2002

SAVANA

GMC

2002 GMC Savana
Owner's Manual

Litho in U.S.A.
Part Number X2214 A First Edition

©Copyright General Motors Corporation 2001
All Rights Reserved

GENERAL MOTORS, GM, the GM Emblem, GMC, the GMC Truck Emblem and the name SAVANA are registered trademarks of General Motors Corporation.

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

Please keep this manual in your vehicle, so it will be there if you ever need it when you’re on the road. If you sell the vehicle, please leave this manual in it so the new owner can use it.

We support voluntary technician certification.

For Canadian Owners Who Prefer a French Language Manual:

Aux propriétaires canadiens: Vous pouvez vous procurer un exemplaire de ce guide en français chez votre concessionaire ou au:

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

How to Use this Manual

Many people read their owner's manual from beginning to end when they first receive their new vehicle. If you do this, it will help you learn about the features and controls for your vehicle. In this manual, you'll find that pictures and words work together to explain things quickly.

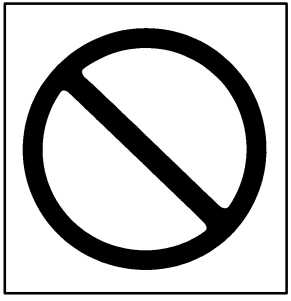
Safety Warnings and Symbols

You will find a number of safety cautions in this book. We use a box and the word CAUTION to tell you 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 don't, you or others could be hurt.



You will also find a circle with a slash through it in this book. This safety symbol means "Don't," "Don't do this" or "Don't let this happen."

Vehicle Damage Warnings

Also, in this book you will find these notices:

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

In the notice area, we tell you about something that can damage your vehicle. Many times, this damage would not be covered by your warranty, and it could be costly. But the notice will tell you 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.

You'll also see warning labels on your vehicle. They use the same words, CAUTION or NOTICE.

Vehicle Symbols

Your vehicle may be equipped with components and labels that use symbols instead of text. Symbols, used on your vehicle, 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 in the Index:

- "Engine Compartment Overview"
- "Instrument Panel"
- "Comfort Controls"
- "Audio Systems"

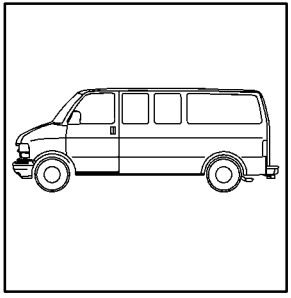
Also see "Warning Lights and Gages" in the Index.

Here are some examples of symbols you may find on your vehicle:

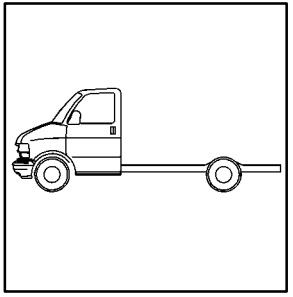
These symbols are used on an original battery:	These symbols are important for you and your passengers whenever your vehicle is driven:		These symbols have to do with vehicle lamps:	These symbols are used on warning and indicator lights:	Here are some other symbols you may see:
CAUTION POSSIBLE INJURY	LATCH BOTH LAP AND SHOULDER BELTS TO PROTECT OCCUPANT DO NOT TWIST SAFETY BELT WHEN ATTACHING		MASTER LIGHTING SWITCH	ENGINE COOLANT TEMP	FUSE BOX ACCESS
PROTECT EYES BY SHIELDING	FASTEN SEAT BELTS	AIR BAG	TURN SIGNALS	BATTERY CHARGING SYSTEM	VENTILATING FAN
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	FUEL
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	OWNER'S MANUAL
SPARK OR FLAME COULD EXPLODE BATTERY	POWER WINDOW	DOOR LOCK UNLOCK	DAYTIME RUNNING LAMPS	ENGINE OIL PRESSURE	SERVICE
			FOG LAMPS	ANTI-LOCK BRAKES	SERVICE MANUAL

Model Reference

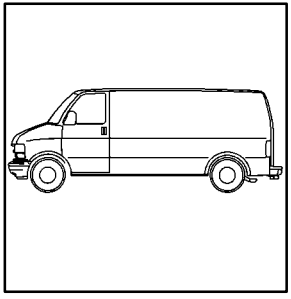
This manual covers these models:



Passenger Van



Cab and Chassis



Cargo Van

Section 1 Seats and Restraint Systems

Here you'll find information about the seats in your vehicle and how to use your safety belts properly. You can also learn about some things you should *not* do with air bags and safety belts.

1-2 Seats and Seat Controls
1-10 Safety Belts: They're for Everyone
1-15 Here Are Questions Many People Ask About Safety Belts -- and the Answers
1-16 How to Wear Safety Belts Properly
1-16 Driver Position
1-24 Safety Belt Use During Pregnancy
1-25 Right Front Passenger Position
1-25 Air Bag System
1-34 Rear Seat Passengers
1-36 Rear Safety Belt Comfort Guides for Children and Small Adults
1-39 Center Passenger Position
1-40 Children
1-46 Restraint Systems for Children
1-61 Older Children
1-64 Safety Belt Extender
1-64 Checking Your Restraint Systems
1-64 Replacing Restraint System Parts After a Crash

Seats and Seat Controls

This part tells you about the seats -- how to adjust them, take them out and put them back in. It also tells you about reclining front seatbacks.

Manual Front Seats

The bucket seats can be adjusted forward or rearward with the lever located at the front of the seat.

To adjust the seat, pull the lever up to release the seat bottom. Slide the seat to where you want it and then release the lever. Try to move the seat with your body, to make sure the seat is locked into place.

⚠ 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 don't want to. Adjust the driver's seat only when the vehicle is not moving.

Power Seat (Option)

If your vehicle has a power seat on the driver's or passenger's side, you can adjust it with these controls located at the front center of the seat cushion.

To raise or lower the seat, move the center knob up or down. To move the seat forward or rearward, move the center knob toward the right or left.

To raise or lower the front of the seat cushion, move the right lever up or down. To raise or lower the rear of the seat cushion, move the left lever up or down.

Reclining Seatbacks

To adjust the seatback, lift the front of the lever, which is located on the inboard side of the seat cushion.

Move the seatback with your body and release the lever to lock the seatback where you want it. Lean forward and pull up on the front of the lever and the seatback will go to an upright position.

But don’t have a seatback reclined if your vehicle is moving.

⚠ CAUTION:

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

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

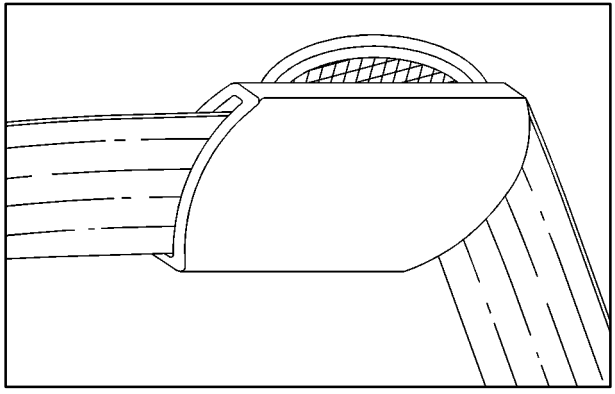
The lap belt can’t do its job either. In a crash the belt could go up over your abdomen. The belt forces would be there, not at your pelvic bones. This could cause serious internal injuries.

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.

Rear Seats

Getting Into the Rear Seats

To make it easier for passengers to get into the rear seats, use the fastener spot on the headliner and safety belt sleeve. These will keep the safety belts out of the way while people get into the rear seats.

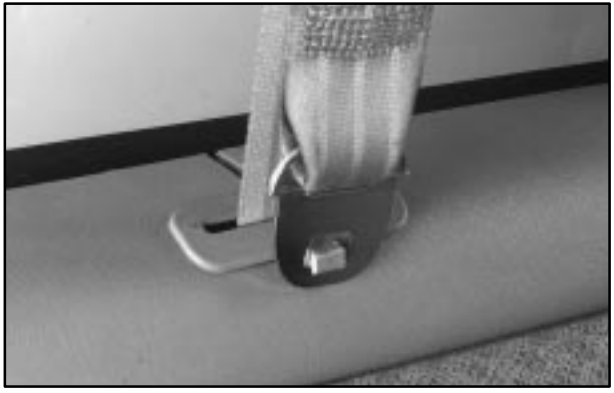


Removing the Rear Seat

1. Disconnect the quick release latch plates for the lap shoulder belts on the bench seat to be removed. To do this, press the tip of a key into the release hole of the safety belt buckle while pulling up on the safety belt.

2. Locate the blue or yellow handle on the inboard side of the seat. If the vehicle has floor mats, the pins will be located under a flap that has been cut into the mat.
3. Turn the handle up.
4. Once the blue or yellow handle is turned up, pull the handle to remove the locking pin. If the vehicle has floor mats, the pins will be located under a flap that has been cut into the mat.

5. Stow the locking pin on the rear of the seat base in the hole that is provided.
6. Repeat this procedure for the pin on the other seat base.
7. Pull the seat rearward about two inches (5 cm) and then lift the seat from the floor rails.
8. Remove the seat from the vehicle.
9. For the first rear seat, stow the safety belt latch by attaching the fastener strip on the safety belt latch to the trim just inside the side door. There is also a fastener strip provided for stowing the safety belt latch for a four-passenger bench seat, if equipped.



For the remaining rear seats, stow the safety belt latch plate on the clip at the window trim.

Replacing the Rear Seats

⚠ CAUTION:

A seat that isn't locked into place properly can move around in a collision or sudden stop. People in the vehicle could be injured. Be sure to lock the seat into place properly when installing it.

⚠ CAUTION:

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

1. Position the seat into the open slots in both rails. Push the seat forward in the rail, hooking both seat bases onto the pins inside of the rails.
2. To install the locking pins at the rear of the seat base, locate the hole in the rail for the pin. It is found on the inboard side of the seat. If the vehicle has floor mats, pull the flap that has been cut into the mat.

3. Remove the pin from its stowed position on the seat base.

4. Insert the blue or yellow locking pin into the seat base. Possible slight seat pushing may be needed to line up the pin with the base. Remember, each pin has its own side. The yellow pin must be installed on the passenger's side and the blue pin on the driver's side.

5. Turn the blue or yellow handle down until it is in the retaining clip.
6. If the vehicle has a floor mat, put the flap back to its original position
7. Repeat this procedure for the other seat base.
8. Connect the quick-release latch plates for the lap-shoulder belts by inserting the latch plates into the buckles attached at the outboard positions of the bench seat. Do not twist the belt.
9. Check that both locking pins are locked into place before operating the vehicle.

Safety Belts: They're 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.

And it explains the air bag system.

⚠ CAUTION:

Don't let anyone ride where he or she can't wear a safety belt properly. If you are in a crash and you're 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” in the Index.

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

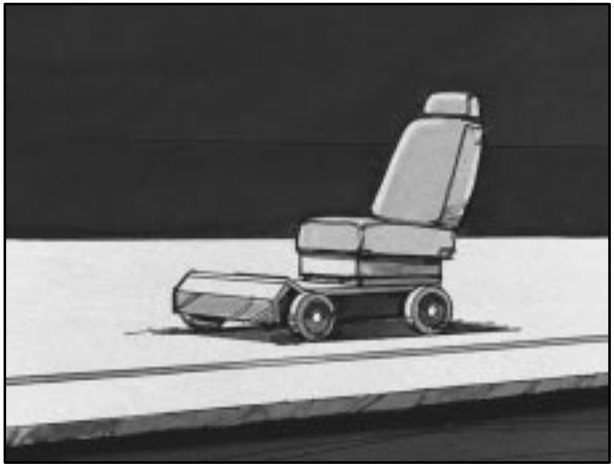
You never know if you’ll be in a crash. If you do have a crash, you don’t know if it will be a bad one.

A few crashes are mild, and some crashes can be so serious that even buckled up a person wouldn’t 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.

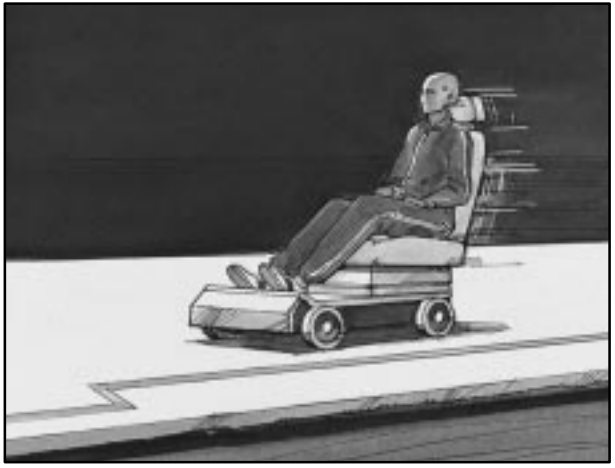
After more than 30 years of safety belts in vehicles, the facts are clear. In most crashes buckling up does matter ... a lot!

Why Safety Belts Work

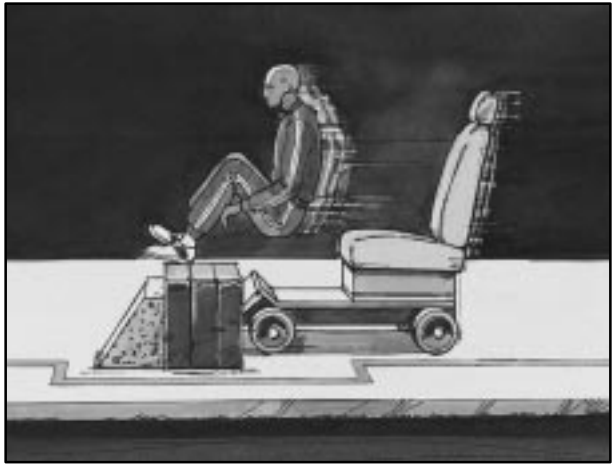
When you ride in or on anything, you go as fast as it goes.



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



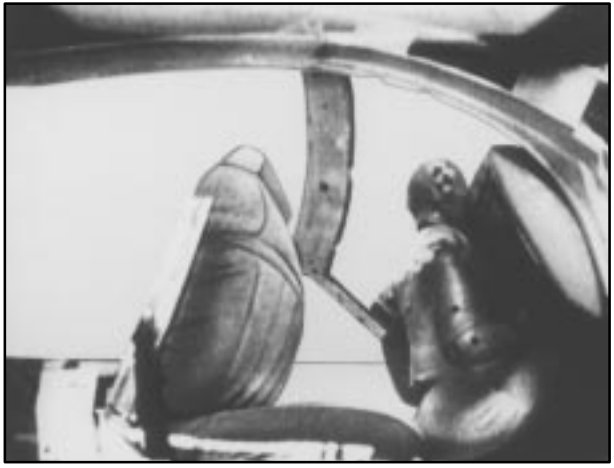
Put someone on it.



Get it up to speed. Then stop the vehicle. The rider doesn't 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's why safety belts make such good sense.

Here Are Questions Many People Ask About Safety Belts -- and the Answers

Q: Won't I be trapped in the vehicle after an accident if I'm wearing a safety belt?

A: You *could* be -- whether you're wearing a safety belt or not. But you can unbuckle a safety belt, even if you're 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 air bags, why should I have to wear safety belts?

A: Air bags are in many vehicles today and will be in most of them in the future. But they are supplemental systems only; so they work *with* safety belts -- not instead of them. Every air bag system ever offered for sale has required the use of safety belts. Even if you're in a vehicle that has air bags, you still have to buckle up to get the most protection. That's true not only in frontal collisions, but especially in side and other collisions.

Q: If I'm 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're in an accident -- even one that isn't your fault -- you and your passengers can be hurt. Being a good driver doesn't 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

Adults

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 the part of this manual called “Children.” Follow those rules for everyone’s protection.

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

We’ll start with the driver position.

Driver Position

This part describes the driver’s restraint system.

Lap-Shoulder Belt

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

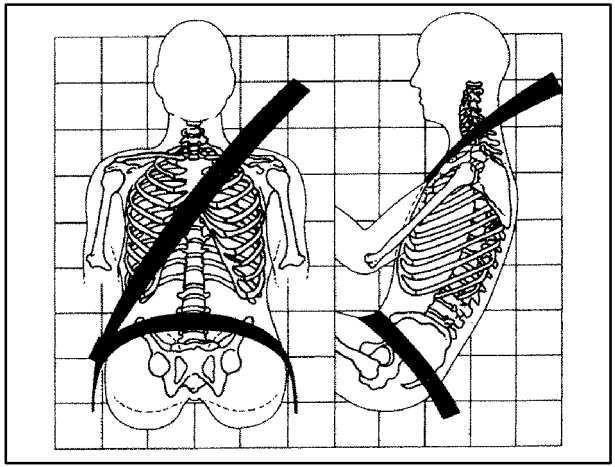
1. Close and lock the door.
2. Adjust the seat so you can sit up straight. To see how, see “Seats” in the Index.

3. Pick up the latch plate and pull the belt across you. Don’t let it get twisted.
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 isn’t long enough, see “Safety Belt Extender” at the end of this section.

   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. To make the lap part tight, pull down on the buckle end of the belt as you pull up on the shoulder belt.



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'd 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's a sudden stop or a crash.

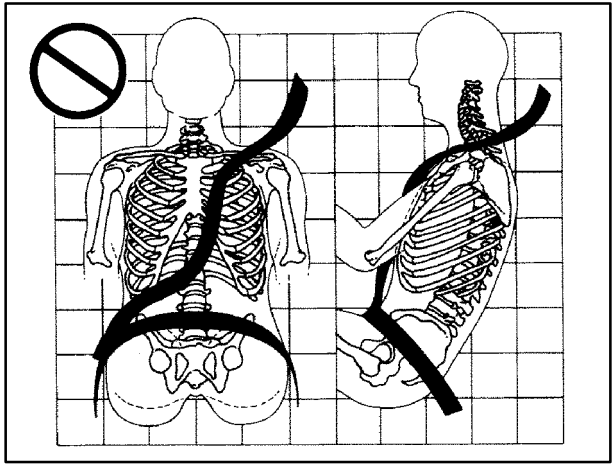
Shoulder Belt Height Adjuster

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

To move it down, push in at the top of the arrows 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 pushing in to make sure it has locked into position.

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.

Q: **What's wrong with this?**

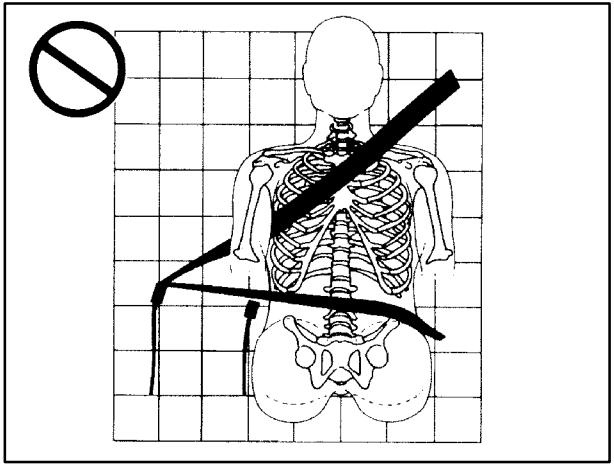


A: The shoulder belt is too loose. It won't give nearly as much protection this way.

⚠ 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's wrong with this?**

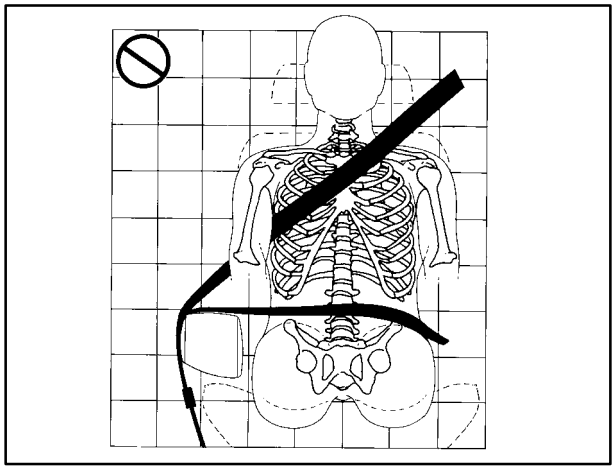


A: The belt is buckled in the wrong place.

⚠ 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's wrong with this?**

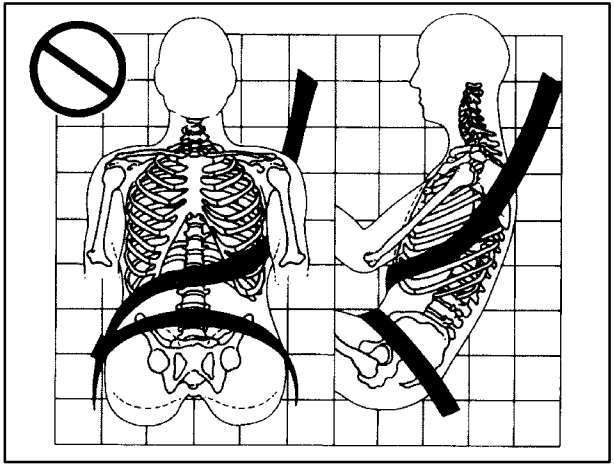


A: The belt is over an armrest.

⚠ CAUTION:

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

Q: **What's wrong with this?**

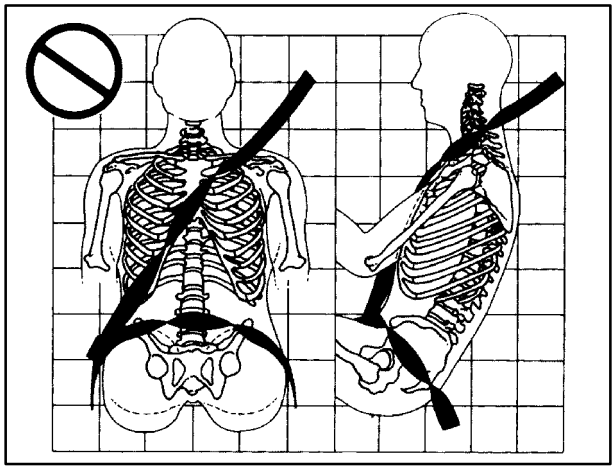


A: The shoulder belt is worn under the arm. It should be worn over the shoulder at all times.

⚠ 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 aren't as strong as shoulder bones. You could also severely injure internal organs like your liver or spleen.

Q: **What's wrong with this?**



A: The belt is twisted across the body.

⚠ CAUTION:

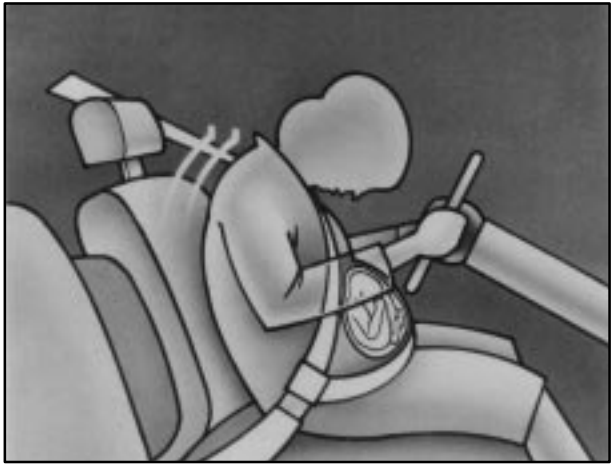
You can be seriously injured by a twisted belt. In a crash, you wouldn't have the full width of the belt to spread impact forces. If a belt is twisted, make it straight so it can work properly, or ask your dealer to fix it.

To unlatch the belt, just 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.

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 don't 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's more likely that the fetus won't be hurt in a crash. For pregnant women, as for anyone, the key to making safety belts effective is wearing them properly.

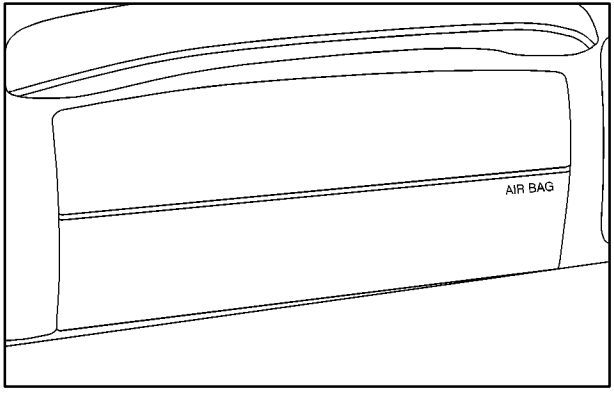
Right Front Passenger Position

To learn how to wear the right front passenger's safety belt properly, see "Driver Position" earlier in this section.

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

Air Bag System

This part explains the air bag system.



If it says AIR BAG on the middle part of the steering wheel and AIR BAG on the instrument panel in front of the right front passenger's seat, your vehicle has two air bags -- one air bag for the driver and another air bag for the right front passenger.

If it says AIR BAG on the middle part of the steering wheel but it doesn't say AIR BAG on the instrument panel in front of the right front passenger's seat, your vehicle has an air bag for the driver only.

If it says AIR BAG on the middle part of the steering wheel, but there is no right front passenger seat, your vehicle has an air bag for the driver only.

If it doesn't say AIR BAG on the middle part of the steering wheel, your vehicle doesn't have air bags.

Frontal air bags are designed to help reduce the risk of injury from the force of an inflating air bag. But these air bags must inflate very quickly to do their job and comply with federal regulations.

Here are the most important things to know about the air bag system:

⚠ CAUTION:

You can be severely injured or killed in a crash if you aren't wearing your safety belt -- even if you have air bags. Wearing your safety belt during a crash helps reduce your chance of hitting things inside the vehicle or being ejected from it. Air bags are designed to work with safety belts, but don't replace them. Air bags are designed to work only in moderate to severe crashes where the front of your vehicle hits something. They aren't designed to inflate at all in rollover, rear or low-speed frontal crashes, or in many side crashes. And, for some unrestrained occupants, air bags may provide less protection in frontal crashes than more forceful air bags have provided in the past. Everyone in your vehicle should wear a safety belt properly -- whether or not there's an air bag for that person.

⚠ CAUTION:

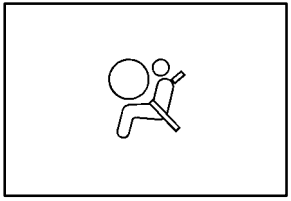
Air bags inflate with great force, faster than the blink of an eye. If you're too close to an inflating air bag, as you would be if you were leaning forward, it could seriously injure you. Safety belts help keep you in position before and during a crash. Always wear your safety belt, even with air bags. The driver should sit as far back as possible while still maintaining control of the vehicle.

If your vehicle has an air bag for the right front passenger, please read this:

⚠ CAUTION:

Anyone who is up against, or very close to, any air bag when it inflates can be seriously injured or killed. Air bags 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 air bag 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 the part of this manual called "Children."

United States



Canada

There is an air bag readiness light on the instrument panel, which shows AIR BAG or the air bag symbol.

The system checks the air bag electrical system for malfunctions. The light tells you if there is an electrical problem. See "Air Bag Readiness Light" in the Index for more information.

How the Air Bag System Works

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

Where are the air bags?

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

⚠ CAUTION:

If something is between an occupant and an air bag, 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 air bag must be kept clear. Don't put anything between an occupant and an air bag, and don't attach or put anything on the steering wheel hub or on or near any other air bag covering.

When should an air bag inflate?

An air bag is designed to inflate in a moderate to severe frontal or near-frontal crash. The air bag will inflate only if the impact speed is above the system's designed "threshold level." If your vehicle goes straight into a wall that doesn't move or deform, the threshold level is about 9 to 16 mph (14 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. If your vehicle strikes something that will move or deform, such as a parked car, the threshold level will be higher. The air bag is not designed to inflate in rollovers, rear impacts, or in many side impacts because inflation would not help the occupant.

In any particular crash, no one can say whether an air bag should have inflated simply because of the damage to a vehicle or because of what the repair costs were. Inflation is determined by the angle of the impact and how quickly the vehicle slows down in frontal or near-frontal impacts.

What makes an air bag inflate?

In an impact of sufficient severity, the air bag sensing system detects that the vehicle is in a crash. The sensing system triggers a release of gas from the inflator, which inflates the air bag. The inflator, air bag and related hardware are all part of the air bag modules inside the steering wheel and in the instrument panel in front of the right front passenger.

How does an air bag restrain?

In moderate to severe frontal or near-frontal collisions, even belted occupants can contact the steering wheel or the instrument panel. Air bags supplement the protection provided by safety belts. Air bags distribute the force of the impact more evenly over the occupant's upper body, stopping the occupant more gradually. But air bags 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 those air bags. Air bags 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.

What will you see after an air bag inflates?

After an air bag inflates, it quickly deflates, so quickly that some people may not even realize the air bag inflated. Some components of the air bag module -- the steering wheel hub for the driver's air bag, or the instrument panel for the right front passenger's bag -- will be hot for a short time. The parts of the bag that come into contact with you may be warm, but not too hot to touch. There will be some smoke and dust coming from vents in the deflated air bags. Air bag inflation doesn't prevent the driver from seeing or from being able to steer the vehicle, nor does it stop people from leaving the vehicle.

⚠ CAUTION:

When an air bag inflates, there is 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 can't get out of the vehicle after an air bag inflates, then get fresh air by opening a window or door.

- Air bags are designed to inflate only once. After they inflate, you'll need some new parts for your air bag system. If you don't get them, the air bag system won't be there to help protect you in another crash. A new system will include air bag modules and possibly other parts. The service manual for your vehicle covers the need to replace other parts.
- Your vehicle is equipped with a crash sensing and diagnostic module, which records information about the air bag system. The module records information about the readiness of the system, when the system commands air bag inflation and driver's safety belt usage at deployment. The module also records speed, engine rpm, brake and throttle data.
- Let only qualified technicians work on your air bag system. Improper service can mean that your air bag system won't work properly. See your dealer for service.

NOTICE:

If you damage the covering for the driver's or the right front passenger's air bag, the bag may not work properly. You may have to replace the air bag module in the steering wheel or both the air bag module and the instrument panel for the right front passenger's air bag. Do not open or break the air bag coverings.

Servicing Your Air Bag-Equipped Vehicle

Air bags affect how your vehicle should be serviced. There are parts of the air bag system in several places around your vehicle. You don't 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 air bag system. To purchase a service manual, see "Service and Owner Publications" in the Index.

⚠ CAUTION:

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

The air bag system does not need regular maintenance.

Adding Equipment to Your Air Bag-Equipped Vehicle

Q: **If I add a push bumper or a bicycle rack to the front of my vehicle, will it keep the air bags from working properly?**

A: As long as the push bumper or bicycle rack is attached to your vehicle so that the vehicle's basic structure isn't changed, it's not likely to keep the air bags from working properly in a crash.

Q: **Is there anything I might add to the front of the vehicle that could keep the air bags from working properly?**

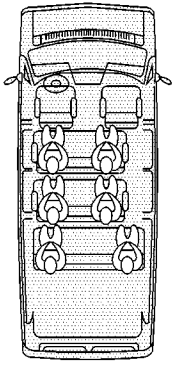
A: Yes. If you add things that change your vehicle's frame, bumper system, front end sheet metal or height, they may keep the air bag system from working properly. Also, the air bag system may not work properly if you relocate any of the air bag sensors. If you have any questions about this, you should 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" in the Index.

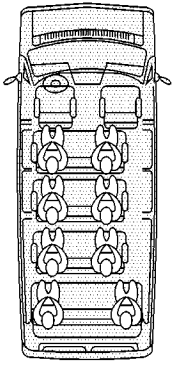
Rear Seat Passengers

It's 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 aren't 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.

Rear Seat Outside Passenger Positions





Lap-Shoulder Belt

The positions next to the windows have lap-shoulder belts. Here's how to wear one properly.

1. Pick up the latch plate and pull the belt across you. Don't let it get twisted.
2. Push the latch plate into the buckle until it clicks.

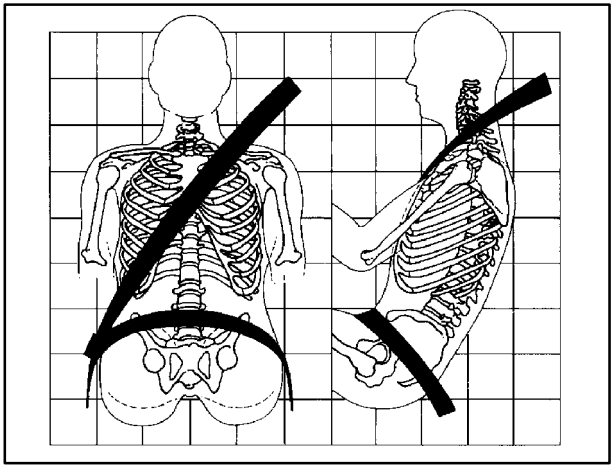
   Pull up on the latch plate to make sure it is secure.

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” at the end of this section.

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 down on the buckle end of the belt as you 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’d 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’s 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.

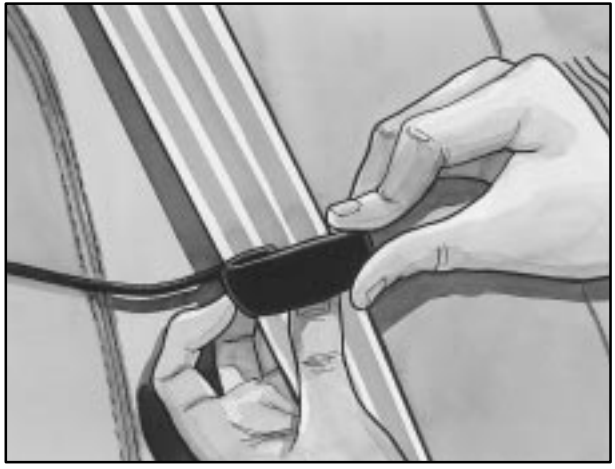
To unlatch the belt, just push the button on the buckle.

Rear Safety Belt Comfort Guides for Children and Small Adults

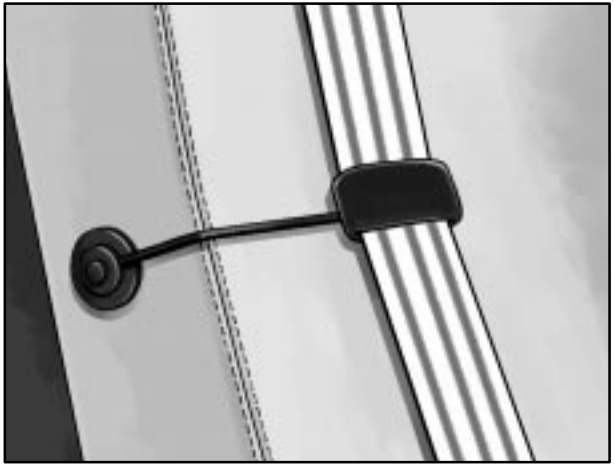
Your vehicle may have rear shoulder belt comfort guides. This feature will provide added safety belt comfort for older children who have outgrown booster seats and for small adults. When installed on a shoulder belt, the comfort guide better positions the belt away from the neck and head.

There is one guide for each outside passenger position in the rear seats. To provide added safety belt comfort for children who have outgrown child restraints and for smaller adults, the comfort guides may be installed on the shoulder belts. Here's how to install a comfort guide and use the safety belt:

1. Locate the guide on the side of the seatback.



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

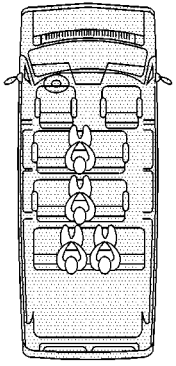


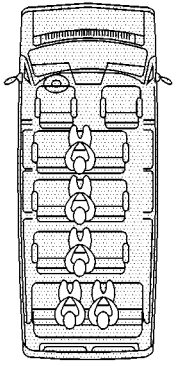
3. Be sure the elastic cord is not wrapped around the retainer pin as this decreases the length.

4. Buckle, position and release the safety belt as described in “Rear Seat Outside Passenger Positions” earlier in this section. Make sure that the shoulder belt crosses the shoulder.

To remove and store the comfort guides, squeeze the belt edges together so that you can take them out of the guides.

Center Passenger Position

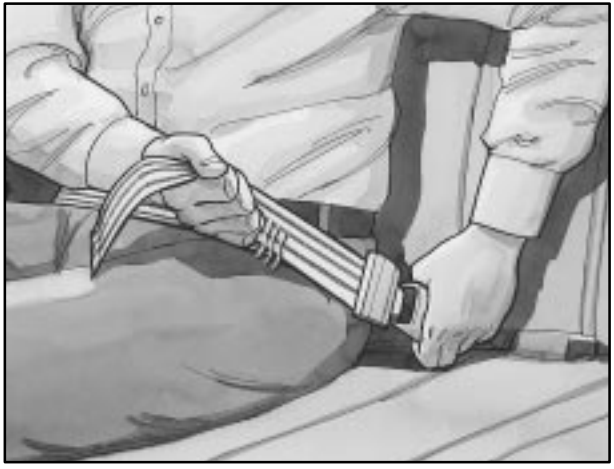




Lap Belt

If your vehicle has rear bench seats, someone can sit in the center positions.

When you sit in a center 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 isn't long enough, see "Safety Belt Extender" at the end of this section.

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.

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.

Infants and Young Children (Except Cargo Vans with Passenger Air Bags)

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

⚠ CAUTION:

People should never hold a baby in their arms while riding in a vehicle. A baby doesn't weigh much -- until a crash. During a crash a baby will become so heavy it is not possible to hold it.

CAUTION: (Continued)

CAUTION: (Continued)

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 air bag when it inflates can be seriously injured or killed. Air bags plus lap-shoulder belts offer outstanding protection for adults and older children, but not for young children and infants. Neither the vehicle's safety belt system nor its air bag 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's unprotected by any bony structure. This alone could cause serious or fatal injuries. Young children always should be secured in appropriate child restraints.

Infants and Young Children (Cargo Vans with Passenger Air Bags)

⚠ CAUTION:

Children who are up against, or very close to, any air bag when it inflates can be seriously injured or killed. Air bags plus lap-shoulder belts offer outstanding protection for adults and older children, but not for young children and infants. Neither the vehicle's safety belt system nor its air bag system is designed for them. Young children and infants need the protection that a child restraint system can provide.

⚠ 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. However, infants, who should be restrained in a rear-facing child restraint, cannot ride safely in this vehicle.

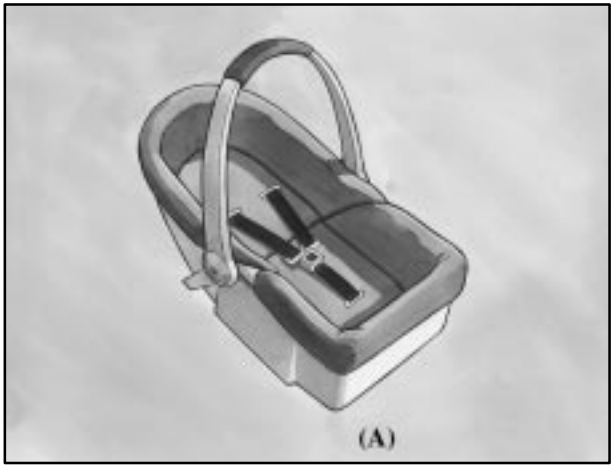
⚠ CAUTION:

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's unprotected by any bony structure. This alone could cause serious or fatal injuries. Young children always should be secured in appropriate child restraints.

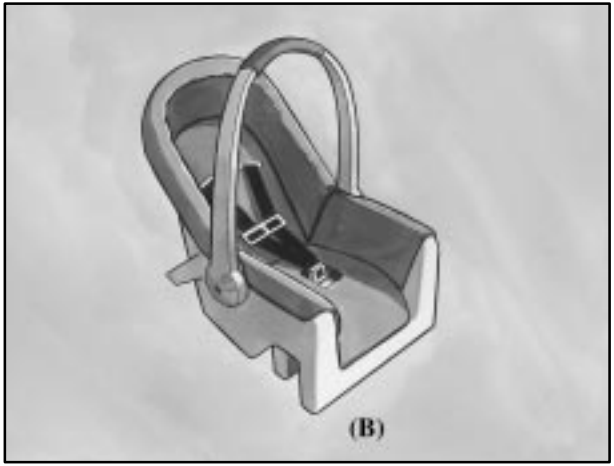
⚠ CAUTION:

People should never hold a baby in their arms while riding in a vehicle. A baby doesn't 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 your arms.

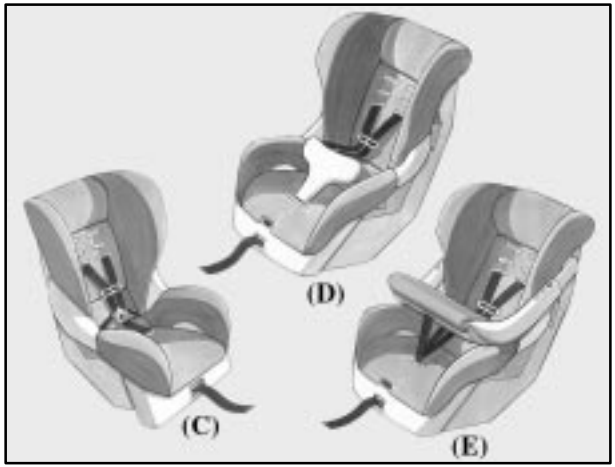
Restraint Systems for Children



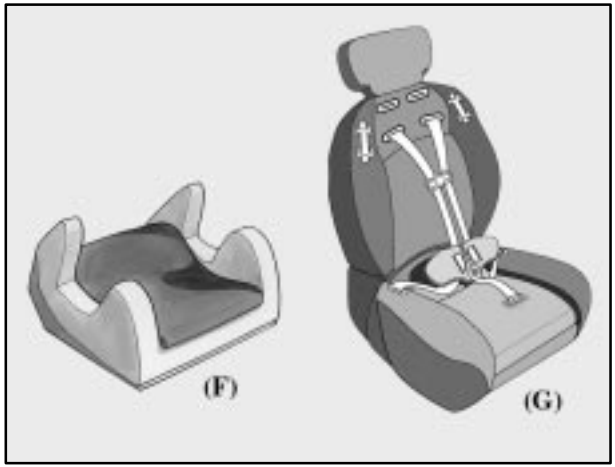
An infant car bed (A), a special bed made for use in a motor vehicle, is an infant restraint system designed to restrain or position a child on a continuous flat surface. Make sure that the infant's head rests toward the center of the vehicle.



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 do child restraints work?

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.

For many years, add-on child restraints have used the adult belt system in the vehicle. To help reduce the chance of injury, the child also has to be secured within the restraint. The vehicle's belt system secures the add-on child restraint in the vehicle, and the add-on child restraint's harness system holds the child in place within the 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.

When choosing a 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. These restraints use the belt system in your vehicle, but the child also has to be secured within the restraint to help reduce the chance of personal injury. 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.

Where to Put the Restraint (Except Cargo Vans and Cab and Chassis Models)

Accident statistics show that children are safer if they are restrained in the rear rather than the front seat. General Motors, therefore, recommends that child restraints be secured in a rear seat including an infant riding in a rear-facing infant seat, a child riding in a forward-facing child seat and an older child riding in a booster seat. If your vehicle has a front passenger air bag, *never* put a rear-facing child restraint in the front passenger seat. Here's why:

⚠ CAUTION:

A child in a rear-facing child restraint can be seriously injured or killed if the right front passenger's air bag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating air bag. If your vehicle has a right front passenger's air bag, always secure a rear-facing child restraint in a rear seat.

CAUTION: (Continued)

CAUTION: (Continued)

You may secure a forward-facing child restraint in the right front seat, but before you do, always move the front passenger seat as far back as it will go. It's better to secure the child restraint in a rear seat.

Wherever you install it, 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.

Where to Put the Restraint (Cargo Vans and Cab and Chassis Models)

The child restraint must be secured properly in the passenger seat. If your vehicle has a passenger air bag, *never* put a rear-facing child restraint in this vehicle. Here's why:

⚠ CAUTION:

A child in a rear-facing child restraint can be seriously injured or killed if the passenger's air bag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating air bag. Do not use a rear-facing child restraint in this vehicle.

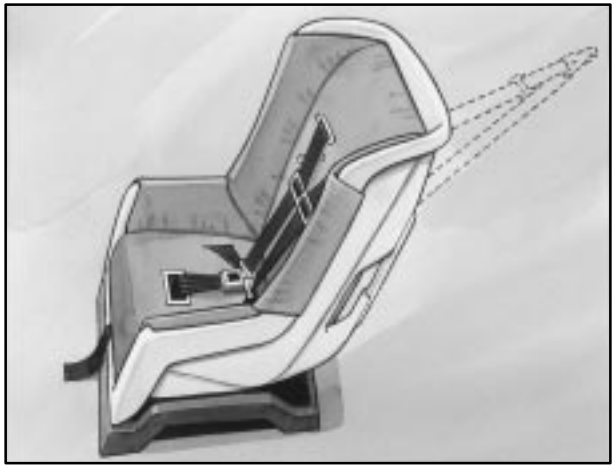
If a forward-facing child restraint is suitable for your child, always move the passenger seat as far back as it will go.

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.

Top Strap

Some child restraints have a top strap, or "top tether." It can help restrain the child restraint during a collision. For it to work, a top strap must be properly anchored to the vehicle. Some top strap-equipped child restraints are designed for use with or without the top strap being anchored. Others require the top strap always to be anchored. Be sure to read and follow the instructions for your child restraint. If yours requires that the top strap be anchored, don't use the restraint unless it is anchored properly.

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



In Canada, the law requires that forward-facing child restraints have a top strap, and that the strap be anchored. In the United States, some child restraints also have a top strap. If your child restraint has a top strap, it should be anchored.

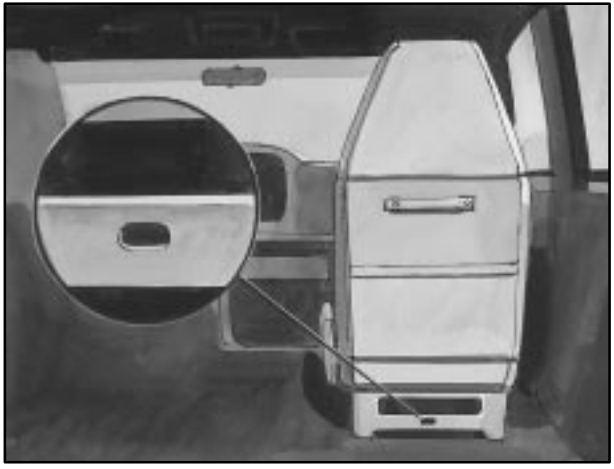
Anchor the top strap to one of the following anchor points. Be sure to use an anchor point located on the same side of the vehicle as the seating position where the child restraint will be placed.

⚠ CAUTION:

Each top tether bracket is designed to anchor only one child restraint. Attaching more than one child restraint to a single bracket could cause the anchor to come loose or even break during a crash. A child or others could be injured if this happens. To help prevent injury to people and damage to your vehicle, attach only one child restraint per bracket.

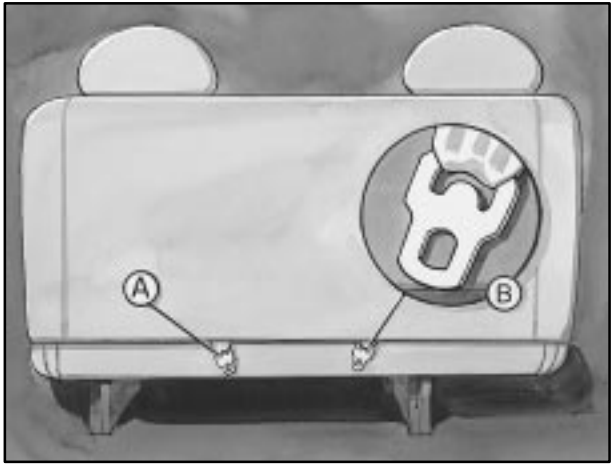
Once you have the top strap anchored, you'll be ready to secure the child restraint itself. Tighten the top strap when and as the child restraint manufacturer's instructions say.

If your vehicle is a cargo van, the anchor for a top strap is located at the rear of the seat cushion on the right front passenger's seat.



Cargo Van Models

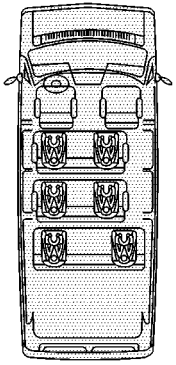
If your vehicle is a passenger van with rear seats, an anchor bracket for a top strap is located at the rear of the seat cushion for each three-passenger rear bench seat. Don't use a child restraint with a top strap in the right front passenger's position, or in any four-passenger rear bench seat.

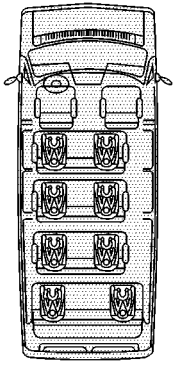


Passenger Van 3-Passenger Rear Seats

Anchor the top strap to this bracket. For the left outboard seating position, use anchor point (A). For the right outboard seating position, use anchor point (B). For a center seating position, use either anchor point (A) or (B).

Securing a Child Restraint in a Rear Outside Seat Position





You'll be using the lap-shoulder belt. See the earlier part about the top strap if the child restraint has one. 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 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.

   If the shoulder belt goes in front of the child's face or neck, put it behind the child restraint.

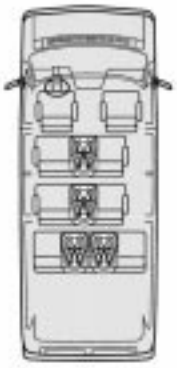
3. Buckle the belt. Make sure the release button is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.

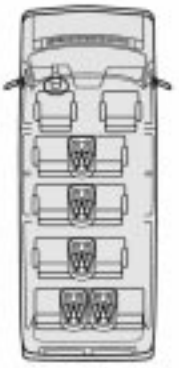
4. Pull the rest of the shoulder belt all the way out of the retractor to set the lock.

5. To tighten the belt, feed the shoulder belt back into the retractor while you push down on the child restraint. If you're 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. 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.

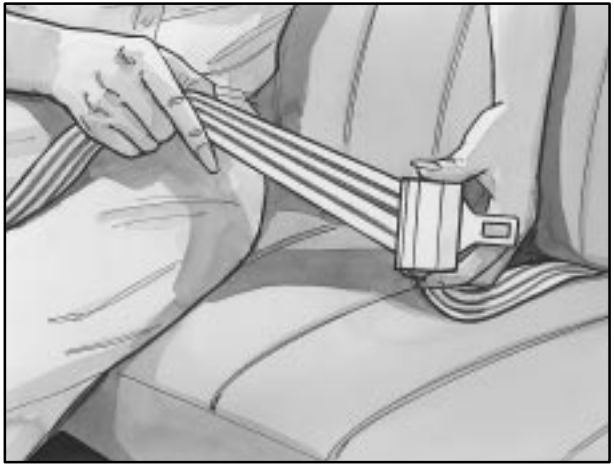
Securing a Child Restraint in a Center Seat Position





You'll be using the lap belt. 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.

See the earlier part about the top strap if the child restraint has one.

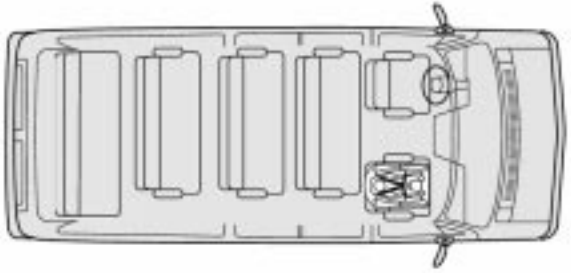


1. Make the belt as long as possible by tilting the latch plate and pulling it along the belt.
2. Put the restraint on the seat.
3. Run the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.

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. To tighten the belt, pull its free end while you push down on the child restraint. If you're 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. 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. It will be ready to work for an adult or larger child passenger.

Securing a Child Restraint in the Right Front Seat Position



If your vehicle has a front passenger air bag, *never* put a rear-facing child restraint in this seat. Here's why:

⚠ CAUTION:

A child in a rear-facing child restraint can be seriously injured or killed if the front passenger's air bag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating air bag. If your vehicle is a passenger van, always secure a rear-facing child restraint in a rear seat.

If your vehicle is a cargo van with a right front passenger air bag, do not use a rear-facing child restraint in this vehicle. If a forward-facing child restraint is suitable for your child, always move the passenger seat as far back as it will go.

Although a rear seat is a safer place, you can secure a forward-facing child restraint in the right front seat.

You'll be using the lap-shoulder belt. See the earlier part about the top strap if the child restraint has one. 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. If your vehicle has a front passenger air bag, always move the seat as far back as it will go before securing a forward-facing child restraint. See "Seats" in the Index.
2. Put the 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.

   If the shoulder belt goes in front of the child's face or neck, put it behind the child restraint.

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, feed the shoulder belt back into the retractor while you push down on the child restraint. You may find it helpful to use your knee to push down on the child restraint as you tighten the belt.

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.

Older Children

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

If you have the choice, a child should sit next to a window so the child can wear a lap-shoulder belt and get the additional restraint a shoulder belt can provide.

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

A: If possible, 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.

Accident statistics show that children are safer if they are restrained in the rear seat.

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

⚠ CAUTION:

Never do this.

Here two children are wearing the same belt. The belt can't 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: Move the child toward the center of the vehicle, but 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. If the child is sitting in a rear seat outside position, see "Rear Safety Belt Comfort Guides" in the Index. If the child is so small that the shoulder belt is still very close to the child's face or neck, you might want to place the child in a seat that has a lap belt, if your vehicle has one.

⚠ 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.

Safety Belt Extender

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

But if a safety belt isn't long enough to fasten, your dealer will order you an extender. It's free. When you go in to order it, take the heaviest coat you will wear, so the extender will be long enough for you. The extender will be just for you, and just for the seat in your vehicle that you choose. Don't let someone else use it, and use it only for the seat it is made to fit. To wear it, just attach it to the regular safety belt.

Checking Your 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.

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 air bag covers, and have them repaired or replaced. (The air bag system does not need regular maintenance.)

Replacing Restraint System Parts After a Crash

If you've had a crash, do you need new belts?

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

If an air bag inflates, you'll need to replace air bag system parts. See the part on the air bag system earlier in this section.

Section 2 Features and Controls

Here you can learn about the many standard and optional features on your vehicle, and information on starting, shifting and braking. Also explained are the instrument panel and the warning systems that tell you if everything is working properly -- and what to do if you have a problem.

2-2 Windows
2-4 Keys
2-6 Door Locks
2-8 Keyless Entry System (If Equipped)
2-16 Rear Doors
2-18 Theft
2-19 Passlock®
2-20 New Vehicle “Break-In”
2-20 Ignition Positions
2-21 Starting Your Gasoline Engine
2-23 Engine Coolant Heater (If Equipped)
2-24 Automatic Transmission Operation
2-27 Parking Brake
2-28 Shifting Into PARK (P)
2-30 Shifting Out of PARK (P)
2-31 Parking Over Things That Burn
2-32 Engine Exhaust
2-32 Running Your Engine While You’re Parked
2-33 Locking Rear Axle (If Equipped)
2-33 Horn
2-34 Tilt Wheel (Option)
2-34 Turn Signal/Multifunction Lever
2-41 Exterior Lamps
2-43 Interior Lamps
2-45 Mirrors
2-49 Storage Compartments
2-49 Cigarette Lighter/Ashtray
2-50 Sun Visors
2-52 The Instrument Panel -- Your Information System
2-53 Instrument Panel Cluster
2-55 Warning Lights, Gages and Indicators

Windows

⚠ CAUTION:

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

Manual Windows

To operate your manual windows, turn the hand crank on each door to raise or lower your side door windows.

Power Windows (Option)

If you have power windows, the controls are located on each of the side doors.

The driver's door has a switch for the passenger window as well. Your power windows will work when the ignition has been turned to RUN or ACCESSORY.

Press the rear of the switch with the power window symbol on it to lower the window.

Press the front of the switch with the power window symbol on it to raise the window.

The driver's window switch also has an express-down feature that allows the window to be lowered without holding the switch. Press and hold the side of the window switch marked AUTO for one second to activate the express-down mode. The express-down mode can be cancelled at any time by pressing the opposite side of the switch. To open the window part way, lightly tap the switch until the window is at the desired position.

Swing-Out Windows

Side Swing-Out Window

To open the side door swing-out windows, pull up on the latch at the edge of the window. Swing the window out and push down on the latch to lock the window into place.

To close the window, pull the latch toward you and push down on the latch to lock it. Your vehicle also has rear swing out windows. See ”Rear Doors” in the index.

Keys

⚠ CAUTION:

Leaving children in a vehicle with the ignition key is dangerous for many reasons. A child or others could be badly injured or even killed.

They could operate the power windows or other controls or even make the vehicle move. Don’t 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 key, your dealer will be able to assist you with obtaining a new one.

NOTICE:

Your vehicle has a number of new features that can help prevent theft. But you can have a lot of trouble getting into your vehicle if you ever lock your key inside. You may even have to damage your vehicle to get in. So be sure you have an extra key.

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 won't open it. You increase the chance of being thrown out of the vehicle in a crash if the doors aren't 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 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.

If your vehicle is equipped with keyless entry, see "Keyless Entry System" later in this section for more information.

From the outside, use your key.

To lock the door from the inside, slide the manual lever on your door down. To unlock the door, slide the manual lever up.

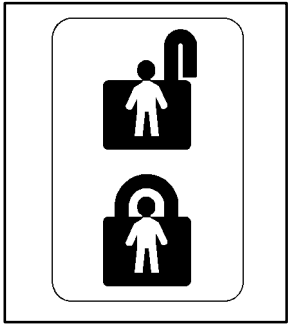
Power Door Locks (Option)

Press the bottom side of the power door lock switch to lock all the doors at once. Press the top side of the power door lock switch to unlock all the doors at once.

When a door is locked, the inside door handle will not work.

Rear Door Security Lock

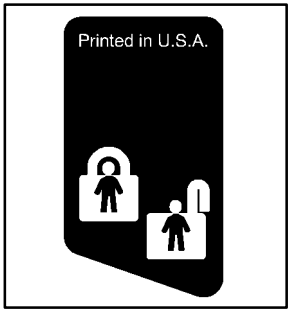
Security locks are located on the passenger side rear door, the side sliding door or the front portion of the 60/40 side swing-out door.



With this feature, you can lock these doors so they can't be opened from the inside by passengers.

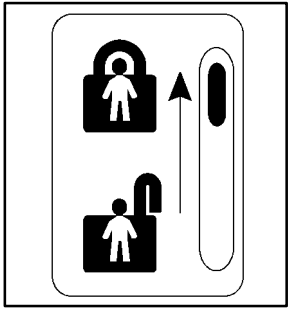
Rear Cargo Door

Move the lever down to engage the security feature. Move the lever up to return the door locks to normal operation.



60/40 Swing-Out Side Door

Move the button to the left to engage the security feature. Move the button to the right to return the door locks to normal operation.



Side Sliding Door

Move the button up to engage the security feature. Move the button down to return the door locks to normal operation.

Keyless Entry System (If Equipped)

If your vehicle has this feature, you can lock and unlock your doors from about 3 feet (1 m) up to 30 feet (9 m) away using the remote keyless entry transmitter supplied with your vehicle.

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(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, and
(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 remote keyless entry system. If the transmitter does not work or if you have to stand closer to your vehicle for the transmitter to work, try this:

- Check the distance. You may be too far from your vehicle. You may need to stand closer during rainy or snowy weather.
- Check the location. Other vehicles or objects may be blocking the signal. Take a few steps to the left or right, hold the transmitter higher, and try again.
- Check to determine if battery replacement or transmitter resynchronization is necessary. See the instructions that follow.
- If you're still having trouble, see your dealer or a qualified technician for service.

Operation

To unlock the driver's door, press the UNLOCK button. If you press this button again within five seconds, all of the doors will unlock. Press the REAR 2X button twice to unlock the rear doors only. When the UNLOCK or REAR 2X button is pressed, the interior dome lamps are turned on for about 40 seconds or until the ignition switch is activated. Press LOCK to lock all doors.

Matching Transmitter(s) to Your Vehicle

Each remote keyless entry transmitter is coded to prevent another transmitter from unlocking your vehicle. If a transmitter is lost or stolen, a replacement can be purchased through your dealer. Remember to bring any remaining transmitters with you when you go to your dealer. When the dealer matches the replacement transmitter to your vehicle, any remaining transmitters must also be matched. Once your dealer has coded the new transmitter, the lost transmitter will not unlock your vehicle. Each vehicle can have a maximum of four transmitters matched to it.

Battery Replacement

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

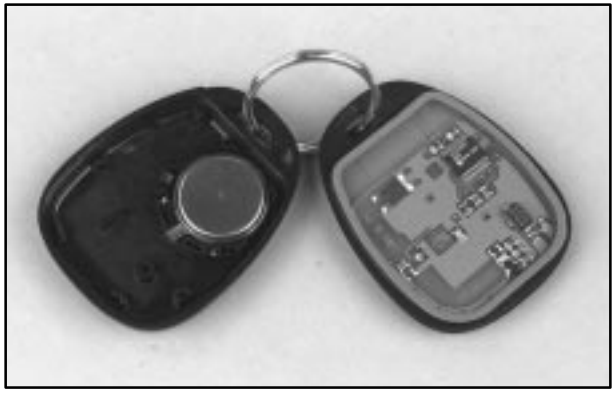
You can tell the battery is weak if the transmitter won't work at the normal range in any location. If you have to get close to your vehicle before the transmitter works, it's probably time to change the battery.

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.

Use one Panasonic® type CR2032 battery:

1. Insert a thin object like a dime in the slot between the covers of the transmitter housing near the key ring hole. Remove the bottom by twisting the dime.
2. Remove and replace the battery, positive (+) side down.



3. Align the covers and snap them together.
4. Check the operation of the transmitter. If the transmitter does not work after battery replacement, it may need to be resynchronized to your vehicle. See “resynchronization” following.

Resynchronization

Resynchronization may be necessary due to the security method used by this system. The transmitter does not send the same signal twice to the receiver. The receiver will not respond to a signal if it has been sent previously. This prevents anyone from recording and playing back the signal from the transmitter.

To resynchronize your transmitter, stand close to your vehicle and simultaneously press and hold the LOCK and UNLOCK buttons on the transmitter for at least five seconds. The door locks should cycle to confirm resynchronization. If the locks do not cycle, see your dealer for service.

Sliding Side Door (Option)

To open the sliding side door from outside, pull the handle toward the rear of the vehicle. Then, slide the door open.

To close the sliding side door from outside, use the outside door handle to slide the door toward the front of the vehicle.

When the door slides closed completely, it will be flush with the side of the body.

To open the sliding door from inside, turn the handle upward and toward the rear of the vehicle. Then, slide the door toward the rear of the vehicle to open it.

To close the sliding door from inside, grasp the inside handle and slide the door toward the front of the vehicle to a closed position.

Make sure the door is completely closed before driving away.

60/40 Swing-Out Side Door

To open the front portion of a 60/40 door from the outside, pull up on the handle and pull the handle toward you.

To open the front portion of a 60/40 door from the inside, pull the handle toward you and push open the door.

To open the rear portion of a 60/40 door from the outside, pull the handle on the side of the rear door and pull it toward you.

To close the 60/40 side doors, close the rear door first. Then close the front door. Check to make sure that both doors are completely closed.

The front side swing-out door has a check strap assembly in the door frame to keep the door from opening beyond 90 degrees.

To open the door beyond 90 degrees, close the door partially, pull the check strap outward at the spring hole and then open the door. When you close the door, the check strap will automatically re-engage.

Rear Doors

⚠ CAUTION:

It can be dangerous to drive with the rear door(s) or rear swing-out windows open because carbon monoxide (CO) gas can come into your vehicle. You can't see or smell CO. It can cause unconsciousness and even death.

CAUTION: (Continued)

CAUTION: (Continued)

If you must drive with the rear door(s) or rear swing-out windows open or if electrical wiring or other cable connections must pass through the seal between the body and the rear door(s) or rear swing-out windows:

- **Make sure all other windows are shut.**
- **Turn the fan on your heating or cooling system to its highest speed with the setting on VENT, HEAT or DEFOG. Additionally, on vehicles with heating/air conditioning systems, MAX A/C or BI-LEVEL A/C can be used. That will force outside air into your vehicle. See "Comfort Controls" in the Index.**
- **If you have air outlets on or under the instrument panel, open them all the way.**

See "Engine Exhaust" in the Index.

To open the rear doors from the outside, pull the handle toward you to open the passenger's side rear door first.

To open the driver's side rear door, pull the latch release at the inside edge of the door.

Both rear doors can be opened past 90 degrees by opening the doors past the first detent (90 degrees open), then opening fully.

To close the rear doors, close the driver side rear door first. Then, close the passenger side rear door. Check to make sure both doors are completely closed.

Rear Swing-Out Window

The rear swing-out windows work the same way as the side swing out windows, but the latch is located at the bottom edge of the window. See ”Side-Door Swing Out Windows” in the index.

Theft

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. However, there are ways you can help.

Key in the Ignition

If you leave your vehicle with the keys inside, it’s an easy target for joy riders or professional thieves -- so don’t do it.

When you park your vehicle and open the driver’s door, you’ll hear a tone reminding you to remove your key from the ignition and take it with you. Always do this. Your steering wheel will be locked, and so will your ignition and transmission. Also remember to lock the doors.

Parking at Night

Park in a lighted spot, close all windows and lock your vehicle. Remember to keep your valuables out of sight. Put them in a storage area, or take them with you.

Parking Lots

Even if you park in a lot where someone will be watching your vehicle, it's still best to lock it up and take your keys. But what if you have to leave your ignition key? What if you have to leave something valuable in your vehicle?

- Put your valuables in a storage area, like your glove box.
- If your vehicle has a remote keyless entry system, take the transmitter with you.
- Lock all the doors except the driver's.
- Then take the door key with you.

Passlock®

Your vehicle is equipped with the Passlock theft-deterrent system.

Passlock is a passive theft-deterrent system. Passlock enables fuel if the ignition lock cylinder is turned with a valid key. If a correct key is not used or the ignition lock cylinder is tampered with, fuel is disabled.

During normal operation, the SECURITY light will go off approximately five seconds after the key is turned to RUN.

If the engine stalls and the SECURITY light flashes, wait until the light stops flashing before trying to restart the engine. Remember to release the key from START as soon as the engine starts.

If the engine is running and the SECURITY light comes on, you will be able to restart the engine if you turn the engine off. However, your Passlock system is not working properly and must be serviced by your dealer. Your vehicle is not protected by Passlock at this time. You may also want to check the fuses (see "Fuses and Circuit Breakers" in the Index). See your dealer for service.

New Vehicle “Break-In”

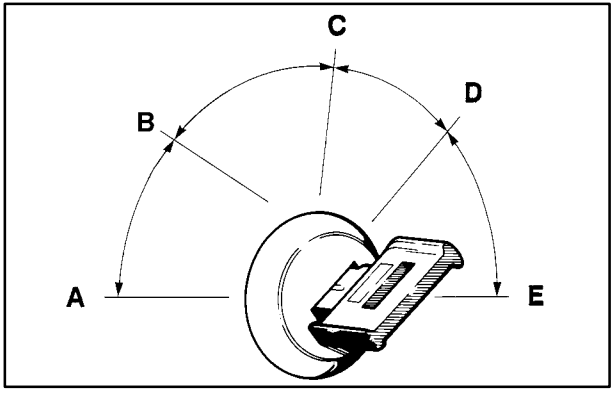
NOTICE:

Your vehicle doesn’t 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).**
- **Don’t drive at any one speed -- fast or slow -- for the first 500 miles (805 km). Don’t make full-throttle starts.**
- **Avoid making hard stops for the first 200 miles (322 km) or so. During this time your new brake linings aren’t 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.**
- **Don’t tow a trailer during break-in. See “Towing a Trailer” in the Index for more information.**

Ignition Positions

With the key in the ignition switch, you can turn it to five different positions.



A (ACCESSORY): This position allows you to use things like the radio, power windows and the windshield wipers when the engine is off. To get into ACCESSORY, push in the key and turn it toward you. Your steering wheel will remain locked, just as it was before you inserted the key.

NOTICE:

If your key seems stuck in LOCK and you can't turn it, be sure you are using the correct key; if so, is it all the way in? If it is, then turn the steering wheel left and right while you turn the key hard. Turn the key only with your hand. Using a tool to force it could break the key or the ignition switch. If none of this works, then your vehicle needs service.

B (LOCK): This position locks your ignition, steering wheel and transmission. It's a theft-deterrent feature. You will only be able to remove your key when the ignition is turned to LOCK.

C (OFF): This position lets you turn off the engine but still turn the steering wheel. It doesn't lock the steering wheel like LOCK. Use OFF if you must have your vehicle in motion while the engine is off (for example, if your vehicle is being pushed).

D (RUN): This is the position for driving.

E (START): This position starts your engine.

Starting Your Gasoline Engine

If you have a diesel engine, see "Starting Your Diesel Engine" in the Diesel Engine Supplement.

Move your shift lever to PARK (P) or NEUTRAL (N). Your engine won't start in any other position -- that's a safety feature. To restart when you're already moving, use NEUTRAL (N) only.

NOTICE:

Don't try to shift to PARK (P) if your vehicle is moving. If you do, you could damage the transmission. Shift to PARK (P) only when your vehicle is stopped.

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.

NOTICE:

Holding your key in START for longer than 15 seconds at a time will cause your battery to be drained much sooner. And the excessive heat can damage your starter motor. Wait about 15 seconds between each try to help avoid draining your battery or damaging your starter.

2. If it doesn't start within 10 seconds, push the accelerator pedal all the way to the floor, while you hold the ignition key in START. When the engine starts, let go of the key and let up on the accelerator pedal. Wait about 15 seconds between each try.

When starting your engine in very cold weather (below 0°F or -18°C), do this:

1. With your foot off the accelerator pedal, turn the ignition key to START and hold it there up to 15 seconds. When the engine starts, let go of the key.
2. If your engine still won't start (or starts but then stops), it could be flooded with too much gasoline. Try pushing your accelerator pedal all the way to the floor and holding it there as you hold the key in START for about three seconds. When the engine starts, let go of the key and accelerator. If the vehicle starts briefly but then stops again, do the same thing, but this time keep the pedal down for five or six seconds. This clears the extra gasoline from the engine.

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 don't, your engine might not perform properly.

Engine Coolant Heater (If Equipped)

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

To Use the Engine Coolant Heater

1. Turn off the engine.
2. Open the hood and unwrap the electrical cord.

   The cord for the engine coolant heater is located on the driver's side of the engine compartment and is attached to the hose for the power steering reservoir.
3. Plug it into a normal, grounded 110-volt AC outlet.

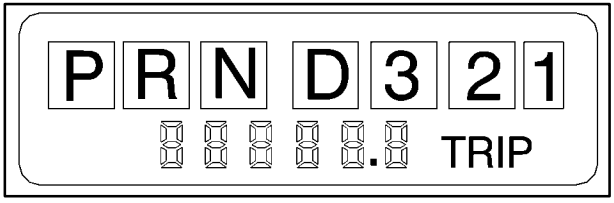
⚠ CAUTION:

Plugging the cord into an ungrounded outlet could cause an electrical shock. Also, the wrong kind of extension cord could overheat and cause a fire. You could be seriously injured. Plug the cord into a properly grounded three-prong 110-volt AC outlet. If the cord won't 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 don't, 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'll be parking your vehicle. The dealer can give you the best advice for that particular area.

Automatic Transmission Operation



There are several different positions for your shift lever.

Your vehicle is equipped with an automatic transmission, and it features an electronic shift position indicator within the instrument cluster. This display must be powered anytime the shift lever is capable of being moved out of the PARK (P) position. This means that if your key is in OFF, but not locked, there will be a small current drain on your battery which could discharge your battery over a period of time.

If you have a need to leave your key in the ignition in OFF for an extended period for any reason, it is recommended that you disconnect the battery cable from the battery to prevent discharging your battery.

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

⚠ 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.

Don't 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 won't move, even when you're on fairly level ground, always set your parking brake and move the shift lever to PARK (P).

See "Shifting Into PARK (P)" in the Index.

If you're pulling a trailer, see "Towing a Trailer" in the Index.

Ensure the shift lever is fully in PARK (P) before starting the engine. Your vehicle has an automatic transmission shift lock control system. With the ignition in RUN, you must fully apply your regular brakes before you can shift from PARK (P).

If you cannot shift out of PARK (P), ease pressure on the shift lever and push the shift lever all the way into PARK (P) as you continue pressing the brake pedal. Then move the shift lever into the gear you want. See “Shifting Out of PARK (P)” in the Index.

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

NOTICE:

Shifting into REVERSE (R) while your vehicle is moving forward could damage your transmission. 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 “Stuck: In Sand, Mud, Ice or Snow” in the Index.

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

⚠ CAUTION:

Shifting out of PARK (P) or NEUTRAL (N) while your engine is “racing” (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. Don’t shift out of PARK (P) or NEUTRAL (N) while your engine is racing.

NOTICE:

Damage to your transmission caused by shifting out of PARK (P) or NEUTRAL (N) with the engine racing isn’t covered by your warranty.

DRIVE (D): This position is for normal driving. If you need more power for passing, and you're:

- 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.

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

THIRD (3): This position is also used for normal driving, however, it offers more power and lower fuel economy than DRIVE (D). You should use THIRD (3) when carrying a heavy load or driving on steep hills.

You should use THIRD (3) (or, as you need to, a lower gear) when towing a trailer to minimize heat build-up and extend the life of your transmission.

SECOND (2): This position gives you more power but lower fuel economy. 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 your brakes off and on. If you manually select SECOND (2), the transmission will drive in SECOND (2). You may use this feature for reducing torque to the rear wheels when you are trying to start your vehicle from a stop on slippery road surfaces.

FIRST (1): This position gives you even more power (but lower fuel economy) than SECOND (2). You can use it on very steep hills, or in deep snow or mud. If the shift lever is put in FIRST (1), the transmission won't shift into first gear until the vehicle is going slowly enough.

NOTICE:

If your rear wheels can't rotate, don't try to drive. This might happen if you are stuck in very deep sand or mud or are up against a solid object. You could damage your transmission.

Also, if you stop when going uphill, don't hold your vehicle there with only the accelerator pedal. This could overheat and damage the transmission. Use your brakes or shift into PARK (P) to hold your vehicle in position on a hill.

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.

If the ignition is on, the brake system warning light will come on.

To release the parking brake, hold the regular brake pedal down. Pull the handle, located just above the parking brake pedal, marked BRAKE RELEASE 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 cause your rear brakes to overheat. You may have to replace them, and you could also damage other parts of your vehicle. Always check to be sure your parking brake is fully released before you drive.

If you are towing a trailer and are parking on any hill, see “Towing a Trailer” in the Index. That section shows what to do first to keep the trailer from moving.

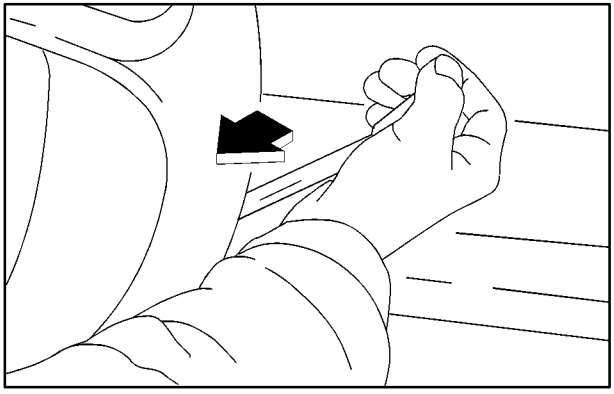
Shifting Into PARK (P)

⚠ CAUTION:

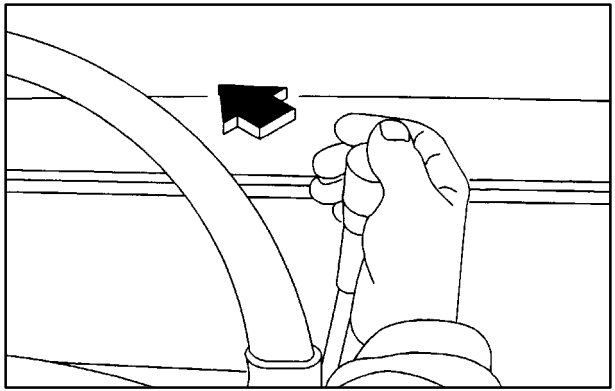
It can be dangerous to get out of your vehicle if the shift lever is not fully in PARK (P) with the parking brake firmly set. Your vehicle can roll. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure your vehicle won't move, even when you're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

1. Hold the brake pedal down with your right foot and set the parking brake.

2. Move the shift lever into PARK (P) like this:



- Pull the lever toward you.



- Move the lever up as far as it will go.

3. Move the ignition key to LOCK.
4. Remove the key and take it with you. If you can leave your vehicle with the ignition key in your hand, your vehicle is in PARK (P).

Leaving Your Vehicle With the Engine Running

⚠ CAUTION:

It can be dangerous to leave your vehicle with the engine running. Your vehicle could move suddenly if the shift lever is not fully in PARK (P) with the parking brake firmly set. And, if you leave the vehicle with the engine running, it could overheat and even catch fire. You or others could be injured. Don't 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 your parking brake is firmly set before you leave it. After you've moved the shift lever to 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 wasn't fully locked into PARK (P).

Torque Lock

If you are parking on a hill and you don't 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)" in the Index.

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, so you can pull the shift lever out of PARK (P).

Shifting Out of PARK (P)

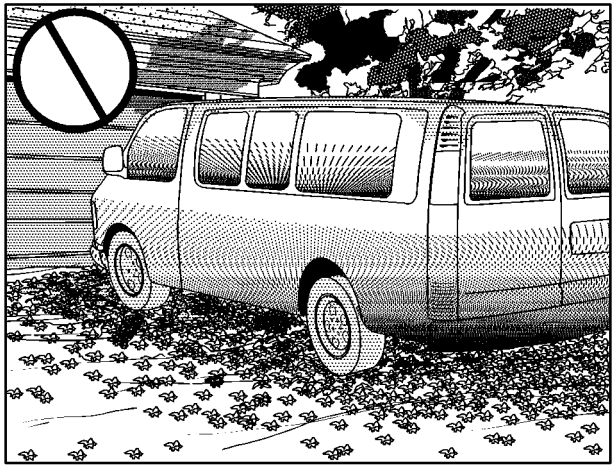
Your vehicle has an automatic transmission shift lock control system. You have to fully apply your regular brakes before you can shift from PARK (P) when the ignition is in RUN. See "Automatic Transmission" in the Index.

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. Then, move the shift lever into the gear you want.

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

1. Turn the key to OFF.
2. Apply and hold the brake until the end of Step 4.
3. Shift to NEUTRAL (N).
4. Start the vehicle and then shift to the drive gear you want.
5. Have the system fixed as soon as you can.

Parking Over Things That Burn



⚠ CAUTION:

Things that can burn could touch hot exhaust parts under your vehicle and ignite. Don't 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 can't see or smell. It can cause unconsciousness and death.

You might have exhaust coming in if:

- **Your exhaust system sounds strange or different.**
- **Your vehicle gets rusty underneath.**
- **Your vehicle was damaged in a collision.**
- **Your vehicle was damaged when driving over high points on the road or over road debris.**
- **Repairs weren't done correctly.**
- **Your vehicle or exhaust system had 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 Your Engine While You're Parked

It's 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."

Also, idling in a closed-in place can let deadly carbon monoxide (CO) into your vehicle even if the 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 "Blizzard" in the Index.

⚠ 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. Don't leave your vehicle when the engine is running unless you have to. If you've left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure your vehicle won't move, even when you're on fairly level ground, always set your parking brake and move the shift lever to PARK (P).

Follow the proper steps to be sure your vehicle won't move. See "Shifting Into PARK (P)" in the Index.

If you're pulling a trailer, see "Towing a Trailer" in the Index.

Locking Rear Axle (If Equipped)

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.

Horn

Press the horn symbol in the middle of the steering wheel to sound the horn.

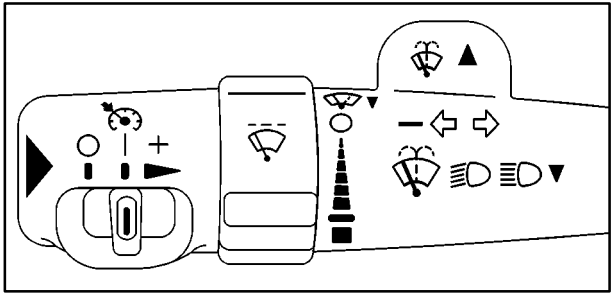
Tilt Wheel (Option)

A tilt steering wheel allows you to adjust the steering wheel before you drive. You can also raise it to the highest level to give your legs more room when you enter and exit the vehicle.

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

To tilt the wheel, hold the steering wheel and pull the lever. Move the steering wheel to a comfortable level, then release the lever to lock the wheel in place.

Turn Signal/Multifunction Lever



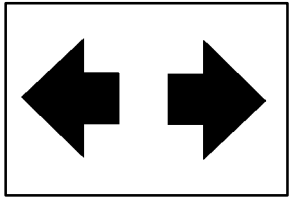
The lever on the left side of the steering column includes the following:

- Turn and Lane Change Signals
- Headlamp High/Low-Beam Changer
- Windshield Wipers
- Windshield Washer
- Cruise Control (Option)
- Exterior Lamps

Turn and Lane Change Signals

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

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



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

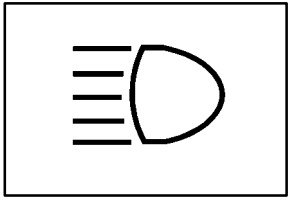
To signal a lane change, just raise or lower the lever until the arrow starts to flash. Hold it there until you complete your lane change. The lever will return by itself when you release it.

As you signal a turn or a lane change, if the arrows flash at twice the normal rate, a signal bulb may be burned out and other drivers may not see your turn signal.

If a bulb is burned out, replace it to help avoid an accident. If the arrows don't go on at all when you signal a turn, check for burned-out bulbs and a blown fuse (see "Fuses and Circuit Breakers" in the Index).

Headlamp High/Low-Beam Changer

To change the headlamps from low beam to high or high to low, pull the multifunction lever all the way toward you. Then release it.



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

Windshield Wipers

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

◯ **(Off):** Turn the band to this symbol to turn off the windshield wipers.

(Mist): Turn the band to this symbol for a single wiping cycle. Hold it there until the windshield wipers start; then let it go. The windshield wipers will stop after one wipe. If you want more wipes, hold the band on mist longer.

Turn the band upward to choose one of the five delay settings. For more wipes select a higher setting; for fewer wipes select a lower setting. The further the band is turned upward, the shorter the delay between wipes. Use this setting for light rain or snow.

(Low Speed): Turn the band downward to the first solid band and past the delay settings, for steady wiping at low speed.

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

Be sure to clear ice and snow from the wiper blades before using them. If they are frozen to the windshield, carefully loosen or thaw them. If your blades do become worn or damaged, get new blades or blade inserts.

Heavy snow or ice can overload your wipers. The windshield wiper motor is protected from overload by a circuit breaker and a fuse. If the motor overheats due to heavy snow or ice the wiper will stop until the motor cools. Although the circuit is protected from electrical overload, overload due to heavy snow or ice may cause wiper linkage damage. Always clear ice and heavy snow from the windshield before using your windshield wipers.

Windshield Washer

(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, press the paddle. The wipers will clear the window and then either stop or return to your preset speed.

⚠ CAUTION:

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

Cruise Control (Option)

: Set

: Off

+ : Resume/Accelerate

| : On

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 or move the cruise switch to off, the cruise control will shut off.

⚠ CAUTION:

- **Cruise control can be dangerous where you can't drive safely at a steady speed. So, don't 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 needless wheel spinning, and you could lose control. Don't use cruise control on slippery roads.**

Setting Cruise Control

⚠ CAUTION:

If you leave your cruise control switch on when you're not using cruise, you might hit a button and go into cruise when you don't want to. You could be startled and even lose control. Keep the cruise control switch off until you want to use cruise control.

1. Move the cruise control switch to on.
2. Get up to the speed you want.

3. Press in the set button at the end of the lever and release it.
4. Take your foot off the accelerator pedal.

Resuming a Set Speed

Suppose you set your cruise control at a desired speed and then you apply the brake. This, of course, shuts off the cruise control. But you don't need to reset it.

Once you're going about 25 mph (40 km/h) or more, you can move the cruise control switch briefly from on to resume/accelerate.

You'll go right back up to your chosen speed and stay there.

If you hold the switch at resume/accelerate, the vehicle will keep going faster until you release the switch or apply the brake. So unless you want to go faster, don't hold the switch at resume/accelerate.

Increasing Speed While Using Cruise Control

There are two ways to go to a higher speed:

- Use the accelerator pedal to get to the higher speed. Push the button at the end of the lever, then release the button and the accelerator pedal. You'll now cruise at the higher speed.
- Move the cruise switch from on to resume/accelerate. Hold it there until you get up to the speed you want, and then release the switch. To increase your speed in very small amounts, move the switch briefly to resume/accelerate briefly. Each time you do this, your vehicle will go about 1 mph (1.6 km/h) faster.

Reducing Speed While Using Cruise Control

- Press in the button at the end of the lever until you reach the lower speed you want, then release it.
- To slow down in very small amounts, press the button at the end of the lever briefly. Each time you do this, you'll go about 1 mph (1.6 km/h) slower.

Passing Another Vehicle While Using Cruise Control

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

Using Cruise Control on Hills

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

Ending Cruise Control

There are two ways to turn off the cruise control:

- Step lightly on the brake pedal; or
- move the cruise switch to off.

Erasing Speed Memory

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

Exterior Lamps

The exterior lamp control is located on the driver's side of the instrument panel.

The exterior lamp control has three positions:

OFF: Turning the control to this position turns off all lamps except the Daytime Running Lamps (DRL).

(Parking Lamps): Turning the control to this position turns on the parking lamps, together with the following:

- Sidemarker Lamps
- Taillamps
- License Plate Lamps
- Instrument Panel Lights
- Ashtray Lamp

(Headlamps): Turning the control to this position turns on the headlamps, together with the previously listed lamps and lights.

You can change your headlamps from high to low beam by pulling on the turn signal/high beam lever.

A circuit breaker protects your headlamps. If you have an electrical overload, your headlamps will flicker on and off. Have your headlamp wiring checked right away if this happens.

Headlamps On Reminder

A tone will sound when your headlamps are turned on and your ignition is in OFF, LOCK or ACCESSORY. If you need to use your headlamps when the ignition switch is in OFF, LOCK or ACCESSORY, the tone can be turned off by moving the instrument panel brightness thumbwheel next to the exterior lamp control all the way down.

Daytime Running Lamps

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

The DRL system will make your headlamps come on at a reduced brightness when the following conditions are met:

- The ignition is on,
- The exterior lamp control is off, and
- The parking brake is released.

When the DRL are on, only your headlamps will be on. The taillamps, sidemarker and other lamps won't be on. Your instrument panel won't be lit up either.

When it begins to get dark, your DRL indicator light is a reminder to turn the headlamps on. The other lamps that come on with your headlamps will also come on.

When you turn off the headlamps, the regular lamps will go off, and your headlamps will change to the reduced brightness of DRL.

To idle your vehicle with the engine on and the DRL off, set the parking brake. The DRL will stay off until you release the parking brake.

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

Center High-Mounted Stoplamp

Your vehicle's center high-mounted stoplamp is located above the rear doors at the center of the vehicle.

If items are loaded on the roof of the vehicle, as in a luggage carrier, care should be taken not to block or damage the center high-mounted stoplamp unit.

Interior Lamps

Instrument Panel Brightness Control

This feature controls the brightness of the instrument panel lights.

The thumbwheel for this feature is located to the right of the exterior lamps control.

Turn the thumbwheel up to brighten the lights. When the thumbwheel is moved to the first position, the radio display and transmission selection display will go to full intensity. The instrument panel cluster will be dimly lit. Moving the thumbwheel up to the next position will activate the interior dome lamps

Dome Lamps

The dome lamps will come on when you open a door.

You can also turn the dome lamps on by moving the instrument panel brightness thumbwheel, located next to the exterior lamp control, all the way up to the second position. In this position, the dome lamps will remain on whether a door is open or closed.

You can use the DOME OVERRIDE button, located below the exterior lamp control, to set the dome lamps to automatically come on when a door is open, or to remain off.

If the DOME OVERRIDE button is pushed in, the dome lamps will not come on.

If the DOME OVERRIDE button is out, the interior lamps will work as usual.

If the button is pressed in, the interior lamps will not come on when any of the vehicle's doors are opened. This feature is helpful when you want to leave your door(s) open for an extended period of time and do not want to run the battery down. The button is located next to the exterior lamp control.

Illuminated Entry

The delayed illumination feature will allow you to enter or exit your vehicle with the lights on for about 20 seconds, after the door is closed or the ignition is cycled.

Reading Lamps (Option)

If your vehicle has reading lamps, press the button next to the lamp to turn the lamp on or off.

Mirrors

Inside Day/Night Rearview Mirror

Pull the tab under the mirror toward you to reduce glare from headlamps behind you after dark. Push the tab away from you to restore the mirror to the original position.

Outside Mirrors

Adjust your outside mirrors so you can see a little of the side of your vehicle, and have a clear view of objects behind you. Some mirrors can be folded in to enter narrow passageways.

Power Remote Control Mirrors (Option)

If you have power mirrors, they can be adjusted from inside the vehicle.

Select the mirror you want to move by turning the knob clockwise to adjust the passenger's side mirror and counterclockwise to adjust the driver's side mirror. The center position is neutral.

Then, adjust the mirror angle by pressing the outer arrows on the knob until the mirror is adjusted to where you want it.

Heated Outside Mirrors (If Equipped)

Your outside mirrors can be defrosted by pressing the button located near the fan control.

An indicator light in the button will light anytime the heated outside mirrors are activated.

Your rear window defogger comes on whenever the heated mirrors are on. If your vehicle has a rear window defogger, see "Rear Window Defogger" in the Index.

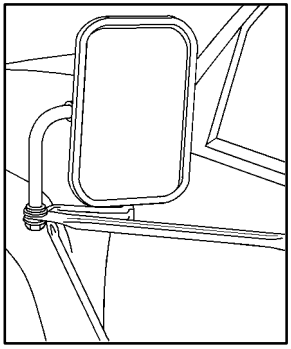
Convex Outside Mirror

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

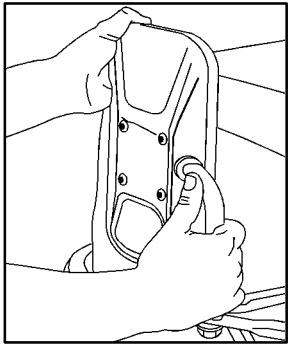
⚠ CAUTION:

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

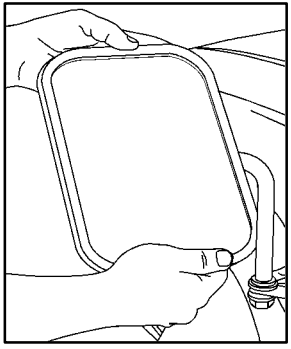
Camper-Type Mirrors (If Equipped)



If your vehicle is equipped with the camper-type mirrors, they can be adjusted so you can have a clear view of any objects behind you.



1. To adjust the mirrors when towing a trailer, turn the mirror by pushing the mirror head toward the front of the vehicle.



2. Turn the mirror head so that it swings further outboard and adjust the mirror surface as needed.

Storage Compartments

Your front storage compartment is at the center of the instrument panel extension, by the floor. To open the compartment, press down on inside portion of the handle and the compartment will open automatically.

Storage compartments may also be included on the inside of each front door.

Cigarette Lighter/Ashtray

The front ashtray is located on the instrument panel extension, at the center of the instrument panel. Lift up on the ashtray door to open it.

NOTICE:

If you store paper and other things that burn in your ashtrays, they could be set on fire by cigarettes or other smoking materials. That could cause a fire and possibly damage your vehicle. Do not store papers and other things that burn in your ashtrays.

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

NOTICE:

Holding a cigarette lighter in with your hand while it is heating can make it overload, damaging the lighter and the heating element. Just push the lighter all the way in and let go. When it's done, it will pop back by itself.

To remove the front ashtray, pull up on the tab with a key or similar object inserted in the tab, and lift the ashtray out.

Sun Visors

To block out glare, you can swing down the visors. You can also swing them from side to side.

Visor Vanity Mirror (Option)

Some visors have mirrors built in, with or without lamps. Just lift the mirror cover on each visor to turn the lamps on, if you have them.

Accessory Power Outlet

You can plug accessory electrical equipment into an accessory power outlet. Just pull on the outlet cover to remove it and follow the proper installation instructions that are included with any electrical equipment that you install.

The accessory power outlet is located on the passenger's side of the front storage compartment.

These circuits are protected by a fuse and have maximum current levels.

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

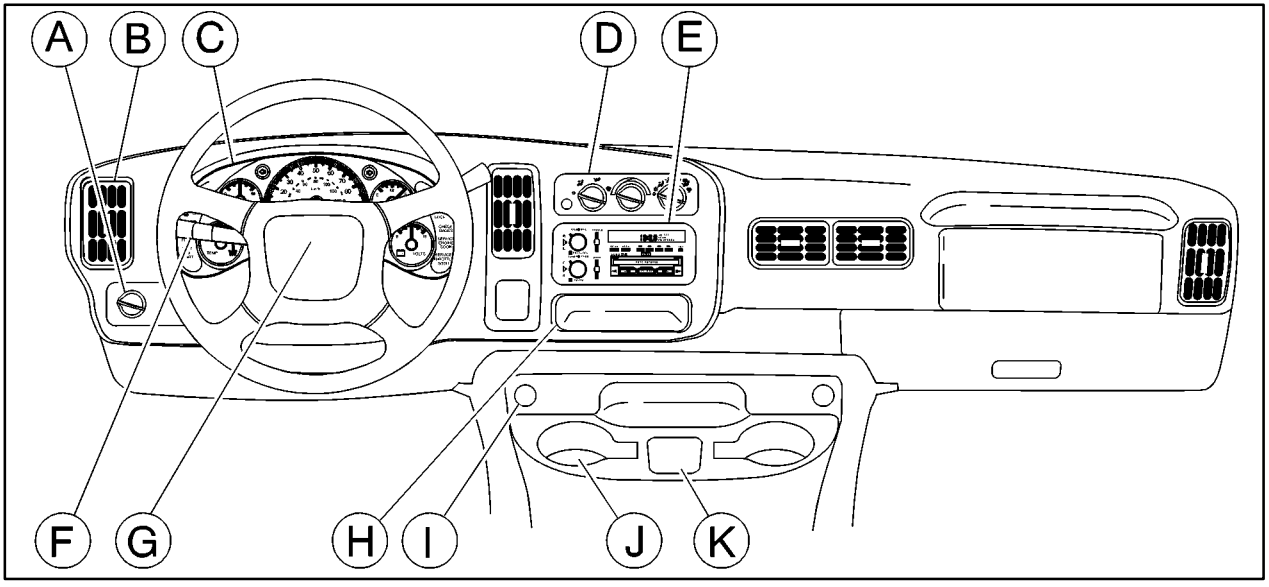
NOTICE:

When using the accessory power outlet, maximum electrical load must not exceed 25 amps. Always turn off any electrical equipment when not in use. Leaving electrical equipment on for extended periods will drain your battery.

NOTICE:

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

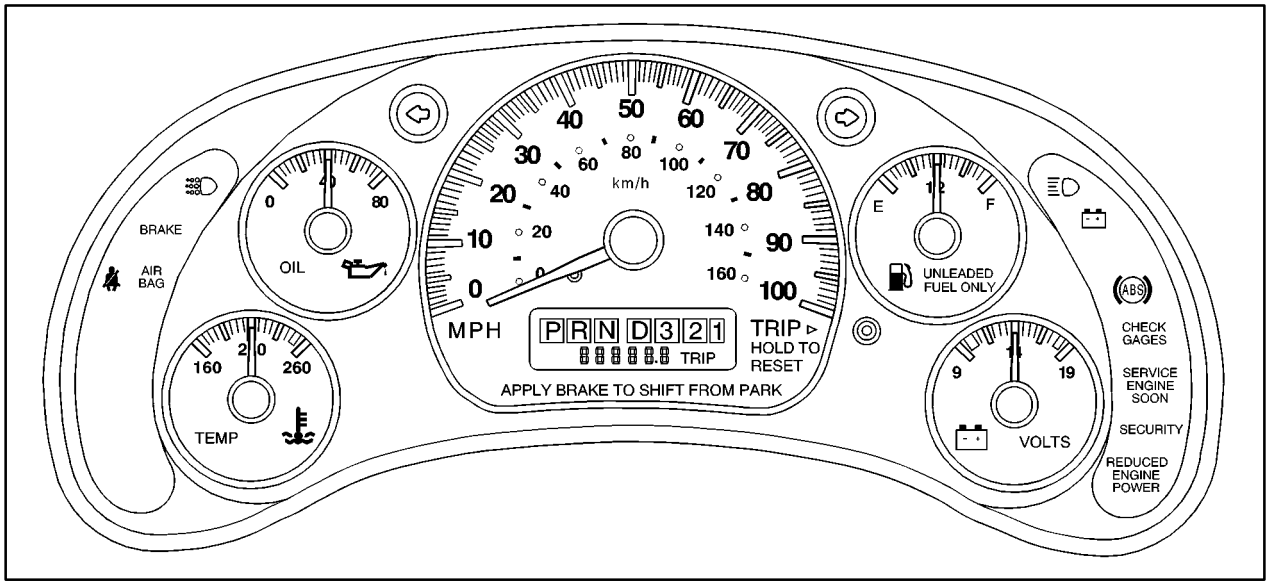
The Instrument Panel - Your Information System



The main components of your instrument panel are the following:

A. Lamp Control
B. Air Vents
C. Instrument Panel Cluster
D. Comfort Controls System
E. Audio System
F. Turn Signal/Multifunction Lever
G. Horn
H. Convenience Tray
I. Cigarette Lighter
J. Cupholder
K. Ashtray

Instrument Panel Cluster



United States version shown, Canada similar

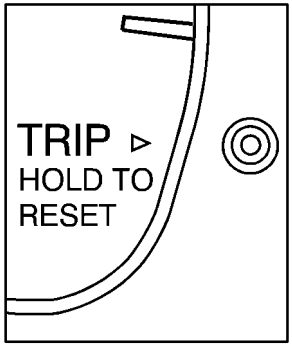
Your instrument panel cluster is designed to let you know at a glance how your vehicle is running. You'll know how fast you're going, how much fuel you're using, and many other things you'll need to know to drive safely and economically.

Speedometer

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).

You may wonder what happens if your vehicle needs a new odometer installed. Laws vary as to the procedure that must be followed, so check with your state or provincial vehicle registration office. But generally, if the new odometer can be set to the mileage total of the old odometer, then it must be. But if it can't, then it's set at zero, and a label must be put on the driver's door to show the old mileage reading when the new odometer was installed.

Trip Odometer



The trip odometer can tell you how far your vehicle has been driven since you last set the trip odometer to zero.

To reset the trip odometer, fully press the reset button located near the trip odometer readout.

The trip odometer can show either total miles or trip miles using this button located on the instrument cluster.

Electronic Road-Speed Governor (Gasoline Engines) (Option)

This optional system automatically controls top vehicle speed. The system controller receives a signal from the vehicle speed sensor and reduces power when the vehicle speed reaches the maximum 65 mph (105 km/h) governed speed.

Warning Lights, Gages and Indicators

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

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

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

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

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

Safety Belt Reminder Light

When the key is turned to RUN or START, a tone will come on for about eight seconds to remind people to fasten their safety belts, unless the driver's safety belt is already buckled.

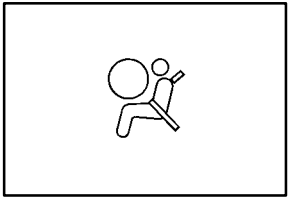
The safety belt light will also come on and stay on for about 20 seconds, then it will flash for about 55 seconds.

If the driver's belt is already buckled, neither the tone nor the light will come on.

Air Bag Readiness Light

There is an air bag readiness light on the instrument panel, which shows AIR BAG or the air bag symbol. The system checks the air bag's electrical system for malfunctions. The light tells you if there is an electrical problem. The system check includes the air bag sensor, the air bag modules, the wiring and the crash sensing and diagnostic module. For more information on the air bag system, see "Air Bag" in the Index.

United States



Canada

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

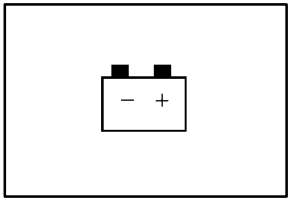
If the air bag readiness light stays on after you start the vehicle or comes on when you are driving, your air bag system may not work properly. Have your vehicle serviced right away.

⚠ CAUTION:

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

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

Charging System Light

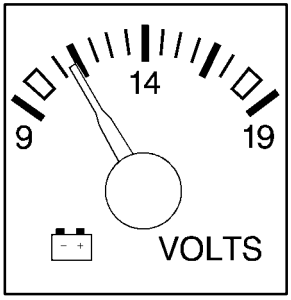


This light should come on briefly when you turn on the ignition, before starting the engine, as a check to show you it is working.

After the engine starts, the light should go out. If it stays on or comes on while you are driving, you may have a problem with your charging system. 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 your battery.

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

Voltmeter



When your engine is not running, but the ignition is on (in the RUN position), this gage shows your battery's state of charge in DC volts.

When the engine is running, the gage shows the condition of the charging system. Readings between the low and high warning zones indicate the normal operating range.

Readings in the low warning zone may occur when a large number of electrical accessories are operating in the vehicle and the engine is left at an idle 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 reading in either warning zone. If you must drive, turn off all unnecessary accessories.

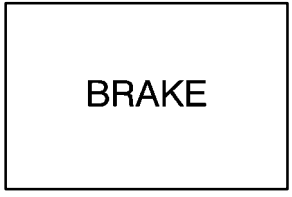
Readings in either warning zone indicate a possible problem in the electrical system. Have the vehicle serviced as soon as possible.

Brake System Warning Light

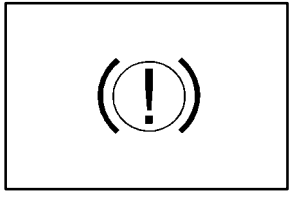
When the ignition is on, the brake system warning light will come on when you set your parking brake. The light will stay on if your parking brake doesn't release fully. If it stays on after your parking brake is fully released, it means you have a brake problem.

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

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



United States



Canada

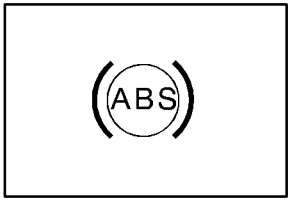
This light should come on briefly when you turn the ignition key to RUN. If it doesn't come on then, have it fixed so it will be ready to warn you if there's a problem.

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

⚠ 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've pulled off the road and stopped carefully, have the vehicle towed for service.

Anti-Lock Brake System Warning Light

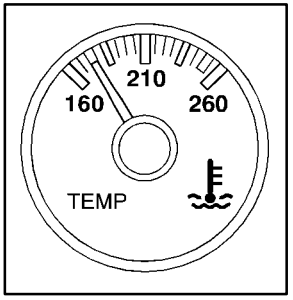


With the anti-lock brake system, this light will come on when you start your engine and may stay on for several seconds. That's normal.

If the light stays on, or comes on when you're driving, your vehicle needs service. If the regular brake system warning light isn't on, you still have brakes, but you don't have anti-lock brakes. If the regular brake system warning light is also on, you don't have anti-lock brakes and there's a problem with your regular brakes. See "Brake System Warning Light" earlier in this section.

The anti-lock brake system warning light should come on briefly when you turn the ignition key to RUN. If the light doesn't come on then, have it fixed so it will be ready to warn you if there is a problem.

Engine Coolant Temperature Gage

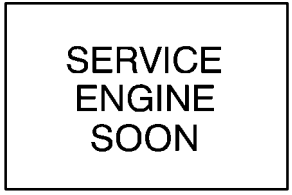


This gage shows the engine coolant temperature. If the gage pointer moves into the red area your engine is too hot!

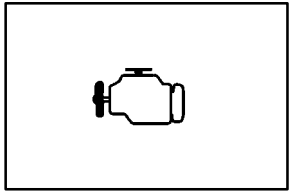
It means that your engine coolant has overheated. If you have been operating your vehicle under normal operating conditions, you should pull off the road, stop your vehicle, and turn off the engine as soon as possible.

See "Engine Overheating" in the Index.

Malfunction Indicator Lamp (Service Engine Soon Light in the United States or Check Engine Light in Canada) (4.3L, 5.0L & 5.7L Engines and 8.1L California Gasoline Engine)



United States



Canada

Your vehicle is equipped with 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 SERVICE ENGINE SOON or 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 a while, your emission controls may not work as well, your fuel economy may not be as good and your engine may not run as smoothly. This could lead to costly repairs that may not be covered by your warranty.

NOTICE:

Modifications made to the engine, 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 may cause the SERVICE ENGINE SOON or CHECK ENGINE light to come on. Modifications to these systems could lead to costly repairs not covered by your warranty. This may also result in a failure to pass a required Emission Inspection/Maintenance test.

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 doesn't 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. Dealer or qualified service center diagnosis and service may be required.
- **Light On Steady --** An emission control system malfunction has been detected on your vehicle. Dealer or qualified service center 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 drive the vehicle to your dealer or qualified service center for service.

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 Your Tank” in the Index. 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 “Fuel” in the Index. 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, have your dealer or qualified service center 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 in order to help your vehicle pass an inspection:

Your vehicle will not pass this inspection if the SERVICE ENGINE SOON or 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, see your dealer or qualified service center to prepare the vehicle for inspection.

Malfunction Indicator Lamp (Service Engine Soon Light) (Check Engine Light) (8.1L Gasoline Engine -- Except California)

SERVICE ENGINE SOON

United States

Canada

If this light comes on or flashes while you are driving, two things may happen.

First, you won't notice any difference in engine performance, but your tail pipe emissions may increase. Second, your engine may not run properly or may stall without warning. If either of these things happen, drive or tow your vehicle to your dealer for service.

This light should come on when the ignition is on, but the engine is not running, as a check to show you it is working. If it does not come on at all, have it repaired.

NOTICE:

If you keep driving your vehicle with this light on, after a while, your emission controls may not work as well, your fuel economy may not be as good and your engine may not run as smoothly. This could lead to costly repairs that may not be covered by your warranty.

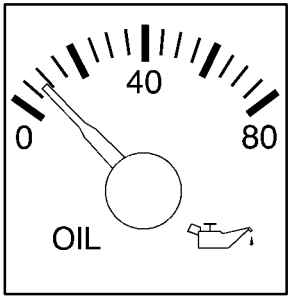
Reduced Engine Power

REDUCED ENGINE POWER

The REDUCED ENGINE POWER light will come on when the cooling system temperature gets too hot and the engine further enters the engine coolant protection mode.

See "Engine Overheating" in the Index for further information.

Oil Pressure Gage



The oil pressure gage 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 readings above the low pressure zone indicate the normal operating range.

A reading in the low pressure zone may be caused by a dangerously low oil level or other problem causing low oil pressure. Check your oil as soon as possible.

⚠ CAUTION:

Don't 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:

Damage to your engine from neglected oil problems can be costly and is not covered by your warranty.

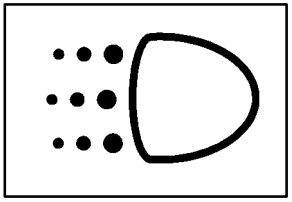
Security Light

This light will come on briefly when you turn the ignition key to START.

The light will stay on until the engine starts. If the light flashes, the Passlock® System has entered a tamper mode. If the vehicle fails to start, see “Passlock” in the Index.

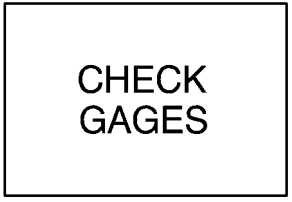
If the light comes on continuously while driving and stays on, there may be a problem with the Passlock System. Your vehicle will not be protected by Passlock, and you should see your GM dealer.

Daytime Running Lamps Indicator Light



You have this light on the instrument panel. It will light whenever the DRL are on. It is also a reminder to turn on your headlamps when driving at night.

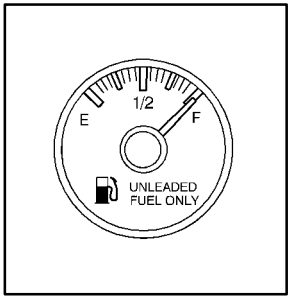
Check Gages Light



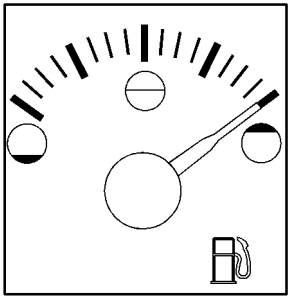
The CHECK GAGES light will come on briefly when you are starting the engine.

If the light comes on and stays on while you are driving, check your coolant temperature and engine oil pressure gages to see if they are in the warning zones.

Fuel Gage



United States



Canada

The fuel gage, when the ignition is on, 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.

Listed are four situations you may experience with your 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 moves a little when you turn a corner or speed up.
- The gage doesn't go back to empty when you turn off the ignition.

None of these indicate a problem with the fuel gage.

Section 3 Comfort Controls and Audio Systems

In this section, you'll find out how to operate the comfort control and audio systems offered with your vehicle. Be sure to read about the particular systems supplied with your vehicle.

3-2 Comfort Controls
3-7 Air Conditioning
3-7 Heating
3-7 Defrosting
3-8 Rear Window Defogger (If Equipped)
3-9 Ventilation System
3-10 Audio Systems
3-10 Setting the Clock for Systems without Radio Data System
3-11 Setting the Clock for Systems with Radio Data System
3-11 AM-FM Stereo
3-14 AM-FM Stereo with Cassette Tape Player (If Equipped)
3-20 AM-FM Stereo with Compact Disc Player (If Equipped)
3-24 AM-FM Stereo with Cassette Tape and Compact Disc Player with Radio Data System (RDS) and Automatic Tone Control (If Equipped)
3-35 AM-FM Stereo with 6-Disc Compact Disc Player with Programmable Equalization and Radio Data System (RDS) (If Equipped)
3-46 Theft-Deterrent Feature RDS Radios (If Equipped)
3-46 Theft-Deterrent Feature Non-RDS Radios (If Equipped)
3-47 Understanding Radio Reception
3-47 Tips About Your Audio System
3-48 Care of Your Cassette Tape Player
3-50 Care of Your Compact Discs
3-50 Care of Your Compact Disc Player
3-50 Fixed Mast Antenna
3-50 Chime Level Adjustment (RDS Radios Only)

Comfort Controls

This section tells you how to make your air system work for you.

With these systems, you can control the heating, cooling and ventilation in your vehicle.

System Controls

If your vehicle does not have air conditioning, your controls will look like this.

Fan Knob

The knob on the left side of the system control panel regulates the fan speed. The knob has four speed positions. To increase airflow, turn the knob toward HI. To decrease airflow, turn it toward LO. To turn the fan off, turn the mode knob on the far right to OFF.

Temperature Knob

The middle knob on the control panel regulates the temperature of the air flowing into the passenger area of your vehicle. This knob will allow you to adjust the relative air temperature independently of the function knob setting. Turn the knob toward the red area for warmer air. Turn the knob toward the blue area for cooler air.

Mode Knob

The right knob changes the airflow setting.

(Vent): This setting directs air through the instrument panel vents.

(Bi-Level): This setting divides airflow between the heater floor vents and instrument panel vents.

(Floor): This setting directs air through the floor vents.

(Floor/Defog): This setting divides airflow between the heater floor vents and windshield.

DEF (Defrost): This setting directs air through the windshield defroster vents. This setting is used to remove fog or ice from the windshield.

Heater/Air Conditioning Controls (If Equipped)

If your vehicle has air conditioning, your heater/air conditioning controls will look like this.

Before using your vehicle's air conditioning, open the windows to clear the vehicle of hot air.

Fan Knob

The knob on the left side of the control panel regulates the fan speed. The knob has four speed positions. To increase airflow, turn the knob toward HI. To decrease airflow, turn it toward LO. To turn the fan off, turn the mode knob on the far right to OFF.

Temperature Knob

The middle knob on the control panel lets you select the temperature of the air flowing into the passenger compartment of your vehicle. This knob will allow you to adjust the air temperature independently of the function knob setting. Turn the knob toward the red area for warmer air. Turn the knob toward the blue area for cooler air.

Mode Knob

The right knob on the control panel changes the heater/air conditioning setting.

MAX A/C (Maximum Air Conditioning): Turn the right knob to MAX A/C for maximum cooling. This setting puts the system in the recirculation mode and helps to maximize your air conditioner's performance and your vehicle's fuel economy. This setting also cools the air the fastest. After the vehicle's interior reaches a comfortable temperature, turn the knob clockwise to place the air conditioning system in the A/C mode.

A/C (Air Conditioning): This setting is used for normal cooling on hot days. It cools outside air and directs it through the instrument panel outlets.

(Bi-Level Air Conditioning): This setting divides airflow between the floor vents and instrument panel vents. The air conditioning compressor will cycle continuously in this setting as long as the outside air temperature is warm enough to activate the compressor.

(Vent): This setting directs air through the instrument panel vents.

(Floor): This setting directs air through the floor vents.

(Floor/Defrost): This setting divides airflow between the floor vents and the windshield. In the blended position, the air conditioning compressor is automatically activated to dehumidify the air.

(Defrost): This setting directs air through the windshield defroster vents. It is useful when you have fog or ice on the windshield.

Rear Heater (Without Air Conditioning) (If Equipped)

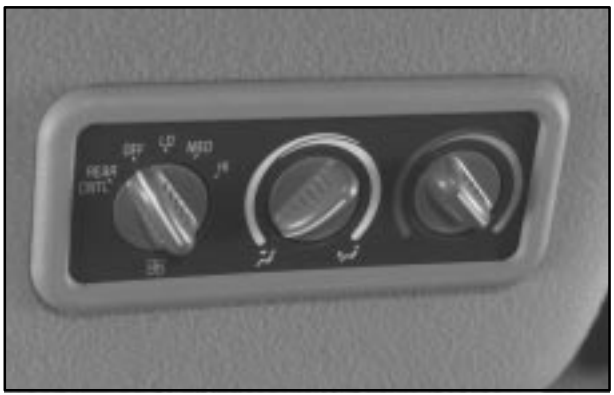
If you have a rear heater (without rear air conditioning), the thumbwheel for this feature is located on the instrument panel.

To increase and decrease the flow of heated air to the rear floor vents, turn the thumbwheel marked HEAT to the desired fan speed.

The thumbwheel has three positions. To increase the flow of heated air, turn the thumbwheel toward HIGH. To turn the fan off, turn the thumbwheel to OFF.

Rear Air Conditioning and Rear Heater (If Equipped)

If your vehicle has a rear air conditioning and rear heater system combination, controls are provided to regulate the temperature, location and speed of the airflow.



Front Passenger Control

To adjust the air temperature, turn the temperature knob on the right side of the control panel.

For warmer air, turn the knob toward the red area, and for cooler air, turn the knob toward the blue area.

To regulate the location of the airflow, adjust the center knob on the control panel. Turn the knob counterclockwise for upper vent airflow or clockwise for headliner vent air flow. Generally, the upper vents are used for air conditioning and the floor vents for heating. The knob can be set to any blend setting.

To adjust the airflow speed, turn the fan knob on the left side of the control panel to the desired fan speed.

To activate the rear control, turn the fan knob on the front control to REAR CNTL.

Rear Passenger Control

The rear control works just like the front control. It will allow second seat passengers to adjust the controls if the front control is switched to the rear position.

Air Conditioning

Before using your vehicle's air conditioning, open the windows to clear the vehicle of hot air. This reduces the time it takes for your vehicle to cool down. Then keep your windows closed for the air conditioner to work at its best.

You can use MAX A/C with the temperature knob in the blue area when it's really hot outside and you need to cool the inside air quickly. MAX A/C lets in only a little air from the outside.

If you first use MAX A/C, you can then use A/C with the temperature knob in the blue area, as soon as the vehicle has cooled down, so outside air will be going through your vehicle.

If your vehicle has rear air conditioning, setting it on LO may enhance front A/C performance by allowing trapped refrigerant in rear lines to circulate.

When the air conditioning, defrost or blend is on, you may notice a slight increase or decrease in engine speed, due to compressor operation. This is normal because the system is designed to cycle the compressor on and off to keep the desired temperature.

Heating

On cold days, use the floor setting with the temperature knob in the red area. Outside air will be brought in through the floor outlets. The heater works best if you keep your windows closed while using it.

If you use the optional engine coolant heater before starting your engine, your heating system will produce warmer air faster to heat the passenger compartment in cold weather. See "Engine Coolant Heater" in the Index.

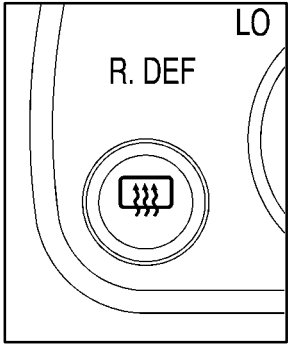
Defrosting

Use defrost to remove fog or ice from the windshield quickly in extremely cold conditions. The temperature knob should be in the red area and the fan knob toward high. The air conditioning compressor may operate in this setting to dehumidify the air.

Rear Window Defogger (If Equipped)

If you see lines running across the rear windows, your vehicle has a rear window defogger. The lines warm the glass.

For best results, clear the windows of as much snow or ice as possible before using the rear window defogger.



To turn on the rear window defogger, press this button located near the fan control. An indicator light in the button will come on when the rear window defogger is working.

The rear window defogger will only work when the ignition is in RUN.

The rear window defogger will turn itself off after several minutes. If you need additional warming time, press the button again. Pressing the button when the indicator light is illuminated will turn the defogger off.

If your vehicle is equipped with heated outside rearview mirrors, the rear window defogger button will activate both the rear window defogger and the heated outside rearview mirrors. See “Heated Outside Rearview Mirrors” in the Index.

Do not attach a temporary vehicle license, tape or decals across the defogger grid on the rear windows. Use care not to damage the wiring bands that connect the rear window defogger grid when operating the rear swing-out windows (if equipped).

NOTICE:

Don’t use a razor blade or something else sharp on the inside of the rear window. If you do, you could cut or damage the warming grid, and the repairs wouldn’t be covered by your warranty.

Ventilation System

For mild outside temperatures when little heating or cooling is needed, use vent to direct outside air through your vehicle. Air will flow through the instrument panel vents.

Your vehicle's flow-through ventilation system supplies outside air to the inside of your vehicle when it is moving. With the side windows closed, air will flow into the front air inlet grilles at the base of the windshield, through the vehicle and out of the rear air exhaust valve. Outside air will also enter the vehicle when the heater or the air conditioning is running.

Your vehicle has air vents near the center and on the sides of the instrument panel that allow you to adjust the direction and the amount of airflow inside the vehicle. Move the thumbwheel on the vent up or down to direct airflow to your preference. Increase or reduce the amount of airflow by opening and closing the louvers. The vents turn to direct the airflow from side to side.

When you close a vent, it will increase the flow of air coming out of any vents that are open.

If you have rear heating or rear air conditioning, you will have adjustable vents in the rear of the vehicle to help direct the airflow. The rear air conditioning vents are located in the headliner at the rear of the vehicle. The rear heating vents are located next to the second and third seat on the driver's side of the vehicle, near the floor. You can move the vents to direct the flow of air, or close the vents altogether. When you close a vent, it will increase the flow of air coming out of any vents that are open.

Ventilation Tips

- Keep the hood and front air inlet free of ice, snow, or any other obstruction (such as leaves). The heater and defroster will work far better, reducing the chance of fogging the inside of your windows.
- When you enter a vehicle in cold weather, turn the fan to HI for a few moments before driving off. 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.

Your vehicle has air vents in the center and on the sides of your instrument panel.

You can move the vents from side to side or up and down to direct the flow of air, or close the vents altogether. When you close a vent, it will increase the flow of air coming out of any vents that are open.

Audio Systems

Your audio system has been designed to operate easily and give years of listening pleasure. You will get the most enjoyment out of it if you acquaint yourself with it first. Find out what your audio system can do and how to operate all of its controls to be sure you’re getting the most out of the advanced engineering that went into it.

Setting the Clock for Systems without Radio Data System

Press and hold the HR or MIN arrow for two seconds. Then press the HR (down) arrow until the correct hour appears. Press and hold the MIN (up) arrow until the correct minute appears. The clock may be set with the ignition on or off.

Setting the Clock for Systems with Radio Data System

Your radio may have a button marked with an H or HR to represent hours and an M or MIN to represent minutes.

Press and hold the hour button until the correct hour appears. AM or PM will appear on the display for morning or afternoon hours. Press and hold the minute button until the correct minute appears. The clock may be set with the ignition on or off.

To set the clock to the time of an FM station broadcasting Radio Data System (RDS) information, press and hold the hour and minute buttons at the same time for two seconds until UPDATED and the clock symbol appears on the display. If the time is not available from the station, NO UPDAT will appear on the display instead.

RDS clock time is broadcast once a minute. Once you have tuned to an RDS broadcast station, it may take a few minutes for your clock time to update.

AM-FM Stereo

Playing the Radio

PWR (Power): Press this knob to turn the system on and off.

VOL (Volume): Turn the knob clockwise to increase volume. Turn it counterclockwise to decrease volume.

RCL (Recall): Pressing this knob will display the station being played or it will display the clock. Clock display is available with the ignition turned off.

Finding a Station

AM FM: Press this button to switch between AM, FM1 and FM2. The display shows your selection.

TUNE: Turn this knob to tune in radio stations.

◁ SEEK SEEK ▷: Press the right or left arrow to seek to the next or previous station and stay there. The radio will seek to stations with a strong signal only.

To scan stations, press and hold one of the SEEK arrows for two seconds until you hear a beep. The radio will go to a station, play for a few seconds and flash the station frequency, then go on to the next station. Press one of the SEEK arrows again to stop scanning. The radio will scan to stations with a strong signal only.

To scan preset stations, press and hold one of the SEEK arrows for more than four seconds until you hear two beeps. The radio will go to the first preset station stored on your pushbuttons, play for a few seconds and flash the station frequency, then go on to the next preset station. This feature will only scan the six presets that are in the selected band. Press one of the SEEK arrows again to stop scanning presets. The channel number (P1-P6) will appear momentarily just before the frequency is displayed. The radio will scan preset stations with a strong signal only.

Setting Preset Stations

The six numbered pushbuttons let you return to your favorite stations. You can set up to 18 stations (six AM, six FM1 and six FM2) by performing the following steps:

1. Turn the radio on.
2. Press AM FM to select the band.
3. Tune in the desired station.
4. Press and hold one of the six numbered buttons until you hear a beep. Whenever you press that numbered pushbutton, the station you set will return.
5. Repeat the steps for each pushbutton.

Setting the Tone (Bass/Treble)

AUDIO: To adjust the bass, press and release AUDIO repeatedly until BAS appears on the display. Then press and hold the up arrow to increase bass. B and a positive number will appear on the display. Press and hold the down arrow to decrease bass. B and a negative number will appear on the display. B and a zero will appear on the display when the bass level is adjusted to the middle position. Release the up or down arrow when you find the bass level you want or when the maximum or minimum level is reached.

To adjust the treble, Press and release AUDIO until TRE appears on the display. Then press and hold the up arrow to increase treble. T and a positive number will appear on the display. Press and hold the down arrow to decrease treble. T and a negative number will appear on the display. T and a zero will appear on the display when the treble level is adjusted to the middle position. Release the up or down arrow when you find the treble level you want or when the maximum or minimum level is reached. If a station is weak or noisy, you may want to decrease the treble.

To adjust bass or treble to the middle position, select BAS or TRE. Then press and hold AUDIO for more than two seconds until you hear a beep. B and a zero or T and a zero will appear on the display. To adjust both tone controls and both speaker controls to the middle position, end out of audio mode by pressing the AUDIO button until the display goes blank. Then press and hold AUDIO for more than two seconds until you hear a beep. CEN will appear on the display.

Adjusting the Speakers (Balance/Fade)

AUDIO: To adjust the balance between the right and left speakers, press and release AUDIO until BAL appears on the display. Then press and hold the up arrow to move the sound to the right speakers or the down arrow to move the sound to the left speakers. R and a number will appear on the display when the sound is balanced toward the right speakers. L and a number will appear on the display when the sound is balanced toward the left speakers. L and a zero will appear on the display when the sound is balanced between the speakers. Release the up or down arrow when you find the speaker balance you want or when the maximum or minimum level is reached.

To adjust the fade between the front and rear speakers, press and release AUDIO until FAD appears on the display. Then press and hold the up arrow to move the sound to the front speakers or the down arrow to move the sound to the rear speakers. F and a number will appear on the display when the sound is balanced toward the front speakers. R and a number will appear on the display when the sound is balanced toward the rear speakers. F and a zero will appear on the display when the sound is balanced between the speakers. Release the up or down arrow when you find the speaker balance you want or when the maximum or minimum level is reached.

To adjust balance or fade to the middle position, select BAL or FAD. Then press and hold AUDIO for more than two seconds until you hear a beep. L and a zero or F and a zero will appear on the display. To adjust both tone controls and both speaker controls to the middle position, end out of audio mode by pressing the AUDIO button until the display goes blank. Then press and hold AUDIO for more than two seconds until you hear a beep. CEN will appear on the display.

Radio Messages

CAL (Calibrated): Your audio system has been calibrated for your vehicle from the factory. If CAL appears on the display it means that your radio has not been configured properly for your vehicle and must be returned to the dealership for service.

LOC (Locked): This message is displayed when the Theftlock® system has locked up. Your vehicle must be returned to the dealership for service.

AM FM Stereo with Cassette Tape Player (If Equipped)

Playing the Radio

PWR (Power): Press this knob to turn the system on and off.

VOL (Volume): Turn this knob clockwise to increase volume. Turn it counterclockwise to decrease volume.

RCL (Recall): Pressing this knob will display the station being played or it will display the clock. Clock display is available with the ignition turned off.

Finding a Station

AM FM: Press this button to switch between AM, FM1 and FM2. The display shows your selection.

TUNE: Turn this knob to choose radio stations.

◁ SEEK SEEK ▷: Press the right or left arrow to seek to the next or previous station and stay there. The radio will seek to stations with a strong signal only.

To scan stations, press and hold one of the SEEK arrows for two seconds until you hear a beep. The radio will go to a station, play for a few seconds and flash the station frequency, then go on to the next station. Press one of the SEEK arrows again to stop scanning. The radio will scan to stations with a strong signal only.

To scan preset stations, press and hold one of the SEEK arrows for more than four seconds until you hear two beeps. The radio will go to the first preset station stored on your pushbuttons, play for a few seconds and flash the station frequency, then go on to the next preset station. This feature will only scan the six presets that are in the selected band. Press one of the SEEK arrows again to stop scanning presets. The channel number (P1-P6) will appear momentarily just before the frequency is displayed. The radio will scan preset stations with a strong signal only.

Setting Preset Stations

The six numbered pushbuttons let you return to your favorite stations. You can set up to 18 stations (six AM, six FM1 and six FM2) by performing the following steps:

1. Turn the radio on.
2. Press AM FM to select the band.
3. Tune in the desired station.
4. Press and hold one of the six numbered pushbuttons until you hear a beep. Whenever you press that numbered pushbutton, the station you set will return.
5. Repeat the steps for each pushbutton.

Setting the Tone (Bass/Treble)

AUDIO: To adjust the bass, press and release AUDIO until BAS appears on the display. Then press and hold the up arrow to increase bass. B and a positive number will appear on the display. Press and hold the down arrow to decrease bass. B and a negative number will appear on the display. B and a zero will appear on the display when the bass level is adjusted to the middle position. Release the up or down arrow when you find the bass level you want or when the maximum or minimum level is reached.

To adjust the treble, press and release AUDIO until TRE appears on the display. Then press and hold the up arrow to increase treble. T and a positive number will appear on the display. Press and hold the down arrow to decrease treble. T and a negative number will appear on the display. T and a zero will appear on the display when the treble level is adjusted to the middle position. Release the up or down arrow when you find the treble level you want or when the maximum or minimum level is reached. If a station is weak or noisy, you may want to decrease the treble.

To adjust bass or treble to the middle position, select BAS or TRE. Then press and hold AUDIO for more than two seconds until you hear a beep. B and a zero or T and a zero will appear on the display. To adjust both tone controls and both speaker controls to the middle position, end out of audio mode by pressing the AUDIO button until the display goes blank. Then press and hold AUDIO for more than two seconds until you hear a beep. CEN will appear on the display.

Adjusting the Speakers (Balance/Fade)

AUDIO: To adjust the balance between the right and left speakers, press and release AUDIO until BAL appears on the display. Then press and hold the up arrow to move the sound to the right speakers or the down arrow to move the sound to the left speakers. R and a number will appear on the display when the sound is balanced toward the right speakers. L and a number will appear on the display when the sound is balanced toward the left speakers. L and a zero will appear on the display when the sound is balanced between the speakers. Release the up or down arrow when you find the speaker balance you want or when the maximum or minimum level is reached.

To adjust the fade between the front and rear speakers, press and release AUDIO until FAD appears on the display. Then press and hold the up arrow to move the sound to the front speakers or the down arrow to move the sound to the rear speakers. F and a number will appear on the display when the sound is balanced toward the front speakers. R and a number will appear on the display when the sound is balanced toward the rear speakers. F and a zero will appear on the display when the sound is balanced between the speakers. Release the up or down arrow when you find the speaker balance you want or when the maximum or minimum level is reached.

To adjust balance or fade to the middle position, select BAL or FAD. Then press and hold AUDIO for more than two seconds until you hear a beep. L and a zero or F and a zero will appear on the display. To adjust both tone controls and both speaker controls to the middle position, end out of audio mode by pressing the AUDIO button until the display goes blank. Then press and hold AUDIO for more than two seconds until you hear a beep. CEN will appear on the display.

Radio Messages

CAL (Calibration): Your audio system has been calibrated for your vehicle from the factory. If CAL appears on the display it means that your radio has not been configured properly for your vehicle and must be returned to the dealership for service.

LOC (Locked): This message is displayed when the Theftlock® system has locked up. Your vehicle must be returned to the dealership for service.

Playing a Cassette Tape

Your tape player is built to work best with tapes that are up to 30 to 45 minutes long on each side. Tapes longer than that are so thin they may not work well in this player. The longer side with the tape visible should face to the right. If the ignition is on, but the radio is off, the tape can be inserted and will begin playing. If you hear nothing but a garbled sound, the tape may not be in squarely. Press the eject button to remove the tape and start over.

While the tape is playing, use the VOL, AUDIO and SEEK controls just as you do for the radio. The radio will display UP if the top side of the tape is playing. DN (Down) will appear if the bottom side is playing.

If you want to insert a tape when the ignition is off, first press the eject button or the RCL knob.

If an error appears on the display, see “Cassette Tape Messages” later in this section.

1 PREV (Previous): Press this pushbutton to go to the previous selection on the tape if the selection has been playing for less than 3 seconds. If this pushbutton is pressed and the current selection has been playing for more than 13 seconds, it will go to the beginning of the current selection. If this pushbutton is pressed and the current selection has been playing from 3 to 13 seconds, it will go to the beginning of the previous selection or the beginning of the current selection, depending on the position on the tape. A negative number will appear on the display while the cassette player is in previous mode indicating the number of selections of the tape that the radio will search back. Pressing this pushbutton multiple times in the previous mode will increase the number of selections. Pressing the NEXT pushbutton will cancel the selections. Your tape must have at least three seconds of silence between each selection for previous to work. The sound will mute while seeking.

2 NEXT: Press this pushbutton to go to the next selection on the tape. A positive number will appear on the display while the cassette player is in next mode indicating the number of selections of the tape that the radio will search forward. Pressing this pushbutton multiple times in the next mode will increase the number of selections. Pressing the PREV pushbutton will cancel the selections. Your tape must have at least three seconds of silence between each selection for next to work. The sound will mute while seeking.

3 REV (Reverse): Press this pushbutton to reverse the tape rapidly. FR will appear on the display. Press it again to return to playing the tape. The radio will play the last selected station while the tape reverses. You may select stations during reverse operation by using the TUNE or SEEK controls or by using the scan or preset scan features.

4 FWD (Forward): Press this pushbutton to advance quickly to another part of the tape. FF will appear on the display. Press this pushbutton again to return to playing the tape. The radio will play the last selected station while the tape advances. You may select stations during forward operation by using the TUNE or SEEK controls or by using the scan or preset scan features.

◁ SEEK SEEK ▷: The right arrow is the same as the NEXT pushbutton, and the left arrow is the same as the PREV pushbutton. If the arrows are held or pressed more than once, the player will continue moving forward or backward through the tape.

5 SIDE: Press this pushbutton to play the other side of the tape.

6 RPT (Repeat): Press this pushbutton once to hear a selection over again. RPT will appear on the display. The current selection will continue to repeat. RPT will flash on the display while the cassette player is searching for the start of the selection. Your tape must have at least three seconds of silence between each selection for repeat to work. Press this button again to turn off repeated play. OFF will appear on the display.

AM FM: Press this button to listen to the radio when a tape is playing. The tape will stop but remain in the player.

TAPE: Press this button to play a cassette tape when listening to the radio. CAS will appear on the display. The inactive tape will remain safely inside the radio for future listening.

⏏ **(Eject):** Press this button to stop a tape when it is playing or to eject a tape when it is not playing. Eject may be activated with the radio off. Cassette tapes may be loaded with the radio and vehicle off if this button is pressed first.

Cassette Tape Messages

ERR (Error): If the player detects a tight or broken tape, this message will appear on the display and the player will eject the tape. The radio will go back to playing the last station selected.

CLN (Clean): If this message appears on the display, the cassette tape player needs to be cleaned. It will still play tapes, but you should clean it as soon as possible to prevent damage to the tapes and player. See “Care of Your Cassette Tape Player” in the Index.

CD Adapter Kits

It is possible to use a portable CD player adapter kit with your cassette tape player after activating the tight/loose tape sensor feature on your tape player.

To activate this feature, use the following steps:

- Turn the ignition to RUN or ACCESSORY.
- Turn the radio on.
- Press and hold the TAPE button for two seconds until one beep is produced. CAS will flash on the display, showing that the TIGHT/LOOSE TAPE sensor is no longer active.
- Insert the adapter into the cassette slot.

This override routine will remain active until eject is pressed.

AM-FM Stereo with Compact Disc Player (If Equipped)

Playing the Radio

PWR (Power): Press this knob to turn the system on and off.

VOL (Volume): Turn this knob clockwise to increase volume. Turn it counterclockwise to decrease volume.

RCL (Recall): Press this knob to display the station being played or to display the clock. Clock display is available with the ignition turned off.

Finding a Station

AM FM: Press this button to switch between AM, FM1 and FM2. The display shows your selection.

TUNE: Turn this knob to choose radio stations.

◁ SEEK SEEK ▷: Press the right or left arrow to seek to the next or previous station and stay there. The radio will seek to stations with a strong signal only. The sound will mute while seeking.

To scan stations, press and hold one of the SEEK arrows for two seconds until you hear a beep. The radio will go to a station, play for a few seconds and flash the station frequency, then go on to the next station. Press one of the SEEK arrows again to stop scanning. The radio will scan to stations with a strong signal only. The sound will mute while scanning.

To scan preset stations, press and hold one of the SEEK arrows for more than four seconds until you will hear a double beep. The radio will go to the first preset station stored on your pushbuttons, play for a few seconds and flash the station frequency, then go on to the next preset station. Press one of the SEEK arrows again to stop scanning. The channel number (P1-P6) will appear momentarily just before the frequency is displayed. The radio will only scan the six presets in the selected band. The radio will scan preset stations with a strong signal only. The sound will mute while scanning.

Setting Preset Stations

The six numbered pushbuttons let you return to your favorite stations. You can set up to 18 stations (six AM, six FM1 and six FM2) by performing the following steps:

1. Turn the radio on.
2. Press AM FM to select the band.
3. Tune in the desired station.
4. Press and hold one of the six numbered pushbuttons until you hear a beep. Whenever you press that numbered pushbutton, the station you set will return.
5. Repeat the steps for each pushbutton.

Setting the Tone (Bass/Treble)

AUDIO: To adjust the bass, press and release AUDIO until BAS appears on the display. Then press and hold the up arrow to increase bass. B and a positive number will appear on the display. Press and hold the down arrow to decrease bass. B and a negative number will appear on the display. B and a zero will appear on the display when the bass level is adjusted to the middle position. Release the up or down arrow when you find the bass level you want or when the maximum or minimum level is reached.

To adjust the treble, press and release AUDIO until TRE appears on the display. Then press and hold the up arrow to increase treble. T and a positive number will appear on the display. Press and hold the down arrow to decrease treble. T and a negative number will appear on the display. T and a zero will appear on the display when the treble level is adjusted to the middle position. Release the up or down arrow when you find the treble level you want or when the maximum or minimum level is reached. If a station is weak or noisy, you may want to decrease the treble.

To adjust bass or treble to the middle position, select BAS or TRE. Then press and hold AUDIO for more than two seconds until you hear a beep. B and a zero or T and a zero will appear on the display. To adjust both tone controls and both speaker controls to the middle position, end out of audio mode by pressing the AUDIO button until the display goes blank. Then press and hold AUDIO for more than two seconds until you hear a beep. CEN will appear on the display.

Adjusting the Speakers (Balance/Fade)

AUDIO: To adjust the balance between the right and left speakers, press and release AUDIO until BAL appears on the display. Then press and hold the up arrow to move the sound to the right speakers or the down arrow to move the sound to the left speakers. R and a number will appear on the display when the sound is balanced toward the right speakers. L and a number will appear on the display when the sound is balanced toward the left speakers. L and a zero will appear on the display when the sound is balanced between the speakers. Release the up or down arrow when you find the speaker balance you want or when the maximum or minimum level is reached.

To adjust the fade between the front and rear speakers, press and release AUDIO until FAD appears on the display. Then press and hold the up arrow to move the sound to the front speakers or the down arrow to move the sound to the rear speakers. F and a number will appear on the display when the sound is balanced toward the front speakers. R and a number will appear on the display when the sound is balanced toward the rear speakers. F and a zero will appear on the display when the sound is balanced between the speakers. Release the up or down arrow when you find the speaker balance you want or when the maximum or minimum level is reached.

To adjust balance or fade to the middle position, select BAL or FAD. Then press and hold AUDIO for more than two seconds until you hear a beep. L and a zero or F and a zero will appear on the display. To adjust both tone controls and both speaker controls to the middle position, end out of audio mode by pressing the AUDIO button until the display goes blank. Then press and hold AUDIO for more than two seconds until you hear a beep. CEN will appear on the display.

Radio Messages

CAL (Calibrated): Your audio system has been calibrated for your vehicle from the factory. If CAL appears on the display it means that your radio has not been configured properly for your vehicle and must be returned to the dealership for service.

LOC (Locked): This message is displayed when the Theftlock® system has locked up. Your vehicle must be returned to the dealership for service.

Playing a Compact Disc

Insert a disc partway into the slot, label side up. The player will pull it in. The disc should begin playing. The display will show CD. If you want to insert a compact disc with the ignition off, first press RCL or the eject button.

If an error appears on the display, see “Compact Disc Messages” later in this section.

1 PREV (Previous): Press this pushbutton to go to the previous track if the current selection has been playing for less than eight seconds. If this pushbutton is pressed and the current selection has been playing for more than eight seconds, it will go to the beginning of the current selection. The track number will appear on the display. If you hold this pushbutton or press it more than once, the player will continue moving back through the disc. The sound will mute while seeking.

2 NEXT: Press this pushbutton to go to the next track. The track number will appear on the display. If you hold this pushbutton or press it more than once, the player will continue moving forward through the disc. The sound will mute while seeking.

3 REV (Reverse): Press and hold this pushbutton to reverse quickly within a track. Release it to play the passage. The display will show elapsed time while reversing.

4 FWD (Forward): Press and hold this pushbutton to advance quickly within a track. Release it to play the passage. The display will show elapsed time while forwarding.

5 RDM (Random): Press this pushbutton to hear the tracks in random, rather than sequential, order. RND will appear on the display. Press this pushbutton again to turn off random play. OFF will appear on the display.

6 RPT (Repeat): Press this pushbutton once to hear a selection over again. RPT will appear on the display. The current track will continue to repeat. Press this pushbutton again to turn off repeated play. OFF will appear on the display.

◁ SEEK SEEK ▷: The right arrow is the same as the NEXT pushbutton, and the left arrow is the same as the PREV pushbutton. If the arrows are held or pressed more than once, the player will continue moving forward or backward through the tape.

RCL (Recall): Press this button to see the current track number or how long the current track has been playing.

AM FM: Press this button to listen the radio when a CD is playing. The CD will stop but remain in the player.

CD: Press this button to play a compact disc when listening to the radio. CD will appear on the display. The inactive CD will remain safely inside the radio for future listening.

⏏ (Eject): Press this button to stop a CD when it is playing or to eject a CD when it is not playing. Eject may be activated with either the ignition or radio off. CDs may be loaded with the radio and ignition off if this button is pressed first.

Compact Disc Messages

If the disc comes out, it could be for one of the following reasons:

- If you're driving on a very rough road. When the road becomes smooth the disc should play.
- If it's very hot. When the temperature returns to normal, the disc should play.
- The disc is upside down.
- It is dirty, scratched or wet.
- The air is very humid. (If so, wait about an hour and try again.)
- If the CD is not playing correctly, for any of the above reasons, try a known good CD.

If any error occurs repeatedly or if an error can't be corrected, contact your dealer.

AM-FM Stereo with Cassette Tape and Compact Disc Player with Radio Data System (RDS) and Automatic Tone Control (If Equipped)

Standard Radio -- Bose® not shown

Playing the Radio

PWR (Power): Press this knob to turn the system on and off.

VOL (Volume): Turn this knob clockwise to increase volume. Turn it counterclockwise to decrease volume.

AUTO VOL (Automatic Volume): With automatic volume, your audio system adjusts automatically to make up for road and wind noise as you drive.

Set the volume at the desired level. Press this button to select LOW, MEDIUM or HIGH. AVOL will appear on the display. Each higher volume setting allows for more volume compensation at faster vehicle speeds. Then as you drive, automatic volume increases the volume as necessary to overcome noise at any speed. The volume level should always sound the same to you as you drive. NONE will appear on the display if the radio cannot determine the vehicle speed. If you don't want to use automatic volume, select OFF.

DISP (Display): Pressing this button will display the station being played or it will display the clock. Clock display is available with the ignition turned off.

Finding a Station

AM FM: Press this button to switch between AM, FM1 and FM2. The display will show your selection.

◀ TUNE ▶: Turn this knob to choose radio stations.

◀ SEEK ▶: Press the right or left arrow to seek to the next or previous station and stay there. The radio will seek to stations with a strong signal only. The sound will mute while seeking.

◀ PSCAN ▶ (Preset Scan): Press and hold one of the arrows for more than two seconds. The radio will produce one beep. The radio will scan to the first preset station stored on your pushbuttons, play for a few seconds, then go on to the next station. Press one of the arrows or one of the pushbuttons again to stop scanning. SCAN will be displayed whenever the tuner is in the preset scan mode. The channel number (P1 through P6) will appear with the frequency. In FM mode, this function will scan through the current band such as FM1 or FM2. The radio will scan to stations with a strong signal only. The sound will mute while scanning.

Setting Preset Stations

The six numbered pushbuttons let you return to your favorite stations. You can set up to 18 stations (six AM, six FM1 and six FM2) by performing the following steps:

1. Turn the radio on.
2. Press AM FM to select the band.
3. Tune in the desired station.
4. Press AUTO TONE to choose the bass and treble equalization that best suits the type of station you are listening to.
5. Press and hold one of the six numbered pushbuttons. The radio will produce one beep. Whenever you press that numbered pushbutton, the station you set will return and the bass and treble equalization that you selected will also be automatically selected for that pushbutton.
6. Repeat the steps for each pushbutton.

Setting the Tone (Bass/Treble)

AUDIO: Press and release the AUDIO knob until BASS or TREB appears on the display. Turn the knob clockwise or counterclockwise to increase or decrease. The display will show the bass or treble level. If a station is weak or noisy, you may want to decrease the treble.

To adjust the bass and treble to the middle position, push and hold the AUDIO knob. The radio will produce one beep and adjust the display level to the middle position.

To adjust all tone and speaker controls to the middle position, push and hold the AUDIO knob when no tone or speaker control is displayed. The radio will produce one beep and display ALL with the level display in the middle position.

AUTO TONE: This feature allows you to choose bass and treble equalization settings designed for country/western, jazz, talk, pop, rock and classical stations.

Each time you press the AUTO TONE button, this feature will switch to one of these program types.

To return the bass and treble to the manual mode, press and release the AUDIO knob.

If your vehicle has the Bose radio, your audio system allows you to choose from four different equalization settings: talk, driver, normal and spatial. These settings can be used while listening to the radio or the CD player. Press the AUTO TONE button to select your choice.

TALK: This setting makes spoken words sound very clear. When listening to non-musical material such as news, talk shows, sports broadcasts and books on tape.

DRIVER: This setting gives the driver the best sound quality.

NORMAL: This setting enhances the stereo effects.

SPATIAL: This setting makes the listening space seem larger.

The radio saves separate AUTO TONE settings for each preset and source.

Adjusting the Speakers (Balance/Fade)

AUDIO: To adjust the balance to the right and left speakers, push and release the AUDIO knob until BAL appears on the display. Turn the knob clockwise to move the sound to the right speakers and counterclockwise to move the sound to the left speakers.

To adjust the fade to the front and rear speakers, push and release the AUDIO knob until FADE appears on the display. Turn the knob clockwise to move the sound to the front speakers and counterclockwise to move the sound to the rear speakers.

To adjust the balance and fade to the middle position, push the AUDIO knob then push it again and hold it until the radio produces one beep. The balance and fade will be adjusted to the middle position and the display will show the speaker balance.

To adjust all tone and speaker controls to the middle position, push and hold the AUDIO knob when no tone or speaker control is displayed. The radio will produce one beep and display ALL with the level display in the middle position.

Using RDS

Your audio system is equipped with a Radio Data System (RDS). RDS is a system that sends data along with the audio of the FM station you are currently tuned to. You can use RDS to display program information and to control your radio. With RDS, the radio can do the following:

- Seek only to stations with the types of programs you want to listen to,
- seek to stations with traffic announcements,
- receive announcements concerning local and national emergencies, and
- receive and display messages from radio stations.

RDS features are only available on FM stations that broadcast RDS information. The RDS features of your radio rely on receiving specific RDS information from these stations. These features will only work when the RDS information is available. In rare cases, a radio station may broadcast incorrect information that will cause the radio features to work improperly. If this happens, contact the radio station.

When you are tuned to an RDS station, the station name will appear on the display, instead of the frequency. Most RDS stations provide their station name, the time of day and a Program Type (PTY) for their current programming. Some stations also provide the name of the current program.

Finding RDS Stations

To find RDS stations perform the following steps:

1. Push the SEEK TYPE button or turn the P-TYPE LIST knob to display the program type list.
2. Turn the knob either clockwise or counterclockwise to select a program type. The list is alphabetical. If you select ANY TYPE your radio will seek to the first PTY available.
3. Push the SEEK TYPE button to activate search.

VOL (Volume): Turn this knob clockwise to increase volume when RDS interrupts regular play. Turn it counterclockwise to decrease volume.

DISP (Display): Press this knob to change what appears on the display while using RDS. Pressing this knob will also display an RDS station frequency or program type when the radio is on. The display options are station name, station frequency, PTY and the name of the program (if available). Pressing and holding this knob will activate the RDS default display.

Finding a PTY Preset Station

P-TYPE LIST (Program Type): Turn this knob clockwise or counterclockwise to select the Program Type (PTY) you want to listen to. TYPE and a PTY will appear on the display. Press the TYPE button and the radio will seek to the first RDS broadcaster of the selected program type. If the radio cannot find the desired program type, NONE will appear on the display and the radio will return to the last station you were listening to.

AM FM (Alternate Frequency): Alternate frequency allows the radio to switch to a stronger station with the same program type. Press and hold AM FM for two seconds to turn alternate frequency on. AF ON will appear on the display. The radio may switch to stronger stations. Press and hold AM FM again for two seconds to turn alternate frequency off. AF OFF will appear on the display. The radio will not switch to other stations. When you turn the ignition off and then on again, the alternate frequency feature will automatically be turned on.

SEEK TYPE: Press this button to go to a station with the last selected PTY; TYPE and the last selected PTY will appear on the display, if it is not already showing. Press SEEK TYPE a second time to seek. If a station with the selected PTY is not found, the radio will return to the original station and display NONE.

RDS Messages

Alert: Alert warns of national or local emergencies. You will not be able to turn off alert announcements. ALERT! appears on the display when an alert announcement plays. When an alert announcement comes on the current radio station, you will hear it, even if the volume is muted or a cassette tape or compact disc is playing. If the cassette tape or compact disc player is playing, play will stop for the announcement and resume when the announcement is finished.

This function will only work during actual emergency broadcasts, and will not work during tests of the emergency broadcast system. This feature is not supported by all RDS stations.

INFO (Information): If the current station has a message, the information icon will appear on the display. These text messages are from the RDS broadcaster to the listening public and may be general information such as artist and song title, call in phone numbers, etc. Press this button to see the message. If the whole message does not appear on the display, parts of the message will appear every three seconds until the message is completed. To scroll through the message at your own speed, press the INFO button again for less than one second. A new group of words will appear on the display. Once the complete message has been displayed, the information icon will disappear from the display until another new message is received. The old message can be displayed by pressing the INFO button until a new message is received or a different station is tuned to.

TRAF (Traffic): Press this button to receive traffic announcements. If the current station does not broadcast traffic announcements, the radio will seek to a station that does. The traffic symbol will flash on the display. When the radio finds a station that broadcasts traffic announcements, it will stop. If no station is found, NO TRAF will appear on the display.

Your radio can be programmed to interrupt the playback of a cassette tape, CD or FM radio by enabling the traffic interrupt feature. Press the TRAF button once to seek to an RDS station that supports the traffic interrupt feature if the current station does not. The traffic symbol will flash on the display when seeking for a station that supports traffic interrupt. When the traffic interrupt feature is on, TRAF will appear on the display.

When a traffic announcement comes on the current radio station, you will hear it, even if the volume is muted or a cassette tape or compact disc is playing. The traffic symbol and TRAFFIC will appear on the display while the traffic announcement plays. If the cassette tape or compact disc player was being used, the tape or compact disc will stay in the player and resume play at the point where it stopped.

Radio Messages

CAL ERR (Calibration Error): This message is displayed when the radio has not been calibrated properly for the vehicle. You must return to the dealership for service.

LOCKED: This message is displayed when the THEFTLOCK® system has locked up. You must return to the dealership for service.

Playing a Cassette Tape

Your tape player is built to work best with tapes that are up to 30 to 45 minutes long on each side. Tapes longer than that are so thin they may not work well in this player. The longer side with the tape visible should face to the right. If the ignition is on, but the radio is off, the tape can be inserted and will begin playing. A tape symbol is shown on the display whenever a tape is inserted. If you hear nothing but a garbled sound, the tape may not be in squarely. Press EJT to remove the tape and start over.

While the tape is playing, use the VOL, AUDIO and SEEK controls just as you do for the radio. The display will show TAPE and an arrow showing which side of the tape is playing.

If you want to insert a tape when the ignition is off, first press EJT or DISP.

If an error appears on the display, see “Cassette Tape Messages” later in this section.

1 PREV (Previous): Press this pushbutton to go to the previous selection on the tape if the selection has been playing for less than three seconds. If this pushbutton is pressed and the current selection has been playing for more than 13 seconds, it will go to the beginning of the current selection. If this pushbutton is pressed and the current selection has been playing from 3 to 13 seconds, it will go to the beginning of the previous selection or the beginning of the current selection, depending upon the position on the tape. SEEK and a -1 will appear on the display while the cassette player is in the previous mode. If this pushbutton is pressed additional times or held, the radio will go to the displayed number of previous selections up to 9. SEEK and a negative number will appear on the display. Your tape must have at least three seconds of silence between each selection for previous to work. The sound will mute while seeking.

2 NEXT: Press this pushbutton to go to the next selection on the tape. If you press the pushbutton more than once, the player will continue moving forward through the tape. SEEK and a positive number will appear on the display. Your tape must have at least three seconds of silence between each selection for next to work. The sound will mute while seeking.

3 REV (Reverse): Press this pushbutton to reverse the tape rapidly. Press it again to return to playing speed. The radio will play the last selected station while the tape reverses. The station frequency and REV will appear on the display. You may select stations during reverse operation by using the TUNE, DISP and SEEK.

4 FWD (Forward): Press this pushbutton to advance quickly to another part of the tape. Press this pushbutton again to return to playing speed. The radio will play the last selected station while the tape advances. The station frequency and FWD will appear on the display. You may select stations during forward operation by using TUNE and SEEK.

5 SIDE: Press this pushbutton to play the other side of the tape.

6 DD (Dolby): Press this pushbutton to reduce background noise. NR ON will appear on the display. Press it again to turn Dolby NR off. NR OFF will appear on the display.

Dolby Noise Reduction is manufactured under a license from Dolby Laboratories Licensing Corporation. Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

◀ SEEK ▶: The right arrow is the same as the NEXT pushbutton, and the left arrow is the same as the PREV pushbutton. If the arrow is held or pressed more than once, the player will continue moving forward or backward through the tape. SEEK and a positive or negative number will appear on the display.

AM FM: Press this button to listen to the radio when a tape is playing. The tape will stop but remain in the player.

TAPE CD: Press this button to play a tape when listening to the radio. Press this button to switch between the tape and compact disc if both are loaded. The inactive tape or CD will remain safely inside the radio for future listening.

⏏ EJT (Eject): Press this button to stop a tape when it is playing or to eject a tape when it is not playing. Eject may be activated with the radio off. Cassette tapes may be loaded with the radio off if this button is pressed first.

Cassette Tape Messages

CHK TAPE (Check Tape): If CHK TAPE appears on the radio display, the tape won't play because of one of the following errors.

- The tape is tight and the player can't turn the tape hubs. Remove the tape. Hold the tape with the open end down and try to turn the right hub counterclockwise with a pencil. Turn the tape over and repeat. If the hubs do not turn easily, your tape may be damaged and should not be used in the player. Try a new tape to make sure your player is working properly.
- The tape is broken. Try a new tape.
- The tape is wrapped around the tape head. Attempt to get the cassette out. Try a new tape.

CLEAN: If this message appears on the display, the cassette tape player needs to be cleaned. It will still play tapes, but you should clean it as soon as possible to prevent damage to the tapes and player. See "Care of Your Cassette Tape Player" in the Index.

If any error occurs repeatedly or if an error can't be corrected, contact your dealer.

Playing a Compact Disc

Insert a disc partway into the slot, label side up. The player will pull it in and the disc should begin playing. The display will show the CD symbol. If you want to insert a compact disc with the ignition off, first press DISP or EJT.

If an error appears on the display, see "Compact Disc Messages" later in this section.

1 PREV (Previous): Press this pushbutton to go to the previous track if the current selection has been playing for less than eight seconds. If this pushbutton is pressed and the current selection has been playing for more than eight seconds, it will go to the beginning of the current selection. TRACK and the track number will appear on the display. If you hold this pushbutton or press it more than once, the player will continue moving back through the disc. The sound will mute while seeking.

2 NEXT: Press this pushbutton to go to the next track. TRACK and the track number will appear on the display. If you hold this pushbutton or press it more than once, the player will continue moving forward through the disc. The sound will mute while seeking.

3 REV (Reverse): Press and hold this pushbutton to reverse quickly within a track. Press and hold this pushbutton for less than two seconds to reverse at six times the normal playing speed. Press and hold it for more than two seconds to reverse at 17 times the normal playing speed. Release it to play the passage. The display will show ET and the elapsed time.

4 FWD (Forward): Press and hold this pushbutton to advance quickly within a track. Press and hold this pushbutton for less than two seconds to advance at six times the normal playing speed. Press and hold it for more than two seconds to advance at 17 times the normal playing speed. Release it to play the passage. The display will show ET and the elapsed time.

6 RDM (Random): Press this pushbutton to hear the tracks in random, rather than sequential, order. RDM ON will appear on the display. RDM T and the track number will appear on the display when each track starts to play. Press this pushbutton again to turn off random play. RDM OFF will appear on the display.

◀ SEEK ▶: Press the left arrow to go to the start of the current or previous track. Press the right arrow to go to the start of the next track. If either of the arrows is held or pressed more then once, the player will continue moving backward or forward through the CD.

DISP (Display): Press this knob to see how long the current track has been playing. ET and the elapsed time will appear on the display. To change what is normally shown on the display (track or elapsed time), press the knob until you see the display you want, then hold the knob for two seconds. The radio will produce one beep.

AM FM: Press this button to listen to the radio when a CD is playing. The CD will stop but remain in the player.

TAPE CD: Press this button to play a tape when listening to the radio. Press this button to switch between the tape and compact disc if both are loaded. The inactive tape or CD will remain safely inside the radio for future listening.

⏏ EJT (Eject): Press this button to stop a CD when it is playing or to eject a CD when it is not playing. Eject may be activated with either the ignition or radio off. CDs may be loaded with the radio and ignition off if this button is pressed first.

Compact Disc Messages

If the disc comes out, it could be for one of the following reasons:

- If you're driving on a very rough road. When the road becomes smooth the disc should play.
- If it's very hot. When the temperature returns to normal, the disc should play.
- The disc is upside down.
- It is dirty, scratched or wet.
- The air is very humid. (If so, wait about an hour and try again.)
- 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 can't be corrected, contact your dealer.

AM-FM Stereo with Six-Disc Compact Disc Player with Programmable Equalization and Radio Data System (RDS) (If Equipped)

Playing the Radio

PWR (Power): Push this knob to turn the system on and off.

VOLUME: Turn the knob clockwise to increase volume. Turn it counterclockwise to decrease volume.

AUTO VOL (Automatic Volume): Your system has a feature called automatic volume. With this feature, your audio system adjusts automatically to make up for road and wind noise as you drive.

Set the volume at the desired level. Press this button to select MIN, MED or MAX. Each higher choice allows for more volume compensation at faster vehicle speeds. Then, as you drive, automatic volume increases the volume, as necessary, to overcome noise at any speed. The volume level should always sound the same to you as you drive. If you don't want to use automatic volume, select OFF.

RCL (Recall): Push this knob to display the station being played or to display the clock. Pushing this knob with the ignition off will display the clock

Finding a Station

AM FM: Press this button to switch between AM, FM1 and FM2. The display shows your selection.

TUNE: Turn this knob to select radio stations.

⊲ SEEK ⊳: Press the right or left arrow to go to the next or previous station and stay there. The sound will mute while seeking.

⊲ SCAN ⊳: Press and hold either SCAN arrow for two seconds until SC appears on the display and you hear a beep. The radio will go to a station, play for a few seconds, then go on to the next station. Press either SCAN arrow again to stop scanning. If you press SCAN for more than four seconds, the radio will change to preset scan mode. The sound will mute while scanning.

To scan preset stations, press and hold either SCAN arrow for more than four seconds, PRESET SCAN will appear on the display. You will hear a double beep. The radio will go to a preset station stored on your pushbuttons, play for a few seconds, then go on to the next preset station. Press either SCAN arrow again to stop scanning presets. The sound will mute while scanning.

Setting Preset Stations

The six numbered pushbuttons let you return to your favorite stations. You can set up to 18 stations (six AM, six FM1 and six FM2) by performing the following steps:

1. Turn the radio on.
2. Press AM FM to select the band.
3. Tune in the desired station.
4. Press AUTO EQ to select the equalization that best suits the type of station selected.
5. Press and hold one of the six numbered pushbuttons until you hear a beep. Whenever you press that numbered pushbutton, the station you set will return and the equalization that you selected will also be automatically selected for that pushbutton.
6. Repeat the steps for each pushbutton.

Setting the Tone (Bass/Treble)

AUDIO: Push the AUDIO knob until BASS, MID or TREB appears on the display. Turn the knob to increase or decrease. When you use this knob, the radio's tone setting will switch to custom. If a station is weak or noisy, you may want to decrease the treble.

To adjust bass, midrange or treble to the middle position, select BASS, MID or TREB and push and hold the AUDIO knob. The radio will produce one beep and adjust the display level to zero.

To adjust all tone and speaker controls to the middle position, push and hold the AUDIO knob when no tone or speaker control is displayed. The radio will produce one beep and CENTERED will appear on the display.

AUTO EQ (Automatic Equalization): This feature allows you to choose preset bass, midrange and treble equalization settings designed for country, jazz, talk, pop, rock and classical program types.

The program type last chosen will appear on the display when you first press AUTO EQ. Each time you press this button, another program type will appear on the display and AUTO EQ will switch to one of the preset program types.

To return to the manual mode (CUSTOM), press the AUTO EQ button until CUSTOM appears on the display. Then you will be able to manually adjust the bass, midrange and treble using the AUDIO knob.

Adjusting the Speakers (Balance/Fade)

AUDIO: To adjust the balance between the right and left speakers, push the AUDIO knob until BAL appears on the display. Turn the knob to adjust the sound to the left or right speakers. The middle position balances the sound between the speakers.

To adjust the fade between the front and rear speakers, push and hold the AUDIO knob until FAD appears on the display. Turn the knob to adjust the sound to the front or rear speakers. The middle position balances the sound between the speakers.

To adjust the balance and fade to the middle position, select balance or fade and push and hold the AUDIO knob. The radio will beep once and will adjust the display level to the middle position.

To adjust all tone and speaker controls to the middle position, push and hold the AUDIO knob when tone or speaker controls are not displayed. The radio will produce one beep and CENTERED will appear on the display.

Using RDS

Your audio system is equipped with a Radio Data System (RDS). RDS mode gives you many useful new features. With RDS, the radio can do the following:

- Seek only to stations with the types of programs you want to listen to,
- seek to stations with traffic announcements,
- receive announcements concerning local and national emergencies, and
- receive and display messages from radio stations.

RDS features are only available for use on FM stations which broadcast RDS information. The RDS features of your radio rely upon receiving specific RDS information from these stations. These features will only work when the RDS information is available. In rare cases, a radio station may broadcast incorrect information that will cause the radio features to work improperly. If this happens, contact the radio station.

When you are tuned to an RDS station, the station name will appear on the display, instead of the frequency. Most RDS stations provide their station name, the time of day and a Program Type (PTY) for their current programming.

Finding a PTY Station

P-TYPE (Program Type): This button is used to turn on and off Program Type (PTY) selections. PTY and the light next to the button will turn on. The last selected PTY will appear on the display for five seconds.

Turn the P-TYPE knob to select the PTY you want to listen to. Press the SEEK arrows to find radio stations for the PTY you want to listen to. The last PTY selected will be used for seek or scan modes. If a station with the selected PTY is not found, NONE FOUND will appear on the display. If both P-TYPE and TRAF are on, the radio will search for stations with traffic announcements and the selected PTY.

To use the PTY interrupt feature, press and hold the P-TYPE button until you hear a beep on the PTY you want to interrupt on. When you are listening to a compact disc, the last selected RDS FM station will interrupt play if that selected program type format is broadcast.

AM FM (Alternate Frequency): Alternate frequency allows the radio to switch to a stronger station with the same program type. Press and hold AM FM for two seconds to turn alternate frequency on. AF ON will appear on the display. The radio may switch to stronger stations. Press and hold AM FM again for two seconds to turn alternate frequency off. AF OFF will appear on the display. The radio will not switch to other stations. When you turn the ignition off and then on again, the alternate frequency feature will automatically be turned on.

Setting PTY Preset Stations

The six numbered pushbuttons let you return to your favorite PTYs. These buttons have factory PTY presets. You can set up to 12 PTYs (six FM1 and six FM2) by performing the following steps:

1. Press AM FM to select FM1 or FM2.
2. Press P-TYPE to activate program type mode.
3. Turn the P-TYPE knob to select a PTY.
4. Press and hold one of the six numbered pushbuttons until you hear a beep. Whenever you press that numbered pushbutton, the PTY you set will return.
5. Repeat the steps for each pushbutton.

RDS Messages

ALERT!: This type of announcement warns of national or local emergencies. You will not be able to turn off alert announcements. ALERT! appears on the display when an alert announcement plays. When an alert announcement comes on the current radio station, you will hear it, even if the volume is muted or a compact disc is playing. If the compact disc player is playing, play will stop for the announcement and resume when the announcement is finished.

INFO (Information): If the current station has a message, INFO will appear on the display. Press this button to see the message. If the whole message does not appear on the display, parts of the message will appear every three seconds until the message is completed. To see the parts of the message faster than every three seconds, press this button again. A new group of words will appear on the display. Once the complete message has been displayed, INFO will disappear from the display until another new message is received.

TRAF (Traffic): Press this button to receive traffic announcements. The traffic announcement brackets will appear on the display. TRAF will appear on the display if the current station broadcasts traffic announcements. If the current station does not broadcast traffic announcements, the radio will seek to a station that does. When the radio finds a station that broadcasts traffic announcements, it will stop. If no station is found, NONE FOUND will appear on the display.

When a traffic announcement comes on the current radio station or a related network station, you will hear it, even if the volume is muted or a compact disc is playing. If the compact disc player was being used, the compact disc will stay in the player and resume play at the point where it stopped.

Playing a Compact Disc

If an error appears on the display, see “Compact Disc Messages” later in this section.

LOAD CD ⏏ : Press the LOAD side of this button to load CDs into the compact disc player. This compact disc player will hold up to six discs.

To insert one disc, do the following:

1. Turn the ignition on.
2. Press and release the LOAD side of the LOAD CD button.
3. Wait for the light, located to the right of the slot, to turn green.
4. Load a disc. Insert a disc partway into the slot, label side up. The player will pull the disc in.

When a disc is inserted, the CD symbol will be displayed. If you select an equalization setting for your disc, it will be activated each time you play a disc.

If the radio is on or off, the disc will begin to play automatically.

To insert multiple discs, do the following:

1. Turn the ignition on.
2. Press and hold the LOAD side of the LOAD CD button for two seconds.

   You will hear a beep and the light, located to the right of the slot, will begin to flash.
3. Once the light stops flashing and turns green, load a disc. Insert a disc partway into the slot, label side up. The player will pull the disc in.

   Once the disc is loaded, the light will begin flashing again. Once the light stops flashing and turns green you can load another disc. The disc player takes up to six discs. Do not try to load more than six.

To load more than one disc but less than six, complete Steps 1 through 3. When you have finished loading discs, with the radio on or off, press the LOAD side of the LOAD CD button to cancel the loading function. The radio will begin to play the last CD loaded.

When a disc is inserted, the CD symbol will be displayed. If more than one disc has been loaded, a number for each disc will be displayed. If you select an equalization setting for your disc, it will be activated each time you play a disc.

If the radio is on or off, the last disc loaded will begin to play automatically.

As each new track starts to play, the track number will appear on the display.

Playing a Specific Loaded Compact Disc

For every CD loaded, a number will appear on the radio display. To play a specific CD, first press the CD AUX button to start playing a CD. Then press the numbered pushbutton that corresponds to the CD you want to play. A small bar will appear under the CD number that is playing, and the track number will appear.

If an error appears on the radio display, see “Compact Disc Messages” later in this section.

LOAD CD ⏏ (Eject): The CD eject side of this button will eject a disc or discs, if you have multiple discs loaded. To eject a disc or discs from the disc player, perform one of the following steps:

- Press and release the CD eject side of the LOAD CD button to eject the disc that is currently playing, or
- to eject all of the discs, press the CD eject side of the LOAD CD button for two seconds, you will hear a beep, and the light will flash to let you know when a disc is being ejected.

When the CD eject side of the LOAD CD button is pressed, the receiver will eject the disc and REMOVE CD will be displayed. You can now remove the disc. If the disc is not removed, after 25 seconds, the disc will be automatically pulled back into the receiver.

If you try to push the disc back into the receiver, before the 25 second time period is complete, the receiver will sense an error and will try to eject the disc several times before stopping.

Do not repeatedly press the CD eject side of the LOAD CD eject button to eject a disc after you have tried to push it in manually. The receiver’s 25-second eject timer will reset at each press of eject, which will cause the receiver to not eject the disc until the 25-second time period has elapsed.

Once the player stops and the disc is ejected, remove the disc. After removing the disc, press the PWR knob off and then on again. This will clear the disc-sensing feature and enable discs to be loaded into the player again.

<< REV (Reverse): Press and hold this button to reverse quickly within a track. You will hear sound at a reduced volume. Release it to play the passage. The display will show elapsed time.

FWD >> (Forward): Press and hold this button to advance quickly within a track. You will hear sound at a reduced volume. Release it to play the passage. The display will show elapsed time.

RPT (Repeat): With repeat, you can repeat one track or an entire disc. To use repeat, do the following:

- To repeat the track you are listening to, press and release the RPT button. RPT will appear on the display. Press RPT again to turn it off.
- To repeat the disc you are listening to, press and hold the RPT button for two seconds. RPT will appear on the display. Press RPT again to turn if off.

RDM (Random): With random, you can listen to the tracks in random, rather than sequential order, on one disc or on all of the discs. To use random, do one of the following:

- To play the tracks on the disc you are listening to in random order, press and hold RDM for more than two seconds. You will hear a beep and RANDOM ONE will appear on the display. Press RDM again to turn if off.
- Press and release the RDM button to play the tracks on all of the discs that are loaded, in random order. RANDOM ALL will appear on the display. Press RDM to turn it off.

AUTO EQ (Automatic Equalization): Press AUTO EQ to select the desired preset equalization setting while playing a compact disc. The equalization will be automatically set whenever you play a compact disc. See “AUTO EQ” listed previously for more information.

⊢ SEEK ⊣: To seek, press the left arrow while playing a CD to go to the start of the current track, if more than ten seconds have passed. Press the right arrow to go to the next track. If you press the button more than once, the player will continue moving backward or forward through the disc.

⊢ SCAN ⊣: To scan one disc, press and hold either SCAN arrow for more than two seconds until SCAN appears on the display and you hear a beep. Use this feature to listen to each track of the currently selected disc for ten seconds. The sound will mute while scanning. SCAN will appear on the display. Press either SCAN arrow again, to stop scanning.

To scan all loaded discs, press and hold either SCAN arrow for more than four seconds until DISC SCAN appears on the display and you hear a beep. Use this feature to listen to the first track, for ten seconds for each disc loaded. The sound will mute while scanning to the next track. DISC SCAN will appear on the display. Press either SCAN arrow again, to stop scanning.

P-TYPE (Program Type): Press this knob to see how long the current track has been playing. To change what is normally shown on the display (track or elapsed time), press the knob until you see the display you want, then hold the knob until the display flashes.

AM FM: Press this button to play the radio when a disc(s) is in the player.

Using Song List Mode

The integrated six-disc CD changer has a feature called song list. This feature is capable of saving 20 track selections.

To save tracks into the song list feature, perform the following steps:

1. Turn the disc player on and load it with at least one disc. See “LOAD CD” listed previously in this section for more information.
2. Check to see that the disc changer is not in song list mode. S-LIST should not appear in the display. If S-LIST is present, press the SONG LIST button to turn it off.
3. Select the desired disc by pressing the numbered pushbutton and then use the SEEK SCAN right arrow button to locate the track that you want to save. The track will begin to play.
4. Press and hold the SONG LIST button for two or more seconds to save the track into memory. When SONG LIST is pressed a beep will be heard immediately. After two seconds of pressing SONG LIST continuously, two beeps will sound to confirm that the track has been saved.
5. Repeat Steps 3 and 4 for saving other selections.

If you attempt to save more than 20 selections, S-LIST FULL will appear on the display.

To play the song list, press the SONG LIST button. One beep will be heard and S-LIST will appear on the display. The recorded tracks will begin to play in the order that they were saved.

You may seek through the song list by using the SEEK SCAN arrows. Seeking past the last saved track will return you to the first saved track.

To delete tracks from the song list, perform the following steps:

1. Turn the disc player on.
2. Press the SONG LIST button to turn song list on. S-LIST will appear on the display.
3. Press the SEEK SCAN arrows to select the desired track to be deleted.
4. Press and hold the SONG LIST button for two seconds. When pressing SONG LIST, one beep will be heard immediately. After two seconds of pressing the SONG LIST button continuously, two beeps will be heard to confirm that the track has been deleted.

After a track has been deleted, the remaining tracks are moved up the list. When another track is added to the song list, the tracks will be added to the end of the list.

To delete the entire song list, perform the following steps:

1. Turn the disc player on.
2. Press the SONG LIST button to turn song list on. S-LIST will appear on the display.
3. Press and hold the SONG LIST button for more than four seconds. A beep will be heard, followed by two beeps after two seconds and a final beep will be heard after four seconds. S-LIST EMPTY will appear on the display indicating that the song list has been deleted.

If a disc is ejected, and the song list contains saved tracks from that disc, those tracks are automatically deleted from the song list. Any tracks saved to the song list again are added to the bottom of the list.

To end song list mode, press the SONG LIST button. One beep will be heard and S-LIST will be removed from the display.

Compact Disc Messages

CHECK CD: If this message appears on the radio display, it could be due to one of the following reasons:

- The road is too rough. The disc should play when the road is smoother.
- The disc is dirty, scratched, wet or upside down.
- The air is very humid. If so, wait about an hour and try again.

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 can't be corrected, contact your dealer. If your radio displays an error message, write it down and provide it to your dealer when reporting the problem.

Theft-Deterrent Feature RDS Radios (If Equipped)

THEFTLOCK® is designed to discourage theft of your 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 will not operate and LOCKED will be displayed.

When the radio and vehicle are turned off, the blinking red light indicates that THEFTLOCK is armed.

With THEFTLOCK activated, your radio will not operate if stolen.

Theft-Deterrent Feature Non-RDS Radios (If Equipped)

THEFTLOCK® is designed to discourage theft of your 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 will not operate and LOC will be displayed.

With THEFTLOCK activated, your radio will not operate if stolen.

Understanding Radio Reception

AM

The range for most AM stations is greater than for FM, especially at night. The longer range, however, can cause stations to interfere with each other. AM can pick up noise from things like storms and power lines. Try reducing the treble to reduce this noise if you ever get it.

FM Stereo

FM stereo will give you the best sound, but FM signals will reach only about 10 to 40 miles (16 to 65 km). Tall buildings or hills can interfere with FM signals, causing the sound to come and go.

Tips About Your Audio System

Hearing damage from loud noise is almost undetectable until it is too late. Your hearing can adapt to higher volumes of sound. Sound that seems normal can be loud and harmful to your hearing. Take precautions by adjusting the volume control on your radio to a safe sound level before your hearing adapts to it.

To help avoid hearing loss or damage do the following:

1. Adjust the volume control to the lowest setting.
2. Increase volume slowly until you hear comfortably and clearly.

NOTICE:

Before you add any sound equipment to your vehicle -- like a tape player, CB radio, mobile telephone or two-way radio -- be sure you can add what you want. If you can, it's very important to do it properly. Added sound equipment may interfere with the operation of your vehicle's engine, Delphi Electronics radio or other systems, and even damage them. Your vehicle's systems may interfere with the operation of sound equipment that has been added improperly.

So, before adding sound equipment, check with your dealer and be sure to check federal rules covering mobile radio and telephone units.

Care of Your Cassette Tape Player

A tape player that is not cleaned regularly can cause reduced sound quality, ruined cassettes or a damaged mechanism. Cassette tapes should be stored in their cases away from contaminants, direct sunlight and extreme heat. If they aren't, they may not operate properly or may cause failure of the tape player.

Your tape player should be cleaned regularly after every 50 hours of use. Your radio may display CLN or CLEAN to indicate that you have used your tape player for 50 hours without resetting the tape clean timer. If this message appears on the display, your cassette tape player needs to be cleaned. It will still play tapes, but you should clean it as soon as possible to prevent damage to your tapes and player. If you notice a reduction in sound quality, try a known good cassette to see if it is the tape or the tape player at fault. If this other cassette has no improvement in sound quality, clean the tape player.

The recommended cleaning method for your cassette tape player is the use of a scrubbing action, non-abrasive cleaning cassette with pads which scrub the tape head as the hubs of the cleaner cassette turn. The recommended cleaning cassette is available through your dealer (GM Part No. 12344789).

When cleaning the cassette tape player with the recommended non-abrasive cleaning cassette, it is possible that the cassette may eject, because the cut tape detection feature on your radio may recognize it as a broken tape. To prevent the cleaning cassette from being ejected, use the following steps.

If your vehicle is equipped with the AM-FM Stereo with Cassette Tape Player do the following:

1. Turn the ignition to RUN or ACCESSORY.
2. Turn the radio off.
3. Press and hold the TAPE button for five seconds. CAS will flash on the display for five seconds.
4. Insert the scrubbing action cleaning cassette.
5. Eject the cleaning cassette after the manufacturer's recommended cleaning time.

If your vehicle is equipped with the AM-FM Stereo with Cassette Tape and Compact Disc Player with Radio Data System and Programmable Equalization do the following:

1. Turn the ignition to RUN or ACCESSORY.
2. Turn the radio off.
3. Press and hold the TAPE CD button for five seconds. READY will appear on the display for five seconds.
4. Insert the scrubbing action cleaning cassette.
5. Eject the cleaning cassette after the manufacturer's recommended cleaning time.

When the cleaning cassette has been ejected, the broken tape detection feature is active again.

You may also choose a non-scrubbing action, wet-type cleaner which uses a cassette with a fabric belt to clean the tape head. This type of cleaning cassette will not eject on its own. A non-scrubbing action cleaner may not clean as thoroughly as the scrubbing type cleaner. The use of a non-scrubbing action, dry-type cleaning cassette is not recommended.

After you clean the player, press and hold the cassette eject symbol or the EJT button for five seconds to reset the CLEAN or CLN indicator. The radio will display CLEANED or --- to show the indicator was reset.

Cassettes are subject to wear and the sound quality may degrade over time. Always make sure the cassette tape is in good condition before you have your tape player serviced.

Care of Your Compact Discs

Handle discs carefully. Store them in their original cases or other protective cases and away from direct sunlight and dust. If the surface of a disc is soiled, dampen a clean, soft cloth in a mild, neutral detergent solution and clean it, wiping from the center to the edge.

Be sure never to touch the signal surface when handling discs. Pick up discs by grasping the outer edges or the edge of the hole and the outer edge.

Care of Your Compact Disc Player

The use of CD lens cleaner discs 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, you can straighten it out by hand. If the mast is badly bent, as it might be by vandals, you should replace it.

Check every once in a while to be sure the mast is still tightened to the fender. If tightening is required, tighten by hand, then with a wrench one quarter turn.

Chime Level Adjustment (RDS Radios Only)

The radio is the vehicle chime producer. The chime is produced from the driver's side front door speakers. To change the volume level, press and hold pushbutton 6 with the ignition on and the radio power off. The chime volume level will change from the normal level to loud, and LOUD will be displayed on the radio. To change back to the default or normal setting, press and hold pushbutton 6 again. The chime level will change from the loud level to normal, and NORMAL will be displayed. Each time the chime volume is changed, three chimes will sound as an example of the new volume selected. Removing the radio and not replacing it with a factory radio or chime module will disable vehicle chimes.

Section 4 Your Driving and the Road

Here you'll find information about driving on different kinds of roads and in varying weather conditions. We've also included many other useful tips on driving.

4-2 Defensive Driving
4-3 Drunken Driving
4-6 Control of a Vehicle
4-6 Braking
4-9 Steering
4-11 Off-Road Recovery
4-12 Passing
4-13 Loss of Control
4-14 Driving at Night
4-16 Driving in Rain and on Wet Roads
4-19 City Driving
4-20 Freeway Driving
4-21 Before Leaving on a Long Trip
4-22 Highway Hypnosis
4-22 Hill and Mountain Roads
4-24 Winter Driving
4-27 Recreational Vehicle Towing
4-28 Loading Your Vehicle
4-30 Towing a Trailer

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” in the Index.

Defensive driving really means “be ready for anything.” On city streets, rural roads or freeways, 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. Be ready for their mistakes.

Rear-end collisions are about the most preventable of accidents. Yet they are common. Allow enough following distance. It’s the best defensive driving maneuver, in both city and rural driving. You never know when the vehicle in front of you is going to brake or turn suddenly.

Defensive driving requires that a driver concentrate on the driving task. Anything that distracts from the driving task -- such as concentrating on a cellular telephone call, reading, or reaching for something on the floor -- makes proper defensive driving more difficult and can even cause a collision, with resulting injury. Ask a passenger to help do things like this, or pull off the road in a safe place to do them yourself. These simple defensive driving techniques could save your life.

Drunken Driving

Death and injury associated with drinking and driving is a national tragedy. It's 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, about 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's 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 solve 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 the driver plans to drive? It's 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 a liquor like whiskey, gin or vodka.

It's 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 when each has the same number of drinks.

The law in an increasing number of 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've 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’ll be careful” isn’t the right answer. What if there’s 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.

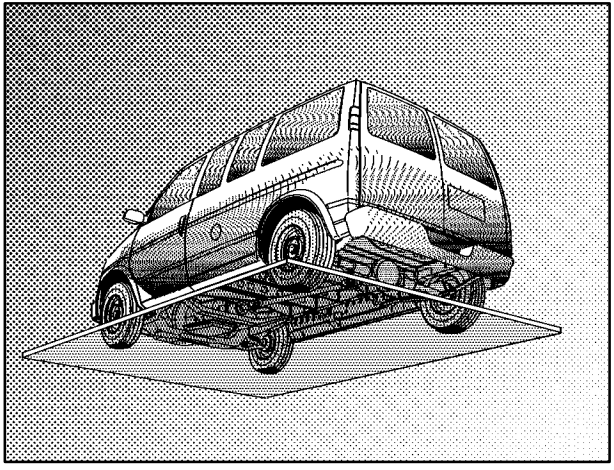
There’s something else about drinking and driving that many people don’t know. Medical research shows that alcohol in a person’s system can make crash injuries worse, especially injuries to the brain, spinal cord or heart. This means that when anyone who has been drinking -- driver or passenger -- is 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 don’t drink and drive or ride with a driver who has been drinking. Ride home in a cab; or if you’re 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're driving on snow or ice, it's easy to ask more of those control systems than the tires and road can provide. That means you can lose control of your vehicle.

Braking

Braking action involves *perception time* and *reaction time.*

First, you have to decide to push on the brake pedal. That's *perception time.* Then you have to bring up your foot and do it. That's *reaction time.*

Average *reaction time* is about 3/4 of a second. But that's 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 3/4 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's pavement or gravel); the condition of the road (wet, dry, icy); tire tread; the condition of your brakes; the weight of the vehicle and the amount of brake force applied.

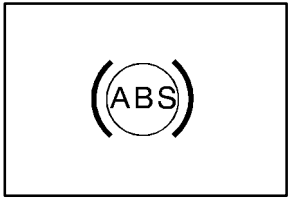
Avoid needless heavy braking. Some people drive in spurts -- heavy acceleration followed by heavy braking -- rather than keeping pace with traffic. This is a mistake. Your brakes may not have time to cool between hard stops. Your brakes will wear out much faster if you do a lot of heavy braking. If you 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 engine ever stops while you're driving, brake normally but don't pump your brakes. If you do, the pedal may get harder to push down. If your 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.

Anti-Lock Brake System (ABS)

Your vehicle has anti-lock brakes. ABS is an advanced electronic braking system that will help prevent a braking skid.

When you start your engine and begin to drive away, your anti-lock brake system will check itself. You may hear a momentary motor or clicking noise while this test is going on. This is normal.



If there's a problem with the anti-lock brake system, this warning light will stay on. See "Anti-Lock Brake System Warning Light" in the Index.

Let's say the road is wet and you're driving safely. Suddenly, an animal jumps out in front of you. You slam on the brakes and continue braking. Here's 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.

The anti-lock system 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: Anti-lock doesn't 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 won't 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 anti-lock brakes.

Using Anti-Lock

Don't 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 anti-lock, you can steer and brake at the same time. In many emergencies, steering can help you more than even the very best braking.

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

Driving on Curves

It's important to take curves at a reasonable speed.

A lot of the "driver lost control" accidents mentioned on the news happen on curves. Here's 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's no traction, inertia will keep the vehicle going in the same direction. If you've ever tried to steer a vehicle on wet ice, you'll understand this.

The traction you can get in a curve depends on the condition of your tires and the road surface, the angle at which the curve is banked, and your speed. While you're in a curve, speed is the one factor you can control.

Suppose you're 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.

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'll want to go slower.

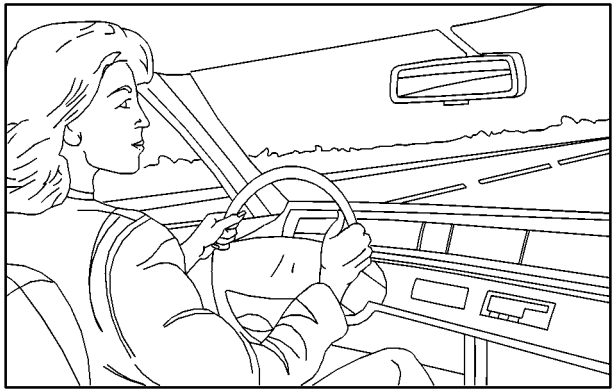
If you need to reduce your speed as you approach a curve, do it before you enter the curve, while your front wheels are straight ahead.

Try to adjust your speed so you can "drive" through the curve. Maintain a reasonable, steady speed. Wait to accelerate until you are out of the curve, and then accelerate gently into the straightaway.

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 can't; there isn't room. That's the time for evasive action -- steering around the problem.

Your vehicle can perform very well in emergencies like these. First apply your brakes. See "Braking in Emergencies" earlier in this section. 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.

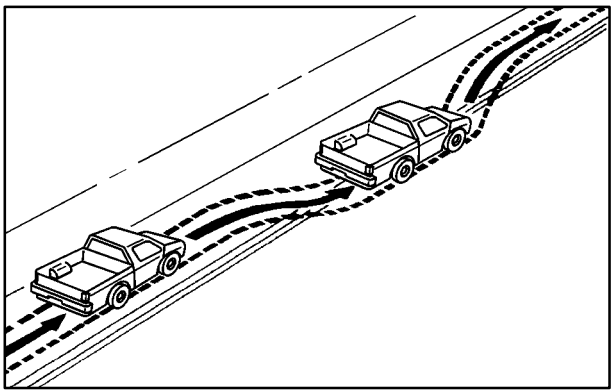


An emergency like this requires close attention and a quick decision. If you are holding the steering wheel at the recommended 9 and 3 o'clock positions, you can turn it a full 180 degrees very quickly without removing either hand. But you have to act fast, steer quickly, and just as quickly straighten 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're driving.



If the level of the shoulder is only slightly below the pavement, recovery should be fairly easy. Ease off the accelerator and then, if there is nothing in the way, steer so that your vehicle straddles the edge of the pavement. You can turn the steering wheel up to one-quarter turn until the right front tire contacts the pavement edge. Then turn your steering wheel to go straight down the roadway.

Passing

The driver of a vehicle about to pass another on a two-lane highway waits for just the right moment, accelerates, moves around the vehicle ahead, then goes back into the right lane again. A simple maneuver?

Not necessarily! Passing another vehicle on a two-lane highway is a potentially dangerous move, since the passing vehicle occupies the same lane as oncoming traffic for several seconds. A miscalculation, an error in judgment, or a brief surrender to frustration or anger can suddenly put the passing driver face to face with the worst of all traffic accidents -- the head-on collision.

So here are some tips for passing:

- "Drive ahead." Look down the road, to the sides and to crossroads for situations that might affect your passing patterns. If you have any doubt whatsoever about making a successful pass, wait for a better time.
- Watch for traffic signs, pavement markings and lines. If you can see a sign up ahead that might indicate a turn or an intersection, delay your pass. A broken center line usually indicates it's 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're awaiting an opportunity. For one thing, following too closely reduces your area of vision, especially if you're following a larger vehicle. Also, you won't 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 don't 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 cars are lined up to pass a slow vehicle, wait your turn. But take care that someone isn't 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 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 inside mirror, activate your right lane change signal and move back into the right lane. (Remember that your right 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.
- Don't 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're 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's review what driving experts say about what happens when the three control systems (brakes, steering and acceleration) don't have enough friction where the tires meet the road to do what the driver has asked.

In any emergency, don't 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 aren't rolling. In the steering or cornering skid, too much speed or steering in a curve causes tires to slip and lose cornering force. And in the acceleration skid, too much throttle causes the driving wheels to spin.

A cornering skid and an acceleration skid are best handled by easing your foot off the accelerator pedal.

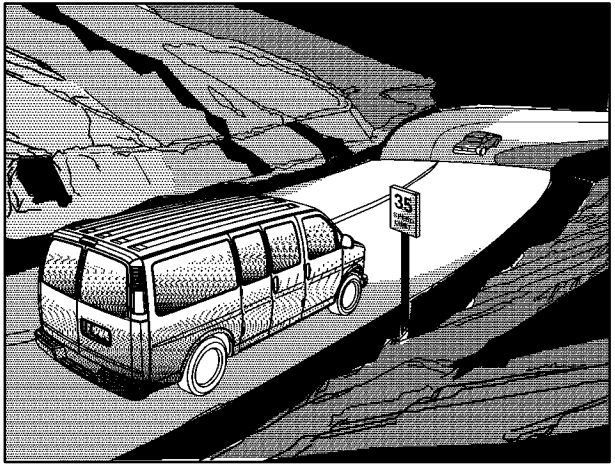
If your vehicle starts to slide, ease your foot off the accelerator pedal and quickly steer the way you want the vehicle to go. If you start steering quickly enough, your vehicle may straighten out. Always be ready for a second skid if it occurs.

Of course, traction is reduced when water, snow, ice, gravel or other material is on the road. For safety, you'll 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 engine braking 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.

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.
- Don’t drink and drive.
- Adjust your inside rearview mirror to reduce the glare from headlamps behind you.
- Since you can’t 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 headlamps can light up only so much road ahead.
- In remote areas, watch for animals.
- If you’re 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.

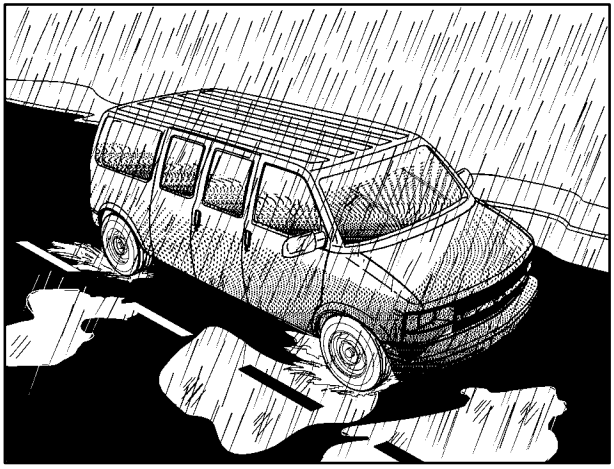
What you do in the daytime can also affect your night vision. For example, if you spend the day in bright sunshine you are wise to wear sunglasses. Your eyes will have less trouble adjusting to night. But if you’re driving, don’t wear sunglasses at night. They may cut down on glare from headlamps, but 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 readjust to the dark. When you are faced with severe glare (as from a driver who doesn’t lower the high beams, or a vehicle with misaimed headlamps), slow down a little. Avoid staring directly into the approaching headlamps.

Keep your 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 your headlamps light up far less of a roadway when you are in a turn or curve. Keep your eyes moving; that way, it’s easier to pick out dimly lighted objects. Just as your 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 aren’t even aware of it.

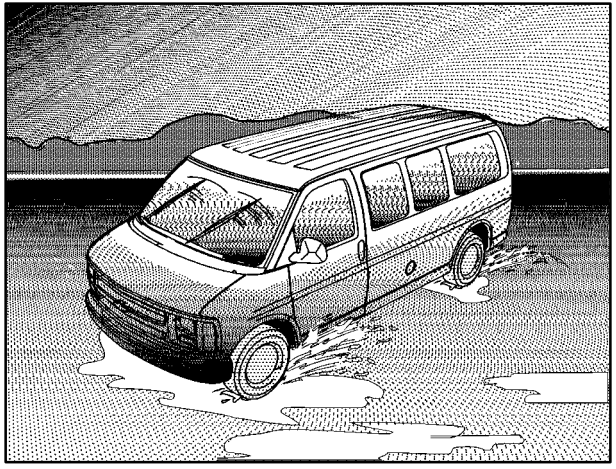
Driving in Rain and on Wet Roads



Rain and wet roads can mean driving trouble. On a wet road, you can't stop, accelerate or turn as well because your tire-to-road traction isn't as good as on dry roads. And, if your tires don't have much tread left, you'll get even less traction. It's always wise to go slower and be cautious if rain starts to fall while you are driving. The surface may get wet suddenly when your reflexes are tuned for driving on dry pavement.

The heavier the rain, the harder it is to see. Even if your windshield wiper blades are in good shape, a heavy rain can make it harder to see road signs and traffic signals, pavement markings, the edge of the road and even people walking.

It's wise to keep your wiping equipment in good shape and keep your windshield washer tank 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.



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 can't, try to slow down before you hit them.

⚠ CAUTION:

Wet brakes can cause accidents. They won't work as well in a quick stop and may cause pulling to one side. You could lose control of the vehicle.

After driving through a large puddle of water or a car wash, apply your brake pedal lightly until your brakes work normally.

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're going fast enough. When your vehicle is hydroplaning, it has little or no contact with the road.

Hydroplaning doesn't 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 isn't a hard and fast rule about hydroplaning. The best advice is to slow down when it is raining.

Driving Through Deep Standing Water

NOTICE:

If you drive too quickly through deep puddles or standing water, water can come in through your engine's air intake and badly damage your engine. Never drive through water that is slightly lower than the underbody of your vehicle. If you can't 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 the other vehicle occupants could drown. Don't ignore police warning signs, and otherwise be very cautious about trying to drive through flowing water.

Some Other Rainy Weather Tips

- Besides slowing down, allow some extra following distance. And be especially careful when you pass another vehicle. Allow yourself more clear room ahead, and be prepared to have your view restricted by road spray.
- Have good tires with proper tread depth. See "Tires" in the Index.

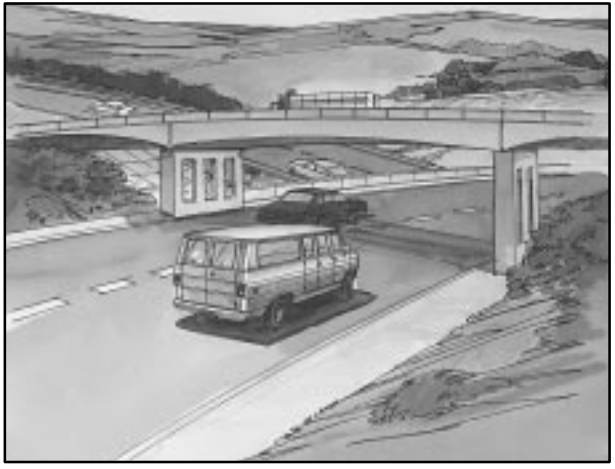
City Driving

One of the biggest problems with city streets is the amount of traffic on them. You'll 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'll save time and energy. See the next part, "Freeway Driving."
- 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's 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 isn't 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're ready. Try to be well rested. If you must start when you're not fresh -- such as after a day's work -- don't 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's ready to go. If it needs service, have it done before starting out. Of course, you'll find experienced and able service experts in GM dealerships all across North America. They'll 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's 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. Don’t 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 mirrors and your instruments frequently.
- If you get sleepy, pull off the road into a rest, service or parking area and take a nap, get some exercise, or both. For safety, treat drowsiness on the highway as an emergency.

Hill and Mountain Roads

Driving on steep hills or mountains is different from driving in flat or rolling terrain.

If you drive regularly in steep country, or if you're planning to visit there, here are some tips that can make your trips safer and more enjoyable.

- Keep your vehicle in good shape. Check all fluid levels and also the brakes, tires, cooling system and transmission. These parts can work hard on mountain roads.
- 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.

⚠ CAUTION:

If you don't shift down, your brakes could get so hot that they wouldn't work well. You would then have poor braking or even none going down a hill. You could crash. Shift down to let your engine assist your brakes on a steep downhill slope.

⚠ CAUTION:

Coasting downhill in NEUTRAL (N) or with the ignition off is dangerous. Your brakes will have to do all the work of slowing down. They could get so hot that they wouldn't work well. You would then have poor braking or even none going down a hill. You could crash. Always have your engine running and your vehicle in gear when you go downhill.

- Know how to go 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. Don't 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:

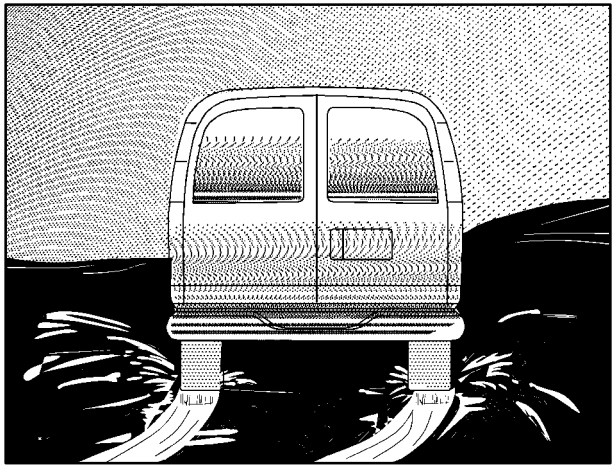
- Have your vehicle in good shape for winter.
- You may want to put winter emergency supplies in your vehicle.

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 your tires meet the road probably have good traction.

However, if there is snow or ice between your tires and the road, you can have a very slippery situation. You'll have a lot less traction or "grip" and will need to be very careful.



What's 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's 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.

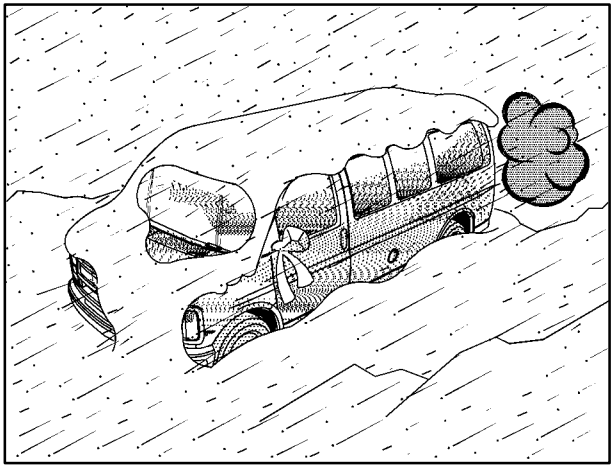
Whatever the condition -- smooth ice, packed, blowing or loose snow -- drive with caution.

Accelerate gently. Try not to break the fragile traction. If you accelerate too fast, the drive wheels will spin and polish the surface under the tires even more.

Your anti-lock brakes improve your vehicle's stability when you make a hard stop on a slippery road. Even though you have an anti-lock braking system, you'll want to begin stopping sooner than you would on dry pavement. See "Anti-Lock" in the Index.

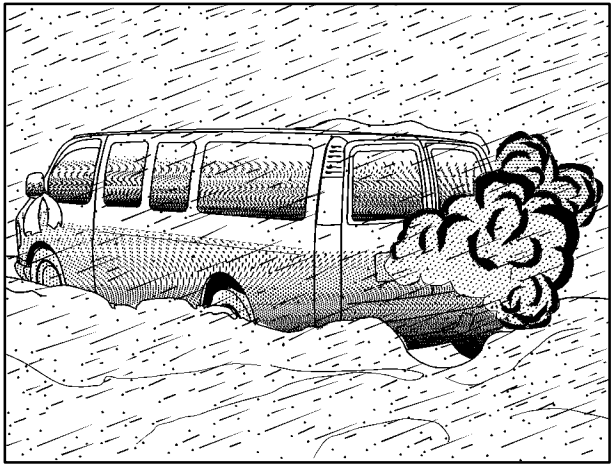
- Allow greater following distance on any slippery road.
- Watch for slippery spots. The road might be fine until you hit a spot that's covered with ice. On an otherwise clear road, ice patches may appear in shaded areas where the sun can't reach: around clumps of trees, behind buildings or under bridges. 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're actually on the ice, and avoid sudden steering maneuvers.

If You're 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've been stopped by the snow.
- Put on extra clothing or wrap a blanket around you. If you have no 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 can't see it or smell it, so you might not know it is in your vehicle. Clear away snow from around the base of your vehicle, especially any that is blocking your exhaust pipe. And check around again from time to time to be sure snow doesn't collect there.

Open a window just a little on the side of the vehicle that's 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 (or batteries) charged. You will need a well-charged battery (or batteries) to restart the vehicle, and possibly for signaling later on with your headlamps. Let the heater run for a while.

If you have a diesel engine, you may have to run it at a higher speed to get enough heat. 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.

Recreational Vehicle Towing

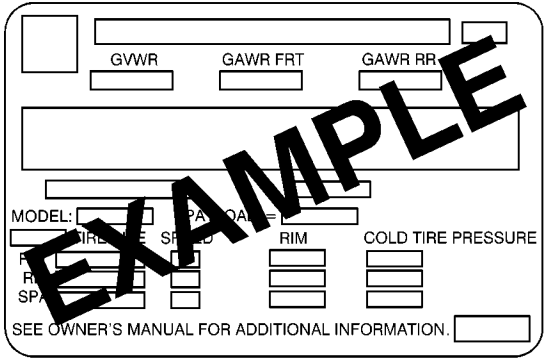
Recreational vehicle towing means towing your vehicle behind another vehicle -- such as behind a motorhome. The two most common types of recreational vehicle towing are known as "dinghy towing" (towing your vehicle with all four wheels on the ground) and "dolly towing" (towing your vehicle with two wheels on the ground and two wheels up on a device known as a "dolly").

Your vehicle was not designed to be towed with any of its wheels on the ground. If your vehicle must be towed, see "Towing Your Vehicle" in the Index.

NOTICE:

Towing your vehicle with all four wheels on the ground will damage the drivetrain components.

Loading Your Vehicle



The Certification/Tire label is found on the rear edge of the driver's door. The label shows the size of your 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.

And, if you do have a heavy load, you should spread it out.

⚠ CAUTION:

Do not load your vehicle any heavier than the GVWR, or either the maximum front or rear 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.

⚠ CAUTION:

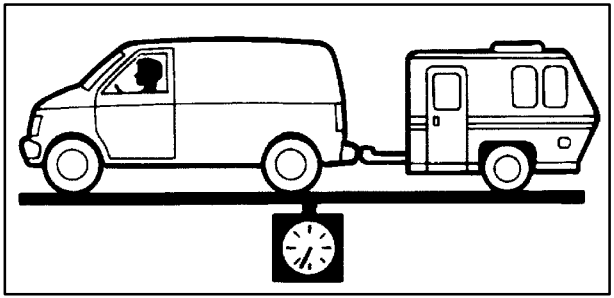
Things you put inside your vehicle can strike and injure people in a sudden stop or turn, or in a crash.

- **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.**
- **Don't leave an unsecured child restraint in your vehicle.**
- **When you carry something inside the vehicle, secure it whenever you can.**
- **Don't leave a seat folded down unless you need to.**

Payload

The Payload Capacity is shown on the Certification/Tire label. This is the maximum load capacity that your vehicle can carry. Be sure to include the weight of the people inside as part of your load. If you added any accessories or equipment after your vehicle left the factory, remember to subtract the weight of these things from the payload. Your dealer can help you with this.

Trailering Package



If your vehicle is equipped with the trailering package, there is also a load rating which includes the weight of the vehicle and the trailer it tows. This rating is called the Gross Combination Weight Rating (GCWR).

When you weigh your trailer, be sure to include the weight of everything you put in it. And, remember to figure the weight of the people inside the vehicle as part of your load.

Your dealer can help you determine your GCWR.

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.

Towing a Trailer

⚠ CAUTION:

If you don't 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. Additional rear axle maintenance is required for a vehicle used to tow a trailer. See "Scheduled Maintenance Services" in the Index.

To identify what the vehicle trailering capacity is for your vehicle, you should read the information in "Weight of the Trailer" that appears later in this section.

If yours was built with trailering options, as many are, it's ready for heavier trailers. But trailering is different than just driving your vehicle by itself. Trailering means changes in handling, durability and fuel economy. Successful, safe trailering takes correct equipment, and it has to be used properly.

That's the reason for this part. In it are many time-tested, important trailering tips and safety rules. Many of these are important for your safety and that of your passengers. So please read this section carefully before you pull a trailer.

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 if your trailer will weigh 4,000 lbs. (1 800 kg) or less. You should always use a sway control if your trailer will weigh more than 4,000 lbs. (1 800 kg). You can ask a hitch dealer about sway controls.
- 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, if necessary, a lower gear selection if the transmission shifts too often (e.g., under heavy loads and/or hilly conditions).

Three important considerations have to do with weight:

- the weight of the trailer,
- the weight of the trailer tongue
- and the weight on your vehicle's tires.

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. And, it can also depend on any special equipment that you have on your vehicle.

The following chart shows how much your trailer can weigh, based upon vehicle model and options.

Model	Engine	Axle Ratio	Max. Trailer Weight (lbs.) (kg)	GCWR (lbs.) (kg)
G1500 (Cargo)	4.3L	3.42	4,600 (2088)	9,500 (4313)
	5.0L	3.42	5,600 (2542)	10,500 (4767)
	5.7L	3.42	6,100 (2769)	11,000 (4994)
G1500 (Passenger)	4.3L	3.42	4,200 (1907)	9,500 (4313)
		3.73	4,700 (2134)	10,000 (4540)
	5.0L	3.42	5,100 (2315)	10,500 (4767)
	5.7L	3.42	5,600 (2542)	11,000 (4994)
		3.73	6,600 (2996)	12,000 (5448)
G2500 (Cargo)	4.3L	3.42	4,300 (1952)	9,500 (4313)
		4.10	5,000 (1816)	10,500 (4767)
	5.0L	3.42	5,200 (2361)	10,500 (4767)
	5.7L	3.42	5,700 (2588)	11,000 (4994)
		3.73	6,400 (2906)	12,000 (5448)
		4.10	7,900 (3587)	13,500 (6129)
	6.5L	3.73	8,500 (3859)	14,500 (6583)
		4.10	8,500 (3859)	14,500 (6583)

Model	Engine	Axle Ratio	Max. Trailer Weight (lbs.) (kg)	GCWR (lbs.) (kg)
G2500 (Passenger)	5.7L	3.73	5,800 (2633)	12,000 (5448)
		4.10	7,300 (3314)	13,500 (6129)
	6.5L	3.73	8,100 (3677)	14,500 (6583)
		4.10	8,100 (3677)	14,500 (6583)
G3500 (Cargo)	5.7L	3.73	6,300 (2860)	12,000 (5448)
		4.10	7,800 (3541)	13,500 (6129)
	6.5L	3.73	8,400 (3814)	14,500 (6583)
		4.10	8,400 (3814)	14,500 (6583)
	8.1L	3.42	7,500 (3405)	13,500 (6129)
		3.73	9,000 (4086)	15,000 (6810)
		4.10	10,000 (4540)	17,000 (7718)
G3500 (Passenger)	5.7L	3.73	5,600 (2542)	12,000 (5448)
		4.10	7,100 (3223)	13,500 (6129)
	6.5L	3.73	7,800 (3541)	14,500 (6583)
		4.10	7,800 (3541)	14,500 (6583)
	8.1L	3.42	6,800 (3087)	13,500 (6129)
		3.73	8,300 (3768)	15,000 (6810)
		4.10	10,000 (4540)	17,000 (7718)

Maximum trailer weight is calculated assuming the driver and one passenger are in the towing vehicle and it has all the required trailering equipment. The weight of additional equipment, passengers and cargo in the towing vehicle must be subtracted from the above maximum trailer weights.

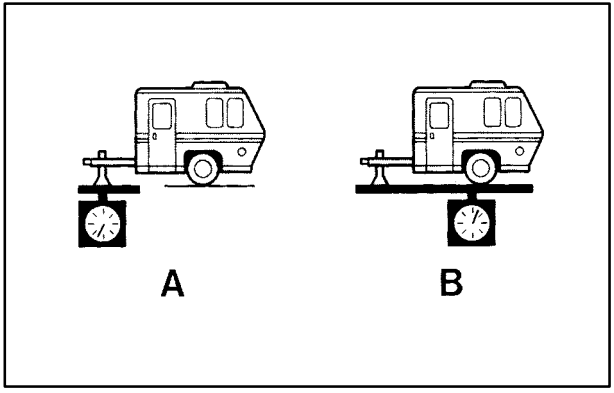
You can ask your dealer for our trailering information or advice, or you can write us at the address listed in your Warranty and Owner Assistance Information Booklet.

In Canada, write to:

General Motors of Canada Limited
Customer Communication Centre, 163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7

Weight of the Trailer Tongue

The tongue load (A) of any trailer is an important weight to measure because it affects the total or gross weight of your vehicle. The Gross Vehicle Weight (GVW) includes the curb weight of the vehicle, any cargo you may carry in it, and the people who will be riding in the vehicle. And if you 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” in the Index for more information about your vehicle’s maximum load capacity.



If you’re using a weight-carrying or a weight-distributing hitch, the trailer tongue weight (A) should be 10 percent to 15 percent of the total loaded trailer weight (B). Do not exceed the maximum allowable tongue weight for your vehicle.

After you’ve loaded your trailer, weigh the trailer and then the tongue, separately, to see if the weights are proper. If they aren’t, you may be able to get them right simply by moving some items around in the trailer.

Total Weight on Your Vehicle's Tires

Be sure your vehicle's tires are inflated to the upper limit for cold tires. You'll find these numbers on the Certification label at the rear edge of the driver's door or see "Loading Your Vehicle" in the Index. Then be sure you don't go over the GVW limit for your vehicle, including the weight of the trailer tongue.

Hitches

It's important to have the correct hitch equipment. Crosswinds, large trucks going by and rough roads are a few reasons why you'll need the right hitch. Here are some rules to follow:

- The bumpers on your vehicle are not intended for hitches. Do not attach rental hitches or other bumper-type hitches to them. Use only a frame-mounted hitch that does not attach to the bumper. Do not use a ball hitch, because it could pull the bumper loose.
- If you'll be pulling a trailer that, when loaded, will weigh more than 4,000 lbs. (1 800 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 you're driving.
- Will you have to make any holes in the body of your vehicle when you install a trailer hitch?

  If you're using the wiring provided by the factory-installed hitch, you should not need to make any holes in the body of your vehicle. However, if you have an aftermarket hitch installed, you may need to make holes in the body.

  If you do, then be sure to seal the holes later when you remove the hitch. If you don't seal them, deadly carbon monoxide (CO) from your exhaust can get into your vehicle. See "Carbon Monoxide" in the Index. Dirt and water can, too.

Safety Chains

You should always attach chains between your vehicle and your trailer. Cross the safety chains under the tongue of the trailer 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. Follow the manufacturer's recommendation for attaching safety chains and do not attach them to the bumper. Always leave just enough slack so you can turn with your rig. Never allow safety chains to drag on the ground.

Trailer Brakes

If your trailer weighs more than 1,000 lbs. (450 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.

Your trailer brake system can tap into your vehicle's hydraulic brake system, except:

- Don't tap into your vehicle's brake system if the trailer's brake system will use more than 0.02 cubic inch (0.3 cc) of fluid from your vehicle's master cylinder. If it does, both braking systems won't work well. You could even lose your brakes.
- Will the trailer parts take 3,000 psi (20 650 kPa) of pressure? If not, the trailer brake system must not be used with your vehicle.
- If everything checks out this far, then make the brake fluid tap at the port on the master cylinder that sends fluid to the rear brakes. But don't use copper tubing for this. If you do, it will bend and finally break off. Use double-walled steel tubing.

Driving with a Trailer

⚠ 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 can't see or smell CO. It can cause unconsciousness or death. See "Engine Exhaust" in the Index.
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.**
- **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 MAX A/C because it only recirculates the air inside your vehicle. See "Comfort Controls" in the Index.**

Towing a trailer requires a certain amount of experience. Before setting out for the open road, you'll want to get to know your rig. Acquaint yourself with the feel of handling and braking with the added weight of the trailer. And always keep in mind that the vehicle you are driving is now a good deal longer and not nearly as responsive as your vehicle is by itself.

Before you start, check the trailer hitch and platform (and attachments), safety chains, electrical connector, lamps, tires and mirror adjustment. If the trailer has electric brakes, start your vehicle and trailer moving and then apply the trailer brake controller by hand to be sure the brakes are working. This lets you check your electrical connection at the same time.

During your trip, check occasionally to be sure that the load is secure, and that the lamps and any trailer brakes are still working.

Following Distance

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

Passing

You'll need more passing distance up ahead when you're towing a trailer. And, because you're a good deal longer, you'll need to go much farther beyond the passed vehicle before you can return to your lane.

Backing Up

Hold the bottom of the steering wheel with one hand. Then, to move the trailer to the left, just move that hand to the left. To move the trailer to the right, move your hand to the right. Always back up slowly and, if possible, have someone guide you.

Making Turns

NOTICE:

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

When you're turning with a trailer, make wider turns than normal. Do this so your trailer won't strike soft shoulders, curbs, road signs, trees or other objects. Avoid jerky or sudden maneuvers. Signal well in advance.

Turn Signals When Towing a Trailer

When you tow a trailer, your vehicle has to have extra wiring and a heavy-duty turn signal flasher (included in the optional trailering package).

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.

When towing at high altitude on steep uphill grades, consider the following: Engine coolant will boil at a lower temperature than at normal altitudes. If you turn your engine off immediately after towing at high altitude 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 automatic transmission in PARK (P) for a few minutes before turning the engine off. If you do get the overheat warning, see "Engine Overheating" in the Index.

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. Then turn your wheels into the curb if facing downhill or into traffic if facing uphill.
2. Have someone place chocks under the trailer wheels.
3. When the wheel chocks are in place, release the regular brakes until the chocks absorb the load.
4. Reapply the regular brakes. Then apply your parking brake and then shift to PARK (P).
5. Release the regular brakes.

When You Are Ready to Leave After Parking on a Hill

1. Apply your regular brakes and hold the pedal down while you:
   - start your engine,
   - shift into a gear, and
   - release the parking brake.
2. Let up on the brake pedal.
3. Drive slowly until the trailer is clear of the chocks.
4. Stop and have someone pick up and store the chocks.

Maintenance When Trailer Towing

Your vehicle will need service more often when you're pulling a trailer. See the Maintenance Schedule for more on this. Things that are especially important in trailer operation are automatic 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

The optional heavy-duty trailer wiring package is a seven-wire harness assembly. The four-wire portion of the harness assembly is stored under the vehicle, along the driver's side rear corner of the frame rail. The three-wire portion of the harness assembly is stored in a frame pocket under the rear of the vehicle, on the driver's side. The heavy-duty trailer wiring harness has a 30-amp feed wire. Both harnesses come without connectors and should be wired by a qualified electrical technician. The technician can use the following color code chart when connecting the wiring harness to your trailer.

Four-Wire Harness

- Light Green: Back-up lamps
- Brown: Parking lamps
- Yellow: Left stoplamp and turn signal
- Dark Green: Right stoplamp and turn signal

Three-Wire Harness

- Dark Blue: Use for electric trailer brakes (seven-wire harness only)
- Orange: Trailer accessory (seven-wire harness only)
- White (heavy gage): Ground wire

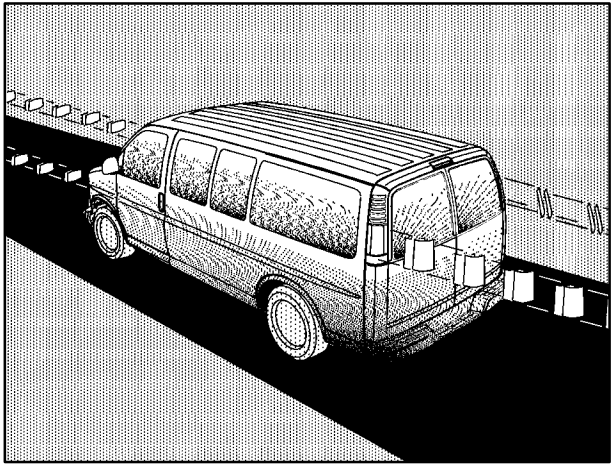
Securely attach the harness to the trailer, then tape or strap it to your vehicle's frame rail. Be sure you leave it loose enough so the wiring doesn't bend or break, but not so loose that it drags on the ground. Store the harness in its original place. Wrap the harness together and tie it neatly so it won't be damaged.

Section 5 Problems on the Road

Here you'll find what to do about some problems that can occur on the road.

5-2 Hazard Warning Flashers
5-2 Other Warning Devices
5-3 Jump Starting
5-9 Towing Your Vehicle
5-10 Engine Overheating (Gasoline Engine)
5-12 Cooling System (Gasoline Engine)
5-20 Engine Fan Noise
5-20 If a Tire Goes Flat
5-21 Changing a Flat Tire
5-36 If You're Stuck: In Sand, Mud, Ice or Snow

Hazard Warning Flashers



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

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

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

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

When the hazard warning flashers are on, your turn signals won't work.

Other Warning Devices

If you carry reflective triangles, you can use them to warn others. Set one up at the side of the road about 300 feet (100 m) behind your vehicle.

Jump Starting

If your battery has run down, you may want to use another vehicle and some jumper cables to start your vehicle. Be sure to follow the steps below 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 don't 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 wouldn't be covered by your warranty.

The ACDelco® battery in your vehicle has a built-in hydrometer. Do not charge, test or jump start the battery if the hydrometer looks clear or light yellow. Replace the battery when there is a clear or light yellow hydrometer and a cranking complaint.

Trying to start your vehicle by pushing or pulling it won't 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 system isn't a 12-volt system with a negative ground, both vehicles can be damaged.

If you have a vehicle with a diesel engine with two batteries (or more) 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's closer to the starter -- this will reduce electrical resistance.

2. Get the vehicles close enough so the jumper cables can reach, but be sure the vehicles aren't touching each other. If they are, it could cause a ground connection you don't want. You wouldn't be able to start your vehicle, and the bad grounding could damage the electrical systems.

   To avoid the possibility of the vehicles rolling, set the parking brake firmly on both vehicles involved in the jump start procedure. Put an automatic transmission in PARK (P) or a manual transmission in NEUTRAL before setting the parking brake.

NOTICE:

If you leave your radio on, it could be badly damaged. The repairs would not be covered by your warranty.

3. Turn off the ignition on both vehicles. Unplug unnecessary accessories plugged into the cigarette lighter or in the accessory power outlet. Turn off the radio and all lamps that aren't needed. This will avoid sparks and help save both batteries. And it could save your radio!

4. Open the hoods and locate the batteries. Find the positive (+) and negative (-) terminal locations on each vehicle. You should always use the remote negative (-) jump starting terminal provided instead of any other engine or body part for the ground connection.

⚠ 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 don't need to add water to the ACDelco® battery installed in every new GM vehicle. But if a battery has filler caps, be sure the right amount of fluid is there. If it is low, add water to take care of that first. If you don't, explosive gas could be present.

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

⚠ CAUTION:

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

5. Check that the jumper cables don't 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.

   Don't connect positive (+) to negative (-) or you will get a short that would damage the battery and maybe other parts, too. And don't connect the negative (-) cable to the negative (-) terminal on the dead battery because this can cause sparks.

6. Connect the red positive (+) cable to the positive (+) terminal of the dead battery. Use a remote positive (+) terminal if the vehicle has one.

7. Don’t let the other end touch metal. Connect it to the positive (+) terminal of the good battery. Use a remote positive (+) terminal if the vehicle has one.

8. Now connect the black negative (-) cable to the negative (-) terminal of the good battery. Use a remote negative (-) terminal if the vehicle has one.

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

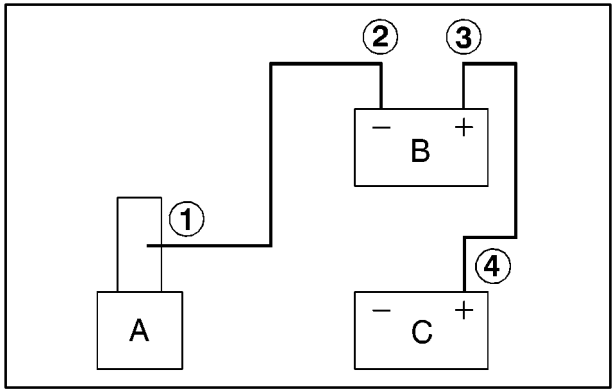
9. Connect the other end of the negative (-) cable to the remote negative (-) jump starting terminal. Remove the cap before using it.

10. Now start the vehicle with the good battery and run the engine for a while.

11. Try to start the vehicle with the dead battery. If it won't start after a few tries, it probably needs service.

NOTICE:

Damage to your vehicle may result from electrical shorting if jumper cables are removed incorrectly. To prevent electrical shorting, take care that they don't touch each other or any other metal. The repairs wouldn't be covered by your warranty.



Jumper Cable Removal

A. Heavy, Unpainted Metal Engine Part or Remote Negative (-) Terminal

B. Good Battery or Remote Positive (+) and Remote Negative (-) Terminals

C. Dead Battery or Remote Positive (+) Terminal

To disconnect the jumper cables from both vehicles, do the following:

1. Disconnect the black negative (-) cable from the vehicle that had the dead battery.
2. Disconnect the black negative (-) cable from the vehicle with the good battery.
3. Disconnect the red positive (+) cable from the vehicle with the good battery.
4. Disconnect the red positive (+) cable from the other vehicle.
5. Return the remote negative (-) cap to the original position.

Towing Your Vehicle

Consult your dealer or a professional towing service if you need to have your disabled vehicle towed. See “Roadside Assistance” in the Index. If you want to tow your vehicle behind another vehicle for recreational purposes (such as behind a motorhome), see “Recreational Vehicle Towing” in the Index.

Engine Overheating (Gasoline Engine)

You will find a coolant temperature gage on your vehicle's instrument panel. If you have a diesel engine, you will also find a low coolant light on your instrument panel.

If your vehicle has a diesel engine, see "Engine Overheating" in the Diesel Engine Supplement.

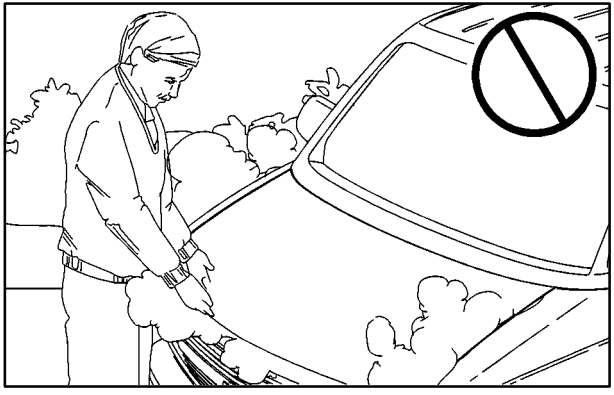
Overheated Engine Protection Operating Mode (8.1L V8 Engine Only)

If an overheated engine condition exists and the REDUCED ENGINE POWER light 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 and change the oil. See "Engine Oil" in the Index.

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. Just turn it off and get everyone away from the vehicle until it cools down. Wait until there is no sign of steam or coolant before you open the hood.

If you keep driving when your engine is overheated, the liquids in it can catch fire. You or others could be badly burned. Stop your engine if it overheats, and get out of the vehicle until the engine is cool. See "Overheated Engine Protection Operating Mode" in the Index.

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" in the Index.

If No Steam Is Coming From Your Engine

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 "Driving on Grades" in the Index.

If you get the overheat warning with no sign of steam, try this for a minute or so:

1. If you have an air conditioner and it's on, turn it off.
2. Turn on your heater to full hot at the highest fan speed and open the window as necessary.
3. If you're in a traffic jam, 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 doesn't come back on, you can drive normally.

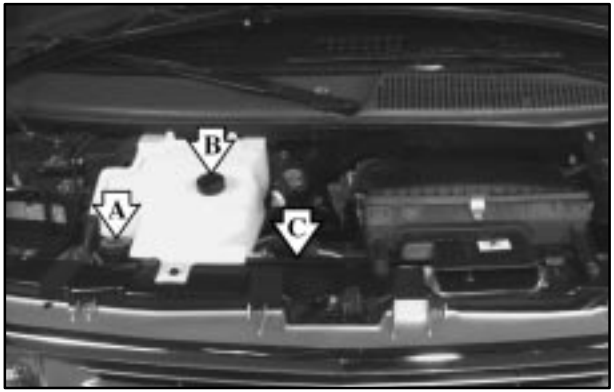
If the warning continues, pull over, stop, and park your vehicle right away.

If there's still no sign of steam, push down the accelerator until the engine speed is about twice as fast as normal idle speed for at least three minutes while you're 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" listed previously in this section.

You may decide not to lift the hood but to get service help right away.

Cooling System (Gasoline Engine)

When you decide it's safe to lift the hood, here's what you'll see:



A. Radiator Pressure Cap

B. Coolant Recovery Tank

C. Engine Cooling Fan(s)

If the coolant inside the coolant recovery tank is boiling, don't do anything else until it cools down.

When the engine is cold, the coolant level should be at or above the FULL COLD mark. If it isn't, 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. Don't touch them. If you do, you can be burned.

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

If there seems to be no leak, start the engine again. See if the engine cooling fan speed increases when idle speed is doubled by pushing the accelerator pedal down. If it doesn't, your vehicle needs service. Turn off the engine.

NOTICE:

Engine damage from running your engine without coolant isn't covered by your warranty. See "Overheated Engine Protection Operating Mode" in the Index.

NOTICE:

When adding coolant, it is important that you use only DEX-COOL® (silicate-free) coolant.

If coolant other than DEX-COOL is added to the system, premature engine, heater core or radiator corrosion may result. In addition, the engine coolant will require change sooner -- at 30,000 miles (50 000 km) or 24 months, whichever occurs first. Damage caused by the use of coolant other than DEX-COOL® is not covered by your new vehicle warranty.

If there seems to be no leak, start the engine again. See if the engine cooling fan speed increases when idle speed is doubled by pushing the accelerator pedal down. If it doesn't, your vehicle needs service. Turn off the engine.

How to Add Coolant to the Coolant Recovery Tank

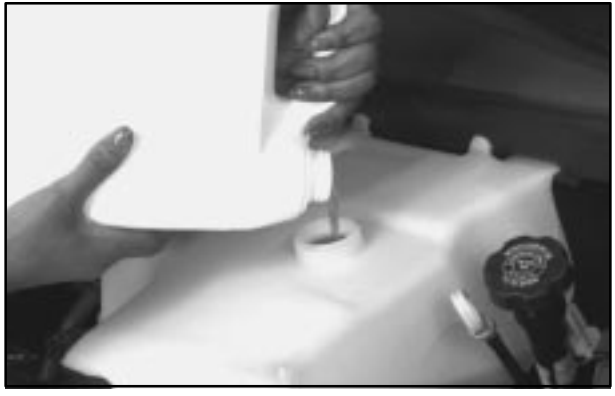
If you haven't found a problem yet, but the coolant level isn't at the FULL COLD mark, add a 50/50 mixture of *clean, drinkable water* and DEX-COOL® engine coolant at the coolant recovery tank. See "Engine Coolant" in the Index for more information.

⚠ 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 wouldn't 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:

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:

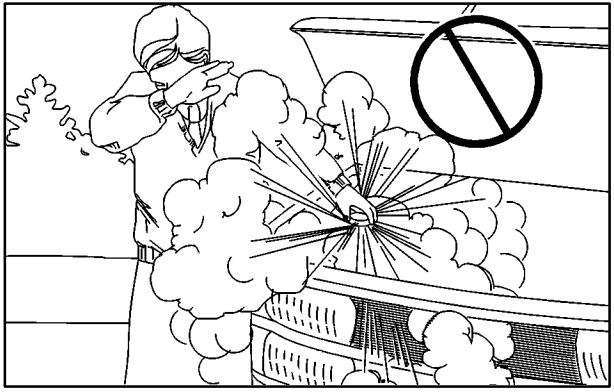
You can be burned if you spill coolant on hot engine parts. Coolant contains ethylene glycol and it will burn if the engine parts are hot enough. Don't spill coolant on a hot engine.

When the coolant in the coolant recovery tank is at the FULL COLD mark, start your vehicle.

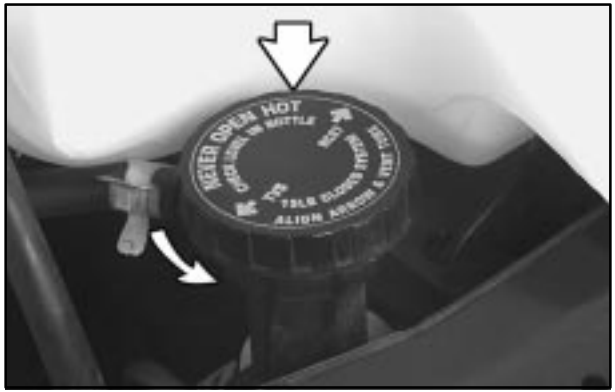
If the overheat warning continues, there's one more thing you can try. You can add the proper coolant mixture directly to the radiator, but be sure the cooling system is cool before you do it.

⚠ CAUTION:

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



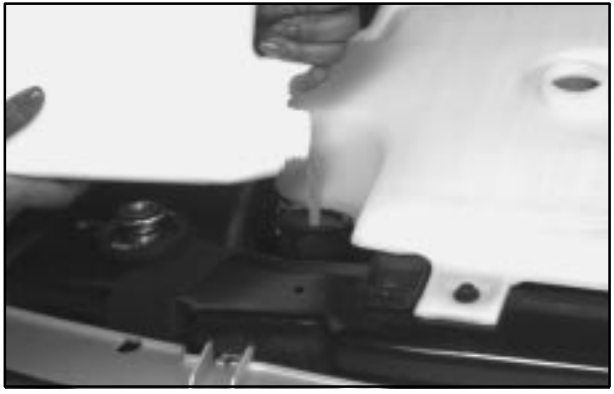
How to Add Coolant to the Radiator

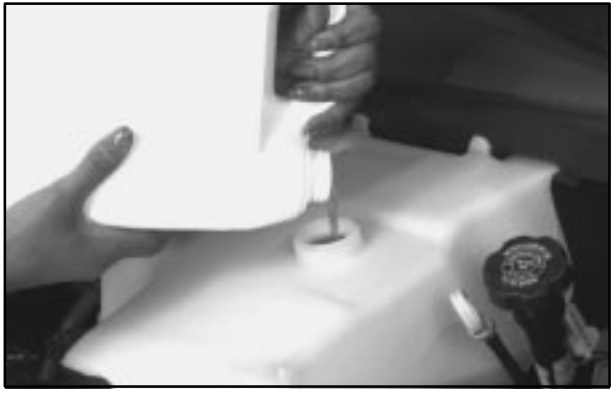


1. You can remove the radiator pressure cap when the cooling system, including the radiator pressure cap and upper radiator hose, is no longer hot. Turn the pressure cap slowly counterclockwise until it first stops. (Don't press down while turning the pressure cap.)

   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, but now push down as you turn it. Remove the pressure cap.





3. Fill the radiator with the proper DEX-COOL® coolant mixture, up to the base of the filler neck. See “Engine Coolant” in the Index for more information about the proper coolant mixture.
4. Then fill the coolant recovery tank to the FULL COLD mark.
5. Put the cap back on the coolant recovery tank, but leave the radiator pressure cap off.

6. Start the engine and let it run until you can feel the upper radiator hose getting hot. Watch out for the engine cooling fan.
7. By this time, the coolant level inside the radiator filler neck may be lower. If the level is lower, add more of the proper DEX-COOL® coolant mixture through the filler neck until the level reaches the base of the filler neck.
8. Then replace the pressure cap. At any time during this procedure if coolant begins to flow out of the filler neck, reinstall the pressure cap. Be sure the arrows on the pressure cap line up like this.

Engine Fan Noise

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 partially disengages.

You may also hear this fan noise when you start the engine. It will go away as the fan clutch partially disengages.

If a Tire Goes Flat

It's unusual for a tire to "blow out" while you're driving, especially if you maintain your tires properly. If air goes out of a tire, it's 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'd 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.

If a tire goes flat, the next part shows how to use your jacking equipment to change a flat tire safely.

Changing a Flat Tire

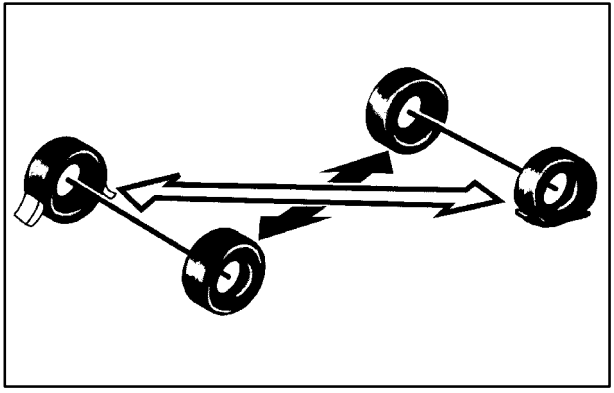
If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place. Turn on your hazard warning flashers.

⚠ CAUTION:

Changing a tire can cause an injury. The vehicle can slip off the jack and roll over you or other people. You and they could be badly injured. Find a level place to change your tire. To help prevent the vehicle from moving:

1. **Set the parking brake firmly.**
2. **Put the shift lever in PARK (P).**
3. **Turn off the engine.**

To be even more certain the vehicle won't move, you can 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 of the vehicle, at the opposite end.



The following steps will tell you how to use the jack and change a tire.

Removing the Spare Tire and Tools

Your spare tire is stored underneath the rear of your vehicle. You will use the ratchet and extension to lower the spare tire.

A flat rear tire reduces clearance to remove the spare tire. If there is less than 12 inches (30.48 cm) between the ground and the rear bumper or any trailer hitch, jack up the vehicle until the flat tire is off the ground. (See “Removing the Flat Tire” and “Installing the Spare Tire,” in the Index.

Unless your vehicle has a flat rear tire, do not remove or restore a tire from/to a storage position under the vehicle while the vehicle is supported by a jack. Always tighten the tire fully against the underside of the vehicle when restoring.

If you have a vehicle which was completed from a cab and chassis, refer to the information from the body supplier/installer.

The spare tire is a full-size tire, like the other tires on your vehicle.

For cargo vans, and all passenger vans except those with the 15-passenger seating arrangement, the jack is secured in the rear passenger side corner of the vehicle.

Remove the retaining wing bolt and lift it off the mounting bracket. Set the jack and jacking equipment near the flat tire.

For vans with the 15-passenger seating arrangement, the jack is secured on the rear passenger side floor of the vehicle.

Remove the retaining wing bolt and lift it out of the mounting bracket. Set the jack and jacking equipment near the flat tire.

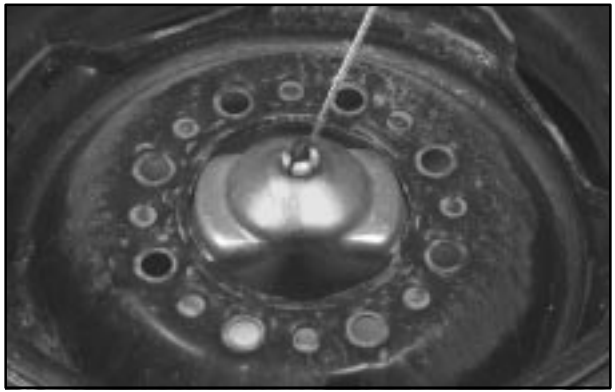
The ratchet has a DOWN side and an UP side.

Attach the ratchet, with the DOWN side facing you, to the extension. The extension has a socket end and a flat chisel end.

Put the flat end of the extension on an angle through the hole in the rear door frame, above the bumper. Be sure the flat end connects into the hoist shaft.

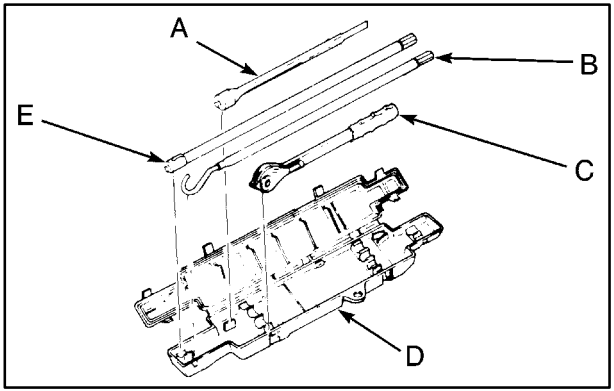
Turn the ratchet counterclockwise to lower the spare tire to the ground. If you are changing a flat rear tire and the vehicle is already jacked up, use the jack handle and extension to hook the cable. Then pull the spare from beneath the vehicle. If the retainer pulls out, hook the inside of the wheel and pull the spare tire out from under the vehicle.

When the tire has been lowered, tilt the retainer at the end of the cable and pull it through the wheel opening.



NOTICE:

To help avoid vehicle damage, do not drive the vehicle before the cable is restored.



Jacking Tool Storage

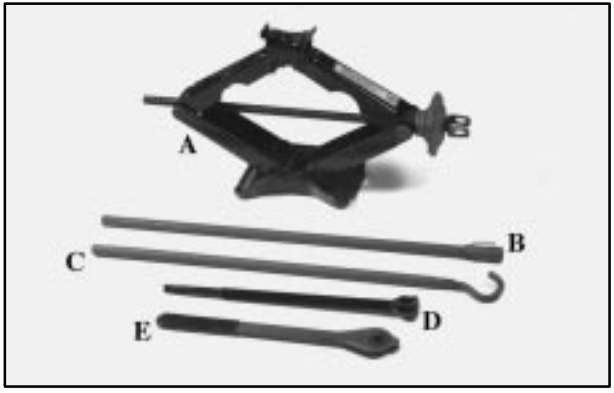
A. Socket

B. Jack Handle

C. Ratchet

D. Jacking Tool Storage Box

E. Jack Handle Extension



The tools you'll be using include the jack (A), jack handle extension (B), jack handle (C), socket (D) and the ratchet (E).

Removing the Wheel Covers and Locking Wheel Nuts

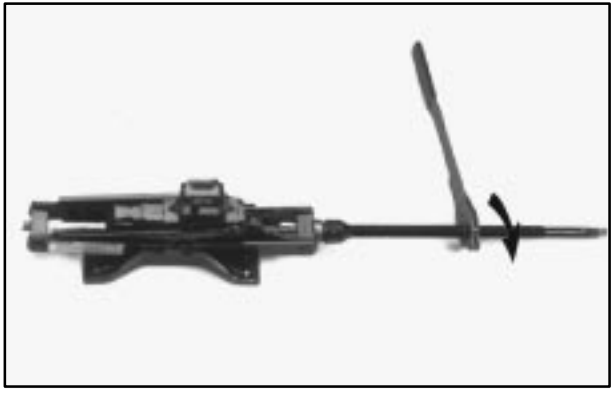
1. You will need to take off the wheel nut caps to reach your wheel nuts. When using the ratchet and socket, make sure the DOWN side faces you.

2. Loosen the plastic nut caps.

3. Remove the center cap.

Removing the Flat Tire and Installing the Spare Tire

1. With the DOWN side facing you, use the ratchet and socket to loosen all the wheel nuts. Don't remove them yet.



2. The jack has a bolt on the end. Attach the socket end of the extension to the jack bolt.

   Attach the ratchet to the extension with the UP side facing you.

3. Turn the ratchet clockwise. That will raise the jack lift head a little.

Front Position

Rear Position

4. Position jack under the vehicle as shown.

⚠ CAUTION:

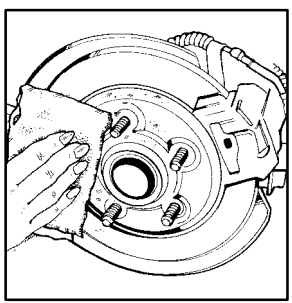
Getting under a vehicle when it is jacked up is dangerous. If the vehicle slips off the jack, you could be badly injured or killed. Never get under a vehicle when it is supported only by a jack.

⚠ 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.

5. Raise the vehicle by turning the ratchet clockwise. Make sure the UP mark faces you. Raise the vehicle far enough off the ground so there is enough room for the spare tire to fit.

6. Remove all the wheel nuts, and take off the flat tire.



7. Remove any rust or dirt from the wheel bolts, mounting surfaces and spare wheel.

⚠ CAUTION:

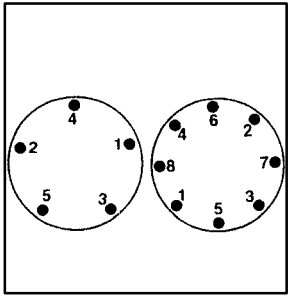
Rust or dirt on the wheel, or on the parts to which it is fastened, can make the wheel nuts become loose after a time. The wheel could come off and cause an accident. When you change a wheel, remove any rust or dirt from the places where the wheel attaches to the vehicle. In an emergency, you can use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

⚠ CAUTION:

Never use oil or grease on studs or nuts. If you do, the nuts might come loose. Your wheel could fall off, causing a serious accident.

8. Put the wheel nuts back on with the rounded end of the nuts toward the wheel. Tighten each wheel nut by hand until the wheel is held against the hub.

9. Lower the vehicle by turning the jack handle counterclockwise. Lower the jack completely.



10. Tighten the nuts firmly in a crisscross sequence as shown. Turn the wheel wrench clockwise.

⚠ CAUTION:

Incorrect wheel nuts or improperly tightened wheel nuts can cause the wheel to become 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 140 lb-ft (190 N·m).

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.

11. Put the wheel cover back on, or put the center cap and plastic wheel nut caps back on. Remove any wheel blocks.

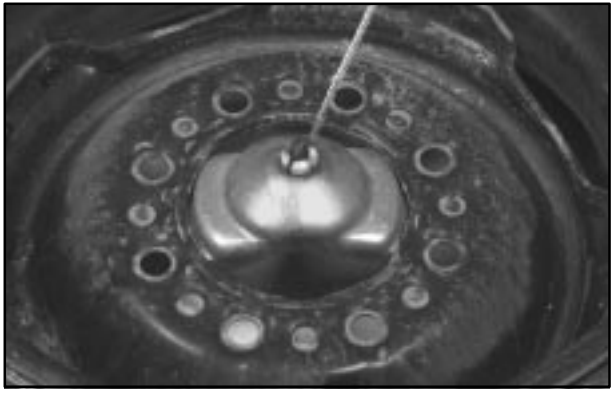
Remember that the jack, jacking equipment and tire must be properly stored in their original storage position before you begin driving again. The next part will show you how.

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.

1. Put the tire on the ground at the rear of the vehicle with the valve stem pointed down.

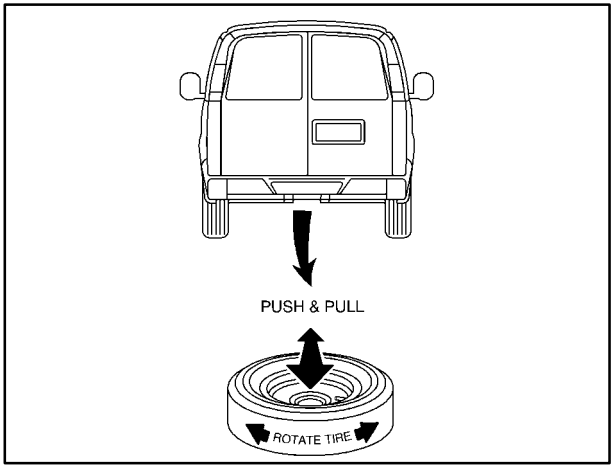


2. Pull the retaining bar through the center of the wheel, making sure it is properly attached.

3. Pull the wheel toward the rear of the vehicle, keeping the cable tight.

4. Attach the ratchet, with the UP side facing you, to the extension.

5. Put the flat end of the extension on an angle through the hole in the rear door frame, above the bumper.
6. Raise the tire fully against the underside of the vehicle. Continue turning the ratchet/wheel wrench until the tire is secure and the cable is tight. The spare tire hoist cannot be overtightened.



7. Make sure the tire is stored securely. Push, pull, and then try to rotate or turn the tire. If the tire moves, use the ratchet/wheel wrench to tighten the cable.

You will hear two “clicks” when the tire is up all the way.

Return the jacking equipment to the proper location. Secure the items and replace the jack cover.

If You're Stuck: In Sand, Mud, Ice or Snow

In order to free your vehicle when it is stuck, you will need to spin the wheels, but you don't want to spin your wheels too fast. The method known as "rocking" can help you get out when you're stuck, but you must use caution.

⚠ CAUTION:

If you let your 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're stuck, spin the wheels as little as possible. Don't spin the wheels above 35 mph (55 km/h) as shown on the speedometer.

NOTICE:

Spinning your wheels can destroy parts of your vehicle as well as the tires. If you spin the wheels too fast while shifting your transmission back and forth, you can destroy your transmission.

For information about using tire chains on your vehicle, see "Tire Chains" in the Index.

Rocking Your Vehicle To Get It Out

First, turn your steering wheel left and right. That will clear the area around your front wheels. 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 your wheels in the forward and reverse directions, you will cause a rocking motion that may free your vehicle. If that doesn't get you out after a few tries, you may need to be towed out. If you do need to be towed out, see "Towing Your Vehicle" in the Index.

Section 6 Service and Appearance Care

Here you will find information about the care of your vehicle. This section begins with service and fuel information, and then it shows how to check important fluid and lubricant levels. There is also technical information about your vehicle, and a part devoted to its appearance care.

6-2 Service
6-3 Fuel (Gasoline Engine)
6-5 Fuels in Foreign Countries (Gasoline Engines)
6-5 Filling Your Tank (Gasoline Engine)
6-7 Filling a Portable Fuel Container
6-8 Checking Things Under the Hood
6-11 Noise Control System
6-12 Engine Oil (Gasoline Engine)
6-17 Engine Air Cleaner/Filter (Gasoline Engines)
6-19 Automatic Transmission Fluid
6-23 Rear Axle
6-23 Engine Coolant
6-27 Radiator Pressure Cap
6-27 Power Steering Fluid
6-28 Windshield Washer Fluid
6-29 Brakes
6-33 Battery
6-34 Bulb Replacement
6-41 Windshield Wiper Blade Replacement
6-42 Tires
6-52 Appearance Care
6-52 Cleaning the Inside of Your Vehicle
6-56 Cleaning the Outside of Your Vehicle
6-57 Cleaning Aluminum Wheels (If Equipped)
6-58 Cleaning Tires
6-58 Sheet Metal Damage
6-58 Finish Damage
6-60 GM Vehicle Care/Appearance Materials
6-61 Vehicle Identification Number (VIN)
6-62 Electrical System
6-68 Replacement Bulbs
6-69 Capacities and Specifications
6-72 Normal Maintenance Replacement Parts

Service

Your dealer knows your vehicle best and wants you to be happy with it. We hope you'll go to your dealer for all your service needs. You'll get genuine GM parts and GM-trained and supported service people.

We hope you'll want to keep your GM vehicle all GM. Genuine GM parts have one of these marks:

Doing Your Own Service Work

If you want to do some of your own service work, you'll want to use the proper service manual. It tells you much more about how to service your vehicle than this manual can. To order the proper service manual, see "Service and Owner Publications" in the Index.

Your vehicle may have an air bag system. If it does, see "Servicing Your Air Bag-Equipped Vehicle" in the Index before attempting to do your own service work.

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" in the Index.

⚠ 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.**
- **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.**

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 (Gasoline Engine)

If your vehicle has a diesel engine, see "Diesel Fuel Requirements and Fuel System" in the Diesel Engine Supplement. For vehicles with gasoline engines, please read this.

Gasoline Octane

Use regular unleaded gasoline with a posted octane of 87 or higher. If the octane is less than 87, you may get a heavy knocking noise when you drive. If it is bad enough, it can damage your engine. A little pinging noise when you accelerate or drive uphill is considered normal. This does not indicate a problem exists or that a higher-octane fuel is necessary.

Gasoline Specifications

It is recommended that gasoline meet specifications which were developed by the American Automobile Manufacturers Association and endorsed by the Canadian Vehicle Manufacturers' Association for better vehicle performance and engine protection. Gasolines meeting these specifications could provide improved driveability and emission control system performance compared to other gasolines.

In Canada, look for the “Auto Makers’ Choice” label on the pump.

Canada Only

California Fuel

If your vehicle is certified to meet California Emission Standards (see the underhood emission control label), it is designed to operate on fuels that meet California specifications. 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 (see “Malfunction Indicator Lamp” in the Index) and your vehicle may fail a smog-check test. 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

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 does not recommend the use of such gasolines. Fuels containing MMT can reduce the life of spark plugs and the performance of the emission control system may be affected. The malfunction indicator lamp may turn on. If this occurs, return to your authorized GM dealer for service.

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. You should not have to add anything to your fuel. Gasolines containing oxygenates, such as ethers and ethanol, and reformulated gasolines may be available in your area to contribute to clean air. General Motors recommends that you use these gasolines, particularly if they comply with the specifications described earlier.

NOTICE:

Your vehicle was not designed for fuel that contains methanol. Don't use fuel containing methanol. It can corrode metal parts in your fuel system and also damage plastic and rubber parts. That damage wouldn't be covered under your warranty.

Fuels in Foreign Countries (Gasoline Engines)

If you plan on driving in another country outside the United States or Canada, the proper fuel may be hard to find. Never use leaded gasoline or any other fuel not recommended in the previous text on fuel. Costly repairs caused by use of improper fuel wouldn't be covered by your warranty.

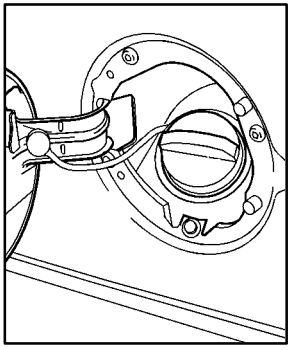
To check on fuel availability, ask an auto club, or contact a major oil company that does business in the country where you'll be driving.

Filling Your Tank (Gasoline Engine)

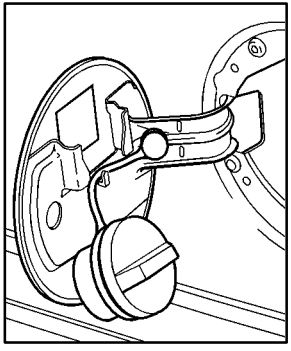
⚠ CAUTION:

Gasoline vapor is highly flammable. It burns violently, and that can cause very bad injuries. Don't smoke if you're near gasoline or refueling your vehicle. Keep sparks, flames and smoking materials away from gasoline.

If your vehicle has a diesel engine, see "Filling Your Tank (Diesel Engine)" in the Diesel Engine Supplement.



The fuel cap is behind a hinged door on the driver's side of your vehicle.



While refueling your vehicle, hang the fuel cap by the tether from the hook on the filler door.

To remove the fuel cap, turn it slowly to the left (counterclockwise). The fuel cap has a spring in it; if you let go of the cap too soon, it will spring back to the right.

⚠ CAUTION:

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

Be careful not to spill gasoline. Clean gasoline from painted surfaces as soon as possible. See "Cleaning the Outside of Your Vehicle" in the Index.

When you put the fuel cap back on, turn it to the right (clockwise) until you hear a clicking sound. Make sure you fully install the cap. 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” in the Index.

NOTICE:

If you need a new fuel cap, be sure to get the right type. Your dealer can get one for you. If you get the wrong type, it may not fit properly. This may cause your malfunction indicator lamp to light and may damage your fuel tank and emissions system. See “Malfunction Indicator Lamp” in the Index.

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.**
- **Don’t smoke while pumping gasoline.**

Checking Things Under the Hood

⚠ CAUTION:

If your vehicle has air conditioning, the auxiliary engine fan under the hood can start up and injure you even when the engine is not running. Keep hands, clothing and tools away from any underhood electric fan.

⚠ CAUTION:

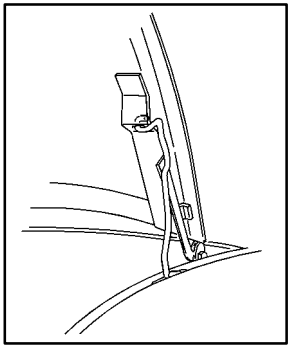
Things that burn can get on hot engine parts and start a fire. These include liquids like fuel, oil, coolant, brake fluid, windshield washer and other fluids, and plastic or rubber. You or others could be burned. Be careful not to drop or spill things that will burn onto a hot engine.

Hood Release

To open the hood, do the following:

1. Pull this handle inside the vehicle. It is located in front of the driver's side door frame near the floor.

2. Then go to the front of the vehicle and release the secondary hood release.
3. Lift the hood.

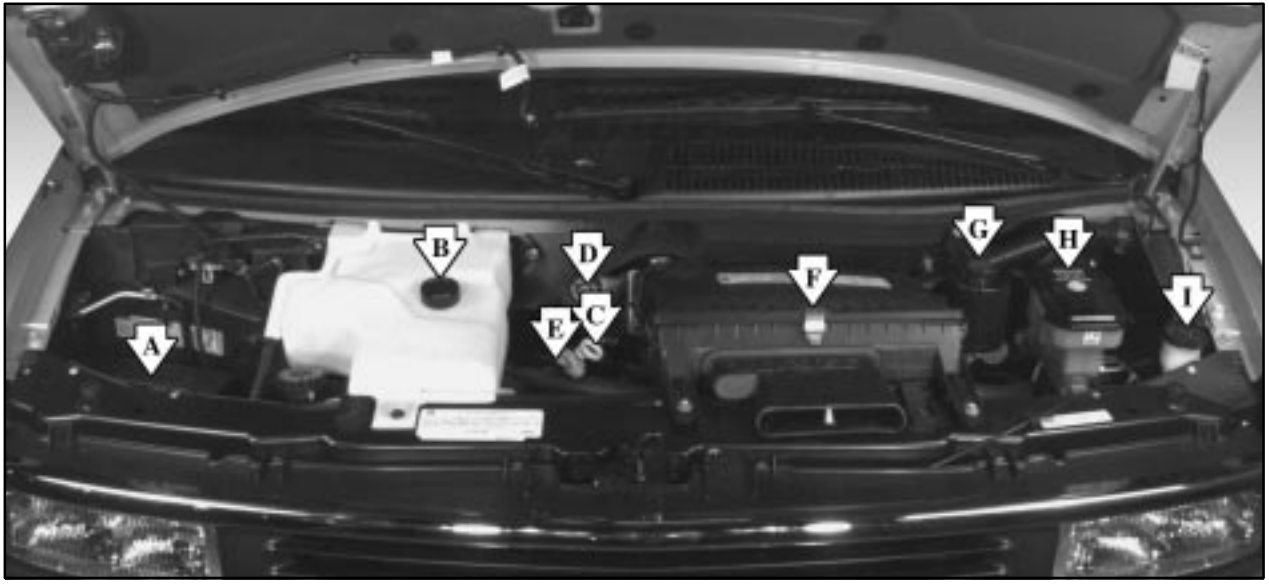


4. Release the hood prop from its retainer and put the hood prop into the slot in the hood hinge.

The underhood lamp (if equipped) will automatically come on and stay on until the hood is closed.

Engine Compartment Overview

When you lift the hood, you'll see these items:



A. Battery
B. Coolant Recovery Tank
C. Engine Oil Dipstick
D. Engine Oil Fill
E. Transmission Fluid Dipstick
F. Engine Air Cleaner/Filter
G. Power Steering Reservoir
H. Brake Master Cylinder
I. Windshield Washer Fluid

Before closing the hood, be sure all the filler caps are on properly.

Then lift the hood to relieve pressure on the hood prop. Remove the hood prop from the slot in the hood and return the prop to its retainer. Then let the hood down and close it firmly.

Noise Control System

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.

Tampering With Noise Control System Prohibited

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 equipped) inoperative so as to allow engine speed to exceed manufacturer specifications.

Fan and Drive:

- Removal of fan clutch (if equipped) or rendering clutch inoperative.
- Removal of the fan shroud (if equipped).

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.

Engine Oil (Gasoline Engine)

If your vehicle has a diesel engine, see “Engine Oil (Diesel Engine)” in the Diesel Engine Supplement.

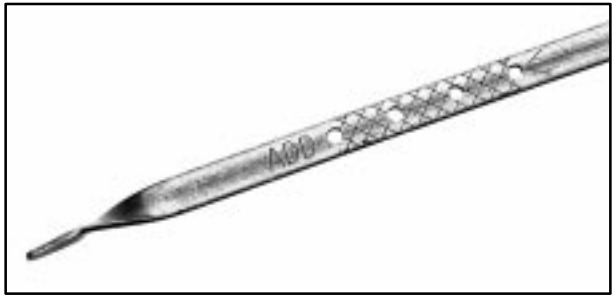
Checking Engine Oil

It’s a good idea to check your 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 has a yellow handle and is located near the center of the engine compartment. See “Engine Compartment Overview” in the Index for more information on location.

Turn off the engine and give the oil several minutes to drain back into the oil pan. If you don’t, the oil dipstick might not show the actual level.

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 at or below the ADD mark, then you'll need to add at least one quart of oil. But you must use the right kind. This part explains what kind of oil to use. For engine oil crankcase capacity, see "Capacities and Specifications" in the Index.

NOTICE:

Don't add too much oil. If your engine has so much oil that the oil level gets above the upper mark that shows the proper operating range, your engine could be damaged.

The engine oil filler cap is located between the coolant recovery tank and the engine air cleaner/filter. See "Engine Compartment Overview" in the Index for more information on location.

Be sure to fill it enough to put the level somewhere in the proper operating range. Push the dipstick all the way back in when you're through.

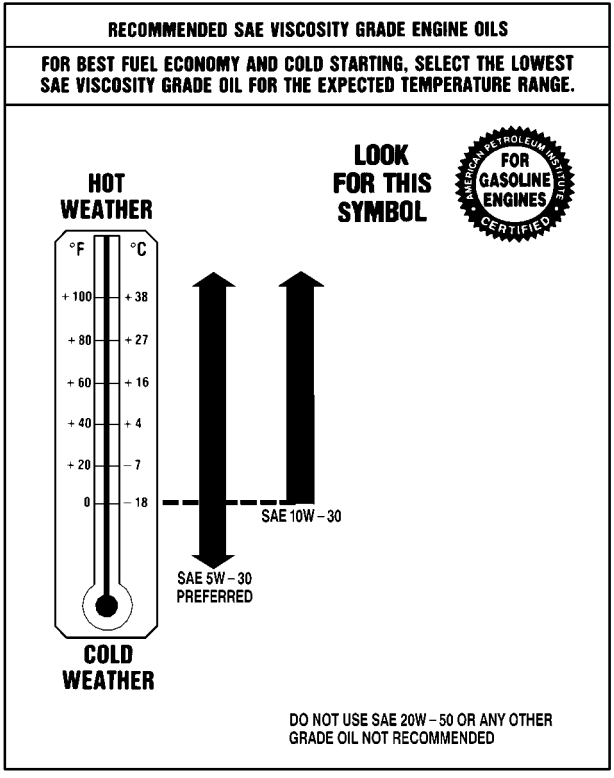
What Kind of Engine Oil to Use

Oils recommended for your vehicle can be identified by looking for the starburst symbol.

This symbol indicates that the oil has been certified by the American Petroleum Institute (API). Do not use any oil which does not carry this starburst symbol.

If you change your own oil, be sure you use oil that has the starburst symbol on the front of the oil container. If you have your oil changed for you, be sure the oil put into your engine is American Petroleum Institute certified for gasoline engines.

You should also use the proper viscosity oil for your vehicle, as shown in the following chart:



As in the chart shown previously, SAE 5W-30 is best for your vehicle. However, you can use SAE 10W-30 if it's going to be 0°F (-18°C) or above. These numbers on an oil container show its viscosity, or thickness. Do not use other viscosity oils, such as SAE 20W-50.

NOTICE:

Use only engine oil with 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 where the temperature falls below -20°F (-29°C), consider using either an SAE 5W-30 synthetic oil or an SAE 0W-30 oil. Both will provide easier cold starting and better protection for your engine at extremely low temperatures.

Engine Oil Additives

Don't add anything to your oil. The recommended oils with the starburst symbol are all you will need for good performance and engine protection.

When to Change Engine Oil

If any one of these is true for you, use the short trip/city maintenance schedule:

- Most trips are less than 5 miles (8 km). This is particularly important when outside temperatures are below freezing.
- Most trips include extensive idling (such as frequent driving in stop-and-go traffic).
- You frequently tow a trailer or use a carrier on top of your vehicle.
- The vehicle is used for delivery service, police, taxi or other commercial application.

Driving under these conditions causes engine oil to break down sooner. If any one of these is true for your vehicle, then you need to change your oil and filter every 3,000 miles (5 000 km) or 3 months -- whichever occurs first.

If none of them is true, use the long trip/highway maintenance schedule. Change the oil and filter every 7,500 miles (12 500 km) or 12 months -- whichever occurs first. Driving a vehicle with a fully warmed engine under highway conditions will cause engine oil to break down slower.

What to Do with Used Oil

Used engine oil contains certain elements that may be unhealthy for your skin and could even cause cancer. Don't 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 throw away 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 your used oil, ask your dealer, a service station or a local recycling center for help.

Engine Air Cleaner/Filter (Gasoline Engines)

The engine air cleaner/filter is located near the center of the engine compartment. See “Engine Compartment Overview” in the Index for more information on location.

The engine air cleaner/filter assembly has an indicator that lets you know when the air filter is dirty and needs to be serviced. See “Owner Checks and Services” in the Index to determine when to check the indicator.

If the area inside the clear section of the indicator is green, no air filter service is required. When the area inside the indicator is orange and CHANGE AIR FILTER appears, the filter should be replaced.

To change the engine air cleaner/filter, do the following:

1. Unhook the retainer clips and remove the cover.
2. Lift the filter out of the engine air cleaner/filter housing. Care should be taken to dislodge as little dirt as possible.
3. Clean the engine air cleaner/filter housing.
4. Install the new engine air cleaner/filter into the engine air cleaner/filter housing. Make sure that it fits properly into the housing.
5. Install the cover and fasten the retaining clips.
6. After the engine air cleaner/filter is properly serviced, the indicator should be reset. Push the button on the top of the indicator to reset it to the green (clean) filter zone.

See “Normal Replacement Parts” for the proper filter to use.

Refer to the Maintenance Schedule to determine when to replace the engine air cleaner/filter and crankcase ventilation filter. See “Scheduled Maintenance Services” in the Index.

⚠ 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 stops flame if the engine backfires. If it isn’t there, and the engine backfires, you could be burned. Don’t drive with it off, and be careful working on the engine with the air cleaner/filter off.

NOTICE:

If the air cleaner/filter is off, a backfire can cause a damaging engine fire. And, dirt can easily get into your engine, which will damage it. Always have the air cleaner/filter in place when you’re driving.

Automatic Transmission Fluid

If your vehicle has a diesel engine, see “Automatic Transmission Fluid” in the Diesel Supplement.

When to Check and Change

A good time to check your automatic transmission fluid level is when the engine oil is changed.

Change both the fluid and filter every 50,000 miles (83 000 km) if the vehicle’s GVWR is over 8,600 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.

If your vehicle’s GVWR is not over 8,600 and you do not use your vehicle under any of these conditions, change the fluid and filter every 100,000 miles (166 000 km).

See “Scheduled Maintenance Services” in the Index.

How to Check

Because this operation can be a little difficult, you may choose to have this done at the dealership service department.

If you do it yourself, be sure to follow all the instructions here, or you could get a false reading on the dipstick.

NOTICE:

Too much or too little fluid can damage 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.

Wait at least 30 minutes before checking the transmission fluid level if you have been driving:

- When outside temperatures are above 90°F (32°C).
- At high speed for quite a while.
- In heavy traffic -- especially in hot weather.
- While pulling a trailer.

To get the right reading, the fluid should be at normal operating temperature, which is 180°F to 200°F (82°C to 93°C).

Get the vehicle warmed up by driving about 15 miles (24 km) when outside temperatures are above 50°F (10°C). If it's colder than 50°F (10°C), drive the vehicle in DRIVE (D) until the engine temperature gage moves and then remains steady for 10 minutes.

A cold fluid check can be made after the vehicle has been sitting for eight hours or more with the engine off, but this is used only as a reference. Let the engine run at idle for five minutes if outside temperatures are 50°F (10°C) or more. If it's colder than 50°F (10°C), you may have to idle the engine longer. Should the fluid level be low during this cold check, you *must* check the fluid hot before adding fluid. Checking the fluid hot will give you a more accurate reading of the fluid level.

Checking the Fluid Level

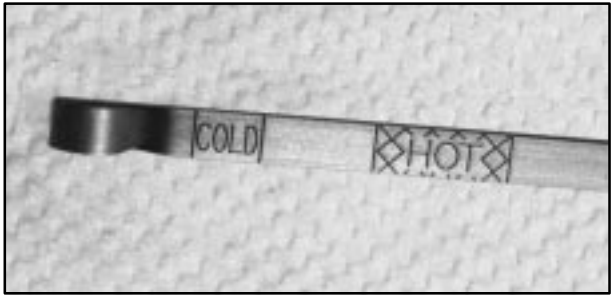
Prepare your vehicle as follows:

- Park your vehicle on a level place. Keep the engine running.
- With the parking brake applied, place the shift lever in PARK (P).
- With your foot on the brake pedal, move the shift lever through each gear range, pausing for about three seconds in each range. Then, position the shift lever in PARK (P).
- Let the engine run at idle for three minutes or more.

Then, without shutting off the engine, follow these steps:

The transmission dipstick has a red handle and is located near the center of the engine compartment. See “Engine Compartment Overview” in the Index for more information on location.

1. Flip the handle up and then pull out the dipstick and wipe it with a clean rag or paper towel.
2. Push it back in all the way, wait three seconds and then pull it back out again.



3. Check both sides of the dipstick, and read the lower level. The fluid level must be in the COLD area, below the cross-hatched area, for a cold check or in the HOT area or cross-hatched area for a hot check.
4. 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.

How to Add Fluid

Refer to the Maintenance Schedule to determine what kind of transmission fluid to use. See “Recommended Fluids and Lubricants” in the Index.

Add fluid only after checking the transmission fluid while it is hot. (A cold check is used only as a reference.) If the fluid level is low, add only enough of the proper fluid to bring the level up to the HOT area for a hot check. It doesn’t take much fluid, generally less than one pint (0.5 L). *Don’t overfill.*

NOTICE:

We recommend you use only fluid labeled DEXRON®-III, because fluid with that label is made especially for your automatic transmission. Damage caused by fluid other than DEXRON®-III is not covered by your new vehicle warranty.

- After adding fluid, recheck the fluid level as described under “How to Check.”
- When the correct fluid level is obtained, push the dipstick back in all the way; then flip the handle down to lock the dipstick in place.

Rear Axle

When to Check Lubricant

Refer to the Maintenance Schedule to determine how often to check the lubricant. See “Scheduled Maintenance Services” in the Index.

How to Check Lubricant

To get an accurate reading, the vehicle should be on a level surface.

If the level is below the bottom of the filler plug hole, you’ll need to add some lubricant. Add enough lubricant to raise the level to the bottom of the filler plug hole.

What to Use

Refer to the Maintenance Schedule to determine what kind of lubricant to use. See “Recommended Fluids and Lubricants” in the Index.

Engine Coolant

The cooling system in your vehicle is filled with DEX-COOL® engine coolant. This coolant is designed to remain in your vehicle for 5 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” in the Index.

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:

When adding coolant, it is important that you use only DEX-COOL® (silicate-free) coolant.

If coolant other than DEX-COOL is added to the system, premature engine, heater core or radiator corrosion may result. In addition, the engine coolant will require change sooner -- at 30,000 miles (50 000 km) or 24 months, whichever occurs first. Damage caused by the use of coolant other than DEX-COOL® is not covered by your new vehicle warranty.

What to Use

Use a mixture of one-half *clean, drinkable water* and one-half DEX-COOL® coolant which won't damage aluminum parts. If you use this coolant mixture, you don't 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 wouldn't 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 wouldn't 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 the proper coolant, you don't have to add extra inhibitors or additives which claim to improve the system. These can be harmful.

Checking Coolant

The coolant recovery tank is located near the center of the engine compartment. See "Engine Compartment Overview" in the Index for more information on location.

The vehicle must be on a level surface. When your engine is cold, the coolant level should be at FULL COLD, or a little higher.

Adding Coolant

If you need more coolant, add the proper DEX-COOL® coolant mixture *at the coolant recovery tank.*

⚠ CAUTION:

Turning the radiator pressure cap when the engine and radiator are hot can allow steam and scalding liquids to blow out and burn you badly. With the coolant recovery tank, you will almost never have to add coolant at the radiator. Never turn the radiator pressure cap -- even a little -- when the engine and radiator are hot.

Add coolant mixture at the recovery tank, but be careful not to spill it.

⚠ CAUTION:

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

Occasionally check the coolant level in the radiator. For information on how to add coolant to the radiator, see "Cooling System" in the Index.

Radiator Pressure Cap

The radiator pressure cap is located near the center of the engine compartment.

NOTICE:

Your radiator cap is a pressure-type cap and must be tightly installed to prevent coolant loss and possible engine damage from overheating. Be sure the arrows on the cap line up with the overflow tube on the radiator filler neck.

Power Steering Fluid

The power steering fluid reservoir is located in the engine compartment on the driver's side of the vehicle.

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

Turn the key off, let the engine compartment cool down, wipe the cap and the top of the reservoir clean, then unscrew the cap and wipe the dipstick with a clean rag. Replace the cap and completely tighten it. Then 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.

To prevent contamination of brake fluid, never check or fill the power steering reservoir with the brake master cylinder cover off.

What to Use

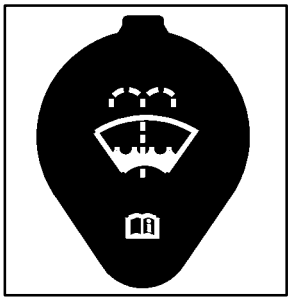
To determine what kind of fluid to use, see “Recommended Fluids and Lubricants” in the Index. Always use the proper fluid. Failure to use the proper fluid can cause leaks and damage hoses and seals.

Windshield Washer Fluid

What to Use

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

Adding Washer Fluid



Open the cap with the washer symbol on it. Add washer fluid until the tank is full.

NOTICE:

- **When using concentrated washer fluid, follow the manufacturer's instructions for adding water.**
- **Don't 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 doesn't clean as well as washer fluid.**
- **Fill your washer fluid tank only three-quarters full when it's very cold. This allows for expansion if freezing occurs, which could damage the tank if it is completely full.**
- **Don't use engine coolant (antifreeze) in your windshield washer. It can damage your washer system and paint.**

Brakes

Brake Fluid

Your brake master cylinder reservoir is filled with DOT-3 brake fluid. See "Engine Compartment Overview" in the Index for the location of the reservoir.

There are only two reasons why the brake fluid level in the reservoir might go down. The first is that the brake fluid goes down to an acceptable level during normal brake lining wear. When new linings are put in, the fluid level goes back up.

The other reason is that fluid is leaking out of the brake system. If it is, you should have your brake system fixed, since a leak means that sooner or later your brakes won't work well, or won't work at all.

So, it isn't a good idea to "top off" your brake fluid. Adding brake fluid won't correct a leak. If you add fluid when your linings are worn, then you'll 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 your brake fluid. See "Periodic Maintenance Inspections" in the Index.

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 isn't, have your 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. Refer to “Recommended Fluids and Lubricants” in the Index. Use new brake fluid from a sealed container only.

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 your brake system, your brakes may not work well, or they may not even work at all. This could cause a crash. Always use the proper brake fluid.

NOTICE:

- **Using the wrong fluid can badly damage brake system parts. For example, just a few drops of mineral-based oil, such as engine oil, in your brake system can damage brake system parts so badly that they’ll have to be replaced. Don’t 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 “Appearance Care” in the Index.**

Brake Wear

Your vehicle has front disc brakes and rear drum brakes.

Disc brake pads have built-in wear indicators that make a high-pitched warning sound when the brake pads are worn and new pads are needed. The sound may come and go or be heard all the time your vehicle is moving (except when you are pushing on the brake pedal firmly).

⚠ CAUTION:

The brake wear warning sound means that soon your brakes won't work well. That could lead to an accident. When you hear the brake wear warning sound, have your vehicle serviced.

NOTICE:

Continuing to drive with worn-out brake pads could result in costly brake repair.

Some driving conditions or climates may cause a brake squeal when the brakes are first applied or lightly applied. This does not mean something is wrong with your brakes.

Properly torqued wheel nuts are necessary to help prevent brake pulsation. When tires are rotated, inspect brake pads for wear and evenly tighten wheel nuts in the proper sequence to GM torque specifications.

Your rear drum brakes don't have wear indicators, but if you ever hear a rear brake rubbing noise, have the rear brake linings inspected immediately. Also, the rear brake drums should be removed and inspected each time the tires are removed for rotation or changing. When you have the front brake pads replaced, have the rear brakes inspected, too.

Brake linings should always be replaced as complete axle sets.

See "Brake System Inspection" in Section 7 of this manual under Part C "Periodic Maintenance Inspections."

Brake Pedal Travel

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

Brake Adjustment

Every time you make a brake stop, your disc brakes adjust for wear.

If your brake pedal goes down farther than normal, your rear drum brakes may need adjustment. Adjust them by backing up and firmly applying the brakes a few times.

Replacing Brake System Parts

The braking system on a vehicle is complex. Its many parts have to be of top quality and work well together if the vehicle is to have really good braking. Your vehicle was designed and tested with top-quality GM brake parts. When you replace parts of your braking system -- for example, when your brake linings wear down and you need new ones put in -- be sure you get new approved GM replacement parts. If you don't, your brakes may no longer work properly. For example, if someone puts in brake linings that are wrong for your vehicle, the balance between your front and rear brakes can change -- for the worse. The braking performance you've come to expect can change in many other ways if someone puts in the wrong replacement brake parts.

Battery

Your new vehicle comes with a maintenance free ACDelco® battery. When it's time for a new battery, get one that has the replacement number shown on the original battery's label. We recommend an ACDelco battery. See "Engine Compartment Overview" in the Index 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.

If you have a diesel engine, you have two batteries. The primary battery is located on the passenger's side of the engine compartment. The second battery is located on the driver's side framerail.

Vehicle Storage

If you're not going to drive your vehicle for 25 days or more, remove the black, negative (-) cable from the battery. This will help keep your battery from running down.

⚠ CAUTION:

Batteries have acid that can burn you and gas that can explode. You can be badly hurt if you aren't careful. See "Jump Starting" in the Index for tips on working around a battery without getting hurt.

Contact your dealer to learn how to prepare your vehicle for longer storage periods.

Also, for your audio system, see "Theft-Deterrent Feature" in the Index.

Bulb Replacement

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

For the type of bulbs, see "Replacement Bulbs" in the Index.

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

You have either a sealed beam headlamp or a composite system.

Sealed Beam Headlamp

1. Remove the four screws from the headlamp retainer. Pull the retainer out and set it aside.
2. Unplug the lamp assembly from the connector.
3. Remove the old headlamp
4. Install a new headlamp into the assembly.
5. Plug the assembly back into the connector.
6. Reassemble the headlamp assembly with the retainer.

Composite Headlamps

1. Open the hood.
2. Locate the rear side of each of the headlamps.

3. Without removing the headlamp assembly itself, remove the bulb socket from the back of the headlamp on the driver's side. Turn the bulb counterclockwise one quarter turn to remove it from the socket. On the passenger's side, turn the bulb clockwise one quarter turn. Do not touch the glass part of the bulb.

4. Reinstall the new bulb into the socket and return it to the headlamp assembly.

Front Parking/Turn Signal Lamps

To replace the front parking/turn signal lamps, do the following:

1. Remove the outer screws from the parking/turn signal lamp lens assembly. (There are either two or four screws, depending on your vehicle's trim level.)

2. Remove the lamp from the grille.
3. Squeeze the tab on the side of the bulb assembly while turning it counterclockwise.
4. Remove the bulb assembly from the back of the lens and replace the bulb.
5. Turn the socket clockwise to reinstall it in the lens assembly. Reinstall the screws on the parking/turn signal lamp assembly.

Sidemarker Lamps

1. Remove the screw from the top of the lens.

2. Unclip the bottom of the lamp from the grille.
3. Pull the bulb straight out to remove it. Install the new bulb.
4. Reverse these steps to reinstall the lamp.

Taillamps

1. Open the rear door.

2. Push the socket protector until you can see the fasteners.

3. Remove the nuts with a deep socket wrench.

4. Remove the hidden upper nuts.

5. Lift the lamp as you turn it toward the rear of the vehicle.

6. To remove, squeeze the tab on the side of the sockets while turning them counterclockwise.

7. Turn the old bulb counterclockwise to remove it. Install the new bulb.
8. Reverse the above steps to reinstall the lamp.

Windshield Wiper Blade Replacement

Windshield wiper blades should be inspected at least twice a year for wear and cracking. See “Wiper Blade Check” in the Index for more information.

Replacement blades come in different types and are removed in different ways. To remove the type with a release clip, do the following:

1. Lift the wiper arm until it locks into a vertical position.

2. Press down on the blade assembly pivot locking tab. Pull down on the blade assembly to release it from the wiper arm hook.
3. The insert has two notches at one end that are locked by bottom claws of the blade assembly. At the notched end, pull the insert from the blade assembly.
4. To install the new wiper insert, slide the notched end last, into the end with two blade claws. Then slide the insert all the way through the blade claws at the opposite end.
5. Make sure that the notches are locked by the bottom claws. Make sure that all other claws are properly locked on both sides of the insert slot.
6. Put the blade assembly pivot in the wiper arm hook. Pull it up until the pivot locking tab locks in the hook slot.
7. Carefully lower the wiper arm and blade assembly into the windshield.

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.

⚠ CAUTION:

Poorly maintained and improperly used tires are dangerous.

- **Overloading your 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" in the Index.**
- **Underinflated tires pose the same danger as overloaded tires. The resulting accident could cause serious injury. Check all tires frequently to maintain the recommended pressure. Tire pressure should be checked when your tires are cold.**
- **Overinflated tires are more likely to be cut, punctured or broken by a sudden impact -- such as when you hit a pothole. Keep tires at the recommended pressure.**
- **Worn, old tires can cause accidents. If your tread is badly worn, or if your tires have been damaged, replace them.**

Inflation -- Tire Pressure

The Certification/Tire label, which is on the rear edge of the driver's door, shows the correct inflation pressures for your tires when they're cold. "Cold" means your vehicle has been sitting for at least three hours or driven no more than 1 mile (1.6 km).

NOTICE:

Don't let anyone tell you that underinflation or overinflation is all right. It's not. If your tires don't have enough air (underinflation), you can get the following:

- **Too much flexing**
- **Too much heat**
- **Tire overloading**
- **Bad wear**
- **Bad handling**
- **Bad fuel economy**

NOTICE: (Continued)

NOTICE: (Continued)

If your tires have too much air (overinflation), you can get the following:

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

When to Check

Check your tires once a month or more. Also, check the tire pressure of the spare tire.

How to Check

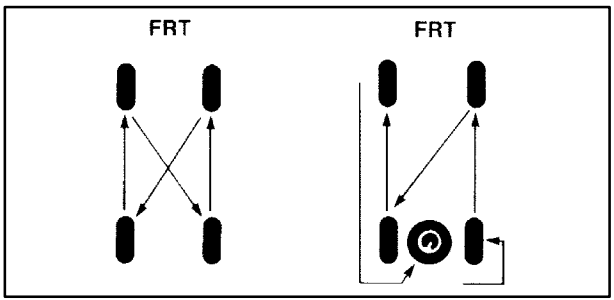
Use a good quality pocket-type gage to check tire pressure. You can't tell if your tires are properly inflated simply by looking at them. Radial tires may look properly inflated even when they're underinflated.

Be sure to put the valve caps back on the valve stems. They help prevent leaks by keeping out dirt and moisture.

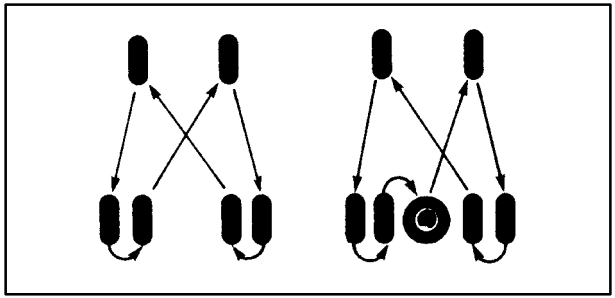
Tire Inspection and Rotation

Tires should be rotated every 6,000 to 8,000 miles (10 000 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's Time for New Tires" and "Wheel Replacement" later in this section 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 ratchet to tighten the cable. See "Storing a Flat or Spare Tire and Tools" in the Index. If your vehicle has dual rear wheels, also see "Dual Tire Operation" later in this section.

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 Services" in the Index for scheduled rotation intervals.



If your vehicle has single rear wheels, always use one of the correct rotation patterns shown here when rotating your tires.



If your vehicle has dual rear wheels, always use one of the correct rotation patterns shown here when rotating your tires.

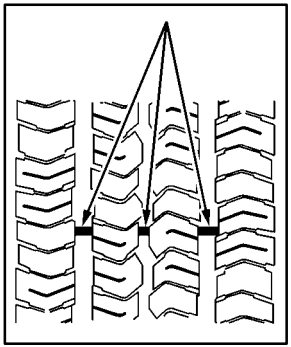
When you install dual wheels, be sure the vent holes in the inner and outer wheels on each side are lined up.

After the tires have been rotated, adjust the front and rear inflation pressures as shown on the Certification/Tire label. Make certain that all wheel nuts are properly tightened. See “Wheel Nut Torque” in the Index.

⚠ CAUTION:

Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after a 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 you need to, to get all the rust or dirt off. See “Changing a Flat Tire” in the Index.

When It's Time for New Tires



One way to tell when it's 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 can't be repaired well because of the size or location of the damage.

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, see "Wheel Nut Torque" in the Index.

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. If you're going to be doing a lot of driving on high-crown roads, you can reduce tire wear by adding 5 psi (35 kPa) to the tire pressure in the outer tires. Be sure to return to the recommended pressures when no longer driving under those conditions. See "Tires" and "Inflation - Tire Pressure" in the Index for more information on proper tire inflation.

⚠ 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.

Buying New Tires

To find out what kind and size of tires you need, look at the Certification/Tire label.

The tires installed on your vehicle when it was new had a Tire Performance Criteria Specification (TPC Spec) number on each tire's sidewall. When you get new tires, get ones with that same TPC Spec number. That way your vehicle will continue to have tires that are designed to give proper endurance, handling, speed rating, traction, ride and other things during normal service on your vehicle. If your tires have an all-season tread design, the TPC number will be followed by an "MS" (for mud and snow).

If you ever replace your tires with those not having a TPC Spec number, make sure they are the same size, load range, speed rating and construction type (bias, bias-belted or radial) as your original tires.

⚠ CAUTION:

Mixing tires could cause you to lose control while driving. If you mix tires of different sizes or types (radial and bias-belted tires), the vehicle may not handle properly, and you could have a crash. Using tires of different sizes may also cause damage to your vehicle. Be sure to use the same size and type tires on all wheels.

⚠ 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.

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, 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 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 1/2) times as well on the government course as a tire graded 100. The relative performance of tires depends upon the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices and differences in road characteristics and climate.

Traction -- AA, A, B, C

The traction grades, from highest to lowest, are AA, A, B, and C. Those grades represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance. Warning: The traction grade assigned to this tire is based on straight-ahead braking traction tests, and does not include acceleration, cornering, hydroplaning, or peak traction characteristics.

Temperature -- A, B, C

The temperature grades are A (the highest), B, and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a level of performance which all passenger car tires must meet under the Federal Motor Vehicle Safety Standard No. 109. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law.

Warning: The temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, underinflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

Wheel Alignment and Tire Balance

The wheels on your vehicle were aligned and balanced carefully at the factory to give you the longest tire life and best overall performance.

Scheduled wheel alignment and wheel balancing are not needed. However, if you notice unusual tire wear or your vehicle pulling one way or the other, the alignment may need to be reset. If you notice your vehicle vibrating when driving on a smooth road, your wheels may need to be rebalanced.

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” in the Index.

See “Changing a Flat Tire” in the Index for more information.

Used Replacement Wheels

⚠ CAUTION:

Putting a used wheel on your vehicle is dangerous. You can’t know how it’s been used or how far it’s 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

NOTICE:

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.

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.

Appearance Care

Remember, cleaning products can be hazardous. Some are toxic. Others can burst into flame if you strike a match or get them on a hot part of the vehicle. Some are dangerous if you breathe their fumes in a closed space. When you use anything from a container to clean your vehicle, be sure to follow the manufacturer's warnings and instructions. And always open your doors or windows when you're cleaning the inside.

Never use these to clean your vehicle:

- Gasoline
- Benzene
- Naphtha
- Carbon Tetrachloride
- Acetone
- Paint Thinner
- Turpentine
- Lacquer Thinner
- Nail Polish Remover

They can all be hazardous -- some more than others -- and they can all damage your vehicle, too.

Don't use any of these unless this manual says you can. In many uses, these will damage your vehicle:

- Alcohol
- Laundry Soap
- Bleach
- Reducing Agents

Cleaning the Inside of Your Vehicle

Use a vacuum cleaner often to get rid of dust and loose dirt. Wipe vinyl, leather, plastic and painted surfaces with a clean, damp cloth.

Cleaning of Fabric/Carpet

Your dealer has cleaners for the cleaning of fabric and carpet. They will clean normal spots and stains very well. You can get GM-approved cleaning products from your dealer. See "Appearance Care and Materials" in the Index.

Here are some cleaning tips:

- Always read the instructions on the cleaner label.
- Clean up stains as soon as you can -- before they set.
- Carefully scrape off any excess stain.
- Use a clean cloth or sponge, and change to a clean area often. A soft brush may be used if stains are stubborn.
- If a ring forms on fabric after spot cleaning, clean the entire area immediately or it will set.

Using Cleaner on Fabric

1. Vacuum and brush the area to remove any loose dirt.
2. Always clean a whole trim panel or section. Mask surrounding trim along stitch or welt lines.
3. Follow the directions on the container label.
4. Apply cleaner with a clean sponge. Don't saturate the material and don't rub it roughly.
5. As soon as you've cleaned the section, use a sponge to remove any excess cleaner.
6. Wipe cleaned area with a clean, water-dampened towel or cloth.
7. Wipe with a clean cloth and let dry.

Special Fabric Cleaning Problems

Stains caused by such things as catsup, coffee (black), egg, fruit, fruit juice, milk, soft drinks, vomit, urine and blood can be removed as follows:

1. Carefully scrape off excess stain, then sponge the soiled area with cool water.
2. If a stain remains, follow the cleaner instructions described earlier.
3. If an odor lingers after cleaning vomit or urine, treat the area with a water/baking soda solution: 1 teaspoon (5 ml) of baking soda to 1 cup (250 ml) of lukewarm water.
4. Let dry.

Stains caused by candy, ice cream, mayonnaise, chili sauce and unknown stains can be removed as follows:

1. Carefully scrape off excess stain.
2. First, clean with cool water and allow to dry completely.
3. If a stain remains, follow the cleaner instructions described earlier.

Cleaning Vinyl

Use warm water and a clean cloth.

- Rub with a clean, damp cloth to remove dirt. You may have to do it more than once.
- Things like tar, asphalt and shoe polish will stain if you don't get them off quickly. Use a clean cloth and a vinyl/leather cleaner. See your dealer for this product.

Cleaning Leather

Use a soft cloth with lukewarm water and a mild soap or saddle soap and wipe dry with a soft cloth. Then, let the leather dry naturally. Do not use heat to dry.

- For stubborn stains, use a leather cleaner. See your dealer for this product.
- *Never* use oils, varnishes, solvent-based or abrasive cleaners, furniture polish or shoe polish on leather.
- Soiled or stained leather should be cleaned immediately. If dirt is allowed to work into the finish, it can harm the leather.

Cleaning the Top of the Instrument Panel

Use only mild soap and water to clean the top surfaces of the instrument panel. Sprays containing silicones or waxes may cause annoying reflections in the windshield and even make it difficult to see through the windshield under certain conditions.

Cleaning Interior Plastic Components

Use only a mild soap and water solution on a soft cloth or sponge. Commercial cleaners may affect the surface finish.

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.

Cleaning Glass Surfaces

Glass should be cleaned often. GM Glass Cleaner or a liquid household glass cleaner will remove normal tobacco smoke and dust films on interior glass. See “Appearance Care and Materials” in the Index.

NOTICE:

Don’t use abrasive cleaners on glass, because they may cause scratches. Avoid placing decals on the inside rear window, since they may have to be scraped off later. If abrasive cleaners are used on the inside of the rear window, an electric defogger element may be damaged. Any temporary license should not be attached across the defogger grid.

Cleaning the Outside of the 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 full-strength glass cleaning liquid. The windshield is clean if beads do not form when you rinse it 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.

Weatherstrips

Silicone grease on weatherstrips will make them last longer, seal better, and not stick or squeak. Apply silicone grease with a clean cloth at least every six months. During very cold, damp weather more frequent application may be required. See “Recommended Fluids and Lubricants” in the Index.

Cleaning the Outside of Your Vehicle

The paint finish on your vehicle provides beauty, depth of color, gloss retention and durability.

Washing Your Vehicle

The best way to preserve your vehicle's finish is to keep it clean by washing it often with lukewarm or cold water.

Don't wash your vehicle in the direct rays of the sun. Use a car washing soap. Don't use strong soaps or chemical detergents. Be sure to rinse the vehicle well, removing all soap residue completely. You can get GM-approved cleaning products from your dealer. See "Appearance Care and Materials" in the Index. Don't 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 your 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."

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 GM-approved cleaning products from your dealer. See "Appearance Care and Materials" in the Index.

Your vehicle may have 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 dull the finish or leave swirl marks.

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.

Cleaning Aluminum Wheels (If Equipped)

Keep your 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.

The surface of these wheels is similar to the painted surface of your vehicle. Don't 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.

Don't take your vehicle through an automatic car wash that has silicon carbide tire cleaning brushes. These brushes can also damage the surface of these wheels.

Cleaning Tires

To clean your tires, use a stiff brush with a tire cleaner.

NOTICE:

When applying a tire dressing always take care to wipe off any overspray or splash from all painted surfaces on the body or wheels of the vehicle. Petroleum-based products may damage the paint finish and tires.

Sheet Metal Damage

If your vehicle is damaged and requires sheet metal repair or replacement, make sure the body repair shop applies anti-corrosion material to the 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.

Minor chips and scratches can be repaired with touch-up materials available from your dealer or other service outlets. 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, accelerated corrosion (rust) can occur 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 other debris can collect. Dirt packed in closed 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 your vehicle. This damage can take two forms: blotchy, ringlet-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.

GM Vehicle Care/Appearance Materials

PART NUMBER	SIZE	DESCRIPTION	USAGE
994954	23 in. x 25 in.	Polishing Cloth – Wax Treated	Exterior polishing cloth.
1050172	16 oz. (0.473 L)	Tar and Road Oil Remover	Removes tar, road oil and asphalt.
1050173	16 oz. (0.473 L)	Chrome Cleaner and Polish	Use on chrome or stainless steel.
1050174	16 oz. (0.473 L)	White Sidewall Tire Cleaner	Removes soil and black marks from whitewalls.
1050214	32 oz. (0.946 L)	Vinyl Cleaner	Cleans vinyl tops, upholstery and convertible tops.
1050427	23 oz. (0.680 L)	Glass Cleaner	Removes dirt, grime, smoke and fingerprints.
1052929	16 oz. (0.473 L)	Chrome and Wire Wheel Cleaner	Removes dirt and grime from chrome wheels and wire wheel covers.
12377964	16 oz. (0.473 L)	Finish Enhancer	Removes dust, fingerprints and surface contaminants. Spray on wipe off.
12377965	16 oz. (0.473 L)	Swirl Remover Polish	Removes swirl marks, fine scratches and other light surface contamination.
12377966	16 oz. (0.473 L)	Cleaner Wax	Removes light scratches and oxidation and protects finish.
12378188	15 oz. (0.443 L)	Foaming Tire Shine–Low Gloss	Cleans, shines and protects in one easy step. No wiping necessary.
12378401	16 oz. (0.473 L)	Wash Wax Concentrate	Medium foaming shampoo. Cleans and lightly waxes. Biodegradable and phosphate free.
12378488	8 oz. (0.237 L)	Spot Lifter	Quickly and easily removes spots and stains from carpets, vinyl and cloth upholstery.

See your General Motors parts department for these products.
See "Recommended Fluids and Lubricants" in the Index.

Vehicle Identification Number (VIN)

This is the legal identifier for your vehicle. It appears on a plate in the front corner of the instrument panel, on the driver's side. You can see it if you look through the windshield from outside your vehicle. The VIN also appears on the Vehicle Certification and Service Parts labels and the certificates of title and registration.

Engine Identification

The 8th character in your VIN is the engine code. This code will help you identify your engine, specifications and replacement parts.

Service Parts Identification Label

You'll find this label on the front passenger door frame. It's very helpful if you ever need to order parts. On this label is:

- your VIN,
- the model designation,
- paint information and
- a list of all production options and special equipment.

Be sure that this label is not removed from the vehicle.

Electrical System

Add-On Electrical Equipment

NOTICE:

Don't add anything electrical to your vehicle unless you check with your dealer first. Some electrical equipment can damage your vehicle and the damage wouldn't be covered by your warranty. Some add-on electrical equipment can keep other components from working as they should.

Your vehicle has an air bag system. Before attempting to add anything electrical to your vehicle, see "Servicing Your Air Bag-Equipped Vehicle" in the Index.

Headlamp Wiring

The headlamp wiring is protected by a circuit breaker in the lamp switch. An electrical overload will cause the lamps to flicker on and off, or in some cases to remain off. If this happens, have your headlamp wiring checked right away.

Windshield Wiper Fuses

The windshield wiper motor is protected by a circuit breaker and a fuse. If the motor overheats due to heavy snow, etc., the wiper will stop until the motor cools. Although the circuit is protected from electrical overload, overload due to heavy snow, etc., may cause wiper linkage damage. Always clear ice and heavy snow from the windshield before using the windshield wipers. If the overload is caused by some electrical problem and not snow, etc., be sure to get it fixed.

Instrument Panel Fuse Block

The fuse block access door is on the instrument panel above the hood release lever on the driver's side of the vehicle.

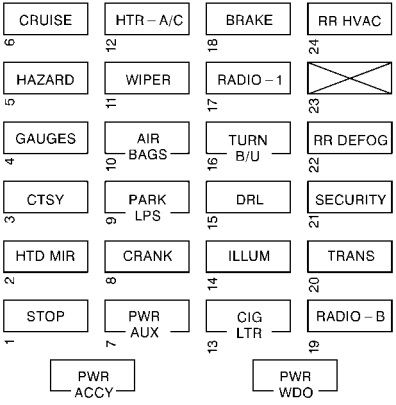
You can remove the cover by turning the fastener counterclockwise.

You can remove fuses with a fuse extractor. The fuse extractor is mounted to the fuse block access door.

To remove fuses if you don't have a fuse extractor, hold the end of the fuse between your thumb and index finger and pull straight out.

Be sure to use the correct fuse. If you ever have a problem on the road and don't have a spare fuse, you can borrow one of the same fuse rating. 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 of the same fuse rating you need. Replace it as soon as you can.

FUSE BLOCK INFORMATION

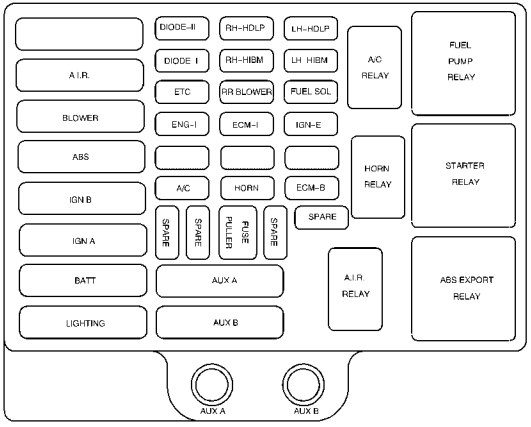


POSITION	NAME	CIRCUITS PROTECTED
1.	STOP	Center High Mounted Stop Lamp, Stoplamps
2.	HTD MIR	Electric Heated Mirrors
3.	CTSY	Courtesy Lamps, Dome/RDG Lamps, Vanity Mirrors, Power Mirrors
4.	GAUGES	Instrument Panel Cluster, Daytime Running Lamp Relay, Daytime Running Lamp Module, Headlamp Switch, Keyless Entry Illumination, Low Coolant Module, CHIME Module, DRAB Module
5.	HAZARD	Hazard Lamps/CHIME Module
6.	CRUISE	Cruise Control
7.	PWR AUX	Auxiliary Power Outlet, DLC
8.	CRANK	Not Used
9.	PARK LPS	License Plate Lamp, Parking Lamps, Taillamps, Front Sidemarkers, Glove Box Ashtray
10.	AIR BAGS	Air Bags
11.	WIPER	Wiper Motor, Washer Pump
12.	HTR-A/C	A/C, A/C Blower, High Blower Relay, Heated Mirror
13.	CIG LTR	Cigarette Lighter

POSITION	NAME	CIRCUITS PROTECTED
14.	ILLUM	Instrument Panel Cluster, HVAC Controls, RR HVAC Controls, Instrument Panel Switches, Radio Illumination, Door Switch Illumination
15.	DRL	Daytime Running Lamp Relay
16.	TURN B/U	Front Turn, RR Turn, Back-up Lamps, BTSI Solenoid
17.	RADIO-1	Radio (Ign, Accy), Upfitter Provision Relay
18.	BRAKE	4WAL PCM, ABS, Cruise Control
19.	RADIO-B	Radio (Battery), Power Antenna
20.	TRANS	PRNDL, Automatic Transmission
21.	SECURITY	Passlock
22.	RR DEFOG	Rear Window Defog
23.	NOT USED	Not Used
24.	RR HVAC	RR HVAC Controls, HIGH, MED, LOW Relays
A.	PWR ACCY	Power Door Lock, Six-Way Power Seat, Keyless Entry Illumination Module
B.	PWR WDO	Power Windows

Engine Compartment Fuse Block

The fuse block is in the engine compartment on the driver's side of the vehicle.



NAME	CIRCUITS PROTECTED
SPARE	Spare Fuse
A.I.R.	Air Pump
BLOWER	Front Blower Motor
ABS	Electronic Brake Control Module
IGN B	Ignition Switch
IGN A	Starter Relay, Ignition Switch
BATT	Instrument Panel Fuse Block
LIGHTING	Instrument Panel Fuse Block, Headlamp Switch
RH-HDLP	Right-hand Headlamp (Export only)
LH-HDLP	Left-hand Headlamp (Export only)
RH-HIBM	Right-hand High-beam Headlamp (Export only)
LH-HIBM	Left-hand High-beam Headlamp (Export only)

NAME	CIRCUITS PROTECTED
ETC	Electronic Throttle Control
RR BLOWER	Rear Auxiliary Blower Motor Relays
CNG	Compressed Natural Gas
ENG-I	Heated O_2 Sensors, Mass Air Flow Sensor, Evap Canister Purge Valve, Crankshaft Position Sensor, Secondary Air Injection Relay (Diesel), Water in Fuel Sensor (Diesel), Fuel Heater (Diesel), Glowplug Relay (Diesel), Wastegate Solenoid (Diesel)
ECM-I	Ignition Coil, Camshaft Position Sensor, VCM, Fuel Injectors, Coil Driver
IGN-E	Air Conditioning Clutch Relay
SPARE	Spare Fuse
SPARE	Spare Fuse
SPARE	Spare Fuse

NAME	CIRCUITS PROTECTED
A/C	Air Conditioning Clutch Relay
HORN	Horn Relay, Underhood Lamp(s)
ECM-B	Fuel Pump Relay, VCM, PCM, Fuel Pump and Engine Oil Pressure Switch
SPARE	Spare Fuse
SPARE	Spare Fuse
AUX A	Upfitter Provisions
AUX B	Upfitter Provisions
A/C RELAY	Air Conditioning
HORN RELAY	Horn
A.I.R. RELAY	Air
FUEL PUMP RELAY	Fuel Pump
STARTER RELAY	Starter
ABS EXPORT RELAY	ABS Export

Replacement Bulbs

LAMP OR BULB	QTY	NUMBER
Sealed Beam Headlamps	2	H6054
Composite Low-Beam Headlamps	2	6052
Composite High-Beam Headlamps	2	9005
Front Sidemarker Lamp	2	194
Front Parking and Turn Lamp	4	2357NA
Rear Parking Lamp	2	3057
Rear Stop and Turn Lamp	2	3057
Back-up Lamp	2	3156
Back-up Lamp	2	1156
Rear Parking, Stop, and Turn Lamp	2	1157

For any bulb not listed here, contact your dealer.

Capacities and Specifications

All capacities are approximate. When adding, be sure to fill to the appropriate level or as recommended in this manual.

See refrigerant charge label under the hood for charge capacity information and requirements.

Engine Identification -- Gasoline Engines

Engine	**“VORTEC” 4300**	**“VORTEC” 5000**	**“VORTEC” 5700**	**“VORTEC” 8100**
Type	V6	V8	V8	V8
VIN Code	W	M	R	G
Fuel System	CSFI[1]	CSFI[1]	CSFI[1]	MFI[2]
Spark Plug Gap	0.060 inches (1.52 mm)	0.060 inches (1.52 mm)	0.060 inches (1.52 mm)	0.060 inches (1.52 mm)
Firing Order	1-6-5-4-3-2	1-8-4-3-6-5-7-2	1-8-4-3-6-5-7-2	1-8-7-2-6-5-4-3

[1]Central Sequential Fuel Injection

[2]Sequential Fuel Injection

Wheel Nut Torque

MODEL	TORQUE
All	140 lb-ft (190 N·m)

Cooling System Capacity

ENGINE	VIN	QTY Without Rear Heater	QTY With Rear Heater
“VORTEC” 4300 V6	W	11.0 quarts (10.4 L)	14.0 quarts (13.2 L)
“VORTEC” 5000 V8	M	17.0 quarts (16.0 L)	20.0 quarts (18.9 L)
“VORTEC” 5700 V8	R	17.0 quarts (16.0 L)	20.0 quarts (18.9 L)
“VORTEC” 8100 V8	G	23.0 quarts (21.8 L)	26.0 quarts (24.6 L)

After refill, the level MUST be checked as outlined under “Engine Cooling System” in Section 5.

Engine Oil Capacity

ENGINE	VIN	Quantity
“VORTEC” 4300 V6	W	4.5 quarts (4.3 L)
“VORTEC” 5000 V8	M	5.0 quarts (4.8 L)
“VORTEC” 5700 V8	R	5.0 quarts (4.8 L)
“VORTEC” 8100 V8	G	6.5 quarts (6.15 L)

Fuel Tank Capacity

TYPE	QUANTITY	MODEL TYPE
Standard Tank	31.0 U.S. gallons (117.3 L)	Passenger and Cargo
Standard Tank	35.0 U.S. gallons (132.5 L)	Cab and Chassis
Optional Tank*	55.0 U.S. gallons (208.1 L)	Cab and Chassis

*159 inch wheelbase or 177 inch wheelbase only

Air Conditioning Refrigerant Capacity

If you do your own service work, you'll need the proper service manual. See "Doing Your Own Service Work" in the Index for additional information. It is recommended that service work on your air conditioning system be performed by a qualified technician.

REFRIGERANT TYPE	CAPACITY
R–134a	2.0 lbs. (0.91 kg) Front
R–134a	3.5 lbs. (1.6 kg) Front and Rear

Normal Maintenance Replacement Parts

Replacement Parts

Replacement part numbers listed in this section are based on the latest information available at the time of printing, and are subject to change. If a part listed in this manual is not the same as the part used in your vehicle when it was built, or if you have any questions, please contact your GM dealer.

These specifications are for information only. If you have any questions, see the service manual for the chassis or refer to the body manufacturer's publications.

Engine	**"VORTEC" 4300 V6**	**"VORTEC" 5000 V8**	**"VORTEC" 5700 V8**	**"VORTEC"8100 V8**
VIN	W	M	R	G
Oil Filter	PF47	PF1218	PF1218	PF454
Engine Air Cleaner Filter *	A917C	A917C	A917C	A917C
PCV Valve	CV769C	CV769C	CV769C	**
Spark Plugs	41-932	41-932	41-932	TJ14R-P15
Fuel Filter	GF481	GF481	GF481	GF481
Radiator Cap	RC36	RC36	RC36	RC36

* Replace with ACDelco® Air Filter, Part No. A917C and for severe dusty conditions, use ACDelco® Air Filter, Part No. 1236C.

**8100 V8 has an internal PCV which does not require replacement.

Section 7 Maintenance Schedule

This section covers the maintenance required for your vehicle. Your vehicle needs these services to retain its safety, dependability and emission control performance.

7-2 Introduction
7-4 Part A: Scheduled Maintenance Services
7-9 Short Trip/City Scheduled Maintenance
7-33 Long Trip/Highway Scheduled Maintenance
7-48 Part B: Owner Checks and Services
7-53 Part C: Periodic Maintenance Inspections
7-55 Part D: Recommended Fluids and Lubricants
7-58 Part E: Maintenance Record

IMPORTANT:
KEEP ENGINE OIL AT THE PROPER LEVEL AND CHANGE AS RECOMMENDED

GM Protection Plan

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.

Introduction

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 procedures are 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, please maintain your vehicle properly.

Maintenance Requirements

Maintenance intervals, checks, inspections 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 recommended maintenance may not be covered by warranty.

How This Section is Organized

This maintenance schedule is divided into five parts:

“Part A: Scheduled Maintenance Services” explains what to have done and how often. Some of these services can be complex, so unless you are technically qualified and have the necessary equipment, you should let your dealer’s service department or another qualified service center do these jobs.

⚠ 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, have a qualified technician do the work.

If you want to get the service information, see “Service and Owner Publications” in the Index.

“Part B: Owner Checks and Services” tells you what should be checked and when. It also explains what you can easily do to help keep your vehicle in good condition.

“Part C: Periodic Maintenance Inspections” explains important inspections that your dealer’s service department or another qualified service center should perform.

“Part D: Recommended Fluids and Lubricants” lists some recommended products necessary to help keep your vehicle properly maintained. These products, or their equivalents, should be used whether you do the work yourself or have it done.

“Part E: Maintenance Record” is a place for you to record and keep track of the maintenance performed on your vehicle. Keep your maintenance receipts. They may be needed to qualify your vehicle for warranty repairs.

Part A: Scheduled Maintenance Services

Using Your Maintenance Schedule

We at General Motors want to help you keep your vehicle in good working condition. But we don't know exactly how you'll 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 dealer.

This part tells you the maintenance services you should have done and when you should schedule them. If you go to your dealer for your service needs, you'll know that GM-trained and supported service people will perform the work using genuine GM parts.

The proper fluids and lubricants to use are listed in Part D. Make sure whoever services your vehicle uses these. All parts should be replaced and all necessary repairs done before you or anyone else drives the vehicle.

These schedules are for vehicles that:

- carry passengers and cargo within recommended limits. You will find these limits on your vehicle's Certification/Tire label. See "Loading Your Vehicle" in the Index.
- are driven on reasonable road surfaces within legal driving limits.
- use the recommended fuel. See "Fuel" in the Index.

Selecting the Right Schedule

First you'll need to decide which of the two schedules is right for your vehicle. Here's how to decide which schedule to follow:

Scheduled Maintenance

Short Trip/City Definition

Follow the Short Trip/City Scheduled Maintenance if any one of these conditions is true for your vehicle:

- Most trips are less than 5 miles (8 km). This is particularly important when outside temperatures are below freezing.
- Most trips include extensive idling (such as frequent driving in stop-and-go traffic).
- You frequently tow a trailer or use a carrier on top of your vehicle.
- If the vehicle is used for delivery service, police, taxi or other commercial application.

One of the reasons you should follow this schedule if you operate your vehicle under any of these conditions is that these conditions cause engine oil to break down sooner.

Short Trip/City Intervals

At 3,000 Miles (5 000 km): Drive Axle Service (2500 and 3500 Series with locking differential only).

Every 3,000 Miles (5 000 km): Engine Oil and Filter Change (or 3 months, whichever occurs first). Chassis Lubrication (or 3 months, whichever occurs first). Drive Axle Fluid Check.

Every 6,000 Miles (10 000 km): Tire Rotation.

Every 15,000 Miles (25 000 km): Diesel Engine Only: Engine Air Cleaner Filter Inspection, if driving in dusty conditions. Drive Axle Service When Towing (2500 and 3500 Series only). Gasoline Engine Only: Noise Shields Inspection (GVWR above 10,000 lbs. only). Diesel Engine Only: Shields and Underhood Insulation Inspection. Diesel Engine Only: Thermostatically Controlled Engine Cooling Fan Check (or every 12 months, whichever occurs first). Diesel Engine Only: Air Intake System Inspection. Front Wheel Bearing Repack (or at each brake relining, whichever occurs first).

Scheduled Maintenance

Short Trip/City Intervals

Every 24,000 Miles (40 000 km): Diesel Engine Only: Fuel Cap Replacement, if driving in dusty conditions.

Every 30,000 Miles (50 000 km): Diesel Engine Only: Engine Air Cleaner Filter Replacement. Fuel Filter Replacement.

Every 50,000 Miles (83 000 km): Automatic Transmission Service (vehicles over 8600 GVWR or driven under severe conditions or equipped with diesel engine).

Every 60,000 Miles (100 000 km): Engine Accessory Drive Belt Inspection. If Equipped: Exhaust Gas Recirculation System Inspection. Gasoline Engine Only: Evaporative Control System Inspection. Diesel Engine Only: Crankcase Depression Regulator Valve (CDRV) System Check.

Short Trip/City Intervals

Every 100,000 Miles (166 000 km): Gasoline Engine Only: Spark Plug Wire Inspection. Gasoline Engine Only: Spark Plug Replacement. Gasoline Engine Only: Automatic Transmission Service (normal conditions). Gasoline Engine Only (Except 8.1L V8): Positive Crankcase Ventilation (PCV) Valve Inspection.

Every 150,000 Miles (240 000 km): Cooling System Service (or every 60 months, whichever occurs first).

These intervals only summarize maintenance services. Be sure to follow the complete scheduled maintenance on the following pages.

Long Trip/Highway Definition

Follow this scheduled maintenance *only* if none of the conditions from the Short Trip/City Scheduled Maintenance are true. Do not use this schedule if the vehicle is used for trailer towing, driven in a dusty area or used off paved roads. Use the Short Trip/City schedule for these conditions.

Driving a vehicle with a fully warmed engine under highway conditions will cause engine oil to break down slower.

Long Trip/Highway Intervals

At 7,500 Miles (12 500 km): Drive Axle Service (2500 and 3500 Series with locking differential only).

Every 7,500 Miles (12 500 km): Engine Oil and Filter Change (or every 12 months, whichever occurs first). Chassis Lubrication (or every 12 months, whichever occurs first). Drive Axle Fluid Check. Tire Rotation.

Every 15,000 Miles (25 000 km): Gasoline Engine Only: Noise Shields Inspection (GVWR above 10,000 lbs. only). Diesel Engine Only: Shields and Underhood Insulation Inspection. Diesel Engine Only: Thermostatically Controlled Engine Cooling Fan Check (or every 12 months, whichever occurs first). Diesel Engine Only: Air Intake System Inspection.

Long Trip/Highway Intervals

Every 30,000 Miles (50 000 km): Fuel Filter Replacement. Diesel Engine Only: Engine Air Cleaner Filter Replacement. Front Wheel Bearing Repack (or at each brake relining, whichever occurs first).

Every 50,000 Miles (83 000 km): Automatic Transmission Service (vehicles over 8600 GVWR or driven under severe conditions or equipped with diesel engine).

Every 60,000 Miles (100 000 km): Engine Accessory Drive Belt Inspection. If Equipped: Exhaust Gas Recirculation System Inspection. Gasoline Engine Only: Evaporative Control System Inspection. Diesel Engine Only: Crankcase Depression Regulator Valve (CDRV) System Check.

Long Trip/Highway Intervals

Every 100,000 Miles (166 000 km): Gasoline Engine Only: Spark Plug Wire Inspection. Gasoline Engine Only: Spark Plug Replacement. Gasoline Engine Only: Automatic Transmission Service (normal conditions). Gasoline Engine Only (Except 8.1L V8): Positive Crankcase Ventilation (PCV) Valve Inspection.

Every 150,000 Miles (240 000 km): Cooling System Service (or every 60 months, whichever occurs first).

These intervals only summarize maintenance services. Be sure to follow the complete scheduled maintenance on the following pages.

Short Trip/City Scheduled Maintenance

The services shown in this schedule up to 100,000 miles (166 000 km) should be repeated after 100,000 miles (166 000 km) at the same intervals for the life of this vehicle. The services shown at 150,000 miles (240 000 km) should be repeated at the same interval after 150,000 miles (240 000 km) for the life of this vehicle.

See “Owner Checks and Services” and “Periodic Maintenance Inspections” following.

Footnotes

† The U.S. Environmental Protection Agency or the California Air Resources Board has determined that the failure to perform this maintenance item will not nullify the emission warranty or limit recall liability prior to the completion of the vehicle’s useful life. We, however, urge that all recommended maintenance services be performed at the indicated intervals and the maintenance be recorded.

 # Lubricate the front suspension, kingpin bushings, steering linkage and rear driveline center splines.

+ A good time to check your brakes is during tire rotation. See “Brake System Inspection” under “Periodic Maintenance Inspections” in Part C of this schedule.

Short Trip/City Scheduled Maintenance

3,000 Miles (5 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed. 2500 and 3500 Series Only: If your vehicle has a locking differential, drain fluid and refill at first engine oil change.

6,000 Miles (10 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

Short Trip/City Scheduled Maintenance

9,000 Miles (15 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.

12,000 Miles (20 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

Short Trip/City Scheduled Maintenance

15,000 Miles (25 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Diesel Engine Only: Inspect engine air cleaner filter if you are driving in dusty conditions. Replace filter if necessary. *An Emission Control Service. (See footnote †.)*

  Gasoline Engine Only: See “Engine Air Cleaner Filter Restriction Indicator Check” in the Index.
- ☐ Check axle fluid level and add fluid as needed. 2500 and 3500 Series Only: If driving in dusty areas or when towing a trailer, drain fluid and refill every 15,000 miles (25 000 km).
- ☐ Clean and repack the front wheel bearings (or at each brake relining, whichever occurs first).
- ☐ Vehicles With GVWR Above 10,000 lbs. or Equipped with Diesel Engine Only: Inspect shields for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

- ☐ Diesel Engine Only: Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: If your engine has a thermostatically controlled cooling fan, inspect all hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

18,000 Miles (30 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

Short Trip/City Scheduled Maintenance

21,000 Miles (35 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.

24,000 Miles (40 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*
- ☐ Diesel Engine Only: Replace fuel cap if driving in dusty conditions. *An Emission Control Service.*

Short Trip/City Scheduled Maintenance

27,000 Miles (45 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.

30,000 Miles (50 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed. 2500 and 3500 Series Only: If driving in dusty areas or when towing a trailer, drain fluid and refill every 15,000 miles (25 000 km).
- ☐ Clean and repack the front wheel bearings (or at each brake relining, whichever occurs first).
- ☐ Replace fuel filter. *An Emission Control Service. (See footnote †.)*

(Continued)

30,000 Miles (50 000 km) (Continued)

- ☐ Diesel Engine Only: Replace engine air cleaner filter. *An Emission Control Service.*

  Gasoline Engine Only: See “Engine Air Cleaner Filter Restriction Indicator Check” in the Index.
- ☐ Vehicles With GVWR Above 10,000 lbs. or Equipped with Diesel Engine Only: Inspect shields for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*
- ☐ Diesel Engine Only: Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: If your engine has a thermostatically controlled cooling fan, inspect all hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

Short Trip/City Scheduled Maintenance

33,000 Miles (55 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.

36,000 Miles (60 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*
- ☐ Check axle fluid level and add fluid as needed.

39,000 Miles (65 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.

Short Trip/City Scheduled Maintenance

42,000 Miles (70 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

45,000 Miles (75 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed. 2500 and 3500 Series Only: If driving in dusty areas or when towing a trailer, drain fluid and refill every 15,000 miles (25 000 km).

- ☐ Clean and repack the front wheel bearings (or at each brake relining, whichever occurs first).

  Diesel Engine Only:Inspect engine air cleaner filter if you are driving in dusty conditions. Replace filter if necessary. *An Emission Control Service. (See footnote †.)*

  Gasoline Engine Only: See “Engine Air Cleaner Filter Restriction Indicator Check” in the Index.
- ☐ Vehicles With GVWR Above 10,000 lbs. or Equipped with Diesel Engine Only: Inspect shields for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: If your engine has a thermostatically controlled cooling fan, inspect all hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

Short Trip/City Scheduled Maintenance

48,000 Miles (80 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*
- ☐ Diesel Engine Only: Replace fuel cap if driving in dusty conditions. *An Emission Control Service.*

50,000 Miles (83 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change automatic transmission fluid and filter if the vehicle has a diesel engine, if the vehicle’s 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.

  If you do not use your vehicle under any of these conditions, change the fluid and filter at 100,000 miles (166 000 km).

Short Trip/City Scheduled Maintenance

51,000 Miles (85 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.

54,000 Miles (90 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

57,000 Miles (95 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.

Short Trip/City Scheduled Maintenance

60,000 Miles (100 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first).
  An Emission Control Service.
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first).
  (See footnote #.)
- ☐ Check axle fluid level and add fluid as needed. 2500 and 3500 Series Only: If driving in dusty areas or when towing a trailer, drain fluid and refill every 15,000 miles (25 000 km).
- ☐ Clean and repack the front wheel bearings (or at each brake relining, whichever occurs first).
- ☐ Vehicles With GVWR Above 10,000 lbs. or Equipped with Diesel Engine Only: Inspect shields for damage or looseness. Adjust or replace as required.
  This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.
- ☐ Inspect engine accessory drive belt.
  An Emission Control Service.
- ☐ Replace fuel filter.
  An Emission Control Service. (See footnote †.)

Short Trip/City Scheduled Maintenance

- ☐ Gasoline Engine Only: Conduct evaporative control system inspection. Check all fuel and vapor lines and hoses for proper hook-up, routing and condition. Check that the purge valve works properly (if equipped). Replace as needed. *An Emission Control Service. (See footnote †.)*
- ☐ Diesel Engine Only: Replace engine air cleaner filter. *An Emission Control Service.*

  Gasoline Engine Only: See “Engine Air Cleaner Filter Restriction Indicator Check” in the Index.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*
- ☐ Diesel Engine Only: Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: If your engine has a thermostatically controlled cooling fan, inspect all hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: Check the crankcase depression regulator valve system for any worn, plugged or collapsed hoses. See service manual. *An Emission Control Service.*

Short Trip/City Scheduled Maintenance

63,000 Miles (105 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.

66,000 Miles (110 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

69,000 Miles (115 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.

Short Trip/City Scheduled Maintenance

72,000 Miles (120 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*
- ☐ Diesel Engine Only: Replace fuel cap if driving in dusty conditions. *An Emission Control Service.*

75,000 Miles (125 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Clean and repack the front wheel bearings (or at each brake relining, whichever occurs first).

(Continued)

75,000 Miles (125 000 km) (Continued)

- ☐ Diesel Engine Only: Inspect engine air cleaner filter if you are driving in dusty conditions. Replace filter if necessary. *An Emission Control Service. (See footnote †.)*

  Gasoline Engine Only: See “Engine Air Cleaner Filter Restriction Indicator Check” in the Index.
- ☐ Check axle fluid level and add fluid as needed. 2500 and 3500 Series Only: If driving in dusty areas or when towing a trailer, drain fluid and refill every 15,000 miles (25 000 km).
- ☐ Vehicles With GVWR Above 10,000 lbs. or Equipped with Diesel Engine Only: Inspect shields for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: If your engine has a thermostatically controlled cooling fan, inspect all hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

Short Trip/City Scheduled Maintenance

78,000 Miles (130 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

81,000 Miles (135 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.

Short Trip/City Scheduled Maintenance

84,000 Miles (140 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

87,000 Miles (145 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.

Short Trip/City Scheduled Maintenance

90,000 Miles (150 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed. 2500 and 3500 Series Only: If driving in dusty areas or when towing a trailer, drain fluid and refill every 15,000 miles (25 000 km).
- ☐ Clean and repack the front wheel bearings (or at each brake relining, whichever occurs first).
- ☐ Replace fuel filter. *An Emission Control Service. (See footnote ✝.)*
- ☐ Diesel Engine Only: Replace engine air cleaner filter. *An Emission Control Service.*

  Gasoline Engine Only: See “Engine Air Cleaner Filter Restriction Indicator Check” in the Index.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

(Continued)

90,000 Miles (150 000 km) (Continued)

- ☐ Vehicles With GVWR Above 10,000 lbs. or Equipped with Diesel Engine Only: Inspect shields for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: If your engine has a thermostatically controlled cooling fan, inspect all hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

93,000 Miles (155 000 km)

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.

DATE	
ACTUAL MILEAGE	SERVICED BY:

Short Trip/City Scheduled Maintenance

96,000 Miles (160 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*
- ☐ Diesel Engine Only: Replace fuel cap if driving in dusty conditions. *An Emission Control Service.*

99,000 Miles (165 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.

Short Trip/City Scheduled Maintenance

100,000 Miles (166 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Gasoline Engine Only: Inspect spark plug wires. *An Emission Control Service.*
- ☐ Gasoline Engine Only: Replace spark plugs. *An Emission Control Service.*
- ☐ Change automatic transmission fluid and filter if the vehicle has a diesel engine, if the vehicle's 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.
- ☐ If you haven't used your vehicle under severe service conditions listed previously and, therefore, haven't changed your automatic transmission fluid, change both the fluid and filter.
- ☐ Gasoline Engine Only (Except 8.1L V8): Inspect Positive Crankcase Ventilation (PCV) valve. *An Emission Control Service.*

150,000 Miles (240 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Drain, flush and refill cooling system (or every 60 months since last service, whichever occurs first). See "Engine Coolant" in the Index for what to use. Inspect hoses. Clean radiator, condenser, pressure cap and neck. Pressure test cooling system and pressure cap. *An Emission Control Service.*

Long Trip/Highway Scheduled Maintenance

The services shown in this schedule up to 100,000 miles (166 000 km) should be repeated after 100,000 miles (166 000 km) at the same intervals for the life of this vehicle. The services shown at 150,000 miles (240 000 km) should be repeated at the same interval after 150,000 miles (240 000 km) for the life of this vehicle.

See “Owner Checks and Services” and “Periodic Maintenance Inspections” following.

Footnotes

† The U.S. Environmental Protection Agency or the California Air Resources Board has determined that the failure to perform this maintenance item will not nullify the emission warranty or limit recall liability prior to the completion of the vehicle’s useful life. We, however, urge that all recommended maintenance services be performed at the indicated intervals and the maintenance be recorded.

 # Lubricate the front suspension, kingpin bushings, steering linkage and rear driveline center splines.

+ A good time to check your brakes is during tire rotation. See “Brake System Inspection” under “Periodic Maintenance Inspections” in Part C of this schedule.

7,500 Miles (12 500 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed. 2500 and 3500 Series Only: If your vehicle has a locking differential, drain fluid and refill at first engine oil change.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

15,000 Miles (25 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Vehicles With GVWR Above 10,000 lbs. or Equipped with Diesel Engine Only: Inspect shields for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*
- ☐ Diesel Engine Only: Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

22,500 Miles (37 500 km)

- ☐ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

DATE	
ACTUAL MILEAGE	SERVICED BY:

30,000 Miles (50 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Clean and repack the front wheel bearings (or at each brake relining, whichever occurs first).
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*
- ☐ Replace fuel filter. *An Emission Control Service. (See footnote †.)*
- ☐ Diesel Engine Only: Replace engine air cleaner filter. *An Emission Control Service.*

  Gasoline Engine Only: See “Engine Air Cleaner Filter Restriction Indicator Check” in the Index.
- ☐ Vehicles With GVWR Above 10,000 lbs. or Equipped with Diesel Engine Only: Inspect shields for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

- ☐ Diesel Engine Only: Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

37,500 Miles (62 500 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

45,000 Miles (75 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Vehicles With GVWR Above 10,000 lbs. or Equipped with Diesel Engine Only: Inspect shields for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*
- ☐ Diesel Engine Only: Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

50,000 Miles (83 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

☐ Change automatic transmission fluid and filter if the vehicle has a diesel engine, if the vehicle's 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.

If you do not use your vehicle under any of these conditions, change the fluid and filter at 100,000 miles (166 000 km).

52,500 Miles (87 500 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

☐ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*

☐ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*

☐ Check axle fluid level and add fluid as needed.

☐ Rotate tires. See "Tire Inspection and Rotation" in the Index for proper rotation pattern and additional information. *(See footnote +.)*

60,000 Miles (100 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Clean and repack the front wheel bearings (or at each brake relining, whichever occurs first).
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*
- ☐ Inspect engine accessory drive belt. *An Emission Control Service.*
- ☐ Replace fuel filter. *An Emission Control Service. (See footnote †.)*
- ☐ Diesel Engine Only: Replace engine air cleaner filter. *An Emission Control Service.*

  Gasoline Engine Only: See “Engine Air Cleaner Filter Restriction Indicator Check” in the Index.
- ☐ Vehicles With GVWR Above 10,000 lbs. or Equipped with Diesel Engine Only: Inspect shields for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

Long Trip/Highway Scheduled Maintenance

- ☐ Gasoline Engine Only: Inspect Evaporative Control System. Check all fuel and vapor lines and hoses for proper hook-up, routing and condition. Check that the purge valve works properly, if equipped. Replace as needed. *An Emission Control Service. (See footnote †.)*
- ☐ Diesel Engine Only: Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: Check the crankcase depression regulator valve system for any worn, plugged or collapsed hoses. See service manual. *An Emission Control Service.*

67,500 Miles (112 500 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

75,000 Miles (125 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Vehicles With GVWR Above 10,000 lbs. or Equipped with Diesel Engine Only: Inspect shields for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

- ☐ Diesel Engine Only: Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

82,500 Miles (137 500 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

90,000 Miles (150 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Clean and repack the front wheel bearings (or at each brake relining, whichever occurs first).
- ☐ Replace fuel filter. *An Emission Control Service. (See footnote †.)*
- ☐ Diesel Engine Only: Replace engine air cleaner filter. *An Emission Control Service.* Gasoline Engine Only: See “Engine Air Cleaner Filter Restriction Indicator Check” in the Index.
- ☐ Vehicles With GVWR Above 10,000 lbs. Only: Inspect shields for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

- ☐ Diesel Engine Only: Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- ☐ Diesel Engine Only: If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

97,500 Miles (162 500 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Change engine oil and filter (or every 12 months, whichever occurs first). *An Emission Control Service.*
- ☐ Lubricate chassis components (or every 12 months, whichever occurs first). *(See footnote #.)*
- ☐ Check axle fluid level and add fluid as needed.
- ☐ Rotate tires. See “Tire Inspection and Rotation” in the Index for proper rotation pattern and additional information. *(See footnote +.)*

100,000 Miles (166 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

- ☐ Gasoline Engine Only: Inspect spark plug wires.
  An Emission Control Service.
- ☐ Gasoline Engine Only: Replace spark plugs. *An Emission Control Service.*
- ☐ Change automatic transmission fluid and filter if the vehicle has a diesel engine, if the vehicle's 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.
- ☐ If you haven't used your vehicle under severe service conditions listed previously and, therefore, haven't changed your automatic transmission fluid, change both the fluid and filter.
- ☐ Gasoline Engine Only (Except 8.1L V8): Inspect Positive Crankcase Ventilation (PCV) valve.
  An Emission Control Service.

150,000 Miles (240 000 km)

DATE	
ACTUAL MILEAGE	SERVICED BY:

☐ Drain, flush and refill cooling system (or every 60 months since last service, whichever occurs first). See “Engine Coolant” in the Index for what to use. Inspect hoses. Clean radiator, condenser, pressure cap and neck. Pressure test the cooling system and pressure cap.
An Emission Control Service.

Part B: Owner Checks and Services

Listed in this part are owner checks and services which should be performed at the intervals specified to help ensure the safety, dependability and emission control performance of your vehicle.

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 Part D.

At the First 100, 1,000 and 6,000 Miles (160, 1 600 and 10 000 km)

For vehicles with dual wheels, check dual wheel nut torque. For proper torque, see “Wheel Nut Torque” in the Index.

At Each Fuel Fill

It is important for you or a service station attendant 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” in the Index for further details.

Engine Coolant Level Check

Check the engine coolant level and add DEX-COOL® coolant mixture if necessary. See “Engine Coolant” in the Index for further details.

Windshield Washer Fluid Level Check

Check the windshield washer fluid level in the windshield washer tank and add the proper fluid if necessary. See “Windshield Washer Fluid” in the Index for further details.

At Least Once a Month

Tire Inflation Check

Make sure tires are inflated to the correct pressures. Don’t forget to check your spare tire. See “Tires” in the Index for further details.

Cassette Deck Service

Clean cassette deck. Cleaning should be done every 50 hours of tape play. See “Audio Systems” in the Index for further details.

At Least Twice a Year

Restraint System Check

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 air bag coverings, and have them repaired or replaced. (The air bag system does not need regular maintenance.)

Wiper Blade Check

Inspect wiper blades for wear or cracking. Replace blade inserts that appear worn or damaged or that streak or miss areas of the windshield. Also see “Wiper Blades, Cleaning” in the Index.

Spare Tire Check

At least twice a year, after the monthly inflation check of the spare tire determines that the spare is inflated to the correct tire inflation pressure, make sure that the spare tire is stored securely. Push, pull, and then try to rotate or turn the tire. If it moves, use the ratchet/wheel wrench to tighten the cable. See “Storing the Spare Tire and Tools” in the Index.

Gasoline Engine Only: Engine Air Cleaner Filter Restriction Indicator Check

Your vehicle has an indicator located on the air cleaner in the engine compartment that lets you know when the air cleaner filter is dirty and needs to be changed. Check indicator at least twice a year or when your engine oil is changed, whichever occurs first. See “Air Cleaner” in the Index for more information. Inspect your air cleaner filter restriction indicator more often if the vehicle is used in dusty areas.

Weatherstrip Lubrication

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 more frequent application may be required. See “Recommended Fluids and Lubricants” in the Index.

Automatic Transmission Check

Check the transmission fluid level; add if needed. See “Automatic Transmission Fluid” in the Index. A fluid loss may indicate a problem. Check the system and repair if needed.

At Least Once a Year

Key Lock Cylinders Service

Lubricate the key lock cylinders with the lubricant specified in Part D.

Body Lubrication Service

Lubricate all hood hinges, hood prop rod pivot, fuel filler door, rear compartment hinges, latches, locks, hood latch assembly, secondary latch, pivots, spring anchor, release pawl and any moving seat hardware. Part D tells you what to use. More frequent lubrication may be required when exposed to a corrosive environment.

Starter Switch Check

⚠ CAUTION:

When you are doing this check, the vehicle could move suddenly. If it does, you or others could be injured. Follow the steps below.

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” in the Index if necessary.

   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 starter should work only in PARK (P) or NEUTRAL (N). If the starter works in any other position, your vehicle needs service.

Automatic Transmission Shift Lock Control System Check

⚠ CAUTION:

When you are doing this check, the vehicle could move suddenly. If it does, you or others could be injured. Follow the steps below.

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” in the Index if necessary.

   Be ready to apply the regular brake immediately if the vehicle begins to move.
3. With the engine off, turn the key to the RUN position, but don’t 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), your vehicle needs service.

Ignition Transmission Lock Check

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

- The key should turn to LOCK only when the shift lever is in PARK (P).
- The key should come out only in LOCK.

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.

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.

Part C: Periodic Maintenance Inspections

Listed in this part are inspections and services which should be performed at least twice a year (for instance, each spring and fall). *You should let your dealer's service department or other qualified service center do these jobs. Make sure any necessary repairs are completed at once.*

Proper procedures to perform these services may be found in a service manual. See “Service and Owner Publications” in the Index.

Steering and Suspension Inspection

Inspect the front and rear suspension and steering system for damaged, loose or missing parts, signs of wear or lack of lubrication. Inspect the power steering lines and hoses for proper hook-up, binding, leaks, cracks, chafing, etc.

Exhaust System Inspection

Inspect the complete exhaust system. Inspect the body near the exhaust system. Look for broken, damaged, missing or out-of-position parts as well as open seams, holes, loose connections or other conditions which could cause a heat build-up in the floor pan or could let exhaust fumes into the vehicle. See “Engine Exhaust” in the Index.

Fuel System Inspection

Inspect the complete fuel system for damage or leaks.

Engine Cooling System Inspection

Inspect the hoses and have them replaced if they are cracked, swollen or deteriorated. Inspect all pipes, fittings and clamps; replace as needed. Clean the outside of the radiator and air conditioning condenser. To help ensure proper operation, a pressure test of the cooling system and pressure cap is recommended at least once a year.

Throttle System Inspection (Gasoline Engine)

Inspect the throttle system for interference or binding, and for damaged or missing parts. Replace parts as needed. Replace any components that have high effort or excessive wear. Do not lubricate accelerator and cruise control cables.

Rear Axle Service

Check the gear lubricant level in the rear axle and add if needed. See “Rear Axle” in the Index. A fluid loss may indicate a problem. Check the axle and repair it if needed.

Brake System Inspection

Inspect the complete system. 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. Also inspect drum brake linings for wear and cracks. Inspect other brake parts, including drums, wheel cylinders, calipers, parking brake, etc. Check parking brake adjustment. You may need to have your brakes inspected more often if your driving habits or conditions result in frequent braking.

Part D: Recommended Fluids and Lubricants

Fluids and lubricants identified below by name, part number or specification may be obtained from your dealer.

USAGE	FLUID/LUBRICANT
Engine Oil (Gasoline Engine)	Engine oil with the American Petroleum Institute Certified for Gasoline Engines starburst symbol of the proper viscosity. To determine the preferred viscosity for your vehicle's engine, see "Engine Oil" in the Index.
Engine Oil (Diesel Engine)	Engine oil with the letters CH-4 or CG-4 is best for your vehicle. The CH-4 or CG-4 designation may appear either alone, or in combination with other API designations, such as API CH-4/SJ, CG-4/SH or CH-4/CG-4/SJ. These letters show American Petroleum Institute (API) levels of quality. To determine the preferred viscosity for your vehicle's diesel engine, see "Engine Oil" in the Index.
Engine Coolant	50/50 mixture of clean, drinkable water and use only GM Goodwrench® DEX-COOL® or Havoline® DEX-COOL® Coolant. See "Engine Coolant" in the Index.

USAGE	FLUID/LUBRICANT
Hydraulic Brake System	Delco Supreme 11® Brake Fluid (GM Part No. 12377967 or equivalent DOT-3 brake fluid).
Windshield Washer Solvent	GM Optikleen® Washer Solvent (GM Part No. 1051515) or equivalent.
Parking Brake Cable Guides	Chassis Lubricant (GM Part No. 12377985 or equivalent) or lubricant meeting requirements of NLGI # 2, Category LB or GC-LB.
Power Steering System	GM Power Steering Fluid (GM Part No. 1052884 - 1 pint, 1050017 - 1 quart, or equivalent).
Automatic Transmission	DEXRON®-III Automatic Transmission Fluid.
Key Lock Cylinders	Multi-Purpose Lubricant, Superlube® (GM Part No. 12346241 or equivalent).

USAGE	FLUID/LUBRICANT
Chassis Lubrication	Chassis Lubricant (GM Part No. 12377985 or equivalent) or lubricant meeting requirements of NLGI # 2, Category LB or GC-LB.
Front Wheel Bearings	Wheel bearing lubricant meeting requirements of NLGI # 2, Category GC or GC-LB (GM Part No. 1051344 or equivalent).
Rear Axle (1500 Series Only)	SAE 75W-90 Synthetic Axle Lubricant (GM Part No. 12378261) or equivalent meeting GM Specification 9986115.
Rear Axle (2500 and 3500 Series with Standard Differential Only)	SAE 80W-90 Axle Lubricant (GM Part No. 1052271 or equivalent).

USAGE	FLUID/LUBRICANT
Rear Axle (2500 and 3500 Series with Locking Differential Only)	Axle Lubricant; use only GM Part No. 1052271. *Do not add friction modifier.*
Propshaft Splines and Universal Joints	Chassis Lubricant (GM Part No. 12377985 or equivalent) or lubricant meeting requirements of NLGI # 2, Category LB or GC-LB.
One-Piece Propshaft Spline	Spline Lubricant, Special Lubricant (GM Part No. 12345879) or lubricant meeting requirements of GM 9985830.

USAGE	FLUID/LUBRICANT
Hood Latch Assembly, Secondary Latch, Pivots, Spring Anchor and Release Pawl	Lubriplate® Lubricant Aerosol (GM Part No. 12346293 or equivalent) or lubricant meeting requirements of NLGI # 2, Category LB or GC-LB.
Hood Hinges	Multi-Purpose Lubricant, Superlube® (GM Part No. 12346241 or equivalent).
Weatherstrip Conditioning	Dielectric Silicone Grease (GM Part No. 12345579 or equivalent).
Weatherstrip Squeaks	Synthetic Grease with Teflon, Superlube® (GM Part No. 12371287 or equivalent).

Part E: Maintenance Record

After the scheduled services are performed, record the date, odometer reading and who performed the service in the boxes provided after the maintenance interval. Any additional information from “Owner Checks and Services” or “Periodic Maintenance” can be added on the following record pages. Also, you should retain all maintenance receipts. Your owner information portfolio is a convenient place to store them.

Maintenance Record			
DATE	ODOMETER READING	SERVICED BY	MAINTENANCE PERFORMED

Maintenance Record

DATE	ODOMETER READING	SERVICED BY	MAINTENANCE PERFORMED

Maintenance Record

DATE	ODOMETER READING	SERVICED BY	MAINTENANCE PERFORMED

Section 8 Customer Assistance Information

Here you will find out how to contact GMC if you need assistance. This section also tells you how to obtain service publications and how to report any safety defects.

8-2 Customer Satisfaction Procedure
8-4 Customer Assistance for Text Telephone (TTY) Users
8-4 Customer Assistance Offices
8-5 GM Mobility Program for Persons with Disabilities
8-6 Roadside Assistance
8-7 Canadian Roadside Assistance
8-8 Courtesy Transportation
8-10 Warranty Information
8-10 Reporting Safety Defects to the United States Government
8-11 Reporting Safety Defects to the Canadian Government
8-11 Reporting Safety Defects to General Motors

Customer Satisfaction Procedure

Your satisfaction and goodwill are important to your dealer and to GMC. Normally, any concerns with the sales transaction or the operation of your vehicle will be resolved by your dealer's sales or service departments. Sometimes, however, despite the best intentions of all concerned, misunderstandings can occur. If your concern has not been resolved to your satisfaction, the following steps should be taken:

STEP ONE -- Discuss your concern with a member of dealership management. Normally, concerns can be quickly resolved at that level. If the matter has already been reviewed with the sales, service or parts manager, contact the owner of the dealership or the general manager.

STEP TWO -- If after contacting a member of dealership management, it appears your concern cannot be resolved by the dealership without further help, contact the GMC Consumer Relations Manager by calling 1-800-GMC-8782 (1-800-462-8782, Customer Assistance prompt). In Canada, contact GM of Canada Customer Communication Centre in Oshawa 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 (This is available from the vehicle registration or title, or the plate at the top left of the instrument panel and visible through the windshield.)
- Dealership name and location
- Vehicle delivery date and present mileage

When contacting GMC, please remember that your concern will likely be resolved at a dealer's facility. That is why we suggest you follow Step One first if you have a concern.

STEP THREE -- Both General Motors and your dealer are committed to making sure you are completely satisfied with your new vehicle. However, if you continue to remain unsatisfied after following the procedure outlined in Steps One and Two, you should file with the GM/BBB Auto Line Program to enforce any additional rights you may have. Canadian owners refer to your Warranty and Owner Assistance Information booklet for information on the Canadian Motor Vehicle Arbitration Plan (CAMVAP).

The BBB Auto Line Program is an out of court program administered by the Council of Better Business Bureaus to settle automotive disputes regarding vehicle repairs or the interpretation of the New Vehicle Limited Warranty. Although you may be required to resort to this informal dispute resolution program prior to filing a court action, use of the program is free of charge and your case will generally be heard within 40 days. If you do not agree with the decision given in your case, you may reject it and proceed with any other venue for relief available to you.

You may contact the BBB using the toll-free telephone number or write them at the following address:

BBB Auto Line
Council of Better Business Bureaus, Inc.
4200 Wilson Boulevard
Suite 800
Arlington, VA 22203-1804

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.

Customer Assistance for Text Telephone (TTY) Users

To assist customers who are deaf, hard of hearing, or speech-impaired and who use Text Telephones (TTYs), GMC has TTY equipment available at its Customer Assistance Center. Any TTY user 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. If a U.S. customer wishes to write to GMC, the letter should be addressed to GMC's Customer Assistance Center.

United States

Pontiac-GMC Customer Assistance Center
P.O. Box 33172
Detroit, MI 48232-5172

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)

From:

Puerto Rico:	1-800-496-9992 (English) 1-800-496-9993 (Spanish)
U.S. Virgin Islands:	1-800-496-9994
Fax Number:	313-381-0022

Canada

General Motors of Canada Limited
Customer Communication Centre, 163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7

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

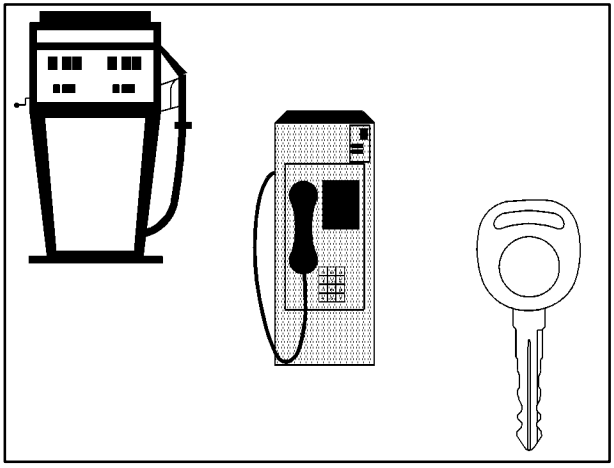
GM Mobility Program for Persons with Disabilities

This program, available to qualified applicants, can reimburse you up to $1,000 toward aftermarket driver or passenger adaptive equipment you may require for your vehicle (hand controls, wheelchair/scooter lifts, etc.).

This program can also provide you with free resource information, such as area driver assessment centers and mobility equipment installers. The program is available for a limited period of time from the date of vehicle purchase/lease. See your dealer for more details or call the GM Mobility Assistance Center at 1-800-323-9935. Text telephone (TTY) users, call 1-800-833-9935.

GM of Canada also has a Mobility Program. Call 1-800-GM-DRIVE (463-7483) for details. When calling from outside Canada, please dial 1-905-644-3063. All TTY users call 1-800-263-3830.

Roadside Assistance



GMC's Roadside Assistance provides stranded owners with over-the-phone roadside repairs, location of the nearest GMC dealer or the following special services:

Flat Tire Change: Installation of spare tire will be covered at no charge (customer is responsible for repair or replacement of tire).

Fuel Delivery: Delivery of enough fuel for the customer to get to the nearest service station (up to $5.00) will be covered.

Jump Start: No-start situations which require a battery jump start will be covered at no charge.

Lock Out: Replacement keys or locksmith service will be covered at no charge if you are unable to gain entry into your vehicle. Delivery of the replacement key will be covered at no charge within 10 miles (16 km).

Emergency Towing Service: Towing to the nearest GMC dealer for warranty related disablements will be covered.

Trip Routing: Custom-made, computerized highlighted maps using the most direct or scenic route are provided free of charge. Maps include points of interest and a list of GMC dealers along the route. Also included is a list of hotels along the route that are discounted through affiliation with "Quest International." Trip Routing is available through Roadside Assistance by calling 1-800-GMC-8782 (462-8782). Please be prepared to provide your Vehicle Identification Number (VIN). Allow five working days for fulfillment.

Trip Interruption Assistance: GMC will reimburse any reasonable trip interruption expenses (up to $500.00) when directly associated with warranty disablement. Trip Interruption service covers expenses such as meals and overnight lodging if vehicle disablement occurs at least 150 miles (240 km) from your home or rental property. You will be required to obtain prior approval from GMC Roadside Assistance and pay for expenses at the time of disablement. Original receipts should be submitted to GMC Roadside Assistance for reimbursement. A service representative will provide assistance when you call.

The Roadside Assistance services listed are available to retail and retail lease customers operating 2002 GMC light duty trucks for a period of 3 years/36,000 miles (60 000 km). All services must be pre-arranged by GMC Roadside Assistance.

Over-the-phone assistance, such as providing the name of the closest dealer or minor technical advice, etc., is available to all owner/operators of GMC trucks, regardless of vehicle or mileage.

Just dial GMC Roadside Assistance at 1-800-GMC-8782 (1-800-462-8782, Roadside Assistance prompt) to reach a qualified representative who can assist you. Text telephone (TTY) users, call 1-888-889-2438.

Your Roadside Assistance representative will ask for the following information when your call is received:

- Vehicle Identification Number (VIN)
- Name and home address
- Telephone number and location from which you are calling
- Location, license plate number and color of your GMC truck
- Mileage of vehicle and description of problem

Roadside Assistance is available 24 hours a day, 7 days a week, 365 days a year, including weekends and holidays. Should you have any questions about roadside assistance, call the GMC Roadside Assistance Center or contact your dealer.

Roadside Assistance is not part of or included in the coverage provided by the New Vehicle Limited Warranty. GMC reserves the right to make any changes or discontinue the Roadside Assistance program at any time without notification.

Canadian Roadside Assistance

Vehicles purchased in Canada have an extensive Roadside Assistance program accessible from anywhere in Canada or the United States. Please refer to the Warranty and Owner Assistance Information book or call 1-800-268-6800 for emergency services.

Courtesy Transportation

GMC has always exemplified quality and value in its offering of motor vehicles. To enhance your ownership experience, we and our participating dealers are proud to offer Courtesy Transportation, a customer support program for new vehicles.

The Courtesy Transportation program is offered to retail purchase/lease customers in conjunction with the Bumper-to-Bumper coverage provided by the New Vehicle Limited Warranty. Several transportation options are available when warranty repairs are required. This will reduce your inconvenience during warranty repairs.

Plan Ahead When Possible

When your vehicle requires warranty service, you should contact your dealer and request an appointment. By scheduling a service appointment and advising your service consultant of your transportation needs, your dealer can help minimize your inconvenience.

If your vehicle cannot be scheduled into the service department immediately, keep driving it until it can be scheduled for service, unless, of course, the problem is safety-related. If it is, please call your dealership, let them know this, and ask for instructions.

If the dealer requests that you simply drop the vehicle off for service, you are urged to do so as early in the work day as possible to allow for same day repair.

Transportation Options

Warranty service can generally be completed while you wait. However, if you are unable to wait GMC helps minimize your inconvenience by providing several transportation options. Depending on the circumstances, your dealer can offer you one of the following:

Shuttle Service

Participating dealers can provide you with shuttle service to get you to your destination with minimal interruption of your daily schedule. This includes a one way shuttle ride to a destination up to 10 miles from the dealership.

Public Transportation or Fuel Reimbursement

If your vehicle requires overnight warranty repairs, reimbursement up to $30 per day (five days maximum) may be available for the use of public transportation such as taxi or bus. In addition, should you arrange transportation through a friend or relative, reimbursement for reasonable fuel expenses up to $10 per day (five day maximum) may be available. Claim amounts should reflect actual costs and be supported by original receipts.

Courtesy Rental Vehicle

When your vehicle is unavailable due to overnight warranty repairs, your dealer may arrange to provide you with a courtesy rental vehicle or reimburse you for a rental vehicle you obtained, at actual cost, up to a maximum of $30.00 per day supported by receipts. This requires that you sign and complete a rental agreement and meet state, 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

Courtesy Transportation is available during the Bumper-to-Bumper warranty coverage period, but it *is not* part of the New Vehicle Limited Warranty. A separate booklet entitled “Warranty and Owner Assistance Information” furnished with each new vehicle provides detailed warranty coverage information.

Courtesy Transportation is available only at participating dealers and all program options, such as shuttle service, may not be available at every dealer. Please contact your dealer for specific information about availability. All Courtesy Transportation arrangements will be administered by appropriate dealer personnel.

Canadian Vehicles: For warranty repairs during the Complete Vehicle Coverage period of the General Motors of Canada New Vehicle Limited Warranty, alternative transportation may be available under the Courtesy Transportation Program. Please consult your dealer for details.

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.

Warranty Information

Your vehicle comes with a separate warranty booklet that contains detailed warranty information.

REPORTING SAFETY DEFECTS TO THE UNITED STATES GOVERNMENT

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA), in addition to notifying General Motors.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer or General Motors.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (or 366-0123 in the Washington, D.C. area) or write to:

NHTSA, U.S. Department of Transportation
Washington, D.C. 20590

You can also obtain other information about motor vehicle safety from the hotline.

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 write to:

Transport Canada
330 Sparks Street
Tower C
Ottawa, Ontario K1A 0N5

REPORTING SAFETY DEFECTS TO GENERAL MOTORS

In addition to notifying NHTSA (or Transport Canada) in a situation like this, we certainly hope you'll notify us. Please call us at 1-800-GMC-8782 (1-800-462-8782), or write:

Pontiac-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, 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.

Owner's Information

Owner publications are written specifically for owners and intended to provide basic operational information about the vehicle. The owner's manual will include the Maintenance Schedule for all models.

Current and Past Model Order Forms

Service Publications are available for current and past model GM vehicles. To request an order form, please specify year and model name of the vehicle.

ORDER TOLL FREE: 1-800-551-4123
Monday-Friday 8:00 AM – 6:00 PM Eastern Time

Visit Helm, Inc. on the World Wide Web at: www.helminc.com
For Credit Card Orders Only (VISA-MasterCard-Discover)

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