasionally to be sure that the load is secure, and that the lamps and any trailer brakes are still working.

Following Distance

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

Passing

You'll need more passing distance up ahead when you're towing a trailer. And, because you're a good deal longer, you'll need to go much farther beyond the passed vehicle before you can return to your lane.

Backing Up

Hold the bottom of the steering wheel with one hand. Then, to move the trailer to the left, just 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. Your vehicle could be damaged. Avoid making very sharp turns while trailering.**

When you're turning with a trailer, make wider turns than normal. Do this so your trailer won't strike soft shoulders, curbs, road signs, trees or other objects. Avoid jerky or sudden maneuvers. Signal well in advance.

Turn Signals When Towing a Trailer

When you tow a trailer, your vehicle may need additional wiring. Check with your dealer. The arrows on your instrument panel will flash whenever you signal a turn or lane change. Properly hooked up, the trailer lamps will also flash, telling other drivers you're about to turn, change lanes or stop.

When towing a trailer, the arrows on your instrument panel will flash for turns even if the bulbs on the trailer are burned out. Thus, you may think drivers behind you are seeing your signal when they are not. It's important to check occasionally to be sure the trailer bulbs are still working.

Driving On Grades

Reduce speed and shift to a lower gear *before* you start down a long or steep downgrade. If you don't shift down, you might have to use your brakes so much that they would get hot and no longer work well.

On a long uphill grade, shift down and reduce your speed to around 45 mph (70 km/h) to reduce the possibility of engine and transaxle overheating.

Notice: **When the outside temperature is above 100° F (38° C) and/or there is a steep, continuous grade, the recommended speed when towing is 55 mph (88 km/h) or less. Extended higher than normal engine and transaxle temperatures may damage your vehicle.**

If you have overdrive, you may want to drive in THIRD (3) instead of DRIVE (D).

Parking on Hills

⚠ CAUTION:

You really should not park your vehicle, with a trailer attached, on a hill. If something goes wrong, your rig could start to move. People can be injured, and both your vehicle and the trailer can be damaged.

But if you ever have to park your rig on a hill, here's how to do it:

1. Apply your regular brakes, but don't shift into PARK (P) yet.
2. Have someone place chocks under the trailer wheels.
3. When the wheel chocks are in place, release the regular brakes until the chocks absorb the load.
4. Reapply the regular brakes. Then apply your parking brake, and then shift to PARK (P).
5. Release the regular brakes.

When You Are Ready to Leave After Parking on a Hill

1. Apply your regular brakes and hold the pedal down while you:
   - start your engine,
   - shift into a gear, and
   - 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

Your vehicle will need service more often when you're pulling a trailer. See the Maintenance Schedule for more on this. Things that are especially important in trailer operation are automatic transaxle fluid (don't overfill), engine oil, drive belts, cooling system and brake system. Each of these is covered in this manual, and the Index will help you find them quickly. If you're trailering, it's a good idea to review this information before you start your trip.

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

Engine Cooling When Trailer Towing

Your cooling system may temporarily overheat during severe operating conditions. See *Engine Overheating on page 326*.

Section 5 Service and Appearance Care

Service 297
Accessories and Modifications 297
California Proposition 65 Warning 298
Doing Your Own Service Work 298
Adding Equipment to the Outside of Your Vehicle 299

Fuel 299
Gasoline Octane 299
Gasoline Specifications 300
California Fuel 300
Additives 300
Fuel E85 (85% Ethanol) 301
Fuels in Foreign Countries 302
Filling the Tank 303
Filling a Portable Fuel Container 305

Checking Things Under the Hood 306
Hood Release 307
Engine Compartment Overview 308
Engine Oil 312
Engine Oil Life System 316
Engine Air Cleaner/Filter 318
Automatic Transaxle Fluid 319
Engine Coolant 323
Pressure Cap 326
Engine Overheating 326
Overheated Engine Protection Operating Mode 329
Cooling System 329
Power Steering Fluid 335
Windshield Washer Fluid 336
Brakes 337
Battery 340
Jump Starting 341

Headlamp Aiming 346

Bulb Replacement 346
Halogen Bulbs 346
Headlamps, Front Turn Signal, Sidemarker, and Parking Lamps 347
Taillamps, Turn Signal, Sidemarker, Stoplamps and Back-up Lamps 349
License Plate Lamp 351
Replacement Bulbs 351

Windshield Wiper Blade Replacement 352

Tires 354
Tire Sidewall Labeling 355
Tire Terminology and Definitions 359
Inflation - Tire Pressure 362

Section 5 Service and Appearance Care

Tire Pressure Monitor System 363
Tire Inspection and Rotation 368
When It Is Time for New Tires 369
Buying New Tires 370
Different Size Tires and Wheels 372
Uniform Tire Quality Grading 372
Wheel Alignment and Tire Balance 374
Wheel Replacement 374
Tire Chains 376
If a Tire Goes Flat 377
Changing a Flat Tire 378
Removing the Spare Tire and Tools 379
Removing the Flat Tire and Installing the Spare Tire 381
Storing a Flat or Spare Tire and Tools 387
Compact Spare Tire 389

Appearance Care 390
Cleaning the Inside of Your Vehicle 390
Fabric/Carpet 391
Leather 392
Instrument Panel, Vinyl, and Other Plastic Surfaces 393
Care of Safety Belts 393
Washing Your Vehicle 394
Cleaning Exterior Lamps/Lenses 394
Finish Care 394
Windshield and Wiper Blades 395
Aluminum Wheels 396
Tires 396
Sheet Metal Damage 397
Finish Damage 397
Underbody Maintenance 397
Chemical Paint Spotting 397
Vehicle Care/Appearance Materials 398

Vehicle Identification 399
Vehicle Identification Number (VIN) 399
Service Parts Identification Label 399

Electrical System 400
Add-On Electrical Equipment 400
Headlamp Wiring 400
Windshield Wiper Fuses 400
Power Windows and Other Power Options 400
Fuses and Circuit Breakers 400
Instrument Panel Fuse Block 401
Underhood Fuse Block 402

Capacities and Specifications 405

Service

Your dealer knows your vehicle best and wants you to be happy with it. We hope you will go to your dealer for all your service needs. You will get genuine GM parts and GM-trained and supported service people.

We hope you will want to keep your GM vehicle all GM. Genuine GM parts have one of these marks:

ACDelco®

GM Parts®

GM® Goodwrench

GM® Accessories

Accessories and Modifications

When you add non-GM accessories to your vehicle they can affect your vehicle's performance and safety, including such things as, airbags, braking, stability, ride and handling, emissions systems, aerodynamics, durability, and electronic systems like anti-lock brakes, traction control and stability control. Some of these accessories may even cause malfunction or damage not covered by warranty.

GM Accessories are designed to complement and function with other systems on your vehicle. Your GM dealer can accessorize your vehicle using genuine GM Accessories. When you go to your GM dealer and ask for GM Accessories, you will know that GM-trained and supported service technicians will perform the work using genuine GM Accessories.

California Proposition 65 Warning

Most motor vehicles, including this one, contain and/or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Engine exhaust, many parts and systems (including some inside the vehicle), many fluids, and some component wear by-products contain and/or emit these chemicals.

Doing Your Own Service Work

⚠ CAUTION:

You can be injured and your 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 you attempt any vehicle maintenance task.**

CAUTION: (Continued)

CAUTION: (Continued)

- **Be sure to use the proper nuts, bolts, and other fasteners. English and metric fasteners can be easily confused. If you use the wrong fasteners, parts can later break or fall off. You could be hurt.**

If you want to do some of your own service work, you will want to use the proper service manual. It tells you much more about how to service your vehicle than this manual can. To order the proper service manual, see *Service Publications Ordering Information on page 447*.

Your vehicle has an airbag system. Before attempting to do your own service work, see *Servicing Your Airbag-Equipped Vehicle on page 84*.

You should keep a record with all parts receipts and list the mileage and the date of any service work you perform. See *Maintenance Record on page 423*.

Adding Equipment to the Outside of Your Vehicle

Things you might add to the outside of your vehicle can affect the airflow around it. This may cause wind noise and affect windshield washer performance. Check with your dealer before adding equipment to the outside of your vehicle.

Fuel

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

The 8th digit of your Vehicle Identification Number (VIN) shows the code letter or number that identifies your engine. You will find the VIN at the top left of the instrument panel. See *Vehicle Identification Number (VIN) on page 399*.

If your vehicle has the 3.5L V6 engine (VIN Code K only), you may use either regular unleaded gasoline or ethanol fuel containing up to 85% ethanol (E85); also see *Fuel E85 (85% Ethanol) on page 301*. In all other engines, use only regular unleaded gasoline.

Gasoline Octane

For all vehicles except those with the 5.3L V8 engine (VIN Code C), use regular unleaded gasoline with a posted octane rating of 87 or higher. If the octane rating is less than 87, you may notice an audible knocking noise when you drive, commonly referred to as spark knock. If this occurs, use a gasoline rated at 87 octane or higher as soon as possible. If you are using gasoline rated at 87 octane or higher and you hear heavy knocking, your engine needs service.

If your vehicle has the 5.3L V8 engine (VIN Code C), use premium unleaded gasoline with a posted octane rating of 91 or higher. You may also use regular unleaded gasoline rated at 87 octane or higher, but your vehicle's acceleration may be slightly reduced, and you may notice a slight audible knocking noise, commonly referred to as spark knock. If the octane is less than 87, you may notice a heavy knocking noise when you drive. If this occurs, use a gasoline rated at 87 octane or higher as soon as possible. Otherwise, you might damage your engine. If you are using gasoline rated at 87 octane or higher and you hear heavy knocking, your engine needs service.

Gasoline Specifications

At a minimum, gasoline should meet ASTM specification D 4814 in the United States or CAN/CGSB-3.5 in Canada. Some gasolines may contain an octane-enhancing additive called methylcyclopentadienyl manganese tricarbonyl (MMT). General Motors recommends against the use of gasolines containing MMT. See *Additives on page 300* for additional information.

California Fuel

If your 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, your vehicle will operate satisfactorily on fuels meeting federal specifications, but emission control system performance may be affected. The malfunction indicator lamp may turn on and your vehicle may fail a smog-check test. See *Malfunction Indicator Lamp on page 183*. If this occurs, return to your authorized GM dealer for diagnosis. If it is determined that the condition is caused by the type of fuel used, repairs may not be covered by your warranty.

Additives

To provide cleaner air, all gasolines in the United States are now required to contain additives that will help prevent engine and fuel system deposits from forming, allowing your emission control system to work properly. In most cases, you should not have to add anything to your 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 your vehicle experiences problems due to dirty injectors or valves, look for gasoline that is advertised as TOP TIER Detergent Gasoline. Also, your GM dealer has additives that will help correct and prevent most deposit-related problems.

Gasolines containing oxygenates, such as ethers and ethanol, and reformulated gasolines may be available in your area. General Motors recommends 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: **Your vehicle was not designed for fuel that contains methanol. Do not use fuel containing methanol. It can corrode metal parts in your fuel system and also damage the plastic and rubber parts. That damage would not be covered under your warranty.**

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

Fuel E85 (85% Ethanol)

The 8th digit of your Vehicle Identification Number (VIN) shows the code letter or number that identifies your engine. You will find the VIN at the top left of the instrument panel. See *Vehicle Identification Number (VIN) on page 399*.

If your vehicle has the 3.5L V6 engine (VIN Code K only), you may use either regular unleaded gasoline or ethanol fuel containing up to 85% ethanol (E85); also see *Fuel on page 299*. In all other engines, including the 3.5L V6 (VIN Code N), use only regular unleaded gasoline.

Only vehicles that have the 3.5L V6 engine (VIN Code K) may use 85% ethanol fuel (E85). General Motors encourages the use of E85 in vehicles that are designed to use it. The ethanol in E85 is a “renewable” fuel, meaning it is made from renewable sources such as corn and other crops.

Many service stations will not have an 85% ethanol fuel (E85) pump available. The U. S. Department of Energy has an alternative fuels website (www.eere.energy.gov/afdc/infrastructure/locator.html) that can help you find E85 fuel. Those stations that do have E85 should have a label indicating ethanol content. Do not use the fuel if the ethanol content is greater than 85%.

At a minimum, E85 should meet ASTM Specification D 5798.

To ensure quick starts in the wintertime, the E85 fuel must be formulated properly for your climate according to ASTM specification D 5798. If you have trouble starting on E85, it may be because your E85 fuel is not properly formulated for your climate. If this happens, switching to gasoline or adding gasoline to your fuel tank may improve starting. For good starting and heater efficiency below 32°F (0°C), the fuel mix in the fuel tank should contain no more than 70% ethanol. It is best not to alternate repeatedly between gasoline and E85. If you do switch fuels, it is recommended that you add as much fuel as possible — do not add less than five gallons (18.9 L) when refueling. You should drive the vehicle immediately after refueling for at least seven miles (11 km) to allow the vehicle to adapt to the change in ethanol concentration.

E85 has less energy per gallon than gasoline, so you will need to refill your fuel tank more often when using E85 than when you are using gasoline. See *Filling the Tank on page 303*.

Notice: **Some additives are not compatible with E85 fuel and may harm your fuel system. Damage caused by additives would not be covered by your new vehicle warranty. Do not use additives with E85 fuel.**

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

Fuels in Foreign Countries

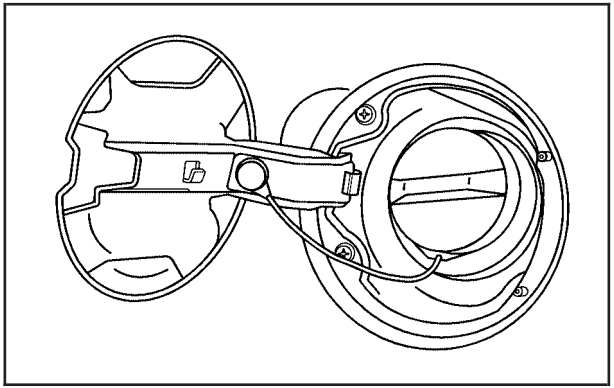
If you plan on driving in another country outside the United States or Canada, the proper fuel may be hard to find. Never use leaded gasoline or any other fuel not recommended in the previous text on fuel. Costly repairs caused by use of improper fuel would not be covered by your warranty.

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.

Filling the Tank

⚠ CAUTION:

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 pump island. Turn off your engine when you are refueling. Do not smoke if you are near fuel or refueling your vehicle. Keep sparks, flames, and smoking materials away from fuel. Do not leave the fuel pump unattended when refueling your vehicle. This is against the law in some places. 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's side of the vehicle. If the vehicle has E85 fuel capability, a yellow cap with the words "E85/gasoline" can be seen.

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.

While refueling, hang the tethered fuel cap on the hook on the inside of the fuel door.

⚠ CAUTION:

If you spill fuel and then something ignites it, you could be badly burned. Fuel can spray out on you if you open the fuel cap too quickly. This spray can happen if your 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 *Washing Your Vehicle on page 394*.

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 183*.

The TIGHTEN GAS CAP message will be displayed on the Driver Information Center (DIC) if the fuel cap is not properly installed. See *DIC Warnings and Messages on page 197* for more information.

⚠ CAUTION:

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 you need a new fuel cap, be sure to get the right type. Your dealer can get one for you. If you get the wrong type, it may not fit properly. This may cause your malfunction indicator lamp to light and may damage your fuel tank and emissions system. See** ***Malfunction Indicator Lamp on page 183*****.**

Filling a Portable Fuel Container

⚠ CAUTION:

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

- **Dispense gasoline 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.**
- **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 gasoline.**

Checking Things Under the Hood

⚠ CAUTION:

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

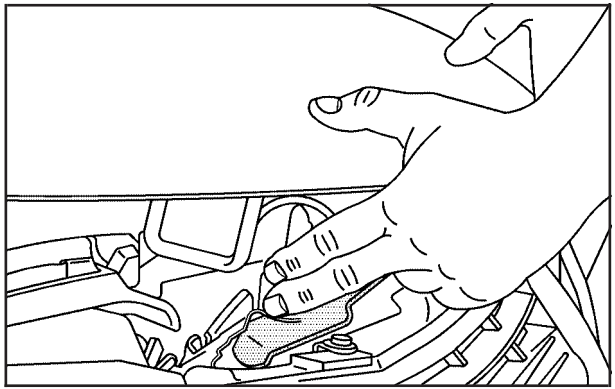
⚠ CAUTION:

Things that burn can get on hot engine parts and start a fire. These include liquids like fuel, oil, coolant, brake fluid, windshield washer and other fluids, and plastic or rubber. You or others could be burned. Be careful not to drop or spill things that will burn onto a hot engine.

Hood Release

To open the hood, do the following:

1. Pull the interior hood release handle with this symbol on it. It is located to the left of the parking brake pedal.

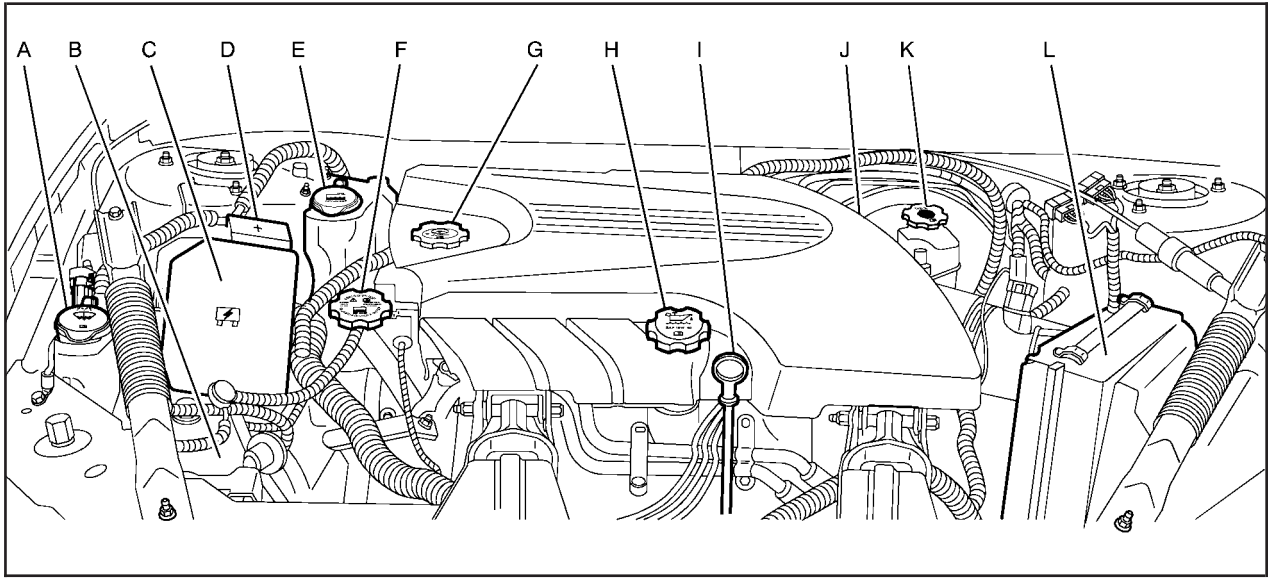


2. Then go to the front of the vehicle and release the secondary hood latch, located near the center of the hood front, by pushing the latch to the right.
3. Lift the hood.

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

When you open the hood on the 3.5L engine (3.9L similar), here is what you will see:



A. Windshield Washer Fluid Reservoir. See “Adding Washer Fluid” under *Windshield Washer Fluid on page 336*.

B. Battery. See *Battery on page 340*.

C. Underhood Fuse Block. See *Underhood Fuse Block on page 402*.

D. Remote Positive (+) Terminal. See *Jump Starting on page 341*.

E. Coolant Recovery Tank. See “Checking Coolant” under *Cooling System on page 329*.

F. Pressure Cap. See *Pressure Cap on page 326*.

G. Power Steering Fluid Cap. See *Power Steering Fluid on page 335*.

H. Engine Oil Fill Cap. See “When to Add Engine Oil” under *Engine Oil on page 312*.

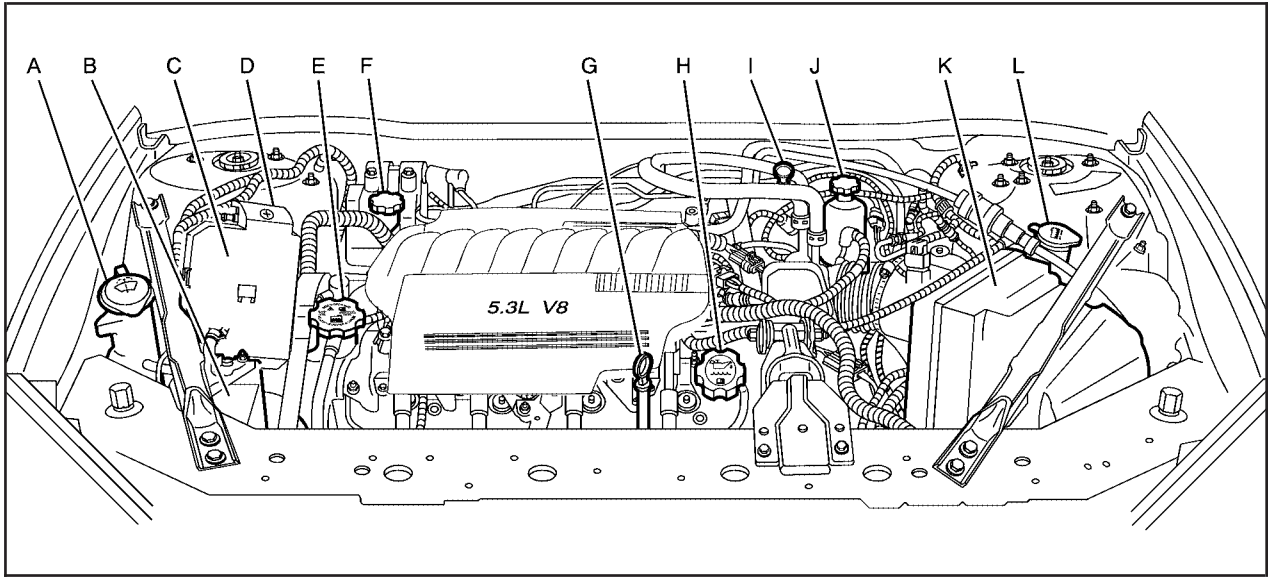
I. Engine Oil Dipstick. See “Checking Engine Oil” under *Engine Oil on page 312*.

J. Automatic Transaxle Fluid Dipstick (Out of View). See “Checking the Fluid Level” under *Automatic Transaxle Fluid on page 319*.

K. Brake Master Cylinder Reservoir. See “Brake Fluid” under *Brakes on page 337*.

L. Engine Air Cleaner/Filter. See *Engine Air Cleaner/Filter on page 318*.

When you open the hood on the 5.3L V8 engine, here is what you will see:



A. Windshield Washer Fluid Reservoir. See “Adding Washer Fluid” under *Windshield Washer Fluid on page 336*.

B. Battery. See *Battery on page 340*.

C. Underhood Fuse Block. See *Underhood Fuse Block on page 402*.

D. Remote Positive (+) Terminal. See *Jump Starting on page 341*.

E. Pressure Cap. See *Pressure Cap on page 326*.

F. Power Steering Fluid Cap. See *Power Steering Fluid on page 335*.

G. Engine Oil Dipstick. See “Checking Engine Oil” under *Engine Oil on page 312*.

H. Engine Oil Fill Cap. See “When to Add Engine Oil” under *Engine Oil on page 312*.

I. Automatic Transaxle Fluid Dipstick (Out of View). See “Checking the Fluid Level” under *Automatic Transaxle Fluid on page 319*.

J. Brake Master Cylinder Reservoir. See “Brake Fluid” under *Brakes on page 337*.

K. Engine Air Cleaner/Filter. See *Engine Air Cleaner/Filter on page 318*.

L. Coolant Recovery Tank. See “Checking Coolant” under *Cooling System on page 329*.

Engine Oil

If the ENGINE OIL LOW ADD OIL message appears in the Driver Information Center (DIC), it means you need to check the engine oil level right away. For more information, see *DIC Warnings and Messages on page 197*. You should check the engine oil level regularly; this is an added reminder.

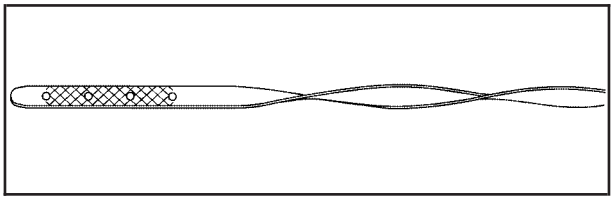
Checking Engine Oil

It is a good idea to check the engine oil every time you get fuel. In order to get an accurate reading, the oil must be warm and the vehicle must be on level ground.

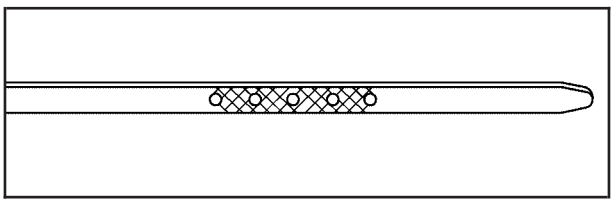
The engine oil dipstick handle is a yellow loop. See *Engine Compartment Overview on page 308* for the location of the engine oil dipstick.

1. Turn off the engine and give the oil several minutes to drain back into the oil pan. If you do not do this, 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



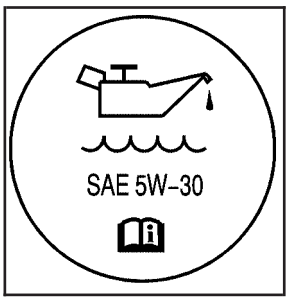
V6 Engine



V8 Engine

If the oil is below the cross-hatched area at the tip of the dipstick, you will need to add at least one quart/liter of oil. But you must use the right kind. This section explains what kind of oil to use. For engine oil crankcase capacity, see *Capacities and Specifications on page 405*.

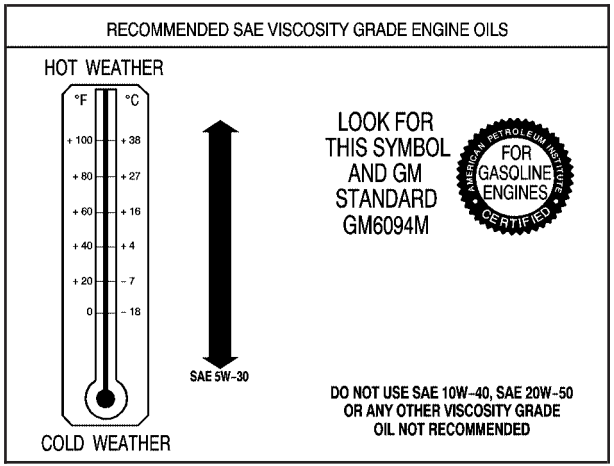
Notice: **Do not add too much oil. If the engine has so much oil that the oil level gets above the cross-hatched area that shows the proper operating range, the engine could be damaged.**



See *Engine Compartment Overview on page 308* for the location of the engine oil fill cap.

Be sure to add enough oil to put the level somewhere in the proper operating range in the cross-hatched area. Push the dipstick all the way back in when you are through.

What Kind of Engine Oil to Use



Look for two things:

- GM6094M

  Your vehicle's engine requires oil meeting GM Standard GM6094M. You should look for and use only an oil that meets GM Standard GM6094M.

- SAE 5W-30

  As shown in the viscosity chart, SAE 5W-30 is best for your vehicle.

  These numbers on an oil container show its viscosity, or thickness. Do not use other viscosity oils such as SAE 20W-50.

Oils meeting these requirements should also have the starburst symbol on the container. This symbol indicates that the oil has been certified by the American Petroleum Institute (API).

You should look for this information on the oil container, and use only those oils that are identified as meeting GM Standard GM6094M and have the starburst symbol on the front of the oil container.

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 your warranty.**

GM Goodwrench® oil meets all the requirements for your vehicle.

If you are in an area of extreme cold, where the temperature falls below –20°F (–29°C), it is recommended that you use either an SAE 5W-30 synthetic oil or an SAE 0W-30 oil. Both will provide easier cold starting and better protection for the engine at extremely low temperatures.

Engine Oil Additives

Do not add anything to the oil. The recommended oils with the starburst symbol that meet GM Standard GM6094M are all you will need for good performance and engine protection.

Engine Oil Life System

When to Change Engine Oil

Your vehicle has a computer system that lets you know 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 will be indicated can vary considerably. For the oil life system to work properly, you must reset the system every time the oil is changed.

When the system has calculated that oil life has been diminished, it will indicate that an oil change is necessary. A CHANGE ENGINE OIL SOON message will come on. See *DIC Warnings and Messages on page 197*.

Change your oil as soon as possible within the next 600 miles (1 000 km). It is possible that, if you are driving under the best conditions, the oil life system may not indicate that an oil change is necessary for over a year. However, your engine oil and filter must be changed at least once a year and at this time the system must be reset. Your dealer has GM-trained service people who will perform this work using genuine GM parts and reset the system. It is also important to check your oil regularly and keep it at the proper level.

If the system is ever reset accidentally, you must change your oil at 3,000 miles (5 000 km) since your 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 your engine oil and filter based on vehicle use. Anytime your oil is changed, reset the system so it can calculate when the next oil change is required. If a situation occurs where you change your oil prior to a CHANGE ENGINE OIL SOON message being turned on, reset the system.

Always reset the engine oil life to 100% after every oil change. It will not reset itself. To reset the Engine Oil Life System, do the following:

1. Display the OIL LIFE REMAINING on the DIC.
2. Press and hold the SET/RESET button on the DIC for more than five seconds. The oil life will change to 100%.

If the CHANGE ENGINE OIL SOON message comes back on when you start your vehicle, the Engine Oil Life System has not reset. Repeat the procedure.

What to Do with Used Oil

Used engine oil contains certain elements that may 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. Instead, recycle it by taking it to a place that collects used oil. If you have a problem properly disposing of used oil, ask your dealer, a service station, or a local recycling center for help.

Engine Air Cleaner/Filter

The engine air cleaner/filter is located in the engine compartment on the driver's side of the vehicle. See *Engine Compartment Overview on page 308* for more information on location.

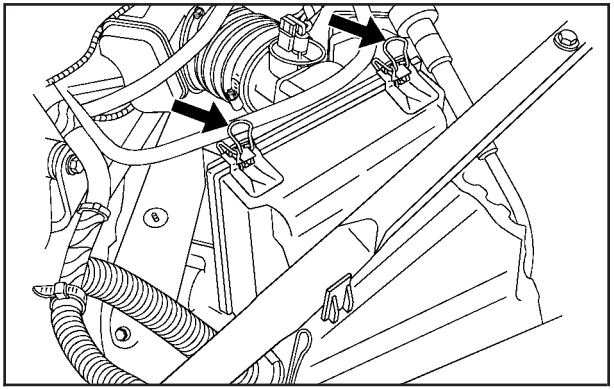
When to Inspect the Engine Air Cleaner/Filter

Inspect the air cleaner/filter at the Maintenance II intervals and replace it at the first oil change after each 50,000 mile (83 000 km) interval. See *Scheduled Maintenance on page 410* 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. Lift the filter cover tabs on top of the engine air cleaner/filter housing.
2. Push the filter cover housing toward the engine.
3. Pull out the filter.
4. Inspect or replace the engine air cleaner/filter.
5. To reinstall the cover, position the tabs through the hinges on the housing.
6. Push the cover tabs on top of the housing to lock the cover in place.

⚠ CAUTION:

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, a backfire can cause a damaging engine fire. And, dirt can easily get into your engine, which will damage it. Always have the air cleaner/filter in place when you are driving.**

Automatic Transaxle Fluid

When to Check and Change Automatic Transaxle Fluid

A good time to check your automatic transaxle fluid level is when the engine oil is changed.

Change the fluid and filter at the intervals listed in *Additional Required Services on page 413*, and be sure to use the transaxle fluid listed in *Recommended Fluids and Lubricants on page 420*.

How to Check Automatic Transaxle Fluid

Because this operation can be a little difficult, you may choose to have this done at the dealership service department.

If you do it yourself, be sure to follow all the instructions here, or you could get a false reading on the dipstick.

Notice: **Too much or too little fluid can damage the transaxle. Too much can mean that some of the fluid could come out and fall on hot engine or exhaust system parts, starting a fire. Too little fluid could cause the transaxle to overheat. Be sure to get an accurate reading if you check the transaxle fluid.**

Wait at least 30 minutes before checking the transaxle fluid level if you have been driving:

- When outside temperatures are above 90°F (32°C).
- At high speed for quite a while.
- In heavy traffic — especially in hot weather.
- While pulling a trailer.

To get the right reading, the fluid should be at normal operating temperature, which is 180°F to 200°F (82°C to 93°C).

Get the vehicle warmed up by driving about 15 miles (24 km) when outside temperatures are above 50°F (10°C). If it is colder than 50°F (10°C), you may have to drive longer.

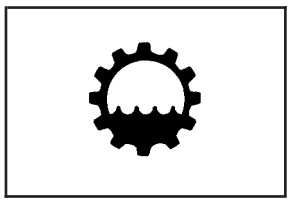
Checking the Fluid Level

Prepare your vehicle as follows:

1. Park your vehicle on a level place. Keep the engine running.
2. With the parking brake applied, place the shift lever in PARK (P).
3. With your foot on the brake pedal, move the shift lever through each gear range, pausing for about three seconds in each range. Then, position the shift lever in PARK (P).
4. Let the engine run at idle for three to five minutes.

Then, without shutting off the engine, follow these steps:

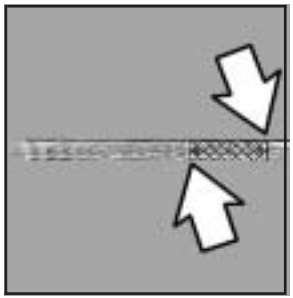
1. Pull out the dipstick and wipe it with a clean rag or paper towel.



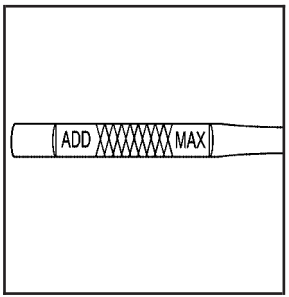
The transaxle fluid dipstick handle is the black loop with this symbol on it. It is located near the rear of the engine compartment.

See *Engine Compartment Overview on page 308* for more information on location.

2. Push it back in all the way, wait three seconds and then pull it back out again.



V6 Engines



5.3L V8 Engine

3. Check both sides of the dipstick, and read the lower level. The fluid level must be in the cross-hatched area.
4. If the fluid level is in the acceptable range, push the dipstick back in all the way.

How to Add Fluid

Refer to the Maintenance Schedule to determine what kind of transaxle fluid to use. See *Recommended Fluids and Lubricants on page 420*.

If the fluid level is low, add only enough of the proper fluid to bring the level into the cross-hatched area on the dipstick.

1. Pull out the dipstick.
2. Using a long-neck funnel, add enough fluid at the dipstick hole to bring it to the proper level.

   It does not take much fluid, generally less than one pint (0.5 L). Do not overfill.

Notice: **Use of the incorrect automatic transaxle fluid may damage your vehicle, and the damages may not be covered by your warranty. Always use the automatic transaxle fluid listed in *Recommended Fluids and Lubricants on page 420*.**

3. After adding fluid, recheck the fluid level as described under “How to Check Automatic Transaxle Fluid,” earlier in this section.
4. When the correct fluid level is obtained, push the dipstick back in all the way.

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 150,000 miles (240 000 km), 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 or if you need to add coolant to the radiator, see *Engine Overheating on page 326*.

A 50/50 mixture of clean, drinkable water and DEX-COOL® coolant will:

- Give freezing protection down to –34°F (–37°C).
- Give boiling protection up to 265°F (129°C).
- 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® may 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 your warranty. Always use DEX-COOL® (silicate-free) coolant in your 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.

⚠ CAUTION:

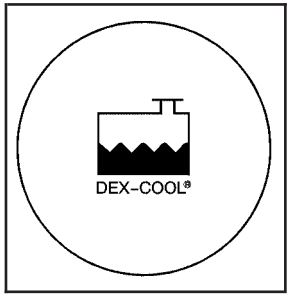
Adding only plain water to your cooling system can be dangerous. Plain water, or some other liquid such as alcohol, can boil before the proper coolant mixture will. Your vehicle's coolant warning system is set for the proper coolant mixture. With plain water or the wrong mixture, your engine could get too hot but you would not get the overheat warning. Your 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 you use an improper coolant mixture, your engine could overheat and be badly damaged. The repair cost would not be covered by your warranty. Too much water in the mixture can freeze and crack the engine, radiator, heater core, and other parts.**

If coolant needs to be added more than four times a year, have your dealer check the cooling system.

Notice: **If you use extra inhibitors and/or additives in your vehicle's cooling system, you could damage your vehicle. Use only the proper mixture of the engine coolant listed in this manual for the cooling system. See *Recommended Fluids and Lubricants on page 420* for more information.**

Checking Coolant



The coolant recovery tank cap has this symbol on it.

See *Engine Compartment Overview on page 308* for more information on the location of the coolant recovery tank.

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

When the engine is cold, the coolant level should be at the cold fill line or a little higher. The cold fill line is marked with the same symbol as the coolant recovery tank cap.

Adding Coolant

If more coolant is needed, add the proper DEX-COOL® coolant mixture at the coolant recovery tank, but be careful not to spill it.

If the coolant recovery tank is completely empty, add coolant to the cooling system through the coolant fill neck on the engine. See *Engine Overheating on page 326*.

⚠ CAUTION:

Turning the radiator pressure cap when the engine and radiator are hot can allow steam and scalding liquids to blow out and burn you badly. With the coolant recovery tank, you will almost never have to add coolant at the radiator. Never turn the radiator pressure cap — even a little — when the engine and radiator are hot.

⚠ CAUTION:

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.

Occasionally check the coolant level in the radiator. For information on how to add coolant to the radiator, see *Cooling System on page 329*.

Pressure Cap

Notice: **If the pressure cap is not tightly installed, coolant loss and possible engine damage may occur. Be sure the cap is properly and tightly secured.**

See *Engine Compartment Overview on page 308* for more information on location.

Engine Overheating

There is a coolant temperature gage and a warning light on the instrument panel that indicate an overheated engine condition. See *Engine Coolant Temperature Gage on page 182* and *Engine Coolant Temperature Warning Light on page 181*.

In addition, you will find an ENGINE OVERHEATED IDLE ENGINE and an ENGINE OVERHEATED STOP ENGINE message displayed on the vehicle's Driver Information Center (DIC). See *DIC Warnings and Messages on page 197* for more information.

If Steam Is Coming From Your Engine

⚠ CAUTION:

Steam from an overheated engine can burn you badly, even if you just open the hood. Stay away from the engine if you see or hear steam coming from it. Turn it off and get everyone away from the vehicle until it cools down. Wait until there is no sign of steam or coolant before you open the hood.

If you keep driving when the vehicles engine is overheated, the liquids in it can catch fire. You or others could be badly burned. Stop your engine if it overheats, and get out of the vehicle until the engine is cool.

CAUTION: (Continued)

CAUTION: (Continued)

See *Overheated Engine Protection Operating Mode on page 329* for information on driving to a safe place in an emergency.

Notice: **If your engine catches fire because you keep driving with no coolant, your vehicle can be badly damaged. The costly repairs would not be covered by your warranty. See *Overheated Engine Protection Operating Mode on page 329* for information on driving to a safe place in an emergency.**

If No Steam Is Coming From Your Engine

An overheat warning can indicate a serious problem.

If you get an engine overheat warning but see or hear no steam, the problem may not be too serious. Sometimes the engine can get a little too hot when you:

- Climb along hill on a hot day.
- Stop after high-speed driving.
- Idle for long periods in traffic.
- Tow a trailer.

If an overheat warning occurs without any sign of steam, try this for a minute or so:

1. In heavy traffic, let the engine idle in NEUTRAL (N) while stopped. If it is safe to do so, pull off the road, shift to PARK (P) or NEUTRAL (N) and let the engine idle.
2. Set the heater at the highest setting and the fan at the highest speed and open the windows as necessary.

If the overheat warning no longer exists, the vehicle can be driven. Just to be safe, drive slower for about 10 minutes. If the warning does not come back on, the vehicle can be driven normally.

If the warning continues, and you have 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 is still there, turn off the engine and get everyone out of the vehicle until it cools down. Also, see “Overheated Engine Protection Operating Mode” later in this section.

You may decide not to lift the hood but to get service help right away.

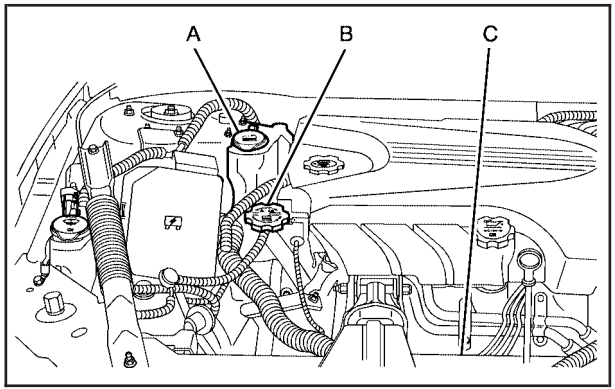
Overheated Engine Protection Operating Mode

This emergency operating mode allows your vehicle to be driven to a safe place in an emergency situation. If an overheated engine condition exists, an overheat protection mode which alternates firing groups of cylinders helps prevent engine damage. In this mode, you will notice a significant loss in power and engine performance. The coolant temperature gage will indicate an overheat condition exists. Driving extended miles (km) and/or towing a trailer in the overheat protection mode should be avoided.

Notice: **After driving in the overheated engine protection operating mode, to avoid engine damage, allow the engine to cool before attempting any repair. The engine oil will be severely degraded. Repair the cause of coolant loss, change the oil and reset the oil life system. See *Engine Oil on page 312*.**

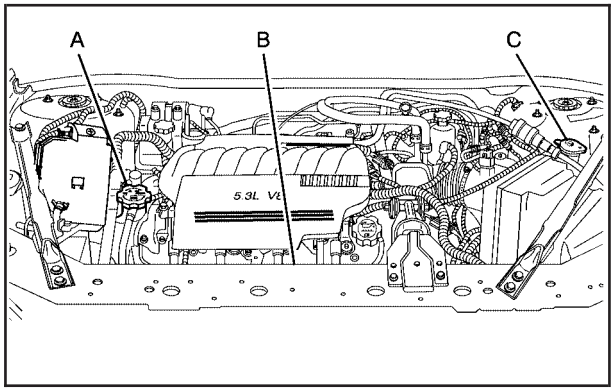
Cooling System

When you decide it is safe to lift the hood, here is what you will see:



3.5L V6 Engine shown, 3.9L Engine similar

A. Coolant Recovery Tank
B. Pressure Cap
C. Electric Engine Cooling Fans



5.3L V8 Engine

A. Pressure Cap
B. Electric Engine Cooling Fans
C. Coolant Recovery Tank

⚠ CAUTION:

An electric engine cooling fan under the hood 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.

If the coolant inside the coolant recovery tank is boiling, do not do anything else until it cools down. The vehicle should be parked on a level surface.

If your vehicle has one of the V6 engines, the coolant recovery tank is located in the rear of the engine compartment on the passenger's side of the vehicle. If your vehicle has the 5.3L V8 engine, the coolant recovery tank is located in the rear of the engine compartment on the driver's side of the vehicle. See *Engine Compartment Overview on page 308*.

When the engine is cold, the coolant level should be at or above the cold fill line on the coolant recovery tank. To check the coolant level, look for the cold fill line on the side of the coolant recovery tank that faces the engine. If the level is not correct, there may be a leak at the pressure cap or in the radiator hoses, heater hoses, radiator, water pump, or somewhere else in the cooling system.

⚠ CAUTION:

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

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

If there seems to be no leak, with the engine on, check to see if the electric engine cooling fans are running. If the engine is overheating, the fans should be running. If the fans are not running, your vehicle needs service.

Notice: **Engine damage from running your engine without coolant is not covered by your warranty. See *Overheated Engine Protection Operating Mode on page 329* for information on driving to a safe place in an emergency.**

Notice: **Using coolant other than DEX-COOL® may cause premature engine, heater core, or radiator corrosion. In addition, the engine coolant could require changing sooner, at 30,000 miles (50 000 km) or 24 months, whichever occurs first. Any repairs would not be covered by your warranty. Always use DEX-COOL® (silicate-free) coolant in your vehicle.**

How to Add Coolant to the Coolant Recovery Tank

⚠ CAUTION:

Adding only plain water to your cooling system can be dangerous. Plain water, or some other liquid such as alcohol, can boil before the proper coolant mixture will. Your vehicle's coolant warning system is set for the proper coolant mixture. With plain water or the wrong mixture, your engine could get too hot but you would not get the overheat warning. Your engine could catch fire and you or others could be burned. Use a 50/50 mixture of clean, drinkable water and DEX-COOL® coolant.

If you have not found a problem yet, but the coolant level is not at the cold fill line, add a 50/50 mixture of clean, drinkable water and DEX-COOL® engine coolant at the coolant recovery tank. See *Engine Coolant on page 323* for more information.

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.**

⚠ CAUTION:

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 the coolant level in the coolant recovery tank is at the cold fill line, start the vehicle.

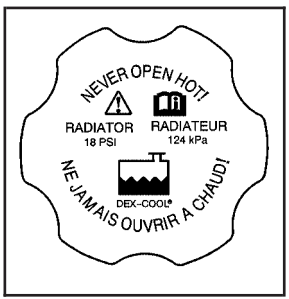
If the overheat warning continues, there is one more thing you can try. You can add the proper coolant mixture directly to the cooling system through the coolant fill neck on the engine, but be sure the system is cool before you do it.

⚠ CAUTION:

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 radiator pressure cap — even a little — they can come out at high speed. Never turn the cap when the cooling system, including the radiator pressure cap, is hot. Wait for the cooling system and radiator pressure cap to cool if you ever have to turn the pressure cap.

How to Add Coolant to the Cooling System

Notice: **Your engine has a specific cooling system drain and fill procedure. Failure to follow this procedure could cause your engine to overheat and be severely damaged. If your engine's cooling system needs to be drained and re-filled, please see your dealer.**



1. You can remove the pressure cap when the cooling system, including the pressure cap and upper radiator hose is no longer hot. Turn the pressure cap slowly counterclockwise.

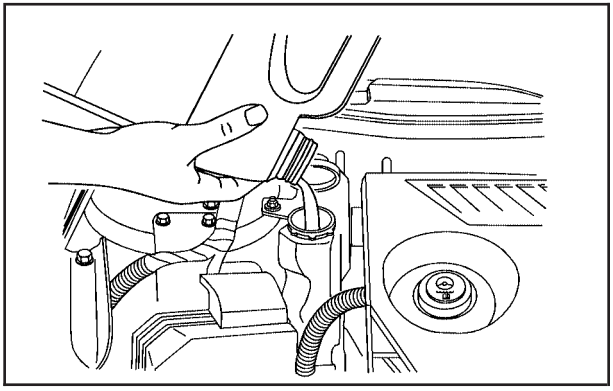
   If you hear a hiss, wait for that to stop. A hiss means that there is still some pressure left.

2. Then keep turning the pressure cap and remove it.

⚠ CAUTION:

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.

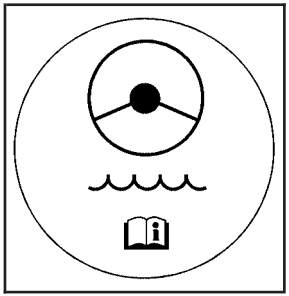
3. Fill the cooling system with the proper DEX-COOL® coolant mixture, up to the base of the filler neck. See *Engine Coolant on page 323* for more information about the proper coolant mixture.
4. Rinse or wipe any spilled coolant from the engine and the compartment.



5. Then fill the coolant recovery tank to the cold fill line.
6. Install the coolant recovery tank cap and the pressure cap. After a day or two of driving, when the engine is cold, check the coolant level in the recovery tank. If it is low, refill it to the cold fill line.

If the coolant in the recovery tank is constantly low, you should have a dealership service department inspect the vehicle for leaks.

Power Steering Fluid



The power steering fluid reservoir is located toward the rear of the engine compartment on the passenger's side of the vehicle. See *Engine Compartment Overview on page 308* for reservoir location.

When to Check Power Steering Fluid

It is not necessary to regularly check power steering fluid unless you suspect there is a leak in the system or 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. Wipe the cap and the top of the reservoir clean.
3. Unscrew the cap and wipe the dipstick with a clean rag.
4. Replace the cap and completely tighten it.
5. Remove the cap again and look at the fluid level on the dipstick.

The fluid level should be somewhere within the cross-hatched area on the dipstick. If the fluid is at the ADD mark, you should add fluid.

What to Use

To determine what kind of fluid to use, see *Recommended Fluids and Lubricants on page 420*. Always use the proper fluid. Failure to use the proper fluid can cause leaks and damage hoses and seals.

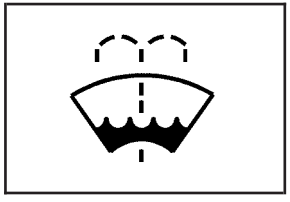
Windshield Washer Fluid

What to Use

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

Adding Washer Fluid

A WASHER FLUID LOW ADD FLUID message will be displayed on the Driver Information Center (DIC) when you need to add windshield washer fluid to your vehicle. See *DIC Warnings and Messages on page 197* for more information.



Open the cap with the washer symbol on it. Add washer fluid until the tank is full.

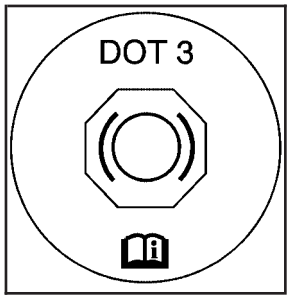
See *Engine Compartment Overview on page 308* for more information on location.

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 your washer fluid tank only three-quarters full when it is very cold. This allows for 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 your washer system and paint.**

Brakes

Brake Fluid



Your brake master cylinder reservoir is filled with DOT-3 brake fluid. See *Engine Compartment Overview on page 308* for the location of the reservoir.

There are only two reasons why the brake fluid level in the reservoir might go down. The first is that the brake fluid goes down to an acceptable level during normal brake lining wear. When new linings are put in, the fluid level goes back up. The other reason is that fluid is leaking out of the brake system. If it is, you should have your brake system fixed, since a leak means that sooner or later your brakes will not work well, or will not work at all.

So, it is not a good idea to top off your brake fluid. Adding brake fluid will not correct a leak. If you add fluid when your linings are worn, then you will have too much fluid when you get new brake linings. You should add or remove brake fluid, as necessary, only when work is done on the brake hydraulic system.

⚠ CAUTION:

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

When your brake fluid falls to a low level, your brake warning light will come on. See *Brake System Warning Light on page 179*.

What to Add

When you do need brake fluid, use only DOT-3 brake fluid. Use new brake fluid from a sealed container only. See *Recommended Fluids and Lubricants on page 420*.

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

⚠ CAUTION:

With the wrong kind of fluid in the brake system, the brakes may not work well, or they may not even work at all. This could cause a crash. Always use the proper brake fluid.

Notice:

- **Using the wrong fluid can badly damage brake system parts. For example, just a few drops of mineral-based oil, such as engine oil, in the brake system can damage brake system parts so badly that they will have to be replaced. Do not let someone put in the wrong kind of fluid.**
- **If you spill brake fluid on your vehicle's painted surfaces, the paint finish can be damaged. Be careful not to spill brake fluid on your vehicle. If you do, wash it off immediately. See *Washing Your Vehicle on page 394*.**

Brake Wear

Your vehicle has four-wheel 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 may come and go or be heard all the time your vehicle is moving, except when you are pushing on the brake pedal firmly.

⚠ CAUTION:

The brake wear warning sound means that soon the brakes will not work well. That could lead to an accident. When you hear the brake wear warning sound, have your vehicle serviced.

Notice: **Continuing to drive with worn-out brake pads could result in costly brake repair.**

Some driving conditions or climates may cause a brake squeal when the brakes are first applied or lightly applied. This does not mean something is wrong with your 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 GM torque specifications.

Brake linings should always be replaced as complete axle sets.

Brake Pedal Travel

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

Brake Adjustment

Every time you apply the brakes, with or without the vehicle moving, your 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. Your vehicle was designed and tested with top-quality GM brake parts. When you replace parts of your braking system — for example, when your brake linings wear down and you need new ones put in — be sure you get new approved GM replacement parts. If you do not, your brakes may no longer work properly. For example, if someone puts in brake linings that are wrong for your vehicle, the balance between your front and rear brakes can change — for the worse. The braking performance you have come to expect can change in many other ways if someone puts in the wrong replacement brake parts.

Battery

Your vehicle has a maintenance free battery. When it is time for a new battery, get one that has the replacement number shown on the original battery's label. We recommend an ACDelco® replacement battery. See *Engine Compartment Overview on page 308* for battery location.

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

Vehicle Storage

If you are not going to drive your vehicle for 25 days or more, remove the black, negative (–) cable from the battery. This will help keep your battery from running down.

⚠ CAUTION:

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 341* for tips on working around a battery without getting hurt.

Jump Starting

If your vehicle's 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.

⚠ CAUTION:

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 your vehicle that would not be covered by your warranty.**

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

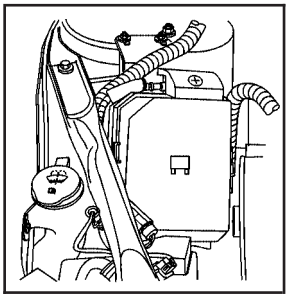
2. Get the vehicles close enough so the jumper cables can reach, but be sure the vehicles are not touching each other. If they are, it could cause a ground connection you do not want. You would not be able to start your vehicle, and the bad grounding could damage the electrical systems.

   To avoid the possibility of the vehicles rolling, set the parking brake firmly on both vehicles involved in the jump start procedure. Put an automatic transaxle in PARK (P) or a manual transaxle in NEUTRAL before setting the parking brake.

Notice: **If you leave your radio or other accessories on during the jump starting procedure, they could be damaged. The repairs would not be covered by your warranty. Always turn off your radio and other accessories when jump starting your vehicle.**

3. Turn off the ignition on both vehicles. Unplug unnecessary accessories plugged into the cigarette lighter or the accessory power outlets. Turn off the radio and all lamps that are not needed. This will avoid sparks and help save both batteries. And it could save the radio!
4. Open the hoods and locate the batteries. Find the positive (+) and negative (–) terminal locations on each vehicle.

   You will not need to access your battery for jump starting. Your vehicle has a remote positive (+) jump starting terminal for that purpose. The remote positive (+) terminal is located in the engine compartment on the passenger's side of the vehicle, on the underhood fuse block. See *Engine Compartment Overview on page 308* for more information on location.



To uncover the remote positive (+) terminal, remove the fuse block cover. You should always use the remote positive (+) terminal instead of the positive (+) terminal on the battery.

⚠ CAUTION:

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.

⚠ CAUTION:

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

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

⚠ CAUTION:

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 be damaged too.

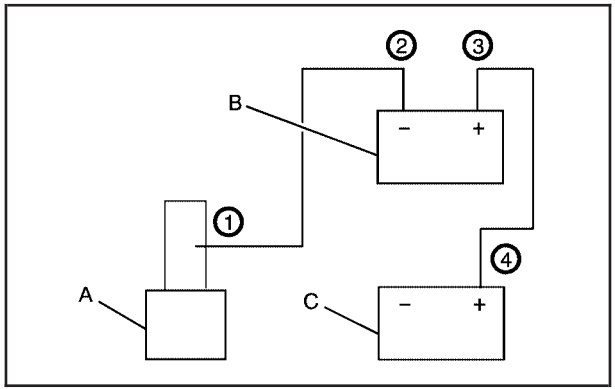
   Before you connect the cables, here are some basic things you should know. Positive (+) will go to positive (+) or to a remote positive (+) terminal if the vehicle has one. Negative (–) will go to a heavy, unpainted metal engine part or to a remote negative (–) terminal if the vehicle has one.

   Do not connect positive (+) to negative (–), or you will get a short that would damage the battery and maybe other parts too. And do not connect the negative (–) cable to the negative (–) terminal on the dead battery because this can cause sparks.

6. Connect the red positive (+) cable to the positive (+) terminal location of 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 location of the vehicle with the good battery. Use a remote positive (+) terminal if the vehicle has one.
8. Now connect the black negative (–) cable to the negative (–) terminal location of the vehicle with 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 at least 18 inches (45 cm) 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. 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 your 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 (+) Terminal 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 fuse block cover to its original position.

Headlamp Aiming

Headlamp aim has been preset at the factory and should need no further adjustment.

However, if your vehicle is damaged in an accident, the headlamp aim may be affected. Aim adjustment to the low-beam headlamps may be necessary if it is difficult to see the lane markers (for horizontal aim), or if oncoming drivers flash their high-beam headlamps at you (for vertical aim).

If you believe your headlamps need to be re-aimed, it is recommend that you take the vehicle to your dealer for service.

Bulb Replacement

For the proper type of replacement bulbs, see *Replacement Bulbs on page 351*.

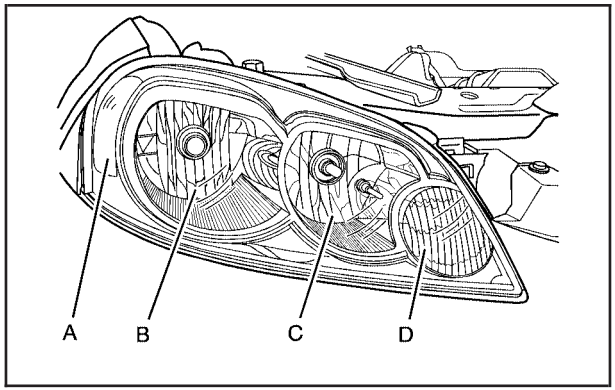
For any bulb changing procedure not listed in this section, contact your dealer.

Halogen Bulbs

⚠ CAUTION:

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.

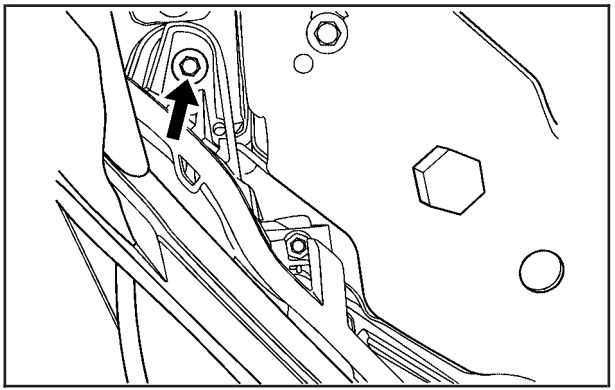
Headlamps, Front Turn Signal, Sidemarker, and Parking Lamps



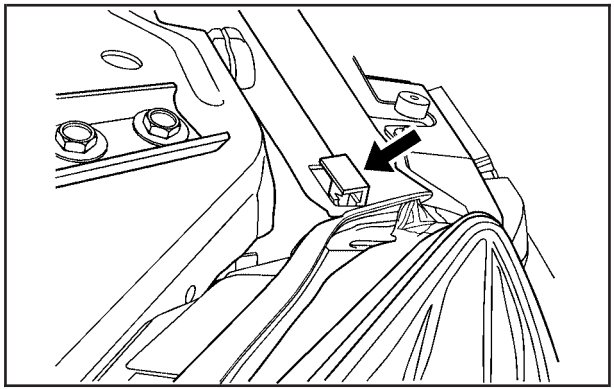
A. Sidemarker
B. Low-Beam Headlamp
C. High-Beam Headlamp
D. Parking/Turn Signal Lamp

To replace one of these bulbs, do the following:

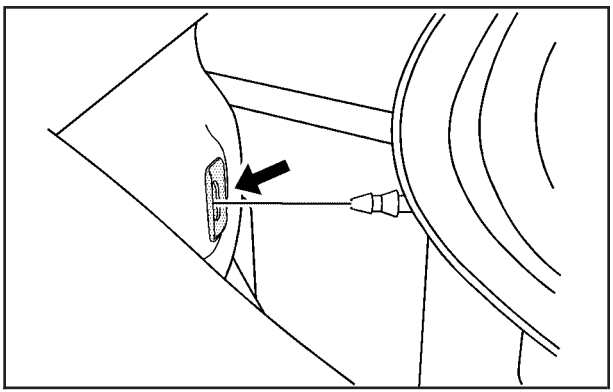
1. Open the hood. See *Hood Release on page 307* for more information.



2. Remove the screw from the headlamp assembly.

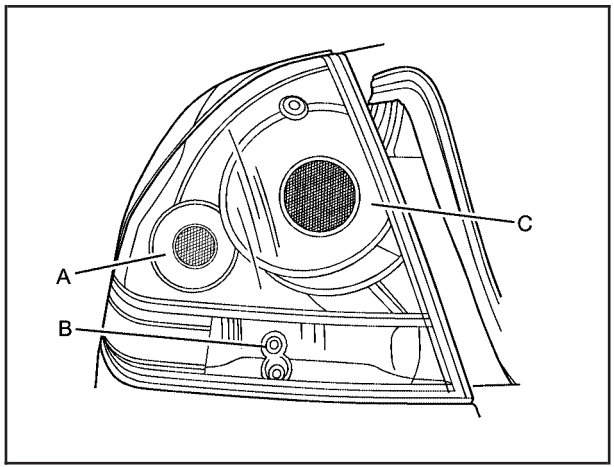


3. Remove the headlamp plastic retainer by pulling it up.
4. Pull the headlamp assembly away from the vehicle and remove the electrical connector.
5. Remove the round dust caps to gain access to the bulbs.
6. Turn the old bulb counterclockwise and remove it from the retaining ring by pulling it away from the headlamp.
7. Remove the electrical connector from the bulb by raising the lock tab and pulling the connector away from the bulb's base.
8. Install the electrical connector to the bulb.
9. Install the new bulb by inserting the smallest tab on the bulb base into the matching notch in the retaining ring. Turn the bulb a quarter-turn clockwise until it stops.
10. Reverse Steps 1 through 5 to reinstall the headlamp assembly.



When you reinstall the headlamp assembly, make sure to line up the pin in the headlamp assembly with the slot in the vehicle.

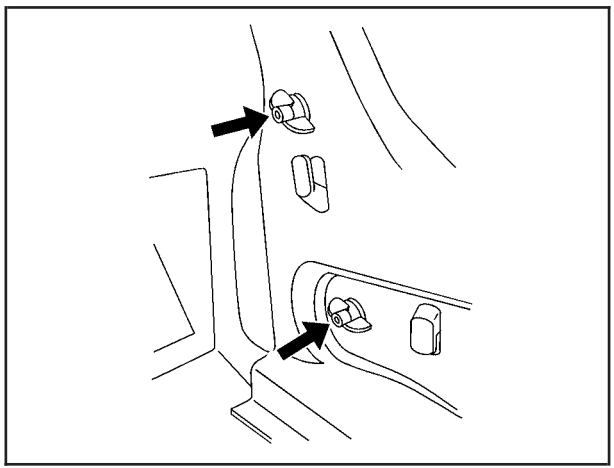
Taillamps, Turn Signal, Sidemarker, Stoplamps and Back-up Lamps



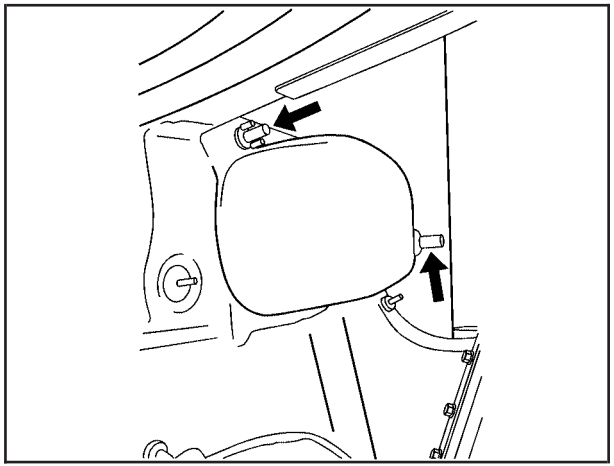
A. Rear Sidemarker Lamp
B. Back-up Lamp
C. Stoplamp/Taillamp/Turn Signal

To replace one of these bulbs, do the following:

1. Open the trunk. See *Trunk on page 103* for more information.
2. Remove the convenience net, if your vehicle has one. Unhook the net from the upper wing nut.



3. Remove the two upper (convenience net) wing nuts.
4. Pull the carpet away from the rear of the vehicle.



5. Remove the two hex nuts.
6. Pull out the taillamp assembly and disconnect the wiring harness.
7. Turn the bulb socket counterclockwise to remove it.
8. Install a new bulb.
9. Turn the bulb socket clockwise to reinstall it.
10. Reverse Steps 1 through 6 to reinstall the taillamp assembly.

    When reinstalling the taillamp assembly, make sure that you line up the four posts on the assembly with the slots in the vehicle.

License Plate Lamp

To replace one of these bulbs, do the following:

1. Turn the lamp assembly counterclockwise and pull the lamp assembly out of the connector.
2. Pull the old bulb from the lamp assembly, keeping the bulb straight as you pull it out.
3. Install the new bulb.
4. Reverse Steps 1 through 3 to reinstall the license plate lamp.

Replacement Bulbs

Exterior Lamp	Bulb Number
Back-Up	921
Front Parking/Turn Signal	3157NAK
License Plate Lamp	194
Headlamps	
High-Beam	H9
Low-Beam	H11
Sidemarker	194
Stoplamp, Taillamp, and Turn Signal	3057

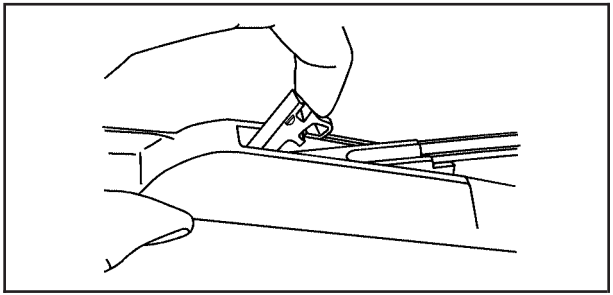
For replacement bulbs not listed here, contact your dealer.

Windshield Wiper Blade Replacement

Windshield wiper blades should be inspected for wear or cracking. See *Scheduled Maintenance on page 410* for more information on wiper blade inspection.

Replacement blades come in different types and are removed in different ways. Here's how to remove the wiper blade:

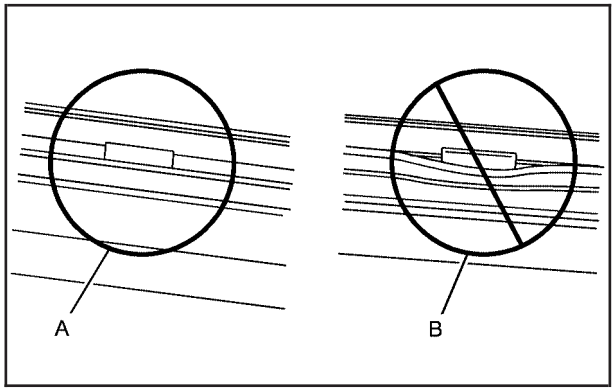
1. Pull the windshield wiper arm connector away from the windshield.



2. While holding the wiper arm, pull the clip up from the blade connecting point, and pull the blade assembly down toward the windshield to remove it from the wiper arm.
3. Install the new wiper blade onto the wiper arm and snap the clip down into place.

To remove and replace the wiper blade element do the following:

1. The wiper blade element has two notches at one end which are engaged by the bottom claw set of the wiper blade. At the notched end of the wiper blade, pull the wiper blade element from the wiper blade assembly.
2. To replace the element, start at the heel end of the wiper blade, which is the end nearest to the base of the wiper arm, and slide the wiper blade element, notched end last, into the wiper blade claw sets.
3. To engage the last claw into the notched end of the wiper blade element, squeeze the wiper blade element at the notched area, and push the wiper blade element so the claw fits into the notch.
4. Be sure the two wiper blade element notches are engaged by the last claw set, and that all the other claws are properly engaged in the slots of the wiper blade element on both sides.



A. Correct Installation

B. Incorrect Installation

For the proper type and size windshield wiper blades, see *Normal Maintenance Replacement Parts on page 421*.

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 GM Warranty booklet for details. For additional information refer to the tire manufacturer's booklet included with your vehicle.

⚠ CAUTION:

Poorly maintained and improperly used tires are dangerous.

- **Overloading your vehicle's tires can cause overheating as a result of too much friction. You could have an air-out and a serious accident. See *Loading Your Vehicle on page 279*.**

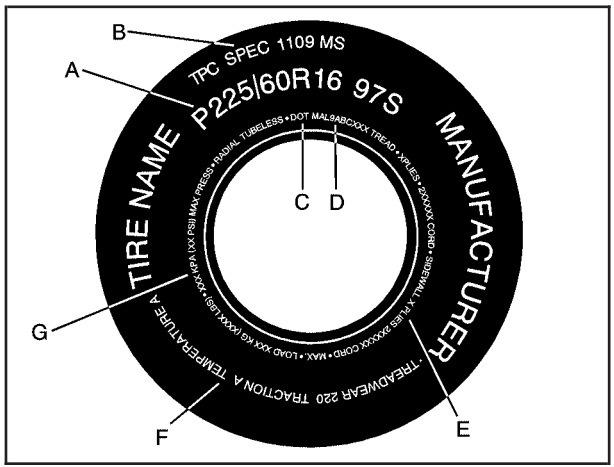
CAUTION: (Continued)

CAUTION: (Continued)

- **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 vehicle's tires are cold. See *Inflation - Tire Pressure on page 362*.**
- **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 the tire's tread is badly worn, or if your vehicle's tires have been damaged, replace them.**

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.

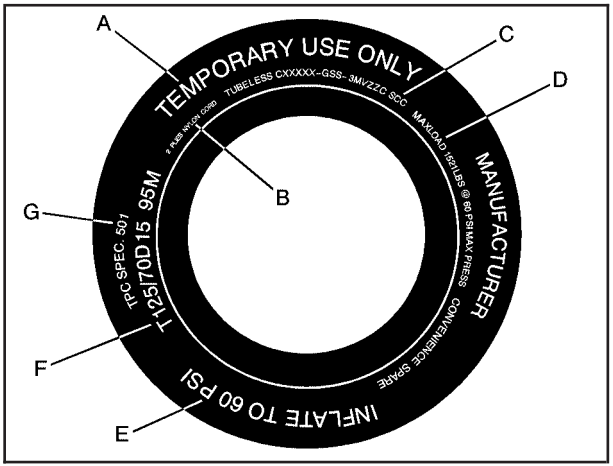
(C) DOT (Department of Transportation): The Department of Transportation (DOT) code indicates that the tire is in compliance with the U.S. Department of Transportation Motor Vehicle Safety Standards.

(D) Tire Identification Number (TIN): The letters and numbers following 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 372*.

(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) Temporary Use Only: The compact spare tire or temporary use tire has a tread life of approximately 3,000 miles (5 000 km) and should not be driven at speeds over 65 mph (105 km/h). 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 389* and *If a Tire Goes Flat on page 377*.

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

(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.

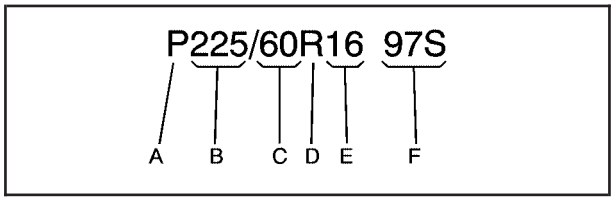
(E) Tire Inflation: The temporary use tire or compact spare tire should be inflated to 60 psi (420 kPa). For more information on tire pressure and inflation see *Inflation - Tire Pressure on page 362*.

(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 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 range and speed rating of the tire. The load index represents the load carry capacity a tire is certified to carry. The load index can range from 1 to 279. The speed rating is the maximum speed a tire is certified to carry a load. Speed ratings range from A to Z.

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 pounds per square inch (psi) or kilopascal (kPa).

Accessory Weight: This means the combined weight of optional accessories. Some examples of optional accessories are, automatic transmission/transaxle, 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 pounds per square inch (psi) or kilopascals (kPa) before a tire has built up heat from driving. See *Inflation - Tire Pressure on page 362*.

Curb Weight: This means 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 *Loading Your Vehicle on page 279*.

GAWR FRT: Gross Axle Weight Rating for the front axle. See *Loading Your Vehicle on page 279*.

GAWR RR: Gross Axle Weight Rating for the rear axle. See *Loading Your Vehicle on page 279*.

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 may 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 150 lbs (68 kg). See *Loading Your Vehicle on page 279*.

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 *Inflation - Tire Pressure on page 362* and *Loading Your Vehicle on page 279*.

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 1/16 inch (1.6 mm) of tread remains. See *When It Is Time for New Tires on page 369*.

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 372*.

Vehicle Capacity Weight: The number of designated seating positions multiplied by 150 lbs (68 kg) plus the rated cargo load. See *Loading Your Vehicle on page 279*.

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 *Loading Your Vehicle on page 279*.

Inflation - 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 Tire and Loading Information label is attached to the vehicle's center pillar (B-pillar). 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 *Loading Your Vehicle on page 279*. 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, it should be at 60 psi (420 kPa). For additional information regarding the compact spare tire, see *Compact Spare Tire on page 389*.

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 mile (1.6 km).

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.

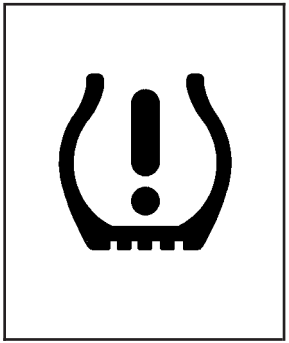
Tire Pressure Monitor System

The Tire Pressure Monitor System (TPMS) uses radio and sensor technology to check tire pressure levels. If your vehicle has this feature, sensors are mounted onto each tire and wheel assembly, except for the spare tire. The TPMS sensors monitor the air pressure in your vehicle's tires and transmit tire pressure readings to a receiver located in the vehicle.

When a low tire pressure condition is detected, the TPMS will illuminate the low tire pressure warning symbol on the instrument panel cluster, and at the same time a message to check the pressure in a specific tire will appear on the Driver Information Center (DIC) display. The low tire pressure warning symbol on the instrument panel cluster and the CHECK TIRE PRESSURE message will appear at each ignition cycle until the tires are inflated to the correct inflation pressure. Using the DIC, tire pressure levels can be viewed by the driver. For additional information and details about the DIC operation and displays see *DIC Operation and Displays on page 189* and *DIC Warnings and Messages on page 197*.

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.

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.

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 *Loading Your Vehicle on page 279*, for an example of the Tire and Loading Information label and its location on your vehicle. Also see *Inflation - Tire Pressure on page 362*.

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 and Rotation on page 368* and *Tires on page 354*.

Notice: **Do not use a tire sealant if your vehicle has Tire Pressure Monitors. The liquid sealant can damage the tire pressure monitor sensors.**

The TPMS will not function properly if one or more of the TPMS sensors are missing or inoperable. If the system detects a missing or inoperable sensor, an error message SERVICE TIRE MONITOR SYSTEM will be shown on the DIC display. If you have replaced a tire/wheel assembly without transferring the TPMS sensors, the error message will be displayed. Once you re-install the TPMS sensors, the error message should go off. See your GM dealer for service if all TPMS sensors are installed and the error message comes on and stays on.

TPMS Sensor Identification Codes

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's side front tire, passenger's side front tire, passenger's side rear tire, and driver's side rear tire using a TPMS diagnostic tool. See your GM dealer for service.

The TPMS sensors may 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.

You will 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 RUN with the engine off.
3. Using the DIC, press the vehicle information button until the LEARN TIRE POSITIONS message displays.
4. Press the set/reset button to allow the system to learn the tire positions. The horn will sound twice to indicate the receiver is ready, and the TIRE LEARNING ACTIVE message will display. The TPMS system is ready for the sensor matching process to begin.
5. Start with the driver's side front tire.
6. 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. To decrease the tire's air-pressure use the pointed end of the valve cap, a pencil-style air pressure gage, or a key.

7. Proceed to the passenger's side front tire, and repeat the procedure in Step 6.
8. Proceed to the passenger's side rear tire, and repeat the procedure in Step 6.
9. Proceed to the driver's side rear tire, and repeat the procedure in Step 6.
10. After hearing the confirming horn chirp for the driver's side rear tire, the tire learning process ends. Turn the ignition switch to OFF.
11. Set all four tires to the recommended air pressure level as indicated on the Tire and Loading Information label.
12. Put the valve caps back on the valve stems.

Federal Communications Commission (FCC) and Industry and Science Canada

The Tire Pressure Monitor System (TPMS) operates on a radio frequency and complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

The Tire Pressure Monitor System (TPMS) operates on a radio frequency and complies with RSS-210 of Industry and Science Canada. Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

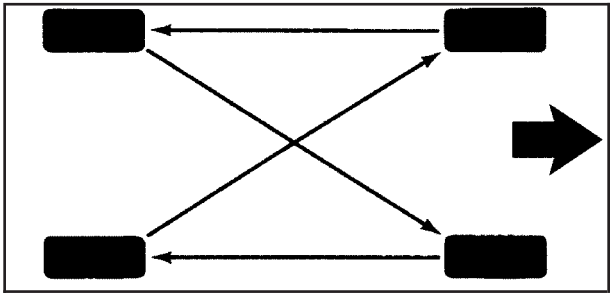
Changes or modifications to this system by other than an authorized service facility could void authorization to use this equipment.

Tire Inspection and Rotation

Tires should be rotated every 5,000 to 8,000 miles (8 000 to 13 000 km).

Any time you notice unusual wear, rotate your 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 369* and *Wheel Replacement on page 374* for more information.

The purpose of regular rotation is to achieve more uniform wear for all tires on the vehicle. The first rotation is the most important. See *Scheduled Maintenance on page 410* for scheduled rotation intervals.



When rotating your tires, always use the correct rotation pattern shown here.

Do not include the compact spare tire in your 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 *Inflation - Tire Pressure on page 362* and *Loading Your Vehicle on page 279*.

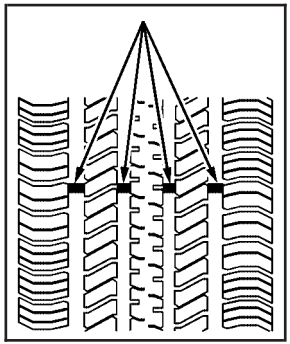
Reset the Tire Pressure Monitor System. See “TPMS Sensor Identification Codes” under *Tire Pressure Monitor System on page 363*.

Make certain that all wheel nuts are properly tightened. See “Wheel Nut Torque” under *Capacities and Specifications on page 405*.

⚠ CAUTION:

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 you change a wheel, remove any rust or dirt from places where the wheel attaches to the vehicle. In an emergency, you can 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 *Changing a Flat Tire on page 378*.

When It Is Time for New Tires



One way to tell when it is time for new tires is to check the treadwear indicators, which will appear when your tires have only 1/16 inch (1.6 mm) or less of tread remaining.

You need a new tire 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.

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 by the tire manufacturer. 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 355* for additional information.

⚠ CAUTION:

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 389*.

⚠ CAUTION:

If you use bias-ply tires on your 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 your 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 may 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 363*.

Your vehicle's original equipment tires are listed on the Tire and Loading Information Label. This label is attached to the vehicle's center pillar (B-pillar). See *Loading Your Vehicle on page 279*, 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, traction control, and electronic stability control, the performance of these systems can be affected.

⚠ CAUTION:

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 GM specific wheel and tire systems developed for your vehicle, and have them properly installed by a GM certified technician.

See *Buying New Tires on page 370* and *Accessories and Modifications on page 297* for additional information.

Uniform Tire Quality Grading

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

Treadwear 200 Traction AA Temperature A

The following information relates to the system developed by the United States National Highway Traffic Safety Administration (NHTSA), which grades tires by treadwear, traction, and temperature performance. This applies only to vehicles sold in the United States. The grades are molded on the sidewalls of most passenger car tires. The Uniform Tire Quality Grading (UTQG) system does not apply to deep tread, winter-type snow tires, space-saver, or temporary use spare tires, tires with nominal rim diameters of 10 to 12 inches (25 to 30 cm), or to some limited-production tires.

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

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.

Warning: The traction grade assigned to this tire is based on straight-ahead braking traction tests, and does not include acceleration, cornering, hydroplaning, or peak traction characteristics.

Temperature – A, B, C

The temperature grades are A (the highest), B, and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a level of performance which all passenger car tires must meet under the Federal Motor 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.

Warning: The temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, underinflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

Wheel Alignment and Tire Balance

The tires and wheels on your vehicle were aligned and balanced carefully at the factory to give you 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 you notice unusual tire wear or your vehicle pulling to one side or the other, the alignment may need to be checked. If you notice your vehicle vibrating when driving on a smooth road, your tires and wheels may need to be rebalanced. See your dealer for proper diagnosis.

Wheel Replacement

Replace any wheel that is bent, cracked, or badly rusted or corroded. If wheel nuts keep coming loose, the wheel, wheel bolts, and wheel nuts should be replaced. If the wheel leaks air, replace it (except some aluminum wheels, which can sometimes be repaired). See your dealer if any of these conditions exist.

Your dealer 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 GM original equipment parts. This way, you will be sure to have the right wheel, wheel bolts, and wheel nuts for your vehicle.

⚠ CAUTION:

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 *Changing a Flat Tire on page 378* for more information.

Used Replacement Wheels

⚠ CAUTION:

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 GM original equipment wheel.

Tire Chains

⚠ CAUTION:

If your vehicle has P225/55R17 or P235/50R18 size tires, do not use tire chains, there is not enough clearance.

Tire chains used on a vehicle without the proper amount of clearance can cause damage to the brakes, suspension, or other vehicle parts. The area damaged by the tire chains could cause you to lose control of your 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 your vehicle and tire size combination and road conditions. Follow that manufacturer's instructions.

CAUTION: (Continued)

CAUTION: (Continued)

To help avoid damage to your vehicle, drive slowly, readjust, or remove the device if it is contacting your vehicle, and do not spin your wheels.

If you do find traction devices that will fit, install them on the front tires.

Notice: **If your vehicle has a tire size other than P225/55R17 or P235/50R18 size tires, use tire chains only where legal and only when you must. Use only SAE Class S-type chains that are the proper size for your tires. Install them on the front tires and tighten them as tightly as possible with the ends securely fastened. Drive slowly and follow the chain manufacturer's instructions. If you can hear the chains contacting your vehicle, stop and retighten them. If the contact continues, slow down until it stops. Driving too fast or spinning the wheels with chains on will damage your vehicle.**

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 will create 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.

⚠ CAUTION:

Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the appropriate safety equipment and training. The jack provided with your vehicle 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. Use the jack provided with your vehicle only for changing a flat tire.

If a tire goes flat, the next part shows how to use the jacking equipment to change a flat tire safely.

Changing a Flat Tire

If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place. Turn on your vehicle's hazard warning flashers. See *Hazard Warning Flashers on page 150* for more information.

⚠ CAUTION:

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 the shift lever in PARK (P).**
3. **Turn off the engine and do not restart while the vehicle is raised.**
4. **Do not allow passengers to remain in the vehicle.**

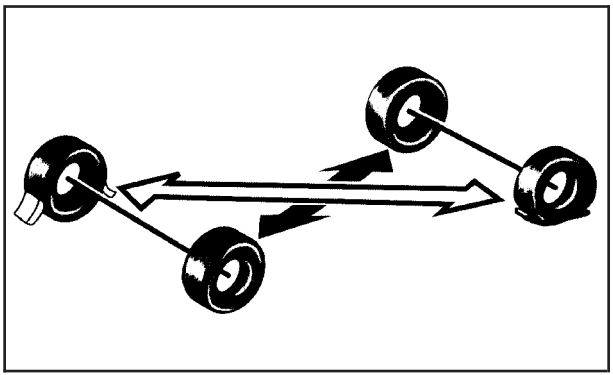
To be even more certain the vehicle will not move, you should put blocks at the

CAUTION: (Continued)

CAUTION: (Continued)

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 your vehicle has a flat tire, use the following example as a guide to assist you in the placement of wheel blocks.

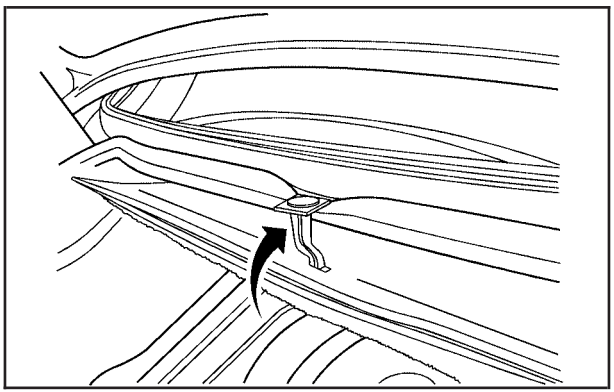


The following information will tell you next how to use the jack and change a tire.

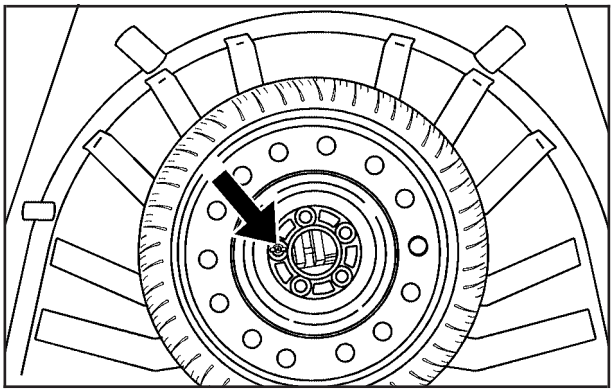
Removing the Spare Tire and Tools

The equipment you will need is located in the trunk.

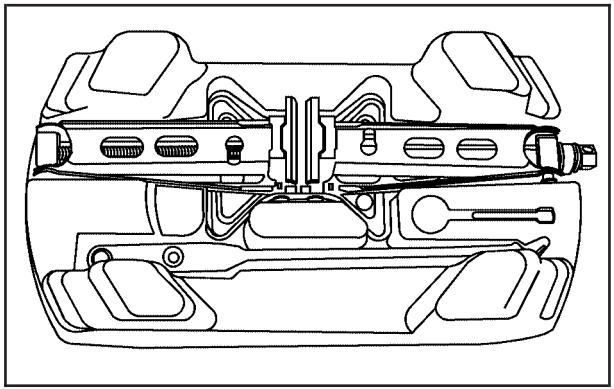
1. Open the trunk. See *Trunk on page 103* for more information.
2. Remove the convenience net if the vehicle has one.



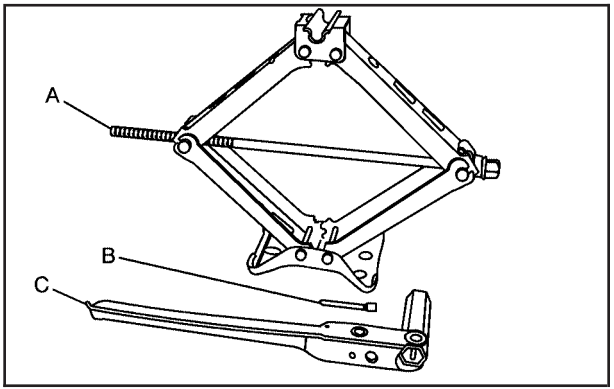
3. Lift the handle on the spare tire cover. The handle may hook on the front edge of the trunk's weatherstrip to hold the cover out of the way.



4. Turn the wing nut counterclockwise and remove it.
5. Remove the compact spare tire.



6. Turn the nut holding the jack counterclockwise and remove it. Then remove the jack and wrench.

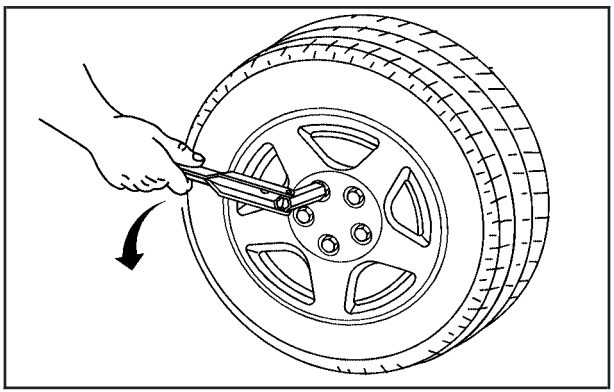


The tools you will need to change a tire include the jack (A), extension and protection guide (B), and wheel wrench (C).

Removing the Flat Tire and Installing the Spare Tire

Your vehicle may have aluminum wheels with exposed wheel nuts. Use the wheel wrench to loosen all the wheel nuts. Do not remove them yet.

Or, your vehicle may have steel wheel covers.

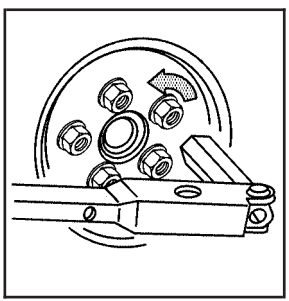


To remove the steel wheel covers and wheel nut caps, loosen the plastic nut caps with the wheel wrench in a counterclockwise direction.

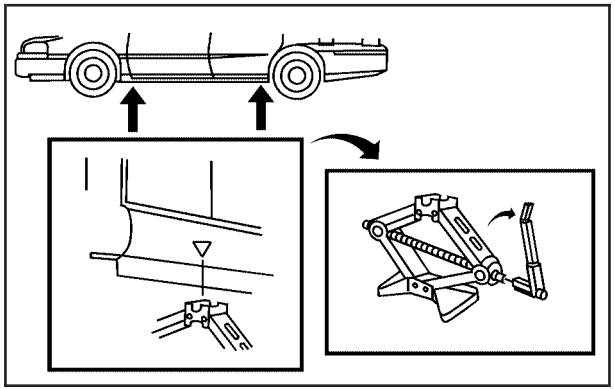
If needed, you can finish loosening them with your fingers. The plastic nut caps will not come off.

Use the flat end of the wheel wrench and pry along the edge of the cover until it comes off. The edge of the wheel cover could be sharp, so do not try to remove it with your bare hands. Do not drop the cover or lay it face down, as it could become scratched or damaged.

Once you have removed the wheel cover, use the following procedure to remove the flat tire and install the spare tire.



1. Turn the wheel wrench once on each wheel nut to loosen them. Do not remove them yet.



2. For all wheel types, find the jacking location using the diagram above and the corresponding hoisting notches located on the bottom side of the plastic molding. The notches in the plastic molding are marked with a triangle shape to help you find them.

   The front location is about 7.0 inches (17.7 cm) from the rear edge of the front wheel well. The rear location is about 4.5 inches (11.4 cm) from the rear edge of the wheel well.

3. Put the compact spare tire near you.

⚠ CAUTION:

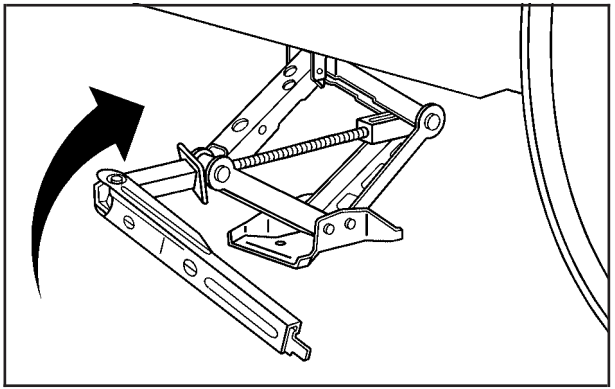
Getting under a vehicle when it is jacked up is dangerous. If the vehicle slips off the jack you could be badly injured or killed. Never get under a vehicle when it is supported only by a jack.

⚠ CAUTION:

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.

⚠ CAUTION:

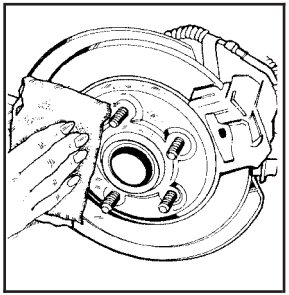
Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the appropriate safety equipment and training. The jack provided with your vehicle is designed only for changing a flat tire. If it is used for anything else, you or others could be badly injured or killed if the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



4. Raise the vehicle by turning the jack handle clockwise. Raise the vehicle far enough off the ground to install the compact spare tire.
5. Remove all wheel nuts and take off the flat tire.

⚠ CAUTION:

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

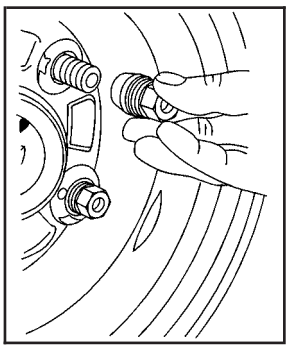


6. Remove any rust or dirt from the wheel bolts, mounting surfaces and spare wheel.

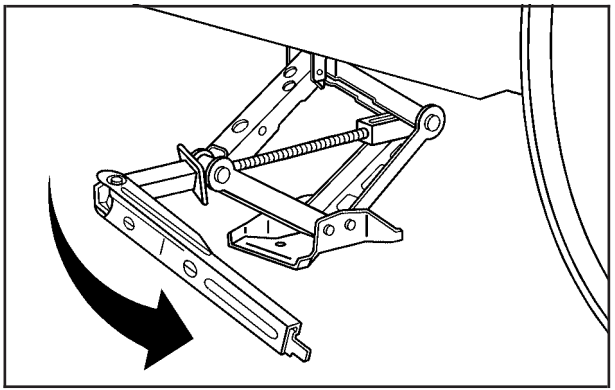
7. Install the compact spare tire.

⚠ CAUTION:

Never use oil or grease on studs or nuts. If you do, the nuts might come loose. Your wheel could fall off, causing a serious accident.



8. Reinstall the wheel nuts with the rounded end of the nuts toward the wheel. Tighten each nut by hand until the wheel is held against the hub.

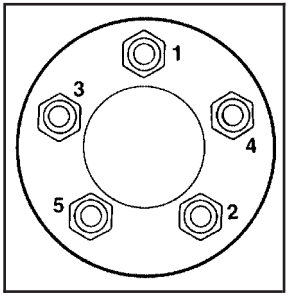


9. Lower the vehicle by turning the jack handle counterclockwise. Lower the jack completely.

⚠ CAUTION:

Incorrect wheel nuts or improperly tightened wheel nuts can cause the wheel to come loose and even come off. This could lead to an accident. Be sure to use the correct wheel nuts. If you have to replace them, be sure to get new GM original equipment wheel nuts. Stop somewhere as soon as you can and have the nuts tightened with a torque wrench to the proper torque specification. See *Capacities and Specifications on page 405* for wheel nut torque specification.

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 405* for the wheel nut torque specification.**



10. Tighten the wheel nuts firmly in a crisscross sequence as shown.

Notice: **Wheel covers will not fit on your compact spare. If you try to put a wheel cover on the compact spare, you could damage the cover or the spare.**

Do not try to put the wheel cover on your compact spare tire. It will not fit. Store the wheel cover in the trunk until you have the flat tire repaired or replaced.

Storing a Flat or Spare Tire and Tools

⚠ CAUTION:

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.

After the compact spare tire has been installed on the vehicle, store the flat tire in the trunk.

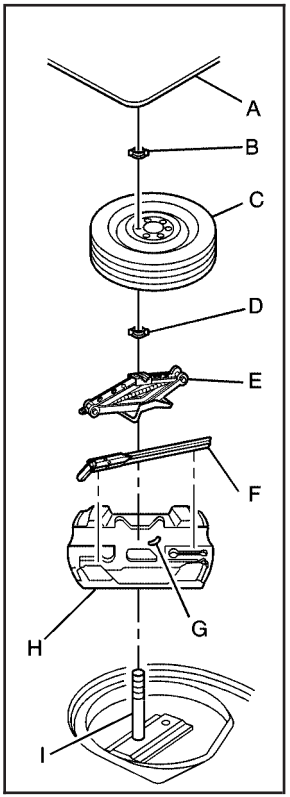
When storing a full-size tire, use the extension with the protector, located in the foam holder, to help avoid wheel surface damage.

To store a full-size tire, do the following:

1. Install the tools in their original location in the trunk area and secure.
2. Place the tire valve stem facing down and the protector/guide placed through a wheel bolt hole.
3. Remove the protector and attach the retainer securely
4. Store the cover as far forward as possible.

When storing a compact spare tire in the trunk, put the protector back in the foam holder.

The compact spare is for temporary use only. Replace the compact spare tire with a full-size tire as soon as you can. See *Compact Spare Tire on page 389*. Use the following as a guide for storing the compact spare tire and tools.



A. Cover
B. Wing Nut
C. Compact Spare Tire
D. Wing Nut
E. Jack
F. Wheel Wrench
G. Extension Protector
H. Foam Holder
I. Bolt Screw

Compact Spare Tire

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

After installing the compact spare on your vehicle, you should stop as soon as possible and make sure your spare tire is correctly inflated. The compact spare is made to perform well at speeds up to 65 mph (105 km/h) for distances up to 3,000 miles (5 000 km), so you can finish your trip and have your full-size tire repaired or replaced where you want. You must calibrate the tire inflation monitor system after installing or removing the compact spare. See *Tire Pressure Monitor System on page 363* for more information.
The system may not work correctly when the compact spare is installed on the vehicle.
Of course, it is best to replace your spare with a full-size tire as soon as you can. Your spare will last longer and be in good shape in case you need it again.

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

Do not use your compact spare on other vehicles.

And do not mix your compact spare tire or wheel with other wheels or tires. They will not fit. Keep your spare tire and its wheel together.

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

Appearance Care

Cleaning the Inside of Your Vehicle

Your vehicle's interior will continue to look its best if it is cleaned often. Although not always visible, dust and dirt can accumulate on your upholstery. Dirt can damage carpet, fabric, leather, and plastic surfaces. Regular vacuuming is recommended to remove particles from your upholstery. It is important to keep your upholstery from becoming and remaining heavily soiled. Soils should be removed as quickly as possible. Your vehicle's interior may experience extremes of heat that could cause stains to set rapidly.

Lighter colored interiors may require more frequent cleaning. Use care because newspapers and garments that transfer color to your home furnishings may also transfer color to your vehicle's interior.

When cleaning your vehicle's interior, only use cleaners specifically designed for the surfaces being cleaned. Permanent damage may result from using cleaners on surfaces for which they were not intended. Use glass cleaner only on glass.

Remove any accidental over-spray from other surfaces immediately. To prevent over-spray, apply cleaner directly to the cleaning cloth.

Notice: **If you use abrasive cleaners when cleaning glass surfaces on your vehicle, you could scratch the glass and/or cause damage to the integrated radio antenna and the rear window defogger. When cleaning the glass on your vehicle, use only a soft cloth and glass cleaner.**

Many cleaners contain solvents that may become concentrated in your vehicle's breathing space. Before using cleaners, read and adhere to all safety instructions on the label. While cleaning your vehicle's interior, maintain adequate ventilation by opening your vehicle's doors and windows.

Dust may be removed from small buttons and knobs using a small brush with soft bristles.

Your dealer has a product for cleaning your vehicle's glass. Should it become necessary, you can also obtain a product from your dealer to remove odors from your vehicle's upholstery.

Do not clean your vehicle 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 your vehicle's interior surfaces.
- Never apply heavy pressure or rub aggressively with a cleaning cloth. Use of heavy pressure can damage your 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 gallon (3.78 L) of water is a good guide.
- Do not heavily saturate your upholstery while cleaning.
- Damage to your vehicle's interior may result from the use of many organic solvents such as naptha, alcohol, etc.

Fabric/Carpet

Use a vacuum cleaner with a soft brush attachment frequently 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, use the following instructions:

1. Saturate a lint-free, clean white cloth with water or club soda.
2. Wring the cloth to 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 until the cleaning cloth remains clean.
5. If the soil is not completely removed, use a mild soap solution and repeat the cleaning process that was used with plain water.

If any of the soil remains, a commercial fabric cleaner or spot lifter may be necessary. When a commercial upholstery cleaner or spot lifter is to be used, test a small hidden area for colorfastness first. If the locally cleaned area gives any impression that a ring formation may result, clean the entire surface.

After the cleaning process has been completed, a paper towel can be used to blot excess moisture from the fabric or carpet.

Leather

A soft cloth dampened with water may be used to remove dust. 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 to dry. Never use steam to clean leather. Never use spot lifters or spot removers on leather. Many commercial leather cleaners and coatings that are sold to preserve and protect leather may permanently change the appearance and feel of your leather and are not recommended. Do not use silicone or wax-based products, or those containing organic solvents to clean your vehicle's interior because they can alter the appearance by increasing the gloss in a non-uniform manner. Never use shoe polish on your leather.

Instrument Panel, Vinyl, and Other Plastic Surfaces

A soft cloth dampened with water may be used to remove dust. 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 your interior and are not recommended. Do not use silicone or wax-based products, or those containing organic solvents to clean your 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 your 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.

⚠ CAUTION:

Do not bleach or dye safety belts. If you do, 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.

Washing Your Vehicle

The paint finish on the vehicle provides beauty, depth of color, gloss retention, and durability.

The best way to preserve the vehicle's finish is to keep it clean by washing it often with lukewarm or cold water.

Do not wash the vehicle in the direct rays of the sun. Use a car washing soap. Do not use strong soaps or chemical detergents. Be sure to rinse the vehicle well, removing all soap residue completely. Approved cleaning products can be obtained from your dealer. See *Vehicle Care/Appearance Materials on page 398*.
Do not use cleaning agents that are petroleum based, or that contain acid or abrasives. All cleaning agents should be flushed promptly and not allowed to dry on the surface, or 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 may cause water to enter the vehicle.

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 Your Vehicle on page 394*.

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. See *Vehicle Care/Appearance Materials on page 398*.

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 your vehicle.**

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.

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 help keep the paint finish looking new, keep the vehicle in a garage or covered whenever possible.

Windshield and Wiper Blades

If the windshield is not clear after using the windshield washer, or if the wiper blade chatters when running, wax, sap, or other material may be on the blade or windshield.

Clean the outside of the windshield with a glass cleaning liquid or powder and water solution. The windshield is clean if beads do not form when it is rinsed with water.

Grime from the windshield will stick to the wiper blades and affect their performance. Clean the blade by wiping vigorously with a cloth soaked in full-strength windshield washer solvent. Then rinse the blade with water.

Check the wiper blades and clean them as necessary; replace blades that look worn.

Aluminum Wheels

Notice: **If you use strong soaps, chemicals, abrasive polishes, cleaners, brushes, or cleaners that contain acid on aluminum or chrome-plated wheels, you could damage the surface of the wheel(s). The repairs would not be covered by your warranty. Use only GM-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 your 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: **If you drive your vehicle through an automatic car wash that has silicone carbide tire cleaning brushes, you could damage the aluminum or chrome-plated wheels. The repairs would not be covered by your warranty. Never drive a vehicle equipped with aluminum or chrome-plated wheels through an automatic car wash that uses silicone carbide tire cleaning brushes.**

Do not take the vehicle through an automatic car wash that has silicone carbide tire cleaning brushes. These brushes can also damage the surface of these wheels.

Tires

To clean the tires, use a stiff brush with tire cleaner.

Notice: **Using petroleum-based tire dressing products on your vehicle may damage the paint finish and/or tires. When applying a tire dressing, always wipe off any overspray from all painted surfaces on your 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 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. Larger areas of finish damage can be corrected in your dealer'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 or an underbody car washing system can do this for you.

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.

Although no defect in the paint job causes this, GM will repair, at no charge to the owner, the surfaces of new vehicles damaged by this fallout condition within 12 months or 12,000 miles (20 000 km) of purchase, whichever occurs first.

Vehicle Care/Appearance Materials

Description	Usage
Polishing Cloth Wax-Treated	Interior and exterior polishing cloth.
Tar and Road Oil Remover	Removes tar, road oil, and asphalt.
Chrome Cleaner and Polish	Use on chrome or stainless steel.
White Sidewall Tire Cleaner	Removes soil and black marks from whitewalls.
Vinyl Cleaner	Cleans vinyl.
Glass Cleaner	Removes dirt, grime, smoke and fingerprints.
Chrome and Wire Wheel Cleaner	Removes dirt and grime from chrome wheels and wire wheel covers.
Finish Enhancer	Removes dust, fingerprints, and surface contaminants. Spray on and wipe off.

Description	Usage
Swirl Remover Polish	Removes swirl marks, fine scratches, and other light surface contamination.
Cleaner Wax	Removes light scratches and protects finish.
Foaming Tire Shine Low Gloss	Cleans, shines, and protects in one step. No wiping necessary.
Wash Wax Concentrate	Medium foaming shampoo. Cleans and lightly waxes. Biodegradable and phosphate free.
Spot Lifter	Quickly removes spots and stains from carpets, vinyl, and cloth upholstery.
Odor Eliminator	Odorless spray odor eliminator used on fabrics, vinyl, leather and carpet.

Vehicle Identification

Vehicle Identification Number (VIN)

This is the legal identifier for your vehicle. It appears on a plate in the front corner of the instrument panel, on the driver's side. You can see it if you look through the windshield from outside your vehicle. The VIN also appears on the Vehicle Certification and Service Parts labels and the certificates of title and registration.

Engine Identification

The eighth character in the VIN is the engine code. This code will help you identify your vehicle's engine, specifications, and replacement parts.

Service Parts Identification Label

You will find this label in the trunk. It is very helpful if you ever need to order parts. On this label, you will find the following:

- VIN
- Model designation
- Paint information
- Production options and special equipment

Do not remove this label from the vehicle.

Electrical System

Add-On Electrical Equipment

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

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

Your vehicle has an airbag system. Before attempting to add anything electrical to your vehicle, see *Servicing Your Airbag-Equipped Vehicle on page 84*.

Headlamp Wiring

The headlamp circuit is protected by individual fuses in the underhood fuse block. An electrical overload will cause the fuse to blow. If this happens, have your headlamp system checked right away.

Windshield Wiper Fuses

The windshield wiper motor is protected by a fuse. If the motor overheats due to heavy snow, etc., the wiper will stop until the motor cools. If the overload is caused by some electrical problem, have it fixed.

Power Windows and Other Power Options

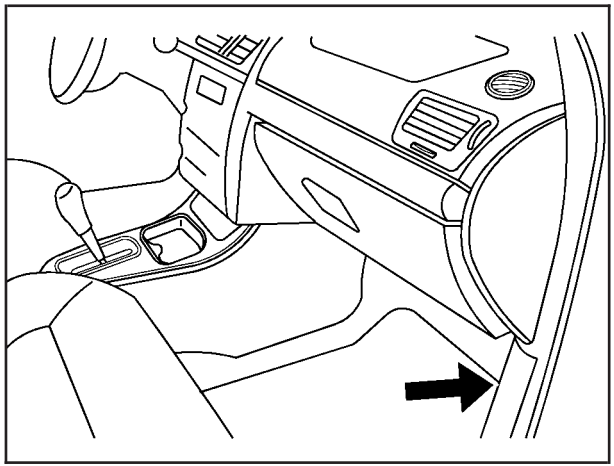
A circuit breaker in the instrument panel fuse block protects the power windows and other power accessories. When the current load is too heavy, the circuit breaker opens and closes, protecting the circuit until the problem is fixed.

Fuses and Circuit Breakers

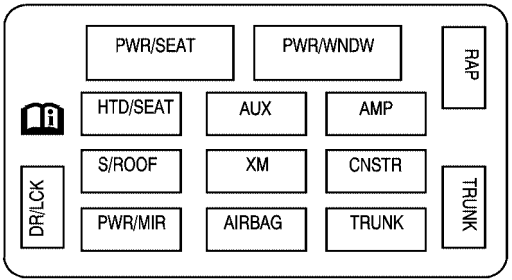
The wiring circuits in your vehicle are protected from short circuits by a combination of fuses and circuit breakers. This greatly reduces the chance of fires caused by electrical problems.

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

Instrument Panel Fuse Block



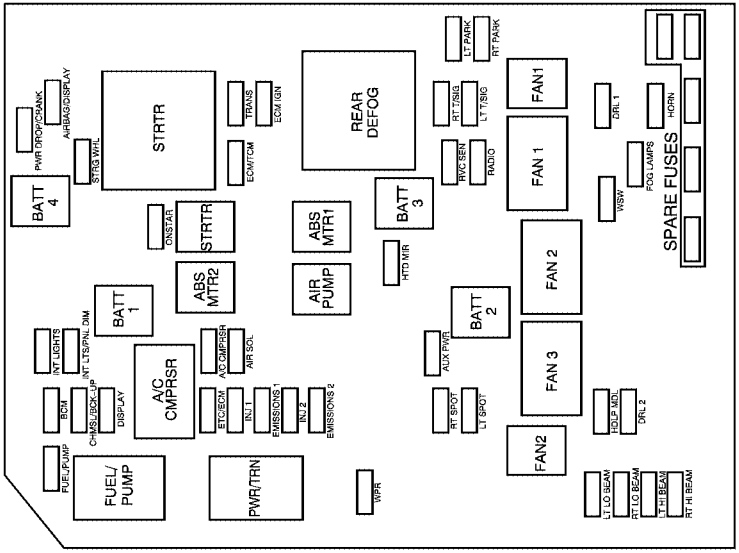
The fuse block is located on the passenger side of the vehicle in the carpet molding. Remove the fuse block door to access the fuses.



Fuses	Usage
PWR/SEAT	Power Seats
PWR/WNDW	Power Window
RAP	Retained Accessory Power
HTD/SEAT	Heated Seats
AUX	Auxiliary Outlets
AMP	Amplifier
S/ROOF	Sunroof
XM	XM™ Radio
CNSTR	Canister
DR/LCK	Door Locks
PWR/MIR	Power Mirrors
AIRBAG	Airbags
TRUNK	Trunk
TRUNK	Trunk Relay

Underhood Fuse Block

The underhood fuse block is located in the engine compartment. See *Engine Compartment Overview on page 308* for more information on location.



Fuses	Usage
LT PARK	Driver's Side Parking Lamp
RT PARK	Passenger's Side Parking Lamp

Fuses	Usage
FAN 1	Cooling Fan 1
SPARE	Spare

Fuses	Usage
SPARE	Spare
AIRBAG/ DISPLAY	Airbag, Display
TRANS	Transaxle
ECM IGN	Engine Control Module, Ignition
RT T/SIG	Passenger's Side Turn Signal
LT T/SIG	Driver's Side Turn Signal
DRL 1	Daytime Running Lamps 1
HORN	Horn
SPARE	Spare
PWR DROP/CRNK	Power Drop, Crank
STRG WHL	Steering Wheel
ECM/TCM	Engine Control Module, Transaxle Control Module
RVC SEN	Regulated Voltage Control Sensor
RADIO	Audio System
FOG LAMPS	Fog Lamps
SPARE	Spare
BATT 4	Battery 4

Fuses	Usage
ONSTAR	OnStar®
STRTR	Starter
ABS MTR1	Anti-lock Brake System Motor 1
BATT 3	Battery 3
WSW	Windshield Wiper
HTD MIR	Heated Mirror
SPARE	Spare
BATT 1	Battery 1
ABS MTR2	Anti-lock Brake System Motor 2
AIR PUMP	Air Pump
BATT 2	Battery 2
INT LIGHTS	Interior Lamps
INT LTS/ PNL DIM	Interior Lamps, Instrument Panel Dimmer
A/C CMPRSR	Air Conditioning Compressor
AIR SOL	AIR (Air Injection Reactor) Solenoid
AUX PWR	Auxiliary Power
BCM	Body Control Module

Fuses	Usage
CHMSL/ BCK-UP	Center High-Mounted Stoplamp, Back-up Lamps
DISPLAY	Display
ETC/ECM	Electronic Throttle Control, Engine Control Module
INJ 1	Injector 1
EMISSIONS 1	Emissions 1
INJ 2	Injector 2
EMISSIONS 2	Emissions 2
RT SPOT	Right Spot
LT SPOT	Left Spot
HDLP MDL	Headlamp Module
DRL 2	Daytime Running Lamps 2
FAN 2	Cooling Fan 2
FUEL/PUMP	Fuel Pump
WPR	Wiper

Fuses	Usage
LT LO BEAM	Driver's Side Low-Beam
RT LO BEAM	Passenger's Side Low-Beam
LT HI BEAM	Driver's Side High-Beam
RT HI BEAM	Passenger's Side High-Beam

Relay	Usage
STRTR	Starter
REAR DEFOG	Rear Defogger
FAN 1	Cooling Fan 1
FAN 2	Cooling Fan 2
A/C CMPRSR	Air Conditioning Compressor
FAN 3	Cooling Fan 3
FUEL/PUMP	Fuel Pump
PWR/TRN	Powertrain

Capacities and Specifications

The following approximate capacities are given in English and metric conversions. See *Recommended Fluids and Lubricants on page 420* for more information.

Application	Capacities	
	English	Metric
Air Conditioning Refrigerant R134a	For the air conditioning system refrigerant charge amount, see the refrigerant caution label located under the hood. See your dealer for more information.	
Automatic Transaxle	7.4 qt	7.0 L
When draining/replacing converter, more fluid may be needed.		
Cooling System Including Reservoir		
3.5L V6, 3.5L V6 Flexible Fuel, 3.9L V6 Engines	10.1 qt	9.6 L
5.3L V8 Engine	13.3 qt	12.6 L
Engine Oil with Filter		
3.5L V6, 3.5L V6 Flexible Fuel and 3.9L V6 Engines	4.0 qt	3.8 L
5.3L V8 Engine	6.0 qt	5.7 L

Application	Capacities	
	English	Metric
Fuel Tank		
3.5L Engine (with NU6 emissions) sold new in CA, ME, VT, NY, MA (see your dealer for bordering states)	17.0 gal	64.4 L
3.5L Engine (without NU6 emissions) sold new in all other states (see your dealer for more information)	17.5 gal	66.2 L
3.9L and 5.3L Engines sold in all states	17.5 gal	66.2 L
Wheel Nut Torque	100 lb ft	140 Nm
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	Transaxle	Spark Plug Gap
3.5L V6	N	Automatic	0.040 inches (1.01 mm)
3.5L Flexible Fuel V6	K	Automatic	0.040 inches (1.01 mm)
3.9L V6 with Active Fuel Management™	R	Automatic	0.040 inches (1.01 mm)
5.3L V8	C	Automatic	0.040 inches (1.01 mm)

Section 6 Maintenance Schedule

Maintenance Schedule 408
Introduction 408
Maintenance Requirements 408
Your Vehicle and the Environment 408
Using the Maintenance Schedule 409
Scheduled Maintenance 410
Additional Required Services 413
Maintenance Footnotes 414
Owner Checks and Services 416
At Each Fuel Fill 416
At Least Once a Month 417
At Least Once a Year 417
Recommended Fluids and Lubricants 420
Normal Maintenance Replacement Parts 421
Engine Drive Belt Routing 422
Maintenance Record 423

Maintenance Schedule

Introduction

Important: Keep engine oil at the proper level and change as recommended.

Have you purchased the GM Protection Plan? The Plan supplements your new vehicle warranties. See your Warranty and Owner Assistance booklet or your dealer for details.

Maintenance Requirements

Notice: **Maintenance intervals, checks, inspections, replacement parts, and recommended fluids and lubricants as prescribed in this manual are necessary to keep your vehicle in good working condition. Any damage caused by failure to follow scheduled maintenance may not be covered by warranty.**

Your Vehicle and the Environment

Proper vehicle maintenance not only helps to keep your vehicle in good working condition, but also helps the environment. All recommended maintenance is important. Improper vehicle maintenance can even affect the quality of the air we breathe. Improper fluid levels or the wrong tire inflation can increase the level of emissions from your vehicle. To help protect our environment, and to keep your vehicle in good condition, be sure to maintain your vehicle properly.

Using the Maintenance Schedule

We at General Motors want to help you keep your vehicle in good working condition. But we do not know exactly how you will drive it. You may drive very short distances only a few times a week. Or you may drive long distances all the time in very hot, dusty weather. You may use your vehicle in making deliveries. Or you may drive it to work, to do errands, or in many other ways.

Because of all the different ways people use their vehicles, maintenance needs vary. You may need more frequent checks and replacements. So please read the following and note how you drive. If you have any questions on how to keep your vehicle in good condition, see your GM Goodwrench® dealer.

This schedule is for vehicles that:

- carry passengers and cargo within recommended limits. You will find these limits on the Tire and Loading Information label. See *Loading Your Vehicle on page 279*.
- are driven on reasonable road surfaces within legal driving limits.
- use the recommended fuel. See *Gasoline Octane on page 299*.

The services in *Scheduled Maintenance on page 410* should be performed when indicated. See *Additional Required Services on page 413* and *Maintenance Footnotes on page 414* for further information.

⚠ CAUTION:

Performing maintenance work on a vehicle can be dangerous. In trying to do some jobs, you can be seriously injured. Do your own maintenance work only if you have the required know-how and the proper tools and equipment for the job. If you have any doubt, see your GM Goodwrench® dealer to have a qualified technician do the work.

Some maintenance services can be complex. So, unless you are technically qualified and have the necessary equipment, you should have your GM Goodwrench® dealer do these jobs.

When you go to your GM Goodwrench® dealer for your service needs, you will know that GM-trained and supported service technicians will perform the work using genuine GM parts.

If you want to purchase service information, see *Service Publications Ordering Information on page 447*.

Owner Checks and Services on page 416 tells you what should be checked, when to check it, and what you can easily do to help keep your vehicle in good condition.

The proper replacement parts, fluids, and lubricants to use are listed in *Recommended Fluids and Lubricants on page 420* and *Normal Maintenance Replacement Parts on page 421*. When your vehicle is serviced, make sure these are used. All parts should be replaced and all necessary repairs done before you or anyone else drives the vehicle. We recommend the use of genuine GM parts.

Scheduled Maintenance

When the CHANGE ENGINE OIL SOON message comes on, it means that service is required for your vehicle. Have your vehicle serviced as soon as possible within the next 600 miles (1 000 km).

It is possible that, if you are driving under the best conditions, the engine oil life system may not indicate that vehicle service is necessary for over a year. However, your engine oil and filter must be changed at least once a year and at this time the system must be reset. Your GM Goodwrench® dealer has GM-trained service technicians who will perform this work using genuine GM parts and reset the system.

If the engine oil life system is ever reset accidentally, you must service your vehicle within 3,000 miles (5 000 km) since your last service. Remember to reset the oil life system whenever the oil is changed. See *Engine Oil Life System on page 316* for information on the Engine Oil Life System and resetting the system.

When the CHANGE ENGINE OIL SOON message appears, certain services, checks, and inspections are required. Required services are described in the following for "Maintenance I" and "Maintenance II." Generally, it is recommended that your first service be Maintenance I, your second service be Maintenance II, and that you alternate Maintenance I and Maintenance II thereafter. However, in some cases, Maintenance II may be required more often.

Maintenance I — Use Maintenance I if the CHANGE ENGINE OIL SOON message comes on within 10 months since the vehicle was purchased or Maintenance II was performed.

Maintenance II — Use Maintenance II if the previous service performed was Maintenance I. Always use Maintenance II whenever the CHANGE ENGINE OIL SOON message comes on 10 months or more since the last service or if the message has not come on at all for one year.

Scheduled Maintenance

Service	Maintenance I	Maintenance II
Change engine oil and filter. See *Engine Oil on page 312*. Reset oil life system. See *Engine Oil Life System on page 316. An Emission Control Service.*	•	•
Visually check for any leaks or damage. *See footnote (k).*	•	•

Scheduled Maintenance (cont'd)

Service	Maintenance I	Maintenance II
Inspect engine air cleaner filter. If necessary, replace filter. See *Engine Air Cleaner/Filter on page 318*. *See footnote (m).*		•
Rotate tires and check inflation pressures and wear. See *Tire Inspection and Rotation on page 368* and "Tire Wear Inspection" in *At Least Once a Month on page 417*.	•	•
Inspect brake system. *See footnote (a).*	•	•
Check engine coolant and windshield washer fluid levels and add fluid as needed.	•	•
Perform any needed additional services. See "Additional Required Services" in this section.	•	•
Inspect suspension and steering components. *See footnote (b).*		•
Inspect engine cooling system. *See footnote (c).*		•
Inspect wiper blades. *See footnote (d).*		•
Inspect restraint system components. *See footnote (e).*		•
Lubricate body components. *See footnote (f).*		•
Check transaxle fluid level and add fluid as needed.		•
Replace passenger compartment air filter, if equipped. *See footnote (g).*		•
Inspect throttle system. *See footnote (j).*		•

Additional Required Services

The following services should be performed at the first maintenance service (I or II) after the indicated miles (kilometers) shown for each item.

Additional Required Services

Service and Miles (Kilometers)	25,000 (40 000)	50,000 (80 000)	75,000 (120 000)	100,000 (160 000)	125,000 (200 000)	150,000 (240 000)
Inspect fuel system for damage or leaks.	•	•	•	•	•	•
Inspect exhaust system for loose or damaged components.	•	•	•	•	•	•
Replace engine air cleaner filter. See *Engine Air Cleaner/Filter on page 318*.		•		•		•
Change automatic transaxle fluid and filter (severe service). *See footnote (h).*		•		•		•
Change automatic transaxle fluid and filter (normal service).						•
Replace spark plugs and inspect spark plug wires. *An Emission Control Service.*				•		

Additional Required Services (cont'd)

Service and Miles (Kilometers)	25,000 (40 000)	50,000 (80 000)	75,000 (120 000)	100,000 (160 000)	125,000 (200 000)	150,000 (240 000)
Engine cooling system service (or every five years, whichever occurs first). *An Emission Control Service. See footnote (i).*						•
Inspect engine accessory drive belt. *An Emission Control Service. See footnote (n).*						•

Maintenance Footnotes

† *The U.S. Environmental Protection Agency or the California Air Resources Board has determined that the failure to perform this maintenance item will not nullify the emission warranty or limit recall liability prior to the completion of the vehicle's useful life. We, however, urge that all recommended maintenance services be performed at the indicated intervals and the maintenance be recorded.*

(a) *Visually inspect brake lines and hoses for proper hook-up, binding, leaks, cracks, chafing, etc. Inspect disc brake pads for wear and rotors for surface condition. Inspect other brake parts, including calipers, parking brake, etc.*

(b) *Visually inspect front and rear suspension and steering system for damaged, loose, or missing parts or signs of wear. Inspect power steering lines and hoses for proper hook-up, binding, leaks, cracks, chafing, etc.*

(c) *Visually inspect hoses and have them replaced if they are cracked, swollen, or deteriorated. Inspect all pipes, fittings, and clamps; replace with genuine GM parts as needed. To help ensure proper operation, a pressure test of the cooling system and pressure cap and cleaning the outside of the radiator and air conditioning condenser is recommended at least once a year.*

(d) *Visually inspect wiper blades for wear or cracking. Replace wiper blades that appear worn or damaged or that streak or miss areas of the windshield.*

(e) *Make sure the safety belt reminder light and all belts, buckles, latch plates, retractors, and anchorages are working properly. Look for any other loose or damaged safety belt system parts. If you see anything that might keep a safety belt system from doing its job, have it repaired. Have any torn or frayed safety belts replaced. Also look for any opened or broken airbag coverings, and have them repaired or replaced. The airbag system does not need regular maintenance.*

(f) *Lubricate all key lock cylinders. Lubricate all hinges and latches, including those for the body doors, hood, secondary latch, pivots, spring anchor, release pawl, rear compartment, glove box door, console door, and any folding seat hardware. More frequent lubrication may be required when exposed to a corrosive environment. Applying silicone grease on weatherstrips with a clean cloth will make them last longer, seal better, and not stick or squeak.*

(g) *If you drive regularly under dusty conditions, the filter may require replacement more often.*

(h) *Change automatic transaxle fluid and filter if the vehicle is mainly driven under one or more of these conditions:*

- *In heavy city traffic where the outside temperature regularly reaches 90°F (32°C) or higher.*
- *In hilly or mountainous terrain.*
- *When doing frequent trailer towing.*
- *Uses such as found in taxi, police, or delivery service.*

(i) *Drain, flush, and refill cooling system. This service can be complex; you should have your dealer perform this service. See Engine Coolant on page 323 for what to use. Inspect hoses. Clean radiator, condenser, pressure cap, and filler neck. Pressure test the cooling system and pressure cap.*

(j) *Check throttle system for interference or binding and for damaged or missing parts. Replace parts as needed. Replace any components that have high effort or excessive wear. Do not lubricate accelerator or cruise control cables.*

(k) *A fluid loss in any vehicle system could indicate a problem. Have the system inspected and repaired and the fluid level checked. Add fluid if needed.*

(m) *If you drive regularly under dusty conditions, inspect the filter at each engine oil change.*

(n) *Visually inspect belt for fraying, excessive cracks, or obvious damage. Replace belt if necessary.*

Owner Checks and Services

These owner checks and services should be performed at the intervals specified to help ensure the safety, dependability, and emission control performance of your vehicle. Your GM Goodwrench® dealer can assist you with these checks and services.

Be sure any necessary repairs are completed at once. Whenever any fluids or lubricants are added to your vehicle, make sure they are the proper ones, as shown in *Recommended Fluids and Lubricants on page 420*.

At Each Fuel Fill

It is important to perform these underhood checks at each fuel fill.

Engine Oil Level Check

Check the engine oil level and add the proper oil if necessary. See *Engine Oil on page 312* for further details.

Notice: **It is important to check your oil regularly and keep it at the proper level. Failure to keep your engine oil at the proper level can cause damage to your engine not covered by your warranty.**

Engine Coolant Level Check

Check the engine coolant level and add DEX-COOL® coolant mixture if necessary. See *Engine Coolant on page 323* for further details.

Windshield Washer Fluid Level Check

Check the windshield washer fluid level in the windshield washer fluid reservoir and add the proper fluid if necessary.

At Least Once a Month

Tire Inflation Check

Visually inspect your vehicle's tires and make sure they are inflated to the correct pressures. Do not forget to check the spare tire. See *Inflation - Tire Pressure on page 362*. Check to make sure the spare tire is stored securely. See *Changing a Flat Tire on page 378*.

Tire Wear Inspection

Tire rotation may be required for high mileage highway drivers prior to the Engine Oil Life System service notification. Check the tires for wear and, if necessary, rotate the tires. See *Tire Inspection and Rotation on page 368*.

At Least Once a Year

Starter Switch Check

⚠ CAUTION:

When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.

1. Before you start, be sure you have enough room around the vehicle.
2. Firmly apply both the parking brake and the regular brake. See *Parking Brake on page 120*.

   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 PARK (P) or NEUTRAL (N). If the vehicle starts in any other position, contact your GM Goodwrench® dealer for service.

Automatic Transaxle Shift Lock Control System Check

⚠ CAUTION:

Whenyou are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.

1. Before you start, be sure you have enough room around the vehicle. It should be parked on a level surface.
2. Firmly apply the parking brake. See *Parking Brake on page 120*.

   Be ready to apply the regular brake immediately if the vehicle begins to move.
3. With the engine off, turn the ignition to RUN, but do not start the engine. Without applying the regular brake, try to move the shift lever out of PARK (P) with normal effort. If the shift lever moves out of PARK (P), contact your GM Goodwrench® dealer for service.

Ignition Transaxle Lock Check

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

- The ignition should turn to OFF only when the shift lever is in PARK (P).
- The ignition key should come out only in OFF.

Contact your GM Goodwrench® dealer if service is required.

Parking Brake and Automatic Transaxle Park (P) Mechanism Check

⚠ CAUTION:

When you are doing this check, your vehicle could begin to move. You or others could be injured and property could be damaged. Make sure there is room in front of your 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 transaxle in NEUTRAL (N), slowly remove foot pressure from the regular brake pedal. Do this until the vehicle is held by the parking brake only.
- To check the PARK (P) mechanism's holding ability: With the engine running, shift to PARK (P). Then release the parking brake followed by the regular brake.

Contact your GM Goodwrench® dealer if service is required.

Underbody Flushing Service

At least every spring, use plain water to flush any corrosive materials from the underbody. Take care to clean thoroughly any areas where mud and other debris can collect.

Recommended Fluids and Lubricants

Fluids and lubricants identified below by name, part number, or specification may be obtained from your dealer.

Usage	Fluid/Lubricant
Engine Oil	Engine oil which meets GM Standard GM6094M and displays the American Petroleum Institute Certified for Gasoline Engines starburst symbol. GM Goodwrench® oil meets all the requirements for your vehicle. To determine the proper viscosity for your vehicle's engine, see *Engine Oil on page 312*.
Engine Coolant	50/50 mixture of clean, drinkable water and use only DEX-COOL® Coolant. See *Engine Coolant on page 323*.
Hydraulic Brake System	Delco® Supreme 11 Brake Fluid or equivalent DOT-3 brake fluid.
Windshield Washer	GM Optikleen® Washer Solvent.

Usage	Fluid/Lubricant
Power Steering System	GM Power Steering Fluid (GM Part No. U.S. 89021184, in Canada 89021186).
Automatic Transaxle	DEXRON®-VI Automatic Transmission Fluid.
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 and Door Hinges	Multi-Purpose Lubricant, Superlube (GM Part No. U.S. 12346241, in Canada 10953474).
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).

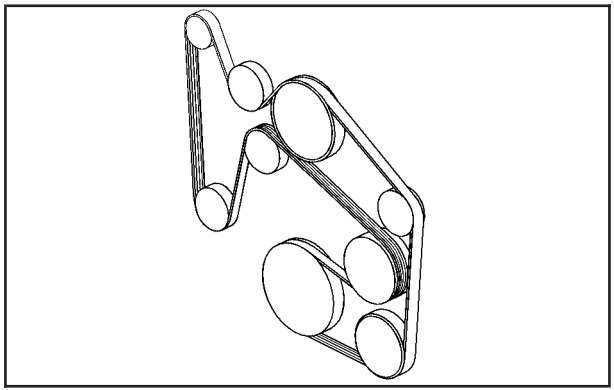
Normal Maintenance Replacement Parts

Replacement parts identified below by name, part number, or specification can be obtained from your GM dealer.

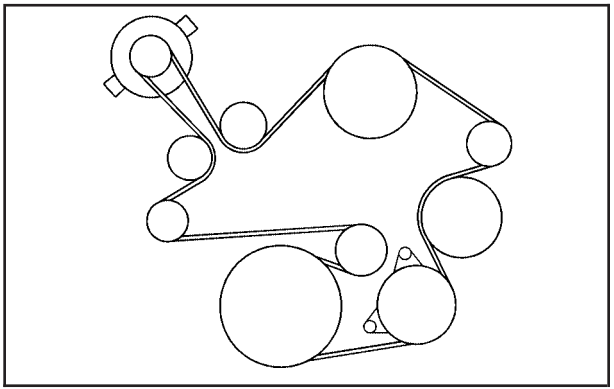
Normal Maintenance Replacement Parts

Part	GM Part Number	AC Delco Part Number
Engine Air Cleaner/Filter	10350737	A2962C
Engine Oil Filter		
3.5L V6, 3.5L V6 Flexible Fuel and 3.9L V6 Engines	89017342	PF61
5.3L V8 Engine	89017524	PF48
Passenger Compartment Air Filter	15284938	CF132
Spark Plugs		
3.5L V6, 3.5LV6 Flexible Fuel and 3.9L V6 Engines	12591131	41-100
5.3L V8 Engine	12571164	41-985
Windshield Wiper Blades		
Driver's – 22 inches (55.0 cm)	19120353	—
Passenger's-Driver's – 22 inches (56.0 cm)	19120354	—

Engine Drive Belt Routing



3.5L V6, 3.5L V6 Flexible Fuel Engines, and 3.9 V6 Engines



5.3L V8 Engine

Maintenance Record

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. See *Maintenance Requirements on page 408*. Any additional information from *Owner Checks and Services on page 416* can be added on the following record pages. You should retain all maintenance receipts.

Maintenance Record

Date	Odometer Reading	Serviced By	Maintenance I or Maintenance II	Services Performed

Maintenance Record (cont'd)

Date	Odometer Reading	Serviced By	Maintenance I or Maintenance II	Services Performed

Maintenance Record (cont'd)

Date	Odometer Reading	Serviced By	Maintenance I or Maintenance II	Services Performed

Maintenance Record (cont'd)

Date	Odometer Reading	Serviced By	Maintenance I or Maintenance II	Services Performed

Section 7 Customer Assistance Information

Customer Assistance and Information 428
Customer Satisfaction Procedure 428
Online Owner Center 431
Customer Assistance for Text Telephone (TTY) Users 432
Customer Assistance Offices 432
GM Mobility Reimbursement Program 433
Roadside Assistance Program 434
Courtesy Transportation 437
Vehicle Data Collection and Event Data Recorders 440
Collision Damage Repair 441
Reporting Safety Defects 446
Reporting Safety Defects to the United States Government 446
Reporting Safety Defects to the Canadian Government 446
Reporting Safety Defects to General Motors 446
Service Publications Ordering Information 447

Customer Assistance and Information

Customer Satisfaction Procedure

Your satisfaction and goodwill are important to your dealer and to Chevrolet. Normally, any concerns with the sales transaction or the operation of your vehicle will be resolved by your dealer's sales or service departments. Sometimes, however, despite the best intentions of all concerned, misunderstandings can occur.
If your concern has not been resolved to your satisfaction, the following steps should be taken:

STEP ONE: Discuss your concern with a member of dealership management. Normally, concerns can be quickly resolved at that level. If the matter has already been reviewed with the sales, service, or parts manager, contact the owner of the dealership or the general manager.

STEP TWO: If after contacting a member of dealership management, it appears your concern cannot be resolved by the dealership without further help, in the U.S., contact the Chevrolet Customer Assistance Center by calling 1-800-222-1020. In Canada, contact General Motors of Canada Customer Communication Centre by calling 1-800-263-3777 (English) or 1-800-263-7854 (French).

We encourage you to call the toll-free number in order to give your inquiry prompt attention. Please have the following information available to give the Customer Assistance Representative:

- Vehicle Identification Number (VIN). This is available from the vehicle registration or title, or the plate at the top left of the instrument panel and visible through the windshield.
- Dealership name and location.
- Vehicle delivery date and present mileage (kilometers).

When contacting Chevrolet, please remember that your concern will likely be resolved at a dealer's facility. That is why we suggest you follow Step One first if you have a concern.

STEP THREE — U.S. Owners: Both General Motors and your dealer are committed to making sure you are completely satisfied with your new vehicle. However, if you continue to remain unsatisfied after following the procedure outlined in Steps 1 and 2, you should file with the BBB Auto Line Program to enforce your rights.

The BBB Auto Line Program is an out of court program administered by the Council of Better Business Bureaus to settle automotive disputes regarding vehicle repairs or the interpretation of the New Vehicle Limited Warranty. Although you may be required to resort to this informal dispute resolution program prior to filing a court action, use of the program is free of charge and your case will generally be heard within 40 days. If you do not agree with the decision given in your case, you may reject it and proceed with any other venue for relief available to you.

You may contact the BBB Auto Line Program using the toll-free telephone number or write them at the following address:

BBB Auto Line Program
Council of Better Business Bureaus, Inc.
4200 Wilson Boulevard
Suite 800
Arlington, VA 22203-1838

Telephone: 1-800-955-5100

This program is available in all 50 states and the District of Columbia. Eligibility is limited by vehicle age, mileage, and other factors. General Motors reserves the right to change eligibility limitations and/or discontinue its participation in this program.

STEP THREE — Canadian Owners: In the event that you do not feel your concerns have been addressed after following the procedure outlined in Steps 1 and 2, General Motors of Canada Limited wants you to be aware of its participation in a no-charge Mediation/Arbitration Program. General Motors of Canada Limited has committed to binding arbitration of owner disputes involving factory-related vehicle service claims. The program provides for the review of the facts involved by an impartial third party arbiter, and may include an informal hearing before the arbiter. The program is designed so that the entire dispute settlement process, from the time you file your complaint to the final decision, should be completed in approximately 70 days. We believe our impartial program offers advantages over courts in most jurisdictions because it is informal, quick, and free of charge.

For further information concerning eligibility in the Canadian Motor Vehicle Arbitration Plan (CAMVAP), call toll-free 1-800-207-0685. Alternatively, you may call the General Motors Customer Communication Centre, 1-800-263-3777 (English), 1-800-263-7854 (French), or you may write to:

The 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

Your inquiry should be accompanied by your Vehicle Identification Number (VIN).

Online Owner Center

Online Owner Center (United States only)

The Owner Center is a resource for your GM ownership needs. Specific vehicle information can be found in one place.

The Online Owner Center allows you to:

- Get e-mail service reminders.
- Access information about your specific vehicle, including tips and videos and an electronic version of this owner manual.
- Keep track of your vehicle's service history and maintenance schedule.
- Find GM dealers for service nationwide.
- Receive special promotions and privileges only available to members.

Refer to www.MyGMLink.com on the web for updated information and to register your vehicle.

My GM Canada (Canada only)

My GM Canada is a password-protected section of gmcanada.com where you can save information on GM vehicles, get personalized offers, and use handy tools and forms with greater ease.

Here are a few of the valuable tools and services you will have access to:

- My Showroom: Find and save information on vehicles and current offers in your area.
- My Dealers/Retailers: Save details such as address and phone number for each of your preferred GM Dealers or Retailers.
- My Driveway: Receive service reminders and helpful advice on owning and maintaining your vehicle.
- My Preferences: Manage your profile, subscribe to E-News and use tools and forms with greater ease.

To sign up to My GM Canada, visit the My GM Canada section within www.gmcanada.com.

Customer Assistance for Text Telephone (TTY) Users

To assist customers who are deaf, hard of hearing, or speech-impaired and who use Text Telephones (TTYs), Chevrolet has TTY equipment available at its Customer Assistance Center. Any TTY user in the U.S. can communicate with Chevrolet by dialing: 1-800-833-CHEV (2438). (TTY users in Canada can dial 1-800-263-3830.)

Customer Assistance Offices

Chevrolet encourages customers to call the toll-free number for assistance. However, if a customer wishes to write or e-mail Chevrolet, the letter should be addressed to:

United States — Customer Assistance

Chevrolet Motor Division
Chevrolet Customer Assistance Center
P.O. Box 33170
Detroit, MI 48232-5170

www.Chevrolet.com
1-800-222-1020
1-800-833-2438 (For Text Telephone devices (TTYs))
Roadside Assistance: 1-800-CHEV-USA (243-8872)
Fax Number: 313-381-0022

From Puerto Rico:
1-800-496-9992 (English)
1-800-496-9993 (Spanish)
Fax Number: 313-381-0022

From U.S. Virgin Islands:
1-800-496-9994
Fax Number: 313-381-0022

Canada — Customer Assistance

General Motors of Canada Limited
Customer Communication Centre, CA1-163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7

www.gmcanada.com
1-800-263-3777 (English)
1-800-263-7854 (French)
1-800-263-3830 (For Text Telephone devices (TTYs))
Roadside Assistance: 1-800-268-6800

Overseas — Customer Assistance

Please contact the local General Motors Business Unit.

Mexico, Central America and Caribbean Islands/Countries (Except Puerto Rico and U.S. Virgin Islands) — Customer Assistance

General Motors de Mexico, S. de R.L. de C.V.
Customer Assistance Center
Paseo de la Reforma # 2740
Col. Lomas de Bezares
C.P. 11910, Mexico, D.F.
01-800-508-0000
Long Distance: 011-52-53 29 0 800

GM Mobility Reimbursement Program

GM MOBILITY℠

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

In the U.S., call **1-800-CHEV-USA (1-800-243-8872)**

In Canada, call **1-800-268-6800**

Service available 24 hours a day, 365 days a year.

As the owner of a new Chevrolet vehicle, you are automatically enrolled in the Chevrolet Roadside Assistance program. This value-added service is intended to provide you with peace of mind as you drive in the city or travel the open road.

Who is Covered?

Roadside Assistance coverage is for the vehicle operator, regardless of ownership. A person driving this vehicle without the consent of the owner is not eligible for coverage.

The following services are provided in the U.S. during the Bumper-to-Bumper warranty period and, in Canada, during the Base Warranty coverage period of the New Vehicle Limited Warranty, up to a maximum coverage of $100.

- **Fuel Delivery:** Delivery of enough fuel for the customer to get to the nearest service station (approximately $5 in the U.S. and 10 litres in Canada). Service to provide diesel may be restricted. For safety reasons, propane and other alternative fuels will not be provided through this service.
- **Lock-out Service:** To ensure security, the driver must present the vehicle registration and personal ID before lock-out service is provided. Lock-out service will be covered at no charge if you are unable to gain entry into your vehicle. If your vehicle will not start, Roadside Assistance will arrange to have your vehicle towed to the nearest authorized dealership. In the U.S., replacement keys made at the customer's expense will be covered within 10 miles (16 km).

- **Emergency Tow From a Public Roadway or Highway:** Tow to the nearest dealership for warranty service or in the event of a vehicle-disabling accident. Winch-out assistance when the vehicle is mired in sand, mud, or snow.
- **Flat Tire Change:** If your vehicle has a spare tire, installation of the tire in good condition will be covered at no charge. The customer is responsible for the repair or replacement of the tire if not covered by a warrantable failure.
- **Jump Start:** No-start occurrences which require a battery jump start will be covered at no charge.

Additional Services for Canadian Customers

- **Trip Routing Service:** Upon Request, Roadside Assistance will send you detailed, computer-personalized maps, highlighting your choice of either the most direct route or the most scenic route to your destination, anywhere in North America, along with any helpful travel information we may have pertaining to your trip. To request this service, please call us toll-free at 1-800-268-6800.

  We will make every attempt to send your personalized trip routing as quickly as possible, but it is best to allow three weeks before your planned departure date. Trip routing requests will be limited to six per calendar year.
- **Trip Interruption Benefits and Assistance:** In the event of a warranty related vehicle disablement, while en route and over 250 kilometres from original point of departure, you may qualify for trip interruption expense assistance. This assistance covers reasonable reimbursement of up to a maximum of $500 (Canadian) for (A) meals (maximum of $50/day), (B) lodging (maximum of $100/night) and (C) alternate ground transportation (maximum of $40/day). This benefit is to assist you with some of the unplanned expense you may incur while waiting for your vehicle to be repaired.

  Pre-authorization, original detailed receipts and a copy of the repair order are required.

  Once authorization has been given, your advisor will help you make any necessary arrangements and explain how to claim for trip interruption expense assistance.

- **Alternative Service:** There may be times, when Roadside Assistance cannot provide timely assistance, your advisor may authorize you to secure local emergency road service, and you will be reimbursed up to $100 upon submission of the original receipt to Roadside Assistance.

In many instances, mechanical failures are covered under Chevrolet's Bumper-to-Bumper warranty, and the duration of the Base Warranty Coverage for Canadian customers of the new Vehicle Limited Warranty. However, any cost for parts and labor for non-warranty repairs are the responsibility of the driver.

For prompt and efficient assistance when calling, please provide the following to the Roadside Assistance Representative:

- Your name, home address, and home telephone number.
- Telephone number of your location.
- Location of the vehicle.
- Model, year, color, and license plate number.
- Odometer reading, Vehicle Identification Number (VIN), and delivery date of the vehicle.
- Description of the problem.

While we hope you never have the occasion to use our service, it is added security while traveling for you and your family. Remember, we are only a phone call away. U.S. customers call Chevrolet Roadside Assistance: **1-800-CHEV-USA (1-800-243-8872)**, text telephone (TTY) users, call **1-888-889-2438**, Canadian customers call **1-800-268-6800**.

Chevrolet and General Motors of Canada Limited reserve the right to limit services or reimbursement to an owner or driver when, in their sole discretion, the claims become excessive in frequency or type of occurrence.

Roadside Assistance is not part of or included in the coverage provided by the New Vehicle Limited Warranty. Chevrolet and General Motors of Canada Limited reserve the right to make any changes or discontinue the Roadside Assistance program at any time without notification.

Towing and Road Service Exclusions

Specifically excluded from Roadside Assistance coverage are towing or services for vehicles operated on a non-public roadway or highway, fines, impound towing caused by a violation of local, Municipal, State, Provincial, or Federal law, and mounting, dismounting or changing of snow tires, chains, or other traction devices.

Courtesy Transportation

To enhance your ownership experience, we and our participating dealers are proud to offer Courtesy Transportation, a customer support program for new vehicles.

For warranty repairs during the Bumper-to-Bumper (U.S.) or Base Warranty Coverage period (Canada), provided by the New Vehicle Limited Warranty, interim transportation may be available under the Courtesy Transportation program. 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 and is available only at participating dealers. A separate booklet entitled “Warranty and Owner Assistance Information” furnished with each new vehicle provides detailed warranty coverage information.

Scheduling Service Appointments

When your vehicle requires warranty service, you should contact your dealer and request an appointment. By scheduling a service appointment and advising your service consultant of your transportation needs, your dealer 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, let them know this, and ask for instructions.

If the dealer requests that you simply drop the vehicle off for service, you are urged to do so as early in the work day as possible to allow for the same day repair.

Transportation Options

Warranty service can generally be completed while you wait. However, if you are unable to wait, GM helps to minimize your inconvenience by providing several transportation options. Depending on the circumstances, your dealer can offer you one of the following:

Shuttle Service

Shuttle service is the preferred means of offering Courtesy Transportation and participating dealers can 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 for the dealer's area.

Public Transportation or Fuel Reimbursement

If your vehicle requires overnight warranty repairs, and public transportation is used as 'shuttle service,' the reimbursement is limited to the associated shuttle allowance and must be supported by original receipts.

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.

Courtesy Rental Vehicle

Your dealer may arrange to provide you with a courtesy rental vehicle or reimburse you for a rental vehicle that you obtain if 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.

Generally it is not possible to provide a like-vehicle as a courtesy rental.

Additional Program Information

All program options, such as shuttle service, may not be available at every dealer. Please contact your dealer for specific information about availability. All Courtesy Transportation arrangements will be administered by appropriate dealer personnel.

General Motors reserves the right to unilaterally modify, change or discontinue Courtesy Transportation at any time and to resolve all questions of claim eligibility pursuant to the terms and conditions described herein at its sole discretion.

Vehicle Data Collection and Event Data Recorders

Your vehicle, like other modern motor vehicles, has a number of sophisticated computer systems that monitor and control several aspects of the vehicle's performance. Your vehicle uses on-board vehicle computers to monitor emission control components to optimize fuel economy, to monitor conditions for airbag deployment and, if the vehicle has the Anti-lock Brake System (ABS), to provide anti-lock braking and to help the driver control the vehicle in difficult driving situations. Some information may be stored during regular operations to facilitate repair of detected malfunctions; other information is stored only in a crash event by computer systems, such as those commonly called Event Data Recorders (EDR).

In a crash event, computer systems, such as the airbag Sensing and Diagnostic Module (SDM) in your vehicle may record information about the condition of the vehicle and how it was operated, such as data related to engine speed, brake application, throttle position, vehicle speed, safety belt usage, airbag readiness, airbag performance, and the severity of a collision. This information has been used to improve vehicle crash performance and may be used to improve crash performance of future vehicles and driving safety. Unlike the data recorders on many airplanes, these on-board systems do not record sounds, such as conversation of vehicle occupants.

To read this information, special equipment is needed and access to the vehicle or the device that stores the data is required. GM will not access information about a crash event or share it with others other than:

- 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.

In addition, once GM collects or receives data, GM may:

- use the data for GM research needs,
- make it available for research where appropriate confidentiality is to be maintained and need is shown, or
- share summary data which is not tied to a specific vehicle with non-GM organizations for research purposes.

Others, such as law enforcement, may have access to the special equipment that can read the information if they have access to the vehicle or the device that stores the data.

If your vehicle has OnStar®, please check the OnStar® subscription service agreement or manual for information on its operations and data collection.

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 will 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 assure that your vehicle's designed appearance, durability, and safety are preserved. The use of Genuine GM parts can help maintain your GM New Vehicle Warranty.

Recycled original equipment parts may also be used for repair. These parts are typically removed from vehicles that were total losses in prior accidents. 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

GM also recommends that you choose a collision repair facility that meets your needs before you ever need collision repairs. Your GM dealer may have a collision repair center with GM-trained technicians and state of the art equipment, or be able to recommend a collision repair center that has GM-trained technicians and comparable equipment.

Insuring 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 an Accident Occurs

Here is what to do if you are involved in an accident.

- Try to relax and then check to make sure you are all right. If you are uninjured, make sure that no one else in your vehicle, or the other vehicle, is injured.
- If there has been an injury, call 911 for help. Do not leave the scene of an accident until all matters have been taken care of. Move your vehicle only if its position puts you in danger or you are instructed to move it by a police officer.
- Give only the necessary and requested information to police and other parties involved in the accident. Do not discuss your personal condition, mental frame of mind, or anything unrelated to the accident. This will help guard against post-accident legal action.
- If you need roadside assistance, call GM Roadside Assistance. See *Roadside Assistance Program on page 434* for more information.
- If your vehicle cannot be driven, know where the towing service will be taking it. Get a card from the tow truck operator or write down the driver's name, the service's name, and the phone number.
- Remove any valuables from your vehicle before it is towed away. Make sure this includes your insurance information and registration if you keep these items in your vehicle.

- Gather the important information you will need from the other driver. Things like name, address, phone number, driver's license number, vehicle license plate, vehicle make, model and model year, Vehicle Identification Number (VIN), insurance company and policy number, and a general description of the damage to the other vehicle.
- If possible, call your insurance company from the scene of the accident. They will walk you through the information they will need. If they ask for a police report, phone or go to the police department headquarters the next day and you can get a copy of the report for a nominal fee. In some states/provinces with "no fault" insurance laws, a report may not be necessary. This is especially true if there are no injuries and both vehicles are driveable.
- Choose a reputable collision repair facility for your vehicle. Whether you select a GM dealer or a private collision repair facility to fix the damage, make sure you are comfortable with them. Remember, you will have to feel comfortable with their work for a long time.
- Once you have an estimate, read it carefully and make sure you understand what work will be performed on your vehicle. If you have a question, ask for an explanation. Reputable shops welcome this opportunity.

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.

Reporting Safety Defects

Reporting Safety Defects to the United States Government

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA), in addition to notifying General Motors.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or General Motors.

To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to http://www.safercar.gov; or write to:

Administrator, NHTSA
400 Seventh Street, SW.
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, you should immediately notify Transport Canada, in addition to notifying General Motors of Canada Limited. You may 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 General Motors

In addition to notifying NHTSA (or Transport Canada) in a situation like this, we certainly hope you will notify General Motors. Please call the Chevrolet Customer Assistance Center at 1-800-222-1020, or write:

Chevrolet Motor Division
Chevrolet Customer Assistance Center
P.O. Box 33170
Detroit, MI 48232-5170

In Canada, please call us at 1-800-263-3777 (English) or 1-800-263-7854 (French). Or, write:

General Motors of Canada Limited
Customer Communication Centre, CA1-163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7

Service Publications Ordering Information

Service Manuals

Service Manuals have the diagnosis and repair information on engines, transmission, axle suspension, brakes, electrical, steering, body, etc.

Transmission, Transaxle, Transfer Case Unit Repair Manual

This manual provides information on unit repair service procedures, adjustments, and specifications for GM transmissions, transaxles, and transfer cases.

Service Bulletins

Service Bulletins give technical service information needed to knowledgeably service General Motors cars and trucks. Each bulletin contains instructions to assist in the diagnosis and service of your vehicle.

In Canada, the service bulletin reference number can be obtained by contacting your General Motors dealer or by calling 1-800-GM-DRIVE (1-800-463-7483). This reference number is needed to order the service bulletin from Helm, Inc.

RETAIL SELL PRICE: $6.00 US + Processing Fee

Owner Information

Owner publications are written specifically for owners and intended to provide basic operational information about the vehicle. The owner manual will include the Maintenance Schedule for all models.

In-Portfolio: Includes a Portfolio, Owner Manual, and Warranty Booklet.

RETAIL SELL PRICE:
$35.00 US + Processing Fee

Without Portfolio: Owner's Manual only.

RETAIL SELL PRICE:
$25.00 US + Processing Fee

Current and Past Model Order Forms

Technical Service Bulletins and Manuals are available for current and past model GM vehicles. To request an order form, please specify year and model name of the vehicle.

ORDER TOLL FREE: 1-800-551-4123
Monday-Friday 8:00 AM - 6:00 PM
Eastern Time

For Credit Card Orders Only (VISA-MasterCard-Discover), visit Helm, Inc. on the World Wide Web at: www.helminc.com

Or you can write to:

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

Prices are subject to change without notice and without incurring obligation. Allow ample time for delivery.

Note to Canadian Customers: All listed prices are quoted in U.S. funds. Canadian residents are to make checks payable in U.S. funds.

A

Accessories and Modifications 297
Accessory Power Outlet(s) 165
Additives, Fuel 300
Add-On Electrical Equipment 400
Air Cleaner/Filter, Engine 318
Air Conditioning 166
Airbag
  Passenger Status Indicator 177
  Readiness Light 176
Airbag Sensing and
  Diagnostic Module (SDM) 440
Airbag System 69
  Adding Equipment to Your
    Airbag-Equipped Vehicle 85
  How Does an Airbag Restrain? 77
  Passenger Sensing System 79
  Servicing Your Airbag-Equipped Vehicle 84
  What Makes an Airbag Inflate? 77
  What Will You See After an
    Airbag Inflates? 78
  When Should an Airbag Inflate? 75
  Where Are the Airbags? 72
Antenna, Backglass 244
Anti-Lock Brake System (ABS) 253
Anti-Lock Brake, System Warning Light 180
Appearance Care
  Aluminum Wheels 396
  Care of Safety Belts 393
  Chemical Paint Spotting 397
  Cleaning Exterior Lamps/Lenses 394
  Cleaning the Inside of Your Vehicle 390
  Fabric/Carpet 391
  Finish Care 394
  Finish Damage 397
  Instrument Panel, Vinyl, and
    Other Plastic Surfaces 393
  Leather 392
  Sheet Metal Damage 397
  Tires 396
  Underbody Maintenance 397
  Vehicle Care/Appearance Materials 398
  Washing Your Vehicle 394
  Windshield and Wiper Blades 395
Ashtray(s) 166

Audio System(s) 213
Audio Steering Wheel Controls 242
Backglass Antenna 244
Care of Your CD Player 244
Care of Your CDs 244
Radio with CD 217, 223
Setting the Time 214, 215
Theft-Deterrent Feature 241
Understanding Radio Reception 243
XM™ Satellite Radio Antenna System 245
Automatic Door Lock 102
Automatic Transaxle
Fluid 319
Operation 117

B

Backglass Antenna 244
Battery 340
Electric Power Management 163
Run-Down Protection 164
Before Leaving on a Long Trip 269
Brake
Anti-Lock Brake System (ABS) 253
Emergencies 255
Parking 120
System Warning Light 179
Brakes 337
Braking 252
Braking in Emergencies 255
Break-In, New Vehicle 111
Bulb Replacement 346
Halogen Bulbs 346
Headlamp Aiming 346
Headlamps, Front Turn Signal, Sidemarker, and Parking Lamps 347
License Plate Lamps 351
Replacement Bulbs 351
Taillamps, Turn Signal, Sidemarker, Stoplamps, and Back-Up Lamps 349
Buying New Tires 370

C

Calibration 195
California Fuel 300
California Proposition 65 Warning 298
Canadian Owners 3
Capacities and Specifications 405
Carbon Monoxide 103, 124, 272, 286
Care of
  Safety Belts 393
  Your CD Player 244
  Your CDs 244
CD, MP3 233
Center Console Storage Area 143
Center Front Passenger Position,
  Safety Belts 36
Center Seat 16
Chains, Tire 376
Charging System Light 179
Check
  Engine Light 183
Checking Things Under the Hood 306
Chemical Paint Spotting 397
Child Restraints
  Child Restraint Systems 50
  Infants and Young Children 46
  Lower Anchors and Tethers for Children 55
Child Restraints (cont.)
  Older Children 43
  Securing a Child Restraint in a
    Rear Seat Position 62
  Securing a Child Restraint in the
    Center Front Seat Position 64
  Securing a Child Restraint in the
    Right Front Seat Position 65
  Where to Put the Restraint 54
Cigarette Lighter 166
Cleaning
  Aluminum Wheels 396
  Exterior Lamps/Lenses 394
  Fabric/Carpet 391
  Finish Care 394
  Inside of Your Vehicle 390
  Instrument Panel, Vinyl, and
    Other Plastic Surfaces 393
  Leather 392
  Tires 396
  Underbody Maintenance 397
  Washing Your Vehicle 394
  Windshield and Wiper Blades 395
Climate Control System 166
  Air Filter, Passenger Compartment 171
  Outlet Adjustment 170
Collision Damage Repair 441

Comfort Guides, Rear Safety Belt 39
Compact Spare Tire 389
Compass 195
Content Theft-Deterrent 107
Control of a Vehicle 252
Convenience Net 144
Coolant
  Engine Temperature Gage 182
  Engine Temperature Warning Light 181
  Heater, Engine 115
Cooling System 329
Courtesy Lamps 161
Cruise Control 155
Cruise Control Light 187
Cupholder(s) 143
Customer Assistance Information
  Courtesy Transportation 437
  Customer Assistance for
    Text Telephone (TTY) Users 432
  Customer Assistance Offices 432
  Customer Satisfaction Procedure 428
  GM Mobility Reimbursement Program 433
  Reporting Safety Defects to
    General Motors 446
  Reporting Safety Defects to the
    Canadian Government 446
Customer Assistance Information (cont.)
  Reporting Safety Defects to the
    United States Government 446
  Roadside Assistance Program 434
  Service Publications Ordering
    Information 447

D

Daytime Running Lamps/Automatic
  Headlamp System 160
Delayed Entry Lighting 162
Delayed Exit Lighting 163
Delayed Headlamps 160
DIC Compass 195
Disc, MP3 233
Doing Your Own Service Work 298
Dome Lamp 162
Door
  Automatic Door Lock 102
  Locks 100
  Power Door Locks 101
  Programmable Automatic Door Unlock 102
  Rear Door Security Locks 102

Driver
Position, Safety Belt 25
Driver Information Center (DIC) 188
DIC Operation and Displays 189
DIC Vehicle Customization 206
DIC Warnings and Messages 197
Driving
At Night 263
City 267
Defensive 248
Drunken 249
Freeway 268
Hill and Mountain Roads 270
In Rain and on Wet Roads 264
Rocking Your Vehicle to Get it Out 278
Winter 272

E

Electric Power Management 163
Electrical System
Add-On Equipment 400
Fuses and Circuit Breakers 400
Headlamp Wiring 400
Instrument Panel Fuse Block 401
Electrical System (cont.)
Power Windows and
Other Power Options 400
Underhood Fuse Block 402
Windshield Wiper Fuses 400
Engine
Air Cleaner/Filter 318
Battery 340
Check and Service Engine Soon Light 183
Coolant 323
Coolant Heater 115
Coolant Temperature Gage 182
Coolant Temperature Warning Light 181
Drive Belt Routing 422
Engine Compartment Overview 308
Exhaust 124
Oil 312
Oil Life System 316
Overheated Protection Operating Mode 329
Overheating 326
Starting 114
Entry Lighting 162
Event Data Recorders (EDR) 440
Extender, Safety Belt 42
Exterior Lamps 158

F

Filter
- Engine Air Cleaner 318

Finish Damage 397
Flashers, Hazard Warning 150
Flash-to-Pass 153
Flat Tire 377
Flat Tire, Changing 378
Flat Tire, Storing 387
Fluid
- Automatic Transaxle 319
- Power Steering 335
- Windshield Washer 336

Fog Lamp Light 187
Fog Lamps 161
Folding Rear Seat 16
Fuel 299
- Additives 300
- California Fuel 300
- E85 (85% Ethanol) 301
- Filling a Portable Fuel Container 305
- Filling Your Tank 303
- Fuels in Foreign Countries 302

Fuel (cont.)
- Gage 188
- Gasoline Octane 299
- Gasoline Specifications 300

Fuses
- Fuses and Circuit Breakers 400
- Instrument Panel Fuse Block 401
- Underhood Fuse Block 402
- Windshield Wiper 400

G

Gage
- Engine Coolant Temperature 182
- Fuel 188
- Speedometer 174
- Tachometer 174

Garage Door Opener 132
Gasoline
- Octane 299
- Specifications 300

Glove Box 142
GM Mobility Reimbursement Program 433

H

Hazard Warning Flashers 150
Head Restraints 15
Headlamp
  Aiming 346
Headlamp Wiring 400
Headlamps
  Bulb Replacement 346
  Daytime Running Lamps/Automatic
    Headlamp System 160
  Delayed 160
  Flash-to-Pass 153
  Halogen Bulbs 346
  Headlamps, Front Turn Signal,
    Sidemarker, and Parking Lamps 347
  High/Low Beam Changer 153
Heated Seats 11
Heater 166
Highbeam On Light 187
Highway Hypnosis 270
Hill and Mountain Roads 270
Hood
  Checking Things Under 306
  Release 307
Horn 150
How to Use This Manual 4
How to Wear Safety Belts Properly 25

I

Ignition Positions 112
Infants and Young Children, Restraints 46
Inflation - Tire Pressure 362
Instrument Panel
  Overview 148
Instrument Panel (I/P)
  Brightness 161
  Cluster 173

J

Jump Starting 341

K

Keyless Entry System 92
Keys 91

L

Labeling, Tire Sidewall 355
Lamps
  Battery Run-Down Protection 164
  Courtesy 161
  Dome 162
  Electric Power Management 163
  Exterior 158
  Fog 161
  Reading 163
LATCH System
  Child Restraints 55
License Plate Lamps 351
Light
  Airbag Readiness 176
  Anti-Lock Brake System Warning 180
  Brake System Warning 179
  Charging System 179
  Cruise Control 187
  Engine Coolant Temperature Warning 181
  Fog Lamp 187
  Highbeam On 187
  Malfunction Indicator 183
  Oil Pressure 186
Light (cont.)
  Passenger Airbag Status Indicator 177
  Passenger Safety Belt Reminder 175
  Safety Belt Reminder 175
  Security 187
  TCS Warning Light 181
  Tire Pressure 182
  Traction Control System (TCS) Warning 181
Lighting
  Delayed Entry 162
  Delayed Exit 163
  Entry 162
  Parade Dimming 163
Loading Your Vehicle 279
Locks
  Automatic Door Lock 102
  Door 100
  Lockout Protection 103
  Power Door 101
  Programmable Automatic Door Unlock 102
  Rear Door Security Locks 102
Loss of Control 262
Lumbar
  Manual Controls 11

M

Maintenance Schedule
Additional Required Services 413
At Each Fuel Fill 416
At Least Once a Month 417
At Least Once a Year 417
Introduction 408
Maintenance Footnotes 414
Maintenance Record 423
Maintenance Requirements 408
Normal Maintenance Replacement Parts 421
Owner Checks and Services 416
Recommended Fluids and Lubricants 420
Scheduled Maintenance 410
Using 409
Your Vehicle and the Environment 408
Malfunction Indicator Light 183
Manual Lumbar Controls 11
Manual Passenger Seat 9
Message
DIC Warnings and Messages 197
Mirrors
Automatic Dimming Rearview with OnStar® 126
Manual Rearview Mirror 126
Manual Rearview Mirror with OnStar® 126
Outside Convex Mirror 127
Outside Power Mirrors 127
MP3 233
MyGMLink.com 431

N

New Vehicle Break-In 111
Normal Maintenance Replacement Parts 421

O

Odometer 174
Off-Road Recovery 260
Oil
  Engine 312
  Pressure Light 186
Oil, Engine Oil Life System 316
Older Children, Restraints 43
Online Owner Center 431
OnStar® System, see OnStar® Manual 128
Other Warning Devices 150
Outlet Adjustment 170
Outlet(s), Accessory Power 165
Outside
  Convex Mirror 127
  Power Mirrors 127
Overheated Engine Protection
  Operating Mode 329
Owner Checks and Services 416
Owners, Canadian 3

P

Paint, Damage 397
Parade Dimming 163
Park (P)
  Shifting Into 121
  Shifting Out of 123
Parking
  Brake 120
  Over Things That Burn 123
Passenger Airbag Status Indicator 177
Passenger Compartment Air Filter 171
Passenger Sensing System 79
Passing 260
PASS-Key® III+ 108
PASS-Key® III+ Operation 109
Power
  Accessory Outlet(s) 165
  Door Locks 101
  Electrical System 400
  Retained Accessory (RAP) 113
  Seat 10
  Steering Fluid 335
  Windows 106
Pressure Cap 326
Pretensioners, Safety Belt 42
Programmable Automatic Door Unlock 102

Q

Questions and Answers About Safety Belts 24

R

Radios 213
Care of Your CD Player 244
Care of Your CDs 244
Radio with CD 217, 223
Setting the Time 214, 215
Theft-Deterrent 241
Understanding Reception 243
Reading Lamps 163
Rear Door Security Locks 102
Rear Safety Belt Comfort Guides 39
Rear Seat Armrest 143
Rear Seat Passengers, Safety Belts 37
Rear Storage Area 143
Rearview Mirror, Automatic Dimming with OnStar® 126
Rearview Mirror with OnStar® 126
Rearview Mirrors 126
Reclining Seatbacks 12
Recommended Fluids and Lubricants 420
Recreational Vehicle Towing 284
Remote Keyless Entry (RKE) System 92
Remote Keyless Entry (RKE) System, Operation 93
Removing the Flat Tire and Installing the Spare Tire 381
Removing the Spare Tire and Tools 379
Replacement Bulbs 351
Reporting Safety Defects
Canadian Government 446
General Motors 446
United States Government 446
Restraint System Check
Checking the Restraint Systems 86
Replacing Restraint System Parts After a Crash 87
Retained Accessory Power (RAP) 113
Right Front Passenger Position, Safety Belts 35
Roadside Assistance Program 434
Rocking Your Vehicle to Get it Out 278
Routing, Engine Drive Belt 422
Running the Engine While Parked 125

S

Safety Belt
- Passenger Reminder Light 175
- Pretensioners 42
- Reminder Light 175

Safety Belts
- Care of 393
- Center Front Passenger Position 36
- Driver Position 25
- How to Wear Safety Belts Properly 25
- Questions and Answers About Safety Belts 24
- Rear Safety Belt Comfort Guides 39
- Rear Seat Passengers 37
- Right Front Passenger Position 35
- Safety Belt Extender 42
- Safety Belt Use During Pregnancy 35
- Safety Belts Are for Everyone 20
- Shoulder Belt Height Adjuster 34

Safety Warnings and Symbols 4
Scheduled Maintenance 410
Seats
- Center Seat 16
- Head Restraints 15
- Heated Seats 11

Seats (cont.)
- Manual Lumbar 11
- Manual Passenger 9
- Power Seats 10
- Reclining Seatbacks 12
- Split Folding Rear Seat 16

Securing a Child Restraint
- Center Front Seat Position 64
- Rear Seat Position 62
- Right Front Seat Position 65

Security Light 187
Service 297
- Accessories and Modifications 297
- Adding Equipment to the Outside of Your Vehicle 299
- California Proposition 65 Warning 298
- Doing Your Own Work 298
- Engine Soon Light 183
- Publications Ordering Information 447

Servicing Your Airbag-Equipped Vehicle 84
Setting the Time 214, 215
Sheet Metal Damage 397
Shifting Into Park (P) 121
Shifting Out of Park (P) 123
Signals, Turn and Lane-Change 152

Spare Tire
Compact 389
Installing 381
Removing 379
Storing 387
Specifications, Capacities 405
Speedometer 174
Starting Your Engine 114
Steering 257
Steering Wheel Controls, Audio 242
Steering Wheel, Tilt Wheel 150
Storage Areas
Center Console Storage Area 143
Convenience Net 144
Cupholder(s) 143
Glove Box 142
Rear Seat Armrest 143
Rear Storage Area 143
Sunglasses Storage Compartment 143
Stuck in Sand, Mud, Ice, or Snow 278
Sun Visors 107
Sunroof 144

T

Tachometer 174
Taillamps
Turn Signal, Sidemarker, Stoplamps, and Back-Up Lamps 349
TCS Warning Light 181
Theft-Deterrent, Radio 241
Theft-Deterrent Systems 107
Content Theft-Deterrent 107
PASS-Key® III+ 108
PASS-Key® III+ Operation 109
Tilt Wheel 150
Tire
Pressure Light 182
Tires 354
Aluminum Wheels, Cleaning 396
Buying New Tires 370
Chains 376
Changing a Flat Tire 378
Cleaning 396
Compact Spare Tire 389
Different Size 372
If a Tire Goes Flat 377

Tires (cont.)
Inflation - Tire Pressure 362
Inspection and Rotation 368
Installing the Spare Tire 381
Pressure Monitor System 363
Removing the Flat Tire 381
Removing the Spare Tire and Tools 379
Storing a Flat or Spare Tire and Tools 387
Tire Sidewall Labeling 355
Tire Terminology and Definitions 359
Uniform Tire Quality Grading 372
Wheel Alignment and Tire Balance 374
Wheel Replacement 374
When It Is Time for New Tires 369
Towing
Recreational Vehicle 284
Towing a Trailer 286
Your Vehicle 284
Traction
Control System (TCS) 256
Control System Warning Light 181
Transaxle
Fluid, Automatic 319
Transaxle Operation, Automatic 117
Trunk 103
Turn and Lane-Change Signals 152
Turn Signal/Multifunction Lever 151

U

Understanding Radio Reception 243
Uniform Tire Quality Grading 372
Universal Home Remote System 132
Operation 133, 139

V

Vehicle
Control 252
Damage Warnings 5
Loading 279
Symbols 5
Vehicle Customization, DIC 206
Vehicle Data Collection and
Event Data Recorders 440
Vehicle Identification
Number (VIN) 399
Service Parts Identification Label 399
Ventilation Adjustment 170
Visors 107

W

Warning Lights, Gages and Indicators 172
Warnings
DIC Warnings and Messages 197
Hazard Warning Flashers 150
Other Warning Devices 150
Safety and Symbols 4
Vehicle Damage 5
Wheels
Alignment and Tire Balance 374
Different Size 372
Replacement 374
Where to Put the Restraint 54
Windows 105
Power 106

Windshield
Washer 154
Washer Fluid 336
Wiper Blade Replacement 352
Wiper Blades, Cleaning 395
Wiper Fuses 400
Wipers 153
Winter Driving 272

X

XM Radio Messages 240
XM™ Satellite Radio Antenna System 245

Y

Your Vehicle and the Environment 408