2007 GMC Sierra Owner Manual

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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 GMC 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 ever needed. If the vehicle is sold, leave this manual in it so the new owner can use it.

Canadian Owners

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

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

Litho in U.S.A.
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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.

If your vehicle has the DURAMAX® Diesel engine, refer to the DURAMAX® Diesel supplement for additional and specific information on this engine.

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.

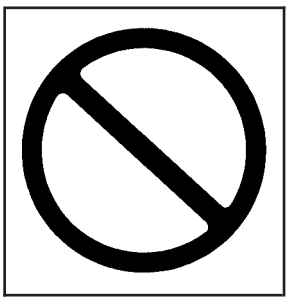
Safety Warnings and Symbols

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

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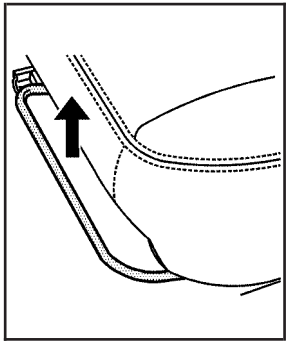
Front Seats

Manual Seats

⚠ 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.

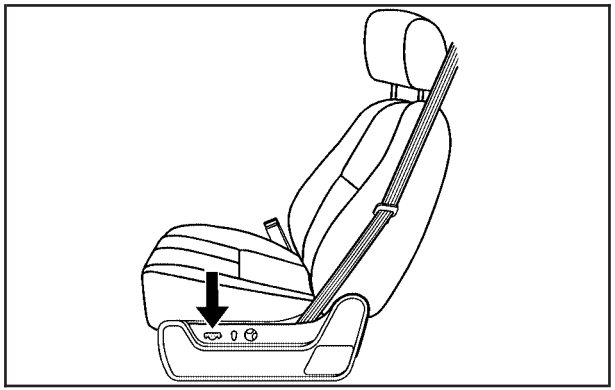
To move a manual seat forward or rearward:



1. Lift the bar to unlock the seat.
2. 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 Power Seat Control, Power Recline, and Power Lumbar shown

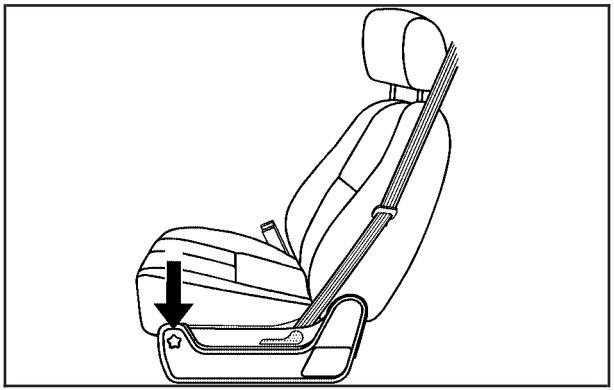
On a vehicle with power seats, the controls used to operate them are located on the outboard side of the seats. To adjust the seat, do any of the following:

- 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.
- Raise or lower the entire seat by moving the entire control up or down.

On seats with power reclining seatbacks, the control is located behind the power seat control on the outboard side of the seats. See "Power Reclining Seatbacks" under *Reclining Seatbacks on page 15*.

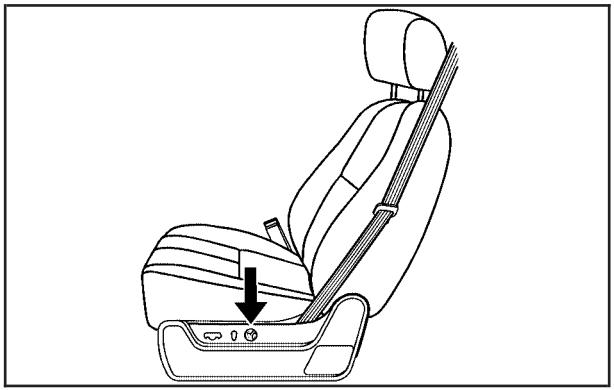
A vehicle with a memory function allows seat settings to be saved and recalled. See *Memory Seat, Mirrors, and Pedals on page 13* for more information.

Manual Lumbar



If your vehicle has this feature, the knob is located on the front of the driver seat lower cushion on the outboard side. Turn the knob forward to increase, and rearward to decrease lumbar support.

Power Lumbar



If the seats have power lumbar, the controls used to operate this feature are located on the outboard side of the seats.

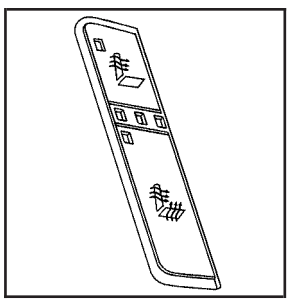
- To increase lumbar support, press and hold the front of the control.
- To decrease lumbar support, press and hold the rear of the control.
- To raise the height of the lumbar support, press and hold the top of the control.
- To lower the height of the lumbar support, press and hold the bottom of the control.

Release the control when the lower seatback reaches the desired level of lumbar support.

Your vehicle may have a memory function which allows seat settings to be saved and recalled. See *Memory Seat, Mirrors, and Pedals on page 13* for more information.

Keep in mind that as your seating position changes, as it may during long trips, so should the position of your lumbar support. Adjust the seat as needed.

Heated Seats



On vehicles with heated front seats, the controls are located on the driver's and passenger's doors, near the door handle.

(Heated Seatback): Press this button to turn on the heated seatback.

The light on the button will come on to indicate that the feature is working. Press the button to cycle through the temperature settings of high, medium, and low and to turn the heat to the seatback off. Indicator lights below the button show the level of heat selected: three for high, two for medium, and one for low.

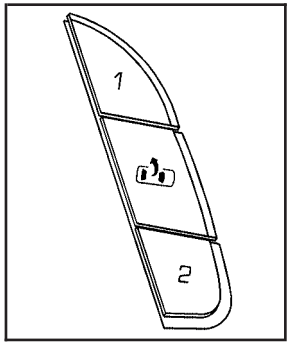
(Heated Seat and Seatback): Press this button to turn on the heated seat and seatback.

The light on the button will come on to indicate that the feature is working. Press the button to cycle through the temperature settings of high, medium, and low and to turn the heat to the seat off. Indicator lights above the button will show the level of heat selected: three for high, two for medium, and one for low.

The heated seats will be canceled ten seconds after the ignition is turned off. If you want to use the heated seat feature after you restart your vehicle, you will need to press the appropriate heated seat or seatback button again.

Memory Seat, Mirrors, and Pedals

Your vehicle may have the memory package.



The controls for this feature are located on the driver's door panel, and are used to program and recall memory settings for the driver's seat, outside mirrors, and the adjustable throttle and brake pedal.

To save your positions in memory, do the following:

1. Adjust the driver's seat, including the seatback recliner and lumbar, both outside mirrors, and the throttle and brake pedals to a comfortable position.

   See *Outside Power Mirrors on page 176* and *Adjustable Throttle and Brake Pedal on page 136* for more information.

   Not all mirrors will have the ability to save and recall their positions.

   Not all adjustable throttles and brake pedals will have the ability to save and recall their positions.

2. Press and hold button 1 until two beeps are heard indicating that the position has been stored.

A second seating, mirror, and throttle and brake pedal position can be programmed by repeating the above steps and pressing button 2.

To recall the memory positions, the vehicle must be in PARK (P). Press and release either button 1 or button 2 corresponding to the desired driving position. The seat, outside mirrors, and adjustable throttle and brake pedals will move to the position previously stored. You will hear a single beep.

If you use the remote keyless entry transmitter to enter your vehicle and the remote recall memory feature is on, automatic seat, adjustable mirror, and adjustable pedal movements will occur. See "MEMORY SEAT RECALL" under *DIC Vehicle Customization (With DIC Buttons) on page 289* for more information.

To stop recall movement of the memory function at any time, press one of the power seat controls, memory buttons, power mirror buttons, or adjustable pedal switch.

If something has blocked the driver's seat and/or the adjustable pedals while recalling a memory position, the driver's seat and/or the adjustable pedals recall may stop working. If this happens, remove the obstruction and press the appropriate control for the area that is not responding for two seconds. Try recalling the memory position again by pressing the appropriate memory button. If the memory position is still not recalling, see your dealer for service.

Easy Exit Seat

The control for this feature is located on the driver's door panel between buttons 1 and 2.

With the vehicle in PARK (P), the driver's seat exit position can be recalled by pressing the exit button. You will hear a single beep, and the driver's seat will move back.

If the easy exit seat feature is programmed in the Driver Information Center (DIC), automatic seat movement will occur when the key is removed from the ignition. See "EASY EXIT SEAT" under *DIC Vehicle Customization (With DIC Buttons) on page 289* for more information.

The memory seat and easy exit features can also be programmed using the DIC.

For programming information, see *DIC Vehicle Customization (With DIC Buttons) on page 289*.

Reclining Seatbacks

Manual Reclining Seatbacks

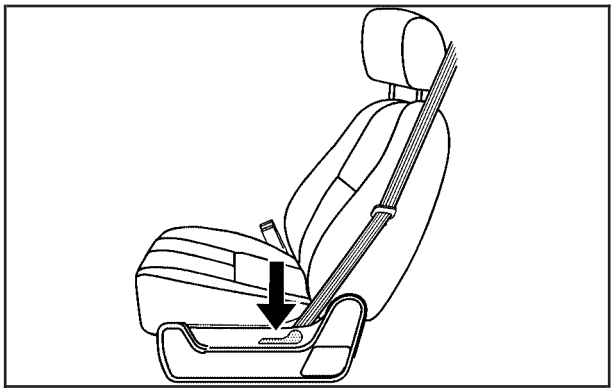
⚠ CAUTION:

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.

If the seats have manual reclining seatbacks, the lever used to operate them is located on the outboard side of the seat(s).



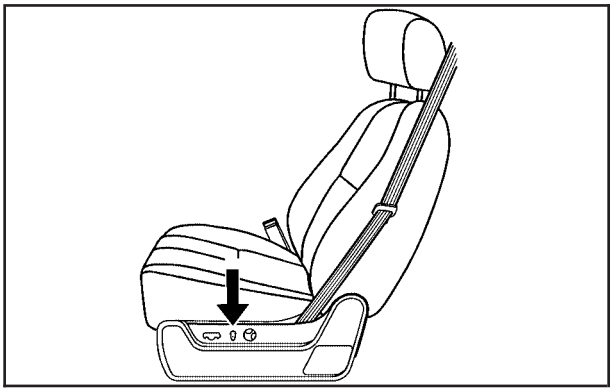
To recline the seatback, do the following:

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:

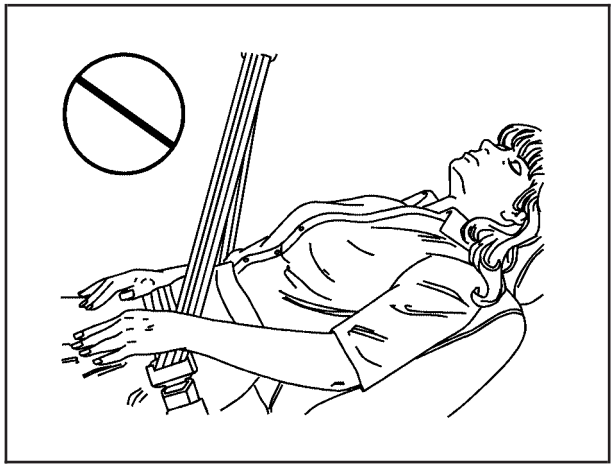
1. Lift the lever fully without applying pressure to the seatback and the seatback will return to the upright position.
2. Push and pull on the seatback to make sure it is locked.

Power Reclining Seatbacks



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

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



⚠ 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.

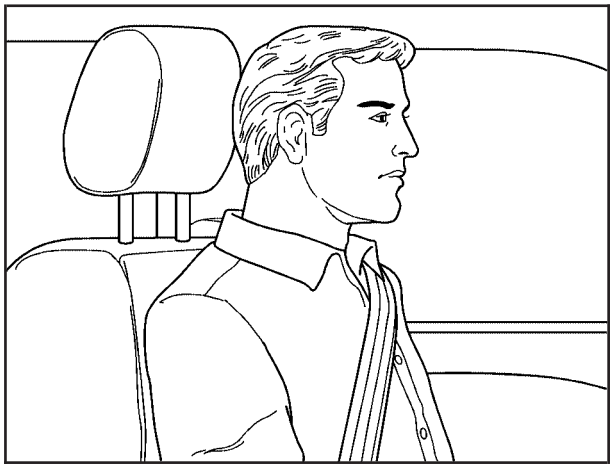
The shoulder belt cannot do its job. In a crash, you could go into it, receiving neck or other injuries.

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.

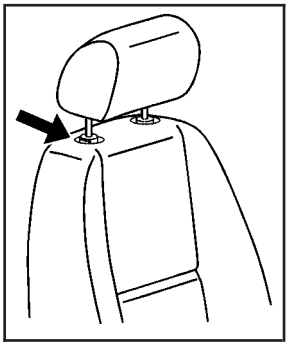
For proper protection when the vehicle is in motion, have the seatback upright. Then sit well back in the seat and wear your safety belt properly.

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 release button, located on the top of the seatback, while you push the head restraint down.

The second row seats have head rests that can be adjusted up and down.

Seatback Latches

The front seatbacks tilt forward to allow access to the rear of the cab.

To tilt the seatback forward, lift the lever located on the outboard side of the seat cushion.

> **⚠ 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.**

To return the seatback to the upright position, push the seatback rearward until it latches. After returning the seatback to its upright position, push and pull on the seatback to make sure it is locked.

Center Seat

Your vehicle may have a front center seat. The seatback doubles as an armrest and cupholder/storage area for the driver and passenger when the center seat is not used. Do not use it as a seating position when the seatback is folded down.

For information on safety belts for this position, see *Center Front Passenger Position (Regular Cab) on page 37* or *Center Front Passenger Position (Crew and Extended Cab) on page 38*.

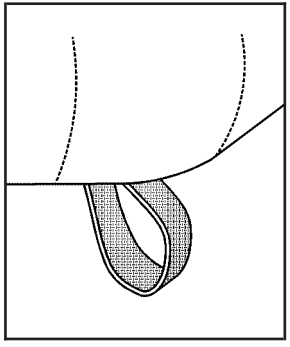
Rear Seats

Rear Seat Operation (Full Bench)

Folding the Rear Seat

To fold the seat up, 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. Pull up on the front of the seat cushion while pulling down on the release strap, located under the seat cushion.
2. Pull the seat cushion up until it latches with the seatback.
3. After latching the seat cushion up, pull forward on it to make sure it is locked.

To fold the seat down, do the following:

1. Push the seat cushion rearward while pulling the release strap, located under the seat cushion. Pull the seat cushion down until it latches.
2. After latching the seat cushion, pull up on it to make sure it is locked.

Rear Seat Operation (Split Bench)

Folding Rear Seat

On a vehicle with a second row 60/40 split seat either side of the rear seat may be folded for added cargo space.

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.**

Make sure that nothing is on the seat.

To fold the seat, slowly pull the seat cushion up.

To return the seat to the normal seating position, slowly pull the seat cushion down.

⚠ 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.

Make sure that the safety belt buckles on the driver's side seatback are accessible to the outboard and center occupant and are not under the seat cushions.

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 a light that comes on as a reminder to buckle up. See *Safety Belt Reminder Light on page 249*.

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

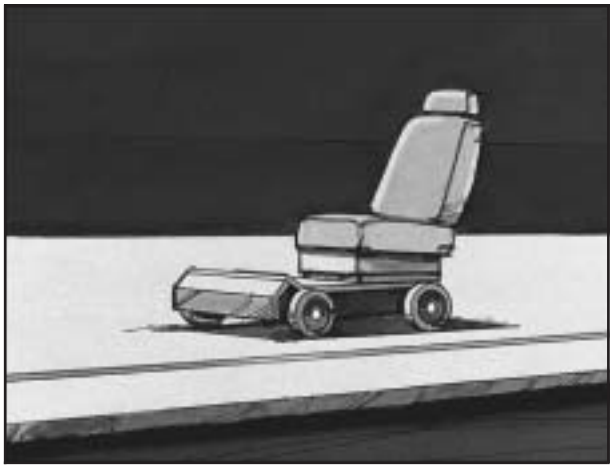
You never know if you will be in a crash. If you do have a crash, you do not know if it will be a bad one.

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.

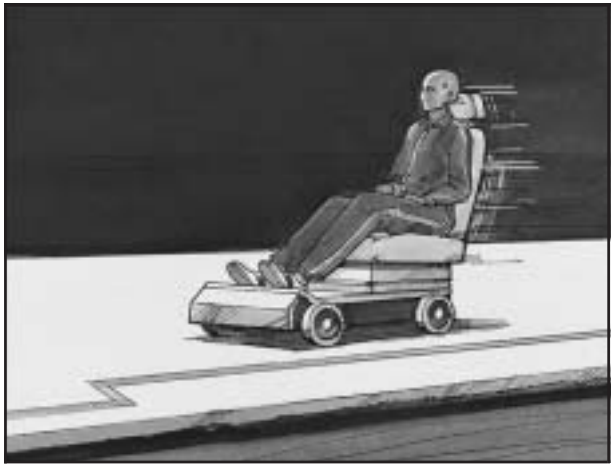
After more than 40 years of safety belts in vehicles, the facts are clear. In most crashes buckling up does matter... a lot!

Why Safety Belts Work

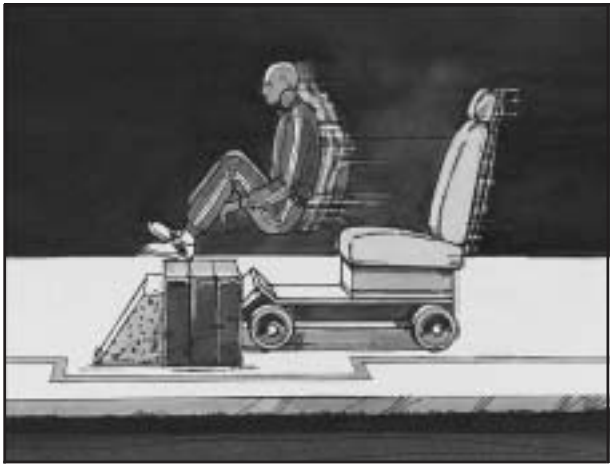
When you ride in or on anything, you go as fast as it goes.



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

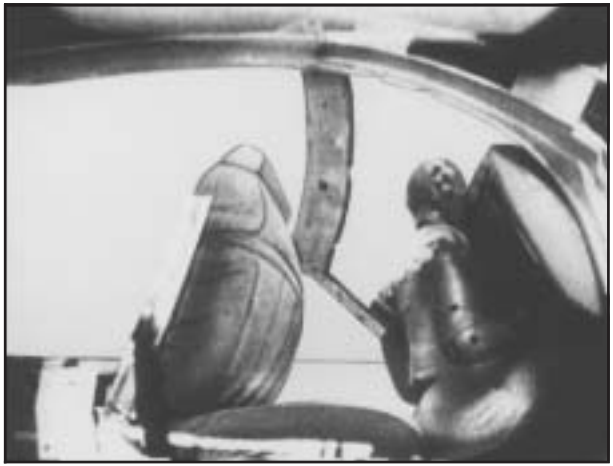


Put someone on it.



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 45* or *Infants and Young Children on page 48*. Follow those rules for everyone's protection.

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

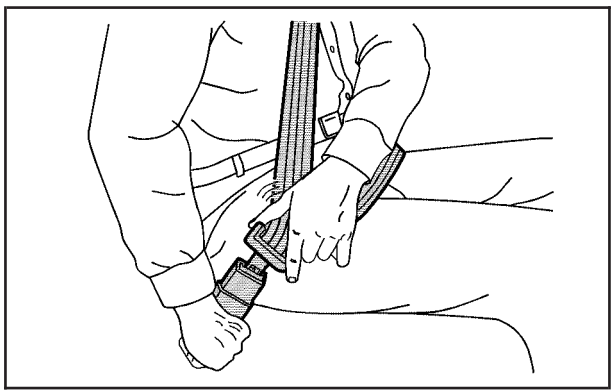
We will start with the driver position.

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.

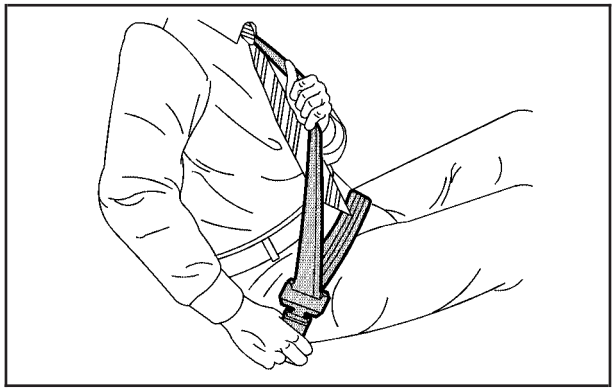
   The lap-shoulder belt may lock if you pull the belt across you very quickly. If this happens, let the belt go back slightly to unlock it. Then pull the belt across you more slowly.

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 44*.

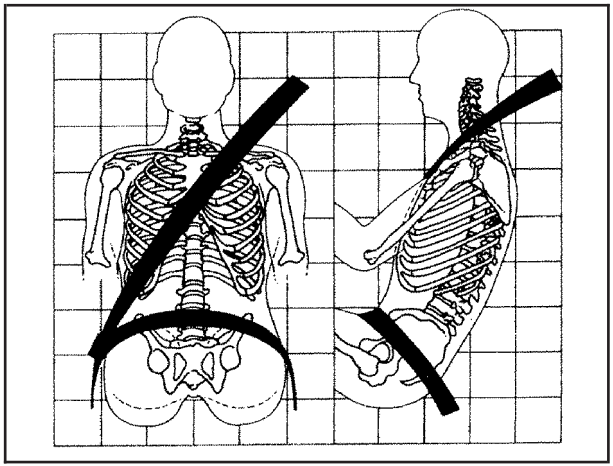
   Make sure the release button on the buckle is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.

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 35*.



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

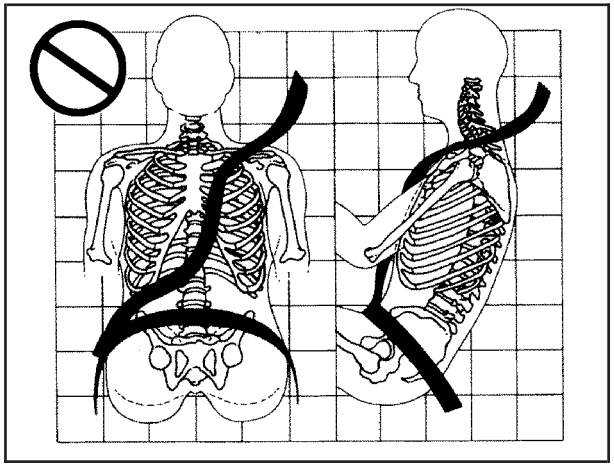
   It may be necessary to pull stitching on the safety belt through the latch plate to fully tighten the lap belt on smaller occupants.



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?

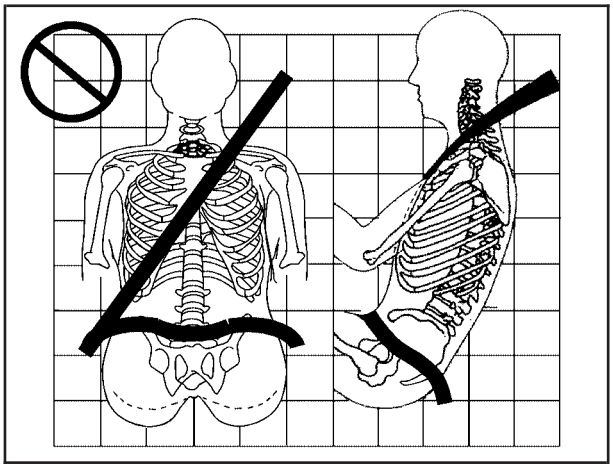


A: The shoulder belt is too loose. It will not give nearly as much protection this way.

⚠ 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?

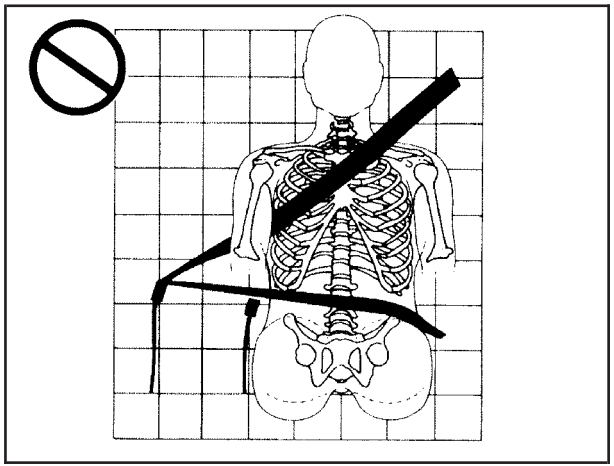


A: The lap belt is too loose. It will not give nearly as much protection this way.

⚠ 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?

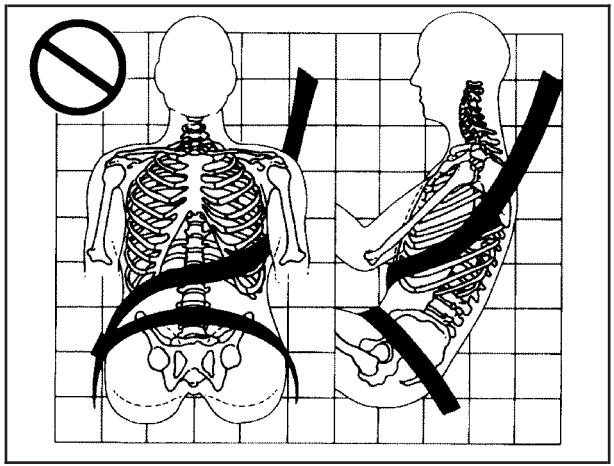


A: The belt is buckled in the wrong place.

⚠ 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?

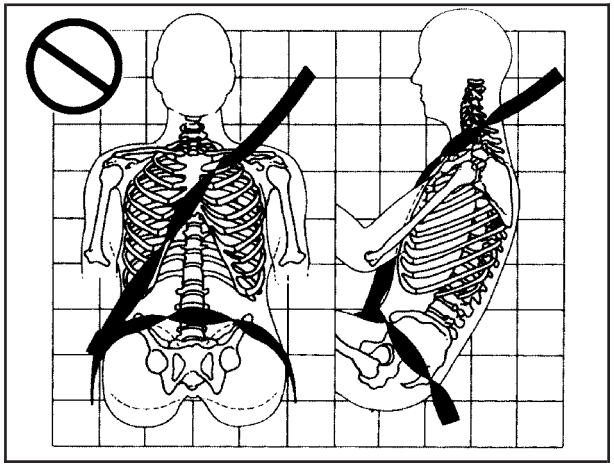


A: The shoulder belt is worn under the arm. It should be worn over the shoulder at all times.

⚠ 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.

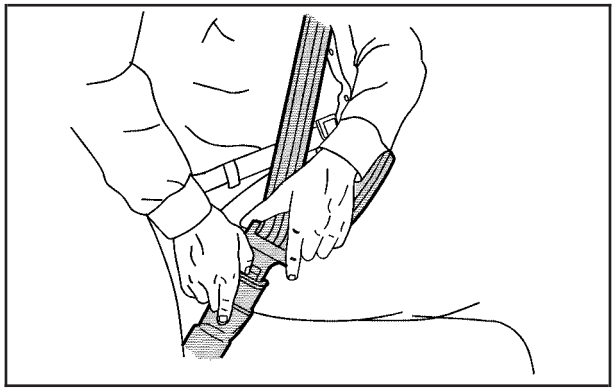
Q: What is wrong with this?



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/retailer to fix it.



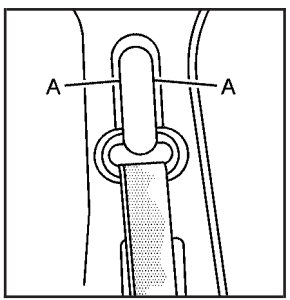
To unlatch the belt, push the button on the buckle. The belt should go back out of the way.

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

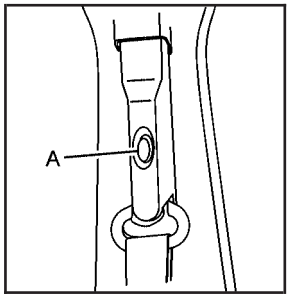
Shoulder belt height adjusters are available for the driver and right front passenger seating positions. Before you begin to drive, move the shoulder belt adjuster to the height that is right for you.

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.



Regular and Crew Cab

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



Extended Cab

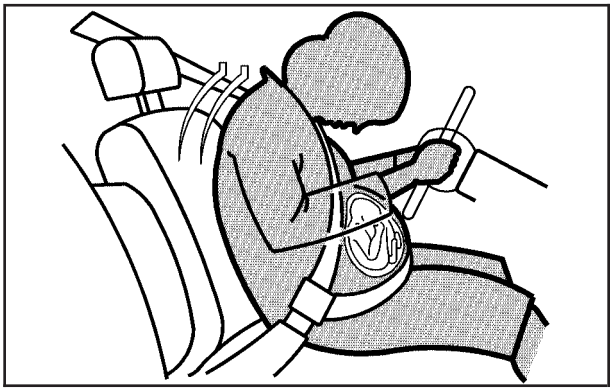
On the extended cabs, push down on the release button (A) and move the height adjuster to the desired position.

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 for the regular and crew cabs, or without pushing the release button for extended cabs, 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 28*.

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 which may turn off the passenger's frontal airbag. If this happens, just let the belt go back all the way and start again.

Center Front Passenger Position (Regular Cab)

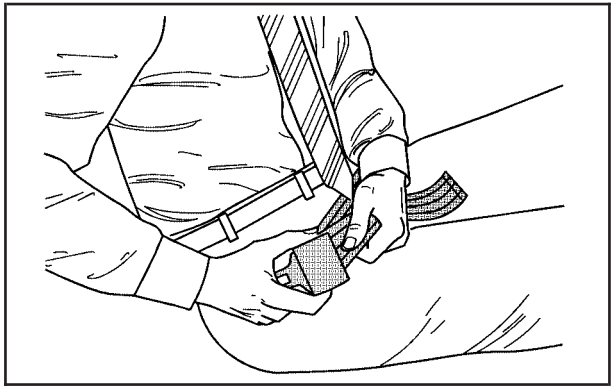
To learn how to wear the center front passenger's safety belt properly, see *Driver Position on page 28*.

The center 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, just let the belt go back all the way and start again.

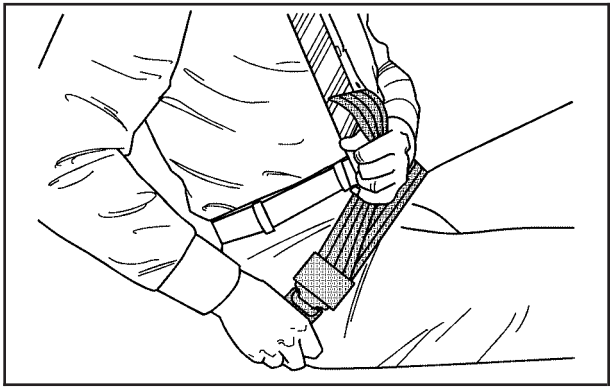
Center Front Passenger Position (Crew and Extended Cab)

Lap Belt

Your vehicle may have a center front seating position.



When you sit in a 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 44*.

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.

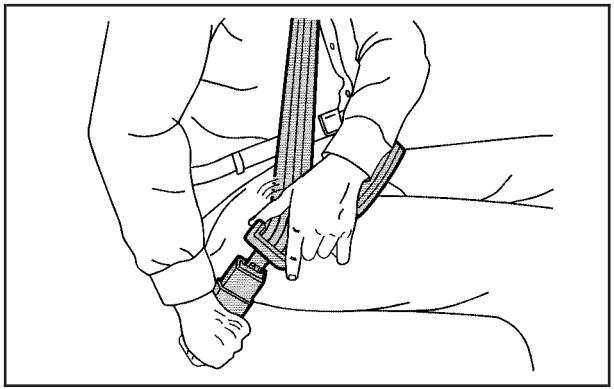
Rear Seat Passengers

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.

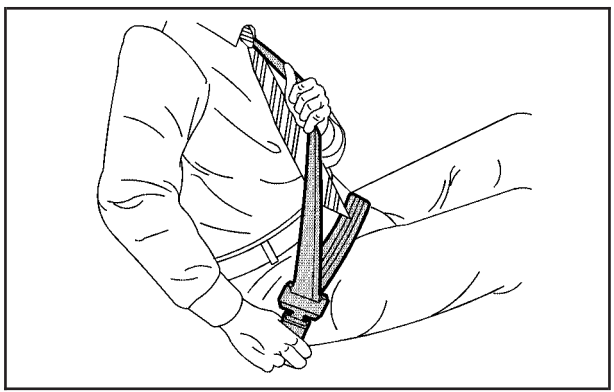
2. Push the latch plate into the buckle until it clicks.

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

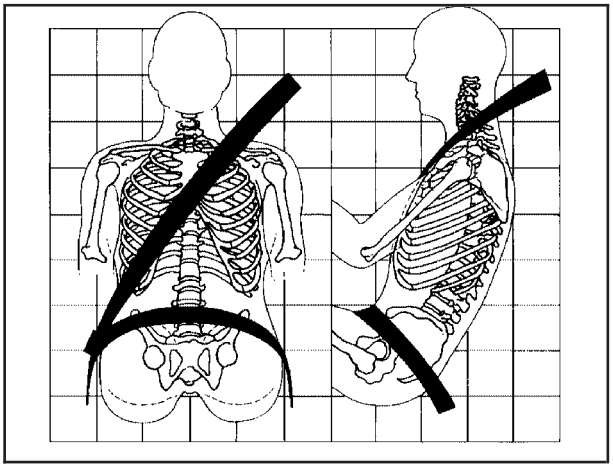
When the shoulder belt is pulled out all the way, it will lock. If it does, let it go back all the way and start again.

If the belt is not long enough, see *Safety Belt Extender on page 44*.

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.

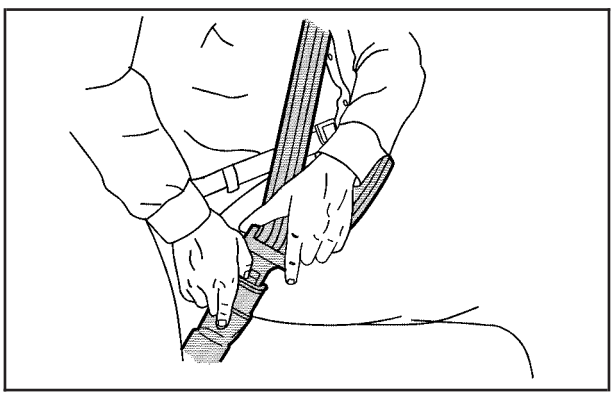


The lap part of the belt should be worn low and snug on the hips, just touching the thighs. In a crash, this applies force to the strong pelvic bones. And you would be less likely to slide under the lap belt. If you slid under it, the belt would apply force at your abdomen. This could cause serious or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



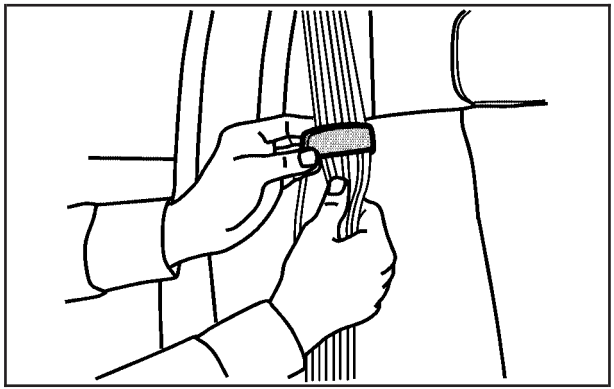
To unlatch the belt, push the button on the buckle.

Rear Safety Belt Comfort Guides

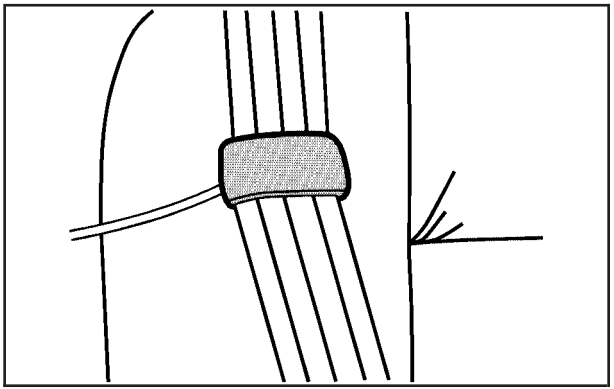
Rear shoulder belt comfort guides may provide added safety belt comfort for older children who have outgrown booster seats and for some adults. When installed on a shoulder belt, the comfort guide positions the belt away from the neck and head.

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

1. Remove the guide from its storage clip on the interior body.



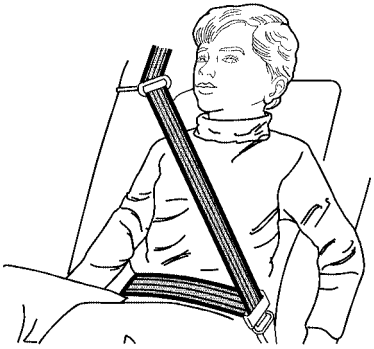
2. Place the guide over the belt and insert the two edges of the belt into the slots of the guide.



3. Be sure that the belt is not twisted and it lies flat. The elastic cord must be 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 39*. 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 guides. Slide the guide onto the storage clip.

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, near frontal, or rear crash if the threshold conditions for pretensioner activation are met. And, if your vehicle has side impact rollover airbags, safety belt pretensioners can help tighten the safety belts in a side crash or a rollover event.

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 105*.

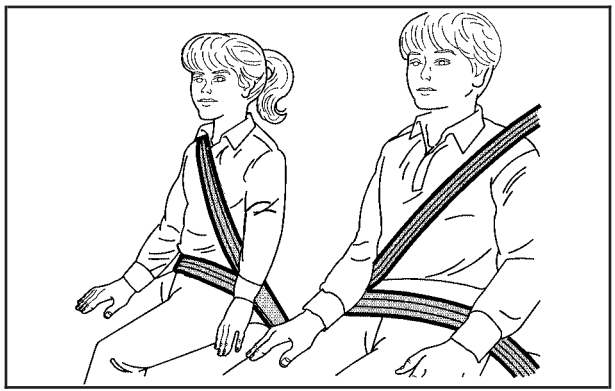
Safety Belt Extender

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

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

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.

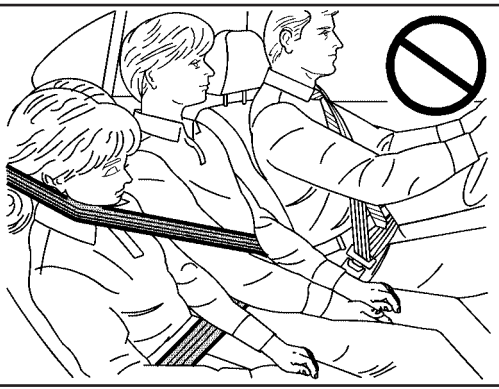
According to accident statistics, children are safer when properly restrained in the rear seating positions than in the front seating positions.

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 cannot 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 41*. 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.

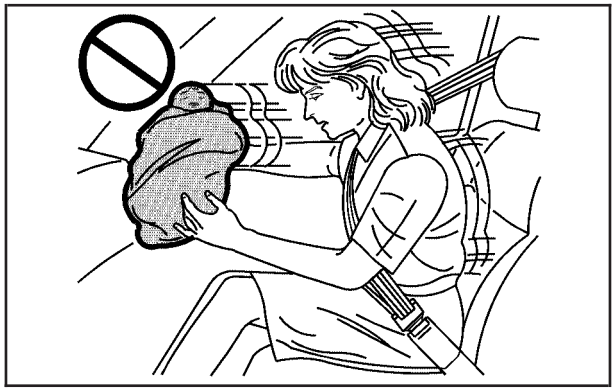
⚠ CAUTION:

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.



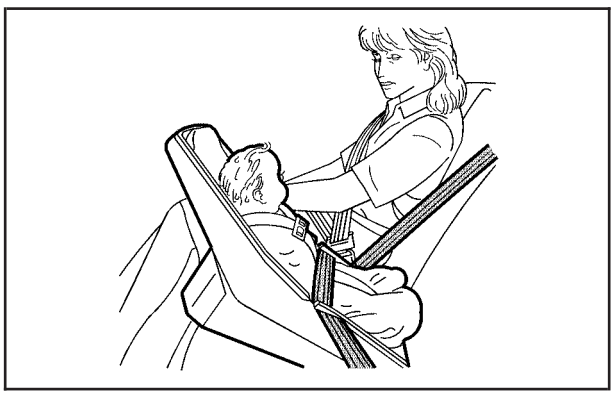
⚠ CAUTION:

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.

CAUTION: (Continued)

CAUTION: (Continued)

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.

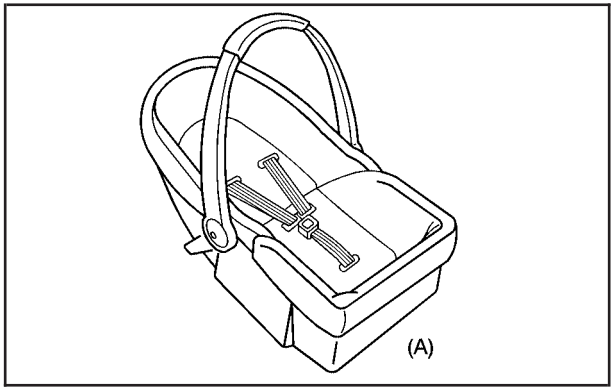
⚠ CAUTION:

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 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.

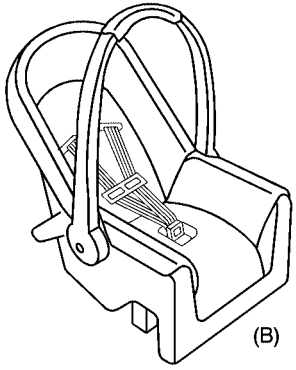
⚠ CAUTION:

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.

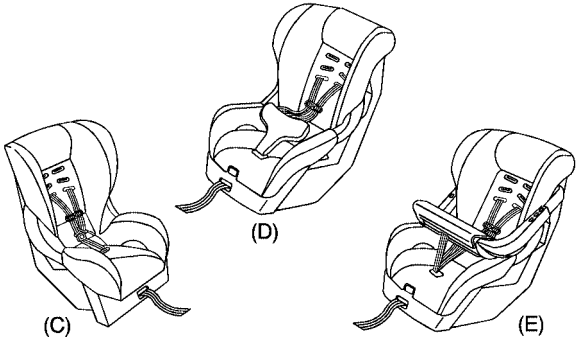
Child Restraint Systems



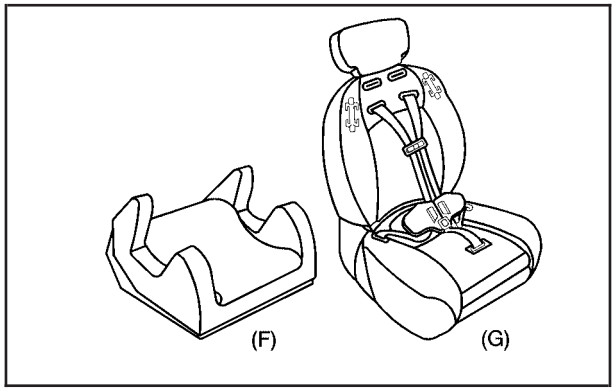
An infant car bed (A), a special bed made for use in a motor vehicle, is an infant restraint system designed to restrain or position a child on a continuous flat surface. Make sure that the infant's head rests toward the center of the vehicle.



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

A label on 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

CAUTION: (Continued)

CAUTION: (Continued)

restraint would be very close to the inflating airbag. Be sure the airbag is off before using a rear-facing child restraint in the right front seat position.

Even though the passenger sensing system or airbag off switch are designed to turn off the passenger’s frontal airbag under certain conditions, 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 transported in vehicles with a rear seat that will accommodate a rear-facing child restraint, whenever possible.

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 your vehicle does not have a rear seat that will accommodate a rear-facing child restraint, we recommend that rear-facing child restraints not be transported in your vehicle, even if the airbag is off.

⚠ 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 use child restraints in the center front seat position. The restraints will not work properly.

There is limited space in the rear seating area of an extended cab model. If you want to secure a child restraint in a rear seating position of an extended cab model, especially in the rear center position, be sure to study the instructions that came with your child restraint to see if there is enough room to secure your seat properly.

If your vehicle has the passenger sensing system or the airbag off switch and you need to secure a rear-facing child restraint in the right front passenger's seat, the passenger's frontal airbag must be off. See *Passenger Sensing System on page 97*, *Airbag Off Switch on page 93*, and *Securing a Child Restraint in the Right Front Seat Position (With Airbag Off Switch) on page 70* or *Securing a Child Restraint in the Right Front Seat Position (With Passenger Sensing System) on page 76* for more on this, including important safety information.

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)

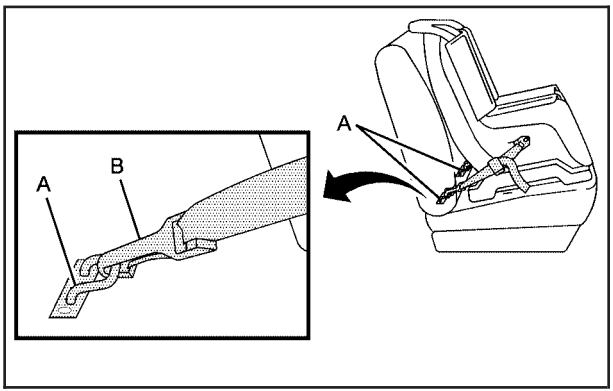
The LATCH system holds a child restraint during driving or in a crash. This system is designed to make installation of a child restraint easier. The LATCH system uses anchors in the vehicle and attachments on the child restraint that are made for use with the LATCH system.

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.

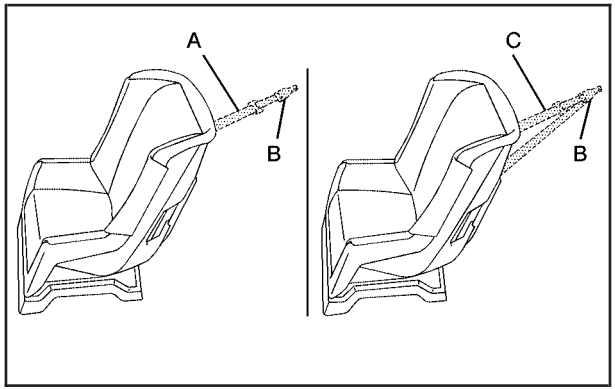
Not all vehicle seating positions or child restraints have lower anchors and attachments or top tether anchors and attachments.

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



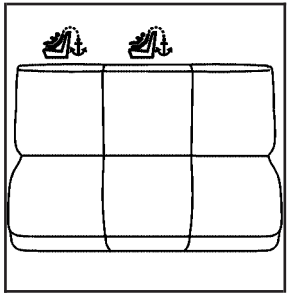
A top tether (A, C) anchors the top of the child restraint to the vehicle. A top tether anchor is built into the vehicle. The top tether attachment (B) on the child restraint connects to the top tether anchor in the vehicle in order to reduce the forward movement and rotation of the child restraint during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

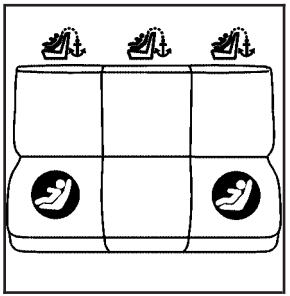
Lower Anchor and Top Tether Anchor Locations



Regular Cab Front Seat

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

Do not install a child restraint in the center front seat position. See *Securing a Child Restraint in the Center Front Seat Position on page 69* for more information.

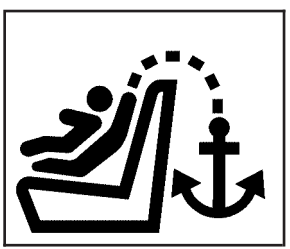


Crew and Extended Cab Rear Seat

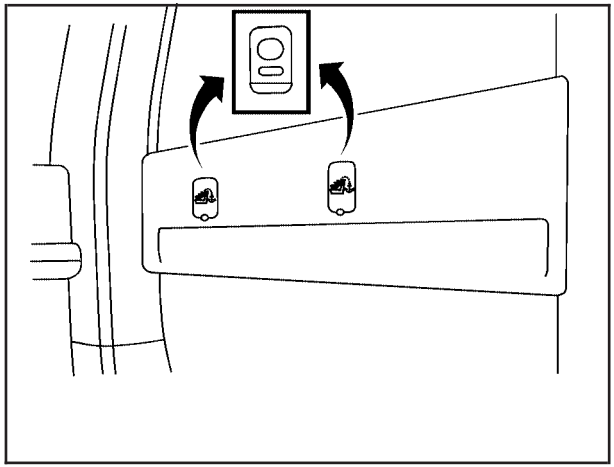
(Top Tether Anchor): Seating positions with top tether anchors.

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

For crew and extended cab models, the rear outboard seating positions have exposed metal lower anchors located in the crease between the seatback and the seat cushion.

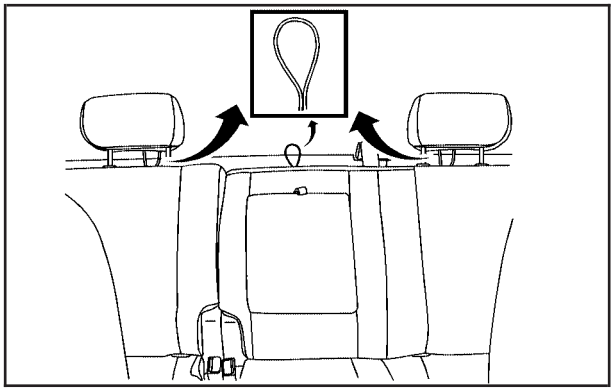


For regular cab models, there is an anchor symbol on the trim covers to assist you in locating the top tether anchors.



Regular Cab

Do not install a child restraint in the center seat position. See *Securing a Child Restraint in the Center Front Seat Position on page 69* for more information. For regular cab models, the top tether anchor is located under a trim covers on the back panel behind the passenger seat. Remove the trim plug to access the anchor.



Crew Cab Shown, Extended Cab Similar

For crew and extended cab models, the top tether anchors are the loops located near the top of the seatback for each rear seating position. These loops will be used to route the top tether through, as well as, to secure the top tether in the vehicle. Be sure to use an anchor (loop) located on the same side of the vehicle as the seating position where the child restraint will be placed.

Be sure to read the instructions following to properly install a child restraint using these loops.

Do not secure a child restraint in the front passenger's position if your vehicle has rear seats, 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 56* 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

CAUTION: (Continued)

CAUTION: (Continued)

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, except the center top tether anchors in crew and extended cab models, and lower anchors in the vehicle are 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.

CAUTION: (Continued)

CAUTION: (Continued)

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:

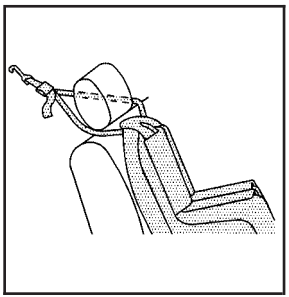
Children can be seriously injured or strangled if a shoulder belt is wrapped around their neck and the safety belt continues to tighten. Secure any unused safety belts behind the child restraint so children cannot reach them. Pull the shoulder belt all the way out of the retractor to set the lock, if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

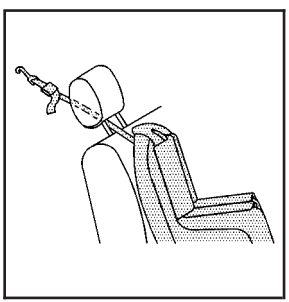
Folding an empty rear seat with the safety belts secured may cause damage to the safety belt or the seat. When removing the child restraint, always remember to return the safety belts to their normal, stowed position before folding the rear seat.

Regular Cab Models

1. If the child restraint manufacturer recommends that the top tether be attached, attach and tighten the top tether to the top tether anchor, if your vehicle has one. Refer to the child restraint instructions and the following steps:
   1.1. Pull the passenger seatback forward by pulling the recliner handle upward to access the top tether anchor. See *Reclining Seatbacks on page 15* for additional information.
   1.2. Find the top tether anchor.
   1.3. Remove the trim cover to expose the anchor.
   1.4. Route, attach, and tighten the top tether according to your child restraint instructions and the following instructions:



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



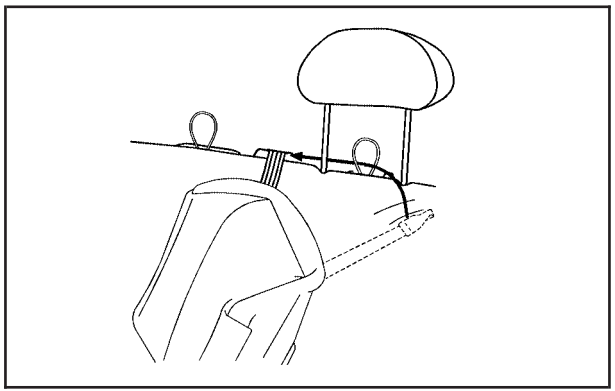
If the position you are using has an adjustable head restraint and you are using a single tether, raise the head restraint and route the tether under the head restraint and in between the head restraint posts.

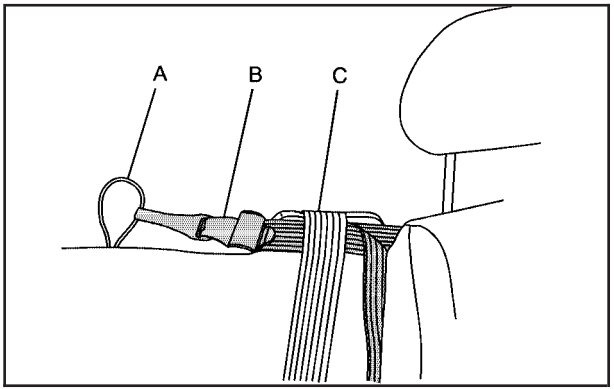
2. See *Securing a Child Restraint in the Right Front Seat Position (With Airbag Off Switch) on page 70* or *Securing a Child Restraint in the Right Front Seat Position (With Passenger Sensing System) on page 76* for instructions on installing the child restraint using the safety belts.
3. Push and pull the child restraint in different directions to be sure it is secure.

Crew and Extended Cab Models

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 (loop), if your vehicle has one. Refer to the child restraint instructions and the following steps:





Example — Rear Driver's Side Position

2.1. When using a child restraint with a top tether in the rear driver side position:

A. Raise the head rest.

B. Route the top tether (B) between the head rest posts, through the loop (A), behind the inboard head rest post, and under the center shoulder belt (C).

C. Attach the top tether (B) to the top tether anchor (loop) (A) at the center rear seating position.

2.2. When using a child restraint with a top tether in the rear center position:

A. Route the top tether (B) through the center loop (A), and behind the inboard passenger side head rest post.

B. Attach the top tether (B) to the top tether anchor (loop) (A) at the passenger side rear seating position.

2.3. When using a child restraint with a top tether in the rear passenger position:

A. Raise the head rest.

B. Route the top tether (B) between the head rest posts, through the loop (A) and behind the inboard head rest post.

C. Attach the top tether (B) to the top tether anchor (loop) (A) at the center rear seating position.

2.4. Tighten the top tether when and as the child restraint manufacturer's instructions say.

When the top tether is tightened, the anchor (loop) may bend. This is normal and will not damage the vehicle.

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

Extended Cab and Crew Cab

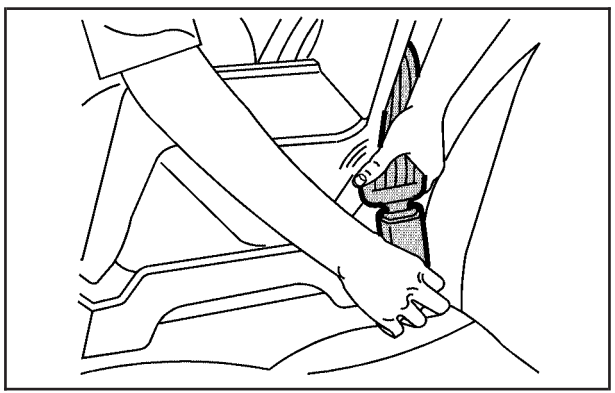
There is limited space in the rear seating of an extended cab model. If you want to secure a child restraint in a rear seating position, be sure to study the instructions that came with your child restraint to see if there is enough room to secure your seat properly.

If your child restraint has the LATCH system, see *Lower Anchors and Tethers for Children (LATCH) on page 58*.

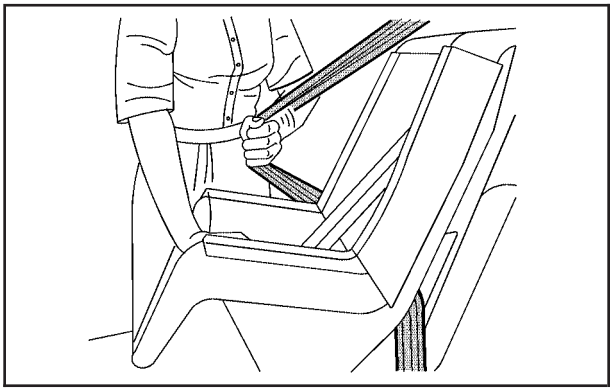
If your child restraint does not have the LATCH system, you will be using the lap-shoulder belt to secure the child restraint in this position.

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.

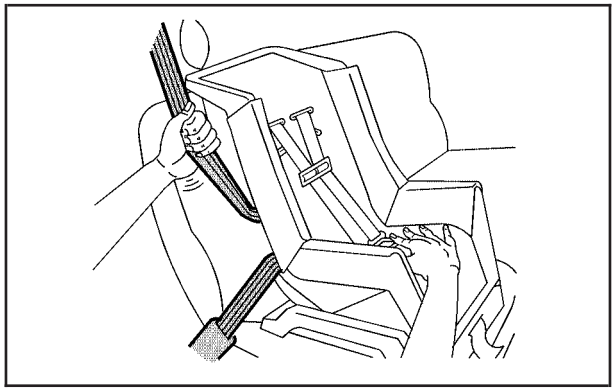
1. Put the child restraint on the seat.
2. Pick up the latch plate and run the lap and shoulder portions of the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.



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 to *Lower Anchors and Tethers for Children (LATCH) on page 58*.
7. Push and pull the restraint in different directions to be sure it is secure.

To remove the child restraint, if the top tether is attached to a 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:

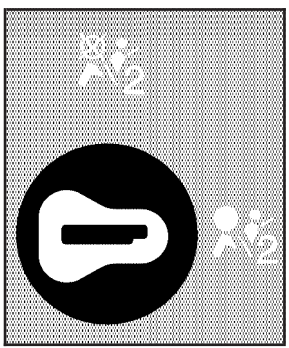
A child in a child restraint in the center front seat can be badly injured or killed by the right front passenger's airbag if it inflates. Never secure a child restraint in the center front seat. It is always better to secure a child restraint in the rear seat.

Do not use child restraints in this position.

Securing a Child Restraint in the Right Front Seat Position (With Airbag Off Switch)

Your vehicle has a right front passenger airbag. If one of the switches pictured in the following illustrations is located in your glove box, your vehicle has an airbag on-off switch that you can use to manually turn on or off the right front passenger's airbag.

United States



Canada

Your switch may vary slightly. See *Airbag Off Switch on page 93* for more on this, including important safety information and illustrations of alternate switch designs.

⚠ CAUTION:

A child in a rear-facing child restraint can be seriously injured or killed if the 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 this vehicle unless the passenger's airbag has been turned off.

Even though the airbag off switch is designed to turn off the passenger's frontal airbag, 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.

CAUTION: (Continued)

CAUTION: (Continued)

We recommend that rear-facing child restraints be transported in vehicles with a rear seat that will accommodate a rear-facing child restraint, whenever possible.

If you need to secure a forward-facing child restraint in the right front seat, always move the passenger seat as far back as it will go.

Never put a rear facing child restraint in the right front passenger's 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. Be sure the airbag is off before using a rear-facing child restraint in the right front seat position. If you secure a forward-facing child restraint in the right front seat, always move the right front passenger seat as far back as it will go.

A rear seat is a safer place to secure a forward facing child restraint. See *Where to Put the Restraint on page 56*. 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 a forward-facing child restraint. See *Manual Seats on page 9* or *Power Seats on page 10*.

⚠ CAUTION:

If the airbag readiness light in the instrument panel cluster ever comes on when you have turned off the airbag, it means that something may be wrong with the airbag system. The right front passenger's airbag could inflate even though the switch is off. If this ever happens, have the vehicle serviced promptly. Until you have the vehicle

CAUTION: (Continued)

CAUTION: (Continued)

serviced, do not let anyone whom the national government has identified as a member of a passenger airbag risk group sit in the right front passenger's position (for example, do not secure a rear-facing child restraint in the right front passenger's seat). See *Airbag Off Switch on page 93*.

If your child restraint has the LATCH system, see *Lower Anchors and Tethers for Children (LATCH) on page 58*.

If your vehicle has a rear seat, there is no top tether anchor at the right front seating position. Do not secure a child seat 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 58* if the child restraint has a top tether.

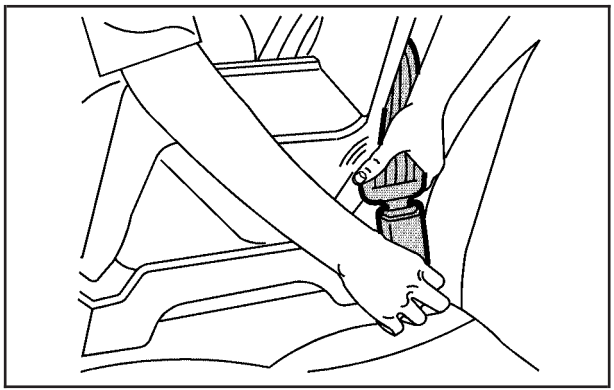
You will be using the lap-shoulder belt to secure the child restraint in this position. Be sure to follow the instructions that came with the child restraint. Secure the child in the child restraint when and as the instructions say.

1. Your vehicle has a right front passenger's frontal airbag. See *Airbag Off Switch on page 93*. If your child restraint is forward-facing, move the seat as far back as it will go before securing the restraint in this seat. See *Manual Seats on page 9* or *Power Seats on page 10*. If you need to use a rear-facing child restraint in this seat, make sure the airbag is off once the child restraint has been installed.

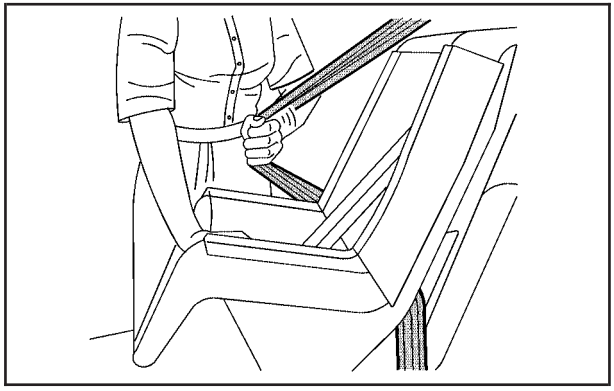
   When the airbag off switch has turned off the right front passenger's frontal airbag, the off indicator in the overhead console should light and stay lit when you turn the ignition to RUN or START after the system check is completed. See *Airbag Off Light on page 250*.

2. Put the child restraint on the seat.

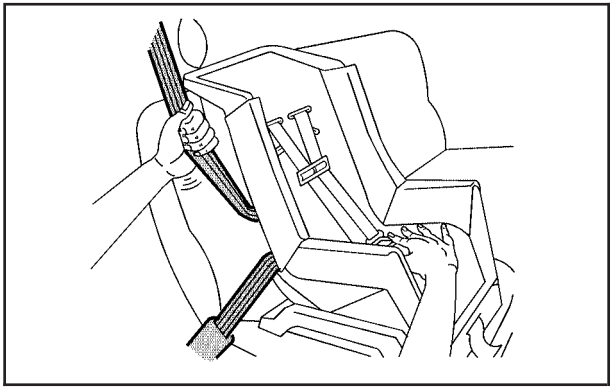
3. Pick up the latch plate, and run the lap and shoulder portions of the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.



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 belt to tighten the lap belt portion, 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 out of the retractor once the lock has been set.

7. If your child restraint manufacturer recommends using a top tether, and the position you are using has a top tether anchor, attach and tighten the top tether to the top tether anchor. Refer to the instructions that came with the child restraint and to *Lower Anchors and Tethers for Children (LATCH) on page 58*.
8. 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.

If you had turned the airbag off with the switch, remember to be sure to use the airbag off switch to turn on the right front passenger's airbag when you remove the child restraint from the vehicle unless the person who will be sitting there is a member of a passenger airbag risk group. See *Airbag Off Switch on page 93*.

⚠ CAUTION:

If the right front passenger's airbag is turned off for a person who is not in a risk group identified by the national government, that person will not have the extra protection of an airbag. In a crash, the airbag will not be able to inflate and help protect the person sitting there. Do not turn off the passenger's airbag unless the person sitting there is in a risk group. See *Airbag Off Switch on page 93* for more on this, including important safety information.

Securing a Child Restraint in the Right Front Seat Position (With Passenger Sensing System)

Your vehicle has a right front passenger airbag. A rear seat is a safer place to secure a forward-facing child restraint. See *Where to Put the Restraint on page 56*.

In addition, your vehicle may have 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 97* and *Passenger Airbag Status Indicator on page 252* 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.

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.

If your vehicle does not have a rear seat that will accommodate a rear-facing child restraint, we recommend that rear-facing child restraints not be transported in your vehicle, even if the airbag is off.

If your child restraint has the LATCH system, see *Lower Anchors and Tethers for Children (LATCH) on page 58*.

If your vehicle has a rear seat, there is no top tether anchor at the right front seating position. Do not secure a child seat 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 58* if the child restraint has a top tether.

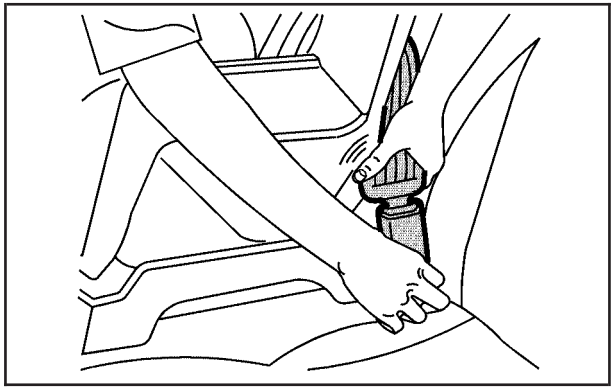
You will be using the lap-shoulder belt to secure the child restraint in this position. Be sure to follow the instructions that came with the child restraint. Secure the child in the child restraint when and as the instructions say.

1. Your vehicle has a right front passenger's frontal airbag. See *Passenger Sensing System on page 97*. 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 Seats on page 9* or *Power Seats on page 10*.

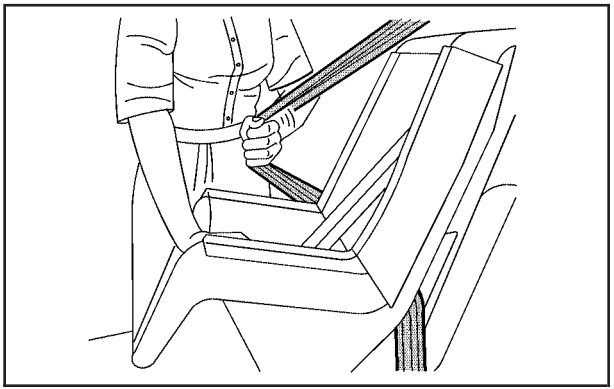
   When the passenger sensing system has turned off the right front passenger's frontal airbag, the off indicator in the passenger airbag status indicator should light and stay lit when you turn the ignition to RUN or START after the system check is completed. See *Passenger Airbag Status Indicator on page 252*.

2. Put the child restraint on the seat.

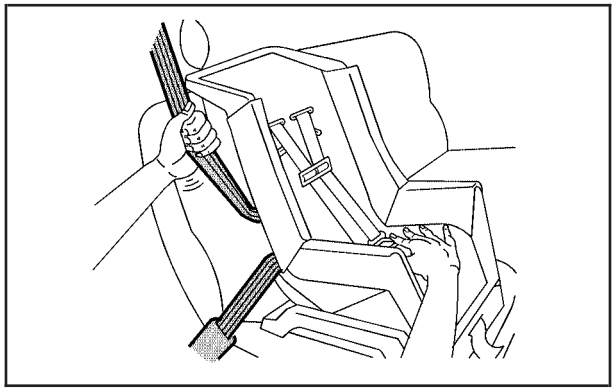
3. Pick up the latch plate, and run the lap and shoulder portions of the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.



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. If your child restraint manufacturer recommends using a top tether, and the position you are using has a top tether anchor, attach and tighten the top tether to the top tether anchor. Refer to the instructions that came with the child restraint and to *Lower Anchors and Tethers for Children (LATCH) on page 58*.
8. Push and pull the child restraint in different directions to be sure it is secure.
9. If your vehicle has the passenger sensing system and the airbag is off, the off indicator in the overhead console 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.

Securing a Child Restraint in the Right Front Seat Position (Heavy Duty Crew Cab Only)

Your vehicle has a right front passenger airbag. *Never* put a rear-facing child restraint in the right front passenger's seat. 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. Always secure a rear-facing child restraint in a rear seat.

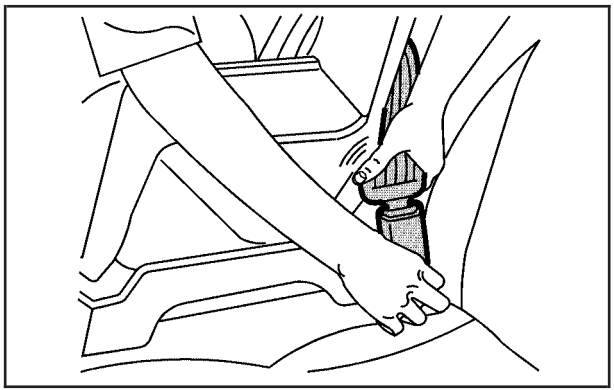
A rear seat is a safer place to secure a forward-facing child restraint. If you need to secure a forward-facing child restraint in the right front seat position, see *Where to Put the Restraint on page 56*.

If your child restraint has the LATCH system, see *Lower Anchors and Tethers for Children (LATCH) on page 58*.

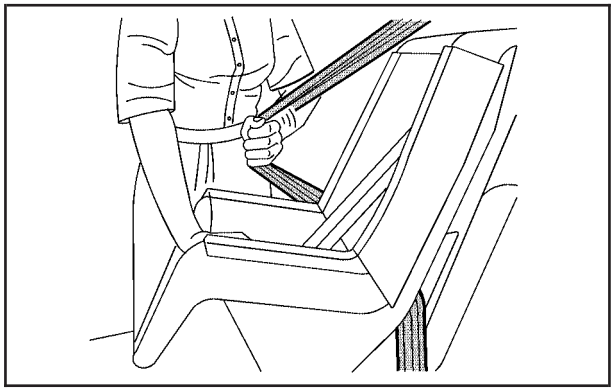
There is no top tether anchor in the right front passenger's position. Do not secure a child seat in this position if a national or local law requires that the top tether be anchored, or if the instructions that come with the child restraint say that the top tether must be anchored. See *Lower Anchors and Tethers for Children (LATCH) on page 58* if your child restraint has a top tether.

You will be using the lap-shoulder belt to secure the 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.

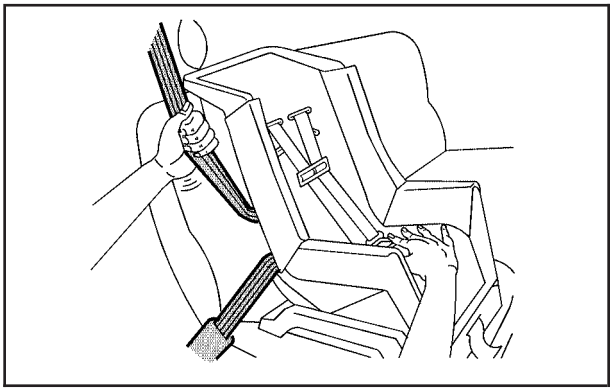
1. Because your vehicle has a right front passenger's frontal airbag, always move the seat as far back as it will go before securing a forward-facing child restraint. See *Manual Seats on page 9* or *Power Seats on page 10*.
2. Put the child restraint on the seat.
3. Pick up the latch plate, and run 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 out of the retractor once the lock has been set.

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

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 the following airbags:

- A frontal airbag for the driver.
- A frontal airbag for the right front passenger.

Your vehicle may have the following airbags:

- A roof-mounted rollover airbag for the driver and right front passenger.
- A roof-mounted rollover airbag for the second row outboard passenger positions.

If your vehicle has roof-mounted rollover airbags, the word AIRBAG will appear on the airbag covering on the headliner above the sidewall trim near the driver's and right front passenger's window and the rear passenger's outboard seating positions.

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.

⚠ CAUTION:

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 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 rollover airbags are designed to inflate in moderate to severe crashes where something hits the side of your vehicle, during a vehicle rollover, or in a severe frontal impact. They are not designed to inflate in rear crashes. If your vehicle has roof-mounted airbags, they are designed to provide both side impact protection and rollover protection.

CAUTION: (Continued)

CAUTION: (Continued)

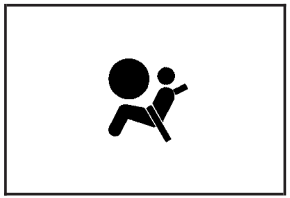
Everyone in your vehicle should wear a safety belt properly — whether or not there is an airbag for that person.

⚠ CAUTION:

Both frontal and roof-mounted 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 45* or *Infants and Young Children on page 48*.



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 250* for more information.

Where Are the Airbags?

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

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

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

If your vehicle has a roof-mounted rollover airbag for the right front passenger and the person directly behind that passenger, it is located 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.

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 has a seat position sensor which enables the sensing system to monitor the fore and aft position of the driver's seat. Seat position sensors provide information that is used to determine if the airbags should deploy at a reduced level or at full deployment.

Your vehicle may or may not have roof-mounted rollover airbags and a rollover sensor. See *Airbag System on page 83*. These "rollover capable" airbags are intended to inflate in moderate to severe side crashes, during a rollover, or in a severe frontal impact. A roof-mounted rollover airbag will inflate if the crash severity is above the system's designed "threshold level."

The threshold level can vary with specific vehicle design. Roof-mounted airbags are not intended to inflate in rear impacts. Both roof-mounted rollover airbags will deploy when either side of the vehicle is struck, during a rollover, or in a severe frontal impact.

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

The airbag system is designed to work properly under a wide range of conditions, including off-road usage. Observe safe driving speeds, especially on rough terrain. As always, wear your safety belt. See *Off-Road Driving on page 390* for tips on off-road driving.

If the GVWR (Gross Vehicle Weight Rating) of your vehicle is 8,500 lb (3 855 kg) or above, your vehicle has single stage airbags. If the GVWR is below 8,500 lb (3 855 kg), your vehicle has dual stage airbags. You can find the GVWR on the certification label on the rear edge of the driver's door. See *Loading Your Vehicle on page 425* for more information.

Single Stage Airbags

If your vehicle has frontal airbags with single stage deployment and your vehicle goes straight into a wall that does not move or deform, the threshold level is about 12 to 16 mph (19 to 26 km/h). The threshold level can vary, however, with specific vehicle design, so that it can be somewhat above or below this range.

Dual Stage Airbags

If your vehicle has frontal airbags with dual stage deployment, the amount of restraint will adjust according to crash severity. Your vehicle has electronic frontal sensors which help the sensing system distinguish between a moderate 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 9 to 16 mph (14 to 26 km/h), and the threshold level for a full deployment is about 18 to 23 mph (29 to 37 km/h).

The threshold level can vary, however, with specific vehicle design, so that it can be somewhat above or below this range. Vehicle's with dual stage airbags also have a sensor which enables the sensing system to monitor the position of the driver seat. The seat position sensor provides information which is used to determine if the airbags should deploy at a reduced level or at full deployment.

What Makes an Airbag Inflate?

In an impact of sufficient severity, the airbag sensing system detects that the vehicle is in a crash. In the case of a roof-mounted rollover airbag, the sensing system detects that the vehicle is about to roll over or has been in a severe frontal impact or a moderate to severe side impact. 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 rollover airbags, the airbag modules are located 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. Roof-mounted rollover airbags would not help you in many types of collisions, including many frontal or near frontal collisions, 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 or rollovers for vehicles with roof-mounted rollover 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 an airbag inflated. Roof-mounted rollover 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, and the area along the ceiling of the 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 flash the hazard warning flashers when the airbags inflate. You can lock the doors again, turn the interior lamps off, and turn off the hazard warning flashers by using the controls for those features.

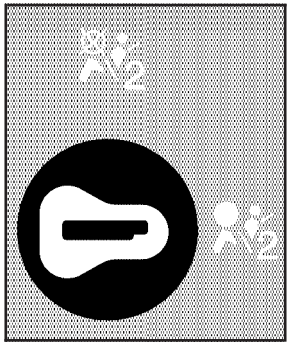
In many crashes severe enough to inflate the airbag, windshields are broken by vehicle deformation. Additional windshield breakage may also occur from the right front passenger airbag.

- Airbags are designed to inflate only once. After an airbag inflates, you will need some new parts for your 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 656*.
- Let only qualified technicians work on the airbag system. Improper service can mean that an airbag system will not work properly. See your dealer for service.

Airbag Off Switch

If one of the switches pictured in the following illustrations is located in your glove box, your vehicle has an airbag on-off switch that you can use to manually turn on or off the right front passenger's airbag. Your switch may vary slightly.

United States



Canada

If your vehicle does not have an airbag off switch, it may have a passenger sensing system. See Passenger Sensing System.

This switch should only be turned to the off position if the person in the right front passenger's position is a member of a passenger risk group identified by the national government as follows:

Infant. *An infant (less than 1 year old) must ride in the front seat because:*

- *My vehicle has no rear seat;*
- *My vehicle has a rear seat too small to accommodate a rear-facing infant seat; or*
- *The infant has a medical condition which, according to the infant's physician, makes it necessary for the infant to ride in the front seat so that the driver can constantly monitor the child's condition.*

Child age 1 to 12. *A child age 1 to 12 must ride in the front seat because:*

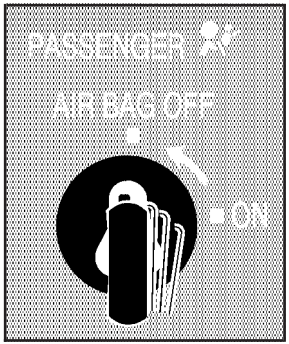
- *My vehicle has no rear seat;*
- *Although children ages 1 to 12 ride in the rear seat(s) whenever possible, children ages 1 to 12 sometimes must ride in the front because no space is available in the rear seat(s) of my vehicle; or*
- *The child has a medical condition which, according to the child's physician, makes it necessary for the child to ride in the front seat so that the driver can constantly monitor the child's condition.*

Medical Condition. *A passenger has a medical condition which, according to his or her physician:*

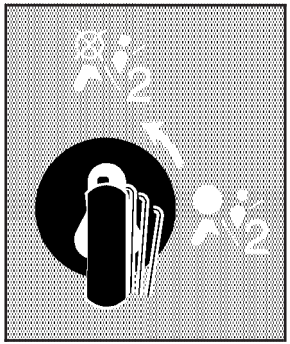
- *Causes the passenger airbag to pose a special risk for the passenger; and*
- *Makes the potential harm from the passenger airbag in a crash greater than the potential harm from turning off the airbag and allowing the passenger, even if belted, to hit the dashboard or windshield in a crash.*

⚠ CAUTION:

If the right front passenger's airbag is turned off for a person who is not in a risk group identified by the national government, that person will not have the extra protection of an airbag. In a crash, the airbag will not be able to inflate and help protect the person sitting there. Do not turn off the passenger's airbag unless the person sitting there is in a risk group.



United States



Canada

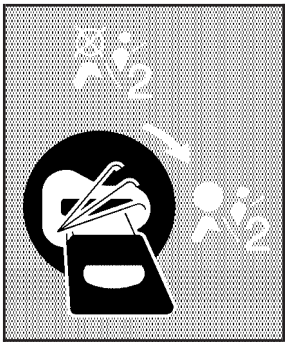
To turn off the right front passenger's airbag, insert your ignition key into the switch, push in, and move the switch to the off position.

The word OFF or the off symbol will come on in the passenger airbag status indicator located in the overhead console to let you know that the right front passenger's airbag is off, after the system check is completed. The airbag off light will come on and stay on to let you know that the right front passenger's airbag is off. See *Airbag Off Light on page 250*.

⚠ CAUTION:

If the airbag readiness light ever comes on when you have turned off the airbag, it means that something may be wrong with the airbag system. The right front passenger's airbag could inflate even though the switch is off. If this ever happens, do not let anyone whom the national government has identified as a member of a passenger airbag risk group sit in the right front passenger's position (for example, do not secure a rear-facing child restraint in the right front passenger's seat) until you have your vehicle serviced. See *Airbag Readiness Light on page 250* for additional information.

United States



Canada

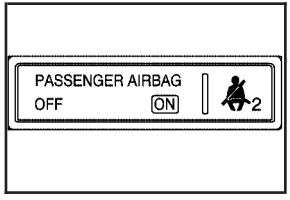
To turn the right front passenger's airbag on again, insert your ignition key into the switch, push in, and move the switch to the on position.

The right front passenger's frontal airbag is now enabled (may inflate). See *Airbag Off Light on page 250* for more information.

Passenger Sensing System

If your vehicle has one of the indicators pictured in the following illustrations, then your vehicle has a passenger sensing system for the right front passenger's position, unless there is an airbag off switch located in the glovebox. If there is an airbag off switch, your vehicle does not have a passenger sensing system. See *Airbag Off Switch on page 93* for more information.

The passenger airbag status indicator will be visible when you start your vehicle on the overhead console.



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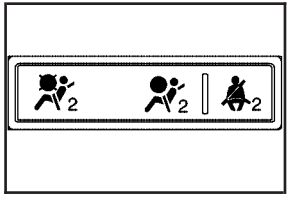

Canada

The words ON and OFF, or the symbol for on and off, will be visible during 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 252*.

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

A label on 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

CAUTION: (Continued)

CAUTION: (Continued)

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 your vehicle does not have a rear seat that will accommodate a rear-facing child restraint, we recommend that rear-facing child restraints not be transported in your vehicle, even if the airbag is off.

The passenger sensing system is designed to turn off the right front passenger's airbag if:

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

When the passenger sensing system has turned off the right front passenger's frontal airbag, the off indicator 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 (With Airbag Off Switch) on page 70* or *Securing a Child Restraint in the Right Front Seat Position (With Passenger Sensing System) on page 76*.

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.

Remove any additional material from the seat cushion before reinstalling or securing the child 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/retailer.

If no rear seat is available, do not install a child restraint in this vehicle, and check with your dealer/retailer.

The passenger sensing system is designed to enable (may inflate) the right front passenger's 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 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 two to three minutes. This will allow the system to detect that person and then enable the right front passenger's frontal airbag.

Safety belts help keep the passenger in position on the seat during vehicle maneuvers and braking, which helps the passenger sensing system maintain the passenger airbag status.

See “Safety Belts” and “Child Restraints” in the Index for additional information about the importance of proper restraint use.

⚠ 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 airbag(s). See *Airbag Readiness Light on page 250* for more on this, including important safety information.

A thick layer of additional material, such as a blanket or cushion, or aftermarket equipment such as seat covers, seat heaters, and seat massagers can affect how well the passenger sensing system operates. You may want to consider not using seat covers or other aftermarket equipment. See *Adding Equipment to Your Airbag-Equipped Vehicle on page 102* 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 663*.

⚠ 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.

CAUTION: (Continued)

CAUTION: (Continued)

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 644*.

Q: What if I added a snow plow? Will it keep the airbags from working properly?

A: We have designed our airbag systems to work properly under a wide range of conditions, including snow plowing with vehicles that have the optional Snow Plow Prep Package (RPO VYU). But do not change or defeat the snow plow's "tripping mechanism." If you do, it can damage your snow plow and your vehicle, and it may cause an airbag inflation.

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, rollover sensor module, steering wheel, instrument panel, overhead console, ceiling headliner, ceiling and pillar garnish trim, roof-mounted rollover 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 644*.

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. Keep safety belts clean and dry. See *Care of Safety Belts on page 601* 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 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 rollover 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 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 250*.

✍ NOTES

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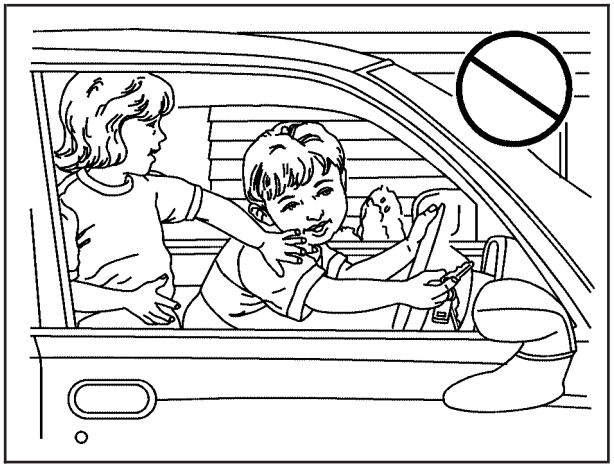
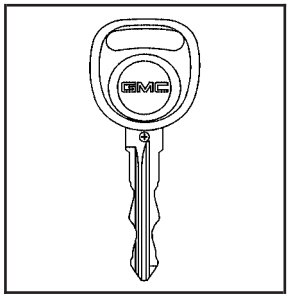
Keys

⚠ CAUTION:

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





Your vehicle has one double-sided key for the ignition and all door locks.

If you ever lose your keys, your dealer/retailer will be able to assist you with obtaining replacements.

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.**

If you ever do get locked out of your vehicle, call the GM Roadside Assistance Center. See *Roadside Assistance Program on page 650*.

Remote Keyless Entry (RKE) System

If the vehicle has a Remote Keyless Entry (RKE) 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 interference.
2. 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:

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.

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

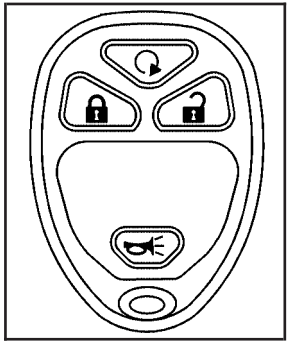
- Check the distance. You may be too far from your vehicle. You may need to stand closer during rainy or snowy weather.
- Check the location. Other vehicles or objects may be blocking the signal. Take a few steps to the left or right, hold the transmitter higher, and try again.
- Check to determine if battery replacement or resynchronization is necessary. See “Battery Replacement” and “Resynchronization” under *Remote Keyless Entry (RKE) System Operation on page 111*.
- 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 from about 3 feet (1 m) up to 65 feet (20 m) away with the Remote Keyless Entry (RKE) transmitter.

If your vehicle has the remote start feature you can also start your vehicle with the RKE transmitter. The RKE transmitter, with the remote start button, provides an increased operating range of 195 feet (60 m) away. However, the operating 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 start it.

There are other conditions which can affect the performance of the transmitter. See *Remote Keyless Entry (RKE) System on page 110*.



With Remote Start (Without Remote Start Similar)

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 RKE 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 (With DIC Buttons) on page 289* for additional information. Pressing the lock button may arm the content theft-deterrent system. See *Content Theft-Deterrent on page 128*.

(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 (With DIC Buttons) on page 289*. Pressing the unlock button on the RKE transmitter will disarm the content theft-deterrent system. See *Content Theft-Deterrent on page 128*.

(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 moved 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 RKE 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 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 “Relearn Remote Key” under *DIC Operation and Displays (With DIC Buttons) on page 268* or *DIC Operation and Displays (Without DIC Buttons) on page 275* for instructions on how to match RKE transmitters to your vehicle.

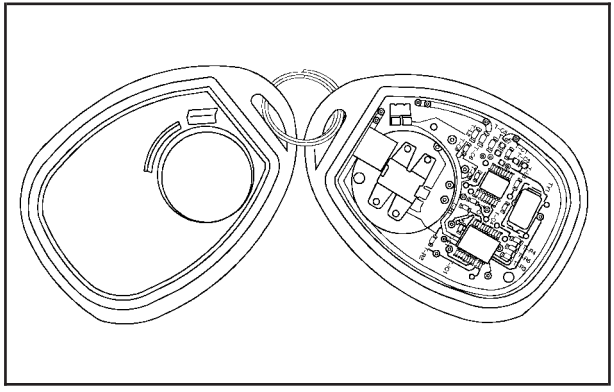
Battery Replacement

Under normal use, the battery in your RKE transmitter should last about four years.

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 RKE transmitter battery is low. See "REPLACE BATTERY IN REMOTE KEY" under *DIC Warnings and Messages on page 279* 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 RKE transmitter do the following:

1. Use a flat object with a thin edge into the notch, located below the vehicle locator/panic alarm 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. It may also start up the vehicle's heating or air conditioning systems and rear window defogger. Normal operation of the system will return after the key is turned to the RUN position.

During a remote start, if your vehicle has an automatic climate control system, the climate control system will default to a heating mode during colder outside temperatures and a cooling mode during warmer outside temperatures. If your vehicle does not have an automatic climate control system, 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.

During a remote start, if your vehicle has an automatic climate control system and heated seats, the heated seats will turn on during colder outside temperatures and will shut off when the key is turned to RUN.

If your vehicle does not have an automatic climate control system, during remote start, you will need to manually turn the heated seats on and off. See *Heated Seats on page 12* for additional information.

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

Do not use the remote start feature if your vehicle is low on fuel. Your vehicle may run out of fuel.

The RKE 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 110* for additional information.

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

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. If you cannot see the vehicle's lights, 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.

   When the vehicle starts, the parking lamps will turn on and remain on while the vehicle is running.
3. If it is the first remote start since the vehicle has been driven, repeat these steps, while the engine is still running, to extend the engine running time by 10 minutes. Remote start can be extended one time.

After entering the vehicle during a remote start, insert and turn the key to RUN 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 RKE 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 vehicle can be remote started two separate times between driving sequences. The engine will run for 10 minutes after each remote start.

Or, you can extend the engine run time by another 10 minutes within the first 10 minute remote start time frame, and before the engine stops.

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

The additional ten minutes are considered a second remote vehicle start.

Once two remote starts, or a single remote start with one time extension has been done, the vehicle must be started with the key.

After the key is removed from the ignition, the vehicle can be remote started again.

The vehicle cannot be remote started 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 that have 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 (With DIC Buttons) on page 289* for additional information. If your vehicle does not have DIC buttons, see your dealer to enable or disable the remote vehicle start system.

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 RKE transmitter will have extended range that will allow you to lock or unlock your vehicle from approximately 197 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.**
- **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**

CAUTION: (Continued)

CAUTION: (Continued)

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 the Remote Keyless Entry (RKE) transmitter or the key in the driver's door.

From the inside, use the power door locks or manual door locks. To lock or unlock the door with the manual locks, push down or pull up on the manual lock knob.

Power Door Locks

The power door lock switches are located on the armrest on the front doors.

(Unlock): Press the side of the switch with the unlock symbol to unlock the doors.

(Lock): Press the side of the switch with the lock symbol to lock the doors.

Delayed Locking

When locking the doors with the power lock switch or the Remote Keyless Entry (RKE) transmitter and a door is open, the doors will lock five seconds after the last door is closed. You will hear three chimes to signal that the delayed locking feature is in use.

Pressing the power lock switch or the lock button on the RKE transmitter twice will override the delayed locking feature and immediately lock all the doors.

This feature will not operate if the key is in the ignition.

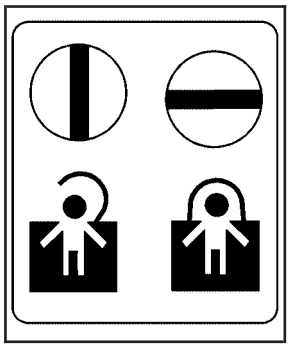
You can program this feature using the Driver Information Center (DIC). See DELAY DOOR LOCK under *DIC Vehicle Customization (With DIC Buttons) on page 289*.

Programmable Automatic Door Locks

Vehicles with an automatic lock/unlock feature enable you to program the vehicle's power door locks. You can program this feature through the Driver Information Center (DIC). See *DIC Vehicle Customization (With DIC Buttons) on page 289* for more information on DIC programming.

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 showing 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 protects you from locking the key in the vehicle when the key is in the ignition and a front door is open.

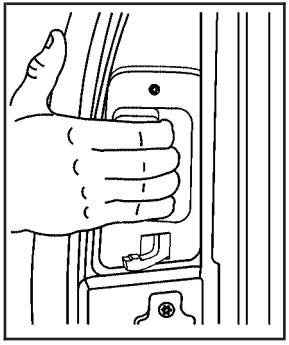
If the driver's side power door lock switch is pressed when the driver's door is open and the key is in the ignition, all of the doors will lock and then the driver's door will unlock.

If the passenger's side power door lock switch is pressed when the front passenger's door is open and the key is in the ignition, all of the doors will lock and then the front passenger's door will unlock.

Rear Doors

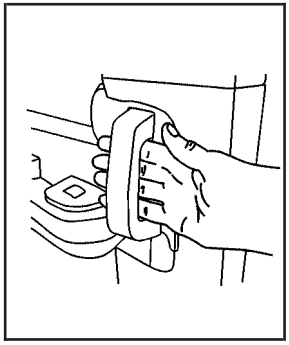
Extended Cab

Your vehicle may have a rear access door(s) that allows easier access to the rear area of the extended cab.



To open a rear access door from the outside, first open the front door. Then, use the handle located on the front edge of the rear access door to open it.

You must fully close a rear access door before you can close the front door.



To open a rear access door from the inside, the front door must be opened first. Then, use the handle located on the inside of the rear access door to open.

Crew Cabs

If your vehicle is a crew cab, you can open your doors from the inside or outside. Your vehicle may also have a feature which prevents children from opening the rear doors. See *Rear Door Security Locks on page 120* for more information.

Tailgate

⚠ CAUTION:

It is extremely dangerous to ride on the tailgate, even when the vehicle is operated at low speeds. People riding on the tailgate can easily lose their balance and fall in response to vehicle maneuvers. Falling from a moving vehicle may result in serious injuries or death. Do not allow people to ride on the tailgate. Be sure everyone in your vehicle is in a seat and using a safety belt properly.

On vehicles with a lock on the tailgate, use the key to lock or unlock the tailgate.

Open the tailgate by lifting up on its handle while pulling the tailgate toward you.

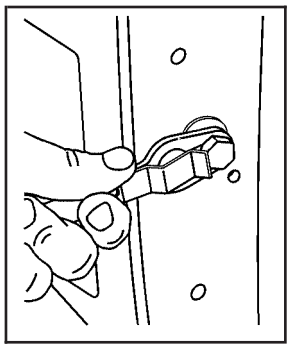
To shut the tailgate, firmly push it upward until it latches.

After you put the tailgate back up, pull it back towards you to be sure it latches securely.

Tailgate Removal

The tailgate can be removed to allow for different loading situations. Although the tailgate can be removed without assistance, you may want someone to assist you with the removal to avoid possible damage to the vehicle.

To remove the tailgate, do the following:



1. Raise the tailgate slightly and release both retaining cable clips. To release the retaining cable clips, lift the cable so it points straight out. Lift the clip over the bolt, and push the cable forward then rotate down.
2. With the tailgate about halfway open, lift the right edge of the tailgate from the lower pivot.

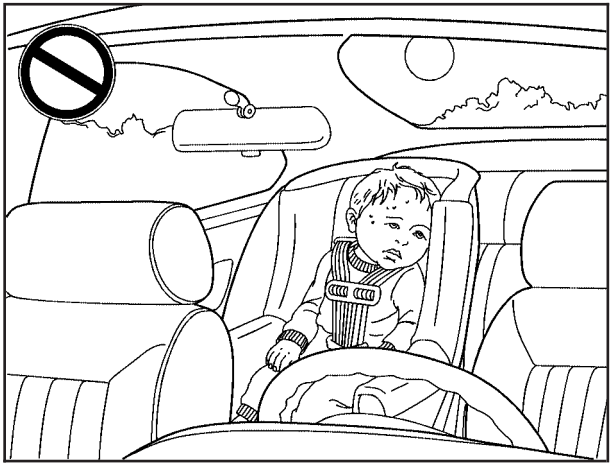
   On vehicles with the tailgate assist feature, raise the tailgate nearly all the way to the closed position prior to removing the left edge.
3. Move the tailgate to the right to release the left edge.

Reverse this procedure to reinstall the tailgate. Make sure the tailgate is secure.

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.



Manual Windows

Turn the hand crank on each door to manually raise or lower the manual windows.

Power Windows

⚠ CAUTION:

Leaving children, helpless adults, or pets in a vehicle with the windows closed is dangerous. They can be overcome from extreme heat in warm or hot weather and suffer permanent injuries or even death from heat stroke.

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

CAUTION: (Continued)

CAUTION: (Continued)

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

If your vehicle has power windows, the controls are located on each of the side doors in the front and rear for crew cab and extended cab models.

The driver's door has a switch for the passenger's and rear windows as well. Your power windows will work when the ignition has been turned to ACCESSORY or RUN or when Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP) on page 134*.

(Window Up/Down): Press the switch down to lower the window, and pull up the front of the switch to raise the window.

Express Down Windows

The driver and front passenger windows also have an express down feature that allows the windows to be lowered without holding the switch. Press down fully on the window switch, then release, to activate the express down mode. The express down mode can be canceled at any time by pulling up on the switch. To open the window partway, press the switch to the first depression position, until the window is at the desired position.

Window Lockout

(Window Lockout): If your crew cab or extended cab vehicle has power windows, the driver's door power window switch has a lockout feature. The lockout switch is located in front of the window switches. This feature prevents the rear windows from operating, except from the driver's position. Press the switch to engage or disengage the lockout feature. An indicator light on the switch will come on when the lockout feature is engaged, and will go off when disengaged.

Power Sliding Rear Window

⚠ CAUTION:

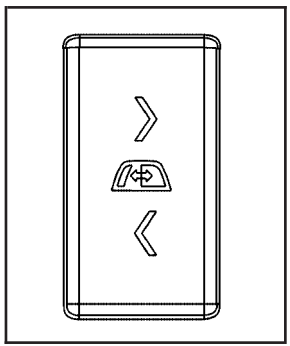
Leaving children, helpless adults, or pets in a vehicle with the windows closed is dangerous. They can be overcome from extreme heat in warm or hot weather and suffer permanent injuries or even death from heat stroke.

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

CAUTION: (Continued)

CAUTION: (Continued)

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



On vehicles equipped with a power sliding rear window, the switch is located in the overhead console.

The power sliding rear window will work when the ignition has been turned to ACCESSORY, RUN, or when Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP) on page 134* for more information.

The power sliding rear window cannot be operated manually.

Press the rear of the switch to open the window. Press the front of the switch to close the window.

Sun Visors

Pull the sun visor down to block glare. Swing the sun visor to the side to cover the side window.

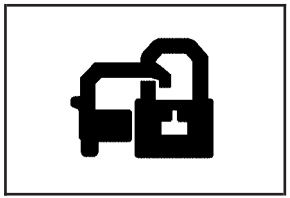
The passenger's side sun visor may have a vanity mirror.

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 a content theft-deterrent alarm system.



To activate the theft-deterrent system, do the following:

1. Open the door.
2. Lock the door with the Remote Keyless Entry (RKE) transmitter. The security light should come on and flash. The door does not need to be open.

   If the delayed locking feature is active, the alarm will not be activated until all doors are closed and the security light goes off.
3. Close all doors. The security light will stop flashing and go off after approximately 30 seconds. The content theft deterrent alarm is not armed until the security light goes off.

If a door is opened without using the RKE transmitter, a ten second pre-alarm will occur. The horn will chirp and the lights will flash. If the key is not placed in the ignition and turned to START or the door is not unlocked by pressing the unlock button on the RKE transmitter during the ten second pre-alarm, the alarm will go off. Your vehicle's headlamps will flash and the horn will sound for about two minutes, then will turn off to save the battery power.

The theft-deterrent system will not activate if you lock the doors with a key, the manual door lock, or the power door lock switch. It activates only if you use the RKE transmitter. You should also remember that you can start your vehicle with the correct ignition key if the alarm has been set off.

Here is how to avoid setting off the alarm by accident:

- If you do not want to activate the theft-deterrent system, the vehicle should be locked with the door key after the doors are closed.
- Always unlock a door with the RKE transmitter. Unlocking a door any other way will set off the alarm if the system has been armed.

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

Testing the Alarm

The alarm can be tested by following these steps:

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

If the alarm does not sound when it should, but the vehicle's headlamps flash, check to see if the horn works. The horn fuse may be blown. To replace the fuse, see *Fuses and Circuit Breakers on page 608*.

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

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 608*. 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

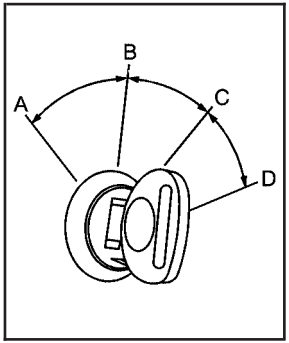
New Vehicle Break-In

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

- **Keep your speed at 55 mph (88 km/h) or less for the first 500 miles (805 km).**
- **Do not drive at any one constant speed, fast or slow, for the first 500 miles (805 km). Do not make full-throttle starts. Avoid downshifting to brake, or slow, the vehicle.**
- **Avoid making hard stops for the first 200 miles (322 km) or so. During this time the new brake linings are not yet broken in. Hard stops with new linings can mean premature wear and earlier replacement. Follow this breaking-in guideline every time you get new brake linings.**
- **Do not tow a trailer during break-in. See *Towing a Trailer on page 445* for the trailer towing capabilities of your vehicle and more information.**

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

Ignition Positions



Use the key to turn the ignition switch to four different positions.

A (LOCK): This position locks the ignition and transmission. It is a theft-deterrent feature. You will only be able to remove the key when the ignition is turned to LOCK.

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 all the way in. If it is, turn the steering wheel left and right while you turn the key hard. If none of this works, then your vehicle needs service.**

B (ACCESSORY): This position lets you use things like the radio and the windshield wipers when the engine is off.

Lengthy operation of features such as the radio in the ACCESSORY ignition position and the RUN position may drain the battery and prevent your vehicle from starting. Do not operate your vehicle in the ACCESSORY ignition position for a long period of time.

C (RUN): This is the position for driving. It is the position the switch returns to after the engine starts, and you release the key.

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.

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 transmission. 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)

Your vehicle has a Retained Accessory Power (RAP) feature which will allow certain features on your vehicle to continue to work up to 10 minutes after the ignition key is turned to LOCK.

The radio, power windows, and if the vehicle has a sunroof and the OnStar® System, will work when the ignition key is in RUN or ACCESSORY. Once the key is turned from RUN to LOCK, the windows and sunroof will continue to work until a door is opened. The radio will continue to work for up to 10 minutes or until the driver's door is opened.

Starting the Engine

If your vehicle has the DURAMAX® Diesel engine, see the DURAMAX® Diesel manual for more information.

To place the transmission 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.

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 transmission gently 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 LOCK 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.**

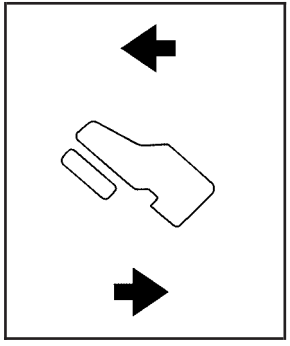
2. If the engine does not start after 5-10 seconds, especially in very cold weather (below 0°F or –18°C), it could be flooded with too much gasoline. Try pushing the accelerator pedal all the way to the floor and holding it there as you hold the key in START for up to a maximum of 15 seconds. Wait at 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 transmission 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.**

Adjustable Throttle and Brake Pedal

If your vehicle has this feature, you can change the position of the throttle and brake pedals.

This feature is designed for shorter drivers, since the pedals cannot move farther away from the standard position, but can move toward the driver for better pedal reach.



The switch used to adjust the pedals is located on the instrument panel below the climate control system.

Press the arrow at the bottom of the switch to move the pedals closer to your body. Press the arrow at the top of the switch to move the pedals away from your body.

Before you start driving, fully press the brake pedal to confirm the adjustment is right for you. While driving, make only small adjustments.

No adjustment to the pedals can be made when the vehicle is in REVERSE (R) or while using the cruise control.

Your vehicle may have a memory function which allows pedal settings to be saved and recalled. See *Memory Seat, Mirrors, and Pedals on page 13* for more information.

Engine Coolant Heater

Your vehicle may have an engine coolant heater.

If your vehicle has the DURAMAX® Diesel engine, see the DURAMAX® Diesel manual for more information.

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. Your vehicle may also have an internal thermostat in the plug end of the cord. This will prevent operation of the engine coolant heater when the temperature is at or above 0°F (–18°C) as noted on the cord.

To Use the Engine Coolant Heater

1. Turn off the engine.
2. Open the hood and unwrap the electrical cord. The cord is located on the driver's side of the engine compartment, near the power steering fluid reservoir.
3. Plug the cord 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™

Your vehicle's V8 engine may have Active Fuel Management™. This system allows the engine to operate on either all or half of its cylinders, depending on the driving conditions.

When less power is required, such as cruising at a constant vehicle speed, the system will operate in the half cylinder mode, allowing 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.

Your vehicle has an Active Fuel Management™ indicator. For more information on using this display see *DIC Operation and Displays (With DIC Buttons) on page 268* or *DIC Operation and Displays (Without DIC Buttons) on page 275*.

Automatic Transmission Operation

If your vehicle is has an automatic transmission, it has an electronic shift position indicator within the instrument panel cluster. This display comes on when the ignition key is turned to the RUN position.

There are several different positions for the shift lever.

Hydra-Matic® 4-Speed Automatic Transmission

Allison Transmission® or Hydra-Matic® 6-Speed Automatic Transmission

See "Range Selection Mode" later in this section.

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

When parked on a hill, especially when the vehicle has a heavy load, you might notice an increase in the effort to shift out of Park. See Torque Lock (Automatic Transmission) under *Shifting Into Park (P) on page 163* for more information.

⚠ 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 163*. If you are pulling a trailer, see *Towing a Trailer on page 445*.

⚠ CAUTION:

If you have Four-Wheel Drive, your vehicle will be free to roll — even if your shift lever is in PARK (P) — if your transfer case is in NEUTRAL. So, be sure the transfer case is in a drive gear, Two-Wheel Drive High or Four-Wheel Drive High or Four-Wheel Drive Low — not in NEUTRAL. See *Shifting Into Park (P) on page 163*.

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

Notice: **Shifting to REVERSE (R) while your vehicle is moving forward could damage the transmission. 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 transmission, see *If Your Vehicle is Stuck in Sand, Mud, Ice, or Snow on page 422*.

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 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) with the engine running at high speed may damage the transmission. The repairs would not be covered by your warranty. Be sure the engine is not running at high speed 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 about 35 mph (55 km/h), push your accelerator pedal about halfway down.
- Going about 35 mph (55 km/h) or more, push the accelerator all the way down.

  By doing this, the vehicle shifts down to the next gear and has more power.

DRIVE (D) can be used when towing a trailer, carrying a heavy load, driving on steep hills, or for off-road driving. You might want to shift the transmission to a lower gear selection if the transmission shifts too often.

Downshifting the transmission in slippery road conditions could result in skidding. See Skidding under *Loss of Control on page 389.*

Your vehicle has a shift stabilization feature that adjusts the transmission shifting to the current driving conditions in order to reduce rapid upshifts and downshifts.

This shift stabilization feature is designed to determine, before making an upshift, if the engine is able to maintain vehicle speed by analyzing things such as vehicle speed, throttle position, and vehicle load. If the shift stabilization feature determines that a current vehicle speed cannot be maintained, the transmission does not upshift and instead holds the current gear. In some cases, this could appear to be a delayed shift, however the transmission is operating normally.

Your vehicle's transmission uses adaptive shift controls. Adaptive shift controls continually compares key shift parameters to pre-programmed ideal shifts stored in the transmissions computer. The transmission constantly makes adjustments to improve vehicle performance according to how the vehicle is being used, such as with a heavy load or when temperature changes. During this adaptive shift control process, shifting might feel different as the transmission determines the best settings.

When temperatures are very cold, the Allison Transmission® and Hydra-Matic® 6-Speed transmission's gear shifting could be delayed providing more stable shifts until the engine warms up. Shifts could be more noticeable with a cold transmission. This difference in shifting is normal.

MANUAL MODE (M): This position, is available on vehicles with the Allison Transmission® or Hydra-Matic® 6-Speed transmission. It lets drivers select the range of gears appropriate for current driving conditions. If your vehicle has this feature, see Range Select Mode (Allison Transmission® or Hydra-Matic® 6-Speed transmission) later in this section.

THIRD (3): This position is also used for normal driving. It reduces vehicle speed more than DRIVE (D) without using the 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, but then you would also want to use the brakes off and on.

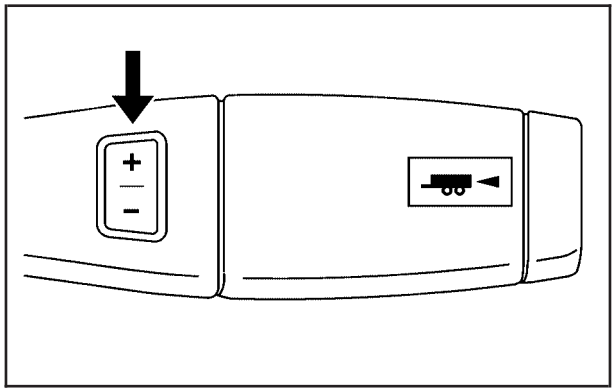
If you manually select SECOND (2) in an automatic transmission, the transmission will start in second gear. You can use this feature for reducing the speed of the rear wheels when you are trying to start your vehicle from a stop on slippery road surfaces.

FIRST (1): For the Hydra-Matic® 4-Speed transmission this position reduces vehicle speed even more than SECOND (2) without using the brakes. You can use it on very steep hills, or in deep snow or mud. If the shift lever is put in FIRST (1) while the vehicle is moving forward, the transmission does not shift into first gear until the vehicle is going slowly enough.

For an Allison Transmission® or Hydra-Matic® 6-Speed transmission, this position reduces vehicle speed without using your brakes. You can use it for major/severe downgrades and off-road driving where the vehicle would otherwise accelerate due to steepness of grade. When you shift to FIRST (1) it provides the lowest gear appropriate to your current road speed and continues to downshift as the vehicle slows, eventually downshifting to FIRST (1) gear.

Notice: **Spinning the tires or holding the vehicle in one place on a hill using only the accelerator pedal may damage the transmission. The repair will not be covered by your warranty. If you are stuck, do not spin the tires. When stopping on a hill, use the brakes to hold the vehicle in place.**

Range Selection Mode (Allison® or Hydra-Matic® 6-Speed Transmission)



Your vehicle may have a Range Selection Mode. The Range Selection Mode helps control the vehicle's transmission and vehicle speed while driving down hill or towing a trailer by letting you select a desired range of gears.

To use this feature, do the following:

1. Move the shift lever to the MANUAL MODE (M).
2. Press the plus/minus buttons, located on the steering column shift lever, to select the desired range of gears for your current driving conditions.

When MANUAL MODE (M) is selected a number displays next to the M, indicating the current gear.

This number is the highest gear that can be used. However, your vehicle can automatically shift to lower gears as it adjusts to driving conditions. This means that all gears below that number are available. When FIFTH (5) is selected, FIRST (1) through FIFTH (5) gears are automatically shifted by the vehicle, but SIXTH (6) cannot be used until the plus/minus button located on the steering column lever is used to change to the gear.

Grade Braking is not available when the Range Selection Mode is active. See *Tow/Haul Mode on page 144.*

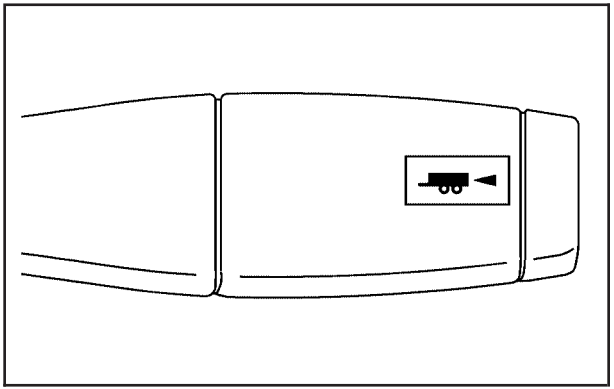
While using the Range Selection mode feature, cruise control and the Tow/Haul mode can be used.

Notice: **Spinning the tires or holding the vehicle in one place on a hill using only the accelerator pedal may damage the transmission. The repair will not be covered by your warranty. If you are stuck, do not spin the tires. When stopping on a hill, use the brakes to hold the vehicle in place.**

Low Traction Mode

If your vehicle has the Allison Transmission®, or the Hydra-Matic® 6-Speed Automatic Transmission, it has a Low Traction Mode that assist in vehicle acceleration when road conditions are slippery, such as with ice or snow. While the vehicle is at a stop, select the second gear range using the Range Selection system. This will limit torque to the wheels after it detects wheel slip, preventing the tires from spinning.

Tow/Haul Mode



If your vehicle has an automatic transmission, it has a tow/haul mode. If your vehicle has an Allison or Hydra-Matic® 6-speed automatic transmission see “Tow/Haul Mode (Allison or Hydra-Matic® 6-Speed Automatic Transmission®) following.

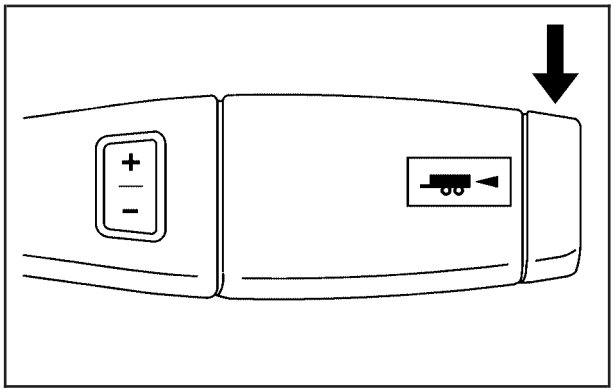
The tow/haul mode adjusts the transmission shift pattern to reduce shift cycling, providing increased performance, vehicle control, and transmission cooling when towing or hauling heavy loads.

The selector button is located on the end of the shift lever. Turn the tow/haul on and off by pressing the button. When the tow/haul is on, a light on the instrument panel cluster will come on.

See *Tow/Haul Mode Light on page 266* for more information.

Also see Tow Haul Mode under *Towing a Trailer on page 445* for more information.

Tow/Haul Mode (Allison Transmission® or Hydra-Matic® 6-Speed Automatic Transmission)



If your vehicle has an Allison or Hydra-Matic® 6-speed automatic transmission®, it has a tow/haul mode. The tow/haul mode adjusts the transmission shift pattern to reduce shift cycling, providing increased performance, vehicle control, and transmission cooling when towing or hauling heavy loads.

Turn the tow/haul mode on and off by pressing the button, located on the end of the shift lever. When the tow/haul is on, a light on the instrument panel cluster will come on.

See *Tow/Haul Mode Light on page 266* for more information.

Also see “Tow Haul Mode” under *Towing a Trailer on page 445* for more information.

Grade Braking (Allison Transmission® or Hydra-Matic® 6-Speed Automatic Transmission)

The Grade Braking shift modes can be activated by pressing the button on the end of the shift control lever. While in Range Selection Mode, Grade Braking is deactivated allowing the driver to select a desired range of gears.

Grade Braking is only active while the Tow/Haul Mode is selected and you are not in the Range Selection Mode. See “Tow/Haul Mode listed previously and *Automatic Transmission Operation on page 138* for more information on the Range Selection Mode. Grade Braking assists in maintaining desired vehicle speeds when driving on downhill grades by automatically implementing a shift schedule that utilizes the engine and transmission to slow the vehicle. This reduces wear on the braking system and increases control of the vehicle. Grade Braking monitors vehicle speed, acceleration, engine torque and brake pedal usage. Using this information, it detects when the truck is on a downhill grade and the driver desires to slow the vehicle by pressing the brake. See the diesel supplement for information on Cruise Grade Braking.

Also see *Towing a Trailer on page 445* for more information.

Four-Wheel Drive

If your vehicle has Four-Wheel Drive, you can send the engine's driving power to all four wheels for extra traction. To get the most satisfaction out of Four-Wheel Drive, you must be familiar with its operation. Read the part that follows before using Four-Wheel Drive. See the appropriate text for the transfer case in your vehicle.

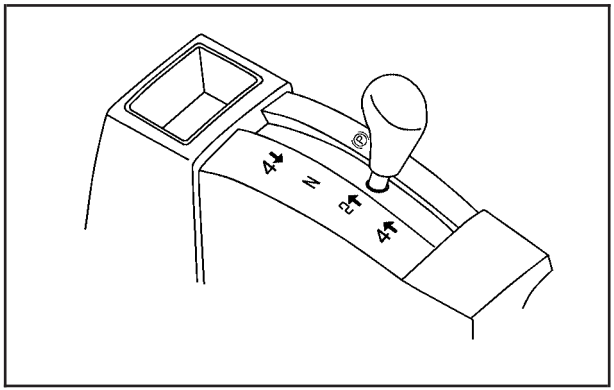
Notice: **Driving on clean, dry pavement in Four-Wheel-Drive High or Four-Wheel-Drive Low for an extended period of time may cause premature wear on your vehicle's powertrain. Do not drive on clean, dry pavement in Four-Wheel-Drive High or Four-Wheel-Drive Low for extended periods of time.**

While driving on clean dry pavement and during tight turns, you may experience vibration in the steering system.

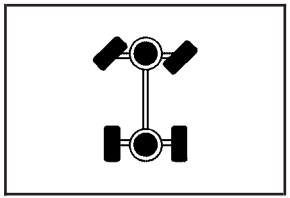
Front Axle Locking Feature

The front axle locks and unlocks automatically when you shift the transfer case. Some delay for the axle to lock or unlock is normal.

Manual Transfer Case



The transfer case shift lever is on the floor to the right of the driver. Use this lever to shift into and out of Four-Wheel Drive.



A Four-Wheel Drive indicator light comes on when you shift into four-wheel drive and the front axle engages. See *Four-Wheel-Drive Light on page 265*

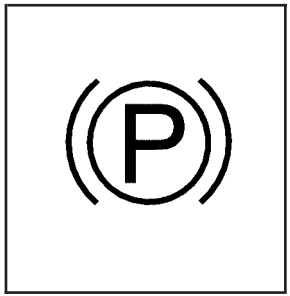
Some delay between shifting and when the indicator light comes on is normal.

Recommended Transfer Case Settings

Driving Conditions	Transfer Case Settings			
	2↑	4↑	4↓	N
Normal	YES			
Severe		YES		
Extreme			YES	
Vehicle in Tow*				YES
*See *Recreational Vehicle Towing on page 439* *Towing Your Vehicle on page 439*				

Notice: **Driving on clean, dry pavement in four-wheel drive for an extended period of time can cause premature wear on your vehicle's powertrain. Do not drive on clean, dry pavement in Four-Wheel Drive for extended periods of time.**

4 ↓ (Four-Wheel-Drive Low): This setting also engages the front axle and delivers extra torque. You may never need Four-Wheel-Drive Low. It sends maximum power to all four wheels. You might choose Four-Wheel-Drive Low if you are driving off-road in deep sand, deep mud, deep snow, and while climbing or descending steep hills. When operating in Four-Wheel Low, the gear ratio provides additional torque when compared to Four-Wheel-Drive High. The transmission gear shift feel is exaggerated.



A parking brake symbol is located next to the N (NEUTRAL) symbol as a reminder to set the parking brake before shifting the transfer case in Neutral.

⚠ CAUTION:

Shifting the transfer case to NEUTRAL can cause your vehicle to roll even if the transmission is in PARK (P). You or someone else could be seriously injured. Be sure to set the parking brake before placing the transfer case in NEUTRAL. See *Parking Brake on page 162*.

N (NEUTRAL): Shift to this setting only when your vehicle needs to be towed. See *Recreational Vehicle Towing on page 439* or *Towing Your Vehicle on page 439*

2 ↑ (Two-Wheel-Drive High): This setting is used for driving in most street and highway situations. The front axle is not engaged in two-wheel drive. This setting also provides the best fuel economy.

4 ↑ (Four-Wheel-Drive High): Use this setting when you need extra traction, such as on snowy or icy roads or in most off-road situations. This setting also engages the front axle to help drive your vehicle. This is the best setting to use when plowing snow.

You can shift from Two-Wheel-Drive High to Four-Wheel-Drive High or Four-Wheel-Drive High to Two-Wheel-Drive High while the vehicle is moving. In extremely cold weather, it may be necessary to stop or slow the vehicle to shift into Four-Wheel-Drive High.

When Using the Manual Transfer Case

- Shifting should be made using quick motions. Shifting slowly may make it more difficult to shift.
- You may notice that it is harder to shift when the vehicle is cold. After the vehicle warms up the shifting will return to normal.
- While in Four-Wheel High or Four-Wheel-Drive Low you may experience reduced fuel economy.
- Avoid driving in Four-Wheel Drive on clean, dry pavement. It may cause your tires to wear faster, and make the transfer case harder to shift and run noisier.
- If the transfer case shifter is in the NEUTRAL position and you have difficulty reaching the selected transfer case mode, with the engine running, shift the transmission momentarily to drive and then back to NEUTRAL. This will realign the gear teeth in the transfer case and allow you to complete the shift.

Shifting from Two-Wheel-Drive High to Four-Wheel-Drive High

- Shifts between Two-Wheel-Drive High and Four-Wheel-Drive High can be made at any vehicle speed.
- Shift the transfer case lever in one continuous motion into either the Four-Wheel-Drive High or Two-Wheel-Drive High position.
- In extremely cold weather, it may be necessary to slow or stop the vehicle to shift into Four-wheel-Drive High until your vehicle has warmed up.
- While in Four-Wheel-Drive High, your vehicle can be driven at any posted legal speed limit.

Shifting In or Out of Four-Wheel-Drive Low

Notice: **Shifting the transfer case into Four-Wheel-Drive Low while moving at speeds faster than 3 mph (5 km/h) may cause premature wear to the transfer case, and may cause the gears to grind. To avoid causing premature wear, and grinding the gears, do not shift the transfer case into Four-Wheel-Drive Low while the vehicle is moving faster than 3 mph (5 km/h).**

Shifting into Four-Wheel-Drive Low should be done, if possible, with the vehicle at a slight roll, 3 mph (5 km/h) or less.

- Shift the transmission into NEUTRAL (N).

⚠ CAUTION:

Shifting the transfer case to NEUTRAL can cause your vehicle to roll even if the transmission is in PARK (P). You or someone else could be seriously injured. Be sure to set the parking brake before placing the transfer case in NEUTRAL. See *Parking Brake on page 162*.

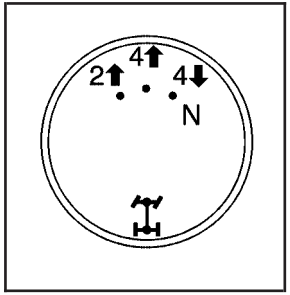
- Shifting into Four-Wheel-Drive Low with the vehicle at a stop may be more difficult. You may be unable to complete the shift to Four-Wheel-Drive Low, and will end up in NEUTRAL. This is normal, and is a function of the gear teeth aligning in your transfer case. When this happens, make sure the engine is on, shift your transmission momentarily to drive and back to NEUTRAL, and then complete the shift.
- Shift the transfer case shift lever in one continuous motion into the Four-Wheel-Drive Low position.
- When Four-Wheel-Drive Low do not drive faster than 45 mph. This will reduce wear and extend the life of your transfer case.

Shifting In or Out of NEUTRAL

1. With the vehicle running and the engine at an idle set the parking brake.
2. Place the transmission into NEUTRAL (N).

Shift the transfer case in one continuous motion into or out of the NEUTRAL position.

Electronic Transfer Case



The transfer case knob is located next to the steering column.

Use the dial to shift into and out of four-wheel drive.

Recommended Transfer Case Settings

Driving Conditions	Transfer Case Settings			
	2↑	4↑	4↓	N
Normal	YES			
Severe		YES		
Extreme			YES	
Vehicle in Tow*				YES
*See *Recreational Vehicle Towing on page 439* *Towing Your Vehicle on page 439*				

You can choose among four driving settings:

Indicator lights in the dial show which setting you are in. The indicator lights will come on briefly when you turn on the ignition and one will stay on. If the lights do not come on, you should take your vehicle to your dealer for service. An indicator light flashes while shifting the transfer case and remains illuminated when the shift is complete. If for some reason the transfer case cannot make a requested shift, it will return to the last chosen setting.

2 ↑ (Two-Wheel-Drive High): This setting is used for driving in most street and highway situations. The front axle is not engaged in Two-Wheel Drive. This setting also provides the best fuel economy.

4 ↑ (Four-Wheel-Drive High): Use the Four-Wheel-Drive High position when extra traction is needed, such as on snowy or icy roads or in most off-road situations. This setting also engages the front axle to help drive your vehicle. This is the best setting to use when plowing snow.

4 ↓ (Four-Wheel-Drive Low): This setting also engages the front axle and delivers extra torque. You may never need this setting. It sends maximum power to all four wheels. You might choose Four-Wheel-Drive Low while driving off-road in deep sand, deep mud, deep snow, and while climbing or descending steep hills. StabiliTrak® will not engage in this mode.

> **⚠ CAUTION:**
>
> **Shifting the transfer case to NEUTRAL can cause your vehicle to roll even if the transmission is in PARK (P). You or someone else could be seriously injured. Be sure to set the parking brake before placing the transfer case in NEUTRAL. See *Parking Brake on page 162*.**

N (NEUTRAL): Shift the vehicle's transfer case to NEUTRAL only when towing your vehicle. See *Recreational Vehicle Towing on page 439* or *Towing Your Vehicle on page 439* for more information.

If the SERVICE 4–Wheel Drive message stays on, you should take your vehicle to your dealer for service. See "Service 4–Wheel Drive message" under *DIC Warnings and Messages on page 279*.

Shifting Into Two-Wheel-Drive High

Turn the knob to the Two-Wheel-Drive High position. This can be done at any speed, except when shifting from Four-Wheel-Drive Low. See Shifting Out of Four-Wheel-Drive Low for more information.

Shifting Into Four-Wheel Drive Low

When Four-Wheel-Drive Low is engaged, vehicle speed should be kept below 45 mph. Extended high-speed operation in Four-Wheel-Drive Low may damage or shorten the life of the drivetrain.

To shift to the Four-Wheel-Drive Low position, the ignition must be in RUN and the vehicle must be stopped or moving less than 3 mph (5 km/h) with the transmission in NEUTRAL (N). The preferred method for shifting into Four-Wheel-Drive Low is to have your vehicle moving 1 to 2 mph (1.6 to 3.2 km/h). Turn the knob to the Four-Wheel-Drive Low position.

You must wait for the Four-Wheel-Drive Low indicator light to stop flashing and remain on before shifting your transmission in gear.

Notice: **Shifting the transmission into gear before the requested mode indicator light has stopped flashing could damage the transfer case. To help avoid damaging your vehicle, always wait for the mode indicator lights to stop flashing before shifting the transmission into gear.**

It is typical for your vehicle to exhibit significant engagement noise and bump when shifting between Four-Wheel-Drive Low and Four-Wheel-Drive High ranges or from NEUTRAL with the engine running.

If the knob is turned to the Four-Wheel-Drive Low position when your vehicle is in gear and/or moving, the Four-Wheel-Drive Low indicator light will flash for 30 seconds and not complete the shift unless your vehicle is moving less than 3 mph (5 km/h) and the transmission is in NEUTRAL (N). After 30 seconds the transfer case will shift to Four-Wheel-Drive High mode.

Shifting Out of Four-Wheel-Drive Low

To shift from Four-Wheel-Drive Low to Four-Wheel-Drive High, or Two-Wheel-Drive High, your vehicle must be stopped or moving less than 3 mph (5 km/h) with the transmission in NEUTRAL (N) and the ignition in RUN. The preferred method for shifting out of Four-Wheel-Drive Low is to have your vehicle moving 1 to 2 mph (1.6 to 3.2 km/h). Turn the knob to the Four-Wheel-Drive High, or Two-Wheel-Drive High position. You must wait for the Four-Wheel-Drive High, or Two-Wheel-Drive High indicator light to stop flashing and remain on before shifting the transmission into gear.

Notice: **Shifting the transmission into gear before the requested mode indicator light has stopped flashing could damage the transfer case. To help avoid damaging your vehicle, always wait for the mode indicator lights to stop flashing before shifting the transmission into gear.**

It is typical for your vehicle to exhibit significant engagement noise and bump when shifting between Four-Wheel-Drive Low and Four-Wheel-Drive High ranges or from NEUTRAL with the engine running.

If the knob is turned to the Four-Wheel-Drive High, or Two-Wheel-Drive High switch position when your vehicle is in gear and/or moving, the Four-Wheel-Drive High, or Two-Wheel-Drive High indicator light will flash for 30 seconds but will not complete the shift unless your vehicle is moving less than 3 mph (5 km/h) and the transmission is in NEUTRAL (N).

Shifting into NEUTRAL

To shift the transfer case to NEUTRAL do the following:

1. Make sure the vehicle is parked so that it will not roll.
2. Set the parking brake and press and hold the regular brake pedal. See *Parking Brake on page 162* for more information.
3. Start the vehicle or turn the ignition to RUN.
4. Shift the transmission to NEUTRAL (N).
5. Shift the transfer case to Two-Wheel-Drive High.
6. Turn the transfer case dial clockwise to NEUTRAL till it stops and hold it for 10 seconds. Then slowly release the dial to the four low position. The NEUTRAL light will come on when the transfer case shift to NEUTRAL is complete.
7. If the engine is running, verify that the transmission is in NEUTRAL (N) by shifting the transmission to REVERSE (R) for one second, then shift the transmission to DRIVE (D) for one second.
8. Turn the ignition to ACCESSORY, which will turn the engine off.
9. Place the transmission shift lever in PARK (P).
10. Release the parking brake prior to moving the vehicle.
11. Turn the ignition to LOCK.

Shifting Out of NEUTRAL

To shift out of NEUTRAL do the following:

1. Set the parking brake and apply the regular brake pedal.
2. Shift the transmission to NEUTRAL (N) and turn the ignition to RUN with the engine off.
3. Turn the transfer case dial to Two-Wheel-Drive High.

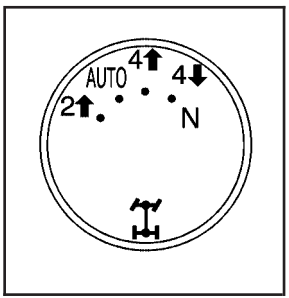
   After the transfer case has shifted out of NEUTRAL the NEUTRAL light will go out.
4. Release the parking brake prior to moving the vehicle.

Notice: **Shifting the transmission into gear before the requested mode indicator light has stopped flashing could damage the transfer case. To help avoid damaging your vehicle, always wait for the mode indicator lights to stop flashing before shifting the transmission into gear.**

5. Start the engine and shift the transmission to the desired position.

Excessively shifting the transfer case into or out of the different modes may cause the transfer case to enter the shift protection mode. This will protect the transfer case from possible damage and will only allow the transfer case to respond to one shift per 10 seconds. The transfer case may stay in this mode for up to three minutes.

Automatic Transfer Case



The transfer case knob is located next to the steering column.

For information on StabiliTrak®, see *StabiliTrak® System on page 381*.

Use the dial to shift into and out of Four-Wheel Drive.

You can choose among five driving settings:

Indicator lights in the dial show which setting you are in. The indicator lights will come on briefly when you turn on the ignition and one will stay on. If the lights do not come on, you should take your vehicle to your dealer for service. An indicator light will flash while shifting the transfer case. It will remain illuminated when the shift is complete. If for some reason the transfer case cannot make a requested shift, it will return to the last chosen setting.

2 ↑ (Two-Wheel-Drive High): This setting is used for driving in most street and highway situations. The front axle is not engaged in Two-Wheel Drive. This setting also provides the best fuel economy.

AUTO (Automatic Four-Wheel Drive): This setting is ideal for use when road surface traction conditions are variable. When driving your vehicle in AUTO, the front axle is engaged, but the vehicle's power is sent only to the front and rear wheels automatically based on driving conditions. Power is sent to the front and rear wheels automatically based on driving conditions. Driving in this mode results in slightly lower fuel economy than Two-Wheel-Drive High.

4 ↑ (Four-Wheel-Drive High): Use the Four-Wheel-Drive High position when extra traction is needed, such as on snowy or icy roads or in most off-road situations. This setting also engages the front axle to help drive your vehicle. This is the best setting to use when plowing snow.

4 ↓ (Four-Wheel-Drive Low): This setting also engages the front axle and delivers extra torque. You may never need this setting. It sends maximum power to all four wheels. You might choose Four-Wheel-Drive Low if you are driving off-road in deep sand, deep mud, deep snow, and while climbing or descending steep hills. StabiliTrak® will not engage in this mode. See *StabiliTrak® System on page 381* for more information.

⚠ CAUTION:

Shifting the transfer case to NEUTRAL can cause your vehicle to roll even if the transmission is in PARK (P). You or someone else could be seriously injured. Be sure to set the parking brake before placing the transfer case in NEUTRAL. See *Parking Brake on page 162*.

N (NEUTRAL): Shift the vehicle's transfer case to NEUTRAL only when towing your vehicle. See *Recreational Vehicle Towing on page 439* or *Towing Your Vehicle on page 439* for more information.

If the SERVICE 4–Wheel Drive message stays on, you should take your vehicle to your dealer for service. See "Service 4–Wheel Drive message" under *DIC Warnings and Messages on page 279*.

Shifting Into Four-Wheel-Drive High or AUTO (Automatic Four-Wheel Drive)

Turn the knob to the Four-Wheel-Drive High or AUTO position. This can be done at any speed, except when shifting from Four-Wheel-Drive Low, and the indicator light will flash while shifting. It will remain on when the shift is completed.

Shifting Into Two-Wheel-Drive High

Turn the knob to the Two-Wheel-Drive High position. This can be done at any speed, except when shifting from Four-Wheel-Drive Low.

Shifting Into Four-Wheel-Drive Low

When Four-Wheel-Drive Low is engaged, vehicle speed should be kept below 45 mph. Extended high-speed operation in Four-Wheel-Drive Low may damage or shorten the life of the drivetrain.

To shift to the Four-Wheel-Drive Low position, the ignition must be in RUN and the vehicle must be stopped or moving less than 3 mph (5 km/h) with the transmission in NEUTRAL (N). The preferred method for shifting into Four-Wheel-Drive Low is to have your vehicle moving 1 to 2 mph (1.6 to 3.2 km/h). Turn the knob to the Four-Wheel-Drive Low position. You must wait for the Four-Wheel-Drive Low indicator light to stop flashing and remain on before shifting your transmission in gear.

Notice: **Shifting the transmission into gear before the requested mode indicator light has stopped flashing could damage the transfer case. To help avoid damaging your vehicle, always wait for the mode indicator lights to stop flashing before shifting the transmission into gear.**

It is typical for your vehicle to exhibit significant engagement noise and bump when shifting between Four-Wheel-Drive Low and Four-Wheel-Drive High ranges or from NEUTRAL with the engine running.

If the knob is turned to the Four-Wheel-Drive Low position when your vehicle is in gear and/or moving, the Four-Wheel-Drive Low indicator light will flash for 30 seconds and not complete the shift unless your vehicle is moving less than 3 mph (5 km/h) and the transmission is in NEUTRAL (N). After 30 seconds the transfer case will shift to Four-Wheel-Drive High mode.

Shifting Out of Four-Wheel-Drive Low

To shift from Four-Wheel-Drive Low to Four-Wheel-Drive High, AUTO or Two-Wheel-Drive High, your vehicle must be stopped or moving less than 3 mph (5 km/h) with the transmission in NEUTRAL (N) and the ignition in RUN. The preferred method for shifting out of Four-Wheel-Drive Low is to have your vehicle moving 1 to 2 mph (1.6 to 3.2 km/h). Turn the knob to the Four-Wheel-Drive High, AUTO or Two-Wheel-Drive High position. You must wait for the Four-Wheel-Drive High, AUTO or Two-Wheel-Drive High indicator light to stop flashing and remain on before shifting your transmission into gear.

Notice: **Shifting the transmission into gear before the requested mode indicator light has stopped flashing could damage the transfer case. To help avoid damaging your vehicle, always wait for the mode indicator lights to stop flashing before shifting the transmission into gear.**

It is typical for your vehicle to exhibit significant engagement noise and bump when shifting between Four-Wheel-Drive Low and Four-Wheel-Drive High ranges or from NEUTRAL with the engine running.

If the knob is turned to the Four-Wheel-Drive High, AUTO, or Two-Wheel-Drive High switch position when your vehicle is in gear and/or moving, the Four-Wheel-Drive High, AUTO or Two-Wheel-Drive High indicator light will flash for 30 seconds but will not complete the shift unless your vehicle is moving less than 3 mph (5 km/h) and the transmission is in NEUTRAL (N).

Shifting into NEUTRAL

To shift the transfer case to NEUTRAL do the following:

1. Make sure the vehicle is parked so that it will not roll.
2. Set the parking brake and apply the regular brake pedal. See *Parking Brake on page 162* for more information.

3. Start the vehicle or turn the ignition to RUN.
4. Put the transmission in NEUTRAL (N).
5. Shift the transfer case to Two-Wheel Drive High.
6. Turn the transfer case dial clockwise to NEUTRAL till it stops and hold it for 10 seconds. Then slowly release the dial to the four low position. The NEUTRAL light will come on when the transfer case shift to NEUTRAL is complete.
7. If the engine is running, make sure that the transmission is in NEUTRAL (N) by shifting the transmission to REVERSE (R) for one second, then shift the transmission to DRIVE (D) for one second.
8. Turn the ignition to ACCESSORY, which will turn the engine off.
9. Place the transmission shift lever in PARK (P).
10. Release the parking brake prior to moving the vehicle.
11. Turn the ignition to LOCK.

Shifting Out of NEUTRAL

To shift out of NEUTRAL do the following:

1. Set the parking brake and apply the regular brake pedal.
2. Shift the transmission to NEUTRAL (N) and turn the ignition to RUN with the engine off.
3. Turn the transfer case dial to Two-Wheel-Drive High, Four-Wheel-Drive High, AUTO.

   After the transfer case has shifted out of NEUTRAL the NEUTRAL light will go out.
4. Release the parking brake prior to moving the vehicle.

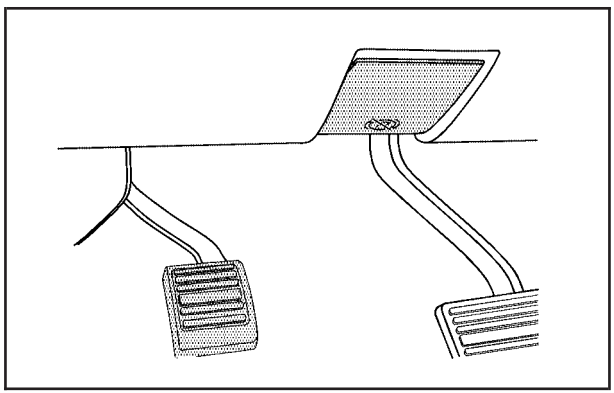
Notice: **Shifting the transmission into gear before the requested mode indicator light has stopped flashing could damage the transfer case. To help avoid damaging your vehicle, always wait for the mode indicator lights to stop flashing before shifting the transmission into gear.**

5. Start the engine and shift the transmission to the desired position.

Parking Brake

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

A chime will activate and the warning light will flash when the parking brake is applied and the vehicle is moving at least 5 mph (8 km/h).



To release the parking brake, hold the regular brake pedal down. Pull the bottom edge of the lever, located above the parking brake pedal, with the parking brake symbol, to release the parking brake.

If the ignition is on when the parking brake is released, the brake system warning light will go off.

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 are parking on any hill, see *Towing a Trailer on page 445*.

Shifting Into Park (P)

⚠ 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. With four-wheel drive, if your transfer case is in NEUTRAL, your vehicle will be free to roll, even if your shift

CAUTION: (Continued)

CAUTION: (Continued)

lever is in PARK (P). So, be sure the transfer case is in a drive gear — not in NEUTRAL. If you are pulling a trailer, see *Towing a Trailer on page 445*.

1. Hold the brake pedal down with your right foot and set the parking brake.
2. Move the shift lever into the PARK (P) position by pulling the shift lever toward you and moving it up as far as it will go.
3. Be sure the transfer case is in a drive gear — not in NEUTRAL (N).
4. Turn the ignition key to LOCK.
5. 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.

If you have four-wheel drive and your transfer case is in NEUTRAL, your vehicle will be free to roll, even if your shift lever is in PARK (P). So be sure the transfer case is in a drive gear — not in NEUTRAL.

CAUTION: (Continued)

CAUTION: (Continued)

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 unless you have to.

If you have to leave your vehicle with the engine running, be sure your vehicle is in PARK (P) and the parking brake is firmly set before you leave it. After you move the shift lever into PARK (P), 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. 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 transmission into PARK (P) properly, the weight of the vehicle may put too much force on the parking pawl in the transmission. You may find it difficult to pull the shift lever out of 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 163*.

When you are ready to drive, move the shift lever out of PARK (P) before you release the parking brake.

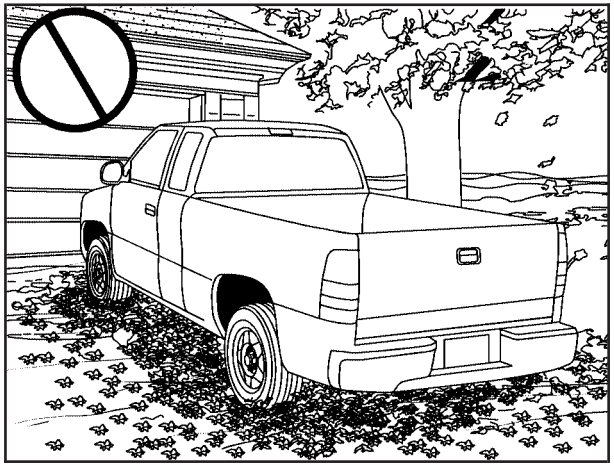
If torque lock does occur, you may need to have another vehicle push yours a little uphill to take some of the pressure from the parking pawl in the transmission, then you will be able to pull the shift lever out of PARK (P).

Shifting Out of Park (P)

Your vehicle has an automatic transmission shift lock control system which locks the shift lever in PARK (P) when the ignition is in the LOCK. You have to fully apply your regular brakes before you can shift from PARK (P) when the ignition is in RUN. See *Automatic Transmission Operation on page 138*.

If you cannot shift out of PARK (P), ease pressure on the shift lever and push the shift lever all the way up into PARK (P) as you maintain brake application. Move the shift lever into another gear.

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:

- **The exhaust system sounds strange or different.**
- **Your vehicle gets rusty underneath.**
- **Your vehicle was damaged in a collision.**

CAUTION: (Continued)

CAUTION: (Continued)

- **Your vehicle was damaged when driving over high points on the road or over road debris.**
- **Repairs were not done correctly.**
- **Your vehicle or the 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 167*.

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 418*.

⚠ 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 the parking brake and move the shift lever to PARK (P).

> **⚠ CAUTION:**
>
> **Four-wheel drive vehicles with the transfer case in NEUTRAL will allow the vehicle to roll, even if the shift lever is in PARK (P). So, be sure the transfer case is in a drive gear — not in NEUTRAL. Always set the parking brake.**

Follow the proper steps to be sure your vehicle will not move. See *Shifting Into Park (P) on page 163*.

If you are pulling a trailer, see *Towing a Trailer on page 445*.

Mirrors

Manual Rearview Mirror

Pull or push the tab under the inside rearview mirror to adjust it to the night or daytime setting. In the nighttime setting, the glare from headlamps behind the vehicle will be less intense.

Automatic Dimming Rearview Mirror with OnStar®, Compass and Temperature Display

Your vehicle may have this feature. When on, the automatic dimming mirror dims to the proper level to minimize glare from lights behind you after dark.

The mirror has a dual display in the upper right corner of the mirror face that shows the compass reading and the outside temperature.

Control buttons for the OnStar® system are at the bottom of the mirror. See *OnStar® System on page 180* for more information about the services OnStar® provides.

⏻ **(On/Off):** This is the on/off button.

Temperature and Compass Display

Press the on/off button, located to the far left, briefly to turn the compass/temperature display on or off.

If the display reads CAL, the compass needs to be calibrated. For more information, see “Compass Calibration” following.

To adjust between Fahrenheit and Celsius, do the following:

1. Press and hold the on/off button for approximately four seconds until either a flashing F or C appears.
2. Press the button again to change the display to the desired unit of measurement. After approximately four seconds of inactivity, the new unit will be locked in and the compass/temperature display will return.

If an abnormal temperature reading is displayed for an extended period of time, see your dealer. Under certain circumstances, a delay in updating the temperature is normal.

Automatic Dimming Mirror Operation

The automatic dimming mirror function is turned on automatically each time the ignition is started. To operate the automatic dimming mirror, do the following:

1. Make sure the green indicator light, located to the left of the on/off button, is lit. If it is not, press and hold the on/off button for approximately six seconds until the green light comes on, indicating that the mirror is in automatic dimming mode.
2. Turn off the automatic dimming mirror function by pressing and holding the on/off button for approximately six seconds, until the green indicator light turns off.

Compass Calibration

The compass may need calibration if one of the following occurs:

- After approximately five seconds, the display does not show a compass heading, N for North, for example, there may be a strong magnetic field interfering with the compass. Such interference may be caused by a magnetic antenna mount, magnetic note pad holder, or a similar magnetic item.
- The compass does not display the correct heading and the compass zone variance is set correctly.

In order to calibrate, CAL must be displayed in the mirror compass windows. If CAL is not displayed, push the on/off button for approximately 12 seconds or until CAL is displayed.

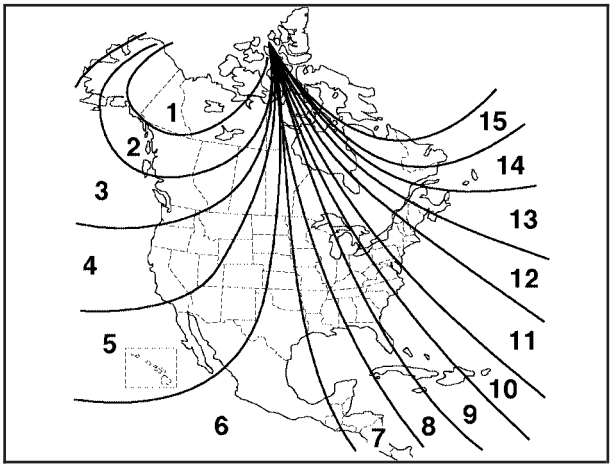
The compass can be calibrated by driving the vehicle in circles at 5 mph (8 km/h) or less until the display reads a direction.

Compass Variance

The mirror is set in zone eight upon leaving the factory. It will be necessary to adjust the compass to compensate for compass variance if the vehicle is outside of zone eight. Under certain circumstances, as during a long distance cross-country trip, it will be necessary to adjust for compass variance. Compass variance is the difference between earth's magnetic north and true geographic north. If not adjusted to account for compass variance, the compass could give false readings.

To adjust for compass variance, do the following:

1. Find your current location and variance zone number on the following zone map.



2. Press and hold the on/off button until a Z and a zone number appears in the display. The compass is now in zone mode.
3. Keep pressing the on/off button until the desired zone number appears in the display. Release the button. After approximately four seconds of inactivity, the new zone number will be locked in and the compass/temperature display will return.

Cleaning the Mirror

When cleaning the mirror, use a paper towel or similar material dampened with glass cleaner. Do not spray glass cleaner directly on the mirror as that may cause the liquid cleaner to enter the mirror housing.

Automatic Dimming Rearview Mirror with Compass and Temperature Display

Your vehicle may have this mirror. When on, an automatic dimming mirror will dim to the proper level to minimize glare from lights behind you after dark.

The mirror also includes a dual display in the upper right corner of the mirror with the compass reading and the outside temperature.

: Briefly press this button to turn the display on or off.

Temperature Display

The temperature can be displayed by pressing the compass/temperature button. Pressing the compass/temperature button once briefly, will toggle the display reading on and off. To alternate the temperature reading between Fahrenheit and Celsius, press and hold the compass/temperature button for approximately three seconds until the display blinks F and C. After approximately five seconds of inactivity, the display will stop blinking and display the last selection made.

If an abnormal temperature reading is displayed for an extended period of time, see your dealer. Under certain circumstances, a delay in updating the temperature is normal.

Automatic Dimming Mirror Operation

⏻ **On/Off:** Press this button to turn the automatic dimming feature on or off. The indicator light to the left of the button will turn on to indicate when the feature is on. Once the mirror is turned off, it will remain off until it is turned back on, or until the vehicle is restarted.

Compass Operation

Press the compass/temperature button once briefly to turn the display on or off.

Compass Calibration

See “Compass Calibration” under *Automatic Dimming Rearview Mirror with OnStar®, Compass and Temperature Display on page 169* for more information.

Compass Variance

See “Compass Variance” under *Automatic Dimming Rearview Mirror with OnStar®, Compass and Temperature Display on page 169* for more information.

Cleaning the Mirror

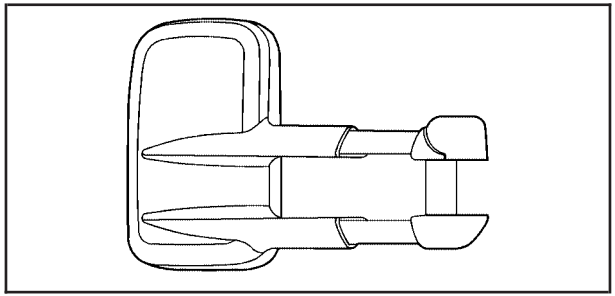
Use a paper towel or similar material dampened with glass cleaner. Do not spray glass cleaner directly on the mirror as that may cause the liquid cleaner to enter the mirror housing.

Outside Manual Mirrors

Adjust your outside mirrors so you can just see the side of your vehicle and have a clear view of objects behind you. The mirrors can be folded in to enter narrow areas.

The use of hood-mounted air deflectors and add-on convex mirror attachments may adversely affect mirror performance.

Outside Trailer-Tow Mirrors



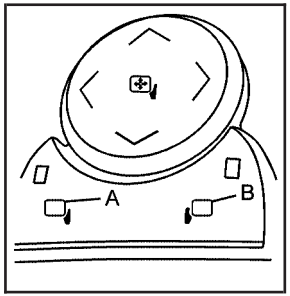
If your vehicle has trailer towing type mirrors, they can be adjusted so you can have a clear view of the objects behind you. Manually pull out the mirror head to extend it for better visibility when towing a trailer.

These mirrors can be manually folded forward or rearward. The lower portion of the mirror is convex. A convex mirror's surface is curved so you can see more from the driver's seat. The convex mirror can be adjusted manually to the driver's preferred position for better vision.

Your vehicle may have outside heated mirrors which help clear them of condensation, snow, and ice. When the rear window defogger button is pressed, the heated mirrors are also turned on. Only the upper glass of the mirror is heated. The lower convex part of the mirror is not heated.

Your mirror may also have a turn signal arrow that will flash in the direction of the turn or lane change.

Outside Power Mirrors



If your vehicle is equipped with outside power mirrors, the controls are located on the driver's door armrest.

- Press (A) to select the driver's side mirror. Then press the arrows located on the four-way control pad to adjust the mirror. Press (A) again to deselect the mirror.
- Press (B) to select the passenger's side mirror. Then press the arrows located on the four-way control pad to adjust the mirror. Press (B) again to deselect the mirror.

This mirror has the following features.

Manual Folding

The mirrors can be manually folded inward to prevent damage when going through an automatic car wash. To fold, push the mirror toward the vehicle. To return the mirror to its original position, push outward. Be sure to return both mirrors to their original unfolded position before driving.

Heated Mirrors

The button to turn the heated mirrors on or off is located on the climate control panel. Press this button to warm the driver's and passenger's outside rearview mirrors to help clear them of ice, snow, and condensation.

See "Rear Window Defogger" under *Dual Automatic Climate Control System on page 238* for more information.

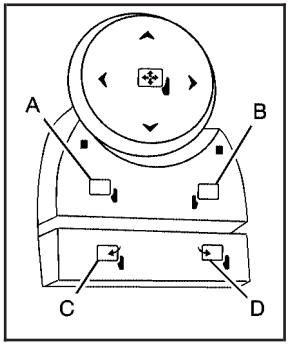
Convex Mirror

The passenger's side mirror may have convex glass. A convex mirror's surface is curved so more can be seen 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.

Outside Power Foldaway Mirrors



If your vehicle is equipped with outside power foldaway mirrors, the controls are located on the driver's door armrest.

- Press (A) to select the driver's side mirror. Then press the arrows located on the four-way control pad to adjust the mirror. Press (A) again to deselect the mirror.
- Press (B) to select the passenger's side mirror. Then press the arrows located on the four-way control pad to adjust the mirror. Press (B) again to deselect the mirror.
- Press (C) to fold the mirrors out to the driving position.
- Press (D) to fold the mirrors in to the folded position.

If the mirrors are accidentally folded/unfolded manually, they may shake or flutter at normal driving speeds and may not stay in the unfolded position. If this happens, you will need to reset the mirrors. See “Resetting the Power Foldaway Mirrors” next.

Resetting the Power Foldaway Mirrors

You will need to reset the power foldaway mirrors if the following occurs:

- The mirrors are accidentally obstructed while folding.
- They are accidentally manually folded/unfolded.
- The mirrors will not stay in the unfolded position.
- The mirrors shake and flutter at normal driving speeds.

To reset the power foldaway mirrors, fold and unfold them one time using the mirror controls. This will reset them to their normal position.

This mirror has the following features.

Automatic Dimming

The driver’s outside mirror will adjust for the glare of the headlamps behind you. See *Automatic Dimming Rearview Mirror with OnStar®, Compass and Temperature Display on page 169*.

Curb View Assist

If your vehicle has the memory package, the outside mirrors are able to perform the curb view assist mirror function. This feature may be useful in allowing the driver to view the curb when parallel parking. This feature will cause the passenger’s and/or driver’s mirror to tilt to a preselected position when the vehicle is in REVERSE (R).

The passenger’s and/or driver’s mirror will return to its original position when the vehicle is shifted out of REVERSE (R), or the ignition is turned off or to LOCK.

This feature can be turned on or off through the Driver Information Center (DIC). See *Driver Information Center (DIC) on page 267*.

Heated Mirrors

The button to turn the heated mirrors on or off is located on the climate control panel. Press this button to warm the driver's and passenger's outside rearview mirrors to help clear them of ice, snow, and condensation.

See "Rear Window Defogger" under *Dual Automatic Climate Control System on page 238* for more information.

Convex Mirror

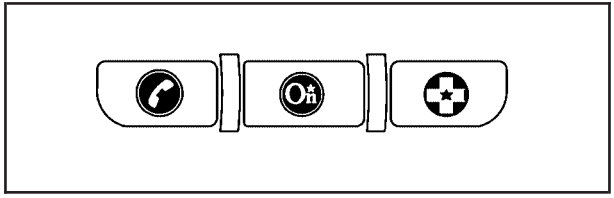
⚠ CAUTION:

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.

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

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

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® Owners 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 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 (U.S. Only)

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 in the U.S. or a Bell Mobility service plan in Canada, depending on eligibility. To find out more, refer to the OnStar® Owners 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® Owners Guide for more information (Only available in the continental U.S.).

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 368* 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

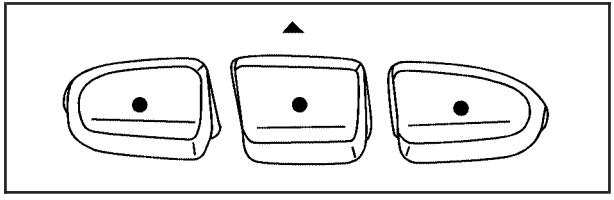
You may need to increase the volume of your radio to hear the OnStar® advisor. If the light next to the OnStar® buttons is red, this means that your system is not functioning properly and should be checked by your dealer/retailer. If the light appears clear (no light is appearing), your OnStar® subscription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

Universal Home Remote System

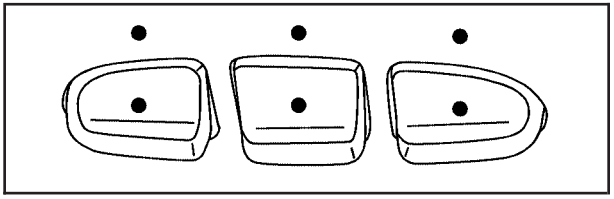
System Identification

Your vehicle may have a Universal Home Remote System.

Determine which Universal Home Remote your vehicle has and then read the pages following for instructions on programming your specific system.



If there is one triangular Light Emitting Diode (LED) indicator light above the Universal Home Remote buttons, follow the instructions under Universal Home Remote System Operation (With One Triangular LED).



If there are three round LED indicator lights above the Universal Home Remote buttons, follow the instructions under Universal Home Remote System Operation (With Three Round LED).

For help or information on the Universal Home Remote System, call the customer assistance phone number under *Customer Assistance Offices on page 648*.

Universal Home Remote System

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:

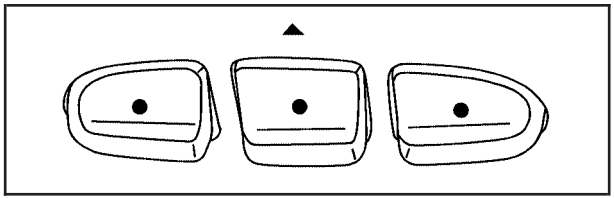
1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

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.

Universal Home Remote System Operation (With One Triangular LED)



If there is one triangular Light Emitting Diode (LED) indicator light above the Universal Home Remote buttons, follow the instructions below.

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 section.

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

It is recommended that a new battery be installed in your hand-held transmitter for quicker and more accurate transmission of the radio-frequency signal.

Programming the Universal Home Remote System

Follow these steps to program up to three devices:

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. Hold the end of your hand-held transmitter about 1 to 3 inches (3 to 8 cm) away from the Universal Home Remote buttons while keeping the indicator light in view.
3. At the same time, 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 it. Immediately press and hold the same button a second time for two seconds, then release it. Immediately, press and hold the same button a third time for two seconds, then release.

   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.

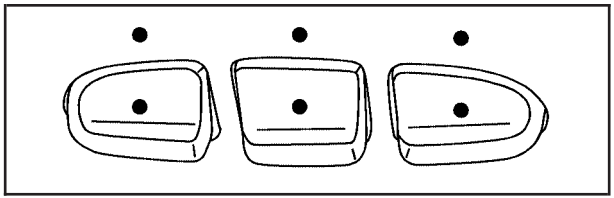
Reprogramming a Single Universal Home Remote Button

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 help or information on the Universal Home Remote System, call the customer assistance phone number under *Customer Assistance Offices on page 648*.

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) indicator lights above the Universal Home Remote buttons, follow the instructions below.

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

Do not use 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 Universal Home Remote Buttons” later in this section.

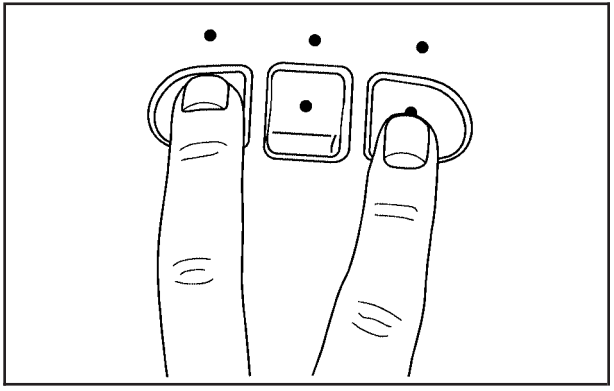
When programming a garage door, it is advised to park outside of the garage. Be sure that people and objects are clear of the garage door or security device you are programming.

Programming Universal Home Remote — Rolling Code

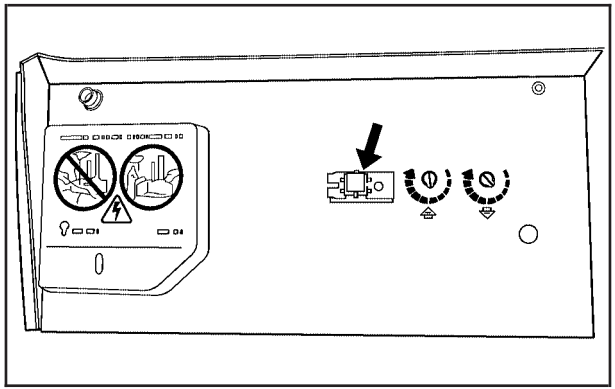
Most garage door openers sold after 1996 are Rolling Code units.

Programming a 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 devices:



1. From inside the vehicle, press the two outside buttons at the same time for one to two seconds, and immediately release them.



2. Locate in the garage, the garage door opener receiver (motor-head unit). Locate the “Learn” or “Smart” button. It can usually be found where the hanging antenna wire is attached to the motor-head unit and may be a colored button. Press this button. After you press this button, you will have 30 seconds to complete the following steps.
3. Immediately return to your vehicle. Press and hold the universal home remote button that 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, within one second, release the button when the garage door moves. The indicator light will blink rapidly until programming is complete.
5. Press and release the same button again. The garage door should move, confirming that programming is successful and complete.

To program another Rolling Code device such as an additional garage door opener, a security device, or home automation device, repeat Steps 1-5, choosing a different function button in Step 3 than what you used for the garage door opener.

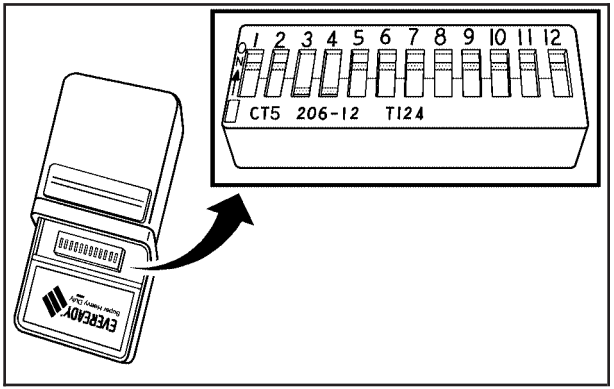
If these instructions do not work, you probably have a Fixed Code garage door opener. Follow the Programming instructions below for a Fixed Code garage door opener.

Programming Universal Home Remote — Fixed Code

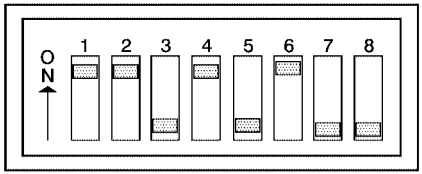
Most garage door openers sold before 1996 are Fixed Code units.

Programming a 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 devices:

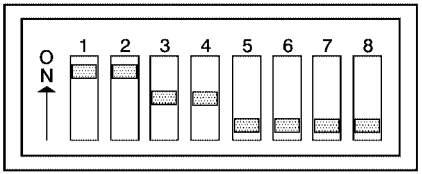


1. To verify if you have a Fixed Code garage door opener, remove the battery cover on your hand held transmitter supplied by the manufacturer of your garage door opener motor. If you see a row of dip switches similar to the graphic above, you have a Fixed Code garage door opener. If you do not see a row of dip switches, return to the previous section for Programming Universal Home Remote – Rolling Code.



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

Example of Eight Dip Switches with Two Positions



Switch Number	1	2	3	4	5	6	7	8
Switch Position	On	On	Neutral	Neutral	Off	On	Off	Off
Your Universal Home Remote Button	Left	Left	Middle	Middle	Right	Right	Right	Right

Example of Eight Dip Switches with Three Positions

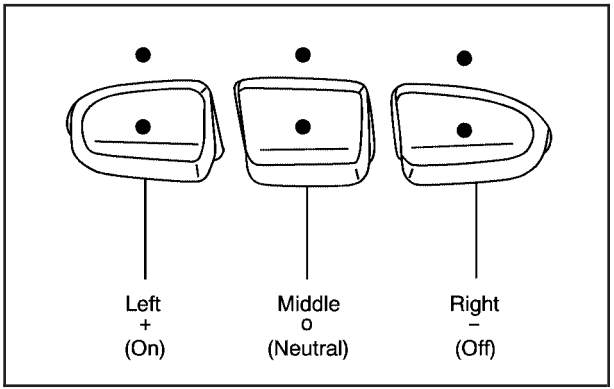
Your panel of switches may not appear exactly as they do in the examples above, but they should be similar.

The switch positions on your hand-held transmitter may be labeled, as follows:

- A switch in the up position may be labeled as “Up,” “+,” or “On.”
- A switch in the down position may be labeled as “Down,” “–,” or “Off.”
- A switch in the middle position may be labeled as “Middle,” “0,” or “Neutral.”

2. Write down the eight to 12 switch settings from left to right as follows:
   - When a switch is in the up position, write “Left.”
   - When a switch is in the down position, write “Right.”
   - If a switch is set between the up and down position, write “Middle.”

     The switch settings that you wrote down in Step 2 will now become the button strokes you enter into the Universal Home Remote in Step 4. Be sure to enter the switch settings that you wrote down in Step 2, in order from left to right, into the Universal Home Remote, when completing Step 4.
3. From inside your vehicle, first firmly press all three buttons at the same time for about three seconds. Release the buttons to put the Universal Home Remote into programming mode.



4. The indicator lights will blink slowly. Enter each switch setting from Step 2 into your vehicle’s Universal Home Remote. You will have two and one-half minutes to complete Step 4. Now press one button on the Universal Home Remote for each switch setting as follows:
   - If you wrote “Left,” press the left button in the vehicle.
   - If you wrote “Right,” press the right button in the vehicle.
   - If you wrote “Middle,” press the middle button in the vehicle.

5. After entering all of the switch positions, again, firmly 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 same button again. The garage door should move, confirming that programming is successful and complete.

To program another Fixed Code device such as an additional garage door opener, a security device, or home automation device, repeat Steps 1-8, choosing a different button in Step 6 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 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 buttons will be erased.

For help or information on the Universal Home Remote System, call the customer assistance phone number under *Customer Assistance Offices on page 648*.

Storage Areas

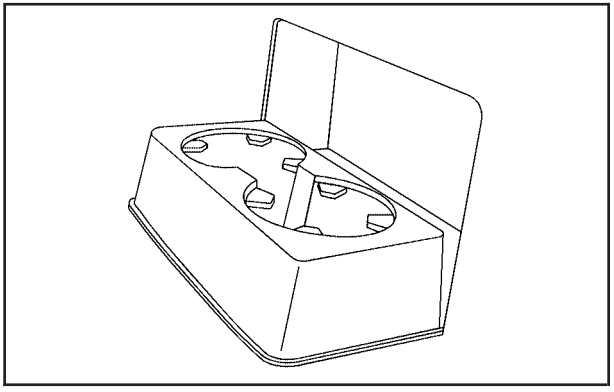
Your vehicle may have a cover on the top of each bed side. To access the stake pockets below, you must cut out the square and remove it.

Glove Box

Open the glove box by pulling up on the bottom of the handle.

Cupholder(s)

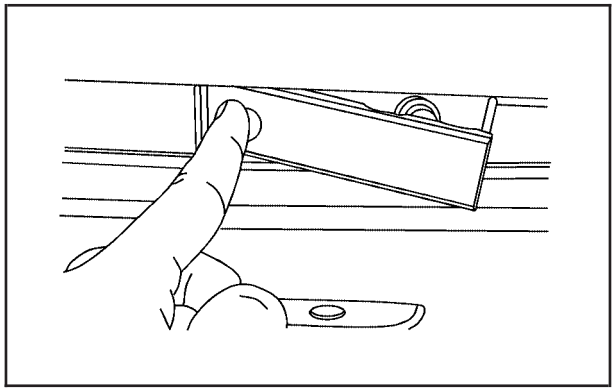
Your vehicle may have cupholders located on and behind the center console and in the rear seat armrest. Pull the loop down on the rear seat armrest to access the cupholders.



Pull downward on the lid to use the cupholders behind the center console.

Instrument Panel Storage Area

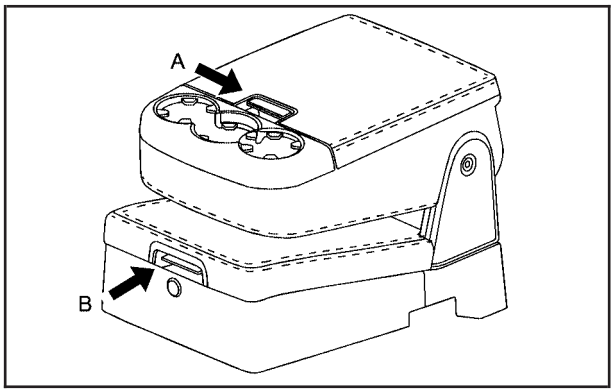
Your vehicle may have an instrument panel storage area. It is located above the glove box.



To open, press and hold the driver's side of the handle in and pull out on the exposed portion of the handle.

Center Console Storage Area

Your vehicle may have an upper and lower center console storage area with cupholders.



To access the upper storage area, pull lever (A) up. To access the lower storage area, raise the upper storage bin, then pull lever (B) up. Use the key to lock and unlock the lower storage area.

Luggage Carrier

The vehicle may have a luggage carrier that can be used to load things on top of the vehicle.

The luggage carrier has siderails attached to the roof. It may also have crossrails which can be moved back and forth to help secure cargo. Tie the load to the siderails or siderail supports.

Notice: **Loading cargo on the luggage carrier that weighs more than 200 lbs (91 kg) or hangs over the rear or sides of the vehicle may damage your vehicle. Load cargo so that it rests on the slats as far forward as possible and against the side rails, making sure to fasten it securely.**

Do not exceed the maximum vehicle capacity when loading your vehicle. For more information on vehicle capacity and loading, see *Loading Your Vehicle on page 425*.

To prevent damage or loss of cargo while you are driving, check to make sure the luggage and cargo are still securely fastened.

Be sure the cargo is properly loaded.

- If small heavy objects are placed on the roof, cut a piece of 3/8 inch plywood to fit inside the crossrails and siderails to spread the load. Tie the plywood to the siderail supports.
- Tie the load to the crossrails or the siderail supports. Use the crossrails only to keep the load from sliding. To move a crossrail, lift the release lever, on both sides of the rail, up to loosen it. Slide the crossrail to the desired position balancing the force side to side. Press the release lever on both sides of the rail, down to tighten it. Try to slide the crossrail back and forth slightly to be sure it is tight.
- If you need to carry long items, move the crossrails as far apart as they will go. Tie the load to the crossrails and the siderails or siderail supports. Also tie the load to the bumpers. Do not tie the load so tightly that the crossrails or siderails are damaged.
- After moving a crossrail, be sure it is securely locked into the siderail.

Your vehicle has a Center High-Mounted Stoplamp (CHMSL) located above the rear glass.

If items are loaded on the roof of the vehicle, care should be taken not to block or damage the CHMSL unit.

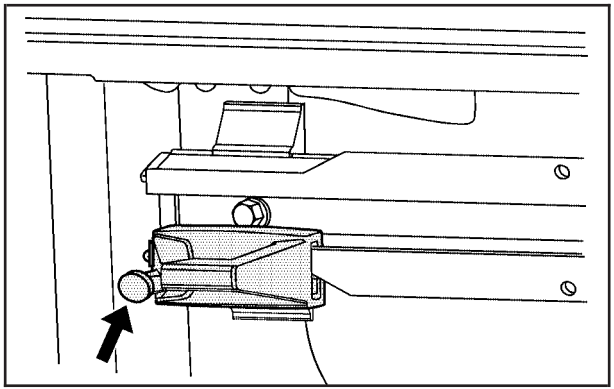
Rear Seat Armrest

Your vehicle may have a rear seat armrest that contains two cupholders. To access the cupholders, pull the armrest down from the rear seatback.

Cargo Management System

Your vehicle may have a cargo management system. It is located in the bed of the truck. The system contains three rails located on the front and sides of the bed.

The system will include four adjustable cargo tie-downs. The tie-downs can be placed on the upper and lower slides of the rail.



To adjust a tie-down, pull the locator pin out and move the tie-down to another location making sure the locator pin lines up with a locator hole on the rail. If the locator pin does not line up with the locator hole, the tie-down may be installed incorrectly. Turn it over and reinstall. Once the pin is inside the hole, the tie-down will not move side to side. The maximum load for each rail is 500 lbs (227 kg).

The rails are notched at each end which allows the tie-downs to be removed and placed on another rail. To remove, pull the locator pin out and slide the tie-down to the end of the rail and pull back.

To remove or install cargo tie-downs at the front of the bed, slide the corner cap towards the center of the bed to expose the rail notches. To remove the corner cap, pull either edge away from the rail.

To remove the system, loosen the toggle bolts on each rail until they can be removed from the bed of the truck. To replace the system, place the toggle bolts and rails into their original locations and tighten them to a torque setting of 12.5 ft-lbs (17 N•m).

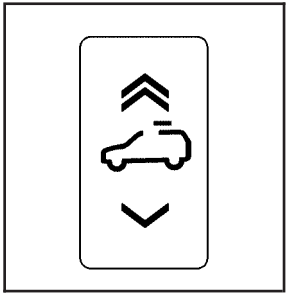
If the system is removed to install a bed liner, make sure there is no bed liner material in the installation points.

Notice: **If you tie down cargo using the horizontal slots on the top of the pickup box, you may damage the box. Using the horizontal slots on the top of the pickup box for tie-down locations may cause damage to the pickup box and would not be covered by your warranty. Only use the tie-down loops if you do not have the cargo management system.**

Sunroof

If your vehicle has a power sliding sunroof, the ignition needs to be turned to RUN, or the Retained Accessory Power (RAP) must be activated to open or close the sunroof. When RAP is active, the sunroof will work for 10 minutes after the ignition is turned off, or until the driver's door is opened. See *Retained Accessory Power (RAP) on page 134* for more information.

Extended Cab



If your vehicle is an extended-cab, the sunroof switch is located on the headliner above the rearview mirror.

Vent: From the closed position, press and hold the rear of the switch to vent the sunroof. To close the sunroof, press and hold the front of the switch.

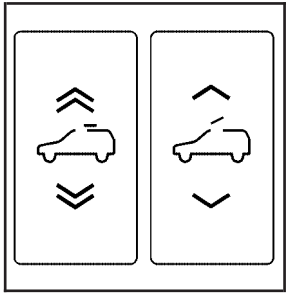
Open: From the vent position, the sunroof can be fully opened either manually or by using the express-open feature. To open manually, press the rear of the switch to the first depression and hold until the sunroof has reached the desired position. To open using express-open, press the rear of the switch fully and release. The sunroof will move to the full open position. To stop the sunroof partway, press the switch a second time.

Close: From the vent, or open position, press and hold the front of the switch to close the sunroof.

The sunroof also has a roller sunshade that can be used to block the rays of the sun. The roller sunshade can be manually operated with the sunroof in an open or closed position. To open the sunshade, press and unlatch it, and roll it back. To close, pull it forward and latch it into the closed position.

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

Crew Cab



If your vehicle is a crew cab, there are two sunroof switches located in the overhead console above the rearview mirror.

Vent: From the closed position, press the rear of the passenger's side switch to vent the sunroof. To close the sunroof, press and hold the front of the passenger's side switch.

Manual-Open/Manual-Close: To open the sunroof press and hold the rear of the driver's side switch until the sunroof reaches the desired position. To close the sunroof, press and hold the front of the driver's side switch until the sunroof reaches the desired position.

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

Express-Open/Express-Close: To express-open the sunroof, fully press and release the rear of the driver's side switch. The sunroof will open automatically. To stop the sunroof partway, press the switch a second time. To express-close the sunroof, fully press and release the front of the driver's side switch. The sunroof will close automatically. To stop the sunroof partway, press the switch a second time.

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

Anti-Pinch Feature (Crew Cab Only): If an object is in the path of the sunroof while it is closing, the anti-pinch feature will detect the object and stop the sunroof from closing at the point of the obstruction. The sunroof will then open halfway, and the air deflector will raise. To close the sunroof once it has re-opened, refer to the Express-Close or Manual-Close functions described previously. If the sunroof is in the vent position, and there is an object in the path of the sunroof when it closing, the anti-pinch feature will detect the object and stop the sunroof. To close the sunroof once it has re-opened, refer to the Manual-Close or Express-Close functions described previously.

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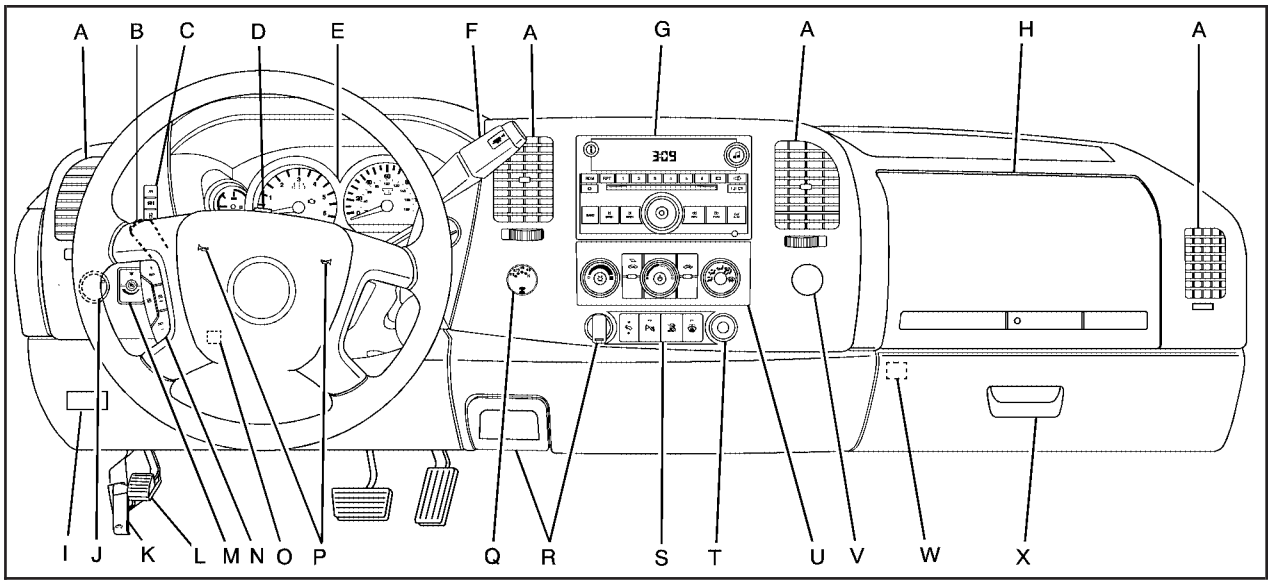
Instrument Panel Overview

Instrument Panel Overview (Base/Uplevel version)



The main components of your instrument panel are the following:

A. Air Outlets. See *Outlet Adjustment on page 245*.

B. Turn Signal/Multifunction Lever. See *Turn Signal/Multifunction Lever on page 212*.

C. Driver Information Center (DIC) Buttons. See *Driver Information Center (DIC) on page 267*.

D. Hazard Warning Flasher Button. See *Hazard Warning Flashers on page 211*.

E. Instrument Panel Cluster. See *Instrument Panel Cluster on page 247*.

F. Shift Lever. See *Automatic Transmission Operation on page 138*. Tow/Haul Selector Button (If Equipped). See *Tow/Haul Mode on page 144*. Range Selection Mode (Allison Transmission® and Hydra-Matic® 6-Speed Button (If Equipped). See *Automatic Transmission Operation on page 138*.

G. Audio System. See *Audio System(s) on page 300*.

H. Instrument Panel Storage Area. See *Instrument Panel Storage Area on page 197*.

I. Integrated Trailer Brake Controller (If Equipped). See *Towing a Trailer on page 445*.

J. Exterior Lamp Controls. See *Exterior Lamps on page 221*.

K. Hood Release. See *Hood Release on page 497*.

L. Parking Brake. See *Parking Brake on page 162*.

M. Dome Lamp Override Button. See *Dome Lamp Override on page 226*. Dome Lamp Knob. See *Dome Lamps on page 226*. Fog Lamp Button (If Equipped). See *Fog Lamps on page 224*.

N. Cruise Control Buttons. See *Cruise Control on page 218*.

O. Tilt Wheel Lever. See *Tilt Wheel on page 212*.

P. Horn. See *Horn on page 211*.

Q. Automatic Transfer Case Control (If Equipped). See *Four-Wheel Drive on page 147*.

R. Ashtray (If Equipped). See *Ashtray(s) and Cigarette Lighter on page 233*.

S. StabiliTrak® Button (If Equipped). See *StabiliTrak® System on page 381*. Ultrasonic Rear Park Assist Disable Button (If Equipped). See *Ultrasonic Rear Parking Assist (URPA) on page 228*. Pedal Adjust Button (If Equipped). See *Adjustable Throttle and Brake Pedal on page 136*. Heated Windshield Washer Fluid Button (If Equipped). *Windshield Washer on page 217*.

T. Accessory Power Outlet. See *Accessory Power Outlet(s) on page 232*.

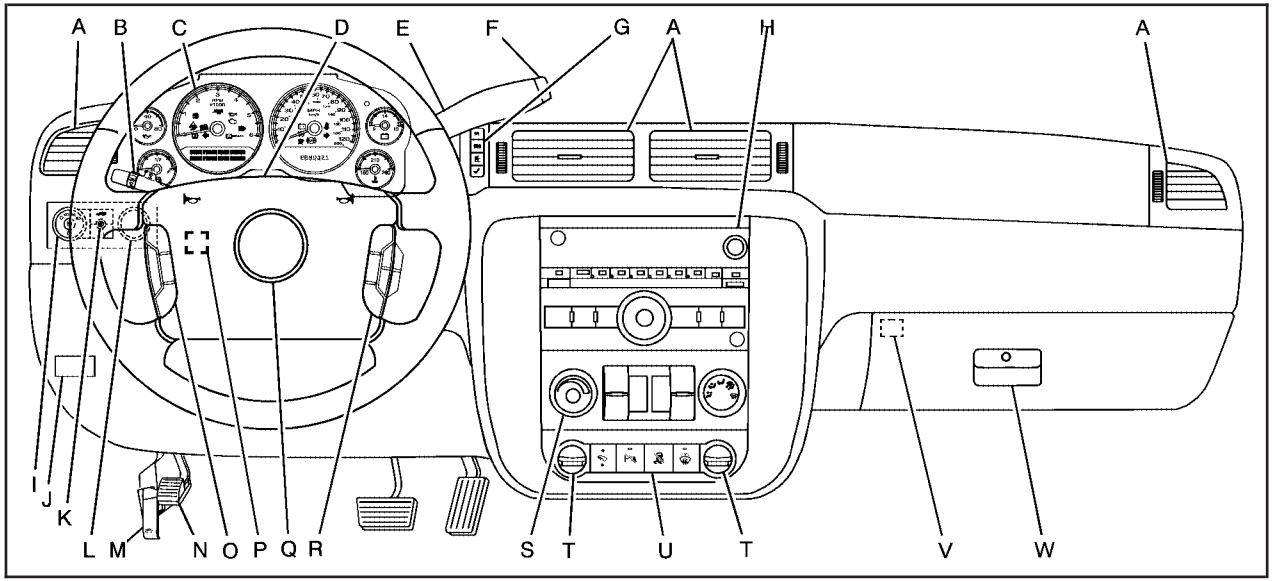
U. Climate Control System. See *Climate Control System (With Air Conditioning) on page 234* or *Climate Control System (Heater Only) on page 237* and *Dual Automatic Climate Control System on page 238*.

V. Power Take Off (PTO) Control (If Equipped). See Power Take Off (PTO) in the DURAMAX® Diesel Supplement Index.

W. Passenger Airbag Off Control (If Equipped). See *Airbag Off Switch on page 93*.

X. Glove Box. See *Glove Box on page 196*.

Instrument Panel Overview (Premium version)



A. Air Outlets. See *Outlet Adjustment on page 245*.

B. Turn Signal/Multifunction Lever. See *Turn Signal/Multifunction Lever on page 212*.

C. Instrument Panel Cluster. See *Instrument Panel Cluster on page 247*.

D. Hazard Warning Flasher Button. See *Hazard Warning Flashers on page 211*.

E. Shift Lever. See *Automatic Transmission Operation on page 138*.

F. Tow/Haul Selector Button (If Equipped). See *Tow/Haul Mode on page 144*.

G. Driver Information Center (DIC) Controls. See *Driver Information Center (DIC) on page 267*.

H. Audio System. See *Audio System(s) on page 300*.

I. Exterior Lamps Control. See *Exterior Lamps on page 221*.

J. Integrated Trailer Brake Controller (If Equipped). See *Towing a Trailer on page 445*.

K. Dome Lamp Override Button. See *Dome Lamp Override on page 226*. Dome Lamp Knob. See *Dome Lamps on page 226*.

L. Automatic Transfer Case Control. (If Equipped). See *Four-Wheel Drive on page 147*.

M. Hood Release. See *Hood Release on page 497*.

N. Parking Brake. See *Parking Brake on page 162*.

O. Cruise Control Buttons. See *Cruise Control on page 218*.

P. Tilt Wheel Lever. See *Tilt Wheel on page 212*.

Q. Horn. See *Horn on page 211*.

R. Audio Steering Wheel Controls. See *Audio Steering Wheel Controls on page 368*.

S. Climate Controls. See *Climate Control System (With Air Conditioning) on page 234* or *Climate Control System (Heater Only) on page 237* or Dual Automatic Climate Controls (If Equipped). See *Dual Automatic Climate Control System on page 238*.

T. Accessory Power Outlets. See *Accessory Power Outlet(s) on page 232*. Cigarette Lighter (If Equipped). See *Ashtray(s) and Cigarette Lighter on page 233*.

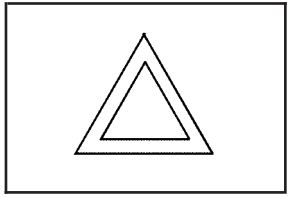
U. StabiliTrak® Button (If Equipped). See *StabiliTrak® System on page 381*. Pedal Adjust Button (If Equipped). See *Adjustable Throttle and Brake Pedal on page 136*. Rear Park Assist Disable Button (If Equipped). See *Ultrasonic Rear Parking Assist (URPA) on page 228*. Heated Windshield Washer Fluid Button (If Equipped). See *Windshield Washer on page 217*.

V. Passenger Airbag Off Control (If Equipped). See *Airbag Off Switch on page 93*.

W. Glove Box. See *Glove Box on page 196*.

Hazard Warning Flashers

The hazard warning flashers 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.

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

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

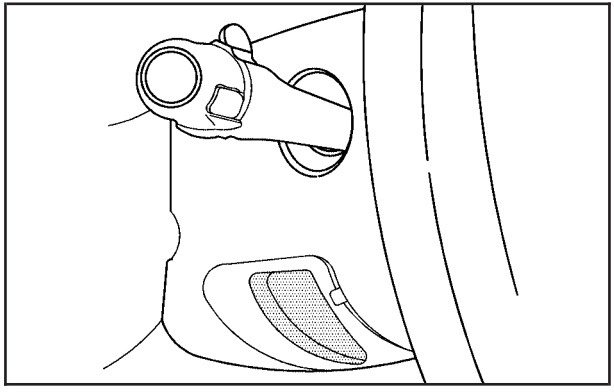
If you carry reflective triangles, you can set them up at the side of the road about 300 feet (100 m) behind your vehicle.

Horn

To sound the horn, press the horn symbols located on the steering wheel.

Tilt Wheel

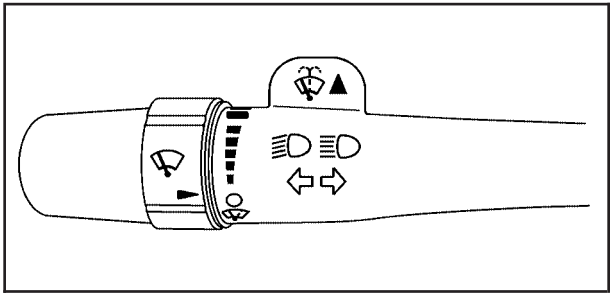
The tilt wheel will allow you to adjust the steering wheel before you drive. Raise it to the highest level to give your legs more room when you exit and enter your vehicle.



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

To tilt the wheel, hold the steering wheel and pull the lever. Then move the steering 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 213*.
- Headlamp High/Low-Beam Changer. See *Headlamp High/Low-Beam Changer on page 214*.
- Flash-to-Pass. See *Flash-to-Pass on page 214*.
- Windshield Wipers. See *Windshield Wipers on page 215*.
- Windshield Washer. See *Windshield Washer on page 217*.

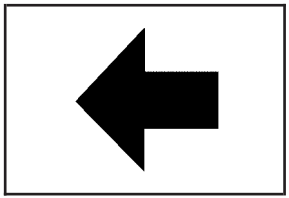
For information on the exterior lamps, see *Exterior Lamps on page 221*.

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.

To signal a lane change, raise or lower the lever for less than one second until the arrow starts to flash. This will cause the turn signals to automatically flash three times. It will flash six times if tow-haul mode is active. Holding the turn signal lever for more than one second will cause the turn signals to flash until you release the lever. The lever will return by itself when it is released.



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

As you signal a turn or a lane change, if the arrows flash more quickly than normal, a signal bulb may be burned out and other drivers will not see your turn signal.

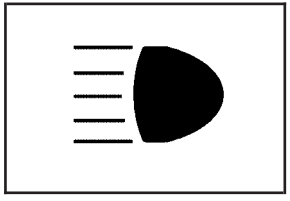
If a bulb is burned out, replace it to help avoid an accident. If the arrows do not go on at all when you signal a turn, check for burned-out bulbs and a blown fuse. See *Fuses and Circuit Breakers on page 608*.

Turn Signal On Chime

If your turn signal is left on for more than 3/4 of a mile (1.2 km), a chime will sound at each flash of the turn signal and the message TURN SIGNAL ON will also appear in the Driver Information Control (DIC). To turn the chime and message off, move the turn signal lever to the off position.

Headlamp High/Low-Beam Changer

(Headlamp High/Low Beam Changer): To change the headlamps from low to high beam, push the lever toward the instrument panel. To return to low-beam headlamps, pull the multifunction lever toward you. Then release it.



When the high beams are on, this indicator light on the instrument panel cluster will also be on.

Flash-to-Pass

This feature lets you use your high-beam headlamps to signal a driver in front of you that you want to pass. It works even if your headlamps are in the automatic position.

To use it, pull the turn signal lever toward you, then release it.

If your headlamps are in the automatic position or on low beam, your high-beam headlamps will turn on. They will stay on as long as you hold the lever toward you. The high-beam indicator on the instrument panel cluster will come on. Release the lever to return to normal operation.

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 549*.

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.

The windshield wipers are controlled by turning the band with the wiper symbol.

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

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

(Delay): The wiper speed can be set 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): Turn the band away from you to the first solid band past the delay settings, for steady wiping at low speed.

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

Rainsense™ II Wipers

If your vehicle has Rainsense™ II windshield wipers, the moisture sensor is located next to the inside rearview mirror and is mounted on the windshield. When active, these sensors are able to detect moisture on the windshield and automatically turn on the wipers.

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

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

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

When Rainsense™ is active, the headlamps will turn on automatically if the exterior lamp control is in the AUTO position.

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

Windshield Washer

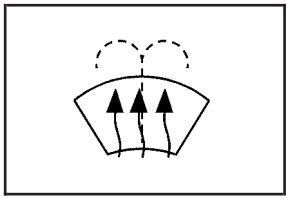
⚠ CAUTION:

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.

(Washer Fluid): There is a paddle marked with the windshield washer symbol at the top of the multifunction lever. To spray washer fluid on the windshield, push the paddle. The wipers will clear the window and then either stop or return to your preset speed.

Heated Windshield Washer

If your vehicle has the heated windshield washer fluid system it may be used to help clear ice, snow, tree sap, or bugs from your windshield.



The button is located in the switchbank under the climate controls.

Push the heated washer fluid button to activate the heated windshield washer fluid system. The indicator light will flash. This activation will initiate four heated wash/wipe cycles. The first heated wash/wipe cycle may take up to 40 seconds to occur, depending on outside temperature. After the first wash/wipe cycle, it may take up to 20 seconds for each of the remaining cycles to begin. Press the button again to turn off the heated windshield washer fluid system or it will automatically turn off after four wipe cycles have been completed.

When the heated windshield washer fluid system is activated under certain outside temperature conditions, steam may flow out of the washer nozzles for a short period of time before washer fluid is sprayed. This is a normal condition.

Cruise Control

⚠ 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.

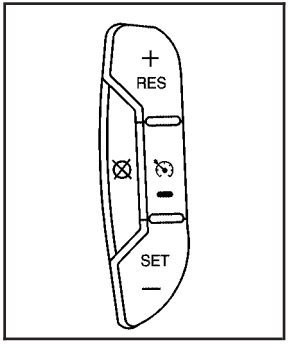
Cruise control can be dangerous on slippery roads. On such roads, fast changes in tire traction can cause excessive wheel slip, and you could lose control. Do not use cruise control on slippery roads.

With cruise control, 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).

When you apply your brakes, cruise control is turned off.

If your vehicle has an Allison® automatic transmission, see “Grade Braking and Cruise Grade Braking (Allison Transmission®) under *Tow/Haul Mode on page 144* for an explanation of how cruise control interacts with the range selection mode, tow/haul and grade braking systems.

If your vehicle has the StabiliTrak®™ system and begins to limit wheel spin while you are using cruise control, the cruise control will automatically disengage. See *StabiliTrak® System on page 381*. When road conditions allow you to safely use it again, you may turn the cruise control back on.



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

(On/Off): This button can both activate and turn off the system. The indicator light is on when cruise control is on and turns off when cruise control is off.

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

SET – (Set/Coast): Press this button to set the speed or make the vehicle decelerate.

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

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 desired speed.
3. Press the SET– button located on the steering wheel and release it.
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 you do not need to reset it.

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 the previous set 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. Each time this is done, the vehicle will go about 1 mph (1.6 km/h) faster.

Reducing Speed While Using Cruise Control

To reduce the vehicle speed while using cruise control:

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

Passing Another Vehicle While Using Cruise Control

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

Using Cruise Control on Hills

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

Ending Cruise Control

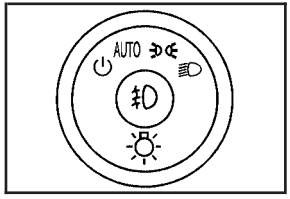
There are three ways to end cruise control:

- 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

When you turn off the cruise control or the ignition, the cruise control set speed memory is erased.

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

The exterior lamps control has four positions:

(Off): Turn the control to this position to turn off the automatic headlamps and daytime running lamps (DRL). Turn the headlamp control to the off position again to turn the automatic headlamps or DRL back on.

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

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

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

When the vehicle is turned off and the headlamps are in AUTO, the headlamps may automatically remain on for a set time. The time of the delay can be changed using the DIC. See *Driver Information Center (DIC) on page 267*.

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

- Instrument Panel Lights
- Taillamps
- License Plate Lamps

(Headlamps): Turn the control to this position to turn on the headlamps together with the following:

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

When the headlamps are turned on while the vehicle is on, the headlamps turn off automatically 10 minutes after the ignition is turned off. When the headlamps are turned on while the vehicle is off, the headlamps will stay on for 10 minutes before automatically turning off to prevent the battery from being drained. Turn the headlamp control to off and then back to the headlamp on position to make the headlamps stay on for an additional 10 minutes.

Push the turn signal/multifunction lever toward the instrument panel to change the headlamps from low beam to high beam.

Headlamps on Reminder

A reminder chime will sound when the headlamps or parking lamps are manually turned on and your ignition is off and a door is open. To disable the chime, turn the light off.

Daytime Running Lamps (DRL)

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 DRL are required on all vehicles first sold in Canada.

The DRL system will come on when the following conditions are met:

- The engine is running.
- The ignition is on.
- The exterior lamps control is in AUTO.
- The light sensor determines it is daytime.

When the DRL are on, only your DRL lamps will be on. The taillamps, sidemarker, and other lamps will not be on. The instrument panel back lighting will not be on either.

When it begins to get dark, the automatic headlamp system will switch from DRL to the headlamps.

When the headlamp switch is turned off, the headlamps will go off.

Automatic Headlamp System

When it is dark enough outside, the automatic headlamp system will turn on the headlamps at the normal brightness, along with the taillamps, sidemarker, parking lamps, and the instrument panel lights. The radio back lighting will also be dimly lit.

To turn off the automatic headlamp system, turn the exterior lamps switch to the off position. Turning off the automatic headlamp system with the headlamp switch is not available for vehicles first sold in Canada.

Your vehicle has a light sensor located on the top of the instrument panel in the defroster grille that regulates when the automatic headlamps turn on. Be sure it is not covered, or the headlamps will come on whenever the ignition is on.

The system may also turn on the headlamps when driving through a parking garage, heavy overcast weather, or a tunnel. This is normal.

There is a delay in the transition between the daytime and nighttime operation of the Daytime Running Lamps (DRL) and the automatic headlamp systems so that driving under bridges or bright overhead street lights does not affect the system. The DRL and automatic headlamp system will only be affected when the light sensor detects a change in lighting lasting longer than the delay.

If you start your vehicle in a dark garage, the automatic headlamp system will come on immediately. Once you leave the garage, it will take approximately one minute for the automatic headlamp system to change to DRL if it is bright enough outside. During that delay, your instrument panel cluster may not be as bright as usual. Make sure your instrument panel brightness control is in the full bright position. See *Instrument Panel Brightness on page 225*.

To idle your vehicle with the automatic headlamp system off, turn the control to the off position.

You may be able to turn off your Automatic Headlamp System. See *Daytime Running Lamps (DRL) on page 222* for more information.

Your headlamps will also stay on after you exit the vehicle. You can program this feature using the Driver Information Center (DIC). See *DIC Vehicle Customization (With DIC Buttons) on page 289*.

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

Puddle Lamps

Your vehicle may have puddle lamps, that come on when it is dark outside to help you see the area near the base of the front doors. The puddle lamps will come on when a door is opened, or when you press the unlock button on the Remote Keyless Entry Transmitter. The lamps will time out or turn off once the engine is started.

Fog Lamps

(Fog Lamps): If your vehicle has fog lamps, the button is located on the instrument panel to the left of the steering column and below the dome lamp override button.

The ignition must be in RUN and the parking lamps must be on for the fog lamps to work.

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

When the fog lamps are turned on, the low-beam headlamps automatically turn on.

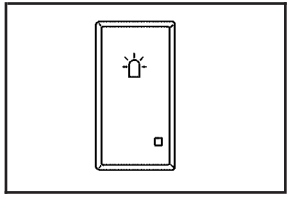
The fog lamps turn off while you change to high-beam headlamps. When the high-beam headlamps go off, the fog lamps will come on again.

Fog lamps should only be used in foggy conditions since they could be distracting to oncoming drivers in clear weather conditions.

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

Auxiliary Roof Mounted Lamp

If your vehicle has this feature, this button includes wiring provisions for a dealer or a qualified service center to install an auxiliary roof lamp.



This button is located on the overhead console.

When the wiring is connected to an auxiliary roof mounted lamp, pressing the bottom of the button will activate the lamp and illuminate an indicator light at the bottom of this button. Pressing the top of the button will turn off the roof mounted lamp and indicator.

The emergency roof lamp circuit is fused at 30 amps, so the total current draw of the attached lamps should be less than this value. The attachment points for the roof lamp circuits are two blunt cut wires located above the overhead console, a dark green switched power wire and a black ground wire.

For further information on roof mount emergency lamp installation, please visit the GM Upfitter website at www.gmupfitters.com or contact your dealer.

If your vehicle has this button, your vehicle may have the snow plow prep package. For further information see *Adding a Snow Plow or Similar Equipment on page 432*.

Instrument Panel Brightness

(Instrument Panel Brightness): This feature controls the brightness of the instrument panel lights.

The knob for this feature is located next to the headlamp control.

Turn the knob clockwise or counterclockwise to adjust the brightness of the instrument panel lights. Turn the knob clockwise to return the instrument panel cluster or radio display to full brightness when the headlamps or parking lamps are on. To turn on the dome lamps, turn the knob to the farthest clockwise position.

Dome Lamps

The dome lamps come on when a door is opened.

The dome lamps can also be turned on by turning the knob, located next to the exterior lamps control, clockwise to the farthest position. In this position, the dome lamps will remain on whether a door is opened or closed.

Dome Lamp Override

(Dome Lamp Override): You can use the dome lamp override button, located next to the exterior lamps control, to set the dome lamps to come on automatically when a door is opened, or to remain off. To turn the lamps off, press the button in. With the button in this position, the dome lamps will remain off when the doors are open. To return the lamps to automatic operation, press the button again to return it to the extended position. With the button in this position, the dome lamps will come on when you open a door.

Entry Lighting

Your vehicle has an illuminated entry feature.

When the doors are opened, the dome lamps will come on if the dome override button is in the extended position. If the dome override button is pressed in, the lamps will not come on.

Exit Lighting

With exit lighting, the interior lamps will come on when the key is removed from the ignition. They will turn off automatically in 20 seconds. The lights will not come on if the dome override button is pressed in.

Reading Lamps

If your vehicle has reading lamps they are located on the overhead console.

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

Your vehicle may also have reading lamps in other locations. To turn the lamps on or off, press the button located next to the lamp.

If your vehicle has a DVD Rear Seat Entertainment (RSE) system, press the lamp lenses to turn the lamps on or off.

The lamps are fixed and cannot be adjusted.

Cargo Lamp

The cargo lamps come on by turning the instrument panel brightness control knob to the farthest clockwise position. This knob is located on the instrument panel and also turns on the dome lamps.

The cargo lamp can be used if more light is needed in the cargo area of the vehicle or in the top-box storage units.

Electric Power Management

The vehicle has Electric Power Management (EPM) that estimates the battery's temperature and state of charge. It then adjusts the voltage for best performance and extended life of the battery.

When the battery's state of charge is low, the voltage is raised slightly to quickly 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 279*.

Battery Run-Down Protection

This feature shuts off the dome and reading lamps, if they are left on for more than 10 minutes when the ignition is turned off. The cargo lamp will shut off after 20 minutes. This will keep the battery from running down.

Ultrasonic Rear Parking Assist (URPA)

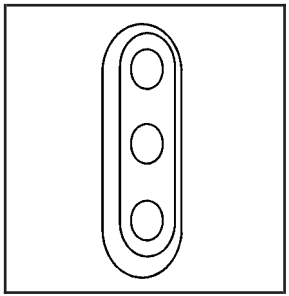
If your vehicle has the Ultrasonic Rear Parking Assist (URPA) system it is designed to help you park while in Reverse (R). It operates only at speeds less than 5 mph (8 km/h). URPA helps make parking easier and helps you avoid colliding with objects such as parked vehicles. The URPA system detects objects that are close to the rear of the vehicle which are at least 10 inches (25.4 cm) off the ground and below hood or trunk level. The system detects objects up to 8 feet (2.5 m) behind your vehicle. The URPA sensors determine how close these objects are from your bumper within this area.

⚠ CAUTION:

The Ultrasonic Rear Park Assist (URPA) system does not replace driver vision. URPA does not:

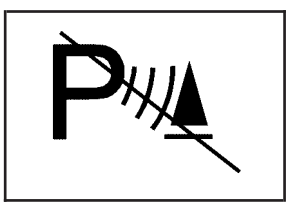
- **Operate above speeds of 5 mph (8 km/h).**
- **Detect objects more than 8 feet (2.5 meters) behind the vehicle. This distance may be less during warmer or humid weather.**
- **Detect objects that are below the bumper, underneath the vehicle, or that are very close to the vehicle.**
- **Detect children, pedestrians, bicyclists, or pets.**

So if you do not use proper care before backing up, you could hit a vehicle, child, pedestrian, bicyclist, or pet, resulting in vehicle damage, injury, or death. Even though the vehicle has the URPA system, always check carefully before backing up by checking behind your vehicle.



The URPA display is located near the passenger side rear window and can be seen by looking over your right shoulder.

The URPA display has three color-coded lights. The lights are used to provide distance and system information, along with beeps that will be heard through the speakers.



URPA can be turned off by pressing the rear park aid disable button located below the climate control system.

The indicator light will come on to indicate that URPA is off.

The red light in the URPA display will also be lit if the vehicle is in REVERSE (R). If the vehicle has a Driver Information Center (DIC), PARK ASSIST OFF will display on the screen. URPA automatically turns back on each time the vehicle is started.

How the System Works

When the shift lever is moved into REVERSE (R), the rear display will briefly come on to let you know the display is operating correctly. URPA comes on automatically when the shift lever is moved into REVERSE (R).

The system does not work at a reverse speed greater than 5 mph (8 km/h). To remind you of this, the red light on the rear display will flash.

How the System Works when Backing

If the shift lever is in REVERSE (R), URPA detects objects close to the rear bumper. The first time an object is detected a single beep will sound. If an object is detected at a REVERSE (R) speed between 0 mph (0 km/h) and 5 mph (8 km/h), the following describes what will occur based on your distance to a detected object located behind the vehicle:

- At distances between 40 inches (1 m) and 8 ft (2.5 m), a single amber light will come on.
- At distances between 23 inches (0.6 m) and 40 inches (1 m), both amber lights will be on.
- At distances between 12 inches (0.3 m) and 23 inches (0.6 m), all three lights (amber/amber/red) will be on.
- At distances less than 12 inches (0.3 m), a beeping sound will repeat for a short time and all three lights (amber/amber/red) will flash.

When the System Does Not Seem to Work Properly

If the URPA system will not activate due to a temporary condition, the message PARK ASSIST OFF will be displayed on the DIC screen and a red light will come on the URPA display when the shift lever is moved into REVERSE (R). This occurs under the following conditions:

- The driver disables the system.
- The parking brake pedal is depressed.
- A trailer was attached to your vehicle, or a bicycle or an object was hanging out of your trunk during your last drive when you turned off the vehicle. If the attached objects are removed from your vehicle before the start of your next drive, the system will return to normal operation unless an object is detected when the vehicle is shifted into REVERSE (R). If this occurs, URPA assumes the object is still attached, so you will have to wait until the vehicle is driven forward above 15 mph (25 km/h) before URPA will return to normal operation.
- The ultrasonic sensors are not kept clean. So, be sure to keep your vehicle's rear bumper free of mud, dirt, snow, ice, and slush. For cleaning instructions, see *Washing Your Vehicle on page 601*. If the DIC still displays the PARK ASSIST OFF message after cleaning the bumper and driving forward at a speed of at least 15 mph (25 km/h), see your dealer.
- Other conditions that may affect system performance include vibrations from a jackhammer or the compression of air brakes on a very large truck or other mechanical devices that interfere with URPA performance.
- When URPA is disabled without driver action and the driver attempts to turn URPA back on by pressing the rear park aid button, the indicator light will flash for 3 seconds and then stay lit to indicate that URPA is off.

As always, drivers should use care when backing up a vehicle. Always look behind you, being sure to check for other vehicles, obstructions and blind spots.

For Driver Information Center messages related to URPA, see *DIC Warnings and Messages on page 279*.

If the vehicle bumper is damaged, the URPA system may not work properly. Take the vehicle to your dealer to repair the system.

Accessory Power Outlet(s)

Accessory power outlets can be used to connect auxiliary electrical equipment, such as a cellular telephone or CB radio.

The vehicle may have two accessory power outlets located below the climate control system, or may have one accessory power outlet and one cigarette lighter. The cigarette lighter is designed to fit only in the receptacle closest to the driver. There may be another accessory power outlet in the rear cargo area. If the vehicle has a floor console, there is an outlet inside the storage bin and one on the rear of the floor console.

To use an outlet, remove the protective cap. When not in use, always cover the outlet with the protective cap. The accessory power outlet is operational at all times.

Notice: **Leaving electrical equipment plugged in for an extended period of time while the vehicle is off will drain the battery. Power is always supplied to the outlets. Always unplug electrical equipment when not in use and do not plug in equipment that exceeds the maximum 20 ampere rating.**

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

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

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 a front ashtray located near the center of the instrument panel. Pull on the door to open it. The ashtray may have a cigarette lighter.

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.**

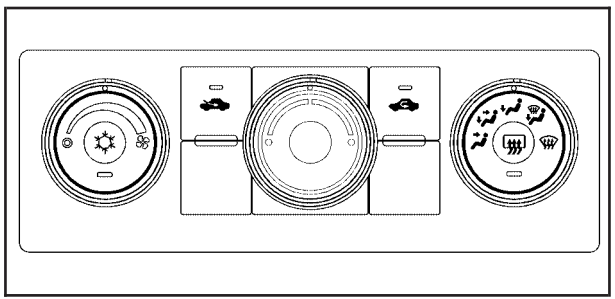
To remove the ashtray, open the door and pull the ashtray bin toward you. To replace the ashtray, insert the ashtray bin inside the ashtray door and press down until it engages. To use the cigarette lighter, push it in all the way, and let go. When it is ready, the lighter will pop back out by itself.

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

Climate Controls

Climate Control System (With Air Conditioning)

With this system you can control the heating, cooling, and ventilation for your vehicle.



Operation

(Fan): Turn the left knob clockwise or counterclockwise to increase or decrease the fan speed. Turn the knob all the way counterclockwise to turn the front system off.

Temperature Control: Turn the center knob clockwise or counterclockwise to increase or decrease the temperature inside the vehicle.

Use the right knob to select from the following modes:

The right knob can be positioned between two modes to select a combination of those two modes.

(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 half to the floor outlets.

(Floor): This mode directs most of the air to the floor outlets with some air directed to the windshield and side window outlets. In this mode, the system will automatically select outside air. Recirculation cannot be selected in floor mode.

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

(Outside Air): Press this button to turn the outside air mode on. When the button is pressed, an indicator light will come on. When this mode is on, outside air will circulate throughout the vehicle. The outside air mode can be used with all modes, but it cannot be used with the recirculation mode. Pressing this button again will cancel the recirculation mode.

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

This mode keeps outside air from entering the vehicle. It can be used to reduce outside air and prevent odors from entering the vehicle. Recirculation may also help cool the air inside the vehicle more quickly once the temperature inside the vehicle is less than the outside temperature.

The recirculation mode cannot be used with floor, defog or defrost modes. If recirculation is selected with one of these modes, the indicator light will flash three times and then turn off. While in recirculation mode the windows may fog when the weather is cold and damp. To clear the fog, select either the defog or defrost mode and increase the fan speed. The recirculation mode can be turned off by pressing the outside air button, or by turning off the ignition.

(Air Conditioning): Press this button to turn the air conditioning system on or off. When this button is pressed, an indicator light on the button will come on to let you know the air conditioning is activated. The air conditioning can be selected in any mode as long as the fan switch is on.

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 or frost on the inside of 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. To avoid fogging windows on rainy and humid days at temperatures above freezing, run the air conditioning compressor. It is best to avoid the use of the recirculation mode, except when maximum A/C performance is needed or for short times to avoid exterior odors.

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

(Defog): This mode clears the windows of fog or moisture and warm the passengers. The air is directed to the windshield, floor outlets, and side window vents.

(Defrost): This mode removes fog or frost from the windshield more quickly. A portion of the air is directed to the windshield and the side window vents, with some air directed to the floor vents. The system will automatically force outside air into the vehicle.

The recirculation mode cannot be selected in the defog or defrost mode. When either mode is selected, the system runs the air conditioning compressor, unless the outside temperature is close to freezing. Do not drive the vehicle until all the windows are clear.

Rear Window Defogger

If your vehicle has a rear window defogger it uses a warming grid to remove fog from the rear window.

The rear window defogger will only work when the ignition is in RUN.

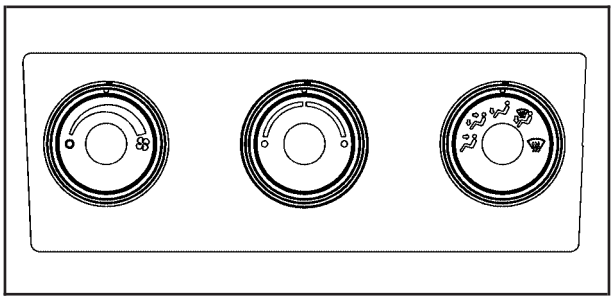
(Rear): Press this button to turn the rear window defogger on or off. An indicator light on the button will come on to let you know that the rear window defogger is activated.

The rear window defogger will only work when the ignition is in RUN. The rear window defogger will stay on for approximately 10 minutes after the button is pressed, unless the ignition is turned to ACC or LOCK. The defogger can also be turned off by pressing the button again or by turning off the engine.

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.**

Climate Control System (Heater Only)

With this system you can control the heating, cooling, and ventilation for your vehicle.



Operation

(Fan): Turn the left knob clockwise or counterclockwise to increase or decrease the fan speed. Turn the knob all the way counterclockwise to turn the front system off.

Temperature Control: Turn the center knob clockwise or counterclockwise to increase or decrease the temperature inside the vehicle.

Use the right knob to select from the following modes:

The right knob can be positioned between two modes to select a combination of those two modes.

(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 to the floor outlets.

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

Defogging and Defrosting

Fog or frost on the inside of 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.

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

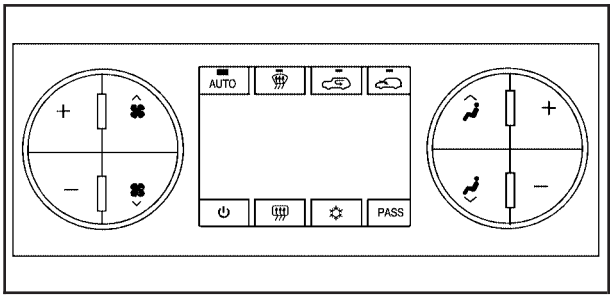
(Defog): This mode clears the windows of fog or moisture and warm the passengers. The air is directed to the windshield, floor outlets, and side window vents.

(Defrost): This mode removes fog or frost from the windshield more quickly. A portion of the air is directed to the windshield and the side window vents, with some air directed to the floor vents. The system will automatically force outside air into the vehicle.

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

Dual Automatic Climate Control System

With this system, you can control the heating, cooling, and ventilation in the vehicle. The vehicle also has a flow-through ventilation system described later in this section.



You can select different climate control settings for the driver and passengers.

Driver and Passenger Side Temperature Controls

The driver and passenger side temperature buttons are used to adjust the temperature of the air coming through the system on the driver or passenger's side of the vehicle. The temperature can be adjusted even if the system is turned off. This is possible since outside air will always flow through the system as the vehicle is moving forward unless it is set to recirculation mode. See "Recirculation" later in this section.

Press the + or – buttons to increase or decrease the cabin temperature. The driver side or passenger side temperature display will show the temperature setting decreasing or increasing.

The passenger's temperature setting can be set to match the driver's temperature setting by pressing the PASS button and turning off the PASS indicator. When the passenger's temperature setting is set different than the driver's setting, the indicator on the PASS button will illuminate and both the driver's side and passenger's side temperature displays will be shown.

Automatic Operation

AUTO (Automatic): When automatic operation is active the system will control the inside temperature, the air delivery, and the fan speed.

Use the steps below to place the entire system in automatic mode:

1. Press the AUTO button.

   When AUTO is selected, the display will change to show the current temperature(s) and AUTO will be lit on the display. The current air delivery mode and fan speed will also be displayed for approximately 5 seconds.

   When AUTO is selected, the air conditioning operation and air inlet will be automatically controlled. The air conditioning compressor may run when the outside temperature is above freezing. The air inlet will normally be set to outside air. If it is hot outside, the air inlet may automatically switch to recirculate inside air to help quickly cool down your vehicle. The light on the button will illuminate in recirculation.

2. Set the driver's and passenger's temperature.

   To find your comfort setting, start with a 74°F (23°C) temperature setting and allow about 20 minutes for the system to regulate. Use the driver's or passenger's temperature buttons to adjust the temperature setting as necessary. If you choose the temperature setting of 60°F (15°C), the system will remain at the maximum cooling setting. If you choose the temperature setting of 90°F (32°C), the system will remain at the maximum heat setting. Choosing either maximum setting will not cause the vehicle to heat or cool any faster.

Be careful not to cover the solar sensor located on the top of the instrument panel near the windshield. This sensor regulates air temperature based on sun load and also turns on your headlamps. For more information on the solar sensor, see "Sensors" later in this section.

To avoid blowing cold air in cold weather, the system will delay turning on the fan until warm air is available. The length of delay depends on the engine coolant temperature. Pressing the fan switch will override this delay and change the fan to a selected speed.

⏻ **(On/Off):** Press this button to turn off the climate control system. Outside air will still enter the vehicle, and will be directed to the floor. This direction can be changed by pressing the mode button. Recirculation can be selected once you have selected vent or bi-level mode. The temperature can also be adjusted using either temperature button. If you adjust the air delivery mode or temperature settings with the system off, the display will illuminate briefly to show you the settings and then return to off. Press the on/off button or the up down arrows on the fan switch, the defrost button, AUTO button, or the air conditioning button to turn the system on when it is off.

Manual Operation

You may manually adjust the air delivery mode or fan speed.

∧ ✇ ∨ **(Fan):** The buttons with the fan symbols allow you to manually adjust the fan speed. Press the up arrow to increase fan speed and the down arrow to decrease fan speed.

Pressing one of these buttons when the system is off will turn the system on. Pressing one of these buttons when in automatic control will place the fan under manual control. The fan setting will remain displayed and the AUTO light will turn off. The air delivery mode will remain under automatic control.

(Mode): Press the mode up and down buttons to manually change the direction of the airflow in your vehicle. Repeatedly press the button until the desired mode appears on the display. Pressing one of these buttons when the system is off will change air delivery mode without turning the system on. Pressing one of these buttons when in automatic control will place the mode under manual control.

The air delivery mode setting will be displayed and the AUTO light will turn off. The fan will remain under automatic control.

(Vent): Air is directed to the instrument panel outlets.

(Bi-Level): Air is directed partly to the instrument panel outlets and to the floor outlets. A little air is directed towards the windshield and side window outlets. Cooler air is directed to the upper outlets and warmer air to the floor outlets.

(Floor): Air is directed to the floor outlets, with some to the windshield, side window outlets, and second row floor outlets. In this mode, the system will automatically select outside air.

(Defog): See “Defogging and Defrosting” later in this section.

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

This mode keeps outside air from entering the vehicle. It can be used to reduce outside air and prevent odors from entering the vehicle. Recirculation may also help cool the air inside the vehicle more quickly once the temperature inside the vehicle is less than the outside temperature.

The recirculation mode cannot be used with floor, defog, or defrost modes. If recirculation is selected with one of those modes, the indicator light will flash three times and then turn off. The air conditioning compressor will also come on when this mode is activated. While in recirculation mode the windows may fog when the weather is cold and damp. To clear the fog, select either the defog or defrost mode and increase the fan speed.

The recirculation mode can be turned off by pressing the outside air button, or by turning off the ignition.

(Outside Air): Press this button to turn on the outside air mode. When this mode is selected, air from outside the vehicle will circulate throughout your vehicle. An indicator light on the button will come on to let you know that it is activated. The outside air mode can be used with all modes, but it cannot be used with the recirculation mode.

Air Conditioning

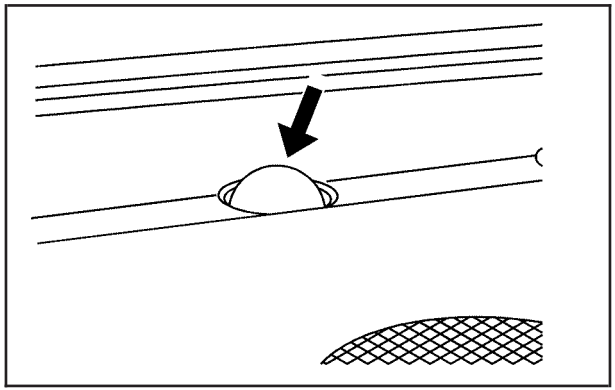
(Air Conditioning): Press this button to turn the air conditioning (A/C) compressor on and off. When air conditioning is selected, an indicator light comes on to let you know that the air conditioning has been activated.

Pressing this button when the outside temperature is too cool for air conditioning makes the air conditioning indicator flash three times and then turn off to let you know the air conditioning mode is not available. If the air conditioning is on and the outside temperature drops below a temperature which is too cool for air conditioning to be effective, the air conditioning light turns off to let you know the air conditioning mode has been canceled.

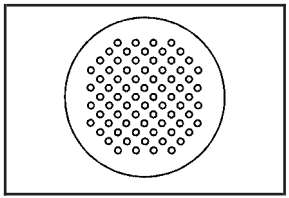
On hot days, open the windows long enough to let hot inside air escape. This helps to reduce the time it takes for the vehicle to cool down. It also helps the system to operate more efficiently.

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

Sensors



The solar sensor, located in the defrost grille, middle of the instrument panel, monitors the solar radiation. Do not cover the solar sensor or the system will not work properly.



The interior temperature sensor, located in the headliner, measures the temperature of the air inside your vehicle.

There is also an exterior temperature sensor located behind the front grille. This sensor reads the outside air temperature and helps maintain the temperature inside the vehicle. Any cover on the front of the vehicle could cause a false reading in the displayed temperature on the rearview mirror.

The climate control system uses the information from these sensors to maintain your comfort setting by adjusting the outlet temperature, fan speed, and the air delivery mode. The system may also supply cooler air to the side of the vehicle facing the sun. The recirculation mode will also be used as needed to maintain cool outlet temperatures.

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 the windshield.

Use the mode up and down arrows to select the defog or defrost modes.

(Defog): Press this button to clear the windows of fog or moisture and warm the passengers. This mode directs air to the windshield, floor outlets, and side window vents. When this mode is selected, the system turns off recirculation and runs the air conditioning compressor unless the outside temperature is close to freezing. The recirculation mode cannot be selected while in the defog mode. Do not drive the vehicle until all the windows are clear.

(Defrost): Press this button to remove fog or frost from the windshield more quickly. This mode directs a portion of the air to the windshield and side window vents and some to the floor vents. In this mode, the system will automatically force outside air into your vehicle. The recirculation mode cannot be selected while in the defrost mode. The air conditioning compressor will run automatically in this setting, unless the outside temperature is close to freezing. Do not drive the vehicle until all the windows are clear.

Rear Window Defogger

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

(Rear Window Defogger): If your vehicle has this feature, press this button to turn the defogger on or off. It will automatically turn off several minutes after it has been activated. The defogger can also be turned off by turning the engine off. Do not drive the vehicle until all the windows are clear.

Notice: **Do not use a razor blade or sharp object to clear the inside rear window. Do not adhere anything to the defogger grid lines in the rear glass. These actions may damage the rear defogger. Repairs would not be covered by your warranty.**

(Heated Mirrors): 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 176*.

Outlet Adjustment

Use the air outlets located in the center and on the side of the instrument panel to direct the airflow.

Operation Tips

- Keep the hood and front air inlets free of ice, snow, or any other obstruction, such as leaves. The heater and defroster will work better, reducing the chance of fogging the inside of your windows.
- When you enter a vehicle in cold weather, set the fan speed to maximum airflow for a few moments before driving. This helps clear the intake ducts of snow and moisture, and reduces the chance of fogging the inside of your windows.
- Keep the air path under the front seats clear of objects. This helps air to circulate throughout your vehicle.
- Adding outside equipment to the front of the vehicle, such as hood-air deflectors, may affect the performance of the heating and air conditioning system. Check with your dealer before adding equipment to the outside of your vehicle.

Warning Lights, Gages, and Indicators

This part describes the warning lights and gages on your vehicle. The pictures help to 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 the warning lights and gages could also save you or others from injury.

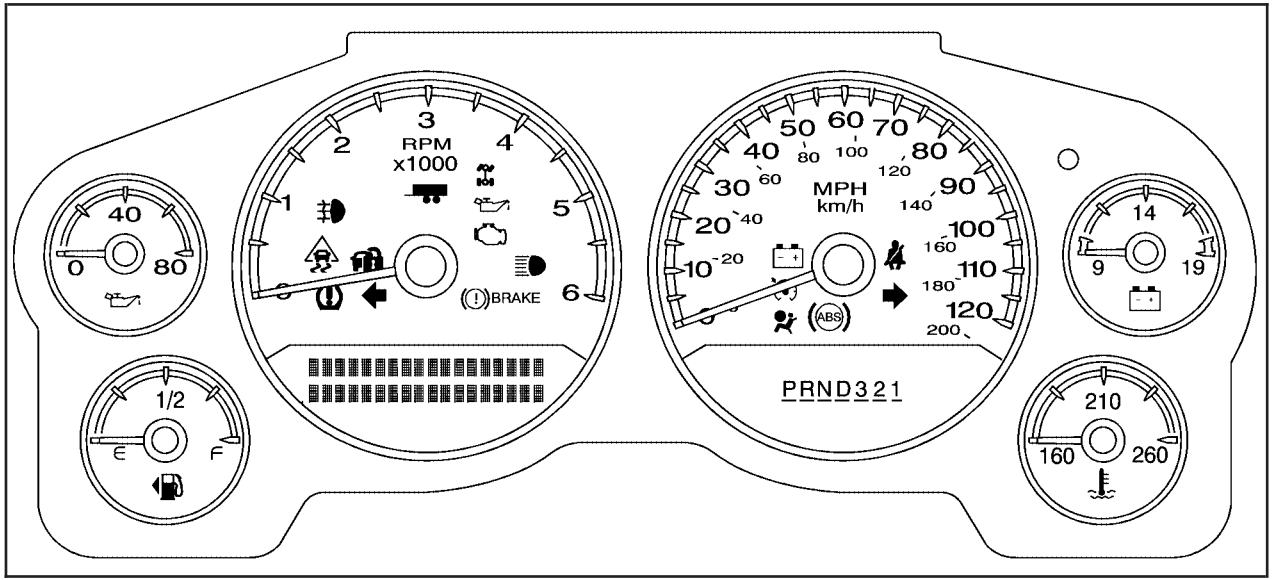
Warning lights come on when there may be or is a problem with one of your vehicle's functions. As the details show on the next few pages, some warning lights come on briefly when you start the engine just to let you know they are working. If you are familiar with this section, you should not be alarmed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

When one of the warning lights comes on and stays on as 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 vehicle's warning lights and gages. They can be a big help.

Your vehicle also has a Driver Information Center (DIC) that works along with warning lights and gages. See *DIC Warnings and Messages on page 279* for more information.

Instrument Panel Cluster



United States Light Duty Premium version shown. Canada, Uplevel, Base, Heavy Duty Clusters similar.

Your instrument 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 you have and many other things you will need to know to drive safely and economically. If your vehicle has the DURAMAX® Diesel engine, see the DURAMAX® Diesel manual for more information.

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 kilometers (used in Canada).

Engine Hour Meter Display

The Driver Information Center (DIC) can also display the number of hours the engine has run. To display the engine hours, turn the ignition off, press and hold the reset button for at least four seconds. The hour meter will be displayed for up to 30 seconds, or until the ignition is turned on. See *DIC Operation and Displays (With DIC Buttons) on page 268* or *DIC Operation and Displays (Without DIC Buttons) on page 275* for more information.

Trip Odometer

The trip odometer can tell you how far your vehicle has been driven since you last set the trip odometer to zero.

Press the reset button, located on the instrument panel cluster next to the voltmeter, to toggle between the trip odometer and the regular odometer. Holding the reset button for approximately one second while the trip odometer is displayed will reset it.

To display the odometer reading with the ignition off, press the reset button.

See *DIC Operation and Displays (With DIC Buttons) on page 268* or *DIC Operation and Displays (Without DIC Buttons) on page 275* for more information.

Tachometer

Your tachometer displays the engine speed in revolutions per minute (rpm). See “Grade Braking (Allison Transmission®)” under *Tow/Haul Mode on page 144* for more information.

Safety Belt Reminder Light

When the key is turned to RUN or START, a chime will sound for several seconds to remind people to buckle their safety belts. The driver safety belt light will also come on 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 come on.

Passenger Safety Belt Reminder Light (1500 Series)

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. The passenger safety belt light will also come on and stay on for several seconds, then it will flash for several more.

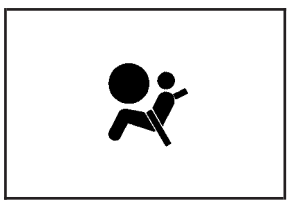
This chime and light will be repeated if the passenger remains unbuckled and the vehicle is in motion.

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

See *Passenger Airbag Status Indicator on page 252* for more information.

Airbag Readiness Light

There is an airbag readiness light on the instrument panel cluster, which shows the airbag symbol. The system checks the airbag's electrical system for malfunctions. The light 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 and, if equipped, the passenger sensing system. For more information on the airbag system, see *Airbag System on page 83*.

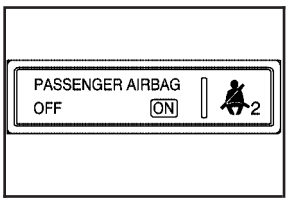


This light will come on when you start your vehicle, and it will flash for a few seconds. This means the system is ready.

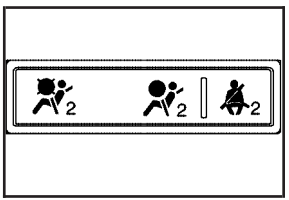
If the airbag readiness light stays on after the vehicle is started or comes on while you are driving, the airbag system may not be working properly. Have your vehicle serviced right away.

Airbag Off Light

If your vehicle has an airbag on-off switch, it also has a passenger airbag status indicator located in the overhead console.



United States



Canada

When the ignition key is turned to RUN or START, the passenger airbag status indicator ON and OFF, or the symbol for on and off, will light for several seconds as a system check. Then, after several more seconds, the status indicator ON or OFF, or either the on or off symbol, will light to let you know the status of the right front passenger's frontal airbag.

When you manually turn the right front passenger's airbag off using the airbag on-off switch in the glove box, the indicator light OFF or the off symbol will come on and stay on to remind you that the airbag has been turned off.

This light will go off when you turn the airbag on. See *Airbag Off Switch on page 93* for more on this, including important safety information.

⚠ CAUTION:

If the right front passenger's airbag is turned off for a person who is not in a risk group identified by the national government, that person will not have the extra protection of an airbag. In a crash, the airbag will not be able to inflate and help protect the person sitting there.

Do not turn off the passenger's airbag unless the person sitting there is in a risk group identified by the national government. See *Airbag Off Switch on page 93* for more on this, including important safety information.

⚠ CAUTION:

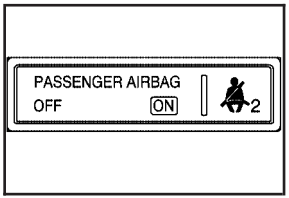
If the airbag readiness light ever comes on when you have turned off the airbag, it means that something may be wrong with the airbag system. The right front passenger's airbag could inflate even though the switch is off. If this ever happens, do not let anyone whom the national government has identified as a member of a passenger airbag risk group sit in the right front passenger's position (for example, do not secure a rear-facing child restraint in the right front passenger's seat) until you have your vehicle serviced. See *Airbag Off Switch on page 93* and *Airbag Readiness Light on page 250* for more on this, including important safety information.

If the word ON or the on symbol is lit, it means that the right front passenger's frontal airbag is enabled (may inflate). See *Airbag Off Switch on page 93* for more on this, including important safety information.

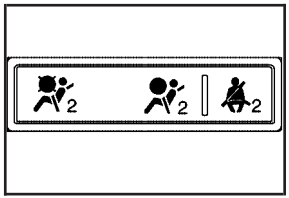
If, after several seconds, both status indicator lights remain on, or if there are no lights at all, there may be a problem with the lights or the airbag on-off switch. See your dealer/retailer for service.

Passenger Airbag Status Indicator

If your vehicle has the passenger sensing system, your overhead console will have a passenger airbag status indicator.



United States



Canada

When you start the vehicle, the passenger airbag status indicator will light ON and OFF, or the symbol for on and off, for several seconds as a system check. Then, after several more seconds, the status indicator will light either ON or OFF, or either the on or off symbol to let you know the status of the right front passenger's frontal airbag.

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.

⚠ CAUTION:

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.

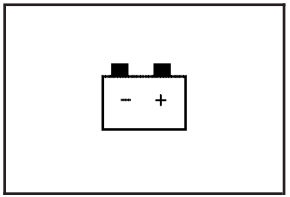
If the word OFF or the off symbol is lit on the airbag status indicator, it means that the passenger sensing system has turned off the right front passenger's frontal airbag. See *Passenger Sensing System on page 97* for more on this, including important safety information.

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

⚠ 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 airbag(s). See *Airbag Readiness Light on page 250* for more on this, including important safety information.

Charging System Light



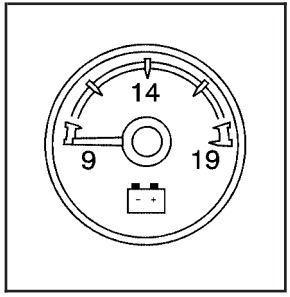
If this light comes on when the engine is running, there could be a problem with the charging system.

This light will also stay on while the key is in RUN until the engine is started.

If the light stays on after starting the engine it could indicate a problem with the generator drive belt, or some other charging system problem. Have it checked right away. Driving while this light is on could drain the battery.

If you must drive a short distance with this light on, it helps to turn off all of the electrical accessories, such as the radio and the blower.

Voltmeter Gage



Your vehicle may have a voltmeter gage.

When the ignition is in RUN, this gage indicates the battery voltage.

When the engine is running, this gage shows the condition of the charging system. The gage may transition from a higher to lower or a lower to higher reading, this is normal. If the vehicle is operating outside the normal operating range, the charging system light will come on. See *Charging System Light on page 254* for more information. The voltmeter gage may also read lower when in fuel economy mode. This is normal.

Readings outside the normal operating range may also occur when a large number of electrical accessories are operating in the vehicle and the engine is left idling for an extended period. This condition is normal since the charging system is not able to provide full power at engine idle. As engine speeds are increased, this condition should correct itself as higher engine speeds allow the charging system to create maximum power.

You can only drive for a short time with the readings outside the normal operating range. If you must drive, turn off all unnecessary accessories.

Readings outside the normal operating range indicate a possible problem in the electrical system. Have the vehicle serviced as soon as possible.

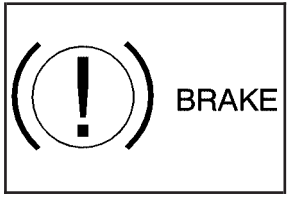
Brake System Warning Light

With the ignition on, the brake system warning light will come on when you set the parking brake. If you try to drive with the parking brake engaged, a chime will sound when the vehicle speed is greater than 5 mph (8 km/h).

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 and a chime sounds there could be a brake problem. Have your brake system inspected right away.

This light may also come on due to low brake fluid. See *Brakes on page 528* for more information.



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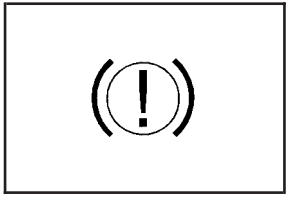


Canada

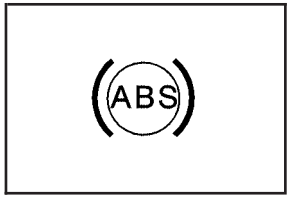
This light should come on briefly when you turn the ignition key to RUN. If it does not come on then, have it fixed so it will be ready to warn you if there is a problem.

⚠ 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.

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 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 439*.

Anti-Lock Brake System Warning Light



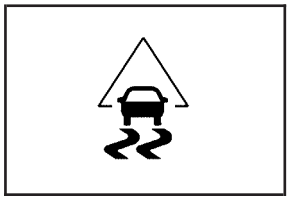
With the Anti-Lock Brake System (ABS), this light will come on when you start your engine and may stay on for several seconds.

That 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.

If the light stays on, or comes on when you are driving, your vehicle needs service. A chime will sound when the light stays on. If the regular brake system warning light is not on, you still have brakes, but you do not have ABS. If the regular brake system warning light is also on you do not have ABS and there is a problem with your regular brakes. In addition to both lights, you will also hear a chime sound on the first occurrence of a problem and each time the vehicle is shut off and then restarted. See *Brake System Warning Light on page 256*.

The ABS warning light should come on briefly 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.

StabiliTrak® Indicator Light



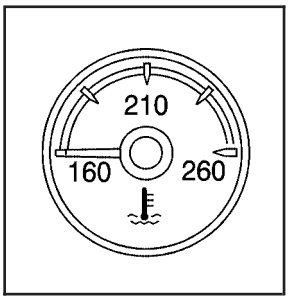
If equipped, this warning light should come on briefly when the engine is started.

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 StabiliTrak® system and your vehicle may need service. When this warning light is on, the system is off and will not limit wheel spin. Adjust your driving accordingly.

This light will also flash when the StabiliTrak® system is active.

If the StabiliTrak® 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 *StabiliTrak® System on page 381* for more information.

Engine Coolant Temperature Gage



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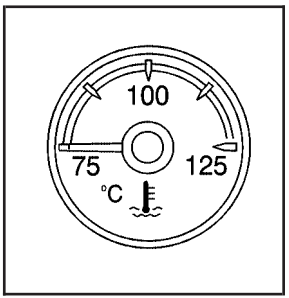


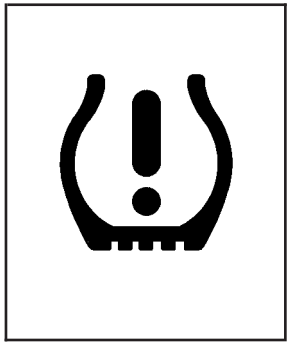
Canada

This gage shows the engine coolant temperature.

It also provides an indicator of how hard your vehicle is working. During a majority of the operation, the gage will read 210°F (100°C) or less. If you are pulling a load or going up hills, it is normal for the temperature to fluctuate and go over the 235°F (113°C) mark. However, if the gage reaches the 260°F (125°C) mark, it indicates that the cooling system is working beyond its capacity.

See *Engine Overheating on page 516*.

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 279* 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 550* 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 561* 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, the emission controls might not work as well, your vehicle's fuel economy might not be as good, and the engine might not run as smoothly. This could lead to costly repairs that might not be covered by your warranty.**

Notice: **Modifications made to the engine, transmission, 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 can cause this light to come on. Modifications to these systems could lead to costly repairs not covered by your warranty. This could also result in a failure to pass a required Emission Inspection/Maintenance test. See *Accessories and Modifications on page 486*.**

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 493*. 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 489*. 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

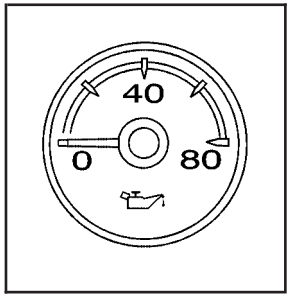
Some state/provincial and local governments have or may begin programs to inspect the emission control equipment on your vehicle. Failure to pass this inspection could prevent you from getting a vehicle registration.

Here are some things you need to know to help your vehicle pass an inspection:

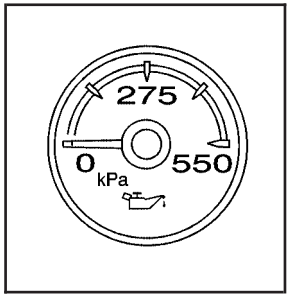
Your vehicle will not pass this inspection if the check engine light is on or not working properly.

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 Gage



United States



Canada

Your vehicle may have an engine oil pressure gage. It shows the engine oil pressure in psi (pounds per square inch) when the engine is running. Canadian vehicles indicate pressure in kPa (kilopascals).

Oil pressure may vary with engine speed, outside temperature and oil viscosity, but if readings are outside the normal operating range, the oil pressure light will come on. See *Oil Pressure Light on page 264* for more information.

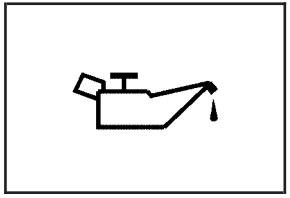
A reading outside the normal operating range may be caused by a dangerously low oil level or some other problem causing low oil pressure. Check your oil as soon as possible. See "OIL PRESSURE LOW" under *DIC Warnings and Messages on page 279* and *Engine Oil (Gasoline Engine) on page 500*.

⚠ 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.**

Oil Pressure Light



This light will come on briefly when you start your engine.

⚠ CAUTION:

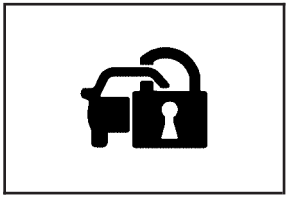
Do not keep driving if the oil pressure is low. If you do, your engine can become so hot that it catches fire. You or others could be burned. Check your oil as soon as possible and have your vehicle serviced.

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.**

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.

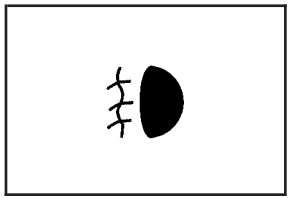
When the light comes on and stays on, it means that oil is not flowing through your engine properly. You could be low on oil and you might have some other system problem.

Security Light



This light flashes when the vehicle security system is activated.

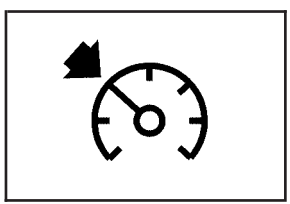
Fog Lamp Light



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 224* for more information.

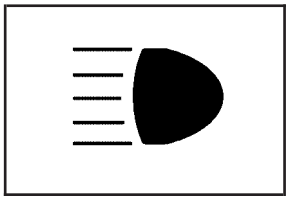
Cruise Control Light



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 218* for more information.

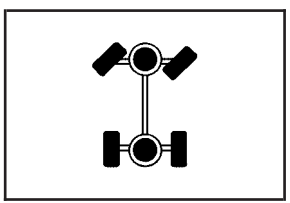
Highbeam On Light



This light comes on when the high-beam headlamps are in use.

See *Headlamp High/Low-Beam Changer on page 214* for more information.

Four-Wheel-Drive Light

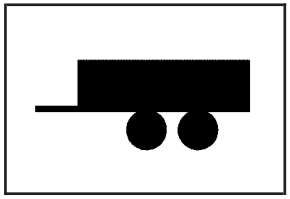


The four-wheel-drive light comes on when you shift a manual transfer case into four-wheel drive and the front axle engages.

Some delay between the shifting and the light coming on is normal.

See *Four-Wheel Drive on page 147* for more information.

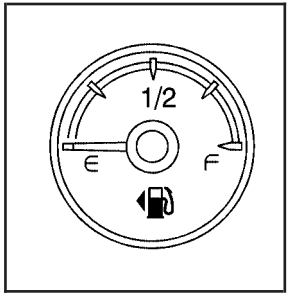
Tow/Haul Mode Light



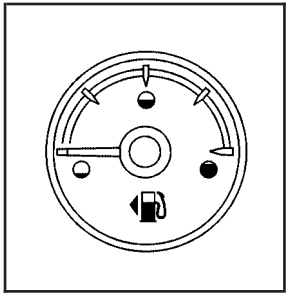
This light comes on when the Tow/Haul mode has been activated.

For more information, see *Tow/Haul Mode on page 144*.

Fuel Gage



United States



Canada

When the ignition is on, the fuel gage tells you about how much fuel you have left in your tank.

The gage will first indicate empty before you are out of fuel, and you should get more fuel as soon as possible.

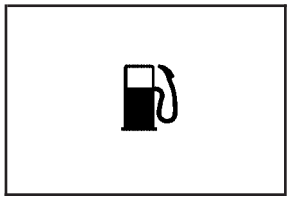
When the fuel tank is low the FUEL LEVEL LOW message will appear. See *DIC Warnings and Messages on page 279* for more information.

Here are some situations you may experience with your fuel gage. None of these indicate a problem with the fuel gage.

- At the gas station, the fuel pump shuts off before the gage reads full.
- It takes a little more or less fuel to fill up than the fuel 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 goes back to empty when you turn off the ignition.

If you have a diesel engine, see "Fuel Gage" in the Diesel Engine Supplement.

Low Fuel Warning Light



This light, under the fuel gage, will come on briefly when you are starting the engine.

This light and a chime will come on when the fuel tank is low on fuel. There will also be a “FUEL LEVEL LOW” message on the Driver Information Center, see *DIC Warnings and Messages on page 279* for more information. When you add fuel this light and message should go off. If it does not, have your vehicle serviced.

Driver Information Center (DIC)

Your vehicle has a Driver Information Center (DIC).

The DIC displays information about your vehicle. It also displays warning messages if a system problem is detected.

All messages will appear in the DIC display located below the tachometer in 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.

If your vehicle has DIC buttons, see “DIC Operation and Displays (With DIC Buttons)” later in this section and *DIC Vehicle Customization (With DIC Buttons) on page 289* for the displays available.

If your vehicle does not have DIC buttons, see “DIC Operation and Displays (Without DIC Buttons)” later in this section for the displays available.

DIC Operation and Displays (With DIC Buttons)

If your vehicle has DIC buttons, the information below explains the operation of this system.

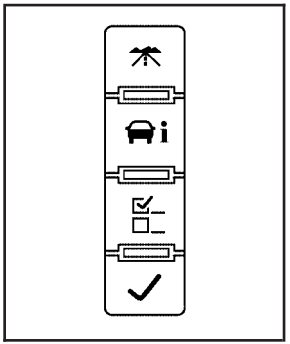
The DIC has different displays which can be accessed by pressing the DIC buttons located on the instrument panel, next to the steering wheel.

The DIC displays trip, fuel, and vehicle system information, and warning messages if a system problem is detected.

The DIC also allows some features to be customized. See *DIC Vehicle Customization (With DIC Buttons) on page 289* for more information.

If your vehicle has DIC buttons, you can also use the trip odometer reset stem to view some of the DIC displays. See “DIC Operation and Displays (Without DIC Buttons)” later in this section.

DIC Buttons



The buttons are the trip/fuel, vehicle information, customization, and set/reset buttons. The button functions are detailed in the following pages.

(Trip/Fuel): Press this button to display the odometer, trip odometer, fuel range, average economy, fuel used, timer, and transmission temperature. Some vehicles also display instantaneous economy and an Active Fuel Management™ indicator.

(Vehicle Information): Press this button to display the oil life, units, tire pressure readings for vehicles with a Tire Pressure Monitor (TPM) system, trailer brake gain and output information for vehicles with the Integrated Trailer Brake Control (ITBC) system, engine hours, Tire Pressure Monitor (TPM) system programming for vehicles with a TPM system, and Remote Keyless Entry (RKE) transmitter programming.

(Customization): Press this button to customize the feature settings on your vehicle. See *DIC Vehicle Customization (With DIC Buttons) on page 289* for more information.

(Set/Reset): Press this button to set or reset certain functions and to turn off or acknowledge messages on the DIC.

Trip/Fuel Menu Items

(Trip/Fuel): Press this button to scroll through the following menu items:

Odometer

Press the trip/fuel button until ODOMETER displays. This display shows the distance the vehicle has been driven in either miles (mi) or kilometers (km). Pressing the trip odometer reset stem will also display the odometer.

To switch between English and metric measurements, see “Units” later in this section.

Trip Odometer

Press the trip/fuel button until TRIP displays. This display shows the current distance traveled in either miles (mi) or kilometers (km) since the last reset for the trip odometer. Pressing the trip odometer reset stem will also display the trip odometer.

The trip odometer can be reset to zero by pressing the set/reset button while the trip odometer is displayed. You can also reset the trip odometer while it is displayed by pressing and holding the trip odometer reset stem.

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 display will show LOW if the fuel level is low.

The fuel range estimate is based on an average of the vehicle's fuel economy over recent driving history and the amount of fuel remaining in the fuel tank. This estimate will change if driving conditions change. For example, if driving in traffic and making frequent stops, this display may read one number, but if the vehicle is driven on a freeway, the number may change even though the same amount of fuel is in the fuel tank. This is because different driving conditions produce different fuel economies. Generally, freeway driving produces better fuel economy than city driving. Fuel range cannot be reset.

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.

Fuel Used

Press the trip/fuel button until FUEL USED displays. This display shows the number of gallons (gal) or liters (L) of fuel used since the last reset of this menu item. To reset the fuel used information, press and hold the set/reset button while FUEL USED is displayed.

Timer

Press the trip/fuel button until TIMER displays. This display can be used as a timer.

To start the timer, press the set/reset button while TIMER is displayed. The display will show the amount of time that has passed since the timer was last reset, not including time the ignition is off. Time will continue to be counted as long as the ignition is on, even if another display is being shown on the DIC. The timer will record up to 99 hours, 59 minutes and 59 seconds (99:59:59) after which the display will return to zero.

To stop the timer, press the set/reset button briefly while TIMER is displayed.

To reset the timer to zero, press and hold the set/reset button while TIMER is displayed.

Transmission Temperature

Press the trip/fuel button until TRANS TEMP displays. This display shows the temperature of the automatic transmission fluid in either degrees Fahrenheit (°F) or degrees Celsius (°C).

Instantaneous Economy and Active Fuel Management™ Indicator

If your vehicle has this display, press the trip/fuel button until INST ECONOMY V8 MODE displays. This display shows the current fuel economy at a particular moment and will change frequently as driving conditions change. This display shows the instantaneous fuel economy in miles per gallon (mpg) or liters per 100 kilometers (L/100 km). Unlike average economy, this screen cannot be reset.

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 four or eight cylinders, depending on your driving demands. When Active Fuel Management™ is active, V4 MODE will display on the DIC. When Active Fuel Management™ is inactive, V8 MODE will display. See *Active Fuel Management™ on page 138* for more information.

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 your 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 279*. You should change your oil as soon as you can. See *Engine Oil (Gasoline Engine) on page 500*. 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 (Gasoline Engine) on page 623* for more information.

Remember, you must reset the OIL LIFE display yourself after each oil change. It will not reset itself. Also, be careful not to reset the OIL LIFE display accidentally at any time other than when the oil has just been changed. It cannot be reset accurately until the next oil change. To reset the engine oil life system, see *Engine Oil Life System on page 503*.

Units

Press the vehicle information button until UNITS displays. This display allows you to select between English or Metric units of measurement. Once in this display, press the set/reset button to select between ENGLISH or METRIC units. All of the vehicle information will then be displayed in the unit of measurement selected.

Tire Pressure

If your vehicle has a Tire Pressure Monitor (TPM) system, 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 559* and *DIC Warnings and Messages on page 279* 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.

Trailer Gain and Output

On vehicles with the Integrated Trailer Brake Control (ITBC) system, the trailer brake display appears in the DIC. Press the vehicle information button until TRAILER GAIN and OUTPUT display.

TRAILER GAIN shows the trailer gain setting. This setting can be adjusted from 0.0 to 10.0 with either a trailer connected or disconnected. To adjust this setting, see “Integrated Trailer Brake Control System” under *Towing a Trailer on page 445* for more information.

OUTPUT shows the power output to the trailer anytime a trailer with electric brakes is connected. Output is displayed in 0 to 10 bars. Dashes may appear in the OUTPUT display. See “Integrated Trailer Brake Control System” under *Towing a Trailer on page 445* for more information.

Engine Hours

Press the vehicle information button until ENGINE HOURS displays. This display shows the total number of hours the engine has run.

Relearn Tire Positions

If your vehicle has a Tire Pressure Monitor (TPM) system, after rotating the tires or after replacing a tire or sensor, the system must re-learn the tire positions. To re-learn the tire positions, see *Tire Pressure Monitor System on page 561*. See *Tire Inspection and Rotation on page 565* and *DIC Warnings and Messages on page 279* for more information.

Relearn Remote Key

This display allows you to match Remote Keyless Entry (RKE) transmitters 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 until REMOTE KEY LEARNING ACTIVE is displayed.
3. Press and hold the lock and unlock buttons on the first transmitter at the same time for about 15 seconds.

   On vehicles with memory recall seats, the first transmitter learned will match driver 1 and the second will match driver 2.

   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 LOCK.

Blank Display

This display shows no information.

DIC Operation and Displays (Without DIC Buttons)

If your vehicle does not have DIC buttons, the information below explains the operation of this system.

The DIC has different displays which can be accessed by pressing the trip odometer reset stem located on the instrument panel cluster. Pressing the trip odometer reset stem will also turn off, or acknowledge, DIC messages.

The DIC displays trip and vehicle system information, and warning messages if a system problem is detected.

If your vehicle does not have DIC buttons, you can use the trip odometer reset stem to view the following displays: odometer, engine hours, trip odometer, transmission temperature, trailer brake gain and output information for vehicles with the Integrated Trailer Brake Control (ITBC) system, oil life, Tire Pressure Monitor (TPM) system programming for vehicles with a TPM system, Remote Keyless Entry (RKE) transmitter programming, and display language.

If your vehicle has DIC buttons, you can use the trip odometer reset stem to view the following displays: odometer, engine hours, trip odometer, and display language.

Trip Odometer Reset Stem Menu Items

Odometer

Press the trip odometer reset stem until ODOMETER displays. This display shows the distance the vehicle has been driven in either miles (mi) or kilometers (km).

Engine Hours

To display the ENGINE HOURS, place the ignition in LOCK or ACCESSORY, then press and hold the trip odometer reset stem for four seconds while viewing the ODOMETER. This display shows the total number of hours the engine has run.

Trip Odometer

Press the trip odometer reset stem until TRIP displays. This display shows the current distance traveled in either miles (mi) or kilometers (km) since the last reset for the trip odometer.

The trip odometer can be reset to zero by pressing and holding the trip odometer reset stem while the 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 trip odometer reset stem 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.

Transmission Temperature

Press the trip odometer reset stem until TRANS TEMP displays. This display shows the temperature of the automatic transmission fluid in either degrees Fahrenheit (°F) or degrees Celsius (°C).

Trailer Gain and Output

On vehicles with the Integrated Trailer Brake Control (ITBC) system, the trailer brake display appears in the DIC. Press the trip odometer reset stem until TRAILER GAIN and OUTPUT display.

TRAILER GAIN shows the trailer gain setting. This setting can be adjusted from 0.0 to 10.0 with either a trailer connected or disconnected.

To adjust this setting, see “Integrated Trailer Brake Control System” under *Towing a Trailer on page 445* for more information.

OUTPUT shows the power output to the trailer anytime a trailer with electric brakes is connected. Output is displayed in 0 to 10 bars. Dashes may appear in the OUTPUT display. See “Integrated Trailer Brake Control System” under *Towing a Trailer on page 445* for more information.

Oil Life

To access this display, the vehicle must be in PARK (P). Press the trip odometer reset stem 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 your 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 279*. You should change your oil as soon as you can.

See *Engine Oil (Gasoline Engine) on page 500*. 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 (Gasoline Engine) on page 623* for more information.

Remember, you must reset the OIL LIFE display yourself after each oil change. It will not reset itself. Also, be careful not to reset the OIL LIFE display accidentally at any time other than when the oil has just been changed. It cannot be reset accurately until the next oil change. To reset the engine oil life system, see *Engine Oil Life System on page 503*.

Relearn Tire Positions

To access this display, the vehicle must be in PARK (P). If your vehicle has a Tire Pressure Monitor (TPM) system, after rotating the tires or after replacing a tire or sensor, the system must re-learn the tire positions. To re-learn the tire positions, see *Tire Pressure Monitor System on page 561*. See *Tire Inspection and Rotation on page 565* and *DIC Warnings and Messages on page 279* for more information.

Relearn Remote Key

To access this display, the vehicle must be in PARK (P). This display allows you to match Remote Keyless Entry (RKE) transmitters to your vehicle. To match an RKE transmitter to your vehicle, do the following:

1. Press the trip odometer reset stem until RELEARN REMOTE KEY displays.
2. Press and hold the trip odometer reset stem for three seconds.
   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 about 15 seconds.
   On vehicles with memory recall seats, the first transmitter learned will match driver 1 and the second will match driver 2.
   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 LOCK.

Language

This display allows you to select the language in which the DIC messages will appear. To select a language, do the following:

1. Press the trip odometer reset stem until ODOMETER displays.
2. While in the ODOMETER display, press and hold the trip odometer reset stem for three seconds until the currently set language displays.
3. Continue to press and hold the trip odometer reset stem to scroll through all of the available languages.
   The available languages are ENGLISH (default), FRANCAIS (French), ESPANOL (Spanish), and NO CHANGE.
4. Once the desired language is displayed, release the trip odometer reset stem to set your choice.

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 any of the DIC buttons on the instrument panel or the trip odometer reset stem on the instrument panel cluster to acknowledge that you received the messages and to clear them from the display.

Some messages cannot be cleared from the DIC display because they are more urgent. These messages require action before they can be cleared. 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.

If your vehicle has the DURAMAX® Diesel engine, see the DURAMAX® Diesel manual for more information.

CHANGE ENGINE OIL SOON

This message displays when the engine oil needs to be changed. When you change the engine oil, be sure to reset the CHANGE ENGINE OIL SOON message. See *Engine Oil Life System on page 503* for information on how to reset the message. This message clears itself after 10 seconds until the next ignition cycle or until the message is reset. See *Engine Oil (Gasoline Engine) on page 500* and *Scheduled Maintenance (Gasoline Engine) on page 623* for more information.

CHECK TIRE PRESSURE

If your vehicle has a Tire Pressure Monitor (TPM) system, this message displays when the pressure in one or more of the vehicle's tires need 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 or the trip odometer reset stem. 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 550*, *Loading Your Vehicle on page 425*, and *Inflation - Tire Pressure on page 559*. 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 (With DIC Buttons)" earlier in this section. If the tire pressure is low, the low tire pressure warning light comes on. See *Tire Pressure Light on page 259*.

CHECK TRAILER WIRING

On vehicles with the Integrated Trailer Brake Control (ITBC) system, this message may display and a chime may sound when one of the following conditions exists:

- A trailer with electric brakes becomes disconnected from the vehicle.
  - If the disconnect occurs while the vehicle is stopped, this message clears itself after a short time.
  - If the disconnect occurs while the vehicle is moving, this message stays on until the ignition is turned off.
- There is a short in the wiring to the electric trailer brakes.

When this message displays, power is no longer available to the trailer brakes.

As soon as it is safe to do so, carefully pull your vehicle over to the side of the road and turn the ignition off. Check the wiring connection to the trailer and turn the ignition back on. This message clears if the trailer is reconnected. This message also clears if you acknowledge it. If this message still displays, either your vehicle or the trailer needs service. See your dealer.

See “Integrated Trailer Brake Control System” under *Towing a Trailer on page 445* for more information.

DRIVER DOOR OPEN

This message displays and a chime sounds if the driver’s door is not fully closed and the vehicle is in a drive gear. Stop and turn off the vehicle, check the door for obstructions, and close the door again. Check to see if the message still appears on the DIC.

ENGINE HOT A/C (Air Conditioning) TURNED OFF

This message displays when the engine coolant becomes hotter than the normal operating temperature. See *Engine Coolant Temperature Gage on page 258*. To avoid added strain on a hot engine, the air conditioning compressor automatically turns off. When the coolant temperature returns to normal, the air conditioning compressor turns back on. You can continue to drive your vehicle.

If this message continues to appear, have the system repaired by your dealer as soon as possible to avoid damage to the engine.

ENGINE OIL LOW ADD OIL

If your vehicle has an oil level sensor, this message displays if the oil level in the vehicle is low. Check the oil level and correct it as necessary. You may need to let the vehicle cool or warm up and cycle the ignition to be sure this message clears.

This message clears itself after 10 seconds, until the next ignition cycle. See *Engine Oil (Gasoline Engine) on page 500* for additional information.

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. See *Engine Overheating on page 516* 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. See *Engine Coolant Temperature Gage on page 258*.

See *Overheated Engine Protection Operating Mode (V8 Engines Only) on page 519* for information on driving to a safe place in an emergency.

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 516* for more information.**

This message displays and a chime sounds if the engine cooling system reaches unsafe temperatures for operation. Stop and turn off the vehicle as soon as it is safe to do so to avoid severe damage. This message clears when the engine has cooled to a safe operating temperature.

ENGINE POWER IS REDUCED

This message displays and a chime sounds when the cooling system temperature gets too hot and the engine further enters the engine coolant protection mode. See *Engine Overheating on page 516* for further information.

This message also displays when the vehicle's engine power is reduced. Reduced engine power can affect the vehicle's ability to accelerate. If this message is on, but there is no reduction in performance, proceed to your destination. The performance may be reduced the next time the vehicle is driven. The vehicle may be driven at a reduced speed while this message is on, but acceleration and speed may be reduced. Anytime this message stays on, the vehicle should be taken to your dealer for service as soon as possible.

FUEL LEVEL LOW

This message displays and a chime sounds if the fuel level is low. Refuel as soon as possible. See *Fuel Gage on page 266* and *Fuel on page 488* for more information.

HOOD OPEN

This message displays and a chime sounds if the hood is not fully closed. Stop and turn off the vehicle, check the hood for obstructions, and close the hood again. Check to see if the message still appears on the DIC.

LEFT REAR DOOR OPEN (Crew Cab)

This message displays and a chime sounds if the driver's side rear door is not fully closed and the vehicle is in a drive gear. Stop and turn off the vehicle, check the door for obstructions, and close the door again. Check to see if the message still appears on the DIC.

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 (Gasoline Engine) on page 500* for more information.**

This message displays if low oil pressure levels occur. Stop the vehicle as soon as safely possible and do not operate it until the cause of the low oil pressure has been corrected. Check the oil as soon as possible and have your vehicle serviced by your dealer. See *Engine Oil (Gasoline Engine) on page 500*.

PARK ASSIST OFF

If your vehicle has the Ultrasonic Rear Parking Assist (URPA) system, after the vehicle has been started, this message displays to remind the driver that the URPA system has been turned off. Press the set/reset button or the trip odometer reset stem to acknowledge this message and clear it from the DIC display. To turn the URPA system back on, see *Ultrasonic Rear Parking Assist (URPA) on page 228*.

PASSENGER DOOR OPEN

This message displays and a chime sounds if the passenger's door is not fully closed and the vehicle is in a drive gear. Stop and turn off the vehicle, check the door for obstructions, and close the door again. Check to see if the message still appears on the DIC.

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 111* and *DIC Operation and Displays (With DIC Buttons) on page 268* or *DIC Operation and Displays (Without DIC Buttons) on page 275* for more information.

REPLACE BATTERY IN REMOTE KEY

This message displays if a Remote Keyless Entry (RKE) transmitter battery is low. The battery needs to be replaced in the transmitter. See "Battery Replacement" under *Remote Keyless Entry (RKE) System Operation on page 111*.

RIGHT REAR DOOR OPEN (Crew Cab)

This message displays and a chime sounds if the passenger's side rear door is not fully closed and the vehicle is in a drive gear. Stop and turn off the vehicle, check the door for obstructions, and close the door again. Check to see if the message still appears on the DIC.

SERVICE 4 WHEEL DRIVE

This message displays if a problem occurs with the four-wheel-drive system. If this message appears, stop as soon as possible and turn off the vehicle. Restart the vehicle and check for the message on the DIC display. If the message is still displayed or appears again when you begin driving, the four-wheel-drive system needs service. See your dealer.

SERVICE AIR BAG

This message displays if there is a problem with the airbag system. Have your dealer inspect the system for problems. See *Airbag Readiness Light on page 250* and *Airbag System on page 83* for more information.

SERVICE BATTERY CHARGING SYSTEM

On some vehicles, this message displays if there is a problem with the battery charging system. Under certain conditions, the charging system light may also turn on in the instrument panel cluster. See *Charging System Light on page 254*. Driving with this problem could drain the battery. Turn off all unnecessary accessories. Have the electrical system checked as soon as possible. See your dealer.

SERVICE BRAKE SYSTEM

This message displays along with the brake system warning light if there is a problem with the brake system. See *Brake System Warning Light on page 256*. If this message appears, stop as soon as possible and turn off the vehicle. Restart the vehicle and check for the message on the DIC display. If the message is still displayed or appears again when you begin driving, the brake system needs service as soon as possible. See your dealer.

SERVICE BRAKES SOON

This message displays if there is a problem with the brake system. If this message appears, stop as soon as possible and turn off the vehicle. Restart the vehicle and check for the message on the DIC display. If the message is still displayed or appears again when you begin driving, the brake system needs service. See your dealer.

SERVICE PARK ASSIST

If your vehicle has the Ultrasonic Rear Parking Assist (URPA) system, this message displays if there is a problem with the URPA system. Do not use this system to help you park. See *Ultrasonic Rear Parking Assist (URPA) on page 228* for more information. See your dealer for service.

SERVICE STABILITRAK

If your vehicle has StabiliTrak® and this message displays, it means there may be a problem with the StabiliTrak® system. If you see this message, try to reset the system. Stop; turn off the engine for at least 15 seconds; then start the engine again. If this message still comes on, it means there is a problem. You should see your dealer for service. The vehicle is safe to drive, however, you do not have the benefit of StabiliTrak®, so reduce your speed and drive accordingly.

SERVICE THEFT DETERRENT SYSTEM

This message displays when there is a problem with the theft-deterrent system. The vehicle may or may not restart so you may want to take the vehicle to your dealer before turning off the engine. See *PASS-Key® III+ Operation on page 130* for more information.

SERVICE TIRE MONITOR SYSTEM

If your vehicle has the Tire Pressure Monitor (TPM) system, this message displays if a part on the 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 StabiliTrak®, this message displays when there is a problem with the Traction Control System (TCS). When this message displays, the system will not limit wheel spin. Adjust your driving accordingly. See your dealer for service. See *StabiliTrak® System on page 381* for more information.

SERVICE TRAILER BRAKE SYSTEM

On vehicles with the Integrated Trailer Brake Control (ITBC) system, this message displays and a chime sounds when there is a problem with the ITBC system.

When this message displays, power is no longer available to the trailer brakes.

As soon as it is safe to do so, carefully pull your vehicle over to the side of the road and turn the ignition off. Check the wiring connection to the trailer and turn the ignition back on. If this message still displays, either your vehicle or the trailer needs service. See your dealer.

See “Integrated Trailer Brake Control System” under *Towing a Trailer on page 445* for more information.

STABILITRAK OFF

If your vehicle has StabiliTrak®, this message displays when you turn off StabiliTrak®, or when the stability control has been automatically disabled. To limit wheel spin and realize the full benefits of the stability enhancement system, you should normally leave StabiliTrak® on. However, you should turn StabiliTrak® off if your vehicle gets stuck in sand, mud, ice, or snow and you want to rock your vehicle to attempt to free it, or if you are driving in extreme off-road conditions and require more wheel spin. See *If Your Vehicle is Stuck in Sand, Mud, Ice, or Snow on page 422*. To turn the StabiliTrak® system on or off, see *StabiliTrak® System on page 381*.

There are several conditions that can cause this message to appear.

- One condition is overheating, which could occur if StabiliTrak® activates continuously for an extended period of time.
- The message also displays if the brake system warning light is on. See *Brake System Warning Light on page 256*.
- The message could display if the stability system takes longer than usual to complete its diagnostic checks due to driving conditions.
- The message displays if an engine or vehicle related problem has been detected and the vehicle needs service. See your dealer.
- The message also displays if the vehicle is shifted into 4LO.

The message turns off as soon as the conditions that caused the message to be displayed are no longer present.

TIGHTEN GAS CAP

This message may display along with the check engine light on the instrument panel cluster if the vehicle's fuel cap is not tightened properly. See *Malfunction Indicator Lamp on page 260*. Reinstall the fuel cap fully. See *Filling the Tank on page 493*. The diagnostic system can determine if the fuel cap has been left off or improperly installed. A loose or missing fuel cap allows fuel to evaporate into the atmosphere. A few driving trips with the cap properly installed should turn this light and message off.

TIRE LEARNING ACTIVE

If your vehicle has a Tire Pressure Monitor (TPM) system, this message displays when the system is re-learning the tire positions on your vehicle. See *DIC Operation and Displays (With DIC Buttons) on page 268* or *DIC Operation and Displays (Without DIC Buttons) on page 275* for more information. 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 565*, *Tire Pressure Monitor System on page 561*, and *Inflation - Tire Pressure on page 559* for more information.

TRACTION CONTROL OFF

If your vehicle has StabiliTrak®, this message displays when the Traction Control System (TCS) is turned off. Adjust your driving accordingly. See *StabiliTrak® System on page 381* for more information.

TRAILER CONNECTED

On vehicles with the Integrated Trailer Brake Control (ITBC) system, this message displays briefly when a trailer with electric brakes is first connected to the vehicle.

This message clears itself after several seconds. This message also clears if you acknowledge it. After this message clears, the TRAILER GAIN/OUTPUT display appears in the DIC.

See "TRAILER GAIN/OUTPUT" under *DIC Operation and Displays (With DIC Buttons) on page 268* or *DIC Operation and Displays (Without DIC Buttons) on page 275* and "Integrated Trailer Brake Control System" under *Towing a Trailer on page 445* for more information.

TRANSMISSION HOT IDLE ENGINE

Notice: **If you drive your vehicle while the transmission fluid is overheating and the transmission temperature warning is displayed on the instrument panel cluster and/or DIC, you can damage the transmission. This could lead to costly repairs that would not be covered by your warranty. Do not drive your vehicle with overheated transmission fluid or while the transmission temperature warning is displayed.**

This message displays along with a continuous chime if the transmission fluid in the vehicle gets hot. Driving with the transmission fluid temperature high can cause damage to the vehicle. Stop the vehicle and let it idle to allow the transmission to cool. This message clears and the chime stops when the fluid temperature reaches a safe level.

TURN SIGNAL ON

This message displays and a chime sounds if a turn signal is left on for 3/4 of a mile (1.2 km). Move the turn signal/multifunction lever to the off position.

WASHER FLUID LOW ADD FLUID

This message displays when the windshield washer fluid is low. Fill the windshield washer fluid reservoir as soon as possible. See *Engine Compartment Overview on page 498* for the location of the windshield washer fluid reservoir. Also, see *Windshield Washer Fluid on page 527* for more information.

DIC Vehicle Customization (With DIC Buttons)

Your vehicle may have customization capabilities that allow you to program certain features to one preferred setting. Customization features can only be programmed to one setting on the vehicle and cannot be programmed to a preferred setting for two different drivers.

All of the customization options may not be available on your vehicle. Only the options available will be displayed on 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 scroll through the available customizable options.

Feature Settings Menu Items

The following are customization features that allow you to program settings to the vehicle:

DISPLAY IN ENGLISH

This feature will only display if a language other than English has been set. This feature allows you to change the language in which the DIC messages appear to English.

Press the customization button until the PRESS ✓ TO DISPLAY IN ENGLISH screen appears on the DIC display. Press the set/reset button once to display all DIC messages in English.

DISPLAY LANGUAGE

This feature allows you to select the language in which the DIC messages will appear.

Press the customization button until the DISPLAY LANGUAGE screen appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

ENGLISH (default): All messages will appear in English.

FRANCAIS: All messages will appear in French.

ESPANOL: All messages will appear in Spanish.

NO CHANGE: No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

You can also change the language by pressing the trip odometer reset stem. See “Language” under DIC Operation and Displays (Without DIC Buttons) earlier in this section for more information.

AUTO DOOR LOCK

This feature allows you to select when the vehicle’s doors will automatically lock. See *Programmable Automatic Door Locks on page 119* for more information.

Press the customization button until AUTO DOOR LOCK appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

SHIFT OUT OF PARK (default): The doors will automatically lock when the vehicle is shifted out of PARK (P).

AT VEHICLE SPEED: The doors will automatically lock when the vehicle speed is above 8 mph (13 km/h) for three seconds.

NO CHANGE: No change will be made to this feature. The current setting will remain.

Choose one of the available settings 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 Locks on page 119* for more information.

Press the customization button until AUTO DOOR UNLOCK appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

OFF: None of the doors will automatically unlock.

DRIVER 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.

Choose one of the available settings 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 the doors are open. See *Remote Keyless Entry (RKE) System Operation on page 111* for more information.

Press the customization button until REMOTE DOOR LOCK appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

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 (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.

Choose one of the available settings 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 111* for more information.

Press the customization button until REMOTE DOOR UNLOCK appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

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.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

DELAY DOOR LOCK

On vehicles with a crew cab, this feature allows you to select whether or not the locking of the vehicle's doors will be delayed. When locking the doors with the power door lock switch or the Remote Keyless Entry (RKE) transmitter and a door is open, this feature will delay locking the doors until five seconds after the last door is closed. You will hear three chimes to signal that the delayed locking feature is in use. The key must be out of the ignition for this feature to work. You can temporarily override delayed locking by pressing the power door lock switch or the lock button on the RKE transmitter a second time. See *Delayed Locking on page 119* for more information.

Press the customization button until DELAY DOOR LOCK appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

OFF: There will be no delayed locking of the vehicle's doors.

ON (default): The doors will not lock until five seconds after the last door is closed.

NO CHANGE: No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

EXIT LIGHTING

This feature allows you to select the amount of time you want the exterior lamps to remain on when it is dark enough outside. This happens after the key is turned from RUN to LOCK.

Press the customization button until EXIT LIGHTING appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

OFF: The exterior lamps will not turn on.

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.

Choose one of the available settings 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 once to access the settings for this feature. Then press the customization button to scroll through the following settings:

OFF: The exterior lights will not turn on when you unlock the vehicle with the RKE transmitter.

ON (default): If it is dark enough outside, the exterior lights will turn on briefly when you unlock the vehicle with the RKE transmitter.

The lights will remain on for 20 seconds or until the lock button on the RKE transmitter is pressed, or the vehicle is no longer off. See *Remote Keyless Entry (RKE) System Operation on page 111* for more information.

NO CHANGE: No change will be made to this feature. The current setting will remain.

Choose one of the available settings 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 once to access the settings for this feature. Then press the customization button to scroll through the following settings:

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.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

PARK TILT MIRRORS

If your vehicle has this feature, it allows you to select whether or not the outside mirror(s) will automatically tilt down when the vehicle is shifted into REVERSE (R). See *Outside Power Foldaway Mirrors on page 177* for more information.

Press the customization button until PARK TILT MIRRORS appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

OFF (default): Neither outside mirror will be tilted down when the vehicle is shifted into REVERSE (R).

DRIVER MIRROR: The driver's outside mirror will be tilted down when the vehicle is shifted into REVERSE (R).

PASSENGER MIRROR: The passenger's outside mirror will be tilted down when the vehicle is shifted into REVERSE (R).

BOTH MIRRORS: The driver's and passenger's outside mirrors will be tilted down when the vehicle is shifted into REVERSE (R).

NO CHANGE: No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

EASY EXIT SEAT

If your vehicle has this feature, it allows you to select your preference for the automatic easy exit seat feature. See *Memory Seat, Mirrors, and Pedals on page 13* for more information.

Press the customization button until EASY EXIT SEAT appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

OFF (default): No automatic seat exit recall will occur.

ON: The driver's seat will move back when the key is removed from the ignition.

The automatic easy exit seat movement will only occur one time after the key is removed from the ignition. If the automatic movement has already occurred, and you put the key back in the ignition and remove it again, the seat will stay in the original exit position, unless a memory recall took place prior to removing the key again.

NO CHANGE: No change will be made to this feature. The current setting will remain.

Choose one of the available settings and press the set/reset button while it is displayed on the DIC to select it.

MEMORY SEAT RECALL

If your vehicle has this feature, it allows you to select your preference for the remote memory seat recall feature. See *Memory Seat, Mirrors, and Pedals on page 13* for more information.

Press the customization button until MEMORY SEAT RECALL appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

OFF (default): No remote memory seat recall will occur.

ON: The driver's seat and, on some vehicles, the outside mirrors will automatically move to the stored driving position when the unlock button on the Remote Keyless Entry (RKE) transmitter is pressed. On some vehicles with the adjustable throttle and brake pedal feature, the pedals will also automatically move. See "Relearn Remote Key" under *DIC Operation and Displays (With DIC Buttons) on page 268* or *DIC Operation and Displays (Without DIC Buttons) on page 275* for more information on matching transmitters to driver ID numbers.

NO CHANGE: No change will be made to this feature. The current setting will remain.

Choose one of the available settings 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 111* for more information.

Press the customization button until REMOTE START appears on the DIC display. Press the set/reset button once to access the settings for this feature. Then press the customization button to scroll through the following settings:

OFF: The remote start feature will be disabled.

ON (default): The remote start feature will be enabled.

NO CHANGE: No change will be made to this feature. The current setting will remain.

Choose one of the available settings 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 once to access the settings for this feature. Then press the customization button to scroll through the following settings:

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.

Choose one of the available settings 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 PRESS ✓ TO EXIT FEATURE SETTINGS appears in the DIC display. Press the set/reset button once to exit the menu.

If you do not exit, pressing the customization button again will return you to the beginning of the feature settings menu.

Exiting the Feature Settings Menu

The feature settings menu will be exited when any of the following occurs:

- The vehicle is no longer in 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 374*. 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. 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/retailer. 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 can interfere with the operation of your vehicle's engine, radio, or other systems, and even damage them. Your vehicle's systems can 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 134* for more information.

Setting the Time

AM-FM Radio with Optional CD Player

If your vehicle has an AM/FM radio with an optional CD player, it has a clock button for setting the time. With these types of radios, the clock can be set with either the radio turned on or off.

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 begin flashing on the display. Press the clock button a third time and the 12HR or 24HR time format begins flashing.
2. While either the hour or the minute numbers are flashing, turn the tune knob, located on the upper right side of the radio faceplate, clockwise or counterclockwise to increase or decrease the time. While the 12HR or 24HR time format is flashing, turn the tune knob clockwise or counterclockwise to select the default time settings.
3. Press the clock button again until the clock display stops flashing to set the currently displayed time; otherwise, the flashing stops after five seconds and the current time displayed will be automatically set.

MP3 Radios with a Single CD or a Single CD and DVD Player

If your vehicle has a radio with a single CD or a CD and DVD player, it has a clock button for setting the time and date.

To set the time and date, follow the instructions:

1. Press the clock button and the HR, MIN, MM, DD, YYYY (hour, minute, month, day, and year) displays.
2. 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 the FWD (forward) button.
3. To decrease the time or date, press the left SEEK arrow or the REV (reverse) button. You can also turn the tune knob, located on the upper right side of the radio, to adjust the selected setting.

Changing the Time and Date Default Settings

You can change the time default setting from 12 hours to 24 hours or change the date default setting from month/day/year to day/month/year.

To change the time or date default settings, follow these instructions:

1. Press the clock button and then the pushbutton located under the forward arrow that is currently displayed on the radio screen until the time 12H (hour) and 24H (hour), and the date MM/DD (month and day) and DD/MM (day and month) displays.
2. Press the pushbutton located under the desired option.
3. Press the clock button again to apply the selected default, or let the screen time out.

MP3 Radio with a Six-Disc CD Player

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. Press the MENU button. Once the clock option displays, press the pushbutton located under that label. The HR, MIN, MM, DD, YYYY (hour, minute, month, day, and year) displays.
2. Press the pushbutton located under any one of the time or date setting 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 the FWD (forward) button.
3. To decrease the time or date, press the left SEEK arrow or the REV (reverse) button. You can also turn the tune knob, located on the upper right side of the radio, to adjust the selected setting.

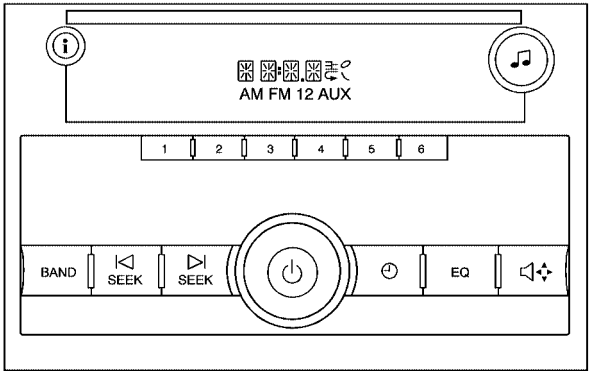
Changing the Time and Date Default Settings

You can change the time default setting from 12 hours to 24 hours or change the date default setting from month/day/year to day/month/year.

To change the time or date default settings, follow these instructions:

1. Press the MENU button. Once the clock option displays, press the pushbutton located under the forward arrow that is currently displayed on the radio screen until the 12H (hour) and 24H (hour), and the date MM/DD (month and day) and DD/MM (day and month) displays.
2. Press the pushbutton located under the desired option.
3. Press the MENU button again to apply the selected default, or let the screen time out.

AM-FM Radio



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.

When the radio is turned on, it plays at the volume level that was last set. The volume can be adjusted using the volume knob.

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.

(Clock): Your vehicle has a clock button for setting the time. With this type of radio, the clock can be set with either the radio turned on or off. See *Setting the Time on page 301* for more information.

Finding a Station

BAND: Press this button to switch between FM1, FM2, or AM. The display shows the selection.

♫ **(Tune):** Turn this knob clockwise or counterclockwise to increase or decrease the station frequency.

⏮ **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 two seconds until a beep sounds. The radio goes to a station, plays for a few seconds, then goes to the next station. The station frequency flashes while the radio is in the scan mode. Press either SEEK arrow again to stop scanning.

The radio seeks and scans stations only with a strong signal that are in the selected band.

To scan presets within the current selected band, press and hold either seek arrow for four seconds until a double beep sounds. The radio goes to a stored preset, plays for a few seconds if a strong signal is present, then goes to the next stored preset. The station frequency flashes while the radio is in the scan mode.

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. Whenever that pushbutton is pressed and released, the station that was set, returns.
5. Repeat the Steps 2-4 for each pushbutton.

Setting the Tone (Bass/Treble)

Bass/Treble: To adjust the bass or treble, press the tune knob or the EQ button until the desired tone control label displays. Turn the tune knob clockwise or counterclockwise to increase or decrease the setting. The display shows the current bass or treble level. If a station's frequency is weak, or if there is static, decrease the treble.

Adjusting the Speakers (Balance/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.

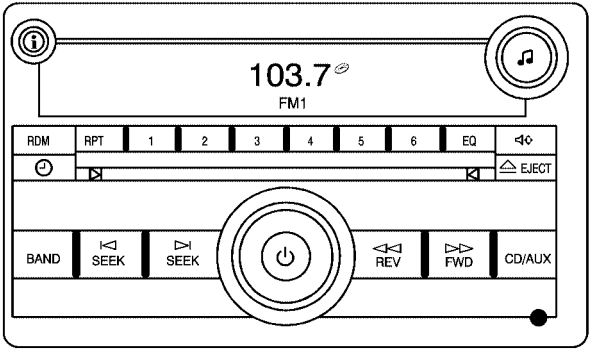
The setting can also be adjusted by pressing the seek arrows.

Radio Messages

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.

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.

When the radio is turned on, it plays at the volume level that was last set. The volume can be adjusted by using the volume knob.

(Clock): Your vehicle has a clock button for setting the time. With this type of radio, the clock can be set with either the radio turned on or off. See *Setting the Time on page 301* for more information.

Finding a Station

BAND: Press this button to switch between FM1, FM2, or AM. The display shows the selection.

(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 two seconds until a beep sounds. The radio goes to a station, plays for a few seconds, then goes to the next station. The station frequency flashes while the radio is in the scan mode. Press either SEEK arrow again to stop scanning.

The radio seeks and scans stations only with a strong signal that are in the selected band.

To scan presets within the current selected band, press and hold either seek arrow for four seconds until a double beep sounds. The radio goes to a stored preset, plays for a few seconds if a strong signal is present, then goes to the next stored preset. The station frequency flashes while the radio is in the scan mode.

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. Whenever 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 button or the EQ pushbutton until the desired tone control label displays. Turn the tune knob clockwise or counterclockwise to increase or decrease the setting. The display shows the current bass or treble level. If a station's frequency is weak, or if there is static, decrease the treble.

Unique BASS/TREB settings can be saved for each source.

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 (forward), or REV (reverse) buttons.

Radio Messages

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 appears on the radio display. 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 and DVDs on page 370* for more information.

If there is no apparent damage, try a known good CD.

Notice: **If a label is added to a CD, or more than one CD is inserted into the slot at a time, or an attempt is made to play scratched or damaged CDs, the CD player could be damaged. While using the CD player, use only CDs in good condition without any label, load one CD at a time, and keep the CD player and the loading slot free of foreign materials, liquids, and debris.**

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. Sound is heard 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. Sound is heard 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, the CD tracks can be listened to 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 the repeat setting, 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.

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

ERR (Error): If this 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-R.
- The label could be caught in the CD player.

NO: This message displays if the EJECT or CD/AUX buttons are pressed and a CD has not been inserted into the 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 374* for more information on driver distraction.

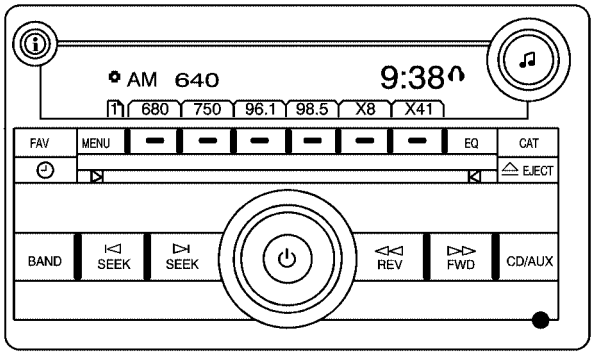
To use a portable audio player, connect a 3.5 mm (1/8 inch) cable to the radio's front auxiliary input jack. When a device is connected, press the radio CD/AUX button to begin playing audio from the device over the car speakers.

⏻ **(Power/Volume):** Turn this knob clockwise or counterclockwise to increase or decrease the volume of the portable player. You might need to do additional volume adjustments from the portable device if the volume is not loud or soft enough.

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, the message NO displays.

Radio with CD (MP3)



Radio with CD shown, Radio with Six-Disc CD 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 could 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). While SCV is on, the radio volume automatically adjusts to compensate for road and wind noise as driving speed changes. 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 (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 seeks and scans stations only 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) might 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.

When information is not available, No Info displays.

Storing a Radio Station as a Favorite

Drivers are encouraged to set up their radio station favorites while the vehicle is parked. 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 374*.

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 if there is static, decrease the treble.

To quickly adjust bass, midrange, or treble to the middle position, press the pushbutton positioned under the BASS, MID, or TREB label for more than two seconds. A beep sounds and the level adjusts to the middle position.

To quickly adjust all 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 choose bass and treble equalization settings designed for different types of music. The choices are pop, rock, country, talk, jazz, and classical. Selecting MANUAL or changing bass or treble, returns the EQ to the manual bass and treble settings.

Unique EQ settings can be saved for each source.

If the radio has a Bose® audio system, the EQ settings are either MANUAL or TALK.

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 when 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 is displayed. 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.

Categories cannot be removed or added 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 and your vehicle must be returned to your dealer for service.

Locked: This message displays 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 353* 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. While 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 appears on the CD. As each new track starts to play, the track number displays. When more than one CD is in the radio, the desired CD to be played can be changed by pressing the pushbuttons located under the displayed Disc label.

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 and DVDs on page 370* for more information.

If there is no apparent damage, try a known good CD.

Notice: **If a label is added to a CD, or more than one CD is inserted into the slot at a time, or an attempt is made to play scratched or damaged CDs, the CD player could be damaged. While using the CD player, use only CDs in good condition without any label, load one CD at a time, and keep the CD player and the loading slot free of foreign materials, liquids, and debris.**

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 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 tracks on the CD that is currently playing.

⏮ **SEEK** ⏭ **:** Press the left SEEK arrow to go to the start of the current track, if more than ten seconds on the CD 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. Sound is heard 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. Sound is heard 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 listened to 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 when a CD is playing. The CD remains inside the radio for future listening.

CD/AUX (CD/Auxiliary): Press this button to play a CD when listening to the radio. The CD icon and a message showing the 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 Input Device Found displays.

Playing an MP3 CD-R or CD-RW Disc

If you have a radio with a single CD (MP3) or a six-disc CD (MP3) player, 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” in the index.

CD Messages

CHECK DISC: If this 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 when reporting the problem.

Using the Auxiliary Input Jack

The radio system has an auxiliary input jack located on the lower right side of the faceplate. This is not an audio output; do not plug the headphone set into the front auxiliary input jack. However, an external audio device such as an iPod, laptop computer, MP3 player, CD player, or cassette tape player, etc. can be connected 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 374* for more information on driver distraction.

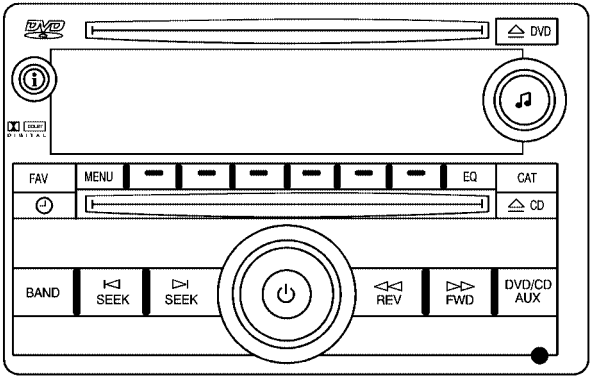
To use a portable audio player, connect a 3.5 mm (1/8 inch) cable to the radio's front auxiliary input jack. When a device is connected, press the radio CD/AUX button to begin playing audio from the device over the vehicle speakers.

⏻ **(Power/Volume):** Turn this knob clockwise or counterclockwise to increase or decrease the volume of the portable player. Additional volume adjustments might be needed from the portable device if the volume does not go loud or soft enough.

BAND: Press this button to listen to the radio when 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 when 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 and DVD (MP3)



If your vehicle has a Rear Seat Entertainment (RSE) system, it has a CD/DVD radio. See *Rear Seat Entertainment System on page 355* for more information on the vehicle's RSE system.

The DVD player is the top slot on the radio faceplate. The player is capable of reading the DTS programmed DVD Audio or DVD Video media, (DTS and DTS Digital Surround are trademarks of Digital Theater Systems, Inc.).

Dolby® is manufactured under license from Dolby® Laboratories. Dolby® and the double-D symbol are trademarks of Dolby® Laboratories.

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 could 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). While SCV is on, the radio volume automatically adjusts to compensate for road and wind noise as driving speed changes. 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 (volume) label on the radio display.
4. Press the pushbutton under the desired SCV 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 display shows the selection.

♫ (Tune): Turn this knob to select radio stations.

⏮ SEEK ⏭ : Press the left or right 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 seeks and scans stations only 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) could 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 is displayed.

When information is not available, No Info displays.

Storing a Radio Station as a Favorite

Drivers are encouraged to set up their radio station favorites while the vehicle is parked. Tune to your favorite stations using the presets, favorites button, and steering wheel controls, if the vehicle has them. See *Defensive Driving on page 374*.

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. If a station's frequency is weak or if there is static, decrease the treble.

To quickly adjust bass, midrange, or treble to the middle position, press the pushbutton positioned under the BASS, MID, or TREB label for more than two seconds. A beep sounds and the level adjusts to the middle position.

To quickly adjust all 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 choose bass and treble equalization settings designed for different types of music. The choices are pop, rock, country, talk, jazz, and classical. Selecting MANUAL or changing bass or treble, returns the EQ to the manual bass and treble settings.

Unique EQ settings can be saved for each source.

If the radio has a Bose® audio system, the EQ settings are either MANUAL or TALK.

Adjusting the Speakers (Balance/Fade)

BAL/FADE (Balance/Fade): To adjust balance or fade, press the tune knob until the speaker control labels display. 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 both the balance and fade to the middle position at one time, press the tune knob for more than two seconds until a beep sounds.

If the Rear Seat Audio (RSA) is turned on, the radio disables FADE and mutes the rear speakers.

Finding a Category (CAT) Station

CAT (Category): The CAT button is used to find XM™ stations when the radio is in the XM™ mode. To find XM™ channels within a desired category, 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 is displayed. Another way to navigate the category list is to press the REV button or the FWD button.
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.

Categories cannot be removed or added 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 displays 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 353* later in this section for further detail.

Playing a CD (In Either the DVD or CD Slot)

Insert a CD partway into the slot, label side up. The player pulls it in and the CD should begin playing (loading a disc into the system, depending on media type and format ranges from 5 to 20 seconds for a CD, and up to 30 seconds for a DVD to 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. The CD is controlled by the buttons on the radio faceplate. The DVD/CD decks, (upper slot is the DVD deck and the lower slot is the CD deck) of the radio are compatible with most audio CDs, CD-R, CD-RW, and MP3s.

When a CD is inserted, the text label DVD or CD symbol appears on the left side of the radio display. As each new track starts to play, the track number appears on the display.

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 and DVDs on page 370* for more information.

If there is no apparent damage, try a known good CD.

Notice: **If a label is added to a CD, or more than one CD is inserted into the slot at a time, or an attempt is made to play scratched or damaged CDs, the CD player could be damaged. While using the CD player, use only CDs in good condition without any label, load one CD at a time, and keep the CD player and the loading slot free of foreign materials, liquids, and debris.**

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.

⏏ **CD (Eject):** Press and release the CD eject button to eject the CD that is currently playing in the bottom slot. 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.

If loading and reading of a CD cannot be completed, such as unknown format, etc., and the disc fails to eject, press and hold the DVD eject button for more than five seconds to force the disc to eject.

⏏ **DVD (Eject):** Press and release the DVD eject button to eject the CD that is currently playing in the top slot. 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.

If loading and reading of a CD cannot be completed, such as unknown format, etc., and the disc fails to eject, press and hold the DVD eject button for more than five seconds to force the disc to eject.

♫ (Tune): Turn this knob to select tracks on the CD that is currently playing.

⏮ SEEK ⏭ : Press the left SEEK arrow to go to the start of the current track, if more than five seconds on the CD have played. If less than five seconds on the CD have played, the previous track plays. 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. Sound is heard 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. Sound is heard at a reduced volume. Release this button to resume playing the track. The elapsed time of the track displays.

RDM (Random): With random, tracks can be listened to in random, rather than sequential order. To play the tracks from the CD, press the DVD/CD AUX button when not sourced to the CD, or insert a disc partway into the slot. A RDM label displays. Press the pushbutton positioned under the RDM label until Random Current Disc displays. Press the pushbutton again to turn off random play.

BAND: Press this button to listen to the radio when a CD or DVD is playing. The CD or DVD remains inside the radio for future listening or for viewing entertainment.

DVD/CD AUX (Auxiliary): Press this button to cycle through DVD, CD, or Auxiliary when listening to the radio. The DVD/CD text label and a message showing the track or chapter number displays when a disc is in either slot. 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” displays.

If a disc is in both the DVD slot and the CD slot the DVD/CD AUX button cycles between the two sources and not indicate “No Aux Input Device”. If a front auxiliary device is connected, the DVD/CD AUX button cycles through all available options, such as: DVD slot, CD slot, Front Auxiliary, and Rear Auxiliary (if available). See “Using the Auxiliary Input Jack(s)” later in this section, or “Audio/Video (A/V) Jacks” under, *Rear Seat Entertainment System on page 355* for more information.

If a disc is inserted into top DVD slot, the rear seat operator can turn on the video screen and use the remote control to navigate the CD (tracks only) through the remote control.

Audio Output

Only one audio source can be heard through the speakers at one time. An audio source is defined as DVD slot, CD slot, XM™, FM/AM, Front Auxiliary Jack, or Rear Auxiliary Jack.

Press the power button to turn the radio on. The radio can be heard through all of the vehicle speakers.

Front seat passengers can listen to the radio (AM, FM, or XM) by pressing the BAND button or the DVD/CD AUX button to select CD slot, DVD slot, front or rear auxiliary input (if available).

If a playback device is plugged into the radio’s front auxiliary input jack or the rear auxiliary jack, the front seat passengers are able to listen to playback from this source through the vehicle speakers. See “Using the Auxiliary Input Jack(s)” later in this section, or “Audio/Video (A/V) Jacks” under, *Rear Seat Entertainment System on page 355* for more information.

Playing an MP3/WMA CD-R or CD-RW Disc

A radio with CD and DVD has the capability of playing an MP3/WMA CD-R or CD-RW disc. For more information on how to play an MP3/WMA CD-R or CD-RW disc, see “Using an MP3” in the index.

CD Messages

If these messages displays and/or the CD comes out, it could be for one of the following reasons:

Optical Error: The disc was inserted upside down.

Disk Read Error: A disc was inserted with an invalid or unknown format.

Player Error: There are disc LOAD or disc EJECT problems.

- 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 when reporting the problem.

Using the DVD Player

The DVD player is controlled by the buttons on the remote control or by the buttons on the radio faceplate. See “Remote Control”, under *Rear Seat Entertainment System on page 355* for more information.

The DVD player is only compatible with DVDs of the appropriate region code that is printed on the jacket of most DVDs.

The DVD slot of the radio is compatible with most audio CDs, CD-R, CD-RW, DVD-Video, DVD-Audio, DVD-R/RW, DVD+R/RW media along with MP3 and WMA formats.

If an error message appears on the video screen or the radio, see “DVD Display Error Messages” under, *Rear Seat Entertainment System on page 355* and “DVD Radio Error Messages” in this section for more information.

Playing a DVD

DVD/CD AUX (Auxiliary): Press this button to cycle through DVD, CD, or Auxiliary when listening to the radio. The DVD/CD text label and a message showing track or chapter number displays when a disc is in either slot. 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” displays. If a disc is in both the DVD slot and the CD slot the DVD/CD AUX button cycles between the two sources and not indicate “No Aux Input Device”. If a front auxiliary device is connected, the DVD/CD AUX button cycles through all available options, such as: DVD slot, CD slot, Front Auxiliary, and Rear Auxiliary (if available). See “Using the Auxiliary Input Jack(s)” later in this section, or “Audio/Video (A/V) Jacks” under, *Rear Seat Entertainment System on page 355* for more information.

⏻ **(Power):** Press this knob to turn the radio on or off. Turn this knob clockwise or counterclockwise to increase or decrease the volume. Press and hold the knob for more than two seconds to turn off the entire radio and Rear Seat Entertainment (RSE) system and to start the parental control feature. Parental control prevents the rear seat occupant from operating the Rear Seat Audio (RSA) system or remote control.

A lock symbol appears next to the clock display. The parental control feature remains on until this button is pressed and held for more than two seconds again, or until the driver turns the ignition off and exits the vehicle.

♫ **(Tune):** Turn this knob to change tracks on a CD or DVD, to manually tune a radio station, or to change clock or date settings, while in the clock or date setting mode. See the information given earlier in this section specific to the radio, CD, and the DVD. Also, see “Setting the Time” in the index, for setting the clock and date.

⏮ **SEEK (Previous Track/Chapter):** Press this button to return to the start of the current track or chapter. Press this button again to go to the previous track or chapter. This button might not work when the DVD is playing the copyright information or the previews.

SEEK ⏭ (Next Track/Chapter): Press this button to go to the next track or chapter. This button might not work when the DVD is playing the copyright information or the previews.

◁◁ **REV (Reverse):** Press this button to quickly reverse the CD or DVD at five times the normal speed. The radio displays the elapsed time while in fast reverse. To stop fast reversing, press this button again. This button might not work when the DVD is playing the copyright information or the previews.

▷▷ **FWD (Fast Forward):** Press this button to fast forward the CD or DVD. The radio displays the elapsed time and fast forwards five times the normal speed. To stop fast forwarding, press this button again. This button might not work when the DVD is playing the copyright information or the previews.

⏏ **(Eject):** Press this button to eject a CD or DVD. If a CD or DVD is ejected, but not removed, the player automatically pulls it back in after 15 seconds.

If loading and reading of a CD cannot be completed, because of an unknown format, etc., and the disc fails to eject, press and hold the CD eject button for more than five seconds to force the disc to eject.

DVD-V (Video) Display Buttons

Once a DVD-V is inserted, the radio display menu shows several tag options for DVD playing. Press the pushbuttons located under any desired tag option during DVD playback. See the tag options listed below for more information.

The rear seat passenger can navigate the DVD-V menus and controls through the remote control. See “Remote Control”, under *Rear Seat Entertainment System on page 355* for more information. The Video Screen automatically turns on when the DVD-V is inserted into the DVD slot.

▶ / ❚❚ **(Play/Pause):** Press either the play or pause icon displays on the radio system, to toggle between pausing or restarting playback of a DVD. If the forward arrow is showing on display, the system is in pause mode. If the pause icon is showing on display, the system is in playback mode. If the DVD screen is off, press the play button to turn the screen on.

Some DVDs begin playing after the previews have finished, although there might be a delay of up to 30 seconds. If the DVD does not begin playing the movie automatically, press the pushbutton located under the play/pause symbol tag displayed on the radio. If the DVD still does not play, refer to the on-screen instructions, if available.

■ **(Stop):** Press this button to stop playing, rewinding, or fast forwarding a DVD.

◀┘ **(Enter):** Press this button to select the choices that are highlighted in any menu.

▤ **(Menu):** Press this button to access the DVD menu. The DVD menu is different on every DVD. Use the pushbuttons located under the navigation arrows to navigate the cursor through the DVD menu. After making a selection press the enter button. This button only operates when using a DVD.

Nav (Navigate): Press this button to display directional arrows for navigating through the menus.

↶● **(Return):** Press this button to exit the current active menu and return to the previous menu. This button operates only when a DVD is playing and a menu is active.

DVD-A (Audio) Display Buttons

Once a DVD-A is inserted, radio display menu shows several tag options for DVD playing. Press the pushbuttons located under any desired tag option during DVD playback. See the tag options listed below for more information.

The rear seat operator can navigate the DVD-A menus and controls through the remote control. See “Remote Control”, under *Rear Seat Entertainment System on page 355* for more information. The Video Screen does not automatically power on when the DVD-A is inserted into the DVD slot. It must be manually turned on by the rear seat occupant through the remote control power button.

▶ / ❚❚ (Play/Pause): Press either the play or pause icon displays on the radio system, to toggle between pausing or restarting playback of a DVD. If the forward arrow is showing on display, the system is in pause mode. If the pause icon is showing on display, the system is in playback mode.

◀ Group ▶ : Press this button to cycle through musical groupings on the DVD-A disc.

Nav (Navigate): Press this button to display directional arrows for navigating through the menus.

♪ (Audio Stream): Press this button to cycle through audio stream formats located on the DVD-A disc. There is not any type of notification for the customer to see through the radio display, but VSM has a text field that shows audio stream changing.

Inserting a Disc

To play a disc, gently insert the disc, with the label side up, into the loading slot. The DVD player might not accept some paper labeled media. The player starts loading the disc into the system and show “Loading Disc” on the radio display. At the same time, the radio displays a softkey menu of option(s). Some discs automatically play the movie while others default to the softkey menu display, which requires the Play, Enter, or Navigation softkeys to be pressed; either by softkey or by the rear seat passenger using the remote control.

Loading a disc into the system, depending on media type and format, ranges from 5 to 20 seconds for a CD, and up to 30 seconds for a DVD.

Stopping and Resuming Playback

To stop playing a DVD without turning off the system, press the stop button on the remote control, or press the pushbutton located under the stop or the play/pause symbol tags displayed on the radio. If the radio head is sourced to something other than DVD-V, press the DVD/CD AUX button to make DVD-V the active source.

To resume DVD playback, press the play/pause button on the remote control, or press the pushbutton located under the play/pause symbol tag displayed on the radio. The DVD should resume play from where it last stopped if the disc has not been ejected and the stop button has not been pressed twice on the remote control. If the disc has been ejected or the stop button has been pressed twice on the remote control, the disc resumes playing at the beginning of the disc.

Ejecting a Disc

Press the eject button on the radio to eject the disc. If a disc is ejected from the radio, but not removed, the radio reloads the disc after a short period of time. The disc is stored in the radio. The radio does not resume play of the disc automatically. If the RSA system is sourced to the DVD, the movie when reloaded into the DVD player begins to play again. In case loading and reading of a DVD or CD cannot be completed (unknown format, etc.), and the disc fails to eject, press and hold the DVD Eject button more than five seconds to force the disc to eject.

DVD Radio Error Messages

Player Error: This message displays when there are disc load or eject problems.

Disc Format Error: This message displays, if the disc is inserted with the disc label wrong side up, or if the disc is damaged.

Disc Region Error: This message displays, if the disc is not from a correct region.

No Disc Inserted: This message displays, if no disc is present when the EJECT or DVD/CD AUX button is pressed on the radio.

Using the Auxiliary Input Jack(s)

The radio system has an auxiliary input jack located on the lower right side of the faceplate. This is not an audio output; do not plug the headphone set into the front auxiliary input jack. However, an external audio device such as an iPod, laptop computer, MP3 player, CD player, or cassette tape player, etc. can be connected 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 374* for more information on driver distraction.

To use a portable audio player, connect a 1/8 inch (3.5 mm) cable to the radio's front auxiliary input jack. While a device is connected, the radio automatically begins playing audio from the device over the vehicle speakers.

To listen to a device through the rear auxiliary input over the speakers, cycle the DVD/CD Aux button on the radio faceplate until "Rear Aux Input" displays on the radio. The RSA or DVD Screen must be on in order for the radio to source to rear auxiliary.

⏻ **(Power/Volume):** Turn this knob clockwise or counterclockwise to increase or decrease the volume of the portable player. Additional volume adjustments might be needed from the portable device if the volume is not loud or soft enough.

BAND: Press this button to listen to the radio when a portable audio device is playing. The portable audio device continues playing, so you might want to stop it or power it off.

DVD/CD AUX (CD/Auxiliary): Press this button to cycle through DVD, CD, or Auxiliary when listening to the radio. The DVD/CD text label and a message showing track or chapter number displays when a disc is in either slot. 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" displays. If a disc is in both the DVD slot and the CD slot the DVD/CD AUX button cycles between the two sources and not indicate "No Aux Input Device".

If a front auxiliary device is connected, the DVD/CD AUX button cycles through all available options, such as: DVD slot, CD slot, Front Auxiliary, and Rear Auxiliary (if available). See “Using the Auxiliary Input Jack(s)” later in this section, or “Audio/Video (A/V) Jacks” under, *Rear Seat Entertainment System on page 355* for more information.

Using an MP3 (Radio with CD or Six-Disc CD Player)

MP3/WMA CD-R or CD-RW Disc

The radio plays MP3/WMA files that were recorded on a CD-R or CD-RW disc. The files can be recorded with the following fixed bit rates: 32 kbps, 40 kbps, 56 kbps, 64 kbps, 80 kbps, 96 kbps, 112 kbps, 128 kbps, 160 kbps, 192 kbps, 224 kbps, 256 kbps, and 320 kbps or a variable bit rate. Song title, artist name, and album are available for display by the radio when recorded using ID3 tags version 1 and 2.

Compressed Audio

The radio also plays discs that contain both uncompressed CD audio (.CDA files) and MP3/WMA files. By default the radio shows the MP3/WMA label on the left side of the screen but plays both file formats in the order in which they were recorded to the disc.

MP3/WMA Format

If you burn your own MP3/WMA disc on a personal computer:

- Make sure the MP3/WMA files are recorded on a CD-R or CD-RW disc.
- Do not mix standard audio and MP3/WMA files on one disc.
- The CD player is able to read and play a maximum of 50 folders, 15 playlists, and a combined total of 512 folders and files.
- Create a folder structure that makes it easy to find songs while driving. Organize songs by albums using one folder for each album. Each folder or album should contain 18 songs or less.

- Avoid subfolders. The system can support up to eight subfolders deep, however, keep the total number of folders to a minimum in order to reduce the complexity and confusion in trying to locate a particular folder during playback.
- Make sure playlists have a .mp3 or .wpl extension (other file extensions might 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 might cause the disc not to function in the player.

Playlists can be changed by using the previous and next folder buttons, the tuner knob, or the seek buttons. An MP3/WMA CD-R or CD-RW that was recorded can also be played using no file folders. If a CD-R or CD-RW contains more than the maximum of 50 folders, 15 playlists, and a combined total of 512 folders and files, the player lets you access and navigate up to the maximum, but all items over the maximum are not accessible.

Root Directory

The root directory of the CD-R or CD-RW is treated as a folder. If the root directory has compressed audio files, the directory is displayed as the CD label. 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.

If a disc contains both uncompressed CD audio (.CDA) and MP3/WMA files, a folder under the root directory called CD accesses all of the CD audio tracks on the disc.

Empty Directory or Folder

If a root directory or a folder exists somewhere in the file structure that contains only folders/subfolders and no compressed files directly beneath them, the player advances to the next folder in the file structure that contains compressed audio files. The empty folder does not display.

No Folder

When the CD-R or CD-RW contains only compressed files, the files are located under the root folder. The next and previous folder function does not display on a CD-R or CD-RW that was recorded without folders or playlists.

When the CD-R or CD-RW 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 search playlists (Px) first and then goes to the root folder.

Order of Play

Tracks recorded to the CD-R or CD-RW are played in the following order:

- Play begins from the first track in the first playlist and continues sequentially through all tracks in each playlist. When the last track of the last playlist has played, play continues from the first track of the first playlist.
- Play begins from the first track in the first folder and continues sequentially through all tracks in each folder. When the last track of the last folder has 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. Parts of words on the last page of text and the extension of the filename does not display.

Preprogrammed Playlists

Preprogrammed playlists that were created using WinAmp™, MusicMatch™, or Real Jukebox™ software can be accessed, however, they cannot be edited using the radio. These playlists are treated as special folders containing compressed audio song files.

Playing an MP3/WMA

Insert a CD-R or CD-RW 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 or CD-RW should begin playing.

If the ignition or radio is turned off with a CD-R or CD-RW in the player, it stays in the player. When the ignition or radio is turned on, the CD-R or CD-RW 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.

If playing a CD-R or CD-RW, the sound quality can be reduced due to CD-R or CD-RW quality, the method of recording, the quality of the music that has been recorded, and the way the CD-R or CD-RW has been handled. 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 does not play properly. If the surface of the CD is soiled, see *Care of Your CDs and DVDs on page 370* for more information.

If there is no apparent damage, try a known good CD.

Notice: **If a label is added to a CD, or more than one CD is inserted into the slot at a time, or an attempt is made to play scratched or damaged CDs, the CD player could be damaged. While using the CD player, use only CDs in good condition without any label, load one CD at a time, and keep the CD player and the loading slot free of foreign materials, liquids, and debris.**

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) or CD-RW(s). To eject the CD-R or CD-RW 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 or CD-RW can be removed. If the CD-R or CD-RW is not removed, after several seconds, the CD-R or CD-RW 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/WMA files on the CD-R or CD-RW currently playing.

⏮ **SEEK** ⏭ **:** Press the left SEEK arrow to go to the start of the current MP3/WMA file, if more than ten seconds have played. Press the right SEEK arrow to go to the next MP3/WMA file. If either SEEK arrow is held or pressed multiple times, the player continues moving backward or forward through MP3/WMA 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/WMA file. Sound is heard 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/WMA file. Sound is heard 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/WMA files on the CD-R or CD-RW can be listened to in random, rather than sequential order, on one CD-R or CD-RW, or all discs in a six-disc CD player. To use random, do one of the following:

1. To play MP3/WMA files from the CD-R or CD-RW in random order, 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/WMA files on the CD-R or CD-RW in order by artist or album. Press the pushbutton located below the music navigator label. The player scans the disc to sort the files by artist and album ID3 tag information. It might take several minutes to scan the disc depending on the number of MP3/WMA files recorded to the CD-R or CD-RW. The radio can begin playing while it is scanning the disc in the background. When the scan is finished, the CD-R or CD-RW begins playing again.

Once the disc has scanned, the player defaults to playing MP3/WMA 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 or CD-RW and begins playing MP3/WMA files by that artist. To listen to MP3/WMA 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 is displayed.

To change from playback by artist to playback by album, press the pushbutton located below the Sort By label. From the sort screen, push one of the buttons below the album button. Press the pushbutton below the back label to return to the main music navigator screen. Now the album name displays on the second line between the arrows and songs from the current album begins to play. Once all songs from that album are played, the player moves to the next album in alphabetical order on the CD-R or CD-RW and begins playing MP3/WMA files from that album.

To exit music navigator mode, press the pushbutton below the Back label to return to normal MP3/WMA playback.

BAND: Press this button to listen to the radio when a CD is playing. The CD remains inside the radio for future listening.

CD/AUX (CD/Auxiliary): Press this button to play a CD when 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 Input Device Found” displays.

Using an MP3 (Radio with CD and DVD Player)

MP3/WMA CD-R or CD-RW Disc

Compressed Audio or Mixed Mode Discs

The radio also plays discs that contain both uncompressed CD audio (.CDA files) and MP3/WMA files depending on which slot the disc is loaded into. By default the radio reads only the uncompressed audio (.CDA) and ignores the MP3/WMA files on the DVD deck. On the CD deck, pressing the CAT button toggles between compressed and uncompressed audio format, the default being the uncompressed format (.CDA).

MP3/WMA Format

If you burn your own MP3/WMA disc on a personal computer:

- Make sure the MP3/WMA files are recorded on a CD-R or CD-RW disc.
- Do not mix standard audio and MP3/WMA files on one disc.
- The CD player (lower slot) is able to read and play a maximum combination of 512 files and folders. The DVD player (upper slot) is able to read 255 folders, 15 playlists and 40 sessions.
- Create a folder structure that makes it easy to find songs while driving. Organize songs by albums using one folder for each album. Each folder or album should contain 18 songs or less.
- Avoid subfolders. The system can support up to eight subfolders deep, however, keep the total number of folders to a minimum in order to reduce the complexity and confusion in trying to locate a particular folder during playback.
- Make sure playlists have a .m3u, .wpl or .pls extension as 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.

Root Directory

The root directory of the CD-R or CD-RW is treated as a folder. If the root directory has compressed audio files, the directory is displayed as F1 ROOT. All files contained directly under the root directory are accessed prior to any root directory folders. However, playlists (Px) are always accessed before root folders or files.

Empty Directory or Folder

If a root directory or a folder exists somewhere in the file structure that contains only folders/subfolders and no compressed files directly beneath them, the player advances to the next folder in the file structure that contains compressed audio files. The empty folder does not display.

No Folder

When the CD-R or CD-RW contains only compressed files, the files are located under the root folder. The next and previous folder function does not function on a CD-R or CD-RW that was recorded without folders or playlists. When displaying the name of the folder the radio displays ROOT.

When the CD-R or CD-RW 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 search 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 or CD-RW are played in the following order:

- Play begins from the first track in the first playlist and continues sequentially through all tracks in each playlist. When the last track of the last playlist has played, play continues from the first track of the first playlist.
- Play begins from the first track in the first folder and continues sequentially through all tracks in each folder. When the last track of the last folder has played, play continues from the first track of the first folder.

When play enters a new folder, the display does not automatically show the new folder name unless the folder mode was chosen as the default display. The new track name displays.

File System and Naming

The song name that is displayed is the song name that is contained in the ID3 tag. If the song name is not present in the ID3 tag, then the radio displays the file name without the extension (such as .mp3) as the track name.

Track names longer than 32 characters or four pages are shortened. Parts of words on the last page of text and the extension of the filename displays.

Preprogrammed Playlists

Preprogrammed playlists that were created using WinAmp™, MusicMatch™, or Real Jukebox™ software can be accessed, however, they cannot be edited using the radio. These playlists are treated as special folders containing compressed audio song files.

Playing an MP3/WMA (In Either the DVD or CD Slot)

Insert a CD-R or CD-RW partway into either the top or bottom slot, label side up. The player pulls it in, and the CD-R or CD-RW should begin playing.

Depending on the format of the disc, a softkey menu appears and allows navigation of the disc. The menu reads left to right as RDM (Randomize song play order), a Folder icon with left and right arrows (to move up or down through available folders), a PL tag if the disc has a Playlist available, and a Music Navigator tag. If a Playlist tag is shown, toggling this key brings up a Folder softkey only or the menu as previously described.

If the ignition or radio is turned off with a CD-R or CD-RW in the player, it stays in the player. When the ignition or radio is turned on, the CD-R or CD-RW 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.

If playing a CD-R or CD-RW, the sound quality can be reduced due to CD-R or CD-RW quality, the method of recording, the quality of the music that has been recorded, and the way the CD-R or CD-RW has been handled. 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 does not play properly. If the surface of the CD is soiled, see *Care of Your CDs and DVDs on page 370* for more information.

If there is no apparent damage, try a known good CD.

Notice: **If a label is added to a CD, or more than one CD is inserted into the slot at a time, or an attempt is made to play scratched or damaged CDs, the CD player could be damaged. While using the CD player, use only CDs in good condition without any label, load one CD at a time, and keep the CD player and the loading slot free of foreign materials, liquids, and debris.**

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.

⏏ **CD (Eject):** Press and release the ⏏ CD button to eject the CD-R or CD-RW that is currently playing in the bottom slot. 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 or CD-RW is not removed, after several seconds, the CD-R or CD-RW automatically pulls back into the player.

If loading and reading of a CD cannot be completed, such as unknown format, etc., and the disc fails to eject, press and hold the ⏏ CD button for more than five seconds to force the disc to eject.

⏏ **DVD (Eject):** Press and release the ⏏ DVD button to eject the CD-R or CD-RW that is currently playing in the top slot. A beep sounds and Ejecting Disc displays. Once the disc is ejected, Remove Disc displays. The CD-R or CD-RW can be removed. If the CD-R or CD-RW is not removed, after several seconds, the CD-R or CD-RW automatically pulls back into the player. If loading and reading of a CD cannot be completed, such as unknown format, etc., and the disc fails to eject, press and hold the ⏏ DVD button for more than five seconds to force the disc to eject.

♫ **(Tune):** Turn the ♫ knob to select MP3/WMA files on the CD-R or CD-RW that is currently playing.

⏮ **SEEK** ⏭ **:** Press the left ⏮ SEEK arrow to go to the start of the current MP3/WMA file, if more than five seconds have played. If less than five seconds have played, the previous MP3/WMA file plays. Press the right ⏭ SEEK arrow to go to the next MP3/WMA file. If either the left ⏮ or right ⏭ SEEK arrow is held, or pressed multiple times, the player continues moving backward or forward through the MP3/WMA 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 the ◁◁ REV button to reverse playback quickly within an MP3/WMA file. Sound is heard at a reduced volume. Release the ◁◁ REV button to resume playing the file. The elapsed time of the file displays.

▷▷ **FWD (Fast Forward):** Press and hold the ▷▷ FWD button to advance playback quickly within an MP3/WMA file. Sound is heard at a reduced volume. Release the ▷▷ FWD button to resume playing the file. The elapsed time of the file displays.

RDM (Random): With the random setting, MP3/WMA files on the CD-R or CD-RW can be listened to in random, rather than sequential order. To play MP3/WMA files from the CD-R or CD-RW you are listening to in random order, press the pushbutton positioned under the RDM label until Random Current Disc displays. Press the same pushbutton again to turn off random play.

(Music Navigator): Use the music navigator feature to play MP3/WMA files on the CD-R or CD-RW in order by artist or album. Press the pushbutton located below the music navigator label. The player scans the disc to sort the files by artist and album ID3 tag information. It might take several minutes to scan the disc depending on the number of MP3/WMA files recorded to the CD-R or CD-RW.

To cancel music navigator while the player is scanning, press the pushbutton located below the music navigator label or eject the disc.

The radio can begin playing while it is scanning the disc in the background. When the scan is finished, the CD-R or CD-RW begins playing again.

Once the disc has been scanned, the player defaults to playing MP3/WMA files in order by artist. The current artist playing is shown on the second line of the display between the arrows. If you want to listen to MP3/WMA files by another artist, press the pushbutton located below either arrow button. The disc goes to the next or previous artist in alphabetical order. Continue pressing either button until the desired artist is displayed.

To change from playback by artist to playback by album, press the pushbutton located below the Sort By label. From the sort screen, push one of the buttons below the album button. Press the pushbutton below the back label to return to the main music navigator screen. Now the album name is displayed on the second line between the arrows and songs from the current album begin to play. Once all songs from that album are played, the player moves to the next album in alphabetical order on the CD-R or CD-RW and begins playing MP3/WMA files from that album.

To exit music navigator mode, press the pushbutton below the Back label to return to normal MP3/WMA playback.

BAND: Press this button to listen to the radio when a CD or a DVD is playing. The CD or DVD remains inside the radio for future listening or viewing entertainment.

DVD/CD AUX (Auxiliary): Press this button to cycle through DVD, CD, or Auxiliary when listening to the radio. The DVD/CD text label and a message showing track or chapter number displays when a disc is in either slot. 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” displays. If a disc is in both the DVD slot and the CD slot the DVD/CD AUX button cycles between the two sources and not indicate “No Aux Input Device”. If a front auxiliary device is connected, the DVD/CD AUX button cycles through all available options, such as: DVD slot, CD slot, Front Auxiliary, and Rear Auxiliary (if available). See “Using the Auxiliary Input Jack(s)” later in this section, or “Audio/Video (A/V) Jacks” under, *Rear Seat Entertainment System on page 355* for more information.

If a MP3/WMA is inserted into top DVD slot, the rear seat operator can turn on the video screen and use the remote control to navigate the CD (tracks only) through the remote control.

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.

Radio Display Message	Condition	Action Required
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.
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 TheftLocked	Theft lock active	The XM™ receiver in the vehicle could have previously been in another vehicle. For security purposes, XM™ receivers cannot be swapped between vehicles. If this message appears 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/retailer.
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/retailer.
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/retailer.

Navigation/Radio System

Your vehicle may have a navigation radio system.

The navigation system has built-in features intended to minimize driver distraction. Technology alone, no matter how advanced, can never replace your own judgment. See the Navigation System manual for some tips to help you reduce distractions while driving.

Rear Seat Entertainment System

Your vehicle may have a DVD Rear Seat Entertainment (RSE) system. The RSE system works with the vehicle's audio system. The DVD player is part of the front radio. The RSE system includes a radio with a DVD player, a video display screen, audio/video jacks, two wireless headphones, and a remote control. See *Radio with CD and DVD (MP3) on page 322* for more information on the vehicle's audio/DVD system.

Before You Drive

The RSE is designed for rear seat passengers only. The driver cannot safely view the video screen while driving and should not try to do so.

In severe or extreme weather conditions the RSE system might not work until the temperature is within the operating range. The operating range for the RSE system is above –4°F (–20°C) or below 140°F (60°C). If the temperature of your vehicle is outside of this range, heat or cool the vehicle until the temperature is within the operating range of the RSE system.

Parental Control

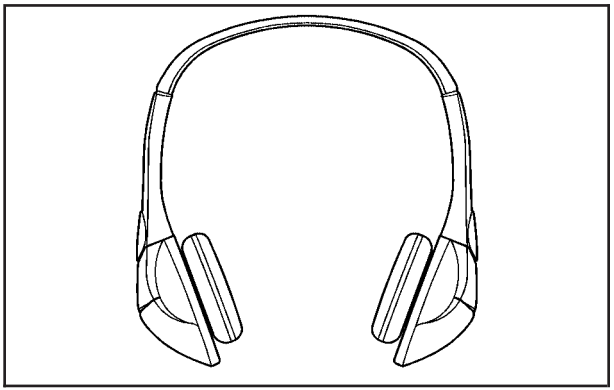
The RSE system could have a Parental Control feature, depending on the radio. The Parental Control feature turns off the video screen and Rear Seat Audio (RSA). This feature also disables all button operations from the remote control and all audio button operations from the RSA. This feature can be used to gain the attention of the rear passengers that are using headphones.

To enable Parental Control, press and hold the radio power button for more than two seconds. If on, the radio, video screen, and RSA turns off. If a DVD and/or CD is playing, it stops. While Parental Control is on, either a padlock icon or a text message comes on, depending on the radio. When the radio is turned back on, the RSE system remains in Parental Control.

To turn off Parental Control, press and hold the radio power button for more than two seconds. The video screen and RSA returns to the state they were in before Parental Control was turned on and if the padlock icon is on the display, it disappears.

Parental Control is also turned off by inserting or ejecting a disc, by pressing the play icon on the radio DVD display menu, or when the ignition is turned off.

Headphones



The RSE includes two 2-channel wireless headphones that are dedicated to this system. These headphones are used to listen to media such as CDs, DVDs, MP3s, DVDAs, radio, any auxiliary source connected to A/V jacks, or the auxiliary input jack, if your vehicle has this feature. The wireless headphones have an On/Off button, channel 1/2 switch, and a volume control.

Push the power button to turn on the headphones. An indicator light located on the headphones comes on. If the light does not come on, the batteries might need to be replaced. See “Battery Replacement” later in this section for more information. Switch the headphones to Off when not in use. Channel 1 is dedicated to the video screen, while Channel 2 is dedicated to RSA selections.

Infrared transmitters are located at the rear of the RSE overhead console. The headphones shut off automatically to save the battery power if the RSE system and RSA are shut off or if the headphones are out of range of the transmitters for more than three minutes. If you move too far forward or step out of the vehicle, the headphones lose the audio signal.

The headphones automatically turns off after four hours of continuous use.

To adjust the volume on the headphones, use the volume control located on the right side.

For optimal audio performance, the headphones must be worn correctly. The symbol L (Left) appears on the upper left side, above the ear pad and should be positioned on the left ear. The symbol R (Right) appears on the upper right side, above the ear pad and should be positioned on the right ear.

Notice: **Do not store the headphones in heat or direct sunlight. This could damage the headphones and repairs will not be covered by your warranty. Keep the headphones stored in a cool, dry place.**

If the foam ear pads attached to the headphones become worn or damaged, the pads can be replaced separately from the headphone set. Refer to your dealer for more information.

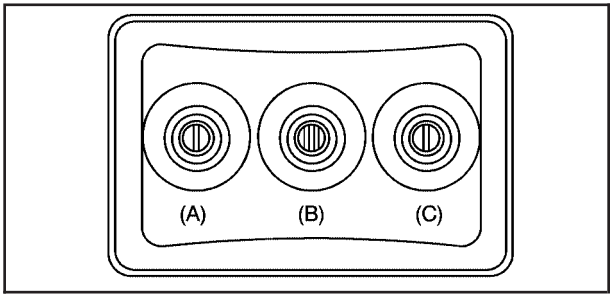
If the headphones are to be stored for a long period of time, remove the batteries and keep them in a cool, dry place.

Battery Replacement

To change the batteries on the headphones, do the following:

1. Turn the screw with a coin or screw driver to loosen the battery door located on the left side of the headphones. Slide the battery door open.
2. Replace the two batteries in the compartment. Make sure that they are installed correctly, using the diagram on the inside of the battery compartment.
3. Replace the battery door and tighten the door screw.

Audio/Video (A/V) Jacks



The A/V jacks, located on the rear of the floor console, allow audio or video signals to be connected from an auxiliary device such as a camcorder or a video game unit to the RSE system. Adapter connectors or cables could be required to connect the auxiliary device to the A/V jacks. Refer to the manufacturer's instructions for proper usage.

The A/V jacks are color coded to match typical home entertainment system equipment. The yellow jack (A) is for the video input. The white jack (B) is for the left audio input. The red jack (C) is for the right audio input.

Power for auxiliary devices is not supplied by the radio system.

To use the auxiliary inputs of the RSE system, connect an external auxiliary device to the color-coded A/V jacks and turn both the auxiliary device and the video screen power on. If the video screen is in the DVD player mode, pressing the AUX (auxiliary) button on the remote control switches the video screen from the DVD player mode to the auxiliary device. The radio can listen to the audio of the connected auxiliary device by sourcing to auxiliary. See *Radio with CD and DVD (MP3) on page 322* for more information.

How to Change the RSE Video Screen Settings

The screen display mode (normal, full, and zoom), screen brightness, and setup menu language can be changed from the on screen setup menu. To change any feature, do the following:

1. Press the display menu button on the remote control.
2. Use the remote control menu navigation arrows and the enter button to use the setup menu.
3. Press the display menu button again to remove the setup menu from the screen.

Audio Output

Audio from the DVD player or auxiliary inputs may be heard through the following possible sources:

- Wireless Headphones
- Vehicle Speakers
- Vehicle wired headphone jacks on the rear seat audio system, if your vehicle has this feature.

The RSE system always transmits the audio signal to the wireless headphones, if there is audio available. See “Headphones” earlier in this section for more information.

The DVD player is capable of outputting audio to the wired headphone jacks on the RSA system, if your vehicle has this feature. The DVD player can be selected as an audio source on the RSA system. See *Rear Seat Audio (RSA) on page 366* for more information.

When a device is connected to the A/V jacks, or the radio's auxiliary input jack, if your vehicle has this feature, the rear seat passengers are able to hear audio from the auxiliary device through the wireless or wired headphones. The front seat passengers are able to listen to playback from this device through the vehicle speakers by selecting AUX as the source on the radio.

Video Screen

The video screen is located in the RSE overhead console.

To use the video screen, do the following:

1. Push the release button located on the RSE overhead console.
2. Move the screen to the desired position.

When the video screen is not in use, push it up into its locked position.

If a DVD is playing and the screen is raised to its locked position, the screen remains on, this is normal, and the DVD continues to play through the previous audio source. Use the remote control power button or eject the disc to turn off the screen.

The RSE overhead console contains the infrared receivers for the wireless headphones and the infrared receivers for the remote control. They are located at the rear of the console.

Notice: **Avoid directly touching the video screen, as damage may occur. See "Cleaning the Video Screen" later in this section for more information.**

Remote Control

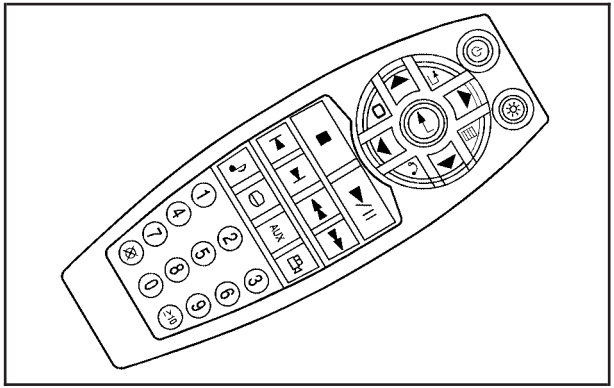
To use the remote control, aim it at the transmitter window at the rear of the RSE overhead console and press the desired button. Direct sunlight or very bright light could affect the ability of the RSE transmitter to receive signals from the remote control. If the remote control does not seem to be working, the batteries might need to be replaced. See “Battery Replacement” later in this section. Objects blocking the line of sight could also affect the function of the remote control.

If a CD or DVD is in the Radio DVD slot, the remote control power button can be used to turn on the video screen display and start the disc. The radio can also turn on the video screen display. See *Radio with CD and DVD (MP3) on page 322* for more information.

Notice: **Storing the remote control in a hot area or in direct sunlight can damage it, and the repairs will not be covered by your warranty. Keep the remote control stored in a cool, dry place.**

If the remote control becomes lost or damaged, a new universal remote control can be purchased. If this happens, make sure the universal remote control uses a code set of Toshiba®.

Remote Control Buttons



⏻ **(Power):** Press this button to turn the video screen on and off.

☼ **(Illumination):** Press this button to turn the remote control backlight on. The backlight automatically times out after seven to ten seconds if no other button is pressed while the backlight is on.

(Title): Press this button to return the DVD to the main menu of the DVD. This function could vary for each disc.

▤ **(Main Menu):** Press this button to access the DVD menu. The DVD menu is different on every DVD. Use the up, down, left, and right arrow buttons to move the cursor around the DVD menu. After making a selection press the enter button. This button only operates when using a DVD.

▲, ▼, ◀, ▶ **(Menu Navigation Arrows):** Use the arrow buttons to navigate through a menu.

◀┘ **(Enter):** Press this button to select the choice that is highlighted in any menu.

▢ **(Display Menu):** Press this button to adjust the brightness, screen display mode (normal, full, or zoom), and display the language menu.

↶ **(Return):** Press this button to exit the current active menu and return to the previous menu. This button operates only when the display menu or a DVD menu is active.

■ **(Stop):** Press this button to stop playing, rewinding, or fast forwarding a DVD. Press this button twice to return to the beginning of the DVD.

▶‖ **(Play/Pause):** Press this button to start playing a DVD. Press this button while a DVD is playing to pause it. Press it again to continue playing the DVD.

While the DVD is playing, the DVD can be played slowly by pressing the pause button then pressing the fast forward button. The DVD continues playing in a slow play mode. Also, reverse can be played slowly by pressing the pause button and then pressing the fast reverse button. To cancel slow play mode, press the play/pause button.

|◀ **(Previous Track/Chapter):** Press this button to return to the start of the current track or chapter. Press this button again to go to the previous track or chapter. This button might not work when the DVD is playing the copyright information or the previews.

▶| **(Next Track/Chapter):** Press this button to go to the beginning of the next chapter or track. This button might not work while the DVD is playing the copyright information or the previews.

(Fast Reverse): Press this button to quickly reverse the DVD or CD. To stop fast reversing a DVD video, press the play button. To stop fast reversing a DVD audio or CD, release the fast reverse button. This button might not work when the DVD is playing the copyright information or the previews.

(Fast Forward): Press this button to fast forward the DVD or CD. To stop fast forwarding a DVD video, press the play button. To stop fast forwarding a DVD audio or CD, release the fast forward button. This button might not work while the DVD is playing the copyright information or the previews.

(Audio): Press this button to change audio tracks on DVDs that have this feature when the DVD is playing. The format and content of this function varies for each disc.

(Subtitles): Press this button to turn ON/OFF subtitles and to move through subtitle options when a DVD is playing. The format and content of this function varies for each disc.

AUX (Auxiliary): Press this button to switch the system between the DVD player and an auxiliary source.

(Camera): Press this button to change camera angles on DVDs that have this feature while a DVD is playing. The format and content of this function varies for each disc.

1 through 0 (Numeric Keypad): The numeric keypad provides the capability of direct chapter or track number selection.

(Clear): Press this button within three seconds after entering a numeric selection, to clear all numerical inputs.

≧ 10 (Double Digit Entries): Press this button to select chapter or track numbers greater than nine. Press this button before entering the number.

Battery Replacement

To change the remote control batteries, do the following:

1. Slide the rear cover back on the remote control.
2. Replace the two batteries in the compartment. Make sure they are installed correctly using the diagram on the inside of the remote control.
3. Replace the battery cover.

If the remote control is to be stored for a long period of time, remove the batteries and keep them in a cool, dry place.

Problem	Recommended Action
No power.	The ignition might not be turned on or in accessory.
The picture does not fill the screen. There are black borders on the top and bottom or on both sides or it looks stretched out.	Check the display mode settings in the setup menu by pressing the display menu button on the remote control.
In auxiliary mode, the picture moves or scrolls.	Check the auxiliary input connections at both devices.
The remote control does not work.	Check to make sure there is no obstruction between the remote control and the transmitter window. Check the batteries to make sure they are not dead or installed incorrectly.
After stopping the player, I push Play but sometimes the DVD starts where I left off and sometimes at the beginning.	If the stop button was pressed one time, the DVD player resumes playing where the DVD was stopped. If the stop button was pressed two times the DVD player begins to play from the beginning of the DVD.

Problem	Recommended Action
The auxiliary source is running but there is no picture or sound.	Check that the RSE video screen is in the auxiliary source mode. Check the auxiliary input connections at both devices.
Sometimes the wireless headphone audio cuts out or buzzes.	Check for obstructions, low batteries, reception range, and interference from cellular telephone towers or by using your cellular telephone in the vehicle. Check that the headphones are on correctly using the L (left) and R (right) on the headphones.
I lost the remote and/or the headphones.	See your dealer for assistance.
The DVD is playing, but there is no picture or sound.	Check that the RSE video screen is sourced to the DVD player.

DVD Display Error Messages

The DVD display error message depends on the radio that is in the vehicle. The video screen can display one of the following:

Disc Load/Eject Error: This message displays when there are disc load or eject problems.

Disc Format Error: This message displays, if the disc is inserted with the disc label wrong side up, or if the disc is damaged.

Disc Region Error: This message displays, if the disc is not from a correct region.

No Disc Inserted: This message displays, if no disc is present when the EJECT button is pressed on the radio.

DVD Distortion

Video distortion can occur when operating cellular phones, scanners, CB radios, Global Position Systems (GPS)*, two-way radios, mobile fax, or walkie talkies.

It might be necessary to turn off the DVD player when operating one of these devices in or near the vehicle.

*Excludes the OnStar® System.

Cleaning the RSE Overhead Console

When cleaning the RSE overhead console surface, use only a clean cloth dampened with clean water.

Cleaning the Video Screen

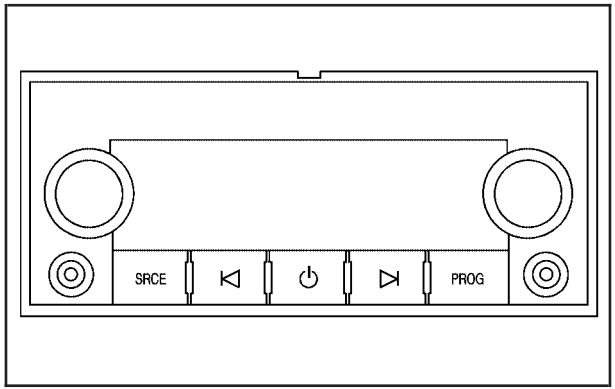
When cleaning the video screen, use only a clean cloth dampened with clean water. Use care when directly touching or cleaning the screen, as damage could result.

Rear Seat Audio (RSA)

This feature allows rear seat passengers to listen to and control any of the music sources: radio, CDs, DVDs, or other auxiliary sources. The rear seat passengers can control the same music sources the front seat passengers are listening to (dual control, available depending upon radio) or a different source. For example, rear seat passengers can control a CD and listen to it through the headphones, while the driver listens to the radio through the speakers. The rear seat passengers have control of the volume for each set of headphones.

You can operate the RSA functions even when the main radio is off.

Audio can be heard through wired headphones (not included) plugged into the jacks on the RSA. If your vehicle has this feature, audio can also be heard on Channel 2 of the wireless headphones.



⏻ **(Power):** Press this button to turn the RSA on or off.

Volume: Turn this knob to increase or to decrease the volume of the wired headphones. The left knob controls the left headphones and the right knob controls the right headphones.

SRCE (Source): Press this button to switch between the radio (AM/FM), XM™ (if equipped), CD, and if your vehicle has these features, DVD, front auxiliary, and rear auxiliary.

⏮ ⏭ **(Seek):** When listening to FM, AM, or XM™ (if equipped), press the seek up or the seek down arrow to go to the next or to the previous station or channels and stay there. This function is inactive, with some radios, if the front seat passengers are listening to the radio.

Press and hold the seek up or seek down arrow until the display flashes, to tune to an individual station. The display will stop flashing after the buttons have not been pushed for more than two seconds. This function is inactive, with some radios, if the front seat passengers are listening to the radio.

While listening to a disc, press the seek up arrow to goto the next track or chapter on the disc. Press the seek down arrow to go back to the start of the current track or chapter (if more than ten seconds have played). This function is inactive, with some radios, if the front seat passengers are listening to the disc.

When a DVD video menu is being displayed, press the seek up arrow or seek down arrow to perform a cursor up or down on the menu. Hold the seek up or seek down arrow to perform a cursor right or left on the menu.

PROG (Program): Press this button to go to the next preset radio station or channel set on the main radio. This function is inactive, with some radios, if the front seat passengers are listening to the radio.

When a CD or DVD audio is playing, press this button to go to the beginning of the CD or DVD audio. This function is inactive, with some radios, if the front seat passengers are listening to the CD or DVD audio.

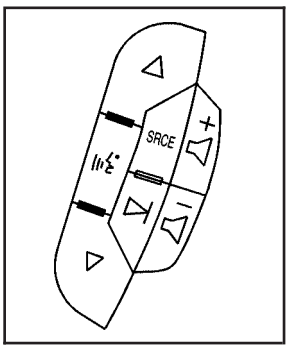
When a CD is playing in the CD changer, press this button to select the next disc, if multiple discs are loaded. This function is inactive, with some radios, if the front seat passengers are listening to the CD.

When a DVD video menu is being displayed, press the PROG button to perform the menu function, then press Enter.

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.

Audio Steering Wheel Controls



If your vehicle has audio steering wheel controls, they could differ 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/DVD is playing, press the up or the down arrow to go to the next or previous track or chapter.

(Mute/Voice Recognition): Press and release this button to silence the vehicle speakers only. The audio of the wireless and wired headphones, if your vehicle has these features, does not mute. Press and release this button again, to turn the sound on.

If your vehicle has the navigation system, press and hold this button for longer than one second to initiate voice recognition. See “Voice Recognition” in the Navigation System manual for more information.

If your vehicle has OnStar®, press and hold this button for longer than one second to interact with the OnStar® system. If your vehicle also has the navigation system, press and hold this button for longer than one second to initiate voice recognition and say “OnStar” to enter OnStar® mode. See the *OnStar® System on page 180* in this manual for more information.

SRCE (Source): Press this button to switch between the radio (AM, FM), XM™ (if equipped), CD, and if your vehicle has these features, DVD, front auxiliary, and rear auxiliary.

+ – (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 while in AM, FM, or XM™ (if equipped). Press this button to go to the next track or chapter while sourced to the CD or DVD slot.

Radio Reception

Frequency interference and static can occur during normal radio reception if items such as cell phone chargers, vehicle convenience accessories, and external electronic devices are plugged into the accessory power outlet. If there is interference or static, unplug the item from the accessory power outlet.

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 boosts 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 gives the best sound, but FM signals only reach 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 could cause loss of the XM™ signal for a period of time. The radio might display NO XM SIGNAL to indicate interference.

Care of Your CDs and DVDs

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 does 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 and DVD Player

The use of CD lens cleaners for CDs is not advised, due to the risk of contaminating the lens of the CD optics with lubricants internal to the CD mechanism.

Fixed Mast Antenna

The fixed mast antenna can withstand most car washes without being damaged. If the mast should ever become slightly bent, straighten it out by hand. If the mast is badly bent, replace it.

Check occasionally to make sure the mast is still tightened to its base. If tightening is required, tighten by hand, then with a wrench one quarter turn.

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.

A vehicle with a sunroof might not get the best performance from the XM™ system 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

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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 22*.

⚠ 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.

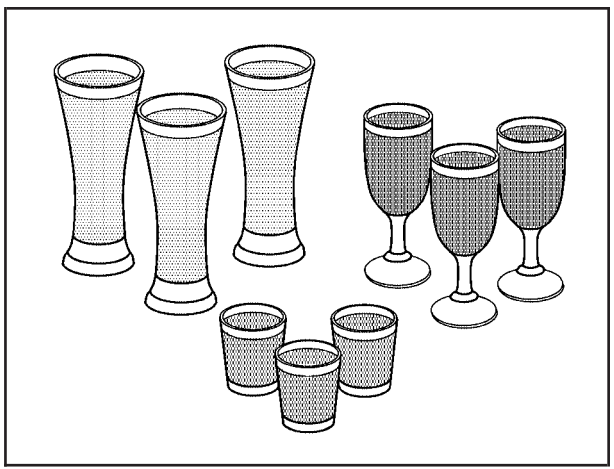
Many adults — by some estimates, nearly half the adult population — choose never to drink alcohol, so they never drive after drinking. For persons under 21, it is against the law in every U.S. state to drink alcohol. There are good medical, psychological, and developmental reasons for these laws.

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 *StabiliTrak® System on page 381*.

Adding non-GM accessories can affect your vehicle's performance. See *Accessories and Modifications on page 486*.

Braking

See *Brake System Warning Light on page 256*.

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.

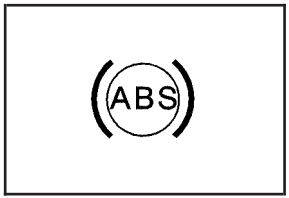
If your vehicle's engine ever stops while you are driving, brake normally but do not pump the brakes. If you do, the pedal may get harder to push down. If the engine stops, you will still have some power brake assist. But you will use it when you brake. Once the power assist is used up, it may take longer 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 486*.

Anti-Lock Brake System (ABS)

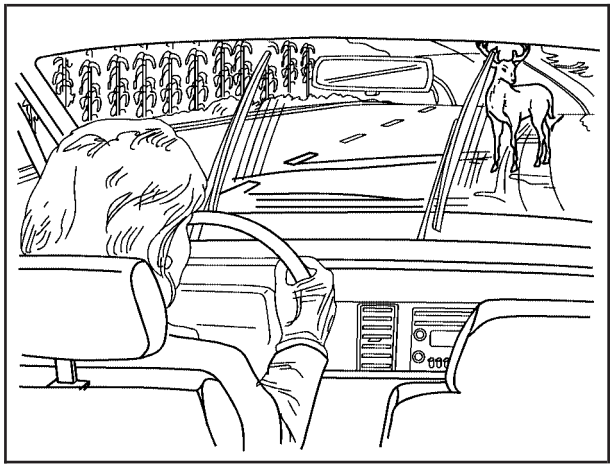
Your vehicle has the Anti-Lock Brake System (ABS), an advanced electronic braking system that will help prevent a braking skid.

When you start your engine and begin to drive away, ABS will check itself. You may hear a momentary motor or clicking noise while this test is going on. This is normal.



If there is a problem with ABS, this warning light will stay on. See *Anti-Lock Brake System Warning Light on page 257*.

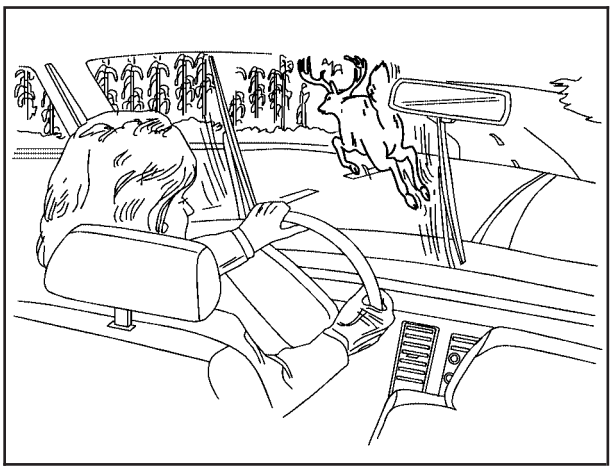
Along with ABS, your vehicle has a Dynamic Rear Proportioning (DRP) system. If there is a DRP problem, both the brake and ABS warning lights will come on accompanied by a 10-second chime. The lights and chime will come on each time the ignition is turned on until the problem is repaired. See your dealer for service.



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 the brakes vibrate, or you may notice some noise, but this is normal.

Braking in Emergencies

With ABS, you can steer and brake at the same time. In many emergencies, steering can help you more than even the very best braking.

Locking Rear Axle

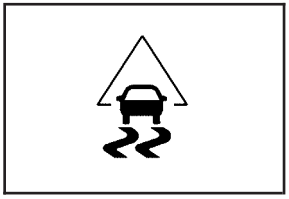
If your vehicle has this feature, your locking rear axle can give you additional traction on snow, mud, ice, sand or gravel. It works like a standard axle most of the time, but when one of the rear wheels has no traction and the other does, this feature will allow the wheel with traction to move the vehicle.

StabiliTrak® System

Your vehicle may be equipped with the StabiliTrak® system which combines antilock brake, traction and stability control systems and helps the driver maintain directional control of the vehicle in most driving conditions.

When you first start your vehicle and begin to drive away, the system performs several diagnostic checks to ensure there are no problems. You may hear or feel the system working. This is normal and does not mean there is a problem with your vehicle. The system should initialize before the vehicle reaches 20 mph (32 km/h). In some cases, it may take approximately two miles of driving before the system initializes.

If the system fails to turn on or activate, the StabiliTrak® light along with one of the following messages will be displayed on the Driver Information Center (DIC): TRACTION CONTROL OFF, SERVICE TRACTION CONTROL, STABILITRAK OFF, SERVICE STABILITRAK. If these DIC messages appear, make sure the StabiliTrak® system has not been turned off using the StabiliTrak® on/off button. Then turn the steering wheel clockwise from the nine o'clock position to the three o'clock position. If this clears the message(s), your vehicle does not need servicing. If this does not clear the message(s), then turn the vehicle off, wait 15 seconds, and then turn it back on again to reset the system. If any of these messages still appear on the Driver Information Center (DIC), your vehicle should be taken in for service. For more information on the DIC messages, see *Driver Information Center (DIC) on page 267*.



The StabiliTrak® light will flash on the instrument panel cluster when the system is both on and activated.

You may also feel or hear the system working; this is normal.

The traction control disable button is located on the instrument panel below the climate controls.

The traction control part of StabiliTrak® can be turned off by pressing and releasing the StabiliTrak® button if both systems (traction control and StabiliTrak®) were previously on. To disable both traction control and StabiliTrak®, press and hold the button for five seconds.

Traction control and StabiliTrak® can be turned on by pressing and releasing the StabiliTrak® button if not automatically shut off for any other reason.

When the TCS or StabiliTrak® system is turned off, the StabiliTrak® light and the appropriate TCS off or StabiliTrak® off message will be displayed on the DIC to warn the driver. Your vehicle will still have brake-traction control when traction control is off, but will not be able to use the engine speed management system. See “Traction Control Operation” next for more information.

When the traction control system has been turned off, you may still hear system noises as a result of the brake-traction control coming on.

It is recommended to leave the system on for normal driving conditions, but it may be necessary to turn the system off if your vehicle is stuck in sand, mud, ice or snow, and you want to “rock” your vehicle to attempt to free it. It may also be necessary to turn off the system when driving in extreme off-road conditions where high wheel spin is required. See *If Your Vehicle is Stuck in Sand, Mud, Ice, or Snow on page 422*.

When the transfer case is in 4LO, the stability system is automatically disabled, the StabiliTrak® light will come on and the STABILITRAK OFF message will appear on the DIC. Both traction control and StabiliTrak® are automatically disabled in this condition.

Traction Control Operation

The traction control system is part of the StabiliTrak® system. Traction control limits wheel spin by reducing engine power to the wheels (engine speed management) and by applying brakes to each individual wheel (brake-traction control) as necessary.

The traction control system is enabled automatically when you start your vehicle. It will activate and the StabiliTrak® light will flash if it senses that any of the wheels are spinning or beginning to lose traction while driving. If you turn off traction control, only the brake-traction control portion of traction control will work. The engine speed management will be disabled. In this mode, engine power is not reduced automatically and the driven wheels can spin more freely. This can cause the brake-traction control to activate constantly.

Notice: **If you allow the wheel(s) of one axle to spin excessively while the StabiliTrak®, ABS and brake warning lights and the SERVICE STABILITRAK message are displayed, you could damage the transfer case. The repairs would not be covered by your warranty. Reduce engine power and do not spin the wheel(s) excessively while these lights and this message are displayed.**

The traction control system may activate on dry or rough roads or under conditions such as heavy acceleration while turning or abrupt upshifts/downshifts of the transmission. When this happens, you may notice a reduction in acceleration, or may hear a noise or vibration. This is normal.

If your vehicle is in cruise control when the system activates, the StabiliTrak® light will flash and the cruise control will automatically disengage. When road conditions allow you to use cruise again, you may re-engage the cruise control. See *Cruise Control on page 218*.

StabiliTrak® may also turn off automatically if it determines that a problem exists with the system. If the problem does not clear itself after restarting the vehicle, you should see your dealer for service.

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 the 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 accelerate. Both control systems — steering and acceleration — have to do their work where the tires meet the road. Adding the sudden acceleration can demand too much of those places. You can lose control. See *StabiliTrak® System on page 381*.

What should you do if this ever happens? Ease up on the 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 the front wheels are straight ahead.

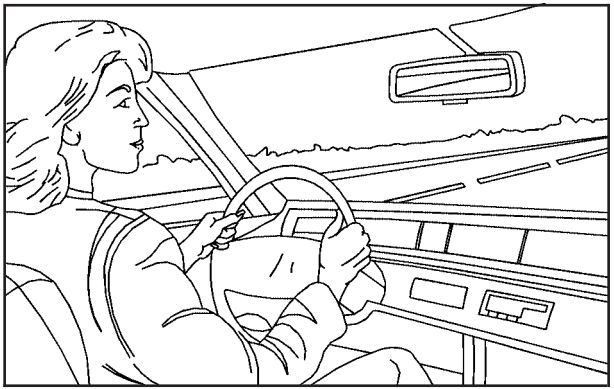
Try to adjust your speed so you can “drive” through the curve. Maintain a reasonable, steady speed. Wait to accelerate until you are out of the curve, and then accelerate gently into the straightaway.

Adding non-GM accessories can affect your vehicle's performance. See *Accessories and Modifications on page 486*.

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 the brakes. See *Braking on page 378*. 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.

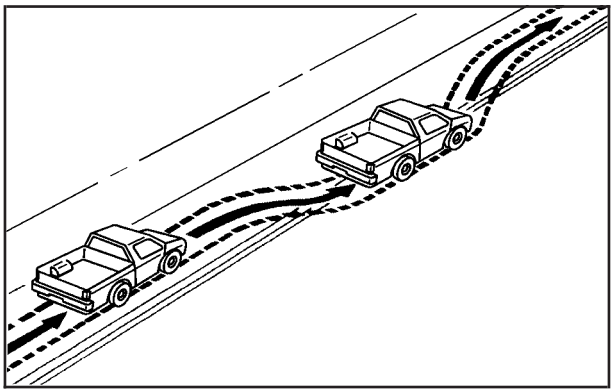


An emergency like this requires close attention and a quick decision. If you are holding the steering wheel at the recommended 9 and 3 o'clock positions, you can turn it a full 180 degrees very quickly without removing either hand. But you have to act fast, steer quickly, and just as quickly straighten 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 the 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, if 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 is best handled by easing your foot off the accelerator pedal.

Remember: StabiliTrak® helps avoid only the acceleration skid. See *StabiliTrak® System on page 381*. If the StabiliTrak® System is off, then an acceleration skid is also 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.

Remember: Any Anti-Lock Brake System (ABS) helps avoid only the braking skid.

Off-Road Driving

This off-road guide is for vehicles that have four-wheel drive. Also, see *Braking on page 378*. If your vehicle does not have four-wheel drive or is equipped with 20-inch tire/wheel assemblies, you should not drive off-road unless you are on a level, solid surface.

The airbag system is designed to work properly under a wide range of conditions, including off-road usage. Observe safe driving speeds, especially on rough terrain. As always, wear your safety belt.

Off-road driving can be great fun. But it does have some definite hazards. The greatest of these is the terrain itself.

“Off-roading” means you have left the great North American road system behind. Traffic lanes are not marked. Curves are not banked. There are no road signs. Surfaces can be slippery, rough, uphill, or downhill. In short, you have gone right back to nature.

Off-road driving involves some new skills. And that is why it is very important that you read this guide. You will find many driving tips and suggestions. These will help make your off-road driving safer and more enjoyable.

If you think you will need some more ground clearance at the front of your vehicle, you can remove the front fascia lower air dam.

The front fascia lower air dam is held in place by two bolts and 10 snap features. The bolts and snap features are accessible from underneath the front fascia.

The following steps must be performed on the bolts and snap features to remove the air dam:

1. Remove the two outboard air dam bolts.
2. With a flat-blade screwdriver, push down on the snap features and disengage the snaps.
3. After the bolts are removed and the snaps are disengaged, push forward on the air dam until it is free.

When you are back on roads, though, be sure to replace the air dam.

Notice: **Operating your vehicle for extended periods without the front fascia lower air dam installed can cause improper air flow to the engine. Always be sure to replace the front fascia air dam when you are finished off-road driving.**

To reinstall the lower air dam do the following:

1. Line up the snap features and push the air dam rearward to engage the snaps.
2. Install the two outboard bolts.

Before You Go Off-Roading

There are some things to do before you go out. For example, be sure to have all necessary maintenance and service work done. Check to make sure all underbody shields, if the vehicle has them, are properly attached. Be sure you read all the information about your four-wheel-drive vehicle in this manual. Is there enough fuel? Is the spare tire fully inflated? Are the fluid levels up where they should be? What are the local laws that apply to off-roading where you will be driving? If you do not know, you should check with law enforcement people in the area. Will you be on someone's private land? If so, be sure to get the necessary permission.

Loading Your Vehicle for Off-Road Driving

⚠ CAUTION:

- **Cargo on the load floor piled higher than the seatbacks can be thrown forward during a sudden stop. You or your passengers could be injured. Keep cargo below the top of the seatbacks.**
- **Unsecured cargo on the load floor can be tossed about when driving over rough terrain. You or your passengers can be struck by flying objects. Secure the cargo properly.**
- **Heavy loads on the roof raise the vehicle's center of gravity, making it more likely to roll over. You can be seriously or fatally injured if the vehicle rolls over. Put heavy loads inside the cargo area, not on the roof. Keep cargo in the cargo area as far forward and low as possible.**

There are some important things to remember about how to load your vehicle.

- The heaviest things should be on the load floor and forward of the rear axle. Put heavier items as far forward as you can.
- Be sure the load is secured properly, so driving on the off-road terrain does not toss things around.

You will find other important information in this manual. See *Loading Your Vehicle on page 425* and *Tires on page 550*.

Environmental Concerns

Off-road driving can provide wholesome and satisfying recreation. However, it also raises environmental concerns. We recognize these concerns and urge every off-roader to follow these basic rules for protecting the environment:

- Always use established trails, roads, and areas that have been specially set aside for public off-road recreational driving; obey all posted regulations.
- Avoid any driving practice that could damage the environment — shrubs, flowers, trees, grasses — or disturb wildlife. This includes wheel-spinning, breaking down trees, or unnecessary driving through streams or over soft ground.
- Always carry a litter bag — make sure all refuse is removed from any campsite before leaving.
- Take extreme care with open fires where permitted, camp stoves, and lanterns.
- Never park your vehicle over dry grass or other combustible materials that could catch fire from the heat of the vehicle's exhaust system.

Traveling to Remote Areas

It makes sense to plan your trip, especially when going to a remote area. Know the terrain and plan your route. You are much less likely to get bad surprises. Get accurate maps of trails and terrain. Try to learn of any blocked or closed roads.

It is also a good idea to travel with at least one other vehicle. If something happens to one of them, the other can help quickly.

Does your vehicle have a winch? If so, be sure to read the winch instructions. In a remote area, a winch can be handy if you get stuck. But you will want to know how to use it properly.

Getting Familiar with Off-Road Driving

It is a good idea to practice in an area that is safe and close to home before you go into the wilderness. Off-road driving does require some new and different driving skills. Here is what we mean.

Tune your senses to different kinds of signals. Your eyes, for example, need to constantly sweep the terrain for unexpected obstacles. Your ears need to listen for unusual tire or engine sounds. With your arms, hands, feet, and body, you will need to respond to vibrations and vehicle bounce.

Controlling your vehicle is the key to successful off-road driving. One of the best ways to control your vehicle is to control your speed.

Here are some things to keep in mind. At higher speeds:

- You approach things faster and you have less time to scan the terrain for obstacles.
- You have less time to react.
- You have more vehicle bounce when you drive over obstacles.
- You will need more distance for braking, especially since you are on an unpaved surface.

⚠ CAUTION:

When you are driving off-road, bouncing and quick changes in direction can easily throw you out of position. This could cause you to lose control and crash. So, whether you are driving on or off the road, you and your passengers should wear safety belts.

Scanning the Terrain

Off-road driving can take you over many different kinds of terrain. You need to be familiar with the terrain and its many different features. Here are some things to consider.

Surface Conditions: Off-roading can take you over hard-packed dirt, gravel, rocks, grass, sand, mud, snow, or ice. Each of these surfaces affects the steering, acceleration, and braking of your vehicle in different ways. Depending upon the kind of surface you are on, you may experience slipping, sliding, wheel spinning, delayed acceleration, poor traction, and longer braking distances.

Surface Obstacles: Unseen or hidden obstacles can be hazardous. A rock, log, hole, rut, or bump can startle you if you are not prepared for them. Often these obstacles are hidden by grass, bushes, snow, or even the rise and fall of the terrain itself. Here are some things to consider:

- Is the path ahead clear?
- Will the surface texture change abruptly up ahead?
- Does the travel take you uphill or downhill? There is more discussion of these subjects later.
- Will you have to stop suddenly or change direction quickly?

When you drive over obstacles or rough terrain, keep a firm grip on the steering wheel. Ruts, troughs, or other surface features can jerk the wheel out of your hands if you are not prepared.

When you drive over bumps, rocks, or other obstacles, the wheels can leave the ground. If this happens, even with one or two wheels, you cannot control the vehicle as well or at all.

Because you will be on an unpaved surface, it is especially important to avoid sudden acceleration, sudden turns, or sudden braking.

In a way, off-road driving requires a different kind of alertness from driving on paved roads and highways. There are no road signs, posted speed limits, or signal lights. You have to use your own good judgment about what is safe and what is not.

Drinking and driving can be very dangerous on any road. And this is certainly true for off-road driving. At the very time you need special alertness and driving skills, your reflexes, perceptions, and judgment can be affected by even a small amount of alcohol. You could have a serious — or even fatal — accident if you drink and drive or ride with a driver who has been drinking. See *Drunken Driving on page 375*.

Driving on Off-Road Hills

Off-road driving often takes you up, down, or across a hill. Driving safely on hills requires good judgment and an understanding of what your vehicle can and cannot do. There are some hills that simply cannot be driven, no matter how well built the vehicle.

⚠ CAUTION:

Many hills are simply too steep for any vehicle. If you drive up them, you will stall. If you drive down them, you cannot control your speed. If you drive across them, you will roll over. You could be seriously injured or killed. If you have any doubt about the steepness, do not drive the hill.

Approaching a Hill

When you approach a hill, you need to decide if it is one of those hills that is just too steep to climb, descend, or cross. Steepness can be hard to judge. On a very small hill, for example, there may be a smooth, constant incline with only a small change in elevation where you can easily see all the way to the top. On a large hill, the incline may get steeper as you near the top, but you may not see this because the crest of the hill is hidden by bushes, grass or shrubs.

Here are some other things to consider as you approach a hill.

- Is there a constant incline, or does the hill get sharply steeper in places?
- Is there good traction on the hillside, or will the surface cause tire slipping?
- Is there a straight path up or down the hill so you will not have to make turning maneuvers?
- Are there obstructions on the hill that can block your path, such as boulders, trees, logs, or ruts?
- What is beyond the hill? Is there a cliff, an embankment, a drop-off, a fence? Get out and walk the hill if you do not know. It is the smart way to find out.
- Is the hill simply too rough? Steep hills often have ruts, gullies, troughs, and exposed rocks because they are more susceptible to the effects of erosion.

Driving Uphill

Once you decide you can safely drive up the hill, you need to take some special steps.

- Use a low gear and get a firm grip on the steering wheel.
- Get a smooth start up the hill and try to maintain your speed. Do not use more power than you need, because you do not want the wheels to start spinning or sliding.

⚠ CAUTION:

Turning or driving across steep hills can be dangerous. You could lose traction, slide sideways, and possibly roll over. You could be seriously injured or killed. When driving up hills, always try to go straight up.

- Try to drive straight up the hill if at all possible. If the path twists and turns, you might want to find another route.
- Ease up on your speed as you approach the top of the hill.
- Attach a flag to the vehicle to make you more visible to approaching traffic on trails or hills.
- Sound the horn as you approach the top of the hill to let opposing traffic know you are there.
- Use your headlamps even during the day. They make your vehicle more visible to oncoming traffic.

⚠ CAUTION:

Driving to the top (crest) of a hill at full speed can cause an accident. There could be a drop-off, embankment, cliff, or even another vehicle. You could be seriously injured or killed. As you near the top of a hill, slow down and stay alert.

Q: What should I do if my vehicle stalls, or is about to stall, and I cannot make it up the hill?

A: If this happens, there are some things you should do, and there are some things you must not do. First, here is what you *should* do:

- Push the brake pedal to stop the vehicle and keep it from rolling backwards. Also, apply the parking brake.
- If the engine is still running, shift the transmission to REVERSE (R), release the parking brake, and slowly back down the hill in REVERSE (R).
- If the engine has stopped running, you will need to restart it. With the brake pedal pressed and the parking brake still applied, shift the transmission to PARK (P) and restart the engine. Then, shift to REVERSE (R), release the parking brake, and slowly back down the hill as straight as possible in REVERSE (R).
- As you are backing down the hill, put your left hand on the steering wheel at the 12 o'clock position. This way, you will be able to tell if the wheels are straight and maneuver as you back down. It is best that you back down the hill with the wheels straight rather than in the left or right direction. Turning the wheel too far to the left or right will increase the possibility of a rollover.

Here are some things you *must not* do if you stall, or are about to stall, when going up a hill.

- Never attempt to prevent a stall by shifting into NEUTRAL (N) to rev-up the engine and regain forward momentum. This will not work. Your vehicle will roll backwards very quickly and you could go out of control.

  Instead, apply the regular brake to stop the vehicle. Then apply the parking brake. Shift to REVERSE (R), release the parking brake, and slowly back straight down.
- Never attempt to turn around if you are about to stall when going up a hill. If the hill is steep enough to stall your vehicle, it is steep enough to cause you to roll over if you turn around. If you cannot make it up the hill, you must back straight down the hill.

Q: Suppose, after stalling, I try to back down the hill and decide I just cannot do it. What should I do?

A: Set the parking brake, put the transmission in PARK (P) and turn off the engine. Leave the vehicle and go get some help. Exit on the uphill side and stay clear of the path the vehicle would take if it rolled downhill. Do not shift the transfer case to NEUTRAL when you leave the vehicle. Leave it in some gear.

⚠ CAUTION:

Shifting the transfer case to NEUTRAL can cause your vehicle to roll even if the transmission is in PARK (P). This is because the NEUTRAL position on the transfer case overrides the transmission. You or someone else could be injured. If you are going to leave your vehicle, set the parking brake and shift the transmission to PARK (P). But do not shift the transfer case to NEUTRAL. Leave the transfer case in the Two-Wheel High, Four-Wheel High or Four-Wheel Low position.

Driving Downhill

When off-roading takes you downhill, you will want to consider a number of things:

- How steep is the downhill? Will I be able to maintain vehicle control?
- What is the surface like? Smooth? Rough? Slippery? Hard-packed dirt? Gravel?
- Are there hidden surface obstacles? Ruts? Logs? Boulders?
- What is at the bottom of the hill? Is there a hidden creek bank or even a river bottom with large rocks?

If you decide you can go down a hill safely, then try to keep your vehicle headed straight down, and use a low gear. This way, engine drag can help the brakes and they will not have to do all the work. Descend slowly, keeping your vehicle under control at all times.

⚠ CAUTION:

Heavy braking when going down a hill can cause your brakes to overheat and fade. This could cause loss of control and a serious accident. Apply the brakes lightly when descending a hill and use a low gear to keep vehicle speed under control.

Q: Are there some things I should not do when driving down a hill?

A: Yes! These are important because if you ignore them you could lose control and have a serious accident.

- When driving downhill, avoid turns that take you across the incline of the hill. A hill that is not too steep to drive down may be too steep to drive across. You could roll over if you do not drive straight down.
- Never go downhill with the transmission in NEUTRAL (N). This is called “free-wheeling.” The brakes will have to do all the work and could overheat and fade.

Q: Am I likely to stall when going downhill?

A: It is much more likely to happen going uphill. But if it happens going downhill, here is what to do.

1. Stop your vehicle by applying the regular brakes. Apply the parking brake.
2. Shift to PARK (P) and, while still braking, restart the engine.
3. Shift back to a low gear, release the parking brake, and drive straight down.
4. If the engine will not start, get out and get help.

Driving Across an Incline

Sooner or later, an off-road trail will probably go across the incline of a hill. If this happens, you have to decide whether to try to drive across the incline. Here are some things to consider:

⚠ CAUTION:

Driving across an incline that is too steep will make your vehicle roll over. You could be seriously injured or killed. If you have any doubt about the steepness of the incline, do not drive across it. Find another route instead.

- A hill that can be driven straight up or down may be too steep to drive across. When you go straight up or down a hill, the length of the wheel base — the distance from the front wheels to the rear wheels — reduces the likelihood the vehicle will tumble end over end. But when you drive across an incline, the much more narrow track width — the distance between the left and right wheels — may not prevent the vehicle from tilting and rolling over. Also, driving across an incline puts more weight on the downhill wheels. This could cause a downhill slide or a rollover.
- Surface conditions can be a problem when you drive across a hill. Loose gravel, muddy spots, or even wet grass can cause your tires to slip sideways, downhill. If the vehicle slips sideways, it can hit something that will trip it — a rock, a rut, etc. — and roll over.
- Hidden obstacles can make the steepness of the incline even worse. If you drive across a rock with the uphill wheels, or if the downhill wheels drop into a rut or depression, your vehicle can tilt even more.

For reasons like these, you need to decide carefully whether to try to drive across an incline. Just because the trail goes across the incline does not mean you have to drive it. The last vehicle to try it might have rolled over.

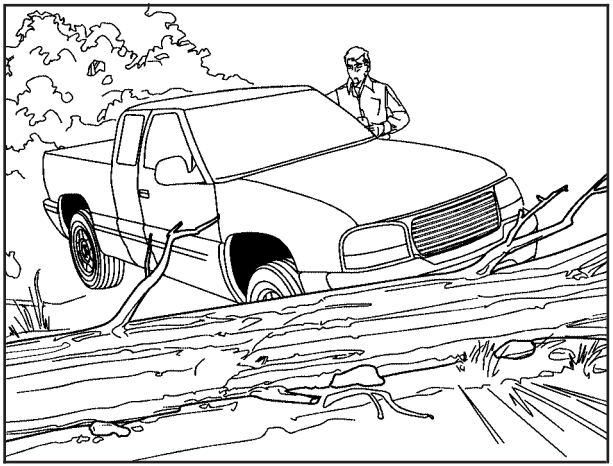
Q: What if I am driving across an incline that is not too steep, but I hit some loose gravel and start to slide downhill. What should I do?

A: If you feel your vehicle starting to slide sideways, turn downhill. This should help straighten out the vehicle and prevent the side slipping. However, a much better way to prevent this is to get out and “walk the course” so you know what the surface is like before you drive it.

Stalling on an Incline

⚠ CAUTION:

Getting out on the downhill (low) side of a vehicle stopped across an incline is dangerous. If the vehicle rolls over, you could be crushed or killed. Always get out on the uphill (high) side of the vehicle and stay well clear of the rollover path.



If your vehicle stalls when you are crossing an incline, be sure you, and any passengers, get out on the uphill side, even if the door there is harder to open. If you get out on the downhill side and the vehicle starts to roll over, you will be right in its path.

If you have to walk down the slope, stay out of the path the vehicle will take if it does roll over.

Driving in Mud, Sand, Snow, or Ice

When you drive in mud, snow, or sand, your wheels will not get good traction. You cannot accelerate as quickly, turning is more difficult, and you will need longer braking distances. If your vehicle has four-wheel drive, see *Four-Wheel Drive on page 147* for transfer case mode selection.

It is best to use a low gear when you are in mud — the deeper the mud, the lower the gear. In really deep mud, the idea is to keep your vehicle moving so you do not get stuck.

When you drive on sand, you will sense a change in wheel traction. But it will depend upon how loosely packed the sand is. On loosely packed sand, such as on beaches or sand dunes, your tires will tend to sink into the sand. This has an effect on steering, accelerating, and braking. Drive at a reduced speed and avoid sharp turns or abrupt maneuvers.

Hard packed snow and ice offer the worst tire traction. On these surfaces, it is very easy to lose control. On wet ice, for example, the traction is so poor that you will have difficulty accelerating. And if you do get moving, poor steering and difficult braking can cause you to slide out of control.

⚠ CAUTION:

Driving on frozen lakes, ponds, or rivers can be dangerous. Underwater springs, currents under the ice, or sudden thaws can weaken the ice. Your vehicle could fall through the ice and you and your passengers could drown. Drive your vehicle on safe surfaces only.

Driving in Water

⚠ CAUTION:

Driving through rushing water can be dangerous. Deep water can sweep your vehicle downstream and you and your passengers could drown. If it is only shallow water, it can still wash away the ground from under your tires, and you could lose traction and roll the vehicle over. Do not drive through rushing water.

Heavy rain can mean flash flooding, and flood waters demand extreme caution.

Find out how deep the water is before you drive through it. If it is deep enough to cover the wheel hubs, axles, or exhaust pipe, do not try it — you probably will not get through. Also, water that deep can damage the axle and other vehicle parts.

If the water is not too deep, drive slowly through it. At faster speeds, water splashes on the ignition system and your vehicle can stall. Stalling can also occur if you get the tailpipe under water. And, as long as the tailpipe is under water, you will never be able to start the engine. When you go through water, remember that when the brakes get wet, it may take you longer to stop.

See *Driving in Rain and on Wet Roads on page 408* for more information on driving through water.

After Off-Road Driving

Remove any brush or debris that has collected on the underbody, chassis, or under the hood. These accumulations can be a fire hazard.

After operation in mud or sand, have the brake linings cleaned and checked. These substances can cause glazing and uneven braking. Check the body structure, steering, suspension, wheels, tires, and exhaust system for damage. Also, check the fuel lines and cooling system for any leakage.

Your vehicle will require more frequent service due to off-road use. Refer to the Maintenance Schedule for additional information.

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.

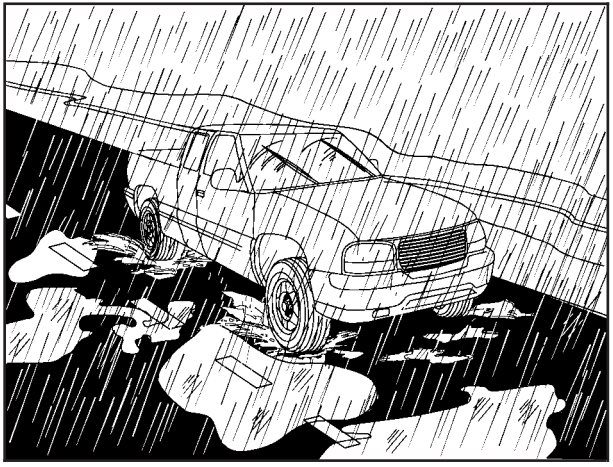
What you do in the daytime can also affect your night vision. For example, if you spend the day in bright sunshine you are wise to wear sunglasses. Your eyes will have less trouble adjusting to night. But if you are driving, do not wear sunglasses at night. They may cut down on glare from headlamps, 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. If your vehicle has four-wheel drive, see *Four-Wheel Drive on page 147* for transfer case mode selection.

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 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 the brake pedal lightly until the 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 the engine's air intake and badly damage the 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

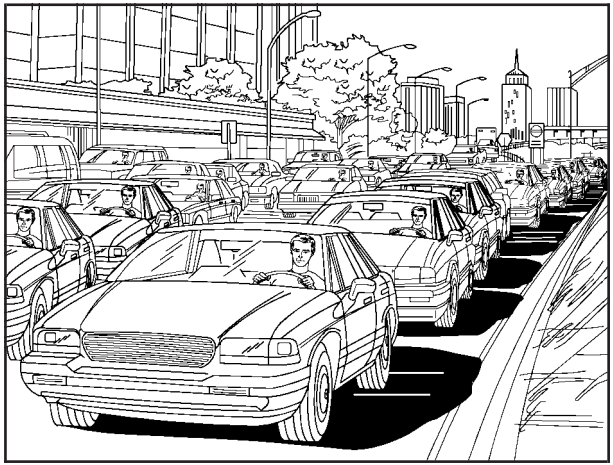
⚠ CAUTION:

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. 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

- Turn on your low-beam headlamps — not just your parking lamps — to help make you more visible to others.
- 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 550*.

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 413*.
- 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 vehicle's mirrors and 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. See *Off-Road Driving on page 390* for information about driving off-road.

- Keep your vehicle in good shape. Check all fluid levels and also the brakes, tires, cooling system, and transmission. These parts can work hard on mountain roads.

⚠ CAUTION:

If you do not shift down, the brakes could get so hot that they would not work well. You would then have poor braking or even none going down a hill. You could crash. Shift down to let the engine assist the brakes on a steep downhill slope.

⚠ CAUTION:

Coasting downhill in NEUTRAL (N) or with the ignition off is dangerous. The 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 the 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 transmission, 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 your vehicle.

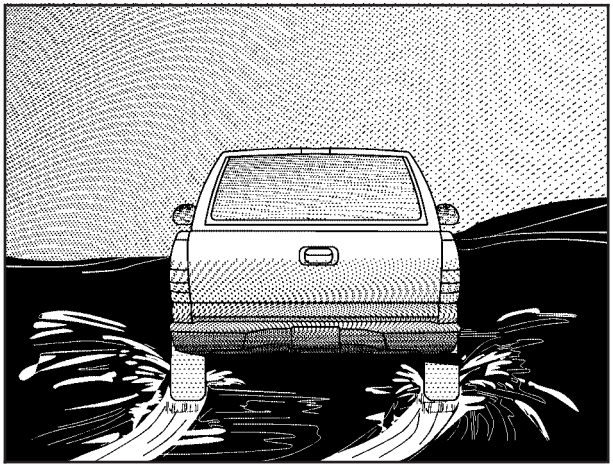
Also see *Tires on page 550*.

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 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.

StabiliTrak® will improve your ability to accelerate when driving on a slippery road. But you can turn StabiliTrak® off if you ever need to. See *StabiliTrak® System on page 381* and *If Your Vehicle is Stuck in Sand, Mud, Ice, or Snow on page 422*. Even with StabiliTrak®, you will want to slow down and adjust your driving to the road conditions. Under certain conditions, you may want to turn StabiliTrak® off, such as when driving through deep snow and loose gravel, to help maintain vehicle motion at lower speeds.

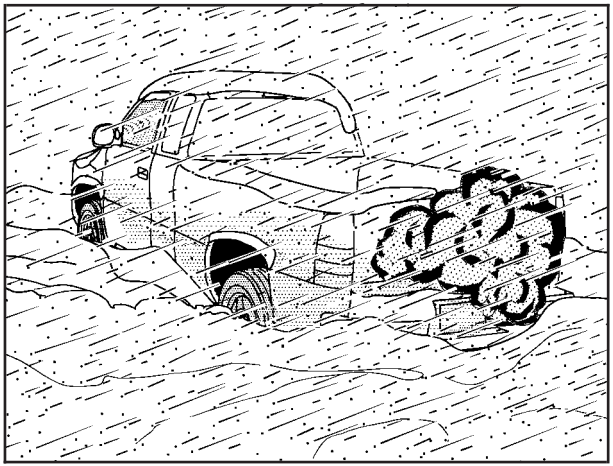
The Anti-Lock Brake System (ABS) improves your vehicle's stability when you make a hard stop on a slippery road. Even though you have ABS, you will want to begin stopping sooner than you would on dry pavement. See *Anti-Lock Brake System (ABS) on page 379*.

- 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 your 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 the 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 your 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 your 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 need to spin the wheels, but you do not want to spin the 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 transmission 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 transmission back and forth, you can destroy the transmission.**

For information about using tire chains on your vehicle, see *Tire Chains on page 574*.

Rocking Your Vehicle to Get It Out

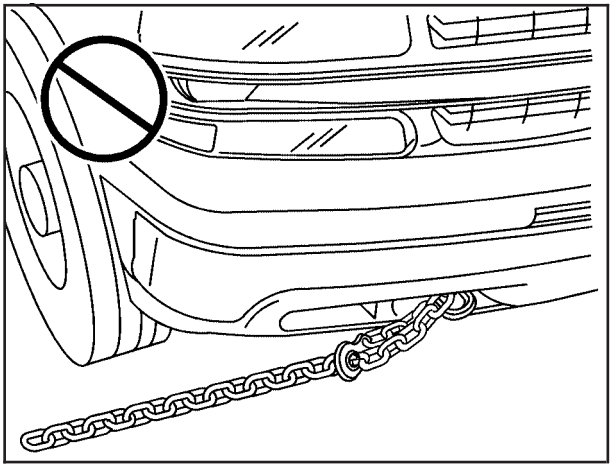
First, turn the steering wheel left and right. That will clear the area around the front wheels. If you have a four-wheel-drive vehicle, shift into Four-Wheel High. If your vehicle has StabiliTrak®, you should turn the system off. See *StabiliTrak® System on page 381*. Then shift back and forth between 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 transmission 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. Or, you can use the recovery hooks if your vehicle has them. If your vehicle does need to be towed out, see *Towing Your Vehicle on page 439*.

Recovery Hooks

⚠ CAUTION:

These hooks, when used, are under a lot of force. Always pull the vehicle straight out. Never pull on the hooks at a sideways angle. The hooks could break off and you or others could be injured from the chain or cable snapping back.



Notice: **Never use recovery hooks to tow the vehicle. Your vehicle could be damaged and it would not be covered by warranty.**

Your vehicle may have recovery hooks at the front of the vehicle. You may need to use them if you are stuck off-road and need to be pulled to some place where you can continue driving.

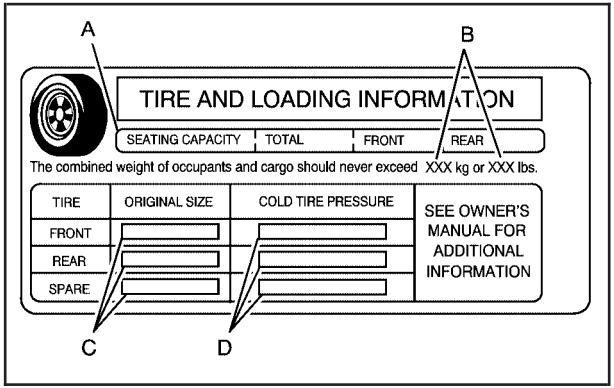
Loading Your Vehicle

It is very important to know how much weight your vehicle can carry. This weight is called the vehicle capacity weight and includes the weight of all occupants, cargo, and all nonfactory-installed options. Two labels on your vehicle show how much weight it was designed to carry, the Tire and Loading Information label and the Certification/Tire 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

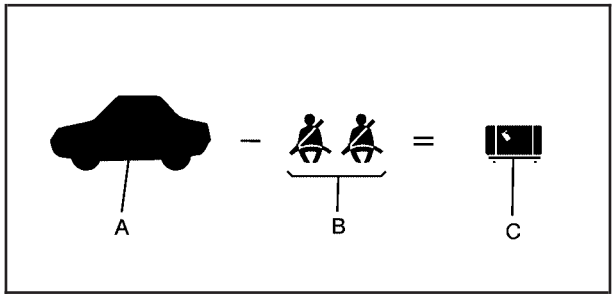
A vehicle specific Tire and Loading Information label is attached to the center pillar (B-pillar). With the driver's door open, you will find the label attached below the door lock post (striker). The tire and loading information label shows the number of occupant seating positions (A), and the maximum vehicle capacity weight (B) in kilograms and pounds.

The Tire and Loading Information label also shows the 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 550* and *Inflation - Tire Pressure on page 559*.

There is also important loading information on the vehicle Certification/Tire label. It tells you the Gross Vehicle Weight Rating (GVWR) and the Gross Axle Weight Rating (GAWR) for the front and rear axles. See “Certification/Tire Label” later in this section.

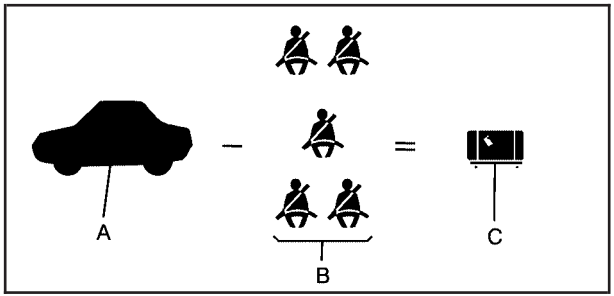
Steps for Determining Correct Load Limit

1. Locate the statement “The combined weight of occupants and cargo should never exceed XXX kg or XXX lbs” on your vehicle’s placard.
2. Determine the combined weight of the driver and passengers that will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kg or XXX lbs.
4. The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the “XXX” amount equals 1400 lbs and there will be five 150 lb passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 lbs (1400 – 750 (5 x 150) = 650 lbs).
5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.
6. If your vehicle will be towing a trailer, the load from your trailer will be transferred to your vehicle. Consult this manual to determine how this reduces the available cargo and luggage load capacity of your vehicle. See *Towing a Trailer on page 445* for important information on towing a trailer, towing safety rules and trailering tips.



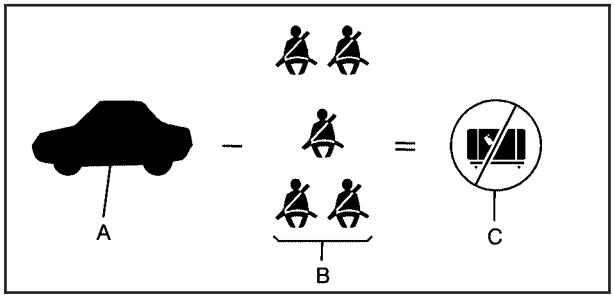
Example 1

Item	Description	Total
A	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	Vehicle Capacity Weight for Example 2 =	1,000 lbs (453 kg)
B	Subtract Occupant Weight 150 lbs (68 kg) × 5 =	750 lbs (136 kg)
C	Available Cargo Weight =	250 lbs (113 kg)

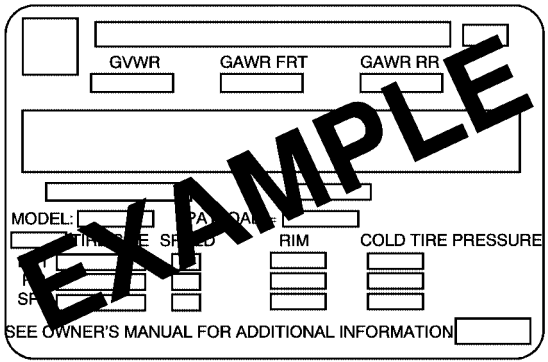


Example 3

Item	Description	Total
A	Vehicle Capacity Weight for Example 3 =	1,000 lbs (453 kg)
B	Subtract Occupant Weight 200 lbs (91 kg) × 5 =	1000 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 capacity weight and seating positions. The combined weight of the driver, passengers, and cargo should never exceed your vehicle's capacity weight.

Certification/Tire Label



A vehicle specific Certification/Tire label is found on the rear edge of the driver's door. The label shows the size of your vehicle's original tires and the inflation pressures needed to obtain the gross weight capacity of your vehicle. This is called Gross Vehicle Weight Rating (GVWR). The GVWR includes the weight of the vehicle, all occupants, fuel, and cargo.

The Certification/Tire label also tells you the maximum weights for the front and rear axles, called Gross Axle Weight Rating (GAWR).

To find out the actual loads on your front and rear axles, you need to go to a weigh station and weigh your vehicle. Your dealer can help you with this. Be sure to spread out your load equally on both sides of the centerline.

Never exceed the GVWR for your vehicle, or the GAWR for either the front or rear axle.

The Certification/Tire label also contains important information about your Front Axle Reserve Capacity. See “What is front axle reserve capacity, and how do I calculate it?” under *Adding a Snow Plow or Similar Equipment on page 432*.

⚠ CAUTION:

In the case of a sudden stop or collision, things carried in the bed of your truck could shift forward and come into the passenger area, injuring you and others. If you put things in the bed of your truck, you should make sure they are properly secured.

⚠ 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.**

Using heavier suspension components to get added durability might not change your weight ratings. Ask your dealer to help you load your vehicle the right way.

If you put things inside your vehicle — like suitcases, tools, packages, or anything else — they 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 cargo area of your vehicle. Try to spread the weight evenly.**
- **Never stack heavier things, like suitcases, inside the vehicle so that some of them are above the tops of the seats.**

CAUTION: (Continued)

CAUTION: (Continued)

- **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.**

There is also important loading information for off-road driving in this manual. See “Loading Your Vehicle for Off-Road Driving“ under *Off-Road Driving on page 390*.

Two-Tiered Loading

Depending on the model of your pick-up, you can create an upper load platform by positioning two or four 2 inches (5 cm) by 6 inches (15 cm) wooden planks across the width of the pickup box. The planks must be inserted in the pickup box depressions. The length of the planks must allow for at least a 3/4 inch (2 cm) bearing surface on each end of the plank.

When using this upper load platform, be sure the load is securely tied down to prevent it from shifting. The load's center of gravity should be positioned in a zone over the rear axle. The zone is located in the area between the front of each wheel well and the rear of each wheel well. The center of gravity height must not extend above the top of the pickup box flareboard.

Any load that extends beyond the vehicle's taillamp area must be properly marked according to local laws and regulations.

Remember not to exceed the Gross Axle Weight Rating (GAWR) of the front or rear axle.

Add-On Equipment

When you carry removable items, you may need to put a limit on how many people you carry inside your vehicle. Be sure to weigh your vehicle before you buy and install the new equipment.

Notice: **Overloading your vehicle may cause damage. Repairs would not be covered by your warranty. Do not overload your vehicle.**

Remember not to exceed the Gross Axle Weight Rating (GAWR) of the front or rear axle.

* Equipment	Maximum Weight
Ladder Rack and Cargo	750 lbs (340 kg)
Cross Toolbox and Cargo	400 lbs (181 kg)
Side Boxes and Cargo	250 lbs per side (113 kg per side)
* The combined weight for all rail-mounted equipment should not exceed 1,000 lbs (454 kg).	

Adding a Snow Plow or Similar Equipment

Before installing a snow plow on your vehicle, here are some things you will need to know:

Notice: **If your vehicle does not have the snow plow prep package, adding a plow can damage your vehicle, and the repairs would not be covered by warranty. Unless your vehicle was built to carry a snow plow, do not add one to your vehicle. If your vehicle has the snow plow prep package, called RPO VYU, then the payload your vehicle can carry will be reduced when a snow plow is installed. Your vehicle can be damaged if either the front or rear axle ratings or the Gross Vehicle Weight (GVW) are exceeded.**

Q: How do I know if my vehicle can handle a snow plow?

A: Some vehicles are built with a special snow plow prep package, called RPO VYU. If your vehicle has this option, you can add a plow to it, provided certain weights, such as the weights on the vehicle's axles and the Gross Vehicle Weight (GVW), are not exceeded.

Q: How heavy can a snow plow safely be?

A: The plow your vehicle can carry depends on many things, such as:

- The options your vehicle came with, and the weight of those options.
- The weight and number of passengers you intend to carry.
- The weight of items you have added to your vehicle, like a tool box or truck cap.
- The total weight of any additional cargo you intend to carry.

Say, for example, you have a 700 lb (318 kg) snow plow. The total weight of all occupants and cargo inside the cab should not exceed 300 lb (135 kg). This means that you may only be able to carry one passenger. But, even this may be too much if you have got other equipment already adding to the weight of your vehicle.

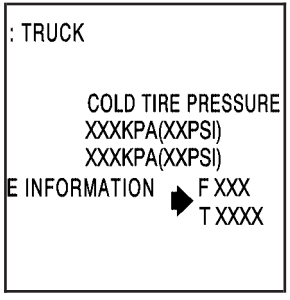
Here are some guidelines for safely carrying a snow plow on your vehicle:

- Make sure the weight on the front and rear axles does not exceed the axle rating for each.
- For the front axle, if more cargo or passengers must be carried, appropriate counter ballast must be installed rear of the rear axle. Counter ballast must be properly secured so it will not move during driving.
- Follow the snow plow manufacturer's recommendations regarding rear ballast. Rear ballast may be required to ensure a proper front and rear weight distribution ratio, even though the actual weight at the front axle may be less than the front axle rating.
- The snow plow manufacturer or installer can assist you in determining the amount of rear ballast required, to help make sure your snowplow/vehicle combination does not exceed the GVW rating, the front and rear axle ratings, and the front and rear weight distribution ratio.
- The total vehicle must not exceed the GVW rating.

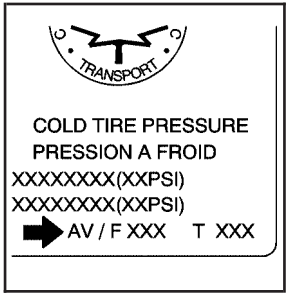
Q: What is front axle reserve capacity, and how do I calculate it?

A: Front axle reserve capacity is the difference between your front Gross Axle Weight Rating (GAWR) and the front axle weight of your vehicle with full fuel and passengers. Basically, it is the amount of weight you can add to your front axle before reaching your front GAWR.

The front axle reserve capacity for your vehicle can be found in the lower right corner of the Certification/Tire label, as shown.

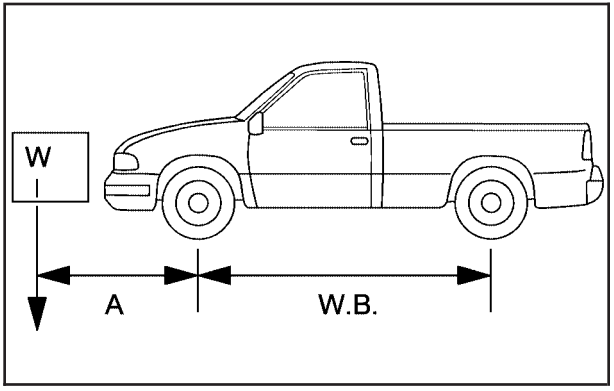


United States



Canada

In order to calculate the amount of weight any front accessory, such as a snow plow, is adding to the front axle, use the following formula:



(W x (A + W.B.)) /W.B.= Weight the accessory is adding to the front axle.

Where:

W = Weight of added accessory

A = Distance that the accessory is in front of the front axle

W.B. = Vehicle Wheelbase

For example, adding a 700 lb (318 kg) snow plow actually adds more than 700 lbs (318 kg) to the front axle. Using the formula, if the snow plow is 4 ft (122 cm) in front of the front axle and the wheel base is 10 ft (305 cm), then:

W = 700 lb (318 kg)

A = 4 ft (122 cm)

W.B. = 10 ft (305 cm)

(W x (A + W.B.))/W.B. = (700 x (4 + 10))/10 = 980 lbs (445 kg)

So, if your truck's front axle reserve capacity is more than 980 lbs (445 kg), you could add the snow plow without exceeding the front GAWR.

Q: What if I want to add heavier equipment to my vehicle?

A: You can add heavier equipment on the front of the vehicle if you compensate for it by carrying fewer passengers, less cargo, or by positioning cargo towards the rear. This has the effect of reducing the load on the front. However, the front GAWR, rear GAWR, and the Gross Vehicle Weight Rating (GVWR) must never be exceeded.

⚠ CAUTION:

On some vehicles that have certain front mounted equipment, such as a snow plow, it may be possible to load the front axle to the front gross axle weight rating (GAWR) but not have enough weight on the rear axle to have proper braking performance. If your brakes can not work properly, you could have a crash. To help your brakes work properly when a snow plow is installed, always follow the snow plow manufacturer or installer's recommendation for rear ballast to ensure a proper front and rear weight distribution ratio, even though the actual front weight may be less than the front GAWR, and the total vehicle weight is less than the gross vehicle weight rating (GVWR). Maintaining a proper front and rear weight distribution ratio is necessary to provide proper braking performance.

Q: What is total vehicle reserve capacity?

A: This is the difference between your GVWR and the weight of your truck with full fuel and passengers. It is the amount of weight you can add to your vehicle before reaching your GVWR. Keep in mind that reserve capacity numbers are intended as a guide when selecting the amount of equipment or cargo your truck can carry. If you are unsure of your vehicle's front, rear, or total weight, go to a weigh station and weigh your vehicle. Your dealer can also help you with this.

The total vehicle reserve capacity for your vehicle can be found in the lower right corner of the Certification/Tire label as shown previously.

See your dealer for additional advice and information about using a snow plow on your vehicle. Also, see *Loading Your Vehicle on page 425*.

Emergency Roof Lamp Provisions

Vehicles with the RPO VYU snow plow prep package also have an emergency roof lamp provision package, RPO TRW. Wiring for the emergency roof lamp is provided above the overhead console. See *Auxiliary Roof Mounted Lamp on page 225* for switch location.

Truck-Camper Loading Information

A vehicle specific Truck-Camper Loading information label is attached to the inside of your vehicle's glove box. This label will tell you if your vehicle can carry a slide-in camper, how much of a load your vehicle can carry, and how to correctly spread out the load. Also, it will help you match the right slide-in camper to your vehicle.

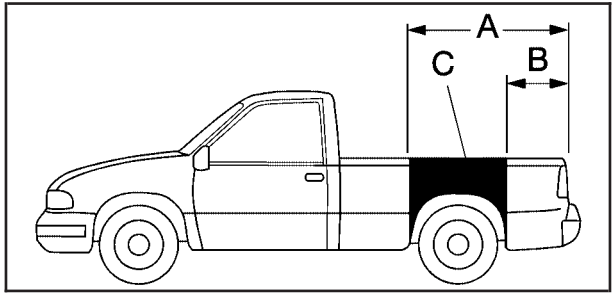
When you carry a slide-in camper, the total cargo load of your vehicle is the weight of the camper, plus the following:

- Everything else added to the camper after it left the factory
- Everything in the camper
- All the people inside

The Cargo Weight Rating (CWR) is the maximum weight of the load your vehicle can carry. It does not include the weight of the people inside. But, you can figure about 150 lbs (68 kg) for each seat.

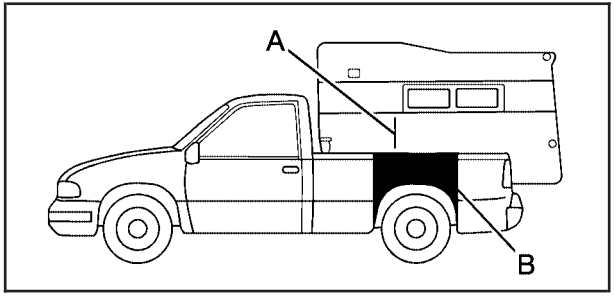
The total cargo load must not be more than your vehicle's CWR.

Refer to the Truck-Camper Loading Information label in the glove box for dimensions A and B as shown in the following illustration.



Use the rear edge of the load floor for measurement purposes. The recommended location for the cargo center of gravity is at point C for the CWR. It is the point where the mass of a body is concentrated and, if suspended at that point, would balance the front and rear.

Here is an example of proper truck and camper match:



A. Camper Center of Gravity

B. Recommended Center of Gravity Location Zone

When the truck is used to carry a slide-in camper, the total cargo load of the truck consists of the manufacturer's camper weight figure, the weight of installed additional camper equipment not included in the manufacturer's camper weight figure, the weight of camper cargo, and the weight of passengers in the camper. The total cargo load should not exceed the truck's cargo weight rating and the camper's center of gravity (A) should fall within the truck's recommended center of gravity zone (B) when installed.

You must weigh any accessories or other equipment that you add to your vehicle. Then, subtract this extra weight from the CWR. This extra weight may shorten the center of gravity zone of your vehicle. Your dealer can help you with this.

If your slide-in camper and its load weighs less than the CWR, the center of gravity zone for your vehicle may be larger.

Your dealer can help you make a good vehicle-camper match and help you determine the CWR.

After you have loaded your vehicle and camper, drive to a weigh station and weigh the front and rear wheels separately. This will tell you the loads on the axles. The loads on the front and rear axles should not be more than either of the Gross Axle Weight Ratings (GAWR). The total of the axle loads should not be more than the Gross Vehicle Weight Rating (GVWR).

Open the driver's door and look at the Certification/Tire label to find out your vehicle's GAWRs and GVWR.

If your vehicle has gone over the weight ratings, move or take out some things until all the weight falls below the ratings.

Secure loose items to prevent weight shifts that could affect the balance of your vehicle. When the truck-camper is loaded, drive to a scale and weigh on the front and on the rear wheels separately to determine axle loads. Individual axle loads should not exceed either of the gross axle weight ratings (GAWR). The total axle loads should not exceed your vehicle's gross vehicle weight rating (GVWR). These ratings are given on the vehicle certification label attached to the rear edge of the driver's door. See "Certification/Tire Label" under *Loading Your Vehicle on page 425*. If weight ratings are exceeded, move or remove items to bring all weights below the ratings.

When you install and load your slide-in camper, check the manufacturer's instructions.

If you want more information on curb weights, cargo weights, Cargo Weight Rating and the correct center of gravity zone for your vehicle, your dealer can help you. Just ask for a copy of "Consumer Information, Truck-Camper Loading."

Pickup Conversion to Chassis Cab

General Motors is aware that some vehicle owners may consider having the pickup box removed and a commercial or recreational body installed. Owners should be aware that, as manufactured, there are differences between a chassis cab and a pickup with the box removed which may affect vehicle safety. The components necessary to adapt a pickup to permit its safe use with a specialized body should be installed by the body builder.

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 650*.

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 will 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 414*.

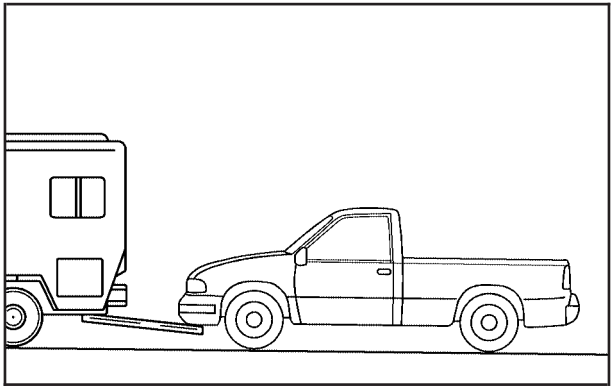
Dinghy Towing

Two-Wheel-Drive Vehicles

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.**

Two-wheel-drive vehicles should not be towed with all four wheels on the ground.
Two-wheel-drive transmissions have no provisions for internal lubrication while being towed.

Four-Wheel-Drive Vehicles



Use the following procedure to tow your vehicle:

1. Shift the transmission to PARK (P).
2. Turn the engine off, but leave the ignition on.
3. Firmly set the parking brake.
4. Securely attach the vehicle being towed to the tow vehicle.

⚠ CAUTION:

Shifting a four-wheel-drive vehicle's transfer case into NEUTRAL can cause your vehicle to roll even if the transmission is in PARK (P). You or others could be injured. Make sure the parking brake is firmly set before you shift the transfer case to NEUTRAL.

5. Shift the transfer case to NEUTRAL. See *Four-Wheel Drive on page 147* for the proper procedure to select the neutral position for your vehicle.
6. Release the parking brake only after the vehicle being towed is firmly attached to the towing vehicle.
7. Turn the ignition off and leave the steering column unlocked.

Dolly Towing

Front Towing (Front Wheels Off the Ground)

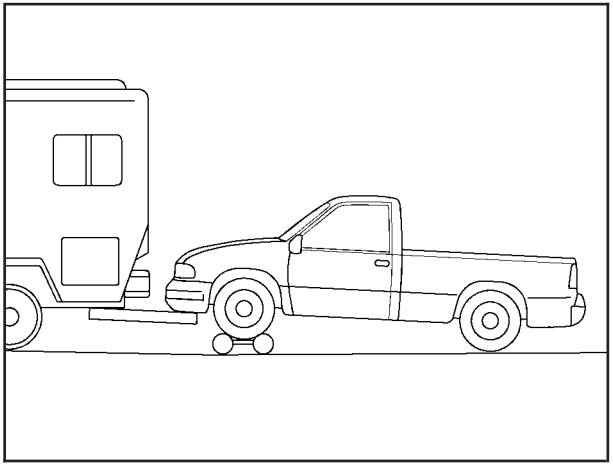
Two-Wheel-Drive Vehicles

Notice: **If you tow a two-wheel-drive vehicle with the rear wheels on the ground, the transmission could be damaged. The repairs would not be covered by your warranty. Never tow your vehicle with the rear wheels on the ground.**

Two-wheel-drive vehicles should not be towed with the rear wheels on the ground. Two-wheel-drive transmissions have no provisions for internal lubrication while being towed.

To dolly tow a two-wheel-drive vehicle, you must tow the vehicle with the rear wheels on the dolly. See “Rear Towing (Rear Wheels Off the Ground)” later in this section for more information.

Four-Wheel-Drive Vehicles



Use the following procedure to tow your vehicle:

1. Drive the vehicle up onto the tow dolly.
2. Shift the transmission to PARK (P).
3. Turn the engine off, but leave the ignition on.
4. Firmly set the parking brake.
5. Securely attach the vehicle being towed to the tow dolly.

⚠ CAUTION:

Shifting a four-wheel-drive vehicle's transfer case into NEUTRAL can cause your vehicle to roll even if the transmission is in PARK (P). You or others could be injured. Make sure the parking brake is firmly set before you shift the transfer case to NEUTRAL.

6. Shift the transfer case to NEUTRAL. See *Four-Wheel Drive on page 147* for the proper procedure to select the neutral position for your vehicle.
7. Release the parking brake only after the vehicle being towed is firmly attached to the towing vehicle.
8. Turn the ignition off and lock the steering column.

Rear Towing (Rear Wheels Off the Ground)

Two-Wheel-Drive Vehicles

Use the following procedure to tow your vehicle from the rear:

1. Drive the vehicle onto the dolly.
2. Firmly set the parking brake. See *Parking Brake on page 162*.
3. Put the transmission in PARK (P).
4. Follow the dolly manufacturer's instructions to attach and secure the vehicle being towed to the dolly and then the loaded dolly to the tow vehicle. Make sure the wheels are straight before towing.

   Use an adequate clamping device to ensure that the front wheels are locked into the straight position.
5. Release the parking brake only after the vehicle being towed is firmly attached to the tow vehicle.
6. Turn the ignition to LOCK.

Four-Wheel-Drive Vehicles

Use the following procedure to tow your vehicle from the rear:

1. Drive the vehicle onto the dolly.
2. Firmly set the parking brake. See *Parking Brake on page 162*.
3. Put the transmission in PARK (P).
4. Follow the dolly manufacturer's instructions to attach and secure the vehicle being towed to the dolly and then the loaded dolly to the tow vehicle.

   Use an adequate clamping device to ensure that the front wheels are locked into the straight position.

⚠ CAUTION:

Shifting a four-wheel-drive vehicle's transfer case into NEUTRAL can cause your vehicle to roll even if the transmission is in PARK (P). You or others could be injured. Make sure the parking brake is firmly set before you shift the transfer case to NEUTRAL.

5. Shift the transfer case to NEUTRAL. See *Four-Wheel Drive on page 147*.
6. Release the parking brake only after the vehicle being towed is firmly attached to the tow vehicle.
7. Turn the ignition to LOCK.

Towing a Trailer

If your vehicle has a diesel engine, see the DURAMAX® Diesel manual for more information.

Do not tow a trailer during break-in. See *New Vehicle Break-In on page 132* for more information.

⚠ 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. 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.

Notice: **Pulling a trailer improperly can damage your vehicle and result in costly repairs not covered by your warranty. To pull a trailer correctly, follow the advice in this part, and see your dealer for important information about towing a trailer with your vehicle.**

To identify the trailering capacity of your vehicle, you should read the information in “Weight of the Trailer” that appears later in this section.

Trailering is different than just driving your vehicle by itself. Trailering means changes in acceleration, braking, 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.

If You Do Decide To Pull A Trailer

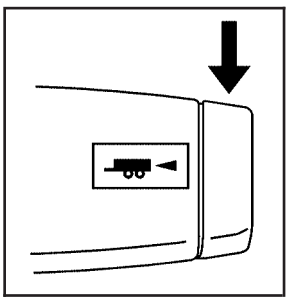
If you do, here are some important points:

- 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. See "Hitches" later in this section.
- Don't tow a trailer at all during the first 500 miles (800 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.
- You can tow in DRIVE (D). You may want to shift the transmission to THIRD (3), or FOURTH (4) with the Allison or Hydra-matic 6-speed transmissions, or if necessary, a lower gear selection if the transmission shifts too often, such as under heavy loads and/or hilly conditions. See *Tow/Haul Mode Light on page 266*.

Three important considerations have to do with weight:

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

Tow/Haul Mode



Press this button at the end of the shift lever to enable/disable the tow/haul mode.

Tow/Haul is a feature that assists when pulling a heavy trailer or a large or heavy load. See *Tow/Haul Mode on page 144* for more information.

Tow/Haul is designed to be most effective when the vehicle and trailer combined weight is at least 75 percent of the vehicle's Gross Combined Weight Rating (GCWR). See "Weight of the Trailer" later in the section. Tow/Haul is most useful under the following driving conditions:

- When pulling a heavy trailer or a large or heavy load through rolling terrain.
- When pulling a heavy trailer or a large or heavy load in stop and go traffic.
- When pulling a heavy trailer or a large or heavy load in busy parking lots where improved low speed control of the vehicle is desired.

Operating the vehicle in Tow/Haul when lightly loaded or with no trailer at all will not cause damage. However, there is no benefit to the selection of Tow/Haul when the vehicle is unloaded. Such a selection when unloaded may result in unpleasant engine and transmission driving characteristics and reduced fuel economy. Tow/Haul is recommended only when pulling a heavy trailer or a large or heavy load.

Weight of the Trailer

How heavy can a trailer safely be?

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. It can also depend on any special equipment that you have on your vehicle, and the amount of tongue weight the vehicle can carry. See "Weight of the Trailer Tongue" later in this section for more information.

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

Use one of the following charts to determine how much your vehicle can weigh, based upon your vehicle model and options.

C-1500 Regular Cab Standard Box (2WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
4.3L V6	3.23 3.73	4,800 lbs (2 177 kg) 5,300 lbs (2 404 kg)	9,500 lbs (4 309 kg) 10,000 lbs (4 536 kg)
4.8L V8	3.23 3.73	5,200 lbs (2 359 kg) 7,200 lbs (3 266 kg)	10,000 lbs (4 536 kg) 12,000 lbs (5 443 kg)
5.3L V8	3.42 3.73	7,200 lbs (3 266 kg) 8,200 lbs (3 719 kg)	12,000 lbs (5 443 kg) 13,000 lbs (5 897 kg)
*Fifth-wheel or gooseneck kingpin weight 15 percent to 25 percent of trailer weight up to 1,500 lbs (680 kg) maximum.			

C-1500 Extended Cab Standard Box (2WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
4.3L V6	3.23 3.73	4,300 lbs (1 950 kg) 4,800 lbs (2 177 kg)	9,500 lbs (4 309 kg) 10,000 lbs (4 536 kg)
4.8L V8	3.23 3.73	4,700 lbs (2 132 kg) 6,700 lbs (3 039 kg)	10,000 lbs (4 536 kg) 12,000 lbs (5 443 kg)
5.3L V8	3.42 3.73	6,700 lbs (3 039 kg) 7,700 lbs (3 493 kg)	12,000 lbs (5 443 kg) 13,000 lbs (5 897 kg)
6.0L V8	3.73	10,300 lbs (4 717 kg)	15,500 lbs (7 031 kg)
*Fifth-wheel or gooseneck kingpin weight 15 percent to 25 percent of trailer weight up to 1,500 lbs (680 kg) maximum. *Fifth-wheel or gooseneck trailer rating limited to 6,800 lbs (3 084 kg) except with 6000 V8 engine limited to 6,900 lbs (3 130 kg).			

C-1500 Extended Cab Short Box (2WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
4.3L V6	3.23 3.73	4,400 lbs (1 196 kg) 4,900 lbs (2 223 kg)	9,500 lbs (4 309 kg) 10,000 lbs (4 536 kg)
4.8L V8	3.23 3.73	4,800 lbs (2 177 kg) 6,800 lbs (3 084 kg)	10,000 lbs (4 536 kg) 12,000 lbs (5 448 kg)
5.3L V8	3.42 3.73	6,800 lbs (3 084 kg) 7,800 lbs (3 538 kg)	12,000 lbs (5 448 kg) 13,000 lbs (5 902 kg)
6.0L V8	3.73	8,900 lbs (4 037 kg)	14,000 lbs (6 350 kg)
6.0L V8**	3.73	8,700 lbs (3 946 kg)	14,000 lbs (6 350 kg)
*This model is neither designed nor intended to tow fifth-wheel or gooseneck trailers. **NHT Enhanced Trailering Performance Package required.			

C-1500 Crew Cab Short Box (2WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
4.8L V8	3.23 3.73	4,600 lbs (2 086 kg) 6,600 lbs (2 994 kg)	10,000 lbs (4 536 kg) 12,000 lbs (5 443 kg)
5.3L V8	3.42 3.73	6,600 lbs (2 994 kg) 7,600 lbs (3 447 kg)	12,000 lbs (5 443 kg) 13,000 lbs (5 897 kg)
6.0L V8	3.73	10,200 lbs (4 627 kg)	15,500 lbs (7 031 kg)
*This model is neither designed nor intended to tow fifth-wheel or gooseneck trailers.			

C-1500 Regular Cab Long Box (2WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
4.3L V6	3.23 3.73	4,700 lbs (2 132 kg) 5,200 lbs (2 359 kg)	9,500 lbs (4 309 kg) 10,000 lbs (4 536 kg)
4.8L V8	3.23 3.73	5,000 lbs (2 268 kg) 7,000 lbs (3 175 kg)	10,000 lbs (4 536 kg) 12,000 lbs (5 448 kg)
5.3L V8	3.42 3.73	7,000 lbs (3 175 kg) 8,000 lbs (3 629 kg)	12,000 lbs (5 443 kg) 13,000 lbs (5 896 kg)
*Fifth-wheel or gooseneck kingpin weight 15 percent to 25 percent of trailer weight up to 1,500 lbs (680 kg) maximum.			

C-1500 Extended Cab Long Box (2WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
5.3L V8	3.42 3.73	6,500 lbs (2 948 kg) 7,500 lbs (3 402 kg)	12,000 lbs (5 443 kg) 13,000 lbs (5 897 kg)
*Fifth-wheel or gooseneck kingpin weight 15 percent to 25 percent of trailer weight up to 1,500 lbs (680 kg) maximum. *Fifth-wheel or gooseneck trailer rating limited to 7,600 lbs (3 447 kg).			

K-1500 Regular Cab Standard Box (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
4.3L V6	3.73	5,100 lbs (2 313 kg)	10,000 lbs (4 536 kg)
4.8L V8	3.42 4.10	5,900 lbs (2 676 kg) 7,900 lbs (3 583 kg)	11,000 lbs (4 989 kg) 13,000 lbs (5 902 kg)

K-1500 Regular Cab Standard Box (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
5.3L V8	3.73 4.10	7,900 lbs (3 583 kg) 8,900 lbs (4 037 kg)	13,000 lbs (5 896 kg) 14,000 lbs (6 350 kg)
*Fifth-wheel or gooseneck kingpin weight 15 percent to 25 percent of trailer weight up to 1,500 lbs (680 kg) maximum. *Fifth-wheel or gooseneck trailer rating limited to 7,300 lbs (3 311 kg).			

K-1500 Extended Cab Standard Box (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
4.8L V8	3.42 4.10	5,500 lbs (2 495 kg) 7,500 lbs (3 402 kg)	11,000 lbs (4 989 kg) 13,000 lbs (5 897 kg)
5.3L V8	3.73 4.10	7,500 lbs (3 402 kg) 8,500 lbs (3 855 kg)	13,000 lbs (5 897 kg) 14,000 lbs (6 350 kg)
6.0L V8	3.73	8,500 lbs (3 855 kg)	14,000 lbs (6 350 kg)
6.0L V8**	4.10	10,500 lbs (4 763 kg)	16,000 lbs (6 257 kg)
*Fifth-wheel or gooseneck kingpin weight 15 percent to 25 percent of trailer weight up to 1,500 lbs (680 kg) maximum. *Fifth-wheel or gooseneck trailer rating limited to 6,900 lbs (3 130 kg) except with 6000 V8 engine which has sufficient payload for any fifth wheel/gooseneck trailering. **NHT Enhanced Trailering Performance Package required.			

K-1500 Extended Cab Short Box (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
4.8L V8	3.42 4.10	5,500 lbs (2 495 kg) 7,500 lbs (3 402 kg)	11,000 lbs (4 989 kg) 13,000 lbs (5 897 kg)
5.3L V8	3.73 4.10	7,500 lbs (3 402 kg) 8,500 lbs (3 855 kg)	13,000 lbs (5 897 kg) 14,000 lbs (6 350 kg)
6.0L V8	3.73	8,600 lbs (3 9015 kg)	14,000 lbs (6 350 kg)
*This model is neither designed nor intended to tow fifth-wheel or gooseneck trailers.			

K-1500 Crew Cab Short Box (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
4.8L V8	3.42 4.10	5,400 lbs (2 449 kg) 7,400 lbs (3 356 kg)	11,000 lbs (4 989 kg) 13,000 lbs (5 897 kg)
5.3L V8	3.73 4.10	7,500 lbs (3 402 kg) 8,500 lbs (3 855 kg)	13,000 lbs (5 897 kg) 14,000 lbs (6 350 kg)
6.0L V8	3.73	8,500 lbs (3 855 kg)	14,000 lbs (6 350 kg)
6.0L V8**	4.10	10,500 lbs (4 763 kg)	16,000 lbs (6 257 kg)
6.2L V8	3.42	8,500 lbs (3 855 kg)	14,000 lbs (6 350 kg)
*This model is neither designed nor intended to tow fifth-wheel or gooseneck trailers. **NHT Enhanced Trailering Performance Package required.			

K-1500 Regular Cab Long Box (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
4.3L V6	3.73	4,800 lbs (2 177 kg)	10,000 lbs (4 536 kg)
4.8L V8	3.42 4.10	5,900 lbs (2 676 kg) 7,900 lbs (3 583 kg)	11,000 lbs (4 989 kg) 13,000 lbs (5 896 kg)

K-1500 Regular Cab Long Box (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
5.3L V8	3.73 4.10	7,900 lbs (3 583 kg) 8,900 lbs (4 037 kg)	13,000 lbs (5 896 kg) 14,000 lbs (6 350 kg)
*Fifth-wheel or gooseneck kingpin weight 15 percent to 25 percent of trailer weight up to 1,500 lbs (680 kg) maximum. *Fifth-wheel or gooseneck trailer rating limited to 8,300 lbs (3 765 kg).			

K-1500 Extended Cab Long Box (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
5.3L V8	3.73 4.10	7,300 lbs (3 311 kg) 8,300 lbs (3 765 kg)	13,000 lbs (5 896 kg) 14,000 lbs (6 350 kg)
*This vehicle has insufficient payload for fifth-wheel or gooseneck trailering.			

C-2500 Extended Cab Standard Box HD (2WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	12,700 lbs (5 761 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin tongue weight should be 15 percent to 25 percent of trailer weight up to 3,000 lbs (1 361 kg) maximum. *Trailer rating limited to 13,000 lbs (5 897 kg) with weight distributing hitch.			

C-2500 Crew Cab Standard Box HD (2WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	12,500 lbs (5 670 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin weight should be 15 percent to 25 percent of trailer weight up to 3,000 lbs (1 361 kg) maximum. *Trailer rating limited to 13,000 lbs (5 897 kg) with weight distributing hitch.			

C-2500 Regular Cab Long Box HD (2WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	12,900 lbs (5 851 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin tongue weight should be 15 percent to 25 percent of trailer weight up to 3,000 lbs (1 361 kg) maximum. *Trailer ratings above 13,000 lbs (5 897 kg) require a fifth-wheel or gooseneck hitch.			

C-2500 Extended Cab Long Box HD (2WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	12,500 lbs (5 670 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin weight should be 15 percent to 25 percent of trailer weight up to 3,000 lbs (1 361 kg) maximum. *Trailer rating limited to 13,000 lbs (5 897 kg) with weight distributing hitch.			

C-2500 Crew Cab Long Box HD (2WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	12,400 lbs (5 624 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin weight should be 15 percent to 25 percent of trailer weight up to 3,000 lbs (1 361 kg) maximum. *Trailer rating limited to 13,000 lbs (5 897 kg) with weight distributing hitch.			

K-2500 Extended Cab Standard Box HD (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	12,400 lbs (5 624 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin weight should be 15 percent to 25 percent of trailer weight up to 3,000 lbs (1 361 kg) maximum. *Trailer rating limited to 13,000 lbs (5 897 kg) with weight distributing hitch.			

K-2500 Crew Cab Standard Box HD (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	12,300 lbs (5 579 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin weight should be 15 percent to 25 percent of trailer weight up to 3,000 lbs (1 361 kg) maximum. *Trailer rating limited to 13,000 lbs (5 897 kg) with weight distributing hitch.			

K-2500 Regular Cab Long Box HD (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	12,700 lbs (5 761 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin weight should be 15 percent to 25 percent of trailer weight up to 3,000 lbs (1 361 kg) maximum. *Trailer rating limited to 13,000 lbs (5 897 kg) with weight distributing hitch.			

K-2500 Extended Cab Long Box HD (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	12,200 lbs (5 534 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin weight should be 15 percent to 25 percent of trailer weight up to 3,000 lbs (1 361 kg) maximum. *Trailer rating limited to 13,000 lbs (5 897 kg) with weight distributing hitch.			

K-2500 Crew Cab Long Box HD (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	12,100 lbs (5 488 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin weight should be 15 percent to 25 percent of trailer weight up to 3,000 lbs (1 361 kg) maximum. *Trailer rating limited to 13,000 lbs (5 897 kg) with weight distributing hitch.			

C-3500 Regular Cab (2WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	12,600 lbs (5 715 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin weight should be 15 percent to 25 percent of trailer weight up to 3,500 lbs (1 587 kg) maximum. *Trailer rating limited to 13,000 lbs (5 897 kg) with weight distributing hitch.			

C-3500 Extended Cab (2WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	12,200 lbs (5 534 kg)	18,500 lbs (8 391 kg)
6.0L V8 (Dual Rear Wheels)	3.73	12,000 lbs (5 443 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin weight should be 15 percent to 25 percent of trailer weight up to 3,500 lbs (1 587 kg) maximum. *Trailer rating limited to 13,000 lbs (5 897 kg) with weight distributing hitch.			

C-3500 Crew Cab (2WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	12,100 lbs (5 488 kg)	18,500 lbs (8 391 kg)
6.0L V8 (Dual Rear Wheels)	3.73	11,800 lbs (5 352 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin weight should be 15 percent to 25 percent of trailer weight up to 3,500 lbs (1 587 kg) maximum. *Trailer rating limited to 13,000 lbs (5 897 kg) with weight distributing hitch.			

K-3500 Regular Cab (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	12,400 lbs (5 624 kg)	18,500 lbs (8 391 kg)
6.0L V8 (Dual Rear Wheels)	3.73	12,200 lbs (5 534 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin weight should be 15 percent to 25 percent of trailer weight up to 3,500 lbs (1 587 kg) maximum. *Trailer rating limited to 13,000 lbs (5 897 kg) with weight distributing hitch.			

K-3500 Extended Cab (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	12,000 lbs (5 443 kg)	18,500 lbs (8 391 kg)
6.0L V8 (Dual Rear Wheels)	3.73	11,700 lbs (5 307 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin weight should be 15 percent to 25 percent of trailer weight up to 3,500 lbs (1 587 kg) maximum. *Trailer rating limited to 13,000 lbs (5 897 kg) with weight distributing hitch.			

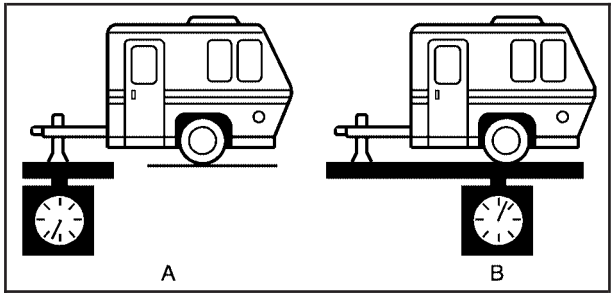
K-3500 Crew Cab (4WD)*	Axle Ratio	Maximum Trailer Weight	GCWR
6.0L V8	3.73	11,800 lbs (5 352 kg)	18,500 lbs (8 391 kg)
6.0L V8 (Dual Rear Wheels)	3.73	11,600 lbs (5 262 kg)	18,500 lbs (8 391 kg)
*Fifth-wheel or gooseneck kingpin weight should be 15 percent to 25 percent of trailer weight up to 3,500 lbs (1 587 kg) maximum. *Trailer rating limited to 13,000 lbs (5 897 kg) with weight distributing hitch.			

The Gross Combination Weight Rating (GCWR) is the total allowable weight of the completely loaded vehicle and trailer including any passengers, cargo, equipment and conversions. The GCWR for your vehicle should not be exceeded.

You can ask your dealer for our trailering information or advice, or you can write us at our Customer Assistance Offices. See *Customer Assistance Offices on page 648* 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. If you have a lot of options, equipment, passengers or cargo in your vehicle, it will reduce the tongue weight your vehicle can carry, which will also reduce the trailer weight your vehicle can tow. And if you will 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 425* for more information about your vehicle's maximum load capacity.



The trailer tongue weight (A) should be 10 percent to 15 percent of the total loaded trailer weight, up to a maximum of 600 lbs (272 kg) for the 1500 or 2500 series, and up to a maximum of 750 lbs (340 kg) for the 2500 HD or 3500 series with a weight carrying hitch. The trailer tongue weight (A) should be 10 percent to 15 percent of the total loaded trailer weight, up to a maximum of 1,000 lbs (453 kg) for the 1500 series and up to a maximum of 1,500 lbs (680 kg) for the 2500, 2500 HD or 3500 series with a weight distributing hitch.

Fifth wheel or gooseneck kingpin weight should be 15 to 25 percent of the trailer weight up to the maximum amount specified in the trailering chart for your vehicle. See “Weight of the Trailer”, and “Fifth-Wheel and Gooseneck Trailering” in this section.

Do not exceed the maximum allowable tongue weight for your vehicle. Choose the shortest hitch extension that will position the hitch ball closest to the vehicle. This will help reduce the effect of trailer tongue weight on the rear axle.

After you have loaded the trailer, weigh the trailer and then the tongue separately, to see if the weights are proper. If they are not, you may be able to get them right by moving some items around in the trailer.

Trailering may be limited by the vehicle’s ability to carry tongue weight. Tongue weight cannot cause the vehicle to exceed the GVWR (Gross Vehicle Weight Rating) or the RGAWR (Rear Gross Axle Weight Rating). The effect of additional weight may reduce your trailering capacity more than the total of the additional weight.

Consider the following example:

A vehicle model base weight is 5,500 lbs (2 495 kg); 2,800 lbs (1 270 kg) at the front axle and 2,700 lbs (1 225 kg) at the rear axle. It has a GVWR of 7,200 lbs (3 266 kg), a RGAWR of 4,000 lbs (1 814 kg) and a GCWR (Gross Combination Weight Rating) of 14,000 lbs (6 350 kg). The trailer rating should be:

14,000 lbs (6350 kg)	GCWR
−5,500 lbs (2495 kg)	Vehicle Weight
8,500 lbs (3855 kg)	Trailer Rating

You can expect tongue weight to be at least 10 percent of trailer weight (850 lbs (386 kg)) and because the weight is applied well behind the rear axle, the effect on the rear axle will be greater than just the weight itself, as much as 1.5 times as much. The weight at the rear axle could be 850 lbs (386 kg) X 1.5 = 1,275 lbs (578 kg). Since the rear axle already weighs 2,700 lbs (1 225 kg), adding 1,275 lbs (578 kg) brings the total to 3,975 lbs (1 803 kg).

This is very close to, but within the limit for RGAWR as well. The vehicle is set to trailer up to 8,500 lbs (3 856 kg).

But let's say your specific vehicle is equipped with some of the latest options and you have a front seat passenger and two rear seat passengers with some luggage and gear in the vehicle as well. You may add 300 lbs (136 kg) to the front axle weight and 400 lbs (181 kg) to the rear axle weight. Your vehicle now weighs:

2,800 lbs (1270 kg)	+	300 lbs (136 kg)	Front
2,700 lbs (1225 kg)	+	400 lbs (181 kg)	Rear
6,200 lbs (2812 kg)			Total

Weight is still below 7,200 lbs (3 266 kg) and you may think that you should subtract 700 additional pounds (318 kg) from your trailering capacity to stay within GCWR limits. Your maximum trailer would only be 7,800 lbs (3 538 kg). You may go further and think you must limit tongue weight to less than 1,000 lbs (454 kg) to avoid exceeding GVWR.

But, you must still consider the effect on the rear axle. Because your rear axle now weighs 3,100 lbs (1 406 kg), you can only put 900 lbs (408 kg) on the rear axle without exceeding RGAWR. The effect of tongue weight is about 1.5 times the actual weight. Dividing the 900 lbs (408 kg) by 1.5 leaves you with being able to handle only 600 lbs (272 kg) of tongue weight. Since tongue weight is usually at least 10 percent of total loaded trailer weight, you can expect that the largest trailer your vehicle can properly handle is 6,000 lbs (2 721 kg).

It is important that you make sure your vehicle does not exceed any of its ratings — GCWR, GVWR, RGAWR, Maximum Trailer Rating or Tongue Weight. The only way to be sure you are not exceeding any of these ratings is to weigh your vehicle and trailer.

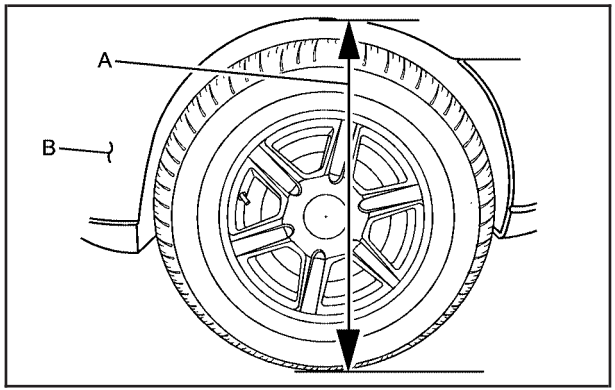
Total Weight on Your Vehicle's Tires

Be sure your vehicle's tires are inflated to the upper limit for cold tires. You'll find these numbers on the Certification label at the rear edge of the driver's door or see Loading Your Vehicle for more information. Then be sure you don't go over the GVW limit for your vehicle, or the GAWR, including the weight of the trailer tongue. If you use a weight distributing hitch, make sure you don't go over the rear axle limit before you apply the weight distribution spring bars.

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.

Weight-Distributing Hitches and Weight Carrying Hitches



A. Body to Ground Distance

B. Front of Vehiclet

When using a weight-distributing hitch, the hitch must be adjusted so the distance (A) remains the same both before and after coupling the trailer to the tow vehicle.

If you use a step-bumper hitch, the bumper could be damaged in sharp turns. Make sure there is ample room when turning to avoid contact between the trailer and the bumper.

If you will be pulling a trailer that, when loaded, will weigh more than 5,000 lbs (2 270 kg) be sure to use a properly mounted weight-distributing hitch and sway control of the proper size. This equipment is very important for proper vehicle loading and good handling when driving. Always use a sway control if the trailer will weigh more than these limits. You can ask a hitch dealer about sway controls.

Fifth Wheel and Gooseneck Trailering

Fifth wheel and gooseneck trailers can be used with many pickup models. These trailers place a larger percentage of the weight (kingpin weight) on the tow vehicle than conventional trailers. Make sure this weight does not cause the vehicle to exceed GAWR or GVWR.

Fifth wheel or gooseneck kingpin weight should be 15 to 25 percent of the trailer weight up to the maximum amount specified in the trailering chart for your vehicle. See “Weight of the Trailer” in this section for more information.

The hitch should be located in the pickup bed so that it's centerline is over or slightly in front of the rear axle. Take care that it is not so far forward that it will contact the back of the cab in sharp turns. This is especially important for short box pickups. Trailer pin box extensions and sliding fifth wheel hitch assemblies can help this condition. There should be at least six inches of clearance between the top of the pickup box and the bottom of the trailer shelf that extends over the box.

Make sure the hitch is attached to the tow vehicle frame rails. Do not use the pickup box for support.

Safety Chains

You should always attach chains between your vehicle and your trailer. Cross the safety chains under the tongue of the trailer to help prevent the tongue from contacting the road if it becomes separated from the hitch. Instructions about safety chains may be provided by the hitch manufacturer or by the trailer manufacturer. If you are towing a trailer up to 5,000 lbs (2 271 kg) with a factory-installed step bumper, you may attach the safety chains to the attaching points on the bumper.

If you are towing a trailer up to your vehicle's trailer rating limit you may attach the safety chains to the attaching point on the hitch platform. If you are towing with an aftermarket hitch follow the trailer or hitch manufacturer's recommendation for attaching safety chains. Always leave just enough slack so you can turn with your rig. Never allow safety chains to drag on the ground.

Trailer Brakes

If your trailer weighs more than 2,000 lbs (900 kg) loaded, then it needs its own brakes – and they must be adequate. Be sure to read and follow the instructions for the trailer brakes so you'll be able to install, adjust and maintain them properly.

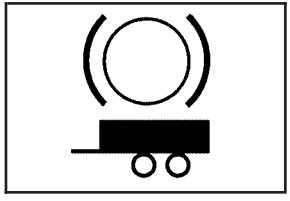
If your vehicle is equipped with StabiliTrak®, your trailer cannot tap into the vehicle's hydraulic brake system.

Your trailer brake system can tap into the vehicle's hydraulic brake system only if:

- The trailer parts can withstand 3,000 psi (20 650 kPa) of pressure.
- The trailer's brake system will use less than 0.02 cubic inch (0.3 cc) of fluid from your vehicle's master cylinder. Otherwise, both braking systems won't work well. You could even lose your brakes.

If everything checks out this far, make the brake tap at the port on the master cylinder that sends the fluid to the rear brakes. But don't use copper tubing for this. If you do, it will bend and finally break off. Use steel brake tubing.

Integrated Trailer Brake Control System



Your vehicle may have an Integrated Trailer Brake Control (ITBC) system for electric trailer brakes.

This symbol is located on the Trailer Brake Control Panel on vehicles with an Integrated Trailer Brake Control System. The power output to the trailer brakes is based on the amount of brake pressure being applied by your vehicle's brake system. This available power output to the trailer brakes can be adjusted to a wide range of trailering situations.

The ITBC system is integrated with your vehicle's brake, anti-lock brake and StabiliTrak® (if equipped) systems. In trailering conditions that cause your vehicle's anti-lock brake or StabiliTrak® systems to activate, power sent to the trailer's brakes will be automatically adjusted to minimize trailer wheel lock-up. This does not imply that your trailer has the StabiliTrak® system.

If your vehicle's brake, anti-lock brake or StabiliTrak® systems are not functioning properly, your ITBC system may not be fully functional or may not function at all. Make sure all of these systems are fully operational to ensure full functionality of the ITBC system.

The ITBC system is powered through your vehicle's electrical system. Turning the ignition off will also turn off the ITBC system. The ITBC system is fully functional only when the ignition is in ON or in RUN.

The ITBC system can only be used with trailers with electric brakes.

⚠ CAUTION:

Connecting a trailer that is not compatible with the ITBC system may result in reduced or complete loss of trailer braking. There may be an increase in stopping distance or trailer instability which could result in personal injury or

CAUTION: (Continued)

CAUTION: (Continued)

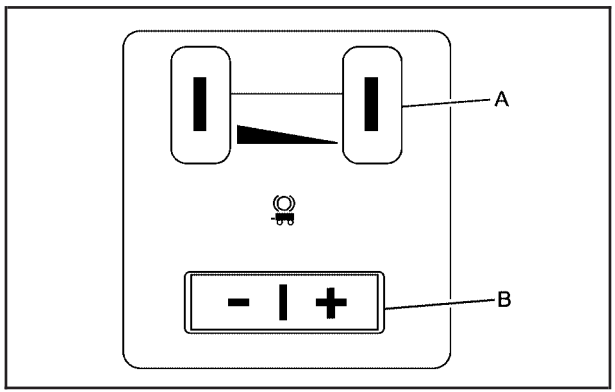
damage to your vehicle, trailer, or other property. An aftermarket controller may be available for use with trailers with surge, air or electric-over-hydraulic trailer brake systems. To determine the type of brakes on your trailer and the availability of controllers, check with your trailer manufacturer or dealer.

When trailering, make sure of the following:

- The ITBC system is used only with trailers that are equipped with electric brakes.
- All applicable local and federal laws and regulations are followed.
- All electrical and mechanical connections to the trailer are made correctly.
- The trailer's brakes are in proper working condition.
- The trailer and vehicle are properly loaded for the towing condition.

The ITBC system is a factory installed item. Out-of-factory installation of this system should not be attempted. GM is not responsible for warranty or performance of the system resulting from out-of-factory installation.

Trailer Brake Control Panel



A. Manual Trailer Brake Apply Lever

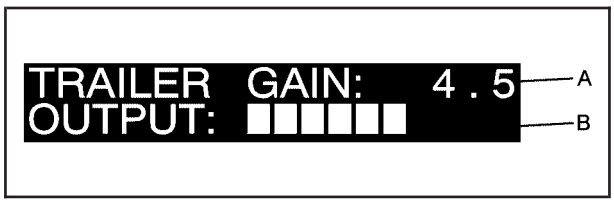
B. Trailer Gain Adjustment Buttons

The ITBC system has a control panel located on the instrument panel to the left of the steering column. See *Instrument Panel Overview (Base/Uplevel version) on page 206* or *Instrument Panel Overview (Premium version) on page 209* for more information on location. The control panel allows you to adjust the amount of output, referred to as trailer gain, available to the electric trailer brakes and allows you to manually apply the trailer brakes. The Trailer Brake Control Panel is used along with the Trailer Brake Display Page on the DIC to adjust and display power output to the trailer brakes.

Trailer Brake DIC Display Page

The ITBC system displays messages into the vehicle's Driver Information Center (DIC). See *DIC Warnings and Messages on page 279* for more information.

The display page indicates Trailer Gain setting, power output to the electric trailer brakes, trailer connection and system operational status.



A. Trailer Gain Setting
B. Power Output to Trailer Brakes
C. No trailer with electric brakes connected or fault present

The Trailer Brake Display Page can be displayed by performing any of the following actions:

- Scrolling through the DIC menu pages using the odometer trip stem or the DIC Vehicle Information button (if equipped).
- Pressing a Trailer Gain button – If the Trailer Brake Display Page is not currently displayed, pressing a Trailer Gain button will first recall the current Trailer Gain setting. After the Trailer Brake Display Page is displayed, subsequent depressions of the gain buttons will then cause the Trailer Gain setting to change.
- Activating the Manual Trailer Brake Apply lever
- Connecting a trailer equipped with electric trailer brakes

All DIC warning and service messages must first be acknowledged by the driver before the Trailer Brake Display Page can be displayed and Trailer Gain can be adjusted.

TRAILER GAIN – This setting is displayed anytime the Trailer Brake Display Page is active. This setting can be adjusted from 0.0 to 10.0 with either a trailer connected or disconnected. To adjust the Trailer Gain, press one of the Trailer Gain adjustment buttons located on the Trailer Brake Control Panel. Pressg and hold a gain button to cause the Trailer Gain to continuously adjust. To turn the output to the trailer off, adjust the Trailer Gain setting to 0.0 (zero).

0.0 (zero) gain is the factory default setting. To properly adjust trailer gain, see the Trailer Gain Adjustment Procedure later in this section.

TRAILER OUTPUT – This is displayed any time a trailer with electric brakes is connected. Output to the electric brakes is based on the amount of vehicle braking present and relative to the Trailer Gain setting. Output is displayed from 0 to 10 bars for each gain setting.

The Trailer Output will indicate "- - - - - -" on the Trailer Brake Display Page whenever the following occur:

- No trailer is connected.
- A trailer without electric brakes is connected (no DIC message is displayed).
- A trailer with electric brakes has become disconnected (a CHECK TRAILER WIRING message will also be displayed on the DIC).
- There is a fault present in the wiring to the electric trailer brakes (a CHECK TRAILER WIRING message will also be displayed on the DIC).
- There is a fault in the ITBC system (a SERVICE TRAILER BRAKE SYSTEM message will also be displayed in the DIC).

Manual Trailer Brake Apply

The Manual Trailer Brake Apply Lever is located on the Trailer Brake Control Panel and is used to apply the trailer's electric brakes independent of your vehicle's brakes. This lever is used in the Trailer Gain Adjustment Procedure to properly adjust the power output to the trailer brakes. Sliding the lever to the left will apply only the trailer brakes. The power output to the trailer is indicated in the Trailer Brake Display Page in the DIC. If your vehicle's service brakes are applied while using the Manual Trailer Brake Apply Lever, the trailer output power will be the greater of the two.

The trailer and the vehicle's brake lamps will come on when either vehicle braking or manual trailer brakes are applied.

Trailer Gain Adjustment Procedure

Trailer Gain should be set for a specific trailering condition and must be adjusted any time vehicle loading, trailer loading or road surface conditions change.

Setting the Trailer Gain properly is needed for the best trailer stopping performance. A trailer that is over-gained may result in locked trailer brakes. A trailer that is under-gained may result in not enough trailer braking. Both of these conditions may result in poorer stopping and stability of the vehicle and trailer.

Use the following procedure to correctly adjust Trailer Gain for each towing condition:

1. Make sure the trailer brakes are in proper working condition.
2. Connect a properly loaded trailer to the vehicle and make all necessary mechanical and electrical connections. See *Loading Your Vehicle on page 425* for more information.
3. After the electrical connection is made to a trailer equipped with electric brakes:
   - A TRAILER CONNECTED message will be briefly displayed on the DIC display.
   - The Trailer Brake Display Page will appear on the DIC showing TRAILER GAIN and TRAILER OUTPUT.
   - In the Trailer Output display on the DIC, "- - - - - -" will disappear if there is no error present. Connecting a trailer without electric brakes will not clear the six dashed lines.

4. Adjust the Trailer Gain by using the gain adjustment (+ / -) buttons on the Trailer Brake Control Panel.
5. Drive the vehicle with the trailer attached on a level road surface representative of the towing condition and free of traffic at about 20 to 25 mph (32 to 40 km/h) and fully apply the Manual Trailer Brake Apply lever.

   Adjusting trailer gain at speeds lower than 20 to 25 mph (32 to 40 km/h) may result in an incorrect gain setting.
6. Adjust the Trailer Gain to just below the point of trailer wheel lock-up, indicated by trailer wheel squeal or puffs of tire smoke when a trailer wheel locks.

   Trailer wheel lock-up may not occur if towing a heavily loaded trailer. In this case, adjust the Trailer Gain to the highest allowable setting for the towing condition.
7. Re-adjust Trailer Gain any time vehicle loading, trailer loading or road surface conditions change or if you notice trailer wheel lock-up at any time while you are towing

Other ITBC Related DIC Messages

In addition to displaying TRAILER GAIN and TRAILER OUTPUT through the DIC, trailer connection and ITBC system status is displayed in the DIC.

TRAILER CONNECTED – This message will be briefly displayed when a trailer with electric brakes is first connected to the vehicle. This message will automatically turn off in about ten seconds. The driver can also acknowledge this message before it automatically turns off.

CHECK TRAILER WIRING – This message will be displayed if:

1. The ITBC system first determines connection to a trailer with electric brakes and then the trailer harness becomes disconnected from the vehicle.

   If the disconnect occurs while the vehicle is stationary, this message will automatically turn off in about thirty seconds. This message will also turn off if the driver acknowledges this message off or if the trailer harness is re-connected.

If the disconnect occurs while the vehicle is moving, this message will continue until the ignition is turned off. This message will also turn off if the driver acknowledges this message off or if the trailer harness is re-connected.

2. There is an electrical fault in the wiring to the electric trailer brakes. This message will continue as long as there is an electrical fault in the trailer wiring. This message will also turn off if the driver acknowledges this message off.

To determine if the electrical fault is on the vehicle side or trailer side of the trailer wiring harness connection, do the following:

1. Disconnect the trailer wiring harness from the vehicle.
2. Turn the ignition OFF.
3. Wait ten seconds, then turn the ignition back to RUN.
4. If the CHECK TRAILER WIRING message re-appears, the electrical fault is on the vehicle side.

   If the CHECK TRAILER WIRING message only re-appears when you connect the trailer wiring harness to the vehicle, the electrical fault is on the trailer side.

SERVICE TRAILER BRAKE SYSTEM – This message will be displayed when there is a problem with the ITBC system. If this message persists over multiple ignition cycles there is problem with the ITBC system. Take your vehicle to an authorized GM dealer to have the ITBC system diagnosed and repaired.

If either the CHECK TRAILER WIRING or SERVICE TRAILER BRAKE SYSTEM message is displayed while you are driving your vehicle, you no longer have power available to your trailer brakes. When traffic conditions allow, carefully pull your vehicle over to the side of the road and turn the ignition off. Check the wiring connection to the trailer and turn the ignition back on. If either of these messages continues, either your vehicle or your trailer needs service.

An authorized GM dealer may be able to diagnose and repair problems with your trailer. However, any diagnosis and repair of your trailer is not covered under your GM Warranty. Please contact your trailer dealer for assistance with trailer repairs and trailer warranty information.

⚠ CAUTION:

If you have a rear-most window open and you pull a trailer with your vehicle, carbon monoxide (CO) could come into your vehicle. You cannot see or smell CO. It can cause unconsciousness or death. See *Engine Exhaust on page 167*. To maximize your safety when towing a trailer:

- **Have your exhaust system inspected for leaks, and make necessary repairs before starting on your trip.**
- **Keep the rear-most windows closed.**

CAUTION: (Continued)

CAUTION: (Continued)

- **If exhaust does come into your vehicle through a window in the rear or another opening, drive with your front, main heating or cooling system on and with the fan on any speed. This will bring fresh, outside air into your vehicle. Do not use the climate control setting for maximum air because it only recirculates the air inside your vehicle. See *Climate Control System (With Air Conditioning) on page 234* or *Climate Control System (Heater Only) on page 237*.**

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 all trailer hitch parts 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.

While towing a trailer or when exposed to long periods of sunshine, the floor of the truck bed may become very warm. Avoid putting items in the truck bed that might be affected by high ambient temperatures.

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

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.

You can tow in DRIVE (D). You may want to shift the transmission to lower gear selection if the transmission shifts too often (e.g., under heavy loads and/or hilly conditions).

You may also want to activate the tow/haul mode if the transmission shifts too often. See *Tow/Haul Mode Light on page 266*.

When towing at high elevation on steep uphill grades, consider the following: Engine coolant at higher elevations will boil at a lower temperature than at or near sea level. If you turn your engine off immediately after towing at high elevation on steep uphill grades, your vehicle may show signs similar to engine overheating. To avoid this, let the engine run while parked, preferably on level ground, with the transmission in PARK (P) at least five minutes before turning the engine off. If you do get the overheat warning, see *Engine Overheating on page 516*.

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 shift into PARK (P).
5. If you have a four-wheel-drive vehicle, be sure the transfer case is in a drive gear and not in NEUTRAL.
6. Release the regular brakes.

⚠ 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.

Always put the shift lever fully in PARK (P) with the parking brake firmly set.

If the transfer case on four-wheel-drive vehicles is in NEUTRAL, your vehicle will be free to roll, even if your shift lever is in PARK (P). So, be sure the transfer case is in a drive gear — not in NEUTRAL.

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
   - 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 *Scheduled Maintenance (Gasoline Engine) on page 623* for more information. Things that are especially important in trailer operation are automatic transmission fluid (don't overfill), engine oil, axle lubricant, belt, 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 these sections before you start your trip.

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

Trailer Wiring Harness

Your vehicle is equipped with one of the following wiring harnesses for towing a trailer or hauling a slide-in camper.

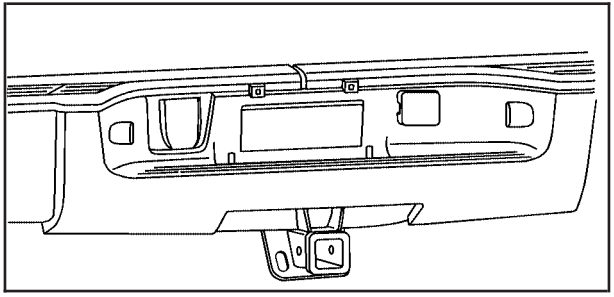
Basic Trailer Wiring

All regular, extended cab and crew cab pickups have a seven-wire trailer towing harness.

For vehicles not equipped with heavy duty trailering, the harness is clipped to the vehicle's frame behind the spare tire mount. The harness requires the installation of a trailer connector, which is available through your dealer.

If you need to tow a light-duty trailer with a standard four-way round pin connector, you can also get an adapter from your dealer.

Heavy-DutyTrailer Wiring Harness Package



For vehicles equipped with heavy duty trailering, the harness is connected to a bracket on the hitch platform. The seven-wire harness contains the following trailer circuits:

- Yellow: Left Stop/Turn Signal
- Dark Green: Right Stop/Turn Signal
- Brown: Taillamps
- White: Ground
- Light Green: Back-up Lamps
- Red: Battery Feed*
- Dark Blue: Trailer Brake*

*The fuses for these two circuits are installed in the underhood electrical center, but the wires are not connected. They should be connected by your dealer or a qualified service center. The fuse and wire for the ITBC is factory installed and connected if the vehicle is equipped with an ITBC. The fuse for the battery feed is not required if your vehicle has an auxiliary battery. If your vehicle does not have an auxiliary battery, have your dealer or authorized service center install the required fuse.

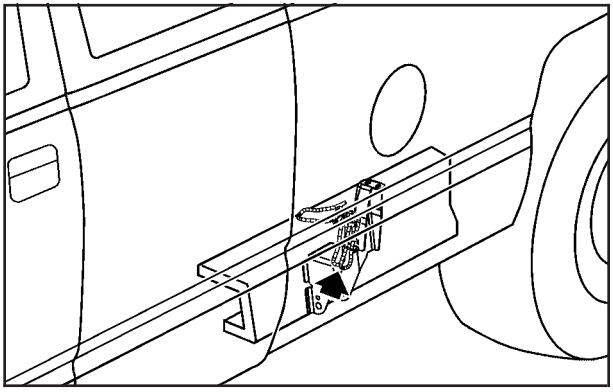
If you are charging a remote (non-vehicle) battery, press the tow/haul mode button located at the end of the shift lever. This will boost the vehicle system voltage and properly charge the battery. If the trailer is too light for tow/haul mode, you can turn on the headlamps as a second way to boost the vehicle system and charge the battery.

Camper/Fifth-Wheel Trailer Wiring Package

The seven-wire camper harness is located under the front edge of the pickup box on the driver's side of the vehicle, attached to the frame bracket. A connector will have to be added to the wiring harness which connects to the camper.

The harness contains the following camper/trailer circuits:

- Yellow: Left Stop/Turn Signal
- Dark Green: Right Stop/Turn Signal
- Brown: Taillamps
- White: Ground
- Light Green: Back-up Lamps
- Red: Battery Feed
- Dark Blue: Trailer Brake



If your vehicle is equipped with the "Heavy-Duty Trailering" option, please refer to "Heavy-Duty Trailer Wiring Package" earlier in this section.

When the camper-wiring harness is ordered without the heavy-duty trailering package, an eight-wire harness with a seven-pin connector is located at the rear of the vehicle and is tied to the vehicle's frame.

Electric Brake Control Wiring Provisions

These wiring provisions are included with your vehicle as part of the trailer wiring package. These provisions are for an electric brake controller. The instrument panel contains blunt cut wires near the data link connector for the trailer brake controller. The harness contains the following wires:

- Dark Blue: Brake Signal to Trailer Connector
- Red/Black: Battery
- Light Blue/White: Brake Switch
- White: Ground

It should be installed by your dealer or a qualified service center.

If your vehicle is equipped with an ITBC, the blunt cuts exist, but are not connected further in the harness. If you install an aftermarket trailer brake controller, the ITBC must be disconnected. Do not power both ITBC and aftermarket controllers to control the trailer brakes at the same time.

Auxiliary Battery

The auxiliary battery provision can be used to supply electrical power to additional equipment that you may choose to add, such as a slide-in camper. If your vehicle has this provision, this relay will be located on the driver's side of the vehicle, next to the underhood electrical center.

Be sure to follow the proper installation instructions that are included with any electrical equipment that you install.

Notice: **Leaving electrical equipment on for extended periods will drain the battery. Always turn off electrical equipment when not in use and do not use equipment that exceeds the maximum amperage rating for the auxiliary battery provision.**

Power Winches

If you wish to use a power winch on your vehicle, only use it when your vehicle is stationary or anchored.

Trailer Recommendations

You must subtract your hitch loads from the CWR for your vehicle. Weigh your vehicle with the trailer attached, so that you won't go over the GVWR or GAWR. If you are using a weight-distributing hitch, weigh the vehicle without the spring bars in place.

You'll get the best performance if you spread out the weight of your load the right way, and if you choose the correct hitch and trailer brakes.

For more information, see *Towing a Trailer on page 445*.

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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/retailer can accessorize your vehicle using genuine GM Accessories. When you go to your GM dealer/retailer and ask for GM Accessories, you will know that GM-trained and supported service technicians will perform the work using genuine GM Accessories.

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 should 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 663*.

Your vehicle has an airbag system. Before attempting to do your own service work, see *Servicing Your Airbag-Equipped Vehicle on page 102*.

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 640*.

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

If your vehicle has a diesel engine, see “Diesel Fuel Requirements and Fuel System” in the DURAMAX® Diesel Supplement.

For vehicles with gasoline engines, please read this.

Gasoline

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

The 8th digit of the Vehicle Identification Number (VIN) shows the code letter or number that identifies your vehicle’s engine. The VIN is at the top left of the instrument panel. See *Vehicle Identification Number (VIN) on page 607*.

If your vehicle has the 5.3L V8 engine (VIN Code 0) or the 5.3L V8 engine (VIN Code 3), you can use either regular unleaded gasoline or ethanol fuel containing up to 85% ethanol (E85); also see *Fuel E85 (85% Ethanol) on page 491*. In all other gasoline engines, use only regular unleaded gasoline.

Gasoline Octane

Use regular unleaded gasoline with a posted octane rating of 87 or higher. If the octane rating is less than 87, you might 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, the engine needs service.

Gasoline Specifications

At a minimum, gasoline should meet ASTM specification D 4814 in the United States or CAN/CGSB-3.5 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 490* 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 260*. 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 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 the fuel system and also damage 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 dealer for service.

Fuel E85 (85% Ethanol)

The 8th digit of the Vehicle Identification Number (VIN) shows the code letter or number that identifies your vehicle's engine. The VIN is at the top left of the instrument panel. See *Vehicle Identification Number (VIN) on page 607*.

If your vehicle has the 5.3L V8 engine (VIN Code 0) or the 5.3L V8 engine (VIN Code 3), you can use either regular unleaded gasoline or ethanol fuel containing up to 85% ethanol (E85); also see *Fuel on page 488*. In all other engines, use only the unleaded gasoline described under *Gasoline Octane on page 489*.

Only vehicles that have the 5.3L V8 engine (VIN Code 0) or the 5.3L V8 engine (VIN Code 3) can use 85% ethanol fuel (E85). We encourage 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. By definition, this means that fuel labeled E85 will have an ethanol content between 70% and 85%. Filling the fuel tank with fuel mixtures that do not meet ASTM specifications can affect driveability and could cause the malfunction indicator lamp to come on.

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 could be because the E85 fuel is not properly formulated for your climate. If this happens, switching to gasoline or adding gasoline to the fuel tank can 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 three gallons (11 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 the fuel tank more often when using E85 than when you are using gasoline. See *Filling the Tank on page 493*.

Notice: **Some additives are not compatible with E85 fuel and can harm your vehicle's fuel system. Damage caused by additives would not be covered by your new vehicle warranty.**

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

Fuels in Foreign Countries

If you plan on driving in another country outside the United States or Canada, the proper fuel might be hard to find. Never use leaded gasoline or any other fuel not recommended in the previous text on fuel. Costly repairs caused by use of improper fuel would not be covered by your warranty.

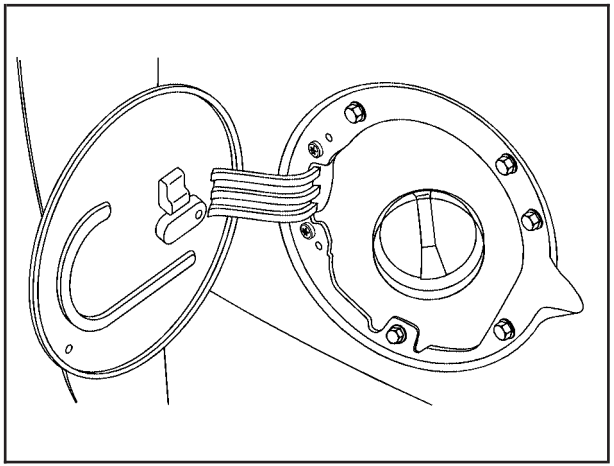
To check the fuel availability, ask an auto club, or contact a major oil company that does business in the country where you will be driving.

Filling the Tank

If your vehicle has the DURAMAX® Diesel engine, see the DURAMAX® Diesel manual for more information.

⚠ 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. Do not use cellular phones. 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. Do not re-enter the vehicle while pumping fuel. Keep children away from the fuel pump; never let children pump fuel.



The tethered fuel cap is located behind a hinged fuel door on the driver'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.

⚠ CAUTION:

Fuel can spray out on you if you open the fuel cap too quickly. If you spill fuel and then something ignites it, you could be badly burned. This spray can happen if 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.

If your vehicle is a dual fuel tank chassis cab model, and it runs out of fuel, refuel the front fuel tank first to ensure a quick restart.

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 601*.

When replacing the fuel cap, turn it clockwise until it clicks. It will require more effort to turn the fuel cap on the last turn as you tighten it. 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 260*.

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 279* 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/retailer 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 260*.**

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.**
- **Do not use a cellular phone while pumping gasoline.**

Checking Things Under the Hood

⚠ CAUTION:

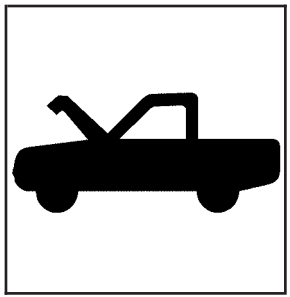
An electric engine cooling fan can start even when the engine is not running. To avoid injury, always keep hands, clothing, and tools away from any engine cooling fan.

⚠ CAUTION:

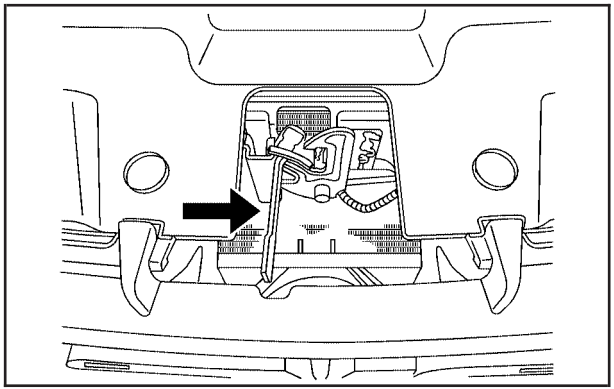
Things that burn can get on hot engine parts and start a fire. These include liquids like fuel, oil, coolant, brake fluid, windshield washer and other fluids, and plastic or rubber. You or others could be burned. Be careful not to drop or spill things that will burn onto a hot engine.

Hood Release

To open the hood do the following:



1. Pull the handle with this symbol on it. It is located inside the vehicle to the left of the brake pedal.



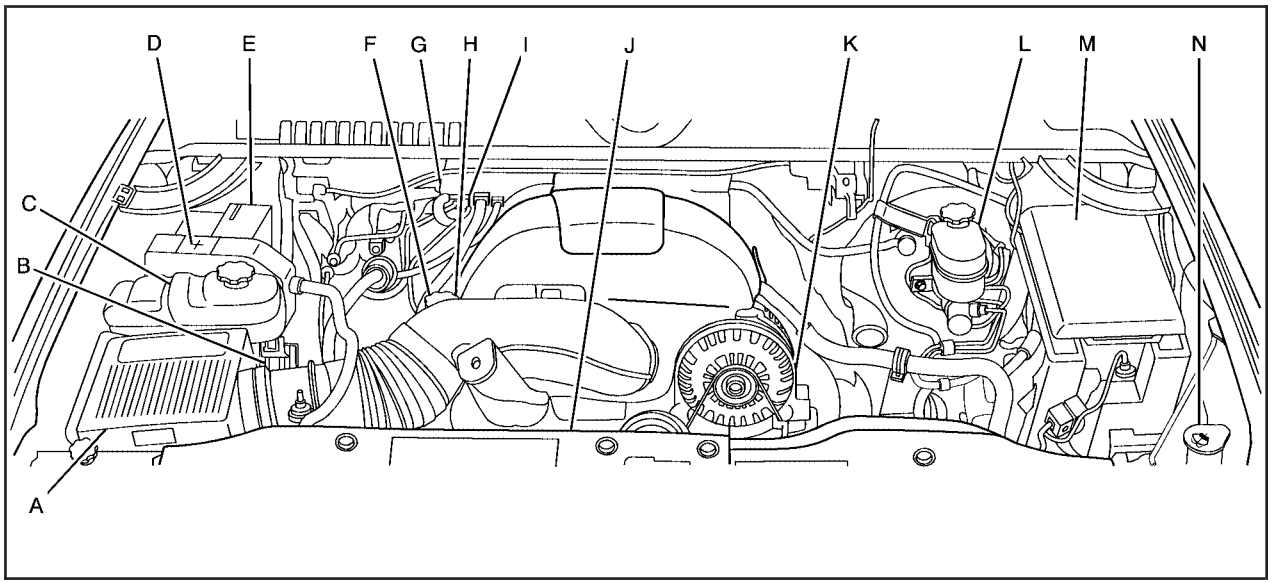
2. Then go to the front of the vehicle and locate the secondary hood release. This is located under the hood, near the center of the grille.
3. Push the secondary hood release to the right.
4. Lift the hood.

   Before closing the hood, be sure all the filler caps are on properly. Then bring the hood from full open to within 6 inches (152 mm) from the closed position, pause, then push the front center of the hood with a swift, firm motion to fully close the hood.

Engine Compartment Overview

If your vehicle has the DURAMAX® Diesel engine, see the DURAMAX® Diesel manual for more information.

When you open the hood on the 5.3L engine (4.3L, 4.8L and 6.0L similar), this is what you will see:



A. Engine Air Cleaner/Filter. See *Engine Air Cleaner/Filter (Gasoline Engines) on page 505*.

B. Air Filter Restriction Indicator (If Equipped). See *Engine Air Cleaner/Filter (Gasoline Engines) on page 505*.

C. Coolant Surge Tank and Pressure Cap. See *Cooling System on page 520* and *Coolant Surge Tank Pressure Cap on page 516*.

D. Positive (+) Terminal. See *Jump Starting on page 532*.

E. Battery. See *Battery on page 531*.

F. Engine Oil Fill Cap. See “When to Add Engine Oil” under *Engine Oil (Gasoline Engine) on page 500*.

G. Automatic Transmission Dipstick. See “Checking the Fluid Level” under *Automatic Transmission Fluid on page 508*.

H. Remote Negative (–) Terminal (Out of View). See *Jump Starting on page 532*.

I. Engine Oil Dipstick (Out of View). See “Checking Engine Oil” under *Engine Oil (Gasoline Engine) on page 500*.

J. Engine Cooling Fan. See *Cooling System on page 520*.

K. Power Steering Fluid Reservoir. See *Power Steering Fluid on page 526*.

L. Brake Master Cylinder Reservoir. See “Brake Fluid” under *Brakes on page 528*.

M. Underhood Fuse Block. See *Underhood Fuse Block on page 612*.

N. Windshield Washer Fluid Reservoir. See “Adding Washer Fluid” under *Windshield Washer Fluid on page 527*.

Engine Oil (Gasoline Engine)

If your vehicle has a diesel engine, see “Engine Oil” in the DURAMAX® Diesel Engine Supplement.

If the CHECK OIL LEVEL light appears on the instrument cluster, except vehicles that have the 4.3L engine, check the engine oil level right away.

For more information, see *Driver Information Center (DIC) on page 267*. You should check the engine oil level regularly; this is an added reminder.

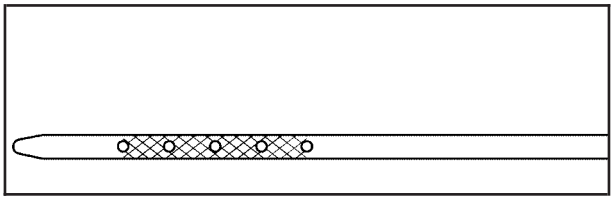
Checking Engine Oil

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 498* for the location of the engine oil dipstick.

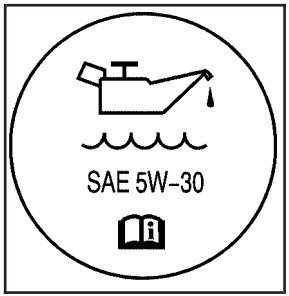
1. Turn off the engine and give the oil several minutes to drain back into the oil pan. If you do not do this, the oil dipstick might not show the actual level.
2. Pull out the dipstick and clean it with a paper towel or cloth, then push it back in all the way. Remove it again, keeping the tip down, and check the level.

When to Add Engine Oil



If the oil is below the cross-hatched area at the tip of the dipstick, you 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 616*.

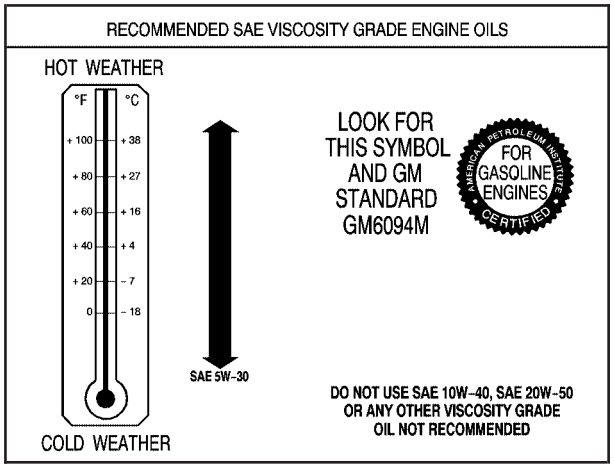
Notice: **Do not add too much oil. If the engine has so much oil that the oil level gets above the cross-hatched area that shows the proper operating range, the engine could be damaged.**



See *Engine Compartment Overview on page 498* 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. Push the dipstick all the way back in when you are through.

What Kind of Engine Oil to Use



Look for three things:

- GM6094M

  Your vehicle's engine requires oil meeting GM Standard GM6094M. 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 have the starburst symbol on the container. This symbol indicates that the oil has been certified by the American Petroleum Institute (API).

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 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 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 279*. 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 coming 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. If your vehicle does not have DIC buttons, the vehicle must be in PARK (P) to access this display. See *DIC Operation and Displays (With DIC Buttons) on page 268* or *DIC Operation and Displays (Without DIC Buttons) on page 275*.
2. Press and hold the SET/RESET button on the DIC, or the trip odometer reset stem if your vehicle does not have DIC buttons, 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.

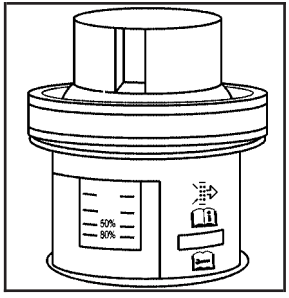
What to Do with Used Oil

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 (Gasoline Engines)

If your vehicle has a diesel engine, see "Pickup Models" under "Engine Air Cleaner/Filter" in the DURAMAX® Diesel Supplement for the correct inspection and replacement procedures.



See *Engine Compartment Overview on page 498* for the location of the engine air cleaner/filter and the air filter restriction indicator, if the vehicle has one.

When to Inspect the Engine Air Cleaner/Filter

If your vehicle has an air filter restriction indicator, it lets you know when the engine air cleaner/filter needs to be replaced. On vehicles with a restriction indicator, you should inspect the air filter restriction indicator at every oil change and replace the engine air cleaner/filter when the indicator tells you to.

On vehicles without an air filter restriction indicator, 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 (Gasoline Engine) on page 623* 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

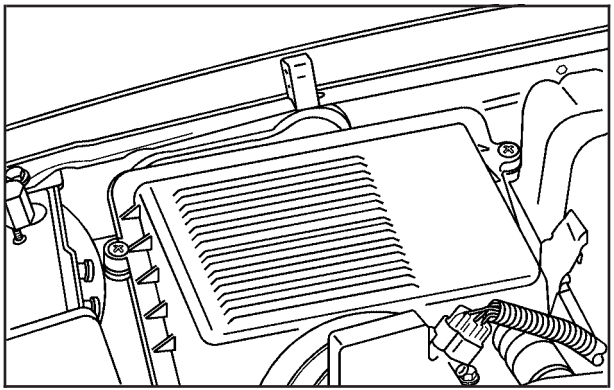
Vehicles With an Air Filter Restriction Indicator

Locate the air filter restriction indicator on the engine air cleaner/filter cover. When the indicator turns black or is in the red/orange “change” zone, replace the filter and reset the indicator. See Steps 1 through 7 to replace the engine air cleaner/filter and to reset the air filter restriction indicator.

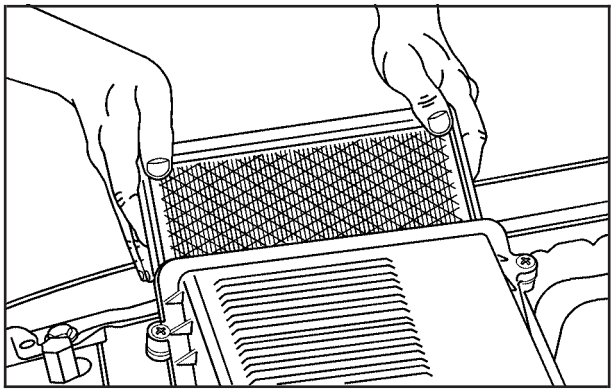
Vehicles Without an Air Filter Restriction Indicator

To inspect the air cleaner/filter, remove the engine air cleaner/filter from the vehicle by following Steps 1 through 7. When you have the engine air cleaner/filter removed, lightly shake it to release loose dust and dirt. If the engine air cleaner/filter remains caked with dirt, a new filter is required.

Replacing the Engine Air Cleaner/Filter and Resetting the Air Filter Restriction Indicator



1. Locate the air cleaner/filter assembly. See *Engine Compartment Overview on page 498*.
2. Loosen the four screws on the cover of the housing and lift up the cover.



3. Remove the engine air cleaner/filter from the housing. Care should be taken to dislodge as little dirt as possible.
4. Clean the engine air cleaner/filter sealing surfaces and the housing.

5. Inspect or replace the engine air cleaner/filter.
6. Reinstall the cover and tighten the screws.
7. Reset the air filter restriction indicator, if the vehicle has one, by pressing the top button on the indicator.

⚠ 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.

Automatic Transmission Fluid

When to Check and Change Automatic Transmission Fluid

It is usually not necessary to check the transmission fluid level. The only reason for fluid loss is a transmission leak or overheating the transmission. If you suspect a small leak, then use the following checking procedures to check the fluid level. However, if there is a large leak, then it may be necessary to have the vehicle towed to a dealership service department and have it repaired before driving the vehicle further.

Notice: **Use of the incorrect automatic transmission fluid may damage your vehicle, and the damages may not be covered by your warranty. Always use the automatic transmission fluid listed in *Recommended Fluids and Lubricants on page 635*.**

Change the fluid and filter at the intervals listed in the Maintenance Schedule. See *Scheduled Maintenance (Gasoline Engine) on page 623*. Be sure to use the transmission fluid listed in *Recommended Fluids and Lubricants on page 635*.

How to Check Automatic Transmission Fluid

Notice: **Too much or too little fluid can damage your transmission. Too much can mean that some of the fluid could come out and fall on hot engine parts or exhaust system parts, starting a fire. Too little fluid could cause the transmission to overheat. Be sure to get an accurate reading if you check your transmission fluid.**

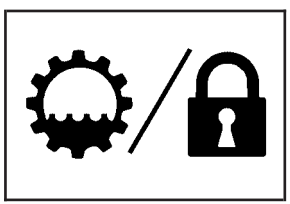
Before checking the fluid level, prepare your vehicle as follows:

1. Start the engine and park your vehicle on a level surface. Keep the engine running.
2. Apply the parking brake and 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, move the shift lever back to PARK (P).
4. Allow the engine to idle (500 – 800 rpm) for at least one minute. Slowly release the brake pedal.
5. Keep the engine running and press the Trip/Fuel button or trip odometer reset stem until TRANS TEMP (Transmission Temperature) displays on the Driver Information Center (DIC).
6. Using the TRANS TEMP reading, determine and perform the appropriate check procedure. If the TRANS TEMP reading is not within the required temperature ranges, allow the vehicle to cool, or operate the vehicle until the appropriate transmission fluid temperature is reached.

Cold Check Procedure

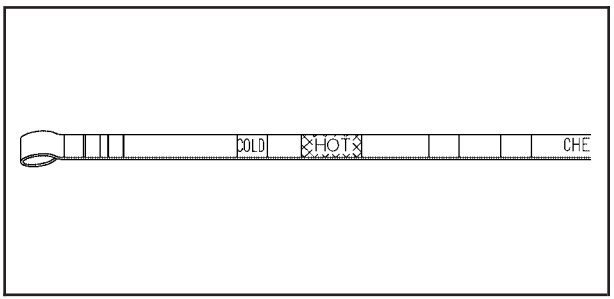
Use this procedure only as a reference to determine if the transmission has enough fluid to be operated safely until a hot check procedure can be made. The hot check procedure is the most accurate method to check the fluid level. Perform the hot check procedure at the first opportunity. Use this cold check procedure to check fluid level when the transmission temperature is between 80°F and 90°F (27°C and 32°C).

1. Locate the transmission dipstick at the rear of the engine compartment, on the passenger's side of the vehicle.



The dipstick handle has this graphic. See *Engine Compartment Overview on page 498* for more information.

2. Flip the handle up, and then pull out the dipstick and wipe it with a clean rag or paper towel.
3. Install the dipstick by pushing it back in all the way, wait three seconds, and then pull it back out again.
4. Check both sides of the dipstick, and read the lower level. Repeat the check procedure to verify the reading.



5. If the fluid level is below the COLD check band, add only enough fluid as necessary to bring the level into the COLD band. It does not take much fluid, generally less than one pint (0.5L). Do not overfill.

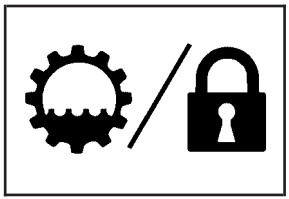
6. Perform a hot check at the first opportunity after the transmission reaches a normal operating temperature between 160°F to 200°F (71°C to 93°C).
7. If the fluid level is in the acceptable range, push the dipstick back in all the way, then flip the handle down to lock the dipstick in place.

Hot Check Procedure

Use this procedure to check the transmission fluid level when the transmission fluid temperature is between 160°F and 200°F (71°C and 93°C).

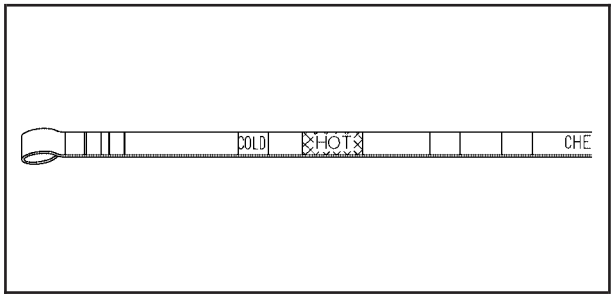
The hot check is the most accurate method to check the fluid level. The hot check should be performed at the first opportunity in order to verify the cold check. The fluid level rises as fluid temperature increases, so it is important to ensure the transmission temperature is within range.

1. Locate the transmission dipstick at the rear of the engine compartment, on the passenger's side of the vehicle.



The dipstick handle has this graphic. See *Engine Compartment Overview on page 498* for more information.

2. Flip the handle up, and then pull out the dipstick and wipe it with a clean rag or paper towel.
3. Install the dipstick by pushing it back in all the way, wait three seconds, and then pull it back out again.
4. Check both sides of the dipstick, and read the lower level. Repeat the check procedure to verify the reading.



5. Safe operating level is within the HOT crosshatch band on the dipstick. If the fluid level is not within the HOT band, and the transmission temperature is between 160°F and 200°F (71°C and 93°C), add or drain fluid as necessary to bring the level into the HOT band. If the fluid level is low, add only enough fluid to bring the level into the HOT band. It does not take much fluid, generally less than one pint (0.5L). Do not overfill.
6. If the fluid level is in the acceptable range, push the dipstick back in all the way, then flip the handle down to lock the dipstick in place.

Consistency of Readings

Always check the fluid level at least twice using the procedures described. Consistency (repeatable readings) is important to maintaining proper fluid level. If fluid is added, it may take 15 minutes or longer to obtain an accurate reading because of residual fluid draining down the dipstick tube. If inconsistent readings persist, check the transmission breather to be sure it is clean and not clogged. If readings are still inconsistent, contact your dealer.

Engine Coolant

If your vehicle has the DURAMAX® Diesel engine, see the DURAMAX® Diesel manual for more information.

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, see *Engine Overheating on page 516*.

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 you have to add coolant more than four times a year, have your dealer check your 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 635* for more information.**

Checking Coolant

The coolant surge tank is located in the engine compartment on the passenger's side of the vehicle. See *Engine Compartment Overview on page 498* for more information on location.

⚠ CAUTION:

Turning the surge tank pressure cap when the engine and radiator are hot can allow steam and scalding liquids to blow out and burn you badly. Never turn the surge tank pressure cap — even a little — when the engine and radiator are hot.

The vehicle must be on a level surface. When your engine is cold, the coolant level should be at the FULL COLD mark on the coolant surge tank.

If your vehicle has a low coolant sensor and the LOW COOLANT LEVEL message comes on and stays on, it means you are low on engine coolant. See "LOW COOLANT LEVEL" under *DIC Warnings and Messages on page 279*.

Adding Coolant

If you need more coolant, add the proper DEX-COOL® coolant mixture at the surge tank, but only when the engine is cool. See *Cooling System on page 520* for more information.

⚠ 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 replacing the pressure cap, make sure it is hand-tight and fully seated.

Coolant Surge Tank 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.**

The coolant surge tank pressure cap must be fully installed on the coolant surge tank. See *Engine Compartment Overview on page 498* for more information on location.

Engine Overheating

If your vehicle has the DURAMAX® Diesel engine, see the DURAMAX® Diesel manual for more information.

You will find a coolant temperature gage on your vehicle's instrument panel. See *Engine Coolant Temperature Gage on page 258*.

In addition, you will find ENGINE OVERHEATED STOP ENGINE, ENGINE OVERHEATED IDLE ENGINE, and ENGINE POWER IS REDUCED messages in the Driver Information Center (DIC) on the instrument panel. See *DIC Warnings and Messages on page 279*.

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

CAUTION: (Continued)

CAUTION: (Continued)

burned. Stop your engine if it overheats, and get out of the vehicle until the engine is cool.

See *Overheated Engine Protection Operating Mode (V8 Engines Only) on page 519* 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 (V8 Engines Only) on page 519* for information on driving to a safe place in an emergency.**

If No Steam Is Coming From Your Engine

The ENGINE OVERHEATED STOP ENGINE or the ENGINE OVERHEATED IDLE ENGINE message, along with a low coolant condition, 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 a long hill on a hot day.
- Stop after high-speed driving.
- Idle for long periods in traffic.
- Tow a trailer. See *Towing a Trailer on page 445*.

If you get the ENGINE OVERHEATED STOP ENGINE or the ENGINE OVERHEATED IDLE ENGINE message with no sign of steam, try this for a minute or so:

1. If you have an air conditioner and it is on, turn it off.
2. Turn on your heater to full hot at the highest fan speed and open the windows as necessary.
3. If you are stopped in a traffic jam, apply the brake, shift to NEUTRAL (N); otherwise, shift to the highest gear while driving — DRIVE (D) or THIRD (3).

If you no longer have the overheat warning, you can drive. Just to be safe, drive slower for about 10 minutes. If the warning does not come back on, you can drive normally.

If the warning continues, pull over, stop, and park your vehicle immediately.

If there is still no sign of steam and your vehicle has an engine-driven cooling fan, push down the accelerator until the engine speed is about twice as fast as normal idle speed for at least five minutes while you are parked.

If there is still no sign of steam and your vehicle has an electric cooling fan, idle the engine for five minutes while you are parked.

If you still have the warning, 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 (V8 Engines Only)

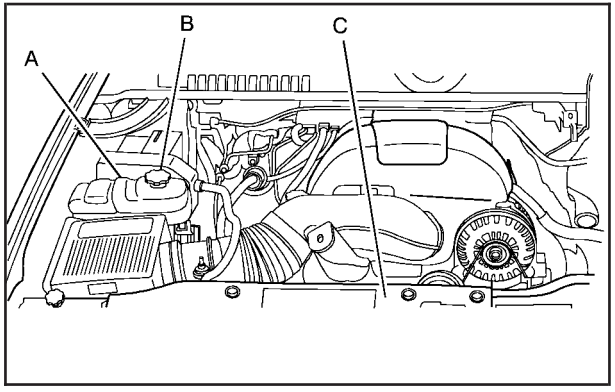
If an overheated engine condition exists and the REDUCED ENGINE POWER message is displayed, an overheat protection mode which alternates firing groups of cylinders helps prevent engine damage. In this mode, you will notice a loss in power and engine performance. This operating mode allows your vehicle to be driven to a safe place in an emergency. 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 (Gasoline Engine) on page 500*.**

Cooling System

If your vehicle has the DURAMAX® Diesel engine, see the DURAMAX® Diesel manual for more information.

When you decide it is safe to lift the hood, here is what you will see:



5.3L Engine (4.3L, 4.8L and 6.0L Similar)

A. Coolant Surge Tank

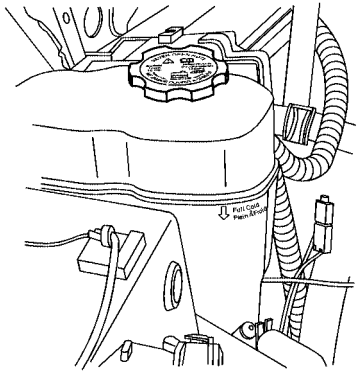
B. Coolant Surge Tank Pressure Cap

C. Engine Cooling Fan

⚠ CAUTION:

An electric engine cooling fan can start even when the engine is not running. To avoid injury, always keep hands, clothing, and tools away from any engine cooling fan.

If the coolant inside the coolant surge tank is boiling, do not do anything else until it cools down. The vehicle should be parked on a level surface. Check the coolant level after the system cools down. Some amount of coolant may be lost due to overheating.



The coolant level should be at or above the FULL COLD mark. If it is not, you may have 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

CAUTION: (Continued)

CAUTION: (Continued)

touch them. If you do, you can be burned.

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

Notice: **Engine damage from running your engine without coolant is not covered by your warranty. See *Overheated Engine Protection Operating Mode (V8 Engines Only) on page 519* 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 Surge Tank for Gasoline Engines

If your vehicle has a diesel engine, see “Cooling System” in the DURAMAX® Diesel Supplement for the proper coolant fill procedure.

If you have not found a problem yet, check to see if coolant is visible in the surge tank. If coolant is visible but the coolant level is not at or above the FULL COLD mark, add a 50/50 mixture of clean, drinkable water and DEX-COOL® coolant at the coolant surge tank, but be sure the cooling system, including the coolant surge tank pressure cap, is cool before you do it. See *Engine Coolant on page 513* for more information.

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

⚠ 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 coolant surge tank pressure cap — even a little — they can come out at high speed. Never turn the cap when the cooling system, including the coolant surge tank pressure cap, is hot. Wait for the cooling system and coolant surge tank pressure cap to cool if you ever have to turn the pressure cap.

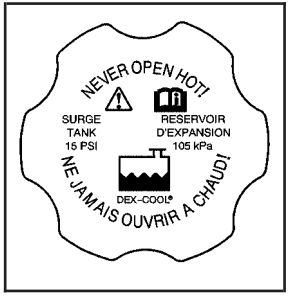
⚠ CAUTION:

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 a proper coolant.

Notice: **In cold weather, water can freeze and crack the engine, radiator, heater core and other parts. Use the recommended coolant and the proper coolant mixture.**

⚠ CAUTION:

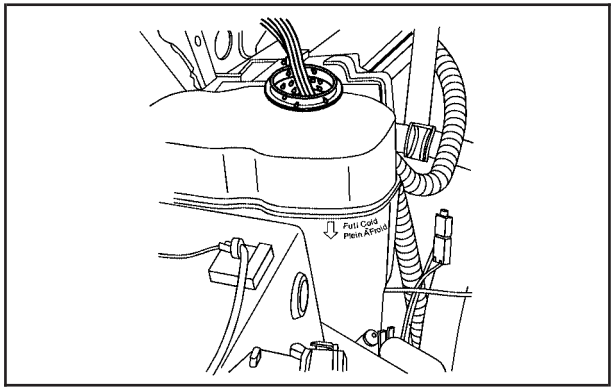
You can be burned if you spill coolant on hot engine parts. Coolant contains ethylene glycol and it will burn if the engine parts are hot enough. Do not spill coolant on a hot engine.



1. Remove the coolant surge tank pressure cap when the cooling system, including the coolant surge tank pressure cap and upper radiator hose, is no longer hot.

Turn the pressure cap slowly counterclockwise about one full turn. If you hear a hiss, wait for that to stop. A hiss means there is still some pressure left.

2. Then keep turning the pressure cap slowly, and remove it.



3. Fill the coolant surge tank with the proper mixture, to the FULL COLD mark.

4. With the coolant surge tank pressure cap off, start the engine and let it run until the engine coolant temperature gage indicates approximately 195°F (90°C).

   By this time, the coolant level inside the coolant surge tank may be lower. If the level is lower, add more of the proper mixture to the coolant surge tank until the level reaches the FULL COLD mark.

5. Then replace the pressure cap. Be sure the pressure cap is hand-tight and fully seated.

6. Verify coolant level after engine is shut off and the coolant is cold. If necessary, repeat coolant fill procedure Steps 1 through 6.

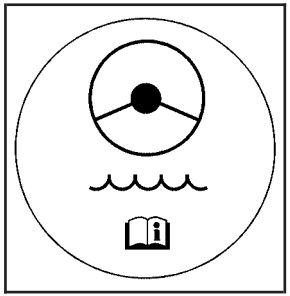
Engine Fan Noise

If your vehicle has a clutched engine cooling fan, when the clutch is engaged, the fan spins faster to provide more air to cool the engine. In most everyday driving conditions, the fan is spinning slower and the clutch is not fully engaged. This improves fuel economy and reduces fan noise. Under heavy vehicle loading, trailer towing, and/or high outside temperatures, the fan speed increases as the clutch more fully engages, so you may hear an increase in fan noise. This is normal and should not be mistaken as the transmission slipping or making extra shifts. It is merely the cooling system functioning properly. The fan will slow down when additional cooling is not required and the clutch disengages.

You may also hear this fan noise when you start the engine. It will go away as the fan clutch partially disengages.

If your vehicle has electric cooling fans, you may hear the fans spinning at low speed during most everyday driving. The fans may turn off if no cooling is required. Under heavy vehicle loading, trailer towing, and/or high outside temperatures, or if you are operating your air conditioning system, the fans may change to high speed and you may hear an increase in fan noise. This is normal and indicates that the cooling system is functioning properly. The fans will change to low speed when additional cooling is no longer required.

Power Steering Fluid



See *Engine Compartment Overview on page 498* 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 level should be at the FULL COLD mark. If necessary, add only enough fluid to bring the level up to the mark.

What to Use

To determine what kind of fluid to use, see *Recommended Fluids and Lubricants on page 635*. Always use the proper fluid. Failure to use the proper fluid can cause leaks and damage hoses and seals.

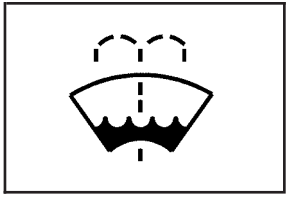
Windshield Washer Fluid

What to Use

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

Adding Washer Fluid

Your vehicle has a low washer fluid message in the DIC that comes on when the washer fluid is low. The message is displayed for 15 seconds at the start of each ignition cycle. When the WASHER FLUID LOW ADD FLUID message displays, you will need to add washer fluid to the windshield washer fluid reservoir.



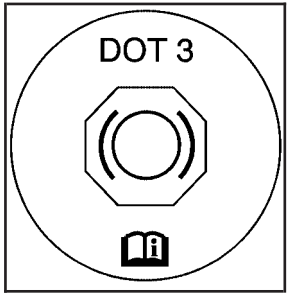
Open the cap with the washer symbol on it. Add washer fluid until the tank is full. See *Engine Compartment Overview on page 498* for reservoir location.

Notice:

- **When using concentrated washer fluid, follow the manufacturer's instructions for adding water.**
- **Do not mix water with ready-to-use washer fluid. Water can cause the solution to freeze and damage your washer fluid tank and other parts of the washer system. Also, water does not clean as well as washer fluid.**
- **Fill your washer fluid tank only three-quarters full when it is very cold. This allows for fluid expansion if freezing occurs, which could damage the tank if it is completely full.**
- **Do not use engine coolant (antifreeze) in your windshield washer. It can damage the vehicle's windshield washer system and paint.**

Brakes

Brake Fluid



The brake master cylinder reservoir is filled with DOT-3 brake fluid. See *Engine Compartment Overview on page 498* 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 the brake system fixed, since a leak means that sooner or later the brakes will not work well.

So, it is not a good idea to top off the brake fluid. Adding brake fluid will not correct a leak. If you add fluid when the 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.

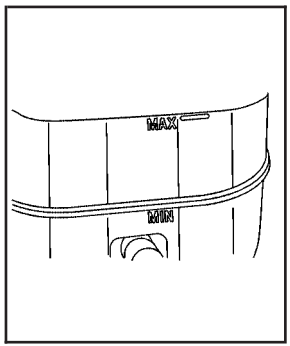
⚠ CAUTION:

If you have 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. See “Checking Brake Fluid” in this section.

Refer to the Maintenance Schedule to determine when to check the brake fluid. See *Scheduled Maintenance (Gasoline Engine) on page 623*.

Checking Brake Fluid

You can check the brake fluid without taking off the cap.



Just look at the brake fluid reservoir. The fluid level should be above MIN. If it is not, have the brake system checked to see if there is a leak.

After work is done on the brake hydraulic system, make sure the level is above the MIN but not over the MAX mark.

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 635*.

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. 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 601*.**

Brake Wear

Your vehicle has front disc brakes and could have rear drum brakes or rear disc brakes.

Disc brake pads have built-in wear indicators that make a high-pitched warning sound when the brake pads are worn and new pads are needed. The sound can come and go or be heard all the time 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 can cause a brake squeal when the brakes are first applied or lightly applied. This does not mean something is wrong with the brakes.

Properly torqued wheel nuts are necessary to help prevent brake pulsation. When tires are rotated, inspect brake pads for wear and evenly tighten wheel nuts in the proper sequence to torque specifications in *Capacities and Specifications on page 616*.

If you have rear drum brakes, they do not have wear indicators, but if you ever hear a rear brake rubbing noise, have the rear brake linings inspected immediately. Rear brake drums should be removed and inspected each time the tires are removed for rotation or changing. Drum brakes have an inspection hole to inspect lining wear during scheduled maintenance. When you have the front brake pads replaced, have the rear brakes inspected, too.

Brake linings should always be replaced as complete axle sets.

Brake Pedal Travel

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

Brake Adjustment

Every time you make a brake stop, the brakes adjust for wear.

Replacing Brake System Parts

The braking system on a vehicle is complex. Its many parts have to be of top quality and work well together if the vehicle is to have really good braking. Your vehicle was designed and tested with top-quality brake parts. When you replace parts of the braking system — for example, when the brake linings wear down and you need new ones put in — be sure you get new approved replacement parts. If you do not, the brakes might not work properly. For example, if someone puts in brake linings that are wrong for your vehicle, the balance between the 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 498* 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 the 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 532* for tips on working around a battery without getting hurt.**

Jump Starting

If your vehicle's battery (or batteries) has run down, you may want to use another vehicle and some jumper cables to start your vehicle. Be sure to use the following steps to do it safely.

> **⚠ 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. If you have a vehicle with a diesel engine with two batteries, you should know before you begin that, especially in cold weather, you may not be able to get enough power from a single battery in another vehicle to start your diesel engine. If your vehicle has more than one battery, use the battery that is closer to the starter — this will reduce electrical resistance. This is located on the passenger side, in the rear of the engine compartment.
3. Get the vehicles close enough so the jumper cables can reach, but be sure the vehicles are not touching each other. If they are, it could cause an unwanted ground connection. You would not be able to start your vehicle, and the bad grounding could damage the electrical systems.

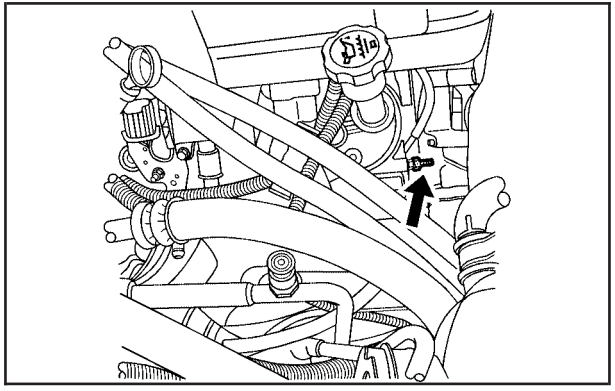
   To avoid the possibility of the vehicles rolling, set the parking brake firmly on both vehicles involved in the jump start procedure. Put the automatic transmission in PARK (P) or a manual transmission in NEUTRAL before setting the parking brake. If you have a four-wheel-drive vehicle, be sure the transfer case is in a drive gear, not in NEUTRAL.

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.**

4. 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 the lamps that are not needed. This will avoid sparks and help save both batteries. And it could save the radio!

5. Open the hood on the other vehicle and locate the positive (+) and negative (–) terminal locations on that vehicle.

   The positive (+) terminal, is located under a red plastic cover at the positive battery post. To uncover the positive (+) terminal, open the red plastic cover.



The remote negative (–) terminal is a stud located on the right front passenger side of the engine, where the negative battery cable attaches.

See *Engine Compartment Overview on page 498*

⚠ 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.

CAUTION: (Continued)

CAUTION: (Continued)

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.

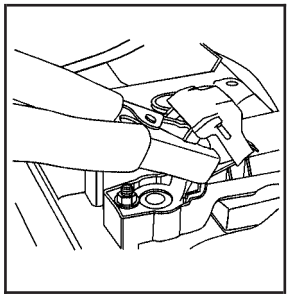
⚠ CAUTION:

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

6. Check that the jumper cables do not have loose or missing insulation. If they do, you could get a shock. The vehicles could be damaged too.

   Before you connect the cables, here are some basic things you should know. Positive (+) will go to positive (+) or to a remote positive (+) terminal if the vehicle has one. Negative (–) will go to a heavy, unpainted metal engine part or to a remote negative (–) terminal if the vehicle has one.

   Do not connect positive (+) to negative (–) or you will get a short that would damage the battery and maybe other parts too. And do not connect the negative (–) cable to the negative (–) terminal on the dead battery because this can cause sparks.



5.3L engine (4.3L, 4.8L and 6.0L similar),

7. Connect the red positive (+) cable to the positive (+) terminal of the vehicle with the dead battery.

8. Do not let the other end touch metal. Connect it to the positive (+) terminal of the good battery. Use a remote positive (+) terminal if the vehicle has one.

9. Now connect the black negative (–) cable to the negative (–) terminal of the good battery. Use a remote negative (–) terminal if the vehicle has one.

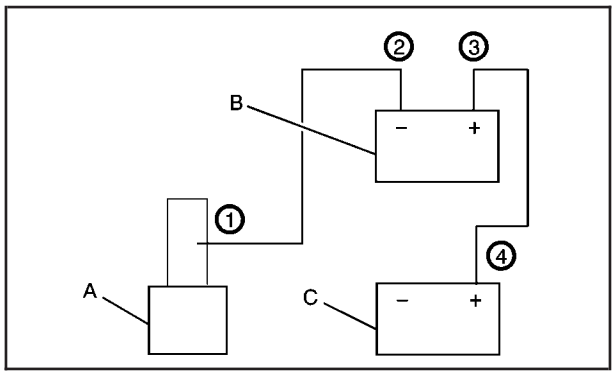
   Do not let the other end touch anything until the next step.

10. Connect the other end of the negative (–) cable to a heavy, unpainted metal engine part or to the remote negative (–) terminal, on the vehicle with the dead battery.

11. Start the vehicle with the good battery and run the engine for a while.

12. Try to start the vehicle that had the dead battery. If it will not start after a few tries, it probably needs service.

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 (+) 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 bad 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 positive (+) terminal cover, to its original position.

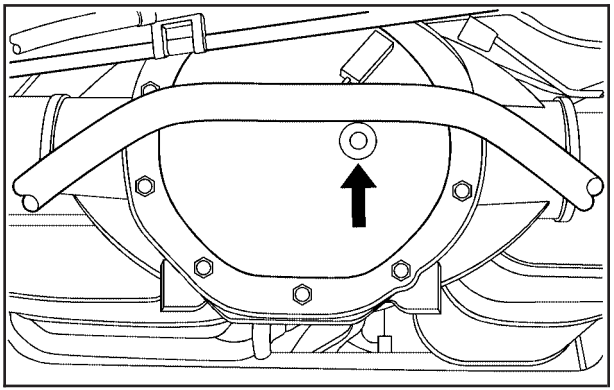
Rear Axle

When to Check Lubricant

It is not necessary to regularly check rear axle fluid unless you suspect there is a leak or you hear an unusual noise. A fluid loss could indicate a problem. Have it inspected and repaired.

All axle assemblies are filled by volume of fluid during production. They are not filled to reach a certain level. When checking the fluid level on any axle, variations in the readings can be caused by factory fill differences between the minimum and the maximum fluid volume. Also, if a vehicle has just been driven before checking the fluid level, it may appear lower than normal because fluid has traveled out along the axle tubes and has not drained back to the sump area. Therefore, a reading taken five minutes after the vehicle has been driven will appear to have a lower fluid level than a vehicle that has been stationary for an hour or two. Remember that the rear axle assembly must be supported to get a true reading.

How to Check Lubricant



To get an accurate reading, the vehicle should be on a level surface.

For all 4.3L, 4.8L and 5.3L 1500 Series applications, the proper level is 0.04 inches to 0.75 inches (1 mm to 19 mm) below the bottom of the filler hole, located on the rear axle. Add only enough fluid to reach the proper level.

For all 6.0L 1500 Series applications, the proper level is from 0.6 inches to 1.6 inches (15 mm to 40 mm) below the bottom of the filler plug hole, located on the rear axle. Add only enough fluid to reach the proper level.

For all 6.0L 2500HD Series applications, the proper level is from 0 to 0.5 inches (0 mm to 13 mm) below the bottom of the filler plug hole, located on the rear axle. Add only enough fluid to reach the proper level.

For all 6.6L Duramax Diesel 2500HD Series applications and all 3500 Series applications, the proper level is from 0.6 inches to 0.8 inches (17 mm to 21 mm) below the bottom of the filler plug hole, located on the rear axles. Add only enough fluid to reach the proper level.

What to Use

Refer to the Maintenance Schedule to determine what kind of lubricant to use. See *Recommended Fluids and Lubricants on page 635*.

Four-Wheel Drive

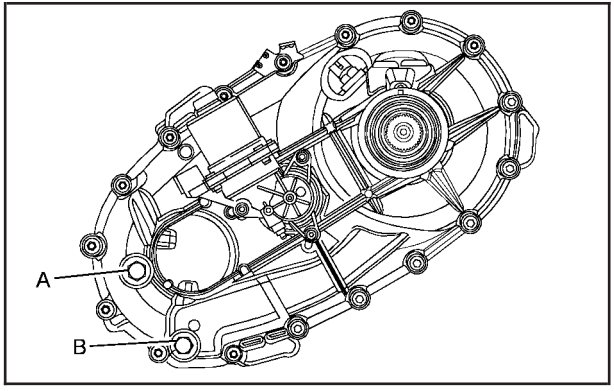
Lubricant checks in this section also apply to these vehicles.

Transfer Case

When to Check Lubricant

It is not necessary to regularly check transfer case fluid unless you suspect there is a leak, or you hear an unusual noise. A fluid loss could indicate a problem. Have it inspected and repaired.

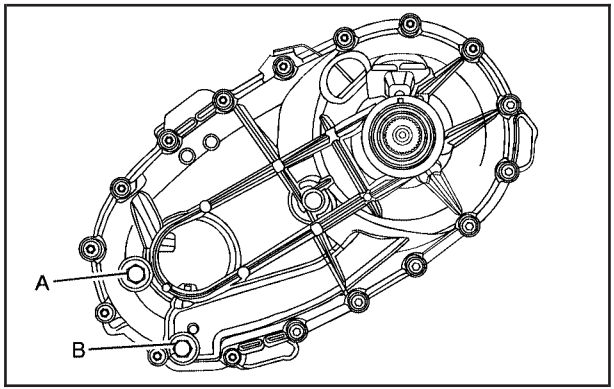
How to Check Lubricant



Electric Shift Transfer Case

A. Fill Plug

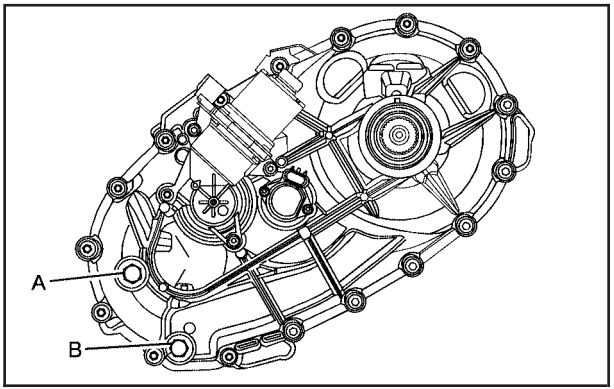
B. Drain Plug



Manual Shift Transfer Case

A. Fill Plug

B. Drain Plug



Active Transfer Case

A. Fill Plug

B. Drain Plug

To get an accurate reading, the vehicle should be on a level surface.

If the level is below the bottom of the filler plug hole, located on the transfer case, you will need to add some lubricant. Add enough lubricant to raise the level to the bottom of the filler plug hole. Use care not to overtighten the plug.

When to Change Lubricant

Refer to the Maintenance Schedule to determine how often to change the lubricant. See *Scheduled Maintenance (Gasoline Engine) on page 623*.

What to Use

Refer to the Maintenance Schedule to determine what kind of lubricant to use. See *Recommended Fluids and Lubricants on page 635*.

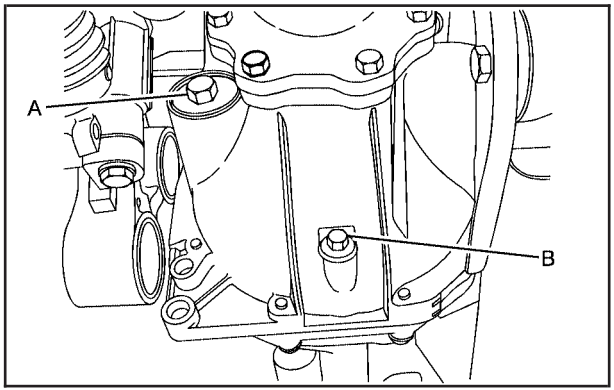
Front Axle

When to Check and Change Lubricant

It is not necessary to regularly check front axle fluid unless you suspect there is a leak or you hear an unusual noise. A fluid loss could indicate a problem. Have it inspected and repaired.

How to Check Lubricant

To get an accurate reading, the vehicle should be on a level surface.



A. Fill Plug

B. Drain Plug

If the level is below the bottom of the filler plug hole, located on the front axle, you may need to add some lubricant:

- When the differential is cold, add enough lubricant to raise the level from 0 (0 mm) to 1/8 inch (3.2 mm) below the filler plug hole.
- When the differential is at operating temperature (warm), add enough lubricant to raise the level to the bottom of the filler plug hole.

What to Use

Refer to the Maintenance Schedule to determine what kind of lubricant to use. See *Recommended Fluids and Lubricants on page 635*.

Noise Control System

Tampering with Noise Control System Prohibited

The following information relates to compliance with federal noise emission standards for vehicles with a Gross Vehicle Weight Rating (GVWR) of more than 10,000 lbs (4 536 kg). The Maintenance Schedule provides information on maintaining the noise control system to minimize degradation of the noise emission control system during the life of your vehicle. The noise control system warranty is given in your warranty booklet.

These standards apply only to vehicles sold in the United States.

Federal law prohibits the following acts or the causing thereof:

1. The removal or rendering inoperative by any person, other than for purposes of maintenance, repair or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control, prior to its sale or delivery to the ultimate purchaser or while it is in use; or
2. The use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

Among those acts presumed to constitute tampering are the acts listed below.

Insulation:

- Removal of the noise shields or any underhood insulation.

Engine:

- Removal or rendering engine speed governor, if the vehicle has one, inoperative so as to allow engine speed to exceed manufacturer specifications.

Fan and Drive:

- Removal of fan clutch, if the vehicle has one, or rendering clutch inoperative.
- Removal of the fan shroud, if the vehicle has one.

Air Intake:

- Removal of the air cleaner silencer.
- Modification of the air cleaner.

Exhaust:

- Removal of the muffler and/or resonator.
- Removal of the exhaust pipes and exhaust pipe clamps.

Bulb Replacement

For the proper type of replacement bulbs, see *Replacement Bulbs on page 549*.

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

Halogen Bulbs

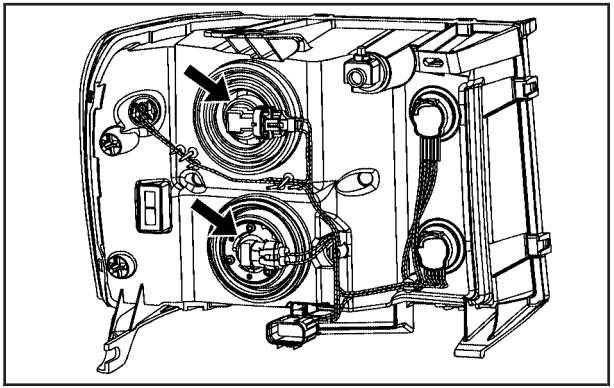
⚠ CAUTION:

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

To replace one of these bulbs, do the following:

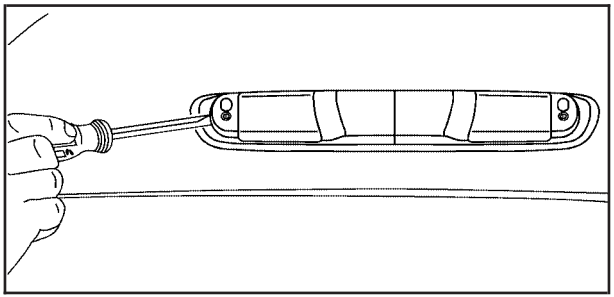
1. Open the hood. See *Hood Release on page 497* for more information.
2. If you are replacing the bulb on the passenger side remove the Engine Air Cleaner cover. See *Engine Air Cleaner/Filter (Gasoline Engines) on page 505* for more information.
3. Reach in and access the bulb sockets from inside the engine compartment.



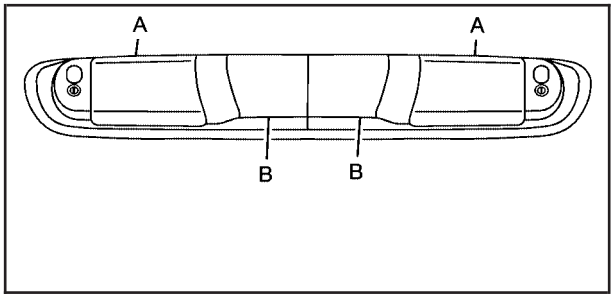
4. Turn the bulb socket counterclockwise to remove it from the headlamp assembly and pull it straight out.
5. Unplug the electrical connector from the old bulb by releasing the clips on the bulb socket.
6. Replace it with a new bulb socket.
7. Plug in the electrical connector to the new bulb socket.
8. Reinstall the new bulb socket into the headlamp assembly and turn it clockwise to secure.
9. Close the hood.

Center High-Mounted Stoplamp (CHMSL) and Cargo Lamp

To replace one of these bulbs, do the following:



1. Remove the screws and lift off the lamp assembly.



A. Cargo Lamp

B. Center High-Mounted Stoplamp Bulb

2. Remove the CHMSL and Cargo bulbs by turning socket counterclockwise and pulling the bulb straight out.
3. Install the CHMSL and Cargo bulbs by pushing the bulb straight in and turning clockwise.
4. Reinstall the lamp assembly and tighten the screws.

Pickup Box Identification and Fender Marker Lamps

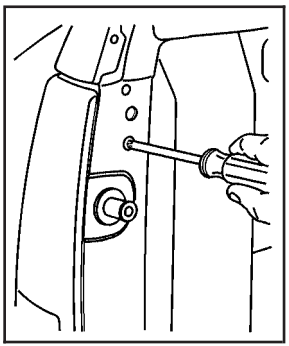
To replace a pickup box identification or fender marker lamp bulb, do the following:

1. Press the tab from the back to remove the lamp.
2. Unplug the lamp assembly harness.
3. Gently pry the individual lamp from the lamp assembly.
4. Unplug the lamp.
5. Plug in a new lamp and snap it into the assembly.
6. Reinstall the lamp assembly.

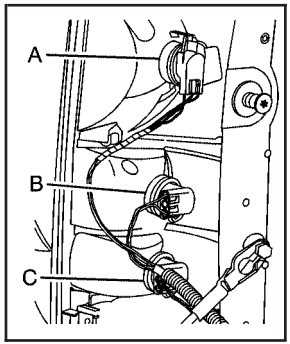
Taillamps, Turn Signal, Stoplamps and Back-up Lamps

To replace one of these bulbs, do the following:

1. Open the tailgate. *Tailgate on page 122* for more information.



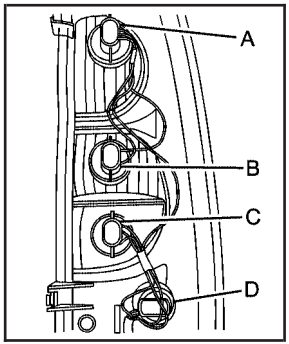
2. Remove the two rear lamp assembly screws near the tailgate latch strikerpost and pull out the lamp assembly.
3. Determine which of the following taillamp assemblies applies to your vehicle.



Dually Models

A. Stoplamp/Taillamp/Turn Signal Lamp
B. Back-up Lamp
C. Stoplamp/Taillamp/Turn Signal Lamp

4. Press the tab, if the vehicle has one, and turn the bulb socket counterclockwise to remove it from the taillamp assembly.

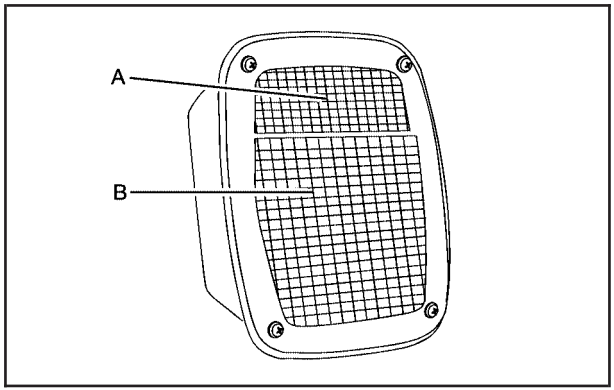


All Other Models

A. Stoplamp/Taillamp/Turn Signal Lamp
B. Stoplamp/Taillamp/Turn Signal Lamp
C. Back-up Lamp
D. Sidemarker Lamp

5. Pull the old bulb straight out from the socket.
6. Press a new bulb into the socket and turn the socket clockwise into the taillamp assembly.
7. Reinstall the taillamp assembly.

Taillamps (Chassis Cab Models)



A. Backup Lamp

B. Stoplamp/Taillamp/Turn Signal Lamp

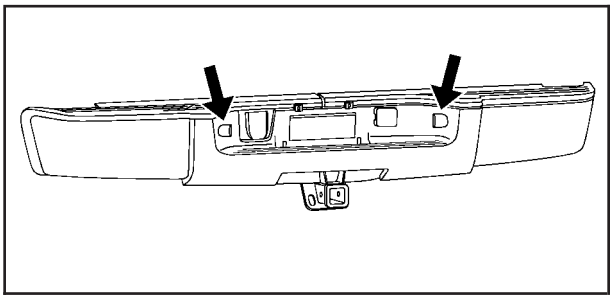
To replace one of these bulbs, do the following:

1. Remove the four screws.
2. Lift the lens off the lamp assembly.
3. Turn the old bulb counterclockwise and pull the it straight out from the socket.
4. Install a new bulb into the socket, turn it clockwise, and press it in until it is tight.
5. Reinstall the lens and the four screws.

License Plate Lamp

To replace one of these bulbs, do the following:

1. Reach under the rear bumper for the bulb socket.



2. Turn the bulb socket counterclockwise and pull the bulb socket out of the connector.
3. Pull the old bulb from the bulb socket, keeping the bulb straight as you pull it out.
4. Install the new bulb.
5. Reverse Steps 1 through 3 to reinstall the bulb socket.

Replacement Bulbs

Exterior Lamp	Bulb Number
Back-up Lamp	3047
Back-up Lamp*	1156
Cargo Lamp and Center High-Mounted Stoplamp (CHMSL)	912
Daytime Running Lamps (DRL)	4114K
Fender Marker and Front Roof Marker	W5WLL
Front Parking and Turn Lamp	3457A
License Plate Lamp	168
Rear Marker Lamp, Taillamp and Stoplamp*	3047
Rear Turn Signal Lamp	3047
Sidemarker Lamp	194
Stoplamp/Turn Signal Lam/Taillamp*	1157
* Chassis Cab Models	

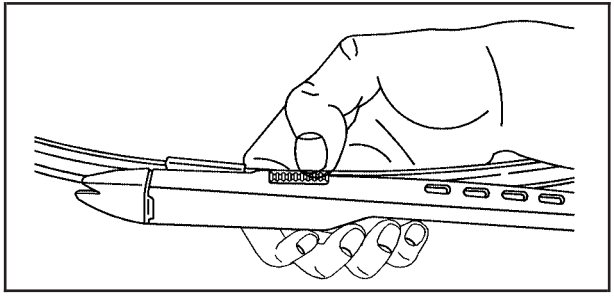
For replacement bulbs not listed here, contact your dealer/retailer.

Windshield Wiper Blade Replacement

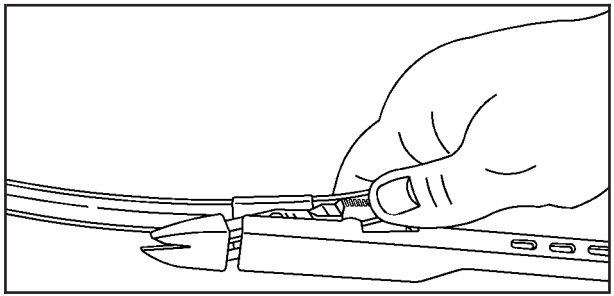
Windshield wiper blades should be inspected for wear or cracking. See *Scheduled Maintenance (Gasoline Engine) on page 623*.

Replacement blades come in different types and are removed in different ways. To replace the wiper blade assembly, do the following:

1. Pull the windshield wiper arm connector away from the windshield.



2. Squeeze the grooved areas on each side of the blade, and rotate the blade assembly away from the arm connector.



3. Install the new blade onto the arm connector and make sure the grooved areas are fully set in the locked position.

For the proper type and size, see *Normal Maintenance Replacement Parts on page 638*.

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 425*.**
- **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.**

CAUTION: (Continued)

CAUTION: (Continued)

Tire pressure should be checked when your vehicle's tires are cold. See *Inflation - Tire Pressure on page 559*.

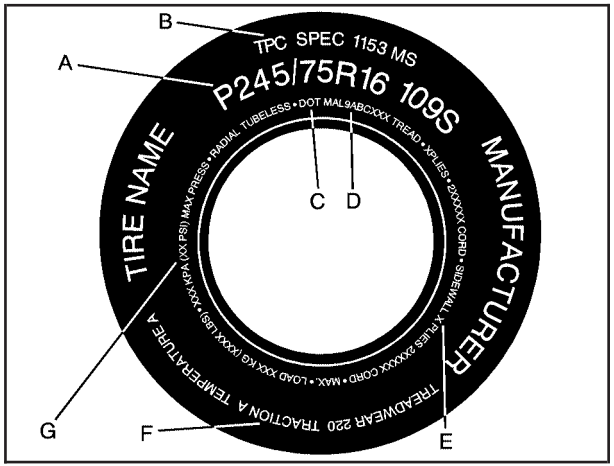
- **Overinflated tires are more likely to be cut, punctured, or broken by a sudden impact — such as when you hit a pothole. Keep tires at the recommended pressure.**
- **Worn, old tires can cause accidents. If the tire's tread is badly worn, or if your vehicle's tires have been damaged, replace them.**

20-Inch Tires

If your vehicle has the optional 20-inch P275/55R20 size tires, they are classified as touring tires and are designed for on road use. The low-profile, wide tread design is not recommended for "off-road" driving or commercial uses such as snow plowing. See *Off-Road Driving on page 390* and *Adding a Snow Plow or Similar Equipment on page 432* for additional information.

Tire Sidewall Labeling

Useful information about a tire is molded into the sidewall. The following illustrations are examples of a typical P-Metric and a LT-Metric tire sidewall.



Passenger (P-Metric) Tire

(A) Tire Size: The tire size code is a combination of letters and numbers used to define a particular tire's width, height, aspect ratio, construction type, and service description. See the "Tire Size" illustration later in this section for more detail.

(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.

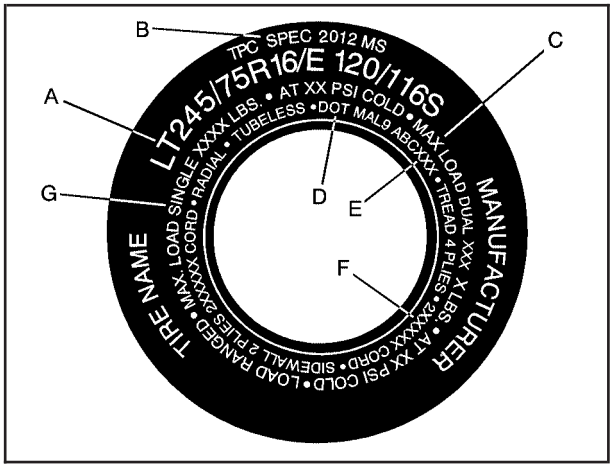
(C) DOT (Department of Transportation): The Department of Transportation (DOT) code indicates that the tire is in compliance with the U.S. Department of Transportation Motor Vehicle Safety Standards.

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

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

(F) Uniform Tire Quality Grading (UTQG): Tire manufacturers are required to grade tires based on three performance factors: treadwear, traction, and temperature resistance. For more information, see *Uniform Tire Quality Grading on page 571*.

(G) Maximum Cold Inflation Load Limit: Maximum load that can be carried and the maximum pressure needed to support that load. For information on recommended tire pressure see *Inflation - Tire Pressure on page 559* and *Loading Your Vehicle on page 425*.



Light Truck (LT-Metric) Tire

(A) Tire Size: The tire size code is a combination of letters and numbers used to define a particular tire's width, height, aspect ratio, construction type, and service description. See the "Tire Size" illustration later in this section for more detail.

(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) Dual Tire Maximum Load: Maximum load that can be carried and the maximum pressure needed to support that load when used in a dual configuration. For information on recommended tire pressure see *Inflation - Tire Pressure on page 559* and *Loading Your Vehicle on page 425*.

(D) 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.

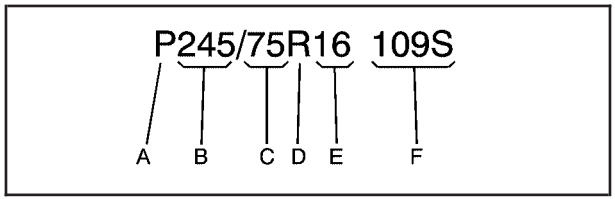
(E) Tire Identification Number (TIN): The letters and numbers following DOT code are the Tire Identification Number (TIN). The TIN shows the manufacturer and plant code, tire size, and date the tire was manufactured. The TIN is molded onto both sides of the tire, although only one side may have the date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

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

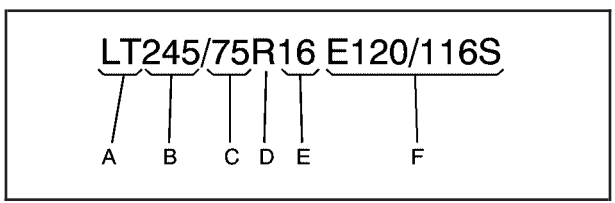
(G) Single Tire Maximum Load: Maximum load that can be carried and the maximum pressure needed to support that load when used as a single. For information on recommended tire pressure see *Inflation - Tire Pressure on page 559* and *Loading Your Vehicle on page 425*.

Tire Size

The following examples show the different parts of a tire size.



Passenger (P-Metric) Tire



Light Truck (LT-Metric) Tire

(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.

(A) Light Truck (LT-Metric) Tire: The United States version of a metric tire sizing system. The letters LT as the first two characters in the tire size means a light truck 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 75, as shown in item C of the light truck (LT-Metric) tire illustration, it would mean that the tire's sidewall is 75 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: The service description indicates the load range and speed rating of a tire. The load index can range from 1 to 279. 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, 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 559*.

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 425*.

GAWR FRT: Gross Axle Weight Rating for the front axle. See *Loading Your Vehicle on page 425*.

GAWR RR: Gross Axle Weight Rating for the rear axle. See *Loading Your Vehicle on page 425*.

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 425*.

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 559* and *Loading Your Vehicle on page 425*.

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 568*.

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 571*.

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 425*.

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 425*.

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), below the driver's door lock post (striker). This label lists your vehicle's original equipment tires and their recommended cold tire inflation pressures. 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 425*.

When to Check

Check your tires once a month or more. Do not forget to check the spare tire. For additional information regarding the spare tire, see *Spare Tire on page 596*.

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're underinflated. 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. Recheck 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.

Dual Tire Operation

When the vehicle is new, or whenever a wheel, wheel bolt or wheel nut is replaced, check the wheel nut torque after 100, 1,000 and 6,000 miles (160, 1 600 and 10 000 km) of driving. For proper torque and wheel nut tightening information, see *Removing the Spare Tire and Tools on page 578*.

The outer tire on a dual wheel setup generally wears faster than the inner tire. Your tires will wear more evenly and last longer if you rotate the tires periodically, see *Tire Inspection and Rotation on page 565*. Also see *Scheduled Maintenance (Gasoline Engine) on page 623*.

⚠ CAUTION:

If you operate your vehicle with a tire that is badly underinflated, the tire can overheat. An overheated tire can lose air suddenly or catch fire. You or others could be injured. Be sure all tires (including the spare) are properly inflated.

See *Inflation - Tire Pressure on page 559*, for information on proper tire inflation.

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 on each tire and wheel assembly, except 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.

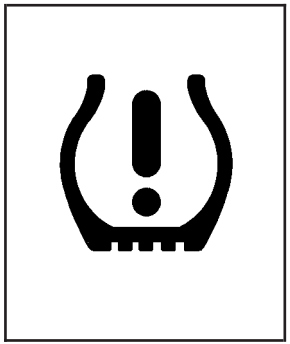
The TPMS is designed to alert the driver, if a low tire pressure condition exists. If your vehicle has the Driver Information Center (DIC), the driver may also check tire pressure levels using the DIC.

When a low tire pressure condition is detected, the TPMS will illuminate the low tire pressure warning symbol located on the instrument panel cluster. If your vehicle has the DIC feature, a message to check the pressure in a specific tire will also appear on the DIC display. The low tire pressure warning symbol on the instrument panel cluster and the CHECK TIRE PRESSURE warning message on the DIC display will appear at each ignition cycle until the tires are inflated to the correct inflation pressure.

For additional information and details about the DIC operation and displays see *DIC Operation and Displays (With DIC Buttons) on page 268* or *DIC Operation and Displays (Without DIC Buttons) on page 275* and *DIC Warnings and Messages on page 279*.

You may notice, during cooler weather conditions, that the tire pressure monitor light, located on the instrument panel cluster, and the CHECK TIRE PRESSURE message will appear when the vehicle is first started and then turn off as you start to drive the vehicle. This could be an early indicator that the tire pressures 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.

The CHECK TIRE PRESSURE warning message and low tire pressure light (telltale) will come on each time the vehicle is started until the tires are inflated to the correct inflation pressure.

The Tire and Loading Information label (tire information placard) shows the size of your vehicle's original tires and the correct inflation pressure for your vehicle's tires when they are cold. See *Inflation - Tire Pressure on page 559*. For the location of the tire and loading information label, see *Loading Your Vehicle on page 425*.

Your vehicle's TPMS can alert you about a low tire pressure condition but it does not replace normal tire maintenance. See *Tire Inspection and Rotation on page 565* and *Tires on page 550*.

Notice: **Do not use a tire sealant if your vehicle has Tire Pressure Monitors. The liquid sealant can damage the tire pressure monitor sensors.**

Resetting the TPMS Identification Codes

Each TPMS sensor has a unique identification code. Any time you rotate your vehicle's tires or replace one or more of the TPMS sensors, 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, passengers side front tire, passengers 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. If increasing the tire's air pressure, do not exceed the maximum inflation pressure indicated on the tire's sidewall.

You will have two minutes to match the first tire/wheel position, and five minutes overall to match all four tire/wheel positions. If it takes longer than two minutes, to match the first tire and wheel, or more than five minutes to match all four tire and wheel positions the matching process stops and you will need to start over.

The TPMS sensor 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 RELEARN TIRE POSITIONS message displays. If your vehicle does not have the DIC buttons, press the trip odometer reset stem located on the instrument panel cluster until the RELEARN TIRE POSITIONS message displays.
4. If your vehicle has the DIC buttons, press the set/reset button. The horn will sound twice to indicate the TPMS receiver is ready, and the TIRE LEARNING ACTIVE message will display. If your vehicle does not have the DIC buttons, press and hold the trip odometer reset stem until the horn chirps twice and the TIRE LEARNING ACTIVE message is displayed.
5. Start with the driver's side front tire.
6. Remove the valve cap from the valve cap 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 make take up to 30 seconds to sound, confirms that the sensor identification code has been matched to this tire and wheel position. To decrease air-pressure out of a tire you can 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 horn chirp will sound two more times to signal the tire learning mode is no longer active. Turn the ignition switch to LOCK.
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

The spare tire does not have a TPMS sensor. If you replace one of the road tires with the spare, the SERVICE TIRE MONITOR message will be displayed on the DIC screen. This message should go off once you re-install the road tire containing the TPMS sensor.

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

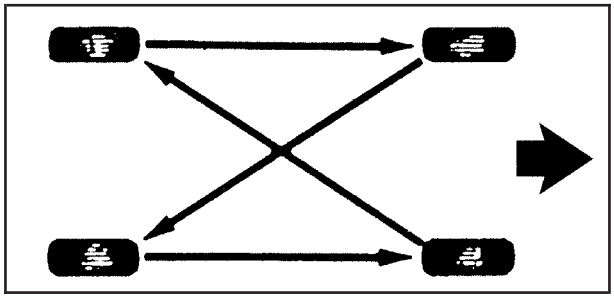
Tires should be rotated every 5,000 to 8,000 miles (8 000 to 13 000 km).

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 568* and *Wheel Replacement on page 573* for more information.

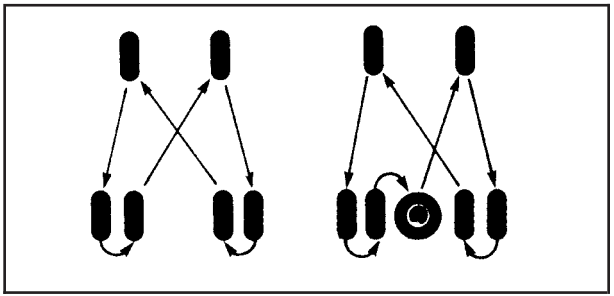
Make sure the spare tire is stored securely. Push, pull, and then try to rotate or turn the tire. If it moves, use the wheel wrench/hoist shaft to tighten the cable. See *Changing a Flat Tire on page 576*.

If your vehicle has dual rear wheels, also see *Dual Tire Operation on page 560*.

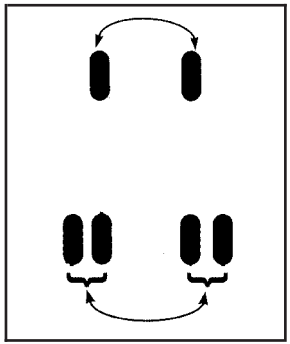
The purpose of regular rotation is to achieve more uniform wear for all tires on the vehicle. The first rotation is the most important. See *Scheduled Maintenance (Gasoline Engine) on page 623*.



If your vehicle has single rear wheels and the tread design for your front tires is the same as your rear tires, use the rotation pattern shown here when rotating your tires.



If your vehicle has dual rear wheels and the tread design for your front tires is the same as your rear tires, always use one of the correct rotation patterns shown here when rotating your tires.



If your vehicle has dual rear wheels and the tread design for the front tires is different from the dual rear tires, always use the correct rotation pattern shown here when rotating your tires.

The dual tires are rotated as a pair, and the inside rear tires become the outside rear tires.

When you install dual wheels, be sure the vent holes in the inner and outer wheels on each side are lined up.

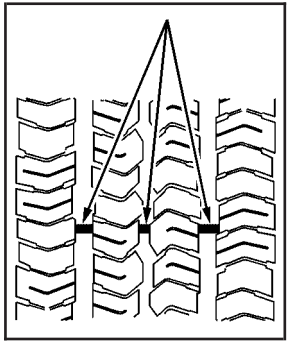
After the tires have been rotated, adjust the front and rear inflation pressures as shown on the Tire and Loading Information label. See *Loading Your Vehicle on page 425*.

Make certain that all wheel nuts are properly tightened. See “Wheel Nut Torque” under *Capacities and Specifications on page 616*.

⚠ 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 576*.

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. Some commercial truck tires may not have treadwear indicators.

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 551* 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 same size, brand, and type tires on all wheels.

Your vehicle may have a different size spare than the road tires (those originally installed on your vehicle). When new, your vehicle included a spare tire and wheel assembly with a similar overall diameter as your vehicle's road tires and wheels, so it is all right to drive on it. Because this spare was developed for use on your vehicle, it will not affect vehicle handling.

⚠ 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 561*.

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 425*, 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 could affect the way your vehicle performs, including its braking, ride and handling characteristics, stability, and resistance to rollover. Additionally, if your vehicle has electronic systems such as anti-lock brakes, rollover airbags, traction control, and 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 568* and *Accessories and Modifications on page 486* 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, under-inflation, 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/retailer for proper diagnosis.

Wheel Replacement

Replace any wheel that is bent, cracked, or badly rusted or corroded. If wheel nuts keep coming loose, the wheel, wheel bolts and wheel nuts should be replaced. If the wheel leaks air, replace it (except some aluminum wheels, which can sometimes be repaired). See your dealer 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.**

Whenever a wheel, wheel bolt or wheel nut is replaced on a dual wheel setup, check the wheel nut torque after 100, 1,000 and 6,000 miles (160, 1 600 and 10 000 km) of driving. For proper torque, see “Wheel Nut Torque” under *Capacities and Specifications on page 616*.

See *Changing a Flat Tire on page 576* 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 dual wheels or P265/65R18, P275/55R20 or LT265/70R17 size tires, do not use tire chains. They can damage your vehicle because 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.

CAUTION: (Continued)

CAUTION: (Continued)

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. 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 vehicle's wheels.

If you do find traction devices that will fit, install them on the rear tires.

Notice: **If your vehicle does not have dual wheels and has a tire size other than P265/65R18, P275/55R20 or LT265/70R17, use tire chains only where legal and only when you must. Use chains that are the proper size for your tires. Install them on the tires of the rear axle. Do not use chains on the tires of the front axle. 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 hazard warning flashers. See *Hazard Warning Flashers on page 211* 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:

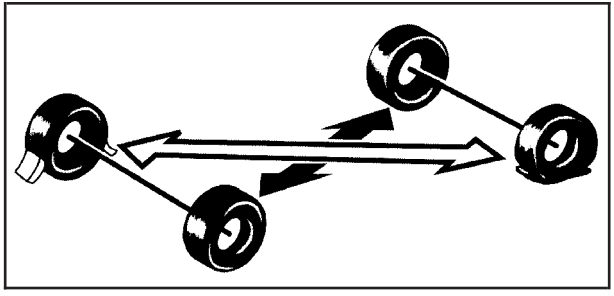
1. **Set the parking brake firmly.**
2. **Put the shift lever in PARK (P).**
3. **If you have a four-wheel-drive vehicle, be sure the transfer case is in a drive gear – not in NEUTRAL.**
4. **Turn off the engine and do not restart while the vehicle is raised.**
5. **Do not allow passengers to remain in the vehicle.**

CAUTION: (Continued)

CAUTION: (Continued)

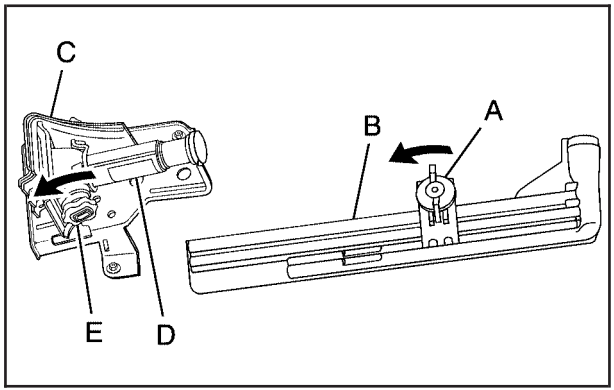
To be even more certain the vehicle will not move, put blocks at the front and rear of the tire farthest away from the one being changed. That would be the tire on the other side, at the opposite end of the vehicle.

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



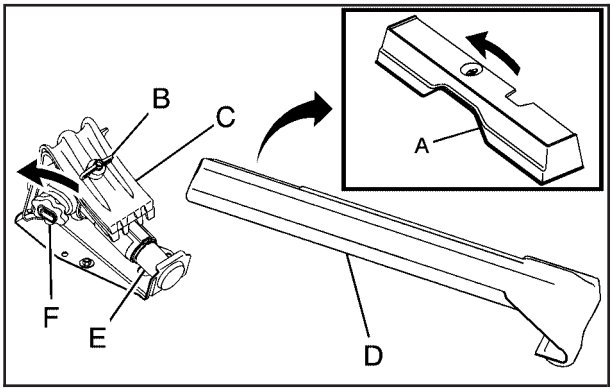
The following information will tell you next how to use the jack and change a tire.

Removing the Spare Tire and Tools



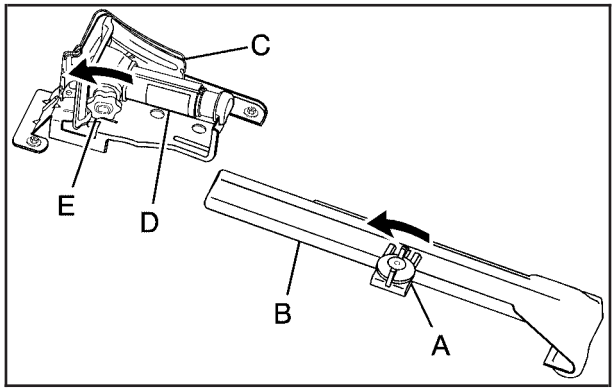
Crew Cab

A. Wing Nut Retaining Tool Kit
B. Tool Kit
C. Wheel Blocks
D. Jack
E. Wing Nut Retaining Wheel Blocks



Regular Cab

A. Tool Cover
B. Wing Nut Retaining Wheel Blocks
C. Wheel Blocks
D. Tool Kit
E. Jack
F. Knob



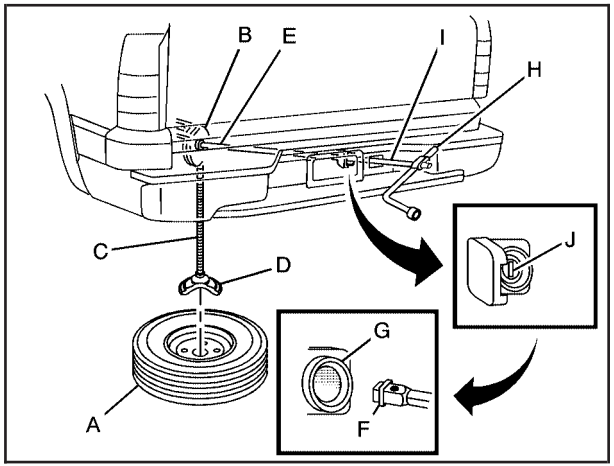
Extended Cab

A. Wing Nut Retaining Tool Kit
B. Tool Kit
C. Wheel Blocks
D. Jack
E. Knob

For regular cab models, the equipment you will need is behind the passenger's seat. For extended and crew cab models, the equipment is on the shelf behind the passenger's side second row seat.

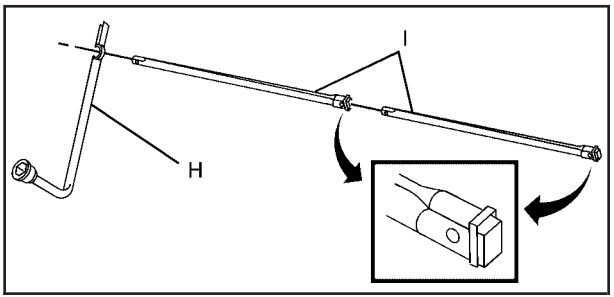
1. If there is a cover, move the seats forward and turn the wing nut on the cover counterclockwise to remove it. For crew cab models, pull up the second row seat with the loop at the base of the seat cushion to access the tools.
2. Turn the knob on the jack counterclockwise to lower the jack head to release the jack from its holder.
3. Remove the wheel blocks and the wheel block retainer by turning the wing nut counterclockwise.
4. Remove the wing nut used to retain the storage bag and tools by turning it counterclockwise.

You will use the jack handle extensions and the wheel wrench to remove the underbody-mounted spare tire.

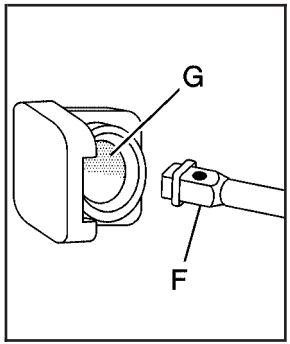


A. Spare Tire (Valve Stem Pointed Down)
B. Hoist Assembly
C. Hoist Cable
D. Tire/Wheel Retainer
E. Hoist Shaft
F. Hoist End of Extension Tool
G. Hoist Shaft Access Hole
H. Wheel Wrench
I. Jack Handle Extensions
J. Spare Tire Lock (If equipped)

1. Open the spare tire lock cover on the bumper and use the ignition key to remove the spare tire lock (J). To remove the spare tire lock, insert the ignition key turn and pull straight out.



2. Assemble the wheel wrench (H) and the two jack handle extensions (I) as shown.

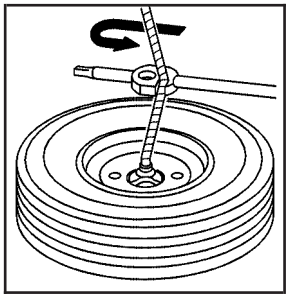


3. Insert the hoist end (open end) (F) of the extension through the hole (G) in the rear bumper.

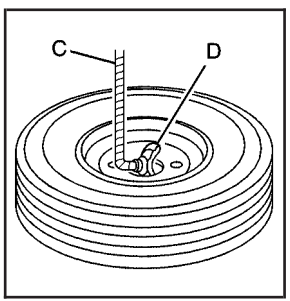
Be sure the hoist end of the extension (F) connects to the hoist shaft (E). The ribbed square end of the extension is used to lower the spare tire.

4. Turn the wheel wrench (H) counterclockwise to lower the spare tire to the ground. Continue to turn the wheel wrench until the spare tire can be pulled out from under the vehicle.

   If the spare tire does not lower to the ground, the secondary latch is engaged causing the tire not to lower. See *Secondary Latch System on page 589*.



5. Use the wheel wrench hook which allows you to pull the hoist cable towards you to assist in reaching the spare tire.

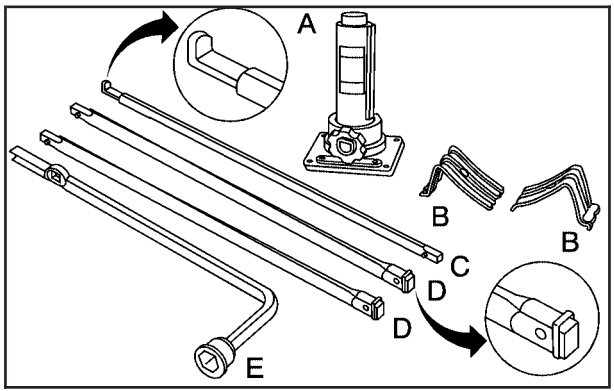


6. Tilt the retainer (D) at the end of the cable (C) when the tire has been lowered, so it can be pulled up through the wheel opening.

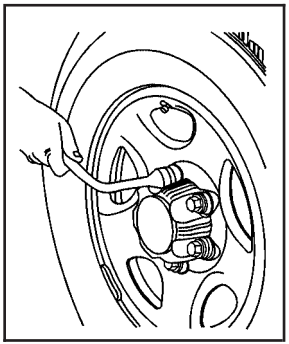
7. Put the spare tire near the flat tire.

Removing the Flat Tire and Installing the Spare Tire

Use the following pictures and instructions to remove the flat tire and raise the vehicle.

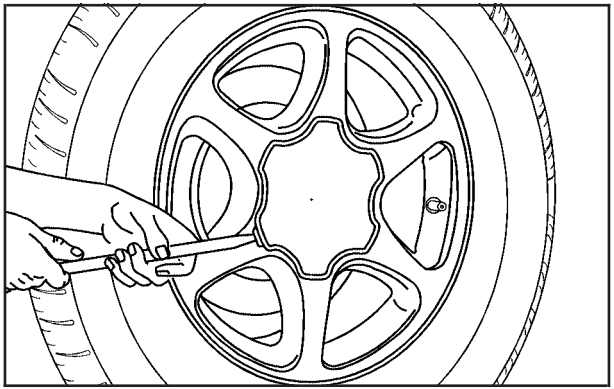


The tools you will be using include the jack (A), the wheel blocks (B), the jack handle (C), the jack handle extensions (D), and the wheel wrench (E).

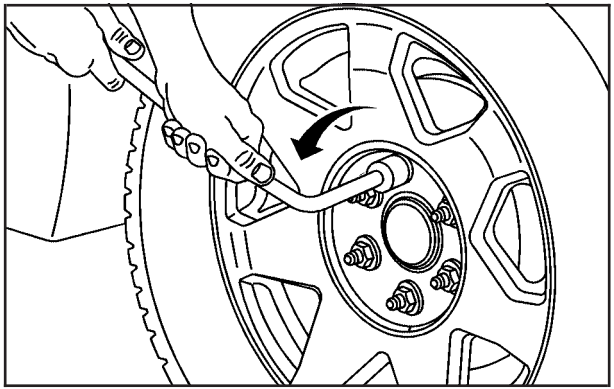


1. If your vehicle has wheel nut caps, loosen them by turning the wheel wrench counterclockwise.

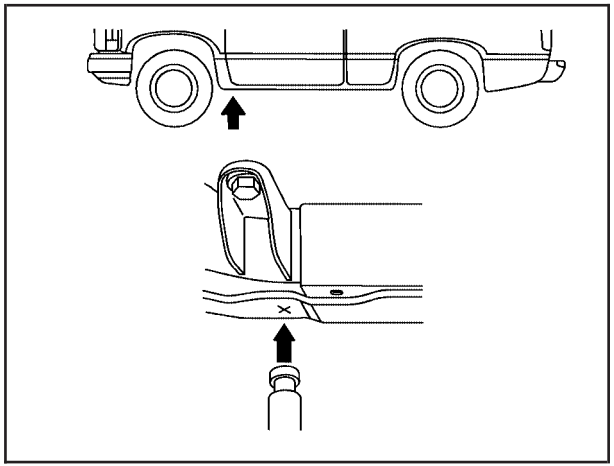
   If the vehicle has a center cap with wheel nut caps, the wheel nut caps are designed to stay with the center cap after they are loosened. Remove the entire center cap.



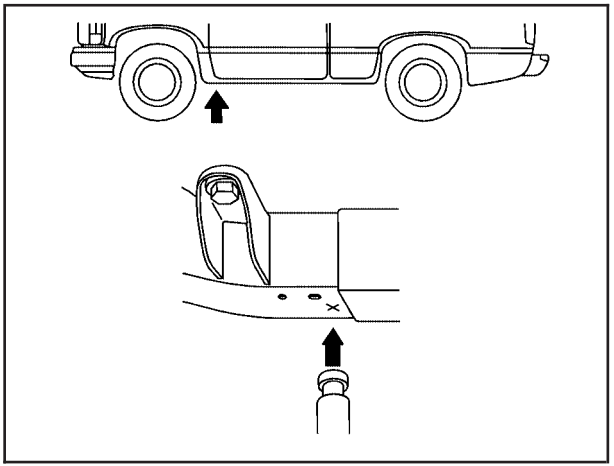
If the wheel has a smooth center cap, place the chisel end of the wheel wrench in the slot on the wheel, and gently pry it out.



2. Use the wheel wrench and turn it counterclockwise to loosen the wheel nuts. Do not remove the wheel nuts yet.

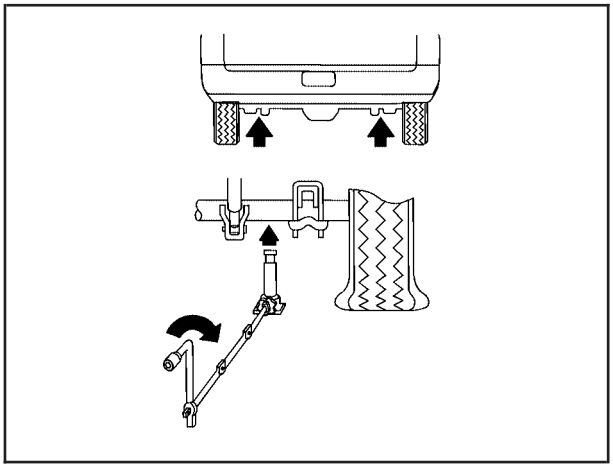


Front Position - 1500 Models



Front Position - All Other Models

3. Position the jack under the vehicle as shown. If the flat tire is on the front of the vehicle (1500 Model vehicles), position the jack under the bracket attached to the vehicle's frame, behind the flat tire. If the flat tire is on the front of the vehicle (all other models), position the jack on the frame behind the flat tire.



Rear Position – All Models

If the flat tire is on the rear, position the jack under the rear axle between the spring anchor and the shock absorber bracket.

If you have added a snow plow to the front of your vehicle, lower the snow plow fully before raising the vehicle.

Make sure that the jack head is positioned so that the rear axle is resting securely between the grooves that are on the jack head.

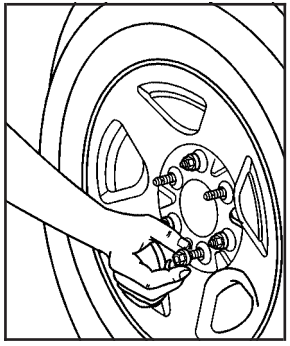
⚠ CAUTION:

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.

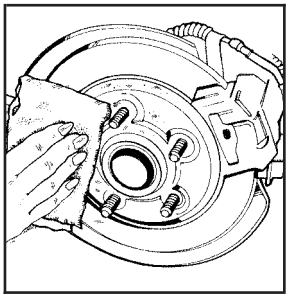
4. Turn the wheel wrench clockwise to raise the vehicle. Raise the vehicle far enough off the ground so there is enough room for the spare tire to fit under the wheel well.



5. Remove all the 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 changing a wheel, remove any rust or dirt from the places where the wheel attaches to the vehicle. In an emergency, a cloth or a paper towel can be used 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 spare tire.

⚠ CAUTION:

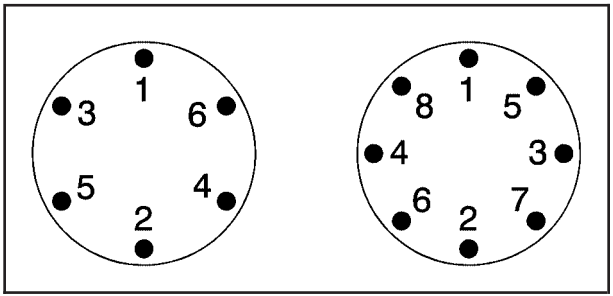
Never use oil or grease on studs or nuts. Because the nuts might come loose. The vehicle's wheel could fall off, causing a serious accident.

8. Put the wheel nuts back on with the rounded end of the nuts toward the wheel.
9. Tighten each wheel nut by hand. Then use the wheel wrench to tighten the nuts until the wheel is held against the hub.
10. Turn the wheel wrench counterclockwise to lower the vehicle. 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 616* 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 616* for the wheel nut torque specification.**



11. Tighten the nuts firmly in a crisscross sequence as shown by turning the wheel wrench clockwise.

When you reinstall the regular wheel and tire, you must also reinstall either the center cap, or bolt-on hub cap, depending on what your vehicle is equipped with. For center caps, place the cap on the wheel and tap it into place until it seats flush with the wheel. The cap only goes on one way. Be sure to line up the tab on the center cap with the indentation on the wheel. For bolt-on hub caps, align the plastic nut caps with the wheel nuts and then tighten by hand. Then use the wheel wrench to tighten.

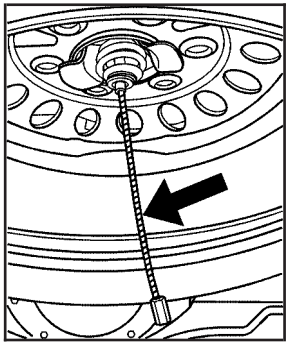
Secondary Latch System

Your vehicle has an underbody-mounted tire hoist assembly which has a secondary latch system. It is designed to stop the spare tire from suddenly falling off your vehicle. For the secondary latch to work, the spare tire must be installed with the valve stem pointing down. See *Storing a Flat or Spare Tire and Tools on page 592*.

⚠ CAUTION:

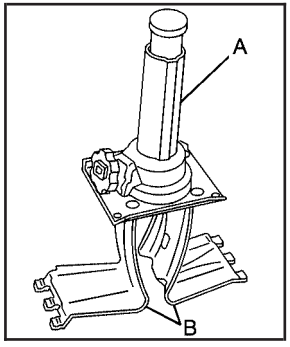
Before beginning this procedure read all the instructions. Failure to read and follow the instructions could damage the hoist assembly and you and others could get hurt. Read and follow the instructions listed next.

To release the spare tire from the secondary latch, do the following:

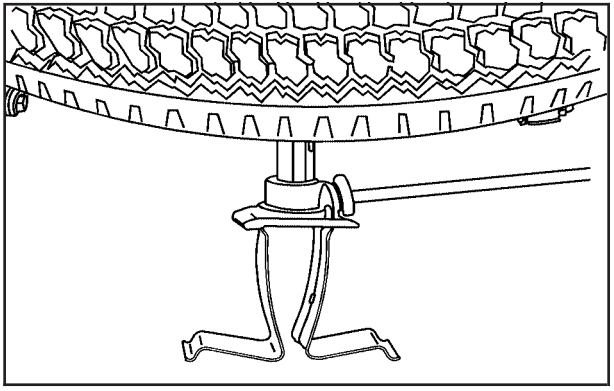


1. Check under the vehicle to see if the cable end is visible. If the cable is not visible, proceed to Step 6.
2. If it is visible, first try to tighten the cable by turning the wheel wrench clockwise until you hear two clicks or feel it skip twice. You cannot overtighten the cable.
3. Loosen the cable by turning the wheel wrench counterclockwise three or four turns.
4. Repeat this procedure at least two times. If the spare tire lowers to the ground, continue with Step 5 of *Removing the Spare Tire and Tools on page 578*.

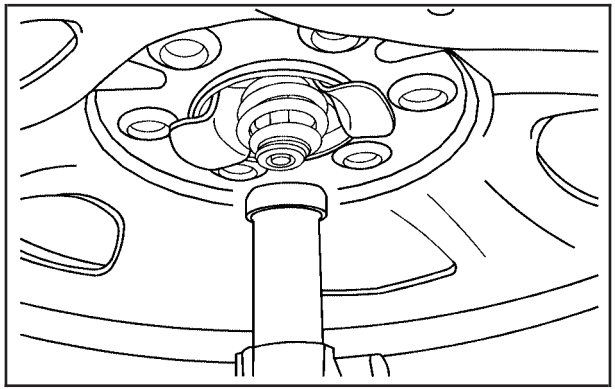
5. If the spare tire does not lower, turn the wheel wrench counterclockwise until approximately 6 inches (15 cm) of cable is exposed.
6. Stand the wheel blocks on their shortest ends, with the backs facing each other.



7. Place the bottom edge of the jack (A) on the wheel blocks (B), separating them so that the jack is balanced securely.



8. Attach the jack handle, extension, and wheel wrench to the jack and place it (with the wheel blocks) under the vehicle toward the front of the rear bumper.

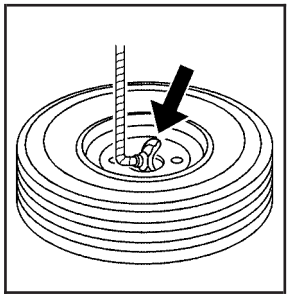


9. Position the center lift point of the jack under the center of the spare tire.
10. Turn the wheel wrench clockwise to raise the jack until it lifts the end fitting.
11. Continue raising the jack until the spare tire stops moving upward and is held firmly in place so that the secondary latch has released and the spare tire is balancing on the jack.
12. Lower the jack by turning the wheel wrench counterclockwise. Keep lowering the jack until the spare tire slides off the jack or is hanging by the cable.

⚠ CAUTION:

Someone standing too close during the procedure could be injured by the jack. If the spare tire does not slide off the jack completely, make sure no one is behind you or on either side of you as you pull the jack out from under the spare.

13. Disconnect the jack handle from the jack and carefully remove the jack with the other hand.
14. Use one hand to push against the spare while firmly pulling the jack out from under the spare tire with the other hand. If the spare tire is hanging from the cable, insert the hoist end of the extension, and wheel wrench into the hoist shaft hole in the bumper and turn the wheel wrench counterclockwise to lower the spare tire the rest of the way.



15. Tilt the tire retainer at the end of the cable and pull it through the wheel opening. Pull the tire out from under the vehicle.

16. Turn the wheel wrench in the hoist shaft hole in the bumper clockwise to raise the cable back up if the cable is hanging under the vehicle.

Have the hoist assembly inspected as soon as you can. You will not be able to store a spare or flat tire using the hoist assembly until it has been replaced.

To continue changing the flat tire, see *Removing the Flat Tire and Installing the Spare Tire on page 582*.

Storing a Flat or Spare Tire and Tools

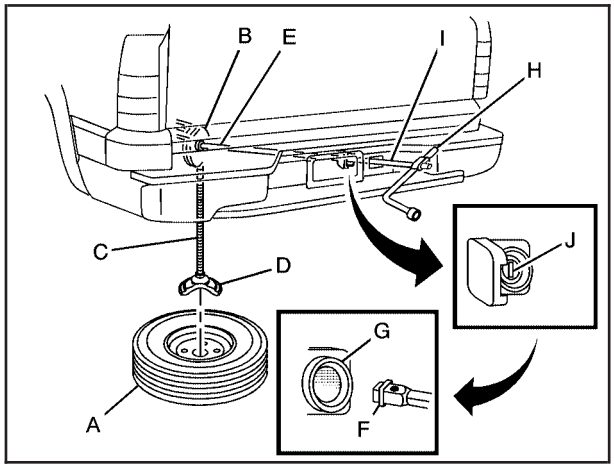
⚠ CAUTION:

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.

Notice: **Storing an aluminum wheel with a flat tire under your vehicle for an extended period of time or with the valve stem pointing up may damage the wheel. Always stow the wheel with the valve stem pointing down and have the wheel/tire repaired as soon as possible.**

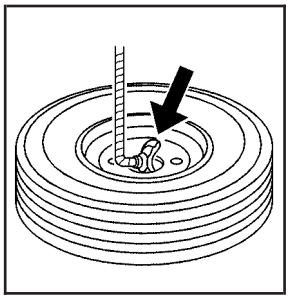
Store the tire under the rear of the vehicle in the spare tire carrier.

Use the following art and text to assist you:

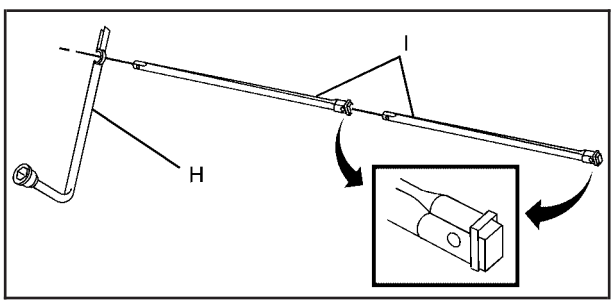


A. Flat or Spare Tire (Valve Stem Pointed Down)
B. Hoist Assembly
C. Hoist Cable
D. Tire/Wheel Retainer
E. Hoist Shaft
F. Hoist End of Extension Tool
G. Hoist Shaft Access Hole
H. Wheel Wrench
I. Jack Handle Extensions
J. Spare Tire Lock (If Equipped)

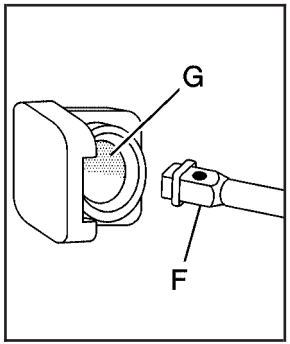
1. Put the tire on the ground at the rear of the vehicle with the valve stem pointed down, and to the rear.



2. Tilt the retainer downward and through the wheel opening. Make sure the retainer is fully seated across the underside of the wheel.

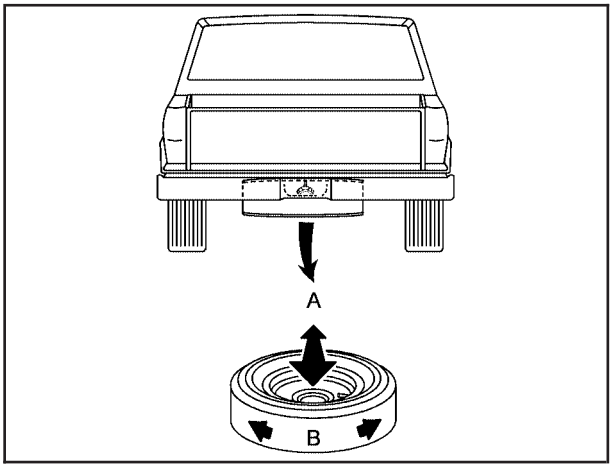


3. Attach the wheel wrench (H) and extensions (I) together.



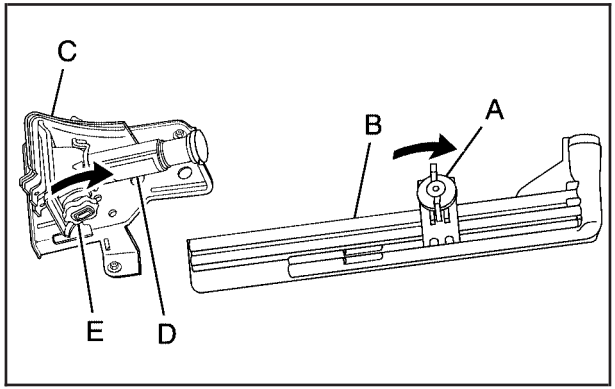
4. Insert the hoist end (F) through the hole (G) in the rear bumper and onto the hoist shaft.

5. Raise the tire part way upward. Make sure the retainer is seated in the wheel opening.
6. Raise the tire fully against the underside of the vehicle by turning the wheel wrench clockwise until you hear two clicks or feel it skip twice. You cannot overtighten the cable.



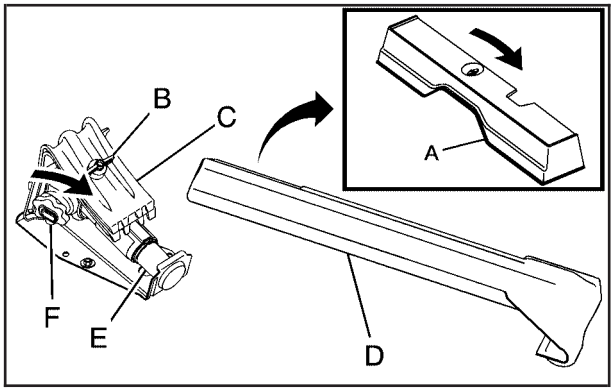
7. Make sure the tire is stored securely. Push, pull (A), and then try to turn (B) the tire. If the tire moves, use the wheel wrench to tighten the cable.
8. Reinstall the spare tire lock, if the vehicle has one.

To store the jack and jack tools, do the following:



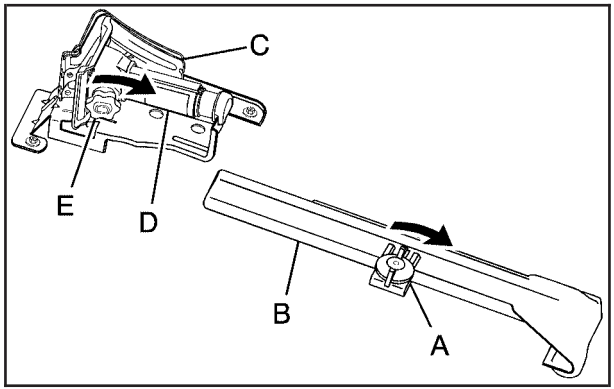
Crew Cab

A. Wing Nut Retaining Tool Kit
B. Tool Kit
C. Wheel Blocks
D. Jack
E. Wing Nut Retaining Wheel Blocks



Regular Cab

A. Tool Cover
B. Wing Nut Retaining Wheel Blocks
C. Wheel Blocks
D. Tool Kit
E. Jack
F. Wing Nut Retaining Jack



Extended Cab

A. Wing Nut Retaining Tool Kit
B. Tool Kit
C. Wheel Blocks
D. Jack
E. Wing Nut Retaining Jack

1. Put the tools in the tool bag and place them in the retaining bracket.

   If your vehicle has a cover replace the cover.
2. Tighten down the wing nut.
3. Assemble the wheel blocks and jack together with the wing nut and retaining hook.

   If you have the Regular Cab, the wheel blocks must be placed straight up and down on the top of the jack.
4. Position the jack in the mounting bracket. Position the holes in the base of the jack onto the pin in the mounting bracket.
5. Return them to their original location in the vehicle. For more information, refer to *Removing the Spare Tire and Tools on page 578* for more information.

Spare Tire

Your vehicle may or may not have a spare tire depending on the model. A spare tire may lose air over time, so check its inflation pressure regularly. See *Inflation - Tire Pressure on page 559* and *Loading Your Vehicle on page 425* for information regarding proper tire inflation and loading your vehicle. For instruction on how to remove, install or store a spare tire, see *Removing the Flat Tire and Installing the Spare Tire on page 582* and *Storing a Flat or Spare Tire and Tools on page 592*.

Notice: **If your vehicle has four-wheel drive and the different size spare tire is installed on your vehicle, do not drive in four-wheel drive until you can have your flat tire repaired and/or replaced. You could damage your vehicle, and the repair costs would not be covered by your warranty. Never use four-wheel drive when the different size spare tire is installed on your vehicle.**

Your vehicle may have a different size spare tire than the road tires originally installed on your vehicle. This spare tire was developed for use on your vehicle, so it is all right to drive on it. If your vehicle has four-wheel drive and the different size spare tire is installed, keep the vehicle in two-wheel drive.

After installing the spare tire on your vehicle, you should stop as soon as possible and make sure the spare tire is correctly inflated. Have the damaged or flat road tire repaired or replaced as soon as you can and installed back onto your vehicle. This way, the spare tire will be available in case you need it again.

Do not mix tires and wheels of different sizes, because they will not fit. Keep your spare tire and its wheel together. If your vehicle has a spare tire that does not match your vehicle's original road tires and wheels in size and type, do not include the spare in the tire rotation.

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. 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 GM dealer has a product for cleaning your vehicle's glass. Should it become necessary, you can also obtain a product from your GM 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.**

Weatherstrips

Silicone grease on weatherstrips will make them last longer, seal better, and not stick or squeak. Apply silicone grease with a clean cloth. During very cold, damp weather frequent application may be required. See *Recommended Fluids and Lubricants on page 635*.

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 606*. 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 601*.

Finish Care

Occasional waxing or mild polishing of your vehicle by hand may be necessary to remove residue from the paint finish. You can get approved cleaning products from your dealer. See *Vehicle Care/Appearance Materials on page 606*.

If your vehicle has a basecoat/clearcoat paint finish, the clearcoat gives more depth and gloss to the colored basecoat. Always use waxes and polishes that are non-abrasive and made for a basecoat/clearcoat paint finish.

Notice: **Machine compounding or aggressive polishing on a basecoat/clearcoat paint finish may damage it. Use only non-abrasive waxes and polishes that are made for a basecoat/clearcoat paint finish on your vehicle.**

Foreign materials such as calcium chloride and other salts, ice melting agents, road oil and tar, tree sap, bird droppings, chemicals from industrial chimneys, etc., can damage your 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. You can help to keep the paint finish looking new by keeping your vehicle garaged or covered whenever possible.

Protecting Exterior Bright Metal Parts

Bright metal parts should be cleaned regularly to keep their luster. Washing with water is all that is usually needed. However, you may use chrome polish on chrome or stainless steel trim, if necessary.

Use special care with aluminum trim. To avoid damaging protective trim, never use auto or chrome polish, steam or caustic soap to clean aluminum. A coating of wax, rubbed to high polish, is recommended for all bright metal parts.

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 or Chrome-Plated Wheels and Trim

Your vehicle may have either 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: **Chrome wheels and other chrome trim may be damaged if you do not wash your vehicle after driving on roads that have been sprayed with magnesium, calcium or sodium chloride. These chlorides are used on roads for conditions such as ice and dust. This damage would not be covered by your vehicle's warranty. Always wash your vehicle's chrome with soap and water after exposure.**

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.**

The surface of these wheels is similar to the painted surface of your vehicle. Do not use strong soaps, chemicals, abrasive polishes, abrasive cleaners, cleaners with acid, or abrasive cleaning brushes on them because you could damage the surface. Do not use chrome polish on aluminum wheels.

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.**

Use chrome polish only on chrome-plated wheels, but avoid any painted surface of the wheel, and buff off immediately after application.

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.**

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 side. You can see it if you look through the windshield from outside your vehicle. The VIN also appears on the Certification/Tire 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 helps you identify your vehicle's engine, specifications, and replacement parts.

Service Parts Identification Label

This label is on the inside of the glove box. It is very helpful if you ever need to order parts. The label has the following information:

- Vehicle Identification Number (VIN)
- Model designation
- Paint information
- Production options and special equipment

Do not remove this label from the vehicle.

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 102*.

Windshield Wiper Fuses

The windshield wiper motor is protected by an internal circuit breaker and 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 and not snow, etc., be sure to get it fixed.

Power Windows and Other Power Options

Circuit breakers protect the power windows and other power accessories. If the current load is too heavy, the circuit breaker opens and then closes after a cool down period, protecting the circuit until the problem is fixed or goes away.

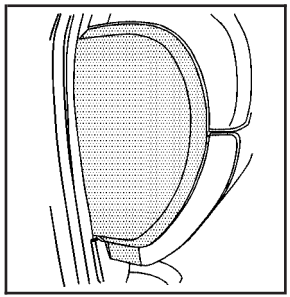
Fuses and Circuit Breakers

The wiring circuits in your vehicle are protected from short circuits by a combination of fuses, circuit breakers and fusible thermal links. This greatly reduces the chance of fires caused by electrical problems.

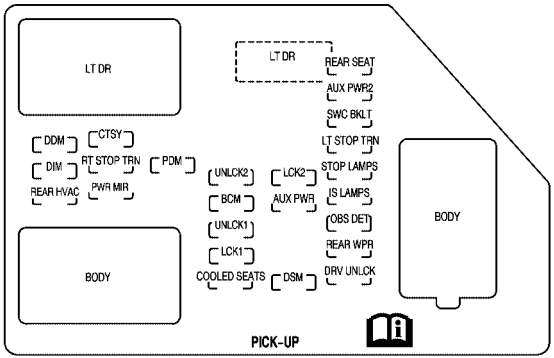
Look at the silver-colored band inside the fuse. If the band is broken or melted, replace the fuse. Be sure you replace a bad fuse with a new one of the identical size and rating.

If you ever have a problem on the road and do not have a spare fuse, you can borrow one that has the same amperage. Just pick some feature of your vehicle that you can get along without, like the radio or cigarette lighter, and use its fuse if it is the correct amperage. Replace it as soon as you can.

Instrument Panel Fuse Block



The instrument panel fuse block access door is located on the driver's side edge of the instrument panel.



Pull off the cover to access the fuse block.

Fuses	Usage
REAR SEAT	Rear Seats
AUX PWR2	Rear Accessory Power Outlet
SWC BKLT	Steering Wheel Controls Backlight
DDM	Driver Door Module
CTSY	Dome Lamps, Driver's Side Turn Signal
LT STOP TRN	Driver Side Turn Signal, Stoplamp
DIM	Instrument Panel Back Lighting

Fuses	Usage
RT STOP TRN	Passenger Side Turn Signal, Stoplamp
PDM	Passenger Door Module, Universal Home Remote System
UNLCK2	Power Door Lock 2 (Unlock Feature)
LCK2	Power Door Lock 2 (Lock Feature)
STOP LAMPS	Stoplamps, Center-High Mounted Stoplamp
REAR HVAC	Rear Climate Controls
PWR MIR	Power Mirror
BCM	Body Control Module (BCM)
AUX PWR	Accessory Power Outlets
IS LAMPS	Interior Lamps
UNLCK1	Power Door Lock 1 (Unlock Feature)
OBS DET	Ultrasonic Rear Parking Assist
LCK1	Power Door Lock 1 (Lock Feature)

Fuses	Usage
REAR WPR	Not Used
COOLED SEATS	Not Used
DSM	Driver Seat Module, Remote Keyless Entry System
DRV UNLCK	Driver's Power Door Lock (Unlock Feature)

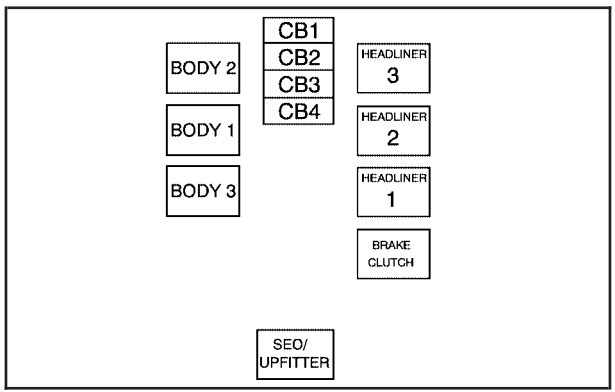
Circuit Breaker	Usage
LT DR	Driver's Side Power Window Circuit Breaker

Harness Connector	Usage
LT DR	Driver's Door Harness Connection
BODY	Harness Connector
BODY	Harness Connector

Center Instrument Panel Fuse Block

The center instrument panel fuse block is located underneath the instrument panel, to the left of the steering column.

Top View

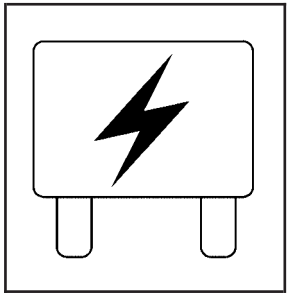


Harness Connector	Usage
BODY 2	Body Harness Connector 2
BODY 1	Body Harness Connector 1
BODY 3	Body Harness Connector 3
HEADLINER 3	Headliner Harness Connector 3
HEADLINER 2	Headliner Harness Connector 2
HEADLINER 1	Headliner Harness Connector 1
BRAKE CLUTCH	Brake Clutch Harness Connector
SEO/UPFITTER	Special Equipment Option Upfitter Harness Connector

Circuit Breaker	Usage
CB1	Passenger's Side Power Window Circuit Breaker
CB2	Passenger's Seat Circuit Breaker
CB3	Driver's Seat Circuit Breaker
CB4	Not Used

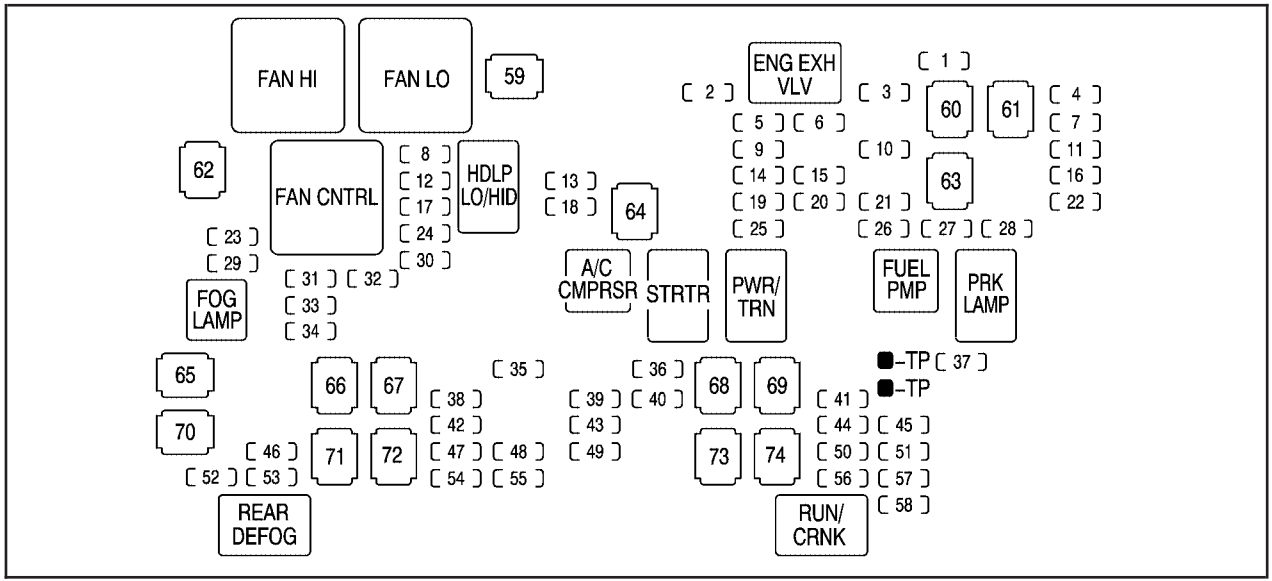
Underhood Fuse Block

The underhood fuse block is located in the engine compartment, on the driver's side of the vehicle.



Lift the cover to access the fuse block.

To remove fuses, hold the end of the fuse between your thumb and index finger and pull straight out.



Fuses	Usage
1	Right Trailer Stop/Turn Lamp
2	Not Used
3	Electronic Stability Suspension Control, Automatic Level Control Exhaust
4	Left Trailer Stop/Turn Lamp

Fuses	Usage
5	Engine Controls
6	Engine Control Module, Throttle Control
7	Trailer Brake Controller
8	Front Washer

Fuses	Usage
9	Oxygen Sensors
10	Anti-lock Brakes System 2
11	Trailer Back-up Lamps
12	Driver's Side Low-Beam Headlamp
13	Engine Control Module (Battery)
14	Fuel Injectors, Ignition Coils (Right Side)
15	Transmission Control Module (Battery)
16	Vehicle Back-up Lamps
17	Passenger's Side Low-Beam Headlamp
18	Air Conditioning Compressor
19	Oxygen Sensors
20	Transmission Controls (Ignition)
21	Fuel Pump
22	Fuel System Control Module
23	Not Used
24	Not Used
25	Fuel Injectors, Ignition Coils (Left Side)
26	Trailer Park Lamps
27	Driver's Side Park Lamps
28	Passenger's Side Park Lamps
29	Fog Lamps
30	Horn
31	Passenger's Side High-Beam Headlamp

Fuses	Usage
32	Daytime Running Lamps
33	Driver's Side High-Beam Headlamp
34	Not Used
35	Sunroof
36	Key Ignition System, Theft Deterrent System
37	Windshield Wiper
38	SEO B2 Upfitter Usage (Battery)
39	Electric Adjustable Pedals
40	Climate Controls (Battery)
41	Airbag System (Ignition)
42	Amplifier
43	Audio System
44	Miscellaneous (Ignition), Cruise Control
45	Tailgate Open/Close Assist
46	Airbag System (Battery)
47	OnStar®, Rear Seat Entertainment Display
48	Instrument Panel Cluster
49	Power Take-Off
50	Auxiliary Climate Control (Ignition), Compass-Temperature Mirror
51	Center High-Mounted Stoplamp (CHMSL)

Fuses	Usage
52	Rear Defogger
53	Heated Mirrors
54	SEO B1 Upfitter Usage (Battery)
55	Cigarette Lighter, Auxiliary Power Outlet
56	Automatic Level Control Compressor Relay, SEO Upfitter Usage
57	Climate Controls (Ignition)
58	Engine Control Module, Secondary Fuel Pump (Ignition)

J-Case Fuses	Usage
59	Cooling Fan 1
60	Automatic Level Control Compressor
61	Heavy Duty Anti-lock Brake System
62	Cooling Fan 2
63	Anti-lock Brake System 1
64	Starter
65	Stud 2 (Trailer Brakes)
66	Left Bussed Electrical Center 1
67	Not Used
68	Heated Windshield Washer System
69	Four-Wheel Drive System

J-Case Fuses	Usage
70	Stud 1 (Trailer Connector Battery Power) (Optional - 40A Fuse Required)
71	Mid-Bussed Electrical Center 1
72	Climate Control Blower
73	Tailgate Open/Close Assist
74	Left Bussed Electrical Center 2

Relays	Usage
FAN HI	Cooling Fan High Speed
FAN LO	Cooling Fan Low Speed
ENG EXH VLV	Not Used
FAN CNTRL	Cooling Fan Control
HDLP LO/HID	Low-Beam Headlamp
FOG LAMP	Front Fog Lamps
A/C CMPRSR	Air Conditioning Compressor
STRTR	Starter
PWR/TRN	Powertrain
FUEL PMP	Fuel Pump
PRK LAMP	Parking Lamps
REAR DEFOG	Rear Defogger
RUN/CRANK	Switched Power

Capacities and Specifications

The following approximate capacities are given in English and metric conversions. See *Recommended Fluids and Lubricants on page 635* for more information.

If your vehicle has the DURAMAX® Diesel engine, see the DURAMAX® Diesel manual 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.	
Cooling System		
4.3L V6 **	16.5 qt	15.6 L
4.8L V8 **	16.9 qt	16.0 L
5.3L V8 **	16.9 qt	16.0 L
6.0L V8 *	16.4 qt	15.5 L
6.0L V8 **	16.8 qt	15.9 L
* 2500, 3500 series ** 1500 series		
Engine Oil with Filter		
4.3L V6	4.5 qt	4.3 L
4.8L V8; 5.3L V8; 6.0L V8	6.0 qt	5.7 L

Application	Capacities	
	English	Metric
Fuel Tank		
1500 Series Standard and Short Box	26.0 gal	98.0 L
1500 Series Long Box	34.0 gal	128.7 L
2500 Series and 3500 Series	34.0 gal	128.7 L
3500 Series Chassis Cab	50.0 gal	189.0 L
3500 Chassis Cab – Front Tank	27.0 gal	102.0 L
3500 Chassis Cab – Rear Tank	23.0 gal (if equipped)	87.0 L
Transmission Fluid (Pan Removal and Filter Replacement)		
Auto 4-Speed Transmission 4L60-E Electronic Transmission	5.0 qt	4.7 L
Auto 4-Speed Transmission 4L70-E Super Duty Transmission	5.0 qt	4.7 L
Auto 6-Speed Transmission 6L80-E	6.0 qt	5.7 L
Auto 6-Speed Transmission 6L90-E	6.3 qt	6.0 L
Auto 6-Speed Transmission Allison	7.4 qt	7.0 L
Transfer Case Fluid	1.6 qt	1.5 L
Wheel Nut Torque	140 ft lb	190 N•m
After refill, the level must be rechecked. Add enough engine coolant so that the fluid is within the proper operating range.		

Engine Specifications

Engine	VIN Code	Transmission	Spark Plug Gap
4.3L V6	X	Automatic	0.060 in (1.52 mm)
4.8L V8	C	Automatic	0.040 in (1.01 mm)
5.3L V8 Iron, Flexible Fuel with Active Fuel Management™, SFI, OHV	0	Automatic	0.040 in (1.01 mm)
5.3L V8 Aluminum, Flexible Fuel with Active Fuel Management™, SFI	3	Automatic	0.040 in (1.01 mm)
5.3L V8 Aluminum with Active Fuel Management™	M	Automatic	0.040 in (1.01 mm)
5.3L V8 Iron with Active Fuel Management™	J	Automatic	0.040 in (1.01 mm)
6.0L V8	K	Automatic	0.040 in (1.01 mm)
6.0L V8 with Active Fuel Management™	Y	Automatic	0.040 in (1.01 mm)

Section 6 Maintenance Schedule

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Maintenance Schedule

Introduction

This maintenance section applies to vehicles with a gasoline engine. If your vehicle has a diesel engine, see the maintenance schedule section in the DURAMAX® Diesel Engine Supplement.

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 might 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 425*.
- are driven on reasonable road surfaces within legal driving limits.
- are driven off-road in the recommended manner. See *Off-Road Driving on page 390*.
- use the recommended fuel. See *Gasoline Octane on page 489*.

The services in *Scheduled Maintenance (Gasoline Engine) on page 623* should be performed when indicated. See *Additional Required Services (Gasoline Engine) on page 627* and *Maintenance Footnotes (Gasoline Engine) on page 629* 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. See *Doing Your Own Service Work on page 487*.

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 663*.

Owner Checks and Services on page 631 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 635* and *Normal Maintenance Replacement Parts on page 638*. 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 (Gasoline Engine)

This maintenance section applies to vehicles with a gasoline engine. If your vehicle has a diesel engine, see the maintenance schedule section in the DURAMAX® Diesel Engine Supplement.

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 503* 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 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 (Gasoline Engine) on page 500*. Reset oil life system. See *Engine Oil Life System on page 503*. *An Emission Control Service.*	•	•
Allison Transmission® only: Replace external transmission filter at the first maintenance service performed on the vehicle.		
Lubricate chassis components. *See footnote #.*	•	•
Visually check for any leaks or damage. *See footnote (j).*	•	•
Inspect engine air cleaner filter or change indicator (if equipped). If necessary, replace filter. See *Engine Air Cleaner/Filter (Gasoline Engines) on page 505*. *See footnote (p).*		•
Rotate tires and check inflation pressures and wear. See *Tire Inspection and Rotation on page 565* and “Tire Wear Inspection” in *At Least Once a Month on page 632*.	•	•
Inspect brake system. *See footnote (a).*	•	•
Check engine coolant and windshield washer fluid levels and add fluid as needed.	•	•

Scheduled Maintenance (cont'd)

Service	Maintenance I	Maintenance II
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 transmission fluid level and add fluid as needed.		•
Inspect shields, vehicles with diesel engine or with GVWR above 10,000 lbs (4 536 kg) only. *See footnote (n).*		•

Additional Required Services (Gasoline Engine)

This maintenance section applies to vehicles with a gasoline engine. If your vehicle has a diesel engine, see the maintenance schedule section in the DURAMAX® Diesel Engine Supplement.

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.	•	•	•	•	•	•
Vehicles without a filter restriction indicator: Replace engine air cleaner filter. See *Engine Air Cleaner/Filter (Gasoline Engines) on page 505*.		•		•		•
Change automatic transmission fluid and filter (severe service). *See footnote (h).*		•		•		•
Change automatic transmission fluid and filter (normal 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)
Four-wheel drive only: Change transfer case fluid (extreme duty service). *See footnotes (g) (l) and (m).*	•	•	•	•	•	•
Four-wheel drive only: Change transfer case fluid (normal service). *See footnotes (g) and (m).*		•		•		•
Inspect evaporative control system. *An Emission Control Service. See footnotes † and (k).*		•		•		•
Replace spark plugs and inspect spark plug wires. *An Emission Control Service.*				•		
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 (q).*						•

Maintenance Footnotes (Gasoline Engine)

This maintenance section applies to vehicles with a gasoline engine. If your vehicle has a diesel engine, see the maintenance schedule section in the DURAMAX® Diesel Engine Supplement.

† *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.*

Lubricate the front suspension, steering linkage, transmission shift linkage, and parking brake cable guides. Control arm ball joints on 2500/3500 series vehicles require lubrication but should not be lubricated unless their temperature is 10°F (–12°C) or higher, or they could be damaged. Control arm ball joints on 1500 series vehicles are maintenance-free. Vehicles used under severe commercial operating conditions require lubrication on a regular basis every 3,000 miles (5 000 km).

(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 drum brake linings/shoes for wear or cracks. Inspect other brake parts, including drums, wheel cylinders, calipers, parking brake, etc.*

(b) *Visually inspect front and rear suspension and steering system for damaged, loose or missing parts, signs of wear or lack of lubrication. Inspect power steering lines and hoses for proper hook-up, binding, leaks, cracks, chafing, etc. Visually check constant velocity joints, rubber boots, and axle seals for leaks.*

(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 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. 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, body door hinges, hood latch assembly, secondary latch, pivots, spring anchor, release pawl, tailgate hinges, tailgate linkage, tailgate handle pivot points, latch bolt, fuel door hinge, locks, and 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) *Check vent hose at transfer case for kinks and proper installation. Check to be sure vent hose is unobstructed, clear, and free of debris.*

(h) *Change automatic transmission fluid and filter if the vehicle Gross Vehicle Weight Rating (GVWR) is over 8600 lbs or 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 513 for what to use. Inspect hoses. Clean radiator, condenser, pressure cap, and filler neck. Pressure test the cooling system and pressure cap.*

(j) *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.*

(k) *Inspect system. Check all fuel and vapor lines and hoses for proper hook-up, routing, and condition. Check that the purge valve, if the vehicle has one, works properly. Replace as needed.*

(l) *Extreme Duty Service: Change transfer case fluid if the vehicle is mainly driven off-road in four-wheel drive, or is used for heavy trailer towing. Farming, mining, forestry, and Department of Natural Resources (DNR) vehicles meet this definition.*

(m) *During any maintenance, if a power washer is used to clean mud and dirt from the underbody, care should be taken to not directly spray the transfer case output seals. High pressure water can overcome the seals and contaminate the transfer case fluid. Contaminated fluid will decrease the life of the transfer case and should be replaced.*

(n) *Vehicles with diesel engine or with GVWR above 10,000 lbs (4 536 kg) only: Inspect shields for damage or looseness. Adjust or replace as required. This is a Noise Emission Control Service. Applicable to vehicles sold in the United States and recommended for vehicles sold in Canada.*

(p) *If you drive regularly under dusty conditions, inspect the filter or change indicator (if equipped) at each engine oil change.*

(q) *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 635*.

At the First 100, 1,000 and 6,000 Miles (160, 1 600 and 10 000 km)

Check dual wheel nut torque. For proper torque, see *Capacities and Specifications on page 616*.

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 (Gasoline Engine) on page 500* for further details.

Notice: **It is important to check the engine oil regularly and keep it at the proper level. Failure to keep the engine oil at the proper level can cause damage to the 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 513* 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 559*. Check to make sure the spare tire is stored securely. See *Changing a Flat Tire on page 576*.

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 565*.

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 162*.

   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 Transmission Shift Lock Control System 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. It should be parked on a level surface.
2. Firmly apply the parking brake. See *Parking Brake on page 162*.

   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 Transmission Lock Check

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

- The ignition should turn to LOCK only when the shift lever is in PARK (P).
- The ignition key should come out only in LOCK.

Contact your GM Goodwrench® dealer if service is required.

Parking Brake and Automatic Transmission 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 transmission 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

This maintenance section applies to vehicles with a gasoline engine. If your vehicle has a diesel engine, see the maintenance schedule section in the DURAMAX® Diesel Engine Supplement.

Fluids and lubricants identified below by name, part number, or specification can 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 (Gasoline Engine) on page 500*.
Engine Coolant	50/50 mixture of clean, drinkable water and use only DEX-COOL® coolant. See *Engine Coolant on page 513*.

Usage	Fluid/Lubricant
Hydraulic Brake System	Delco® Supreme 11 Brake Fluid or equivalent DOT-3 brake fluid.
Windshield Washer	GM Optikleen® Washer Solvent.
Power Steering System	GM Power Steering Fluid (GM Part No. U.S. 89021184, in Canada 89021186).
Automatic Transmission	DEXRON®-VI Automatic Transmission Fluid.
Key Lock Cylinders	Multi-Purpose Lubricant, Superlube (GM Part No. U.S. 12346241, in Canada 10953474).
Floor Shift Linkage	Lubriplate Lubricant Aerosol (GM Part No. U.S. 12346293, in Canada 992723) or lubricant meeting requirements of NLGI #2 Category LB or GC-LB.

Usage	Fluid/Lubricant
Chassis Lubrication	Chassis Lubricant (GM Part No. U.S. 12377985, in Canada 88901242) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.
Front Axle (1500 Series)	SAE 80W-90 Axle Lubricant (GM Part No. U.S. 1052271, in Canada 10950849).
Front Axle (1500 HD, 2500, 2500 HD, and 3500 Series)	SAE 75W-90 Synthetic Axle Lubricant (GM Part No. U.S. 12378261, in Canada 10953455) meeting GM Specification 9986115.
Rear Axle	SAE 75W-90 Synthetic Axle Lubricant (GM Part No. U.S. 12378261, in Canada 10953455) meeting GM Specification 9986115.

Usage	Fluid/Lubricant
Transfer Case (Four-Wheel Drive)	DEXRON®-VI Automatic Transmission Fluid.
Front Axle Propshaft Spline or One-Piece Propshaft Spline (Two-Wheel Drive with 4-Speed Auto. Trans.)	Spline Lubricant, Special Lubricant (GM Part No. U.S. 12345879, in Canada 10953511) or lubricant meeting requirements of GM 9985830.
Rear Driveline Center Spline	Chassis Lubricant (GM Part No. U.S. 12377985, in Canada 88901242) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.
Hood Hinges	Multi-Purpose Lubricant, Superlube (GM Part No. U.S. 12346241, in Canada 10953474).

Usage	Fluid/Lubricant
Body Door Hinge Pins, Tailgate Hinge and Linkage, Folding Seats, and Fuel Door Hinge	Multi-Purpose Lubricant, Superlube (GM Part No. U.S. 12346241, in Canada 10953474).
Tailgate Handle Pivot Points, Hinges, Latch Bolt, and Linkage	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).
Weatherstrip Squeaks	Synthetic Grease with Teflon, Superlube (GM Part No. U.S. 12371287, in Canada 10953437).

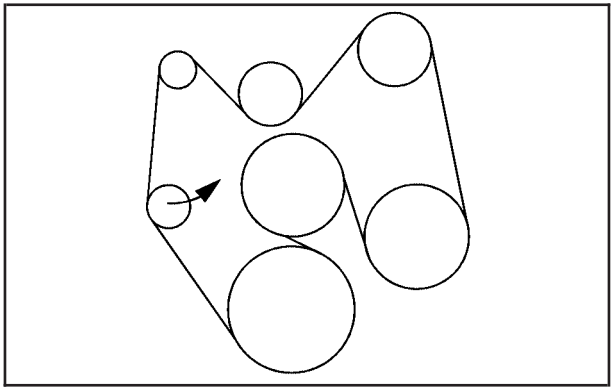
Normal Maintenance Replacement Parts

Replacement parts identified below by name, part number, or specification can be obtained from your GM dealer.

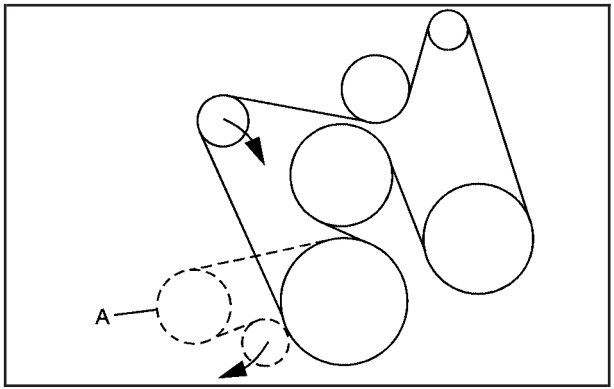
If your vehicle has the DURAMAX® diesel engine, see the DURAMAX® Diesel manual for more information.

Part	GM Part Number	ACDelco® Part Number
Engine Air Cleaner/Filter		
High Capacity	15908915	A1518C
Standard	15908916	A1519C*
Oil Filter		
4.3L V6	25010792	PF47
4.8L V8; 5.3L V8; 6.0L V8	89017524	PF48
Spark Plugs		
4.3L V6	89017883	41-932
4.8L V8; 5.3L V8; 6.0L V8	12571164	41-985
Wiper Blades – 21.6 inches (55.0 cm)	15930910	—
*A1518C high-capacity air cleaner filter may be substituted.		

Engine Drive Belt Routing



V6 Engines



V8 Engines

(A) Air Conditioning Compressor

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 620*. Any additional information from *Owner Checks and Services on page 631* 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

Section 7 Customer Assistance Information

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Customer Assistance and Information

Customer Satisfaction Procedure

Your satisfaction and goodwill are important to your dealer/retailer and to GMC. Normally, any concerns with the sales transaction or the operation of the vehicle will be resolved by your dealer's/retailer'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/retailer 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/retailer or the general manager.

STEP TWO: If after contacting a member of dealership/retailer management, it appears your concern cannot be resolved by the dealership/retailer without further help, in the U.S., contact the GMC Consumer Relations Manager by calling 1-800-GMC-8782 (1-800-462-8782, Customer Assistance prompt). In Canada, contact General Motors of Canada Customer Communication 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/retailer name and location.
- Vehicle delivery date and present mileage.

When contacting GMC, please remember that your concern will likely be resolved at a dealer's/retailer'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/retailer are committed to making sure you are completely satisfied with your new vehicle. However, if you continue to remain unsatisfied after following the procedure outlined in Steps One and Two, you should file with the Better Business Bureau (BBB) Auto Line Program to enforce your rights.

The BBB Auto Line Program is an out of court program administered by the Council of Better Business Bureaus to settle automotive disputes regarding vehicle repairs or the interpretation of the New Vehicle Limited Warranty. Although you may be required to resort to this informal dispute resolution program prior to filling out 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 can call the General Motors Customer Communication Centre, 1-800-263-3777 (English), 1-800-263-7854 (French), or write to:

Mediation/Arbitration Program
c/o Customer Communication Centre
General Motors of Canada Limited
Mail Code: CA1-163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7

Telephone: 1-800-955-5100

Your inquiry should be accompanied by 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/retailers 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 the Text Telephones (TTYs), GMC has TTY equipment available at its Customer Assistance Center. Any TTY user can communicate with GMC by dialing: 1-800-GMC-8583 (462-8583). (TTY users in Canada can dial 1-800-263-3830.)

Customer Assistance Offices

GMC encourages customers to call the toll-free number for assistance. However, if a customer wishes to write or e-mail GMC, the letter should be addressed to:

United States

GMC Customer Assistance Center
P.O. Box 33172
Detroit, MI 48232-5172

www.GMC.com
1-800-GMC-8782 (462-8782)
1-800-GMC-8583 (462-8583) (For Text Telephone devices (TTYs))
Roadside Assistance: 1-800-GMC-8782 (462-8782)
Fax Number: 313-381-0022

From Puerto Rico
1-800-496-9992 (English)
1-800-496-9993 (Spanish)
Fax Number: 313-381-0022

U.S. Virgin Islands:
1-800-496-9994
Fax Number: 313-381-0022

Canada

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

All Overseas Locations

Please contact the local General Motors Business Unit.

Mexico, Central America and Caribbean Islands/Countries (Except Puerto Rico and U.S. Virgin Islands)

General Motors de Mexico, S. de R.L. de C.V.
Customer Assistance Center
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-GMC-8782 (1-800-462-8782)**.

In Canada, call **1-800-268-6800**.

Service is available 24 hours a day, 365 days a year.

As the owner of a new GMC vehicle, you are automatically enrolled in the GMC 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.

- **Emergency Tow From a Public Roadway or Highway:** Tow to the nearest dealership/retailer 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:** Installation of a spare tire in good condition, when equipped and properly inflated, 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.
- **Trip Routing:** Your Roadside Assistance Representative can provide you with specific information regarding this feature.
- **Trip Interruption Expense Benefits:** Your Roadside Assistance Representative can provide you with specific information regarding this feature.

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 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 GMC's Bumper-to-Bumper warranty. However, when other services are utilized, our Roadside Assistance Representatives will explain any payment obligations you might incur.

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 of the vehicle.
- 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 GMC Roadside Assistance: **1-800-462-8782**, text telephone (TTY) users, call **1-888-889-2438**. Canadian customers call **1-800-268-6800**.

GMC 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. GMC and General Motors of Canada 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/retailers 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/retailers. 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, contact your dealer/retailer and request an appointment. By scheduling a service appointment and advising your service consultant of your transportation needs, your dealer/retailer can help minimize your inconvenience.

If your vehicle cannot be scheduled into the service department immediately, keep driving it until it can be scheduled for service, unless, of course, the problem is safety-related. If it is, please call your dealership/retailer, let them know this, and ask for instructions.

If the dealer/retailer requests 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/retailer can offer you one of the following:

Shuttle Service

Shuttle service is the preferred means of offering Courtesy Transportation and participating dealers/retailers 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/retailer'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/retailer may arrange to provide you with a courtesy rental vehicle or reimburse you for a rental vehicle that you obtain if your vehicle is kept for an overnight warranty repair. Rental reimbursement will be limited and must be supported by original receipts. This requires that you sign and complete a rental agreement and meet state/provincial, local, and rental vehicle provider requirements. Requirements vary and may include minimum age requirements, insurance coverage, credit card, etc. You are responsible for fuel usage charges and may also be responsible for taxes, levies, usage fees, excessive mileage, or rental usage beyond the completion of the repair.

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/retailer. Please contact your dealer/retailer for specific information about availability. All Courtesy Transportation arrangements will be administered by appropriate dealer/retailer 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 owner 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/retailer may have a collision repair center with GM-trained technicians and state of the art equipment, or be able to recommend a collision repair center that has GM-trained technicians and comparable equipment.

Insuring Your Vehicle

Protect your investment in your GM vehicle with comprehensive and collision insurance coverage. There are significant differences in the quality of coverage afforded by various insurance policy terms. Many insurance policies provide reduced protection to your GM vehicle by limiting compensation for damage repairs by using aftermarket collision parts. Some insurance companies will not specify aftermarket collision parts. When purchasing insurance, we recommend that you assure your vehicle will be repaired with GM original equipment collision parts. If such insurance coverage is not available from your current insurance carrier, consider switching to another insurance carrier.

If your vehicle is leased, the leasing company may require you to have insurance that assures repairs with Genuine GM Original Equipment Manufacturer (OEM) parts or Genuine Manufacturer replacement parts. Read your lease carefully, as you may be charged at the end of your lease for poor quality repairs.

If 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 650* 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/retailer 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/retailer, 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 us. Please call us at 1-800-GMC-8782 (1-800-462-8782), or write:

GMC Customer Assistance Center
P.O. Box 33172
Detroit, MI 48232-5172

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/retailer 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 includes 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 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, 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.

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