Chevy Trucks.

The Trucks You Can Depend On.
The Trucks That Last.

1993 CHEVROLET ASTRO VAN OWNER'S MANUAL

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How To Use This Manual

INTRODUCTION

1993 Chevrolet Astro Owner's Manual

Welcome

This manual has been prepared to acquaint you with the operation and maintenance of your 1993 Astro, and to provide important safety information. There is also a Chevrolet Truck Warranty and Owner Assistance Information booklet. In some vehicles, there can be information manuals from other manufacturers like body builders, van outfitters or special equipment companies. We urge you to read all these publications carefully. This will help you enjoy the safe and trouble-free operation of your vehicle.

When it comes to service, keep in mind that your Chevrolet dealer knows your vehicle best and is interested in your complete satisfaction. Your dealer invites you to return for all of your service needs both during and after the warranty period.

Remember, if you have a concern and need help handling it to your satisfaction, see the procedure in the Chevrolet Truck Warranty and Owner Assistance Information booklet.

Thanks for choosing a Chevrolet product. We value you as a member of the Chevrolet family. We want to assure you of our continuing interest in your pleasure and satisfaction with your vehicle.

Chevrolet Motor Division

General Motors Corporation

30007 Van Dyke Ave.

Warren, Michigan

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Second Edition *Printed in U.S.A.*

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How To Use This Manual

Important Notes to Owners and Drivers

. . . **About 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 or driver can use it.

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

. . . **For Canadian Owners Who Prefer a French Language Manual:** **Aux proprietaires canadiens:** Vous pouvez vous procurer un exemplaire de ce guide en francais chez votre concessionaire ou au DGN Marketing Services Ltd., 1500 Bonhill Rd., Mississauga, Ontario L5T 1C7.

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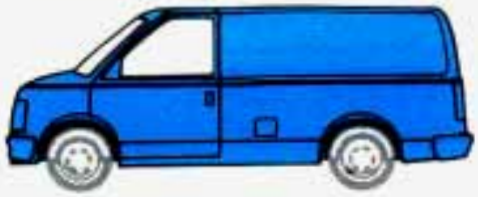
Model Reference

This manual covers these models:

TYPE	MODEL
	PASSENGER MODEL
	CARGO MODEL

P0357

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How to Use this Manual

Seats & Safety Belts

Features & Controls

Comfort Controls & Audio Systems

Your Driving and the Road

Problems on the Road

Service & Appearance Care

Customer Assistance Information

T0212

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How To Use This Manual

Section 0

Many people read their owner's manual from beginning to end when they first receive their new vehicle. This 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.

INDEX: A good place to look for what you need is the Index in back of the manual. It's an alphabetical list of all that's in the manual, and the page number where you'll find it.

SECTIONS 1-6: Each section of this manual begins with a brief list of its contents, so you can often find at a glance if a section contains the information you want.

SECTION 7: This section of this manual covers the maintenance required for your vehicle.

SECTION 8, CUSTOMER ASSISTANCE: This section includes important information about Reporting Safety Defects and gives you details about the "Roadside Assistance" program. You will also find customer satisfaction phone numbers (including customer satisfaction numbers for the hearing and speech impaired), as well as the mediation/arbitration procedure. We've also included ordering information for service publications in this section.

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How To Use This Manual

Safety Warnings and Symbols

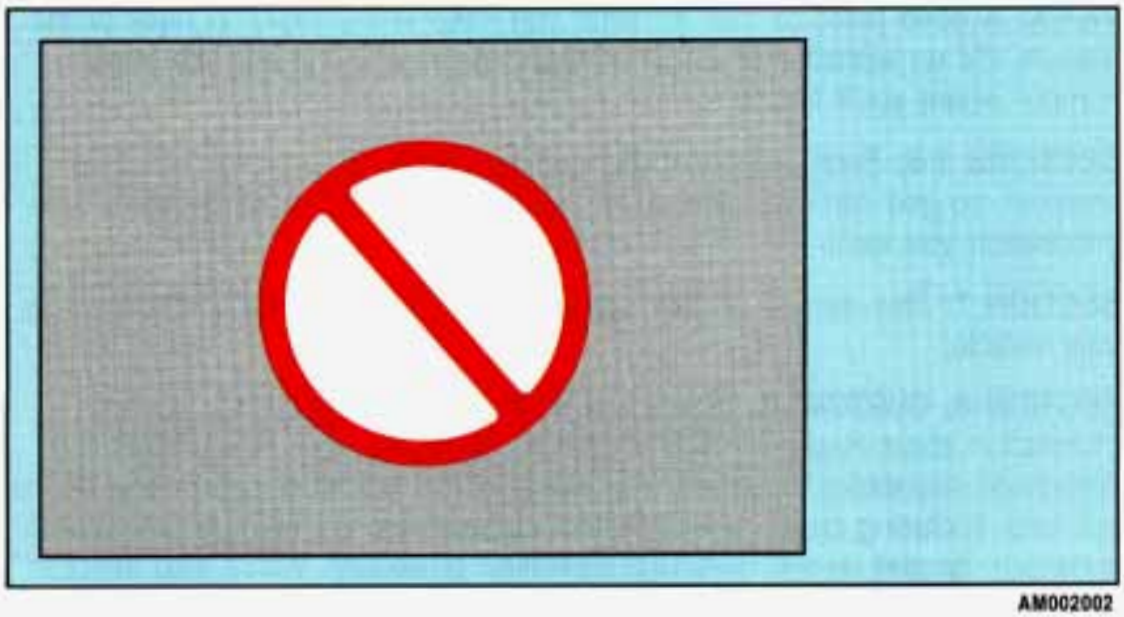
You will find a number of safety cautions in this book. We use yellow and the word CAUTION to tell you about things that could hurt you if you were to ignore the warning.

CAUTION

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

In the yellow 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 red 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."



AM002002

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Vehicle Damage Warnings

Also, in this book you will find these blue notices:

NOTICE

These mean there is something that could damage your vehicle.

In the blue 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. In this manual, we've used the familiar words and colors that General Motors has used for years.

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

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Vehicle Symbols

These are some of the symbols you will find on your vehicle. For example, these symbols are used on an original battery:

Caution Possible Injury

Protect Eyes by Shielding

Caustic Battery Acid Could Cause Burns

Spark or Flame Could Explode Battery

Avoid Sparks or Flames

These symbols are important for you and your passengers whenever your vehicle is driven:

Fasten Safety Belts

Door Lock/Unlock

P0335

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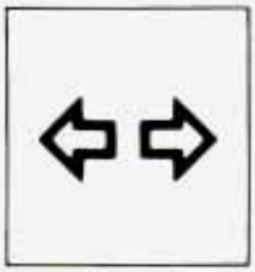
These symbols have to do with your lights:

Master Lighting Switch



Turn Signal Direction

Hazard Warning Flasher

Headlight High Beam

Parking Lights

Fog Lights

Daytime Running Lights

These symbols are on some of your controls:

Hood Release

Windshield Wiper

Windshield Washer

Windshield Defroster

Ventilating Fan

Rear Window Wiper & Washer

Rear Window Defogger

Hatch Release

P0358

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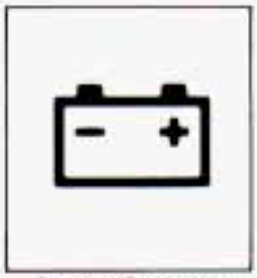
How To Use This Manual

These symbols are used on warning and indicator lights:

Engine Coolant Temperature



Battery Charging System

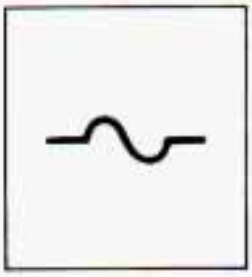
Fuel

Engine Oil Pressure

Brake (Standard Cluster)

Four-Wheel Anti-lock Brakes

Here are some other symbols you may see:



Fuse

Lighter

Horn

Speaker

P0359

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Seats and Safety Belts

Section 1

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 safety belts.

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Seats and Safety Belts

Seats and Seat Controls

This section tells you about the seats—how to adjust them, take them out and put them back in. It also tells you about bucket and bench seats, power seats, and head restraints.

Front Seats

Manual Seats

CAUTION

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

P0414

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

Slide the lever at the front of the seat to the left to unlock it. Slide the seat to where you want it. Then release the lever and try to move the seat with your body, to make sure the seat is locked into place.

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Power Driver's Seat

P0410

You can adjust the seat before entering the vehicle.

The front control makes the front of the seat go up and down.

The rear control makes the rear of the seat go up and down.

The center control makes the whole seat go up and down or forward and rearward.

Reclining Bucket Seatbacks

P0409

If you have this feature, you can adjust the seatback by rotating the knob. It is easier to recline the seat if you do not lean against it while turning the knob.

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Don't have a seatback reclined if your vehicle is moving.

AM101010

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.

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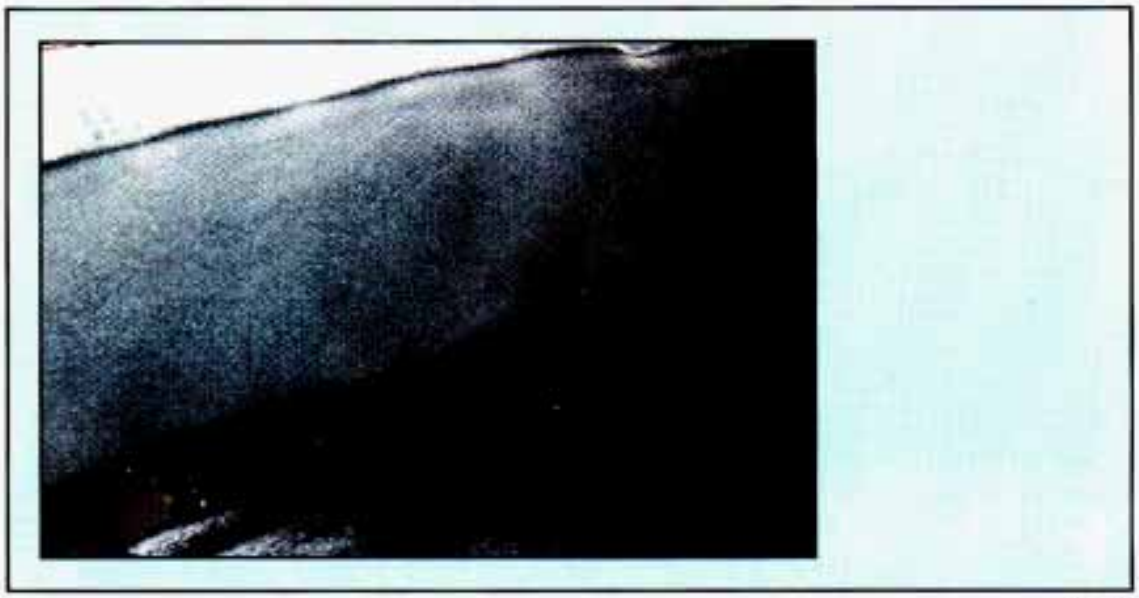
Rear Seats

Bucket Seats

If you have rear bucket seats in your vehicle, they will recline and adjust the same way as the front manual bucket seats. See "Front Seats" earlier in this section or in the Index.

Bench Seats

If you have bench seats in your vehicle, each seat can carry up to three passengers. They can also be removed to increase storage space.



K3203

The center and rear bench seats can be adjusted forward or rearward by the lever at the front of the seat. Slide the lever at the front of the seat to the right to unlock it. Slide the seat to where you want it. Then release the lever and try to move the seat with your body, to make sure the seat is locked into place.

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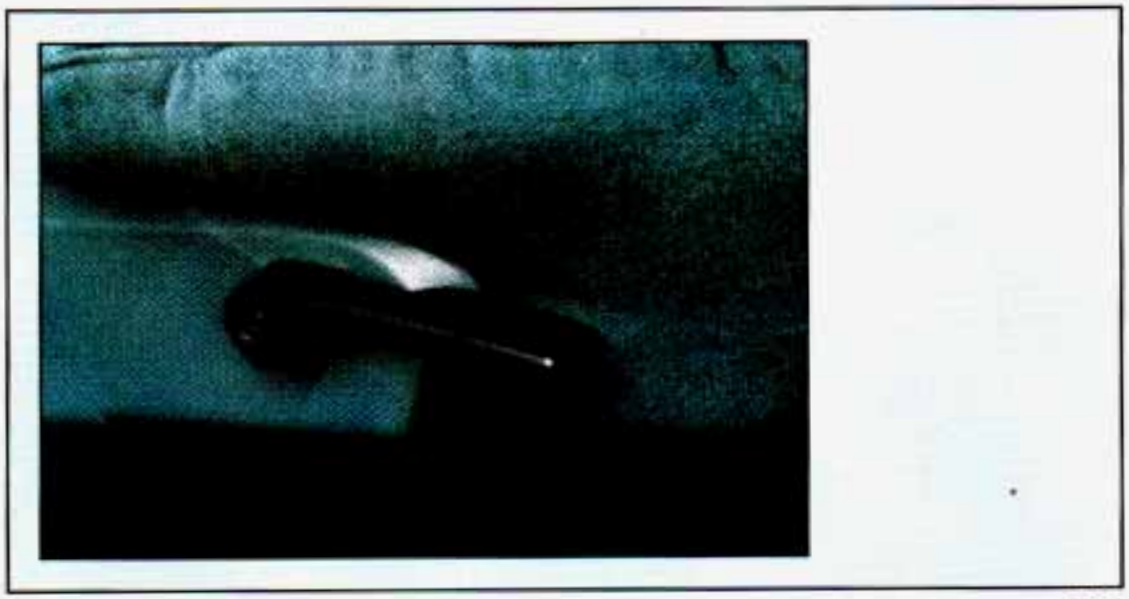
The non-touring center bench seat has a pivoting right armrest. The left armrest can also be used as a storage compartment.

The storage compartment and beverage cooler can also be used as rear seat armrests. See "Storage Compartment/Beverage Cooler" in the Index.

The optional touring bench seats come with moveable armrests, individual reclining seatbacks, adjustable headrests and a fold down center console.



P0461

To adjust your seatback, pull up on the lever on the lower outside of the seat.

The center bench seatbacks will recline further back than the rear bench seatbacks.

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P0417

To raise or lower the center console, press the button between the beverage holders. Only sit in the center seating position when the console is in an upright position. For details about headrests, see "Head Restraints" in this section.

Seatback Latches (Non-Touring Bench Seats)

K3106

To fold your non-touring seatback forward, pull up on the latch release lever while pulling the seatback toward you. The lever is on the right rear of your seat. After the latch has been released, push the seatback down until it locks in place. To raise the seatback, unlock the seat by pushing forward on the lever. Make sure the seatback is locked when it is put back in the upright position.

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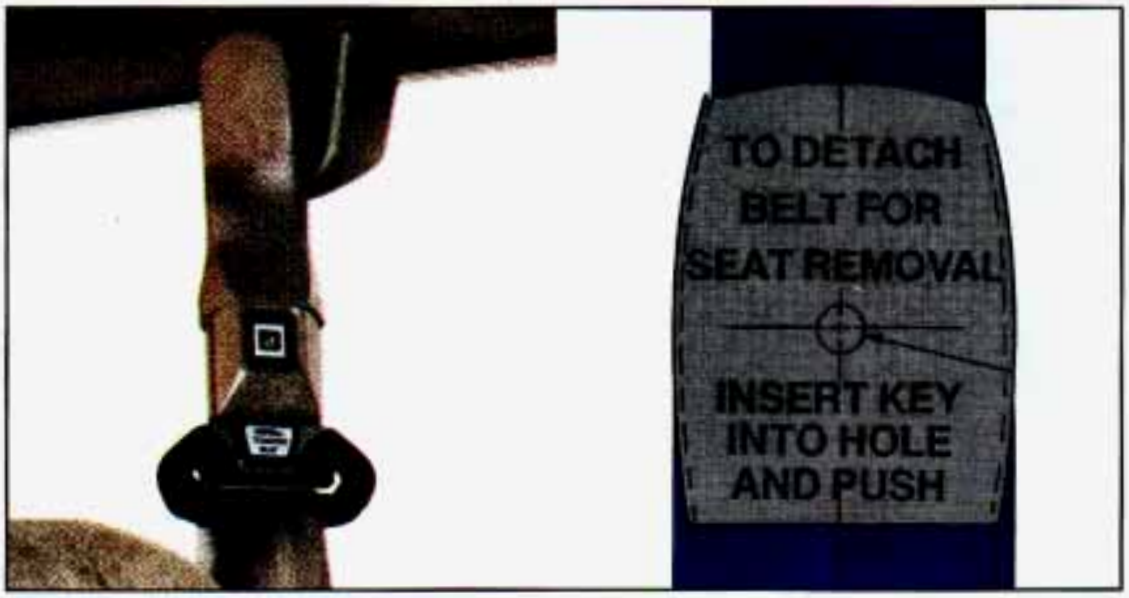
Seats and Safety Belts

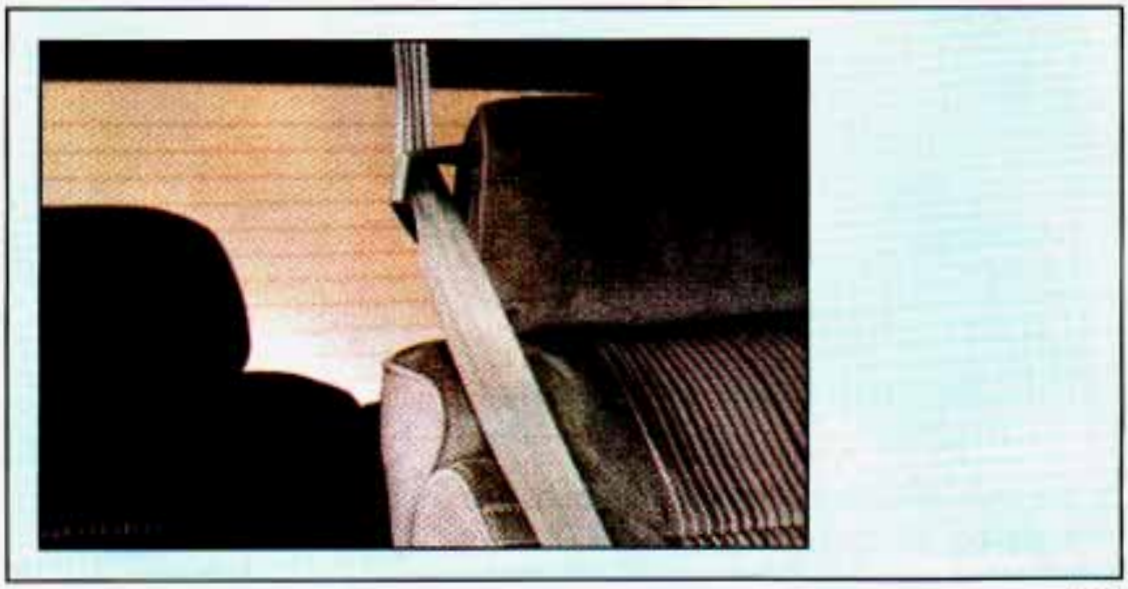
Removable Seats (Touring and Non-Touring Bench Seats)



P0415

To remove the seat:

1. Disconnect the quick release latch plates for the lap-shoulder belt from the buckles in the roof.
2. If you are removing the center seat, remove the right lap-shoulder belt. To do this, press the tip of a key into the release hole of the safety belt attachment while pulling up on the safety belt.



N0034

If you have a safety belt guide on your seat, pull the safety belt all the way out through the guide.

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3. Pull up on the seatback latch on the right rear of the front seat. Push the seatback down until it locks in place (non-touring bench seats only).

K3113

4. Lift up on the seat release latch. The latches are near the floor on the rear legs of the seat. To relieve pressure on the latch, pull back on the seat.

K3109

5. Lift up on the rear of the seat to remove the seat assembly from the rear latch pins. Then, pull back and lift the seat out of the vehicle.

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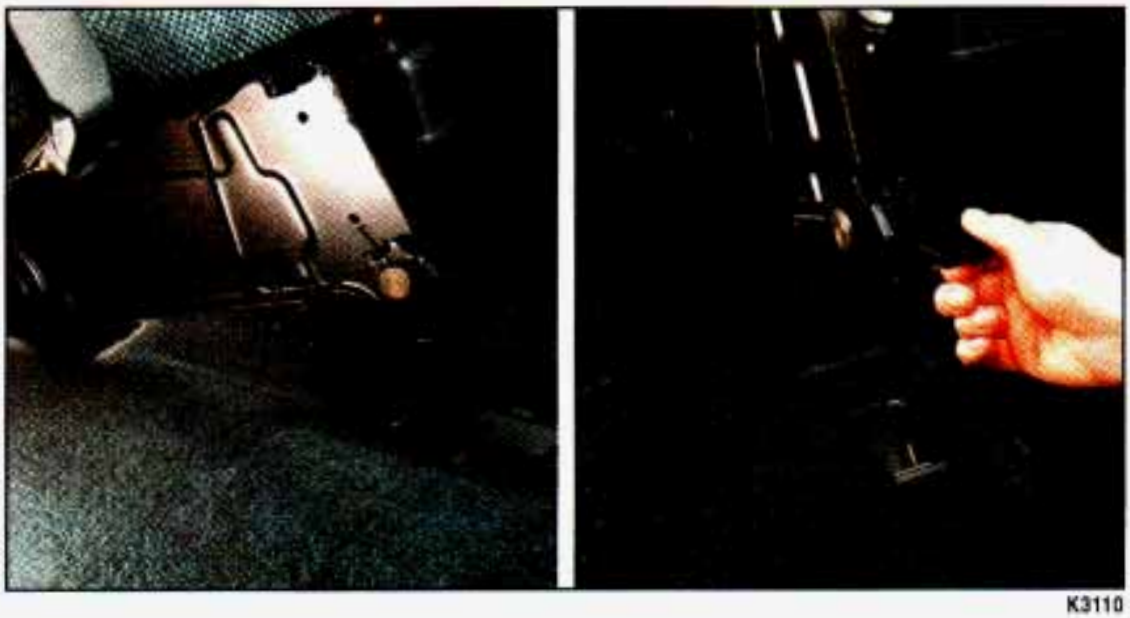
To install the seat:



K3110

1. Lower the seat into position. Make sure the front retainers are hooked onto the anchor pins. Do the same for the rear retainers. Make sure the seat is locked in by pulling up and down on the seat.
2. Raise the seatback by pushing forward on the latch at the right rear of the seat. Pull up on the seatback until it is locked securely in the up position.
3. Attach the quick release latch plate to the buckles in the roof. If you are installing the center seat, connect the right lap-shoulder belt to the attachment on the seat cushion. If you have a safety belt guide on your seat, pull the belt through the guide before reattaching the lap-shoulder belt to the side of the seat. The release hole should be facing outward.

   If you installed the safety belt with the release hole facing inward (toward the seat), slide the plastic cover up so you can see the buckle. Disconnect the seat belt. Slide the cover back down and reinstall the belt correctly.

CAUTION

⚠ To avoid personal injury, do not ride in the right position of the center seat unless the safety belt is securely anchored. Be sure the buckle on the free end of the belt is fastened securely to the latch plate mounted at the base of the seat.

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NOTICE

Be sure to put the correct seats back in the proper positions so the safety belts will work properly.

Head Restraints

AN102012

If your vehicle has the optional touring package, you have adjustable head restraints.

Slide the head restraint up or down so that the top of the restraint is closest to the top of your ears.

This position reduces the chances of a neck injury in a crash.

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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.

CAUTION

Don't let anyone ride where they 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.

AM110001

This figure lights up when you turn the key to **RUN** or **START** when your safety belt isn't buckled, and you'll hear a chime too.

It's the reminder to buckle up. In many 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 very mild. In them, you won't get hurt even if you're not buckled up. And some crashes can be so serious, like being hit by a train, 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 be badly hurt or killed.

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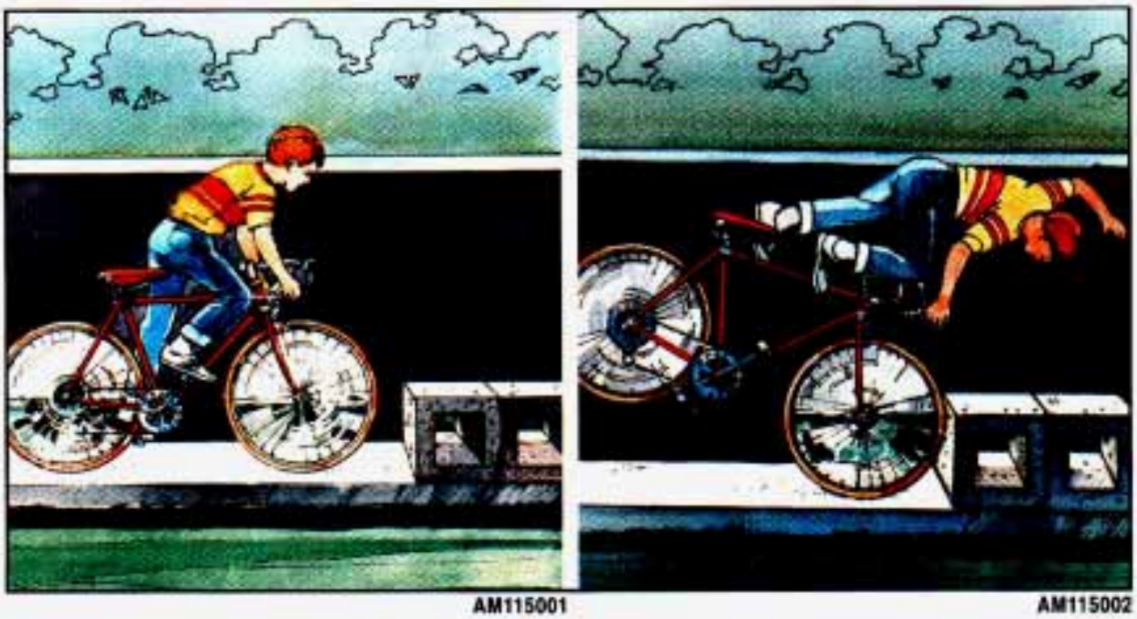
After 25 years of safety belts in vehicles, the facts are clear. In most crashes buckling up does matter . . . a lot!

AM110014

Why Safety Belts Work



AM115001 AM115002

When you ride in or on anything, you go as fast as it goes. For example, if the bike is going 10 mph (16 km/h), so is the child. When the bike hits the block, it stops. But the child keeps going!

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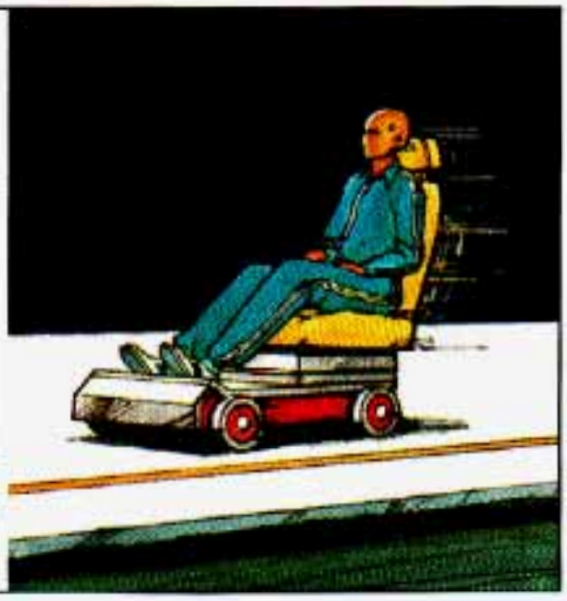
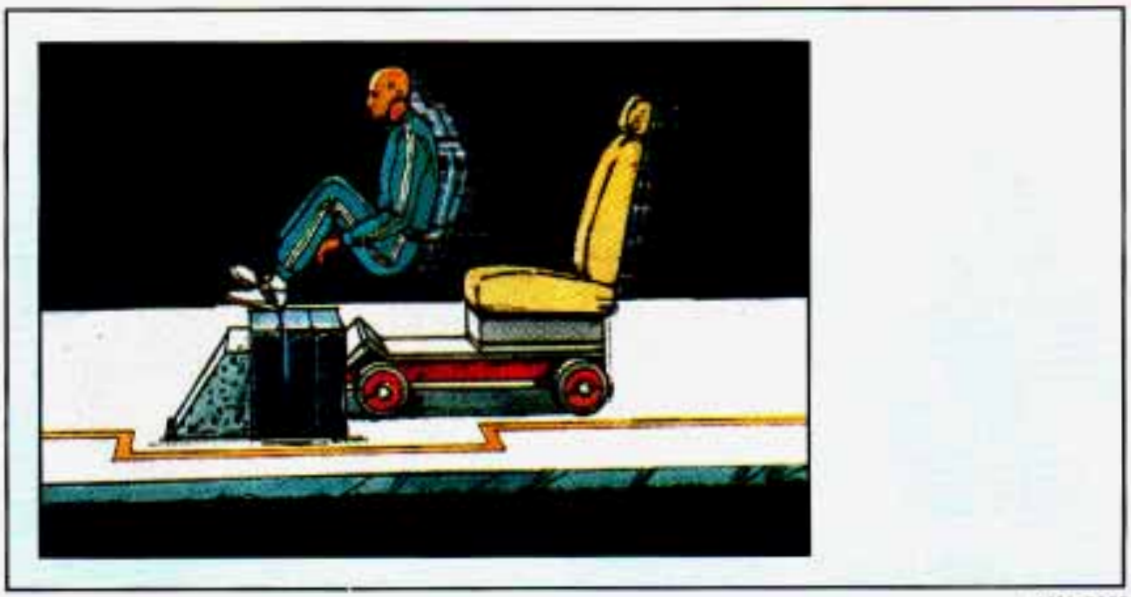
Seats and Safety Belts

AM115003



AM115004

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



AM115005

Get it up to speed. Then stop the "vehicle." The rider doesn't stop.

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AM115006

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

AM115007

or the instrument panel . . .

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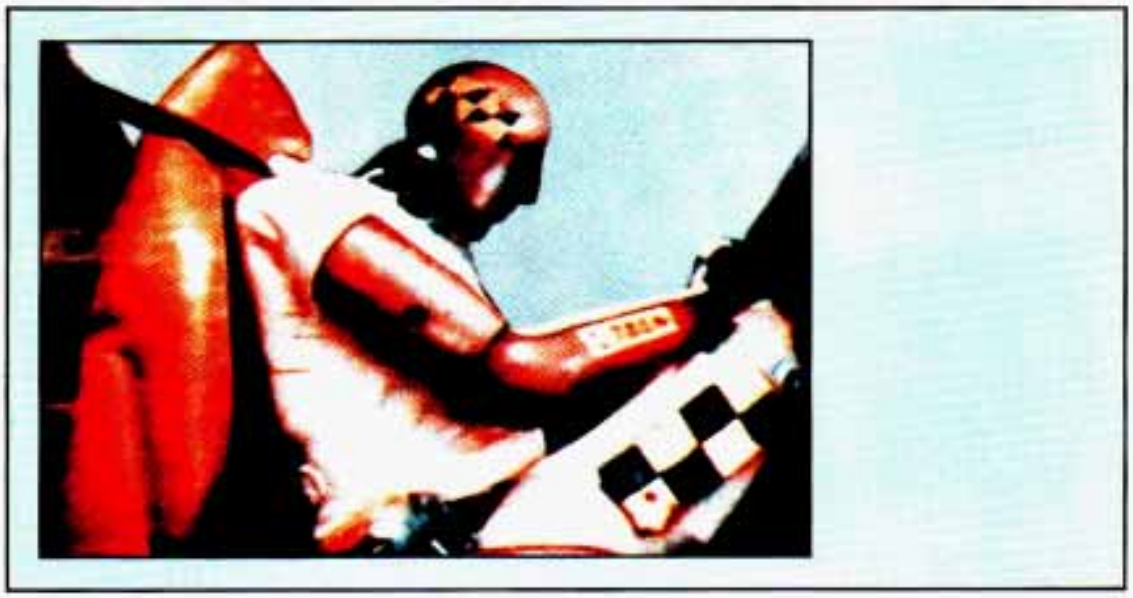

AM115008

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 easily 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: Why don't they just put in air bags so people won't have to wear safety belts?

A: "Air bags," or Supplemental Inflatable Restraint systems, are in some vehicles today and will be in more 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.

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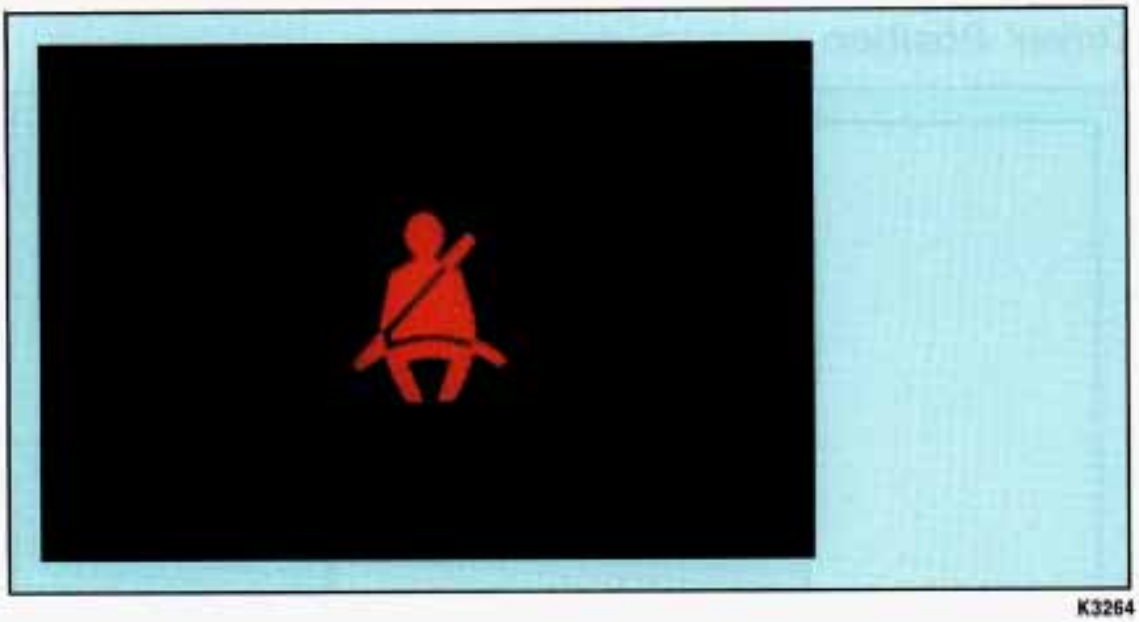
Q: If I'm a good driver, and I never drive far from home, why should I wear safety belts?

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.

Safety Belt Reminder Light



K3264

When the key is turned to **RUN** or **START**, a light will come on for about eight seconds to remind people to fasten their safety belts. Unless the driver's safety belt is buckled, a chime will also sound.

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Seats and Safety Belts

How To Wear Safety Belts Properly

Adults

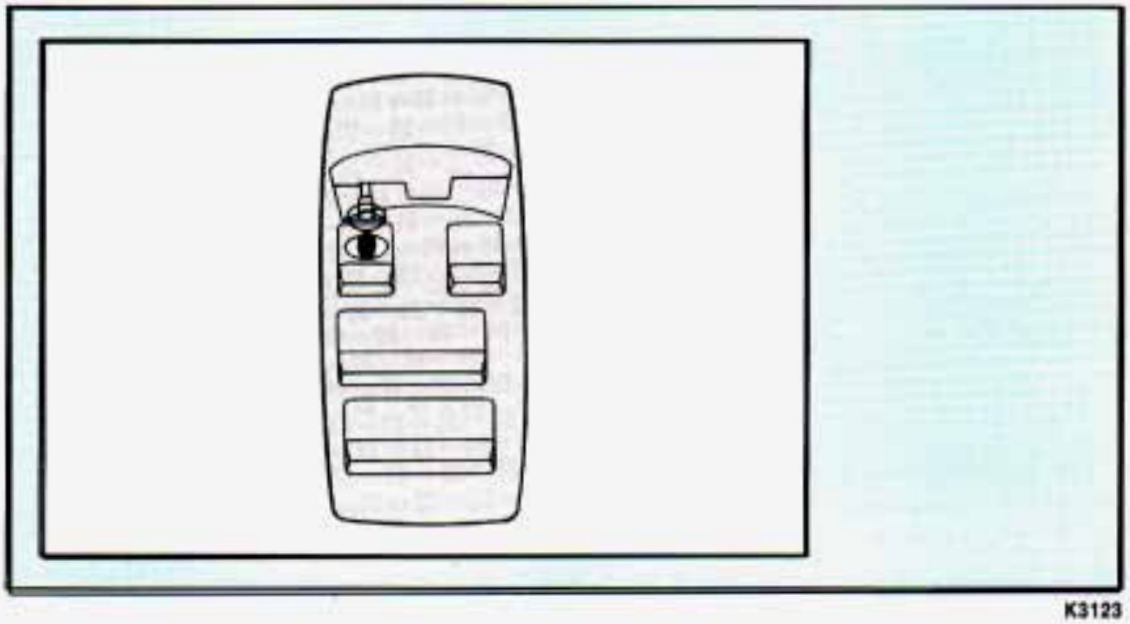
This section is only for people of adult size.

CAUTION

There are special things to know about safety belts and children. And there are different rules for babies and smaller children. If a child will be riding in your vehicle, see the part after this one, 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



K3123

This part describes the driver's restraint system.

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Lap-Shoulder Belt

AN120049

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

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

AN120033

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. 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 faces upward or outward so you would be able to unbuckle it quickly if you ever had to.

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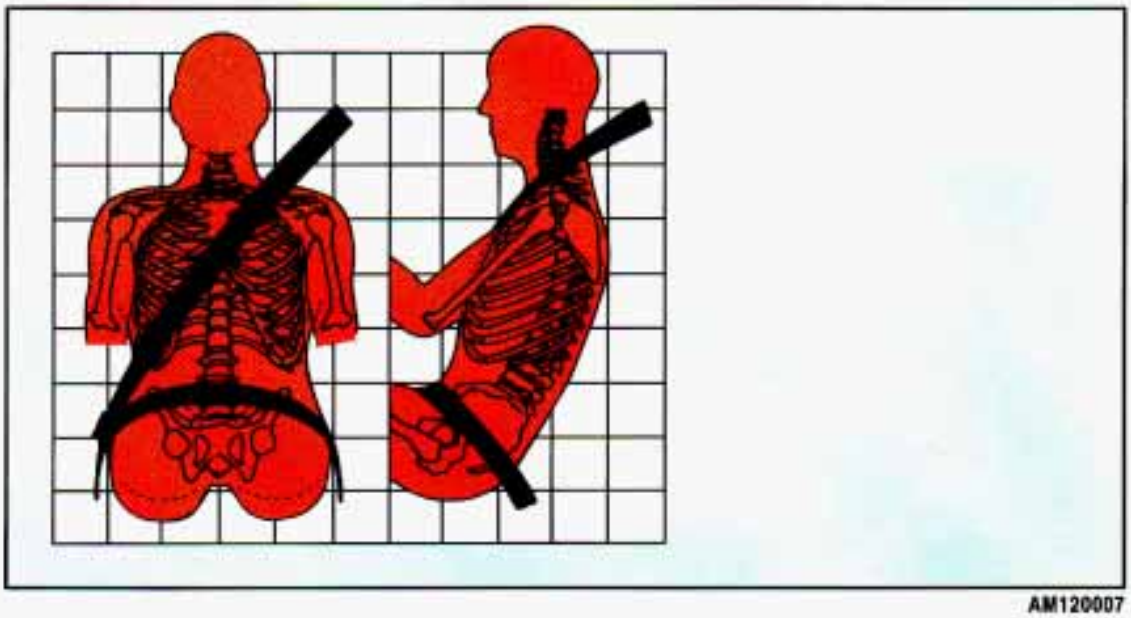
AM120167

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



AM120007

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.

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Shoulder Belt Height Adjuster

You can move the shoulder belt adjuster to the height that is right for you.

AN120160 AN120161

To move it down, push in the adjuster at the arrows and pull down on the adjuster. After you move the adjuster to where you want it, try to move it up and down to make sure it is locked into place.

You can move the adjuster up from a lower position just by pushing up on it.

AN120162

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.

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Q: What's wrong with this?

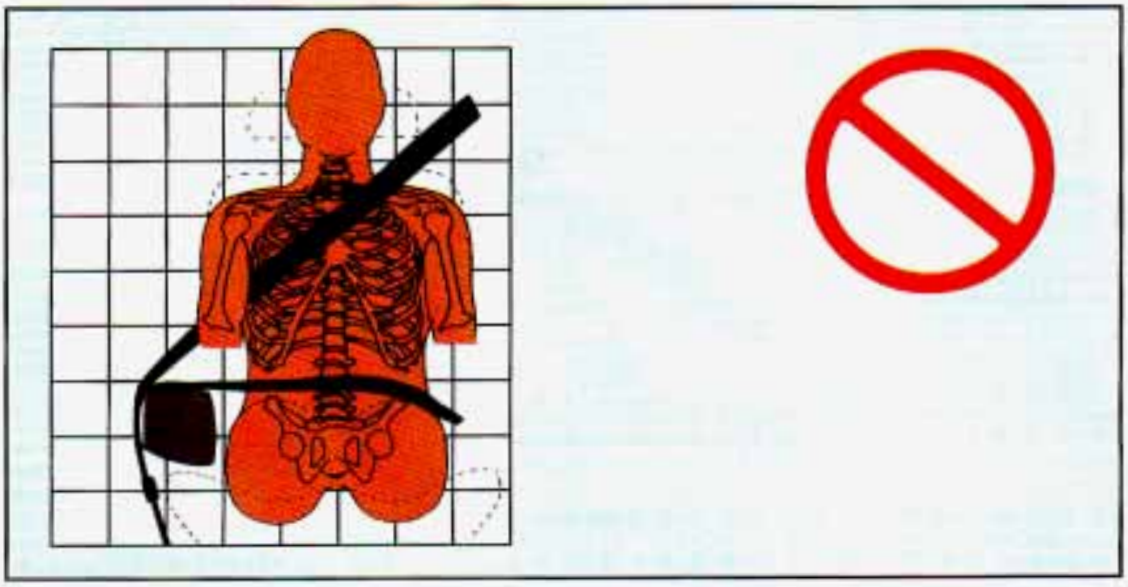
AM120015

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?



AM120058

A: The belt is over an armrest.

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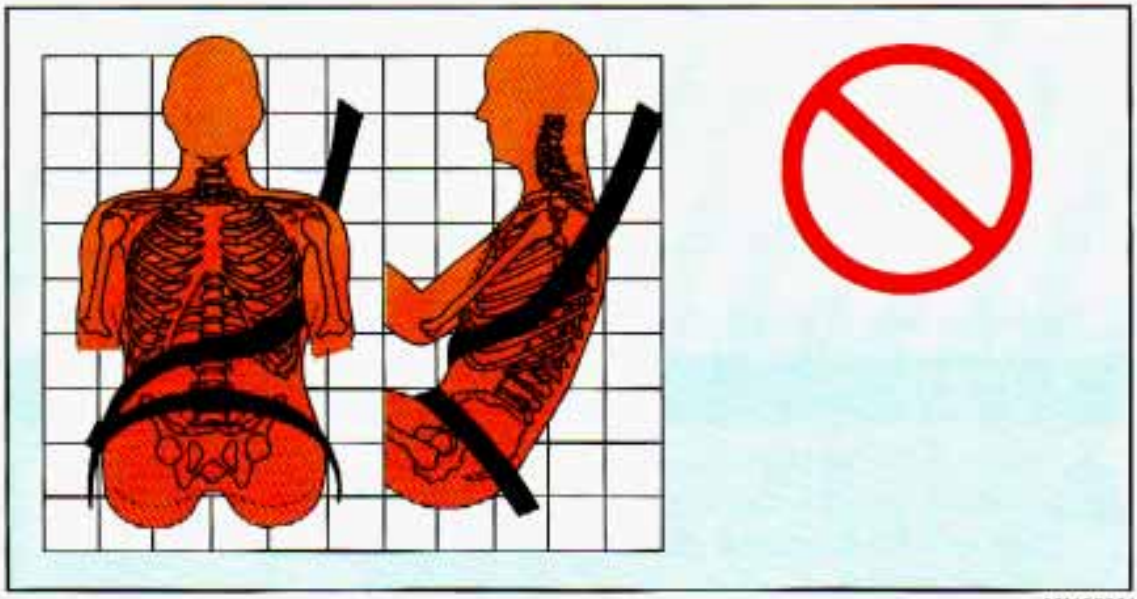
CAUTION

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?



AM125001

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.

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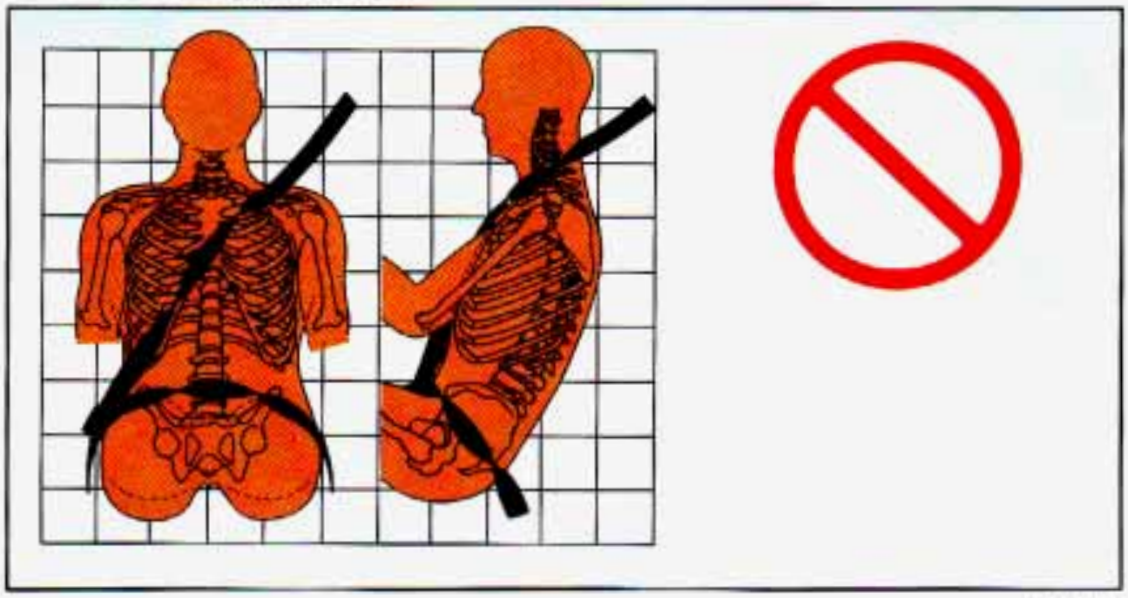
Seats and Safety Belts

Q: What's wrong with this?



AM125002

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 take 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.

AN120064

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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 throughout the pregnancy.

AM135001

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.

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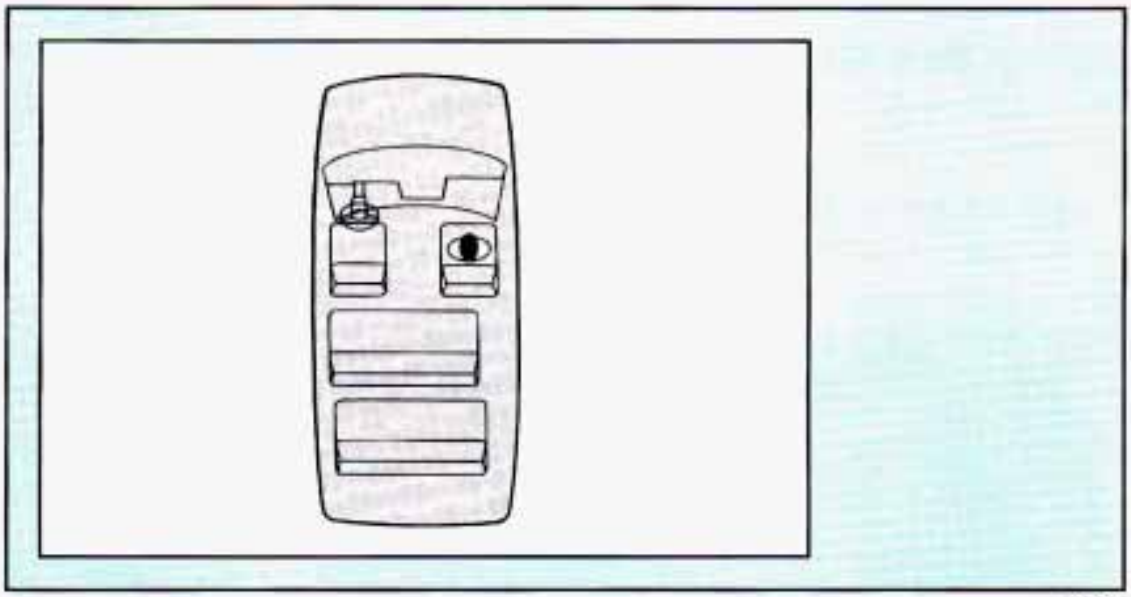
Right Front Passenger Position



K3114

The right front passenger's safety belt works the same way as the driver's safety belt. See "Driver Position," earlier in this section.

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.

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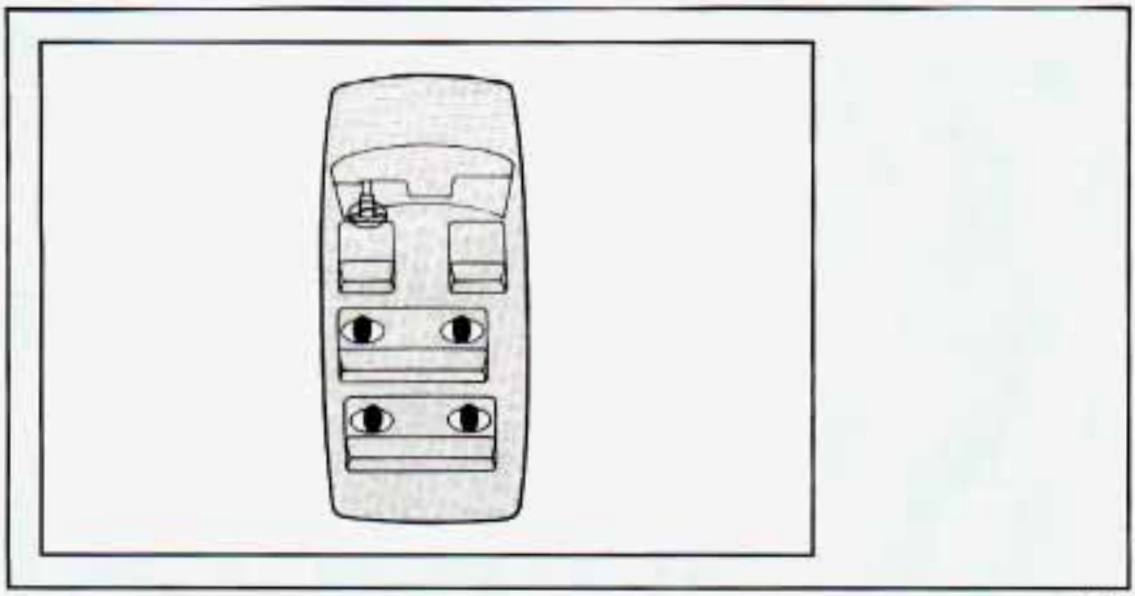
Rear Seat Outside Passenger Positions



K3138

These positions have lap-shoulder belts. Here's how to wear one properly.

AM147106

1. Pick up the latch plate and pull it across you. Don't let it get twisted.
2. Push the latch plate into the buckle until it clicks. If the belt stops before it reaches the buckle, tilt the latch plate and keep pulling until you can buckle it.

   If the belt is not long enough, see "Safety Belt Extender" at the end of this section.

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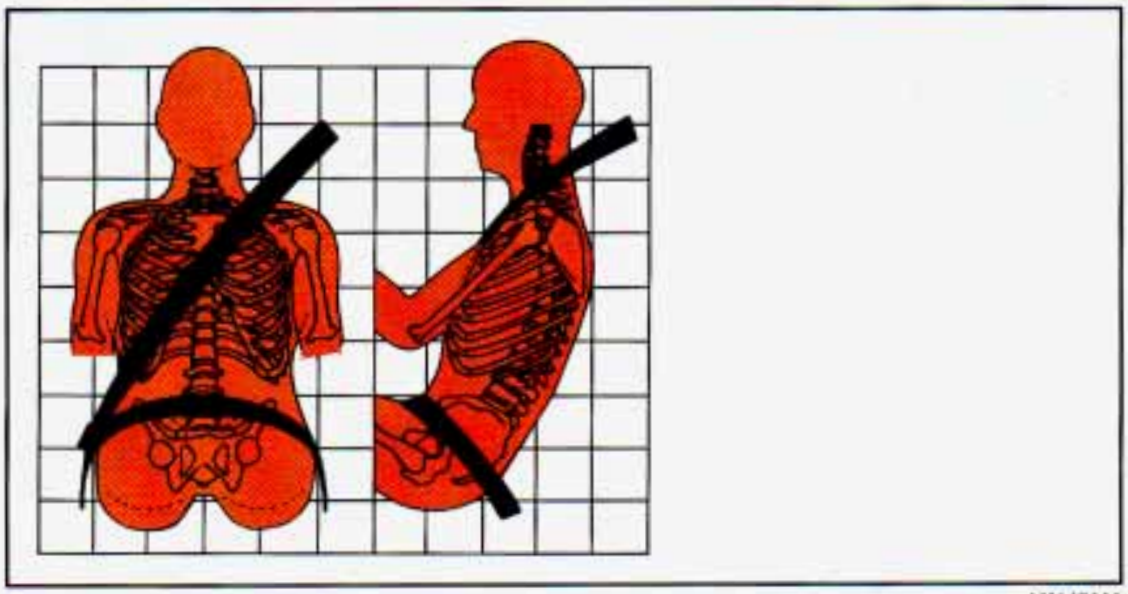
Make sure the release button on the buckle faces upward or outward so you would be able to unbuckle it quickly if you ever had to.

AN147135

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



AM147008

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.

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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.

AM147110

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

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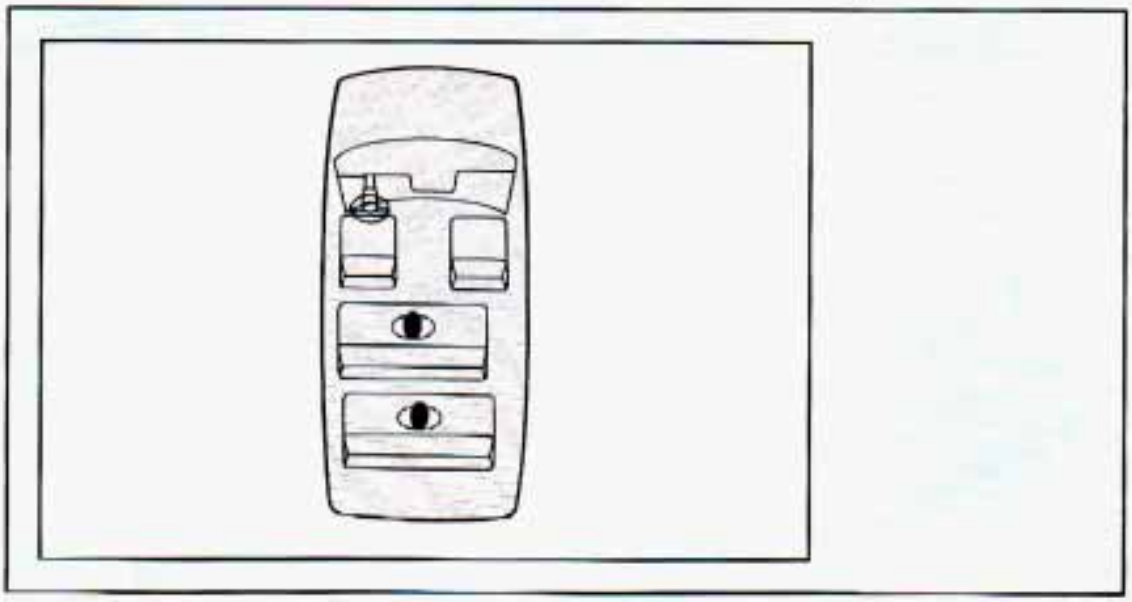
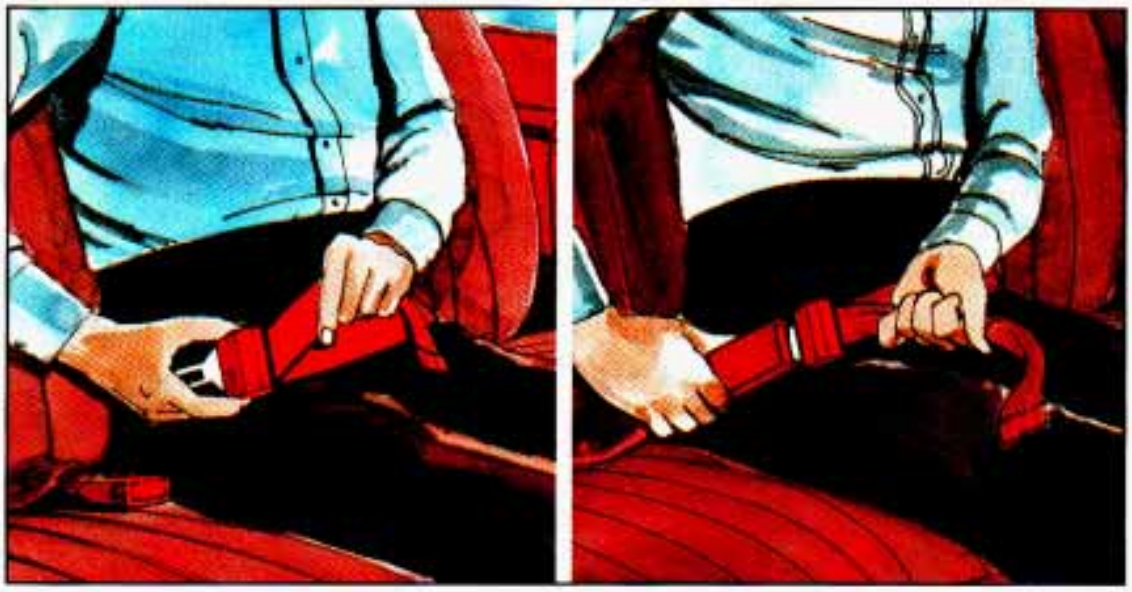
Center Passenger Positions (Bench Seat)



K3133

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.



AM145018 AM145026

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.

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Make sure the release button on the buckle faces upward or outward so you would be able to unbuckle it quickly if you ever had to.

Children

AM150007R1

Everyone in a vehicle needs protection! That includes infants and all children smaller than adult size. In fact, the law in every state and Canadian province says children up to some age must be restrained while in a vehicle.

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Smaller Children and Babies

CAUTION

Smaller children and babies should always be restrained in a child or infant restraint. The instructions for the restraint will say whether it is the right type and size for your child. A very young child's hip bones are so small that a regular belt might not stay low on the hips, as it should. Instead, the belt will likely be over the child's abdomen. In a crash the belt would apply force right on the child's abdomen, which could cause serious or fatal injuries. So, be sure that any child small enough for one is always properly restrained in a child or infant restraint.

AM150035

CAUTION

Never hold a baby in your arms while riding in a vehicle. A baby doesn't weigh much—until a crash. During a crash a baby will become so heavy you can't hold it. For example, in a crash at only 25 mph (40 km/h), a 12-pound (5.5 kg) baby will suddenly become a 240-pound (110 kg) force on your arms. The baby would be almost impossible to hold.

Secure the baby in an infant restraint.

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AP150032

Child Restraints

Be sure to 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. The instructions that come with the infant or child restraint will show you how to do that.

Where to Put the Restraint

Accident statistics show that children are safer if they are restrained in the rear rather than the front seat. We at General Motors therefore recommend that you put your child restraint in the rear seat unless the child is an infant and you're the only adult in the vehicle. In that case, you might want to secure the restraint in the front seat where you can keep an eye on the baby.

Wherever you install it, be sure to secure the child restraint properly.

CAUTION

⚠ 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.

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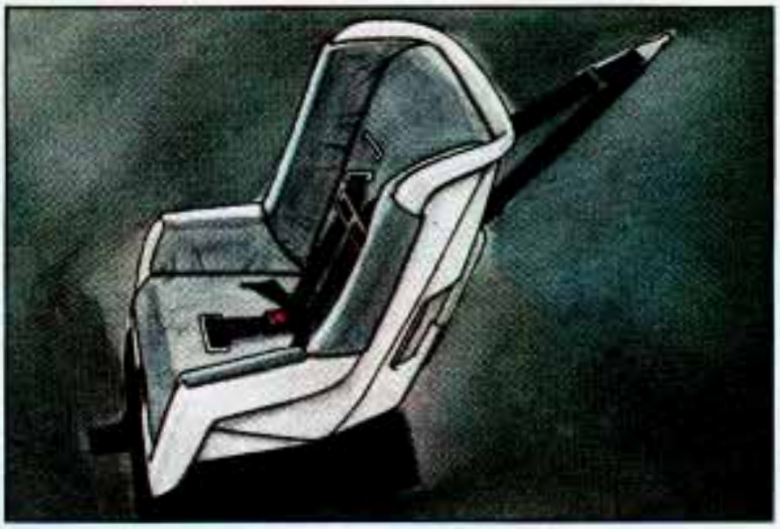
Top Strap

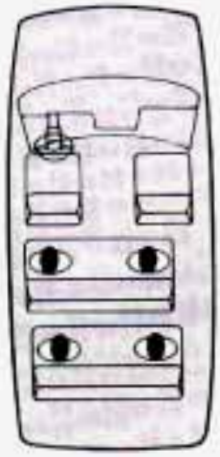


AN155001

If your child restraint has a top strap, it should be anchored.

If you need to have an anchor installed, you can ask your General Motors dealer to put it in for you. If you want to install an anchor yourself, your dealer can tell you how to do it.

Securing a Child Restraint in a Rear Outside Position



K3138

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

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1. Put the restraint on the seat. Follow the instructions for the child restraint.
2. Secure the child in the child restraint as the instructions say.
3. Pull out the vehicle's safety belt. Make the belt as long as possible by tilting the latch plate and pulling it along the belt.

AN160085

AN160086

4. Run the lap part through or around the restraint. The child restraint instructions will show you how. See if the shoulder belt would go in front of the child's face or neck. If so, put it behind the child restraint.
5. Buckle the belt. Make sure the release button faces upward and outward, so you'll be able to unbuckle it quickly if you ever need to.
6. To tighten the belt, pull up on the shoulder belt while you push down on the child restraint.

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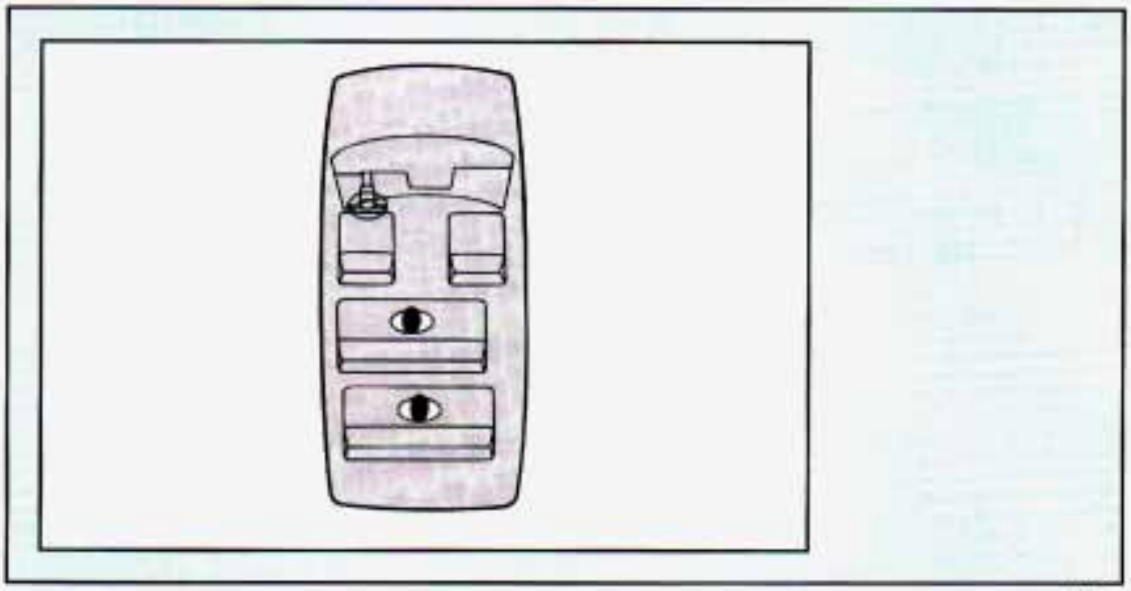
AN160148 AN160087

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.

Securing a Child Restraint in the Center Rear Seat Position



K3133

When you secure a child restraint in a center seating position, you'll be using the lap belt. See the earlier part about the top strap if the child restraint has one.

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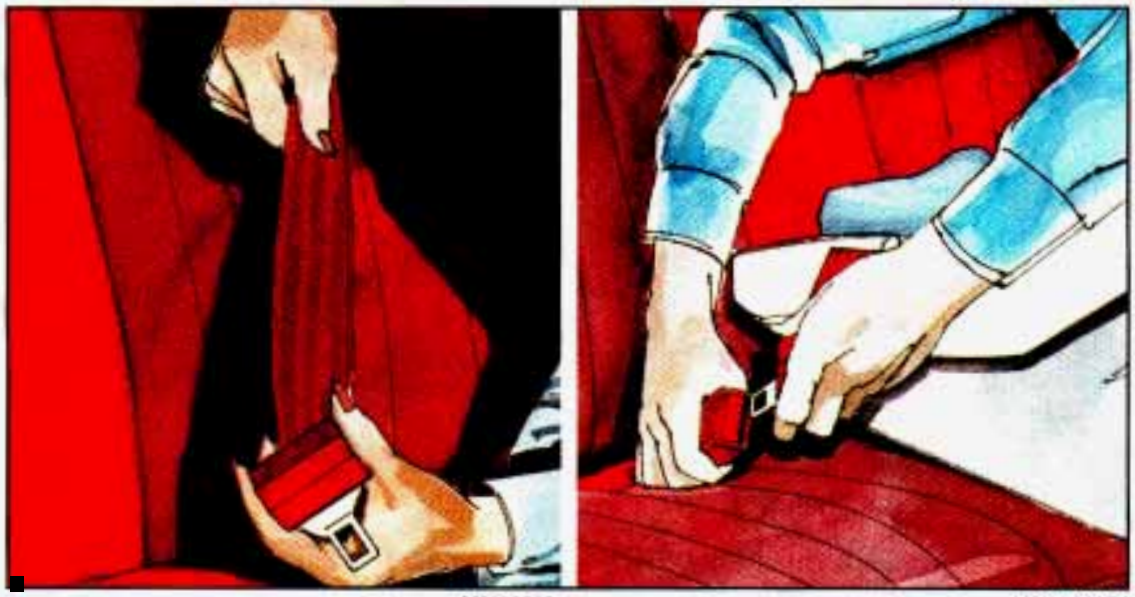
1. Make the belt as long as possible by tilting the latch plate and pulling it along the belt.
2. Put the restraint on the seat. Follow the instructions for the child restraint.
3. Secure the child in the child restraint as the instructions say.



AM163013 AM163019R1

4. Run the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.
5. Buckle the belt. Make sure the release button faces upward or outward, so you'll be able to unbuckle it quickly if you ever need to.
6. To tighten the belt, pull its free end while you push down on the child restraint.
7. Push and pull the child restraint in different directions to be sure it is secure. If the child restraint isn't secure, turn the latch plate over and buckle it again. Then see if it is secure. If it isn't, secure the restraint in a different place in the vehicle and contact the child restraint maker for their advice.

   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.

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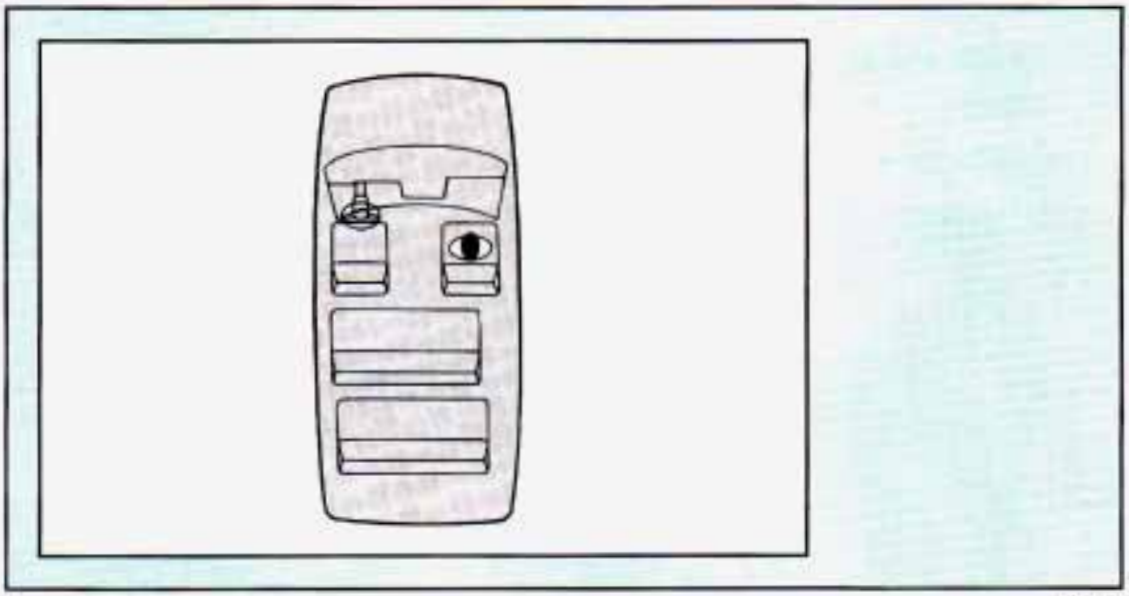
Securing a Child Restraint in the Right Front Seat



K3114

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

1. Put the restraint on the seat. Follow the instructions for the child restraint.
2. Secure the child in the child restraint as the instructions say.
3. Pull out the vehicle's safety belt and run the lap part through or around the restraint. The child restraint instructions will show you how. See if the shoulder belt would go in front of the child's face or neck. If so, put it behind the child restraint.
4. Buckle the belt. Make sure the release button faces upward or outward, so you'll be able to unbuckle it quickly if you ever need to.

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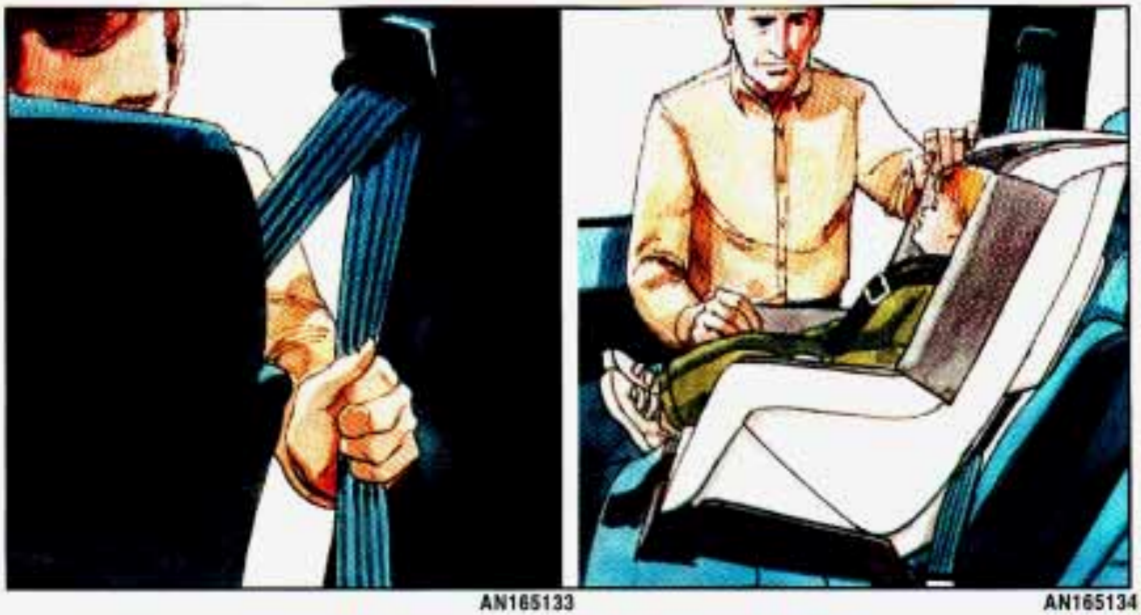
AN165022 AN165145

5. Press the button on the retractor cover 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.



AN165133 AN165134

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.

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Larger Children

AM170007

Children who have outgrown child restraints 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.

Accident statistics show that children are safer if they are restrained in the rear seat. But they need to use the safety belts properly.

- Children who aren't buckled up can be thrown out in a crash.

AM170061

- Children who aren't buckled up can strike other people who are.

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AM170037

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 so small that the shoulder belt still is 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.

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AM170019

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.

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Checking Your Restraint Systems

Now and then, make sure all your belts, buckles, latch plates, retractors, anchorages and reminder systems are working properly. Look for any loose parts or damage. If you see anything that might keep a restraint system from doing its job, have it repaired.

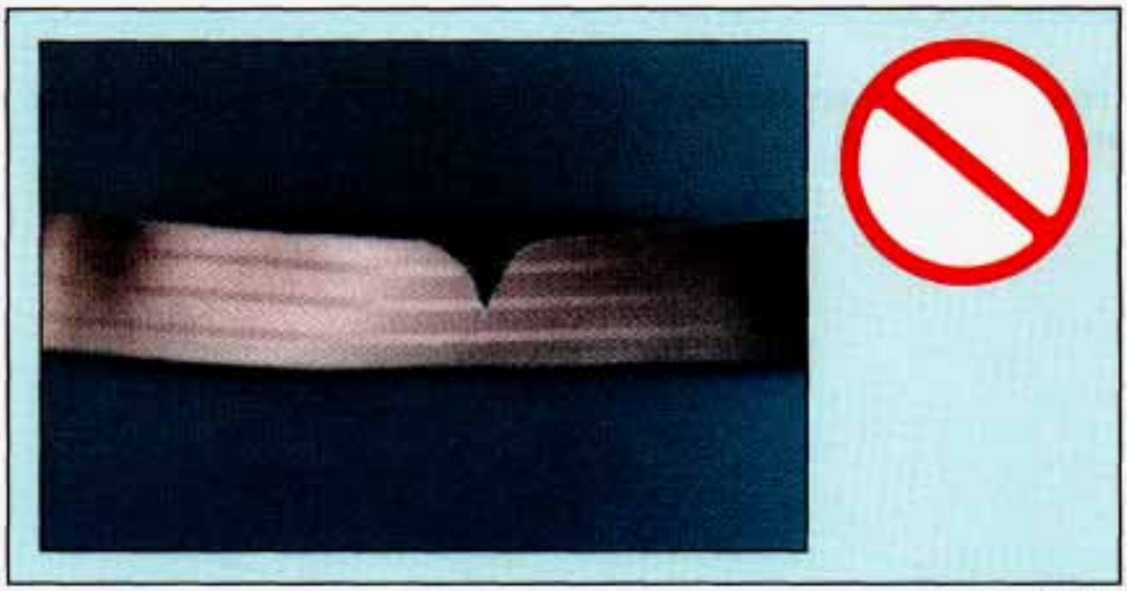
Replacing Safety Belts After a Crash

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 belts.

If belts are cut or damaged, replace them. Collision damage also may mean you will have to have safety belt parts like the retractor replaced or anchorage locations repaired—even if the belt wasn't being used at the time of the collision.

Q: What's wrong with this?



AP125004

A: The belt is torn.

CAUTION

Torn or frayed 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.

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Seats and Safety Belts

Before replacing any safety belt, see your dealer for the correct part number. You'll need the model year and model number for your vehicle. The model year is on your title and registration. And you can find the model number on the certification/tire label on the rear edge of the driver's door.

K2447

The model number on the replacement belt must be listed on the safety belt you want to replace.

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Features & Controls

Section 2

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.

For explanation of vehicle symbols, refer to "Vehicle Symbols in Section 0.

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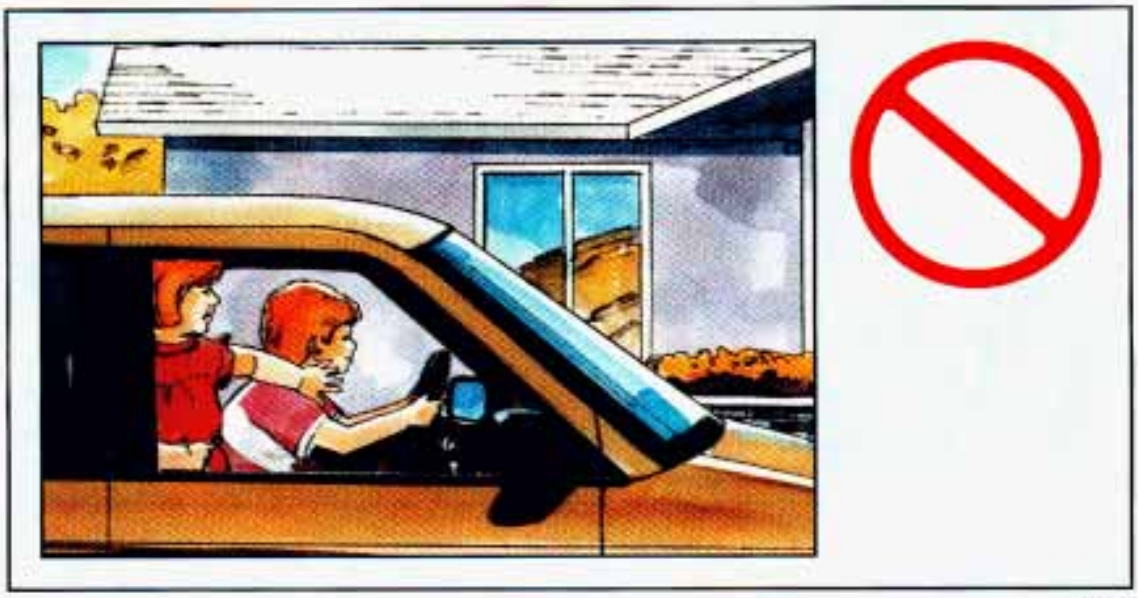
Keys

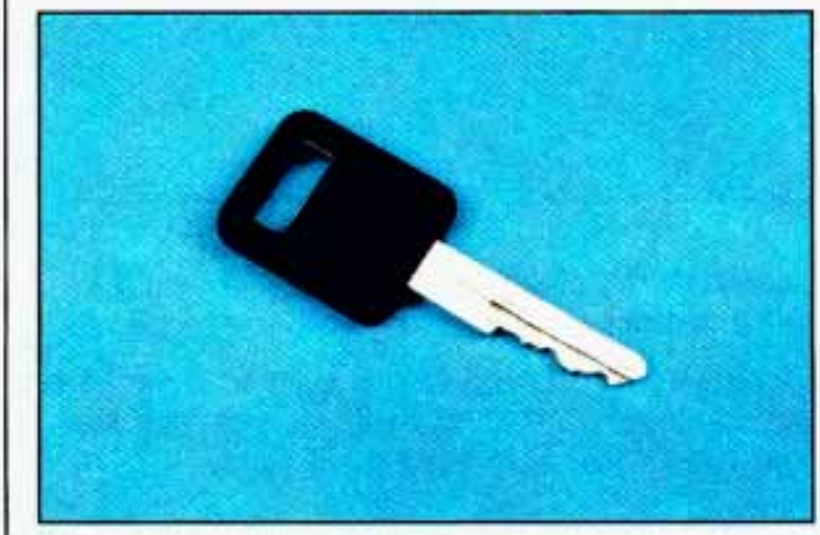


K3202

CAUTION

Leaving young 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 power windows or other controls or even make the vehicle move. Don't leave the keys in a vehicle with small children.



K5127

The ignition keys are for the ignition only.

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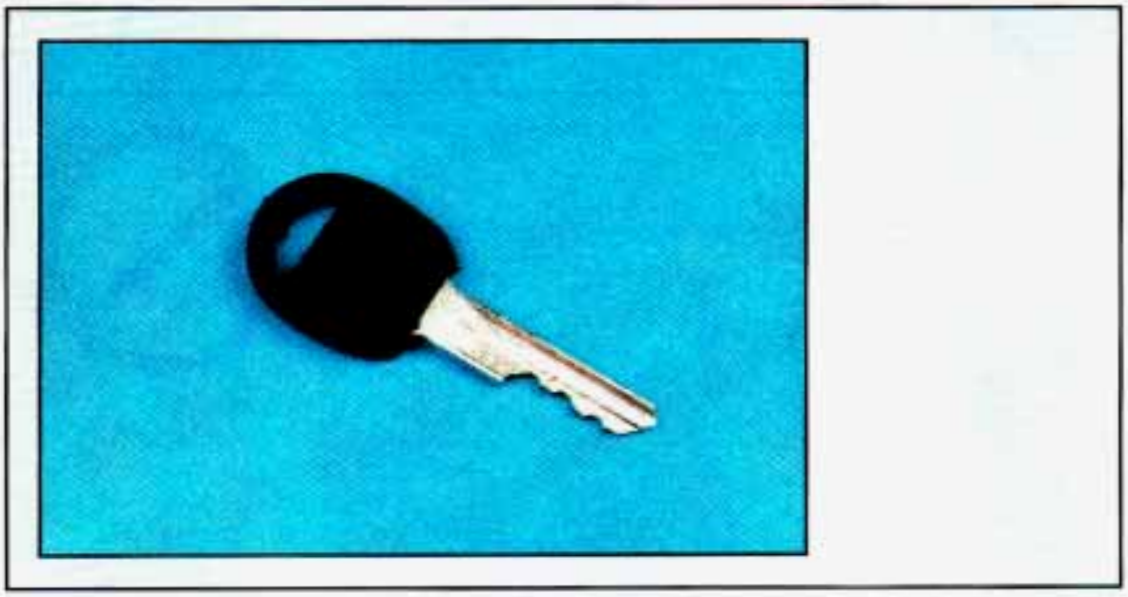
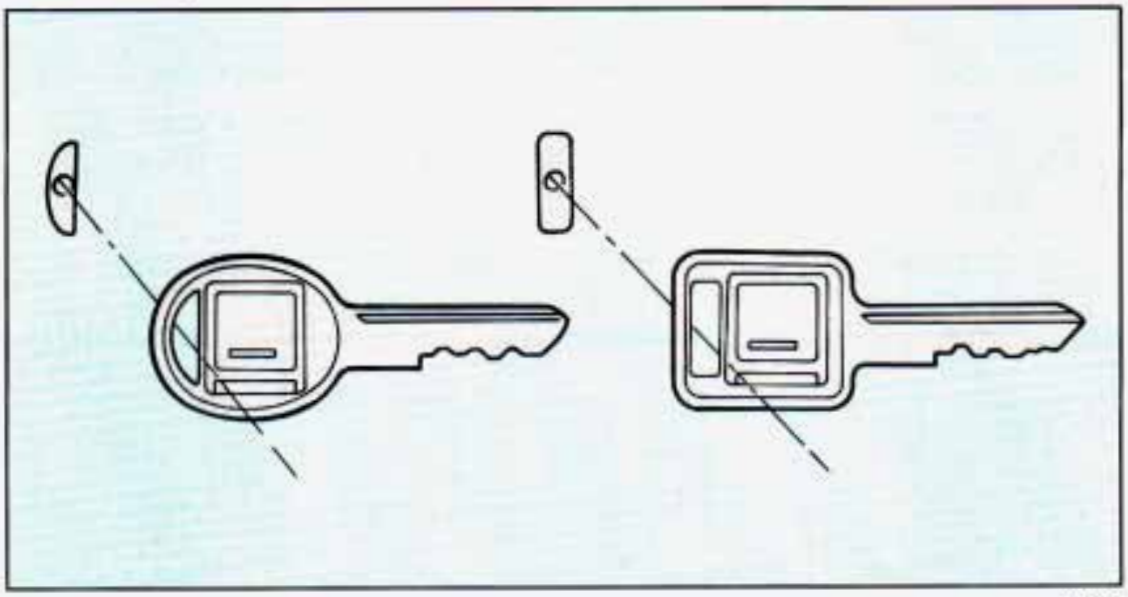


K5316

The door keys are for the doors and all other locks.



K1298

When a new vehicle is delivered, the dealer removes the plugs from the keys, and gives them to the first owner.

Each plug has a code on it that tells your dealer or a qualified locksmith how to make extra keys. Keep the plugs in a safe place. If you lose your keys, you'll be able to have new ones made easily using these plugs.

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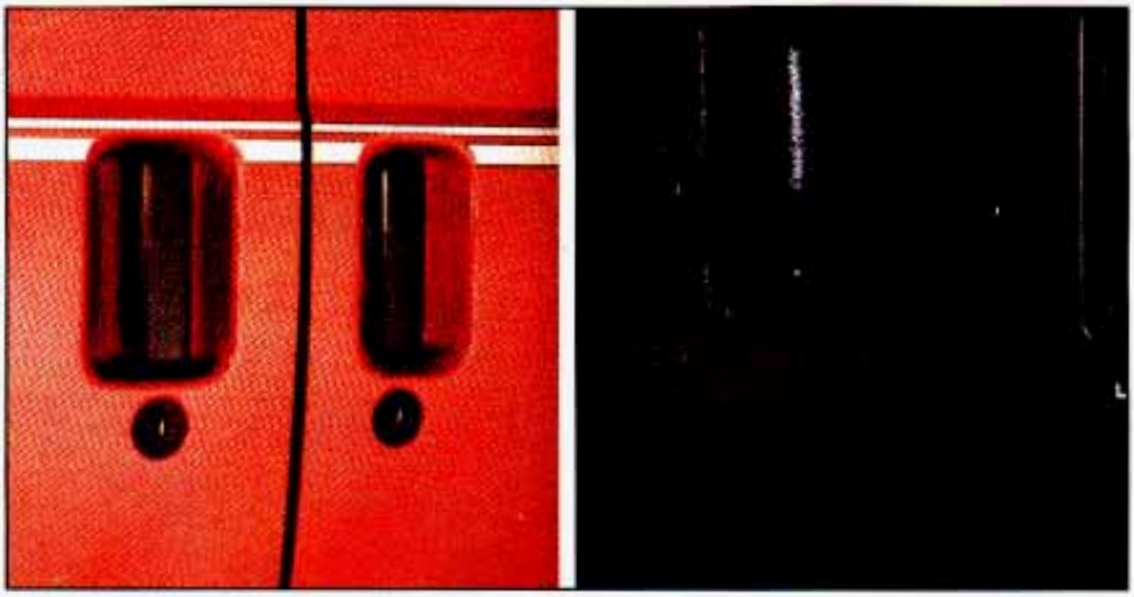
NOTICE

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 keys inside. You may even have to damage your vehicle to get in. So be sure you have extra keys.

Your Doors and How They Work

Side Doors



P0413

To open the front side door from the outside, grasp the handle and pull the door open.

To open the front side door from the inside, pull the lever toward you and push the door open.

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Sliding Side Door

P0411

To open the sliding side door, pull the handle toward the back and slide the door to the rear until it latches in the open position.

P0444

To close the sliding side door, pull the handle toward the front to release the rear latch, and slide the door forward.

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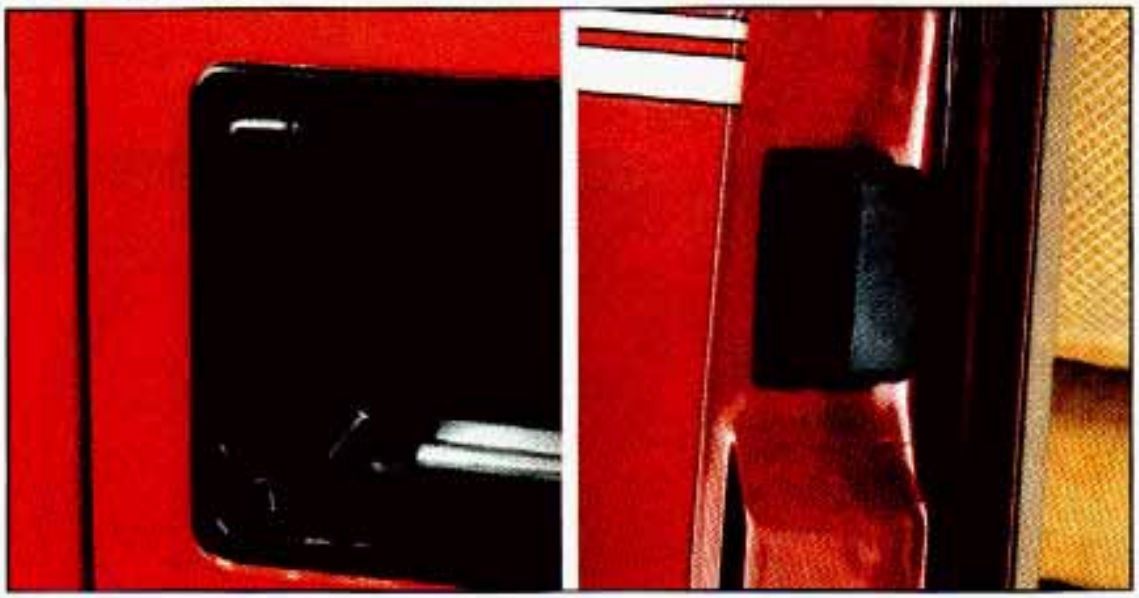
Rear Doors



P0412

To open the rear doors from the outside, open the right rear door first. Grasp the handle and pull the door open.

To open the left rear door, pull on the latch release handle in the inside of the door.

To close the rear doors, close the left door first. Check to make sure both doors are completely closed.

The rear doors have a check assembly to keep the doors from opening beyond 90˚.

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To fully open the doors, push in on the clip and lift the check assembly up off the mounting bracket. Do this on each door. Replace the assemblies the same way.

See the caution under "Swing-Out Windows" in this section.

P0475

Rear Hatch and Split-Panel Doors

P0476

If you have this option, your vehicle must be in either **P** (Park) or **N** (Neutral) to release the hatch and unlock the split-panel doors. If your battery is dead, the hatch and doors will not open, even from the outside with a key.

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P0477

To release the hatch and unlock the split-panel doors from the inside of the vehicle, press the hatch switch on the instrument panel just left of the steering column. Then, pull up on the hatch handle and open the doors.

To release the hatch and unlock the split-panel doors from the outside of the vehicle, put the key in the lock and turn to the right. Then, pull up on the hatch and open the right rear door first. Grasp the handle and pull the door open.

To open the left rear door, pull on the latch release handle in the inside of the door.

To close the rear doors, close the left door first. Check to make sure both doors are completely closed.

The rear doors have a check assembly to keep the doors from opening beyond 90°.

To fully open the doors, push in on the clip and lift the check assembly up off the mounting bracket. Do this on each door. Replace the assemblies the same way.

The hatch and split-panel doors will automatically lock when the hatch is shut.

If the hatch is partially closed, the rear doors will lock and you will need to use the key or "**Hatch Rel.**" switch, located to the left of the steering column, to unlock them. (See also Hatch Release Switch, Rear Wiper/Washer, and Rear Defogger in the Index.)

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Door Locks

CAUTION

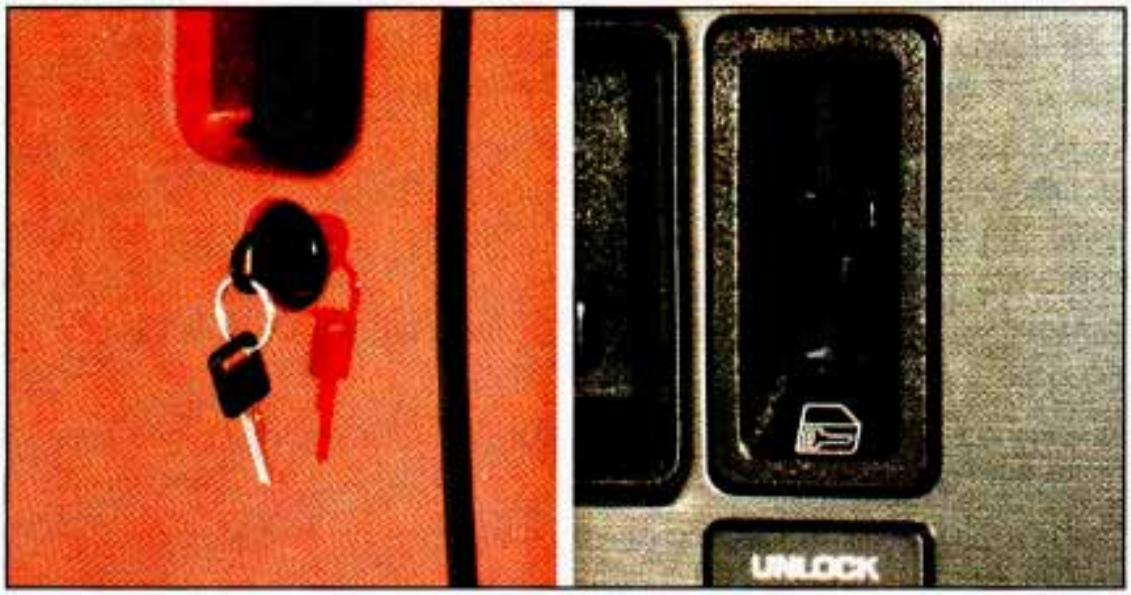
Unlocked doors can be dangerous.

Passengers—especially children—can easily open the doors and fall out. When a door is locked, the inside handle won't open it.

Outsiders can easily enter through an unlocked door when you slow down or stop your vehicle.

This may not be so obvious: You increase the chance of being thrown out of the vehicle in a crash if the doors aren't locked. Wear safety belts properly, lock your doors, and you will be far better off whenever you drive your vehicle.

There are several ways to lock and unlock your vehicle:



P0441

From the outside: Use your door key.

From the inside: To lock front doors and sliding side door, slide the lock levers down.

Rear doors cannot be manually locked from the inside.

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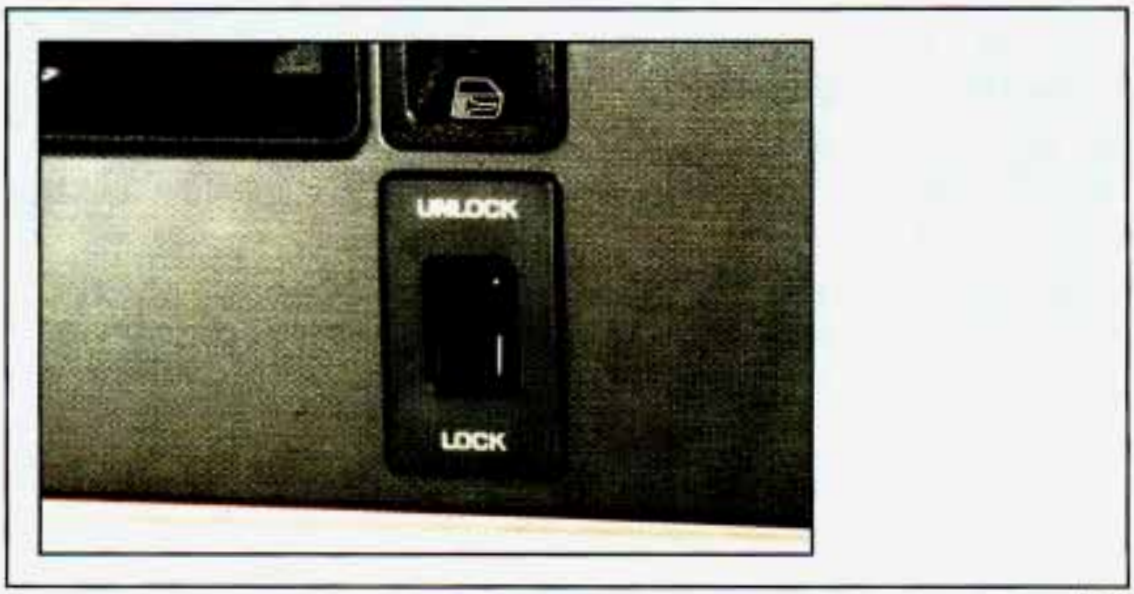
P0438

To unlock the front doors and the sliding side door from the inside: Slide the lock levers up.

To unlock the rear hatch and split-panel doors from the inside: Push the top of the switch.

Power Door Locks



P0439

If your vehicle has power door locks, push the power door lock switch to lock or unlock all the doors at once.

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Every vehicle with power door locks has a pulse lock system. A pulse lock system works like this:

If the sliding door is open and you push the power door lock switch, the sliding door will not lock immediately. After you close the door, the system comes on and, in about five seconds, locks the sliding door.

All models have overriding door locks. When a door is locked, the door handle will not work the latch. This will help stop a door from being accidentally opened. However, power door locks do not affect the operation of the hatch.

Leaving Your Vehicle

If you are leaving the vehicle, take your keys, open your door and set the locks from inside. Then get out and close the door.

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 walk away from 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 chime 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. And 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: If you park in a lot where someone will be watching your vehicle, it's 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 out of sight.
- Lock all doors except the driver's.
- Then take the door key with you.

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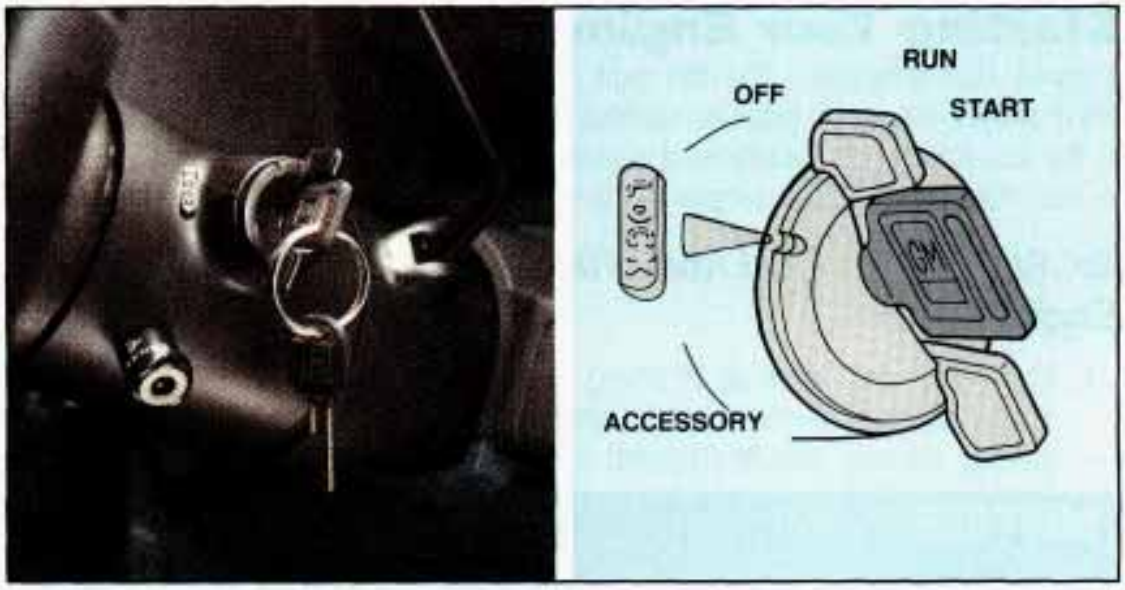
New Vehicle "Break-In"

NOTICE

Your modern 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 (804 km).
- Don't drive at any one speed—fast or slow—for the first 500 miles (804 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.

Ignition Switch



K3212

Use your ignition key to start your vehicle. The ignition key lets you turn the ignition switch to five different positions.

Acc (Accessory): Lets you use things like the radio and the windshield wipers when the engine is off. To get into **Acc**, push in the key and turn it toward you. Your steering wheel will remain locked, just as it was before you inserted the key.

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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**.

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).

Run: This is the position for driving.

Start: This starts your engine.

NOTICE

If your key seems stuck in **LOCK** and you can't turn it, be sure it is all the way in. If it is, then turn the steering wheel left and right while you turn the key hard. But 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.

Starting Your Engine

Engines start differently. The 8th digit of your Vehicle Identification Number (VIN) shows the code letter or number for your engine. You will find the VIN at the top left of your instrument panel. (See "Vehicle Identification Number" in the index.) Follow the proper steps to start the engine.

To Start Your 4.3 Liter (VIN Codes Z and W) V6 Engines:

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

NOTICE

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

2. Don't push the accelerator pedal before starting your engine. In some other vehicles you might need to do this, but because of your vehicle's computer systems, you don't.

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3. Turn your 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.

4. If it doesn't start right away, hold your key in **Start**. If it doesn't start in three seconds, push the accelerator pedal about one-quarter of the way down for 12 more seconds, or until it starts.

5. If your engine still won't start (or starts but then stops), it could be flooded with too much gasoline. Try this:

   Wait 15 seconds to let the starter motor cool down. Then push your accelerator pedal all the way to the floor. Hold it there. Then, hold the key in **Start** for no more than ten seconds. This clears the extra gasoline from the engine.

   If the engine still doesn't start, wait another 15 seconds and do it all again.

   When the engine starts, let go of the key and the accelerator pedal.

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 fuel injection system operates. Before adding electrical equipment, check with your dealer. If you don't, your engine might not perform properly.

If you ever have to have your vehicle towed, see the part of this Manual that tells how to do it without damaging your vehicle. See "Towing Your Vehicle" in the Index.

Fuel Regulator

If you have the 4.3L engine (VIN Code W), you will have a fuel regulator that shuts the fuel off when the engine reaches 5600 rpm.

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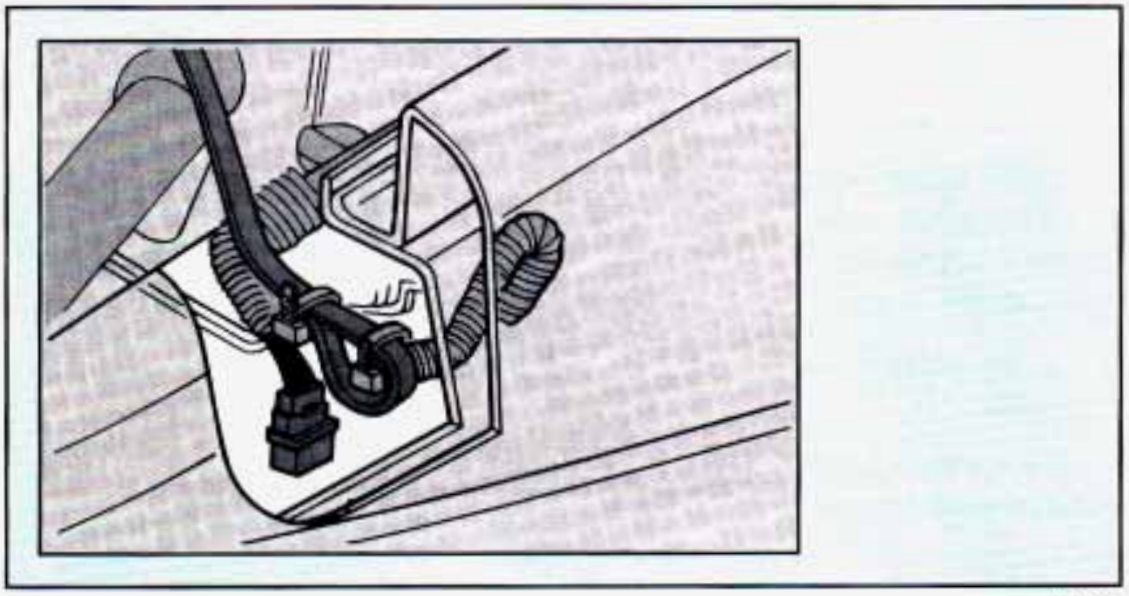
Driving Through Deep Standing Water

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. If you can't avoid deep puddles or standing water, drive through them very slowly.

Engine Block Heater (Option)



K3213

In very cold weather, -0˚F (-18˚C) or colder, the engine block heater can help. You'll get easier starting and better fuel economy during engine warm-up.

To use the block heater:

1. Turn off the engine.
2. Open the hood and unwrap the electrical cord.
3. Plug it into a normal, grounded 110-volt outlet.

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CAUTION

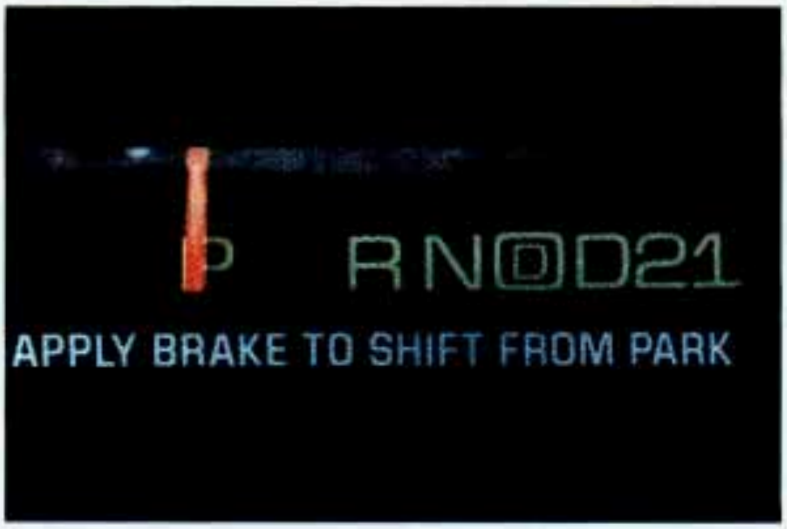
Plugging the cord into an ungrounded outlet could cause an electrical shock. Also, the wrong kind of extension cord could overheat and cause a fire. You could be seriously injured. Plug the cord into a properly grounded three-prong 110-volt outlet. If the cord won't reach, use a heavy-duty three-prong extension cord rated for at least 15 amps.

NOTICE

After you've used the block heater, be sure to 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 block heater plugged in? The answer depends on the weather, the kind of oil you have, and some other things. Instead of trying to list everything here, we ask that you contact a GM 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



P0472

There are several different positions for your shift lever.

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- **P** (Park).

  This 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 **P** (Park) 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, when you're on fairly level ground, always set your parking brake and move the shift lever to **P** (Park).

See "Shifting Into **P** (Park)" in the Index. If you are parking on a hill, or pulling a trailer, also see "Parking on Hills" or "Towing a Trailer" in the Index.

Ensure the shift lever is fully in **P** (Park) range before starting the engine. Your vehicle has a brake-transmission shift interlock. You have to fully **apply** your regular brakes **before** you can shift from **P** (Park) when the ignition key is in the **Run** position. If you cannot shift out of **P** (Park), ease pressure on the shift lever—push the shift lever all the way into **P** (Park) as you maintain brake application. Then move the shift lever into the gear you wish. See "Shifting Out of **P** (Park) in this part.

- **R** (Reverse).

  Use this gear to back up.

NOTICE

Shifting to **R** (Reverse) while your vehicle is moving forward could damage your transmission. Shift to **R** (Reverse) only after your vehicle is stopped.

To rock your vehicle back and forth to get out of snow, ice or sand without damaging your transmission, see "If You're Stuck in Sand, Mud, Ice or Snow" in the Index.

- **N** (Neutral).

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

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CAUTION

Shifting out of **P** (Park) or **N** (Neutral) 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 **P** (Park) or **N** (Neutral) while your engine is racing.

NOTICE

Damage to your transmission caused by shifting out of **P** (Park) or **N** (Neutral) with the engine racing isn't covered by your warranty.

- **OD** (Automatic Overdrive).

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

  — Going less than about 35 mph (56 km/h), push your accelerator about halfway down.

  — Going about 35 mph (56 km/h) or more, push the accelerator all the way down. You'll shift down to the next gear and have more power.

  OD should **not** be used when towing a trailer, carrying a heavy load, or driving on steep hills. Select **D** (third gear) when operating the vehicle under any of these conditions.

- **D** (Third Gear).

  This is like **OD**, but you never go into Overdrive. You should use **D** when towing a trailer, carrying a heavy load, or driving on steep hills.

- **2** (Second Gear).

  This position gives you more power but lower fuel economy. You can use **2** (Second Gear) 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 **2**, the transmission will drive in second gear. 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.

- **1** (First Gear).

  This position gives you even more power (but lower fuel economy) than **2** (Second Gear). You can use it on very steep hills, or in deep snow or

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mud. If the selector lever is put in **1** (First Gear), the transmission won't shift into **1** (First Gear) until the vehicle is going slowly enough.

NOTICE

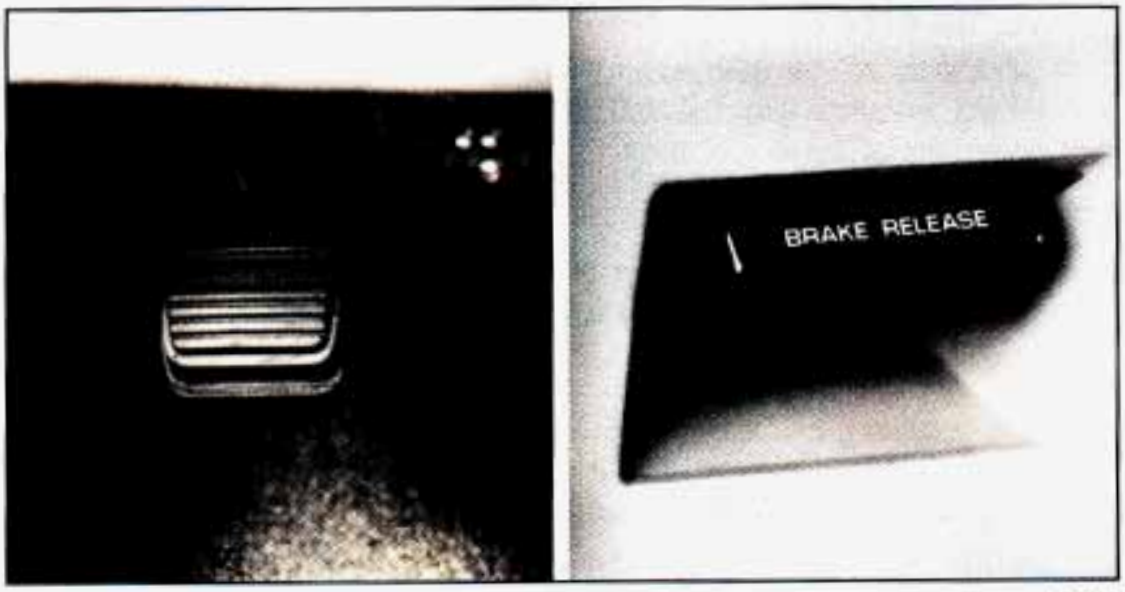
If your rear wheels can't rotate, don't try to drive. This might happen if you were stuck in very deep sand or mud or were up against a solid object. You could damage your transmission or transfer case, or both.

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 **P** (Park) to hold your vehicle in position on a hill.

Locking Rear Axle

If you have this feature, your 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, the locking feature will allow the wheel with traction to move the vehicle.

Parking Brake



P0473

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.

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To release the parking brake:
Hold the regular brake pedal down. Pull the brake release lever.

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.

If you are on a hill: See "Parking on Hills" in the Index. That part shows how to turn your front wheels.

If you are towing a trailer and are parking on any hill: See "Towing a Trailer" in the Index. That part shows what to do first to keep the trailer from moving.

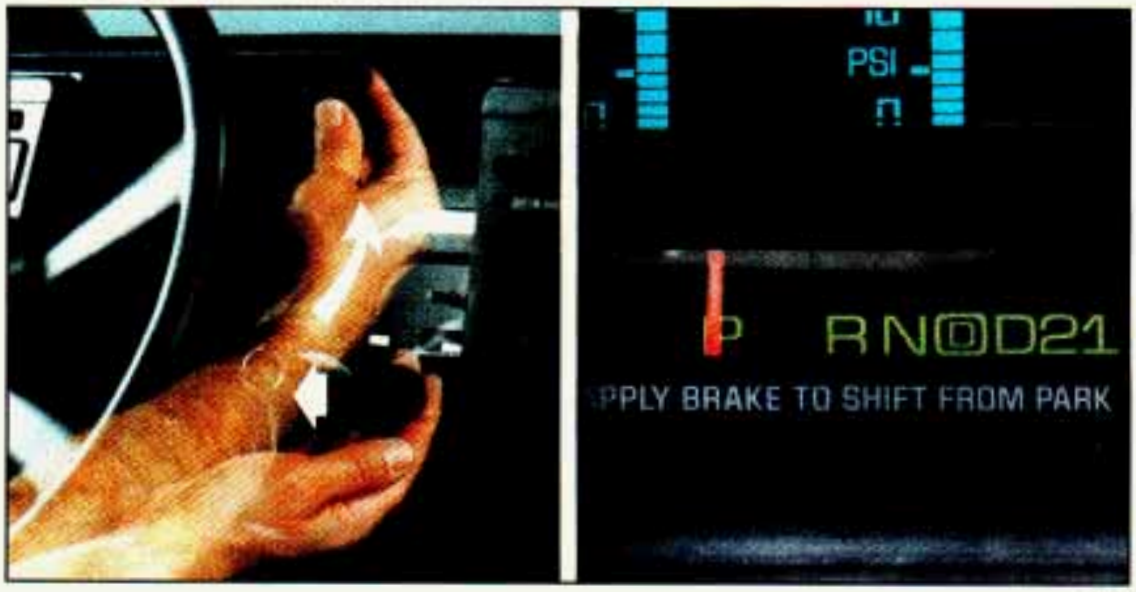
Shifting Into P (Park)

CAUTION

It can be dangerous to get out of your vehicle if the shift lever is not fully in **P** (Park) 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, when you're on fairly level ground, use the steps that follow. If you are parking on a hill, or if you're pulling a trailer, also see "Parking On Hills" or "Towing a Trailer" in the Index.

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



P0662

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2. Move the shift lever into the **P** (Park) position 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 walk away from your vehicle with the ignition key in your hand, your vehicle is in **P** (Park).

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 **P** (Park) with the parking brake firmly set. And, if you leave the vehicle with the engine running, it could overheat and even catch fire. You or others could be injured. 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 **P** (Park) and your parking brake firmly set before you leave it. After you've moved the shift lever into the **P** (Park) position, hold the regular brake pedal down then, see if you can move the shift lever away from **P** (Park) without first pulling it toward you. If you can, it means that the shift lever wasn't fully locked into **P** (Park).

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Shifting Out of P (Park)

Your vehicle has a brake-transmission shift interlock. You have to fully **apply** your regular brake before you can shift from **P** (Park) when the ignition is in the **RUN** position. See "Automatic Transmission" in the Index.

If you cannot shift out of **P** (Park), ease pressure on the shift lever—push the shift lever all the way into **P** (Park) as you maintain brake application. Then move the shift lever into the gear you wish.

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

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

Parking Over Things That Burn

AN220012

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.

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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 it fixed **immediately**.

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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 air system control 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 switch 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 **P** (Park) with the parking brake firmly set. Your vehicle can roll. Don't leave your vehicle with the engine 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 **P** (Park).

Follow the proper steps to be sure your vehicle won't move. See "Shifting Into **P** (Park)") in the Index. If you are parking on a hill, or if you're pulling a trailer, also see "Parking on Hills" or "Towing a Trailer" in the Index.

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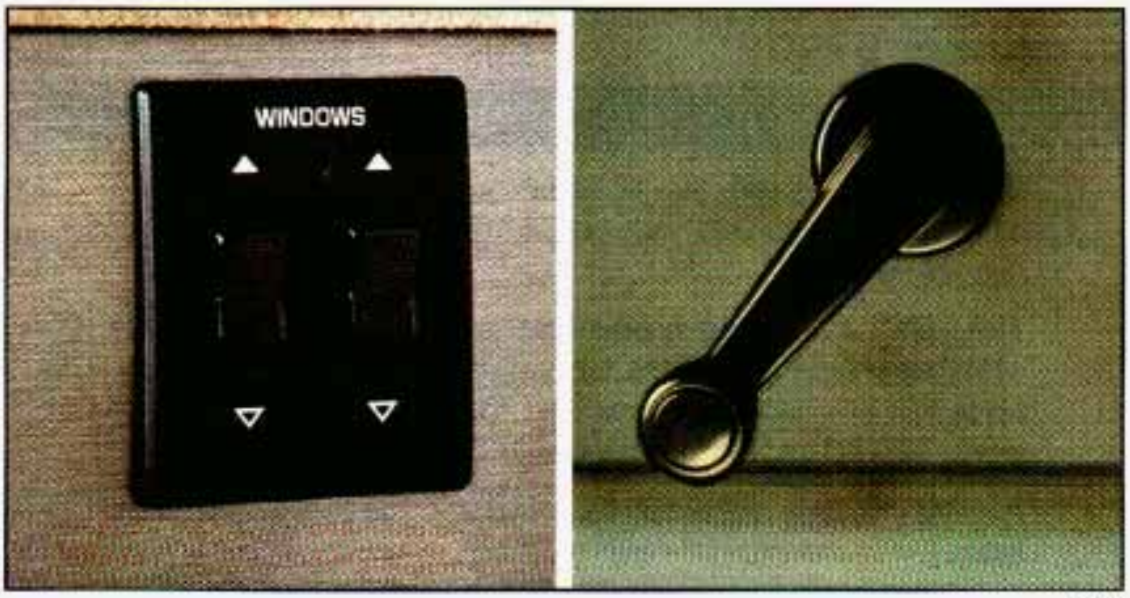
Windows



P0437

Manual Windows

Turn the hand crank on each door to raise or lower your side door windows.

Power Windows

If you have optional power windows, the controls are on each of the front side doors. The driver's door has a switch for the front passenger window as well. Your power windows will not move unless the ignition has been turned to **Run**.

Swing-Out Windows

P0442

To open your swing-out windows, pull up on the latch and push the window out.

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To close the window, pull the latch toward you and push it down.

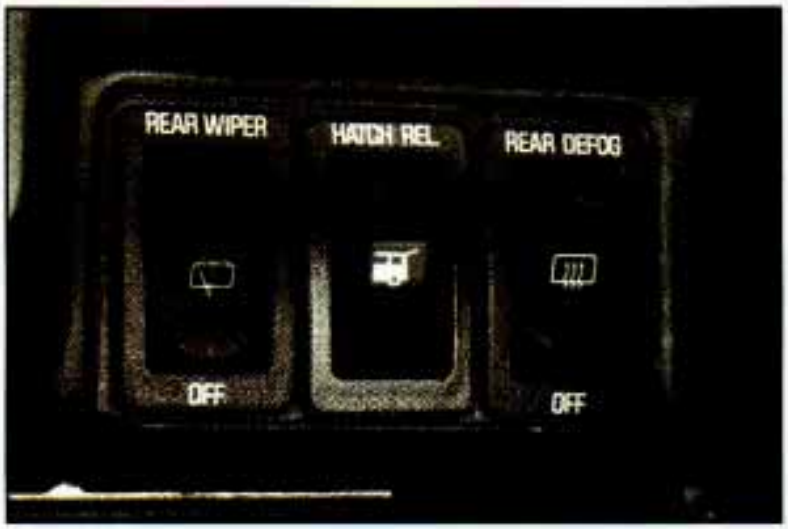
CAUTION

It can be dangerous to drive with the rear swing-out windows, rear hatch or rear doors open. Carbon Monoxide (CO) gas can come into your vehicle. You can't see or smell CO. It can cause unconsciousness and even death.

If you must drive with the rear swing-out windows, rear hatch or rear doors open:

- Make sure all other windows are shut.
- Turn the fan on your heating or cooling system to its highest speed with the setting on **anything but MAX A/C** (that will force outside air into your vehicle). See "Comfort Controls" in the Index.
- If you have air vents on or under the instrument panel, open then up all the way.

Hatch Release Switch



K3313

This switch is to the left of the steering column. It will release the rear hatch.

The vehicle must be in **P** (Park) or **N** (Neutral) to release the hatch and unlock the split-panel doors.

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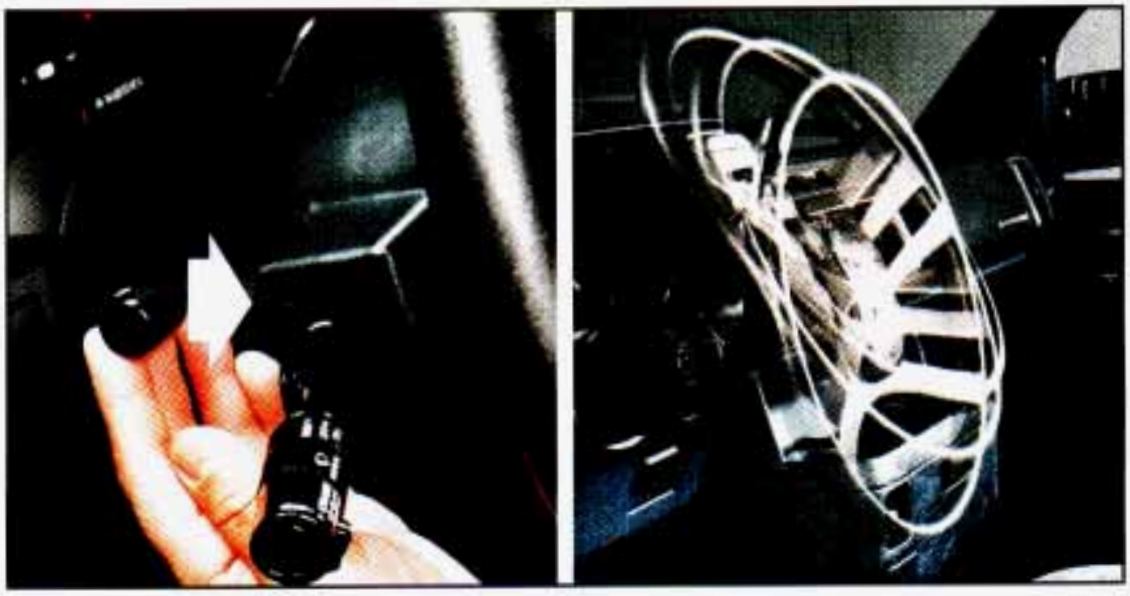
Horn

N0047

Press the pad in the center of the steering wheel to sound the horn.

Tilt Wheel



N0046

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 exit and enter the vehicle.

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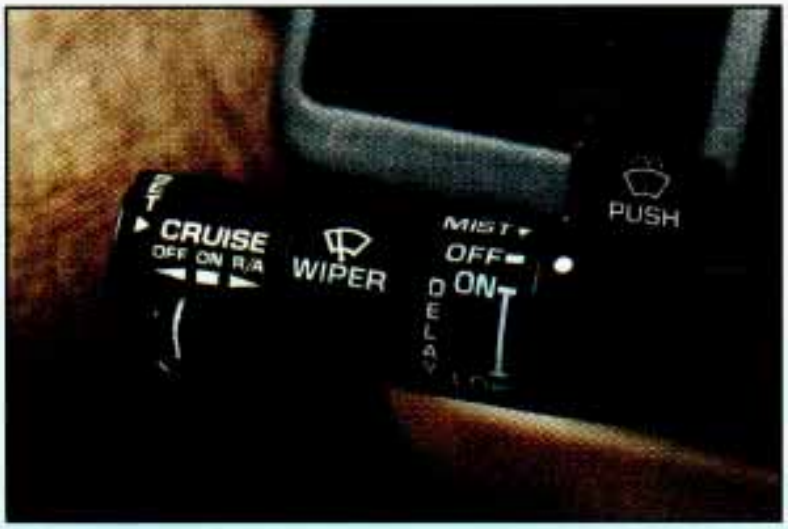
To tilt the wheel, hold the steering wheel and pull the lever. Move the steering wheel to a comfortable level, then release the lever to lock the wheel in place.

The Turn Signal/Multifunction Lever



P0436

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

- Turn Signal and Lane Change Indicator
- Headlight High-Low Beam & Passing Signal
- Windshield Wipers
- Windshield Washer
- Cruise Control (Optional)

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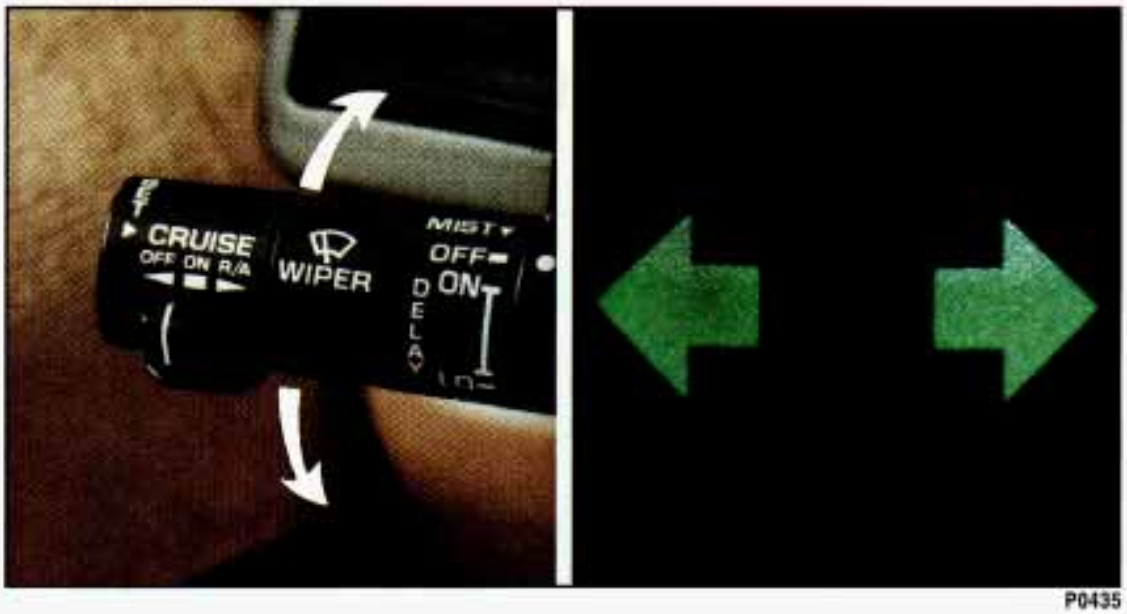
Turn Signal and Lane Change Indicator



P0435

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.

A green arrow on the instrument panel will flash in the direction of the turn or lane change.

To signal a lane change, just raise or lower the lever until the green 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 don't flash but just stay on, a signal bulb may be burned out and other drivers won't see your turn signal.

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

If you have a trailer towing option with added wiring for the trailer lights, a different turn signal flasher is used. With this flasher installed, the signal indicator will flash even if a turn signal bulb is burned out. Check the front and rear turn signal lights regularly to make sure they are working.

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Operation of Lights

Although your vehicle's lighting system (headlights, parking lights, fog lamps, side marker lights and tail lights) meet all applicable Federal lighting requirements, certain states and provinces may apply their own lighting regulations that may require special attention before you operate these lights. For example, some jurisdictions may require that you operate your lower beam lights with fog lamps at all times, or that headlights be turned on whenever you must use your windshield wipers. In addition, most jurisdictions prohibit driving solely with parking lights, especially at dawn or dusk. It is recommended that you check with your own state or provincial highway authority for applicable lighting regulations.

Headlight High-Low Beam

P0433

To change the headlights from low beam to high or high to low, pull the turn signal lever all the way toward you. Then release it. When the high beams are on, a blue light on the instrument panel also will be on.

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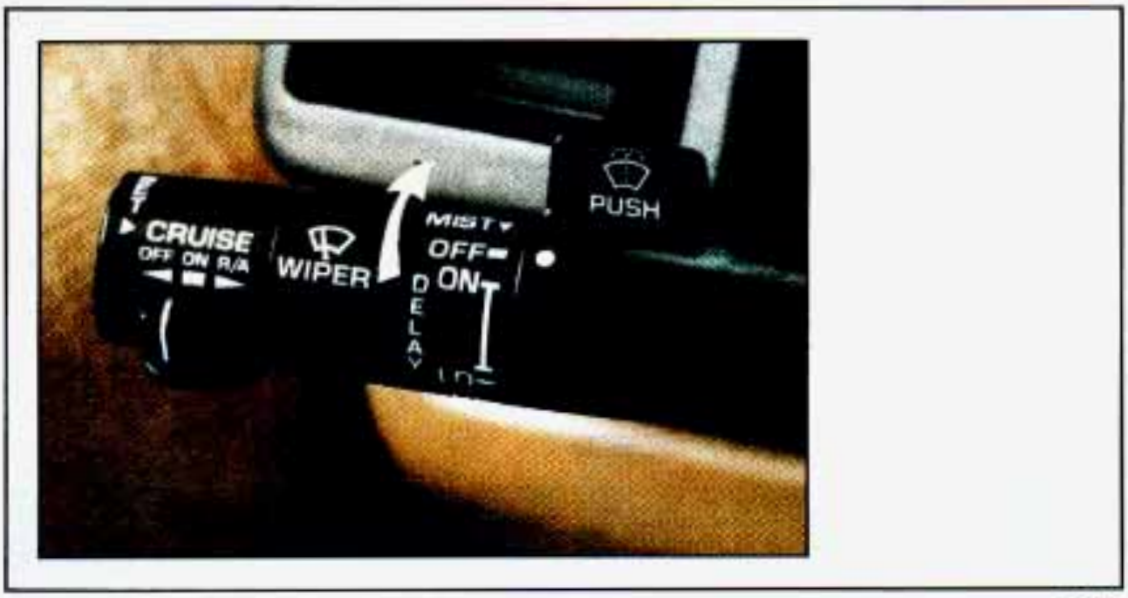
Windshield Wipers



P0478

You control the windshield wipers by turning the band marked **WIPER**.

For a single wiping cycle, turn the band to **MIST**. Hold it there until the wipers start, then let go. The wipers will stop after one cycle. If you want more cycles, hold the band on **MIST** longer.

For steady wiping at low speed, turn the band away from you to the **LO** position. For high speed wiping, turn the band further, to **HI**. To stop the wipers, move the band to **OFF**.

CAUTION

Damaged wiper blades may prevent you from seeing well enough to drive safely. To avoid damage, be sure to clear ice and snow from the wiper blades before using them. If they're frozen to the windshield, carefully loosen or thaw them. If your blades do become damaged, get new blades or blade inserts.

Heavy snow or ice can overload your wipers. A circuit breaker will stop them until the motor cools. Clear away snow or ice to prevent an overload.

Low Speed Delay Wipers

You can set the wiper speed for a long or short delay between wipes. This can be very useful in light rain or snow. Turn the band to choose the delay time. The closer to **LO**, the shorter the delay.

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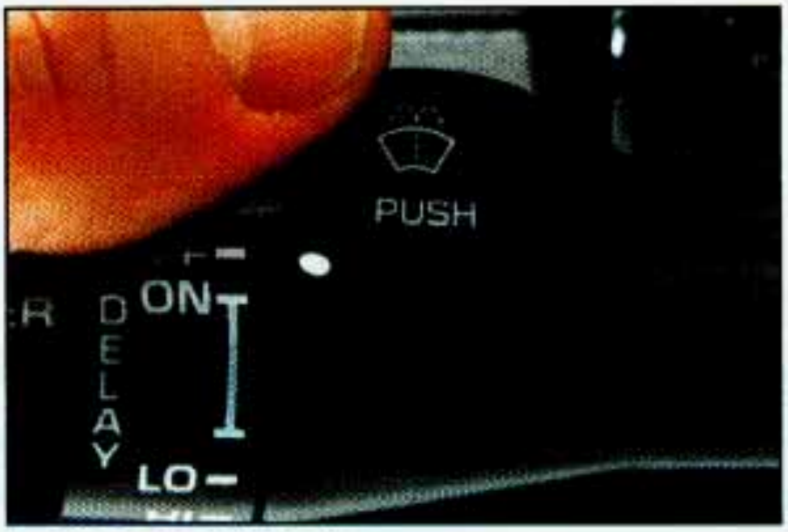
Windshield Washer



K3279

At the top of the multifunction lever there's a paddle with the word **PUSH** on it. To spray washer fluid on the windshield, push and release the paddle. The wipers will clear the window and then either stop or return to your preset speed. For continued wash operation, press and hold the paddle down.

CAUTION

- Driving without washer fluid can be dangerous. A bad mud splash can block your vision. You could hit another vehicle or go off the road. Check your washer fluid level often.
- 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.

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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 3/4 full when it's very cold. This allows for expansion, which could damage the tank if it is completely full.
- Don't use radiator antifreeze in your windshield washer. It can damage your washer system and paint.

Rear Window Wiper/Washer

K3387

You control your rear window wiper/washer from a switch on your instrument panel, just left of your steering column.

- Press the top of the switch to the first position to turn on the wiper.
- Press the top of the switch in all the way and hold to release the desired amount of washer fluid. The wipers will continue to work after you release the switch.
- Press the bottom of the switch (OFF) to turn the wiper off.

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The rear window washer system uses the same fluid bottle as the windshield washer system.

The rear window washer system will run out of fluid before the windshield washer system, indicating you need to check your fluid level and fill the fluid bottle.

Cruise Control (Option)

P0436

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, the Cruise Control shuts 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.

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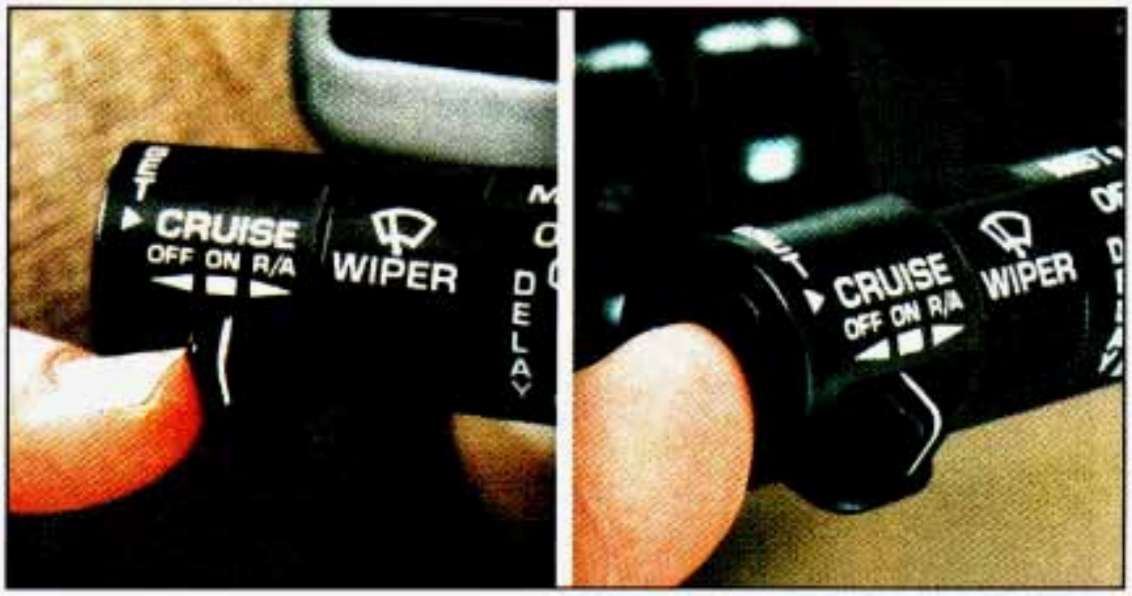
To Set Cruise Control



P0432

Move the Cruise switch to **ON**.

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 it.

- Get up to the speed you want.
- Push in the set button at the end of the lever and release it.
- Take your foot off the accelerator pedal.

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To Resume a Set Speed

P0431

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 switch from **ON** to **R/A** (Resume/Accelerate) for about half a second.

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

CAUTION

If you hold the switch at **R/A** (Resume/Accelerate) longer than half a second, the vehicle will keep going faster until you release the switch or apply the brake. You could be startled and even lose control. So unless you want to go faster, don't hold the switch at **R/A** (Resume/Accelerate).

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To Increase Speed While Using Cruise Control

P0430

There are two ways to go to a higher speed. Here's the first:

1. Use the accelerator pedal to get to the higher speed.
2. 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.

Here's the second way to go to a higher speed:

1. Move the Cruise switch from **ON** to **R/A** (Resume/Accelerate). Hold it there until you get up to the speed you want, and then release the switch.
2. To increase your speed in very small amounts, move the switch to **R/A** (Resume/Accelerate) for less than half a second and then release it. Each time you do this, your vehicle will go 1 mph (1.6 km/h) faster.

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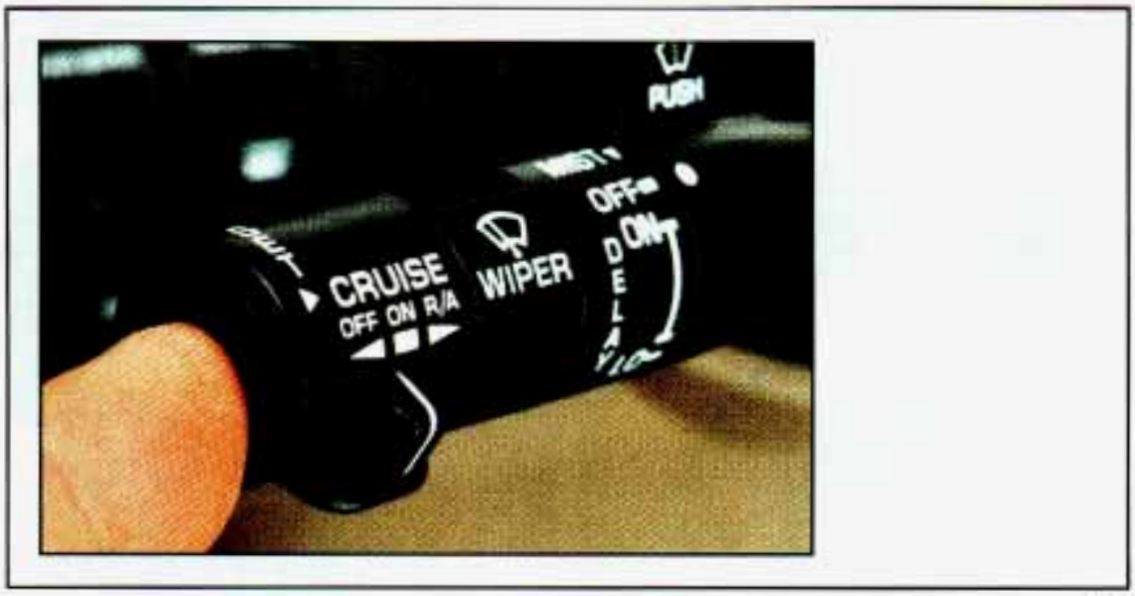
To Reduce Speed While Using Cruise Control



P0398

1. Push in the button at the end of the lever until you reach the lower speed you want, then release it.
2. To slow down in very small amounts, push the button for less than half a second. Each time you do this, you'll go 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.

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To Get Out of Cruise Control

P0429

There are two ways to turn off the Cruise Control:

1. Step lightly on the brake pedal **OR**
2. Move the Cruise switch to **OFF**.

To Erase Speed Memory

When you turn off the Cruise Control or the ignition, your Cruise Control memory is erased.

Lights

P0397

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Your light switches are on the left side of the instrument panel above the vent.

Press the top light switch to the left to turn on:

- Parking Lights
- Taillights
- License Plate Lights
- Instrument Panel Lights

Press the bottom light switch to the left to turn on the headlights, together with:

- Parking Lights
- Taillights
- License Plate Lights
- Instrument Panel Lights

Press both switches to the right to turn off your lights.

Turn the dial above the light switches to the left to dim your instrument panel lights.

Turn the dial to the right to brighten your instrument panel lights. If you turn the dial all the way to the right until it clicks, your interior lights will come on.

You can switch your headlights from high to low beam by pulling on the multifunction lever on the left of the steering column.

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

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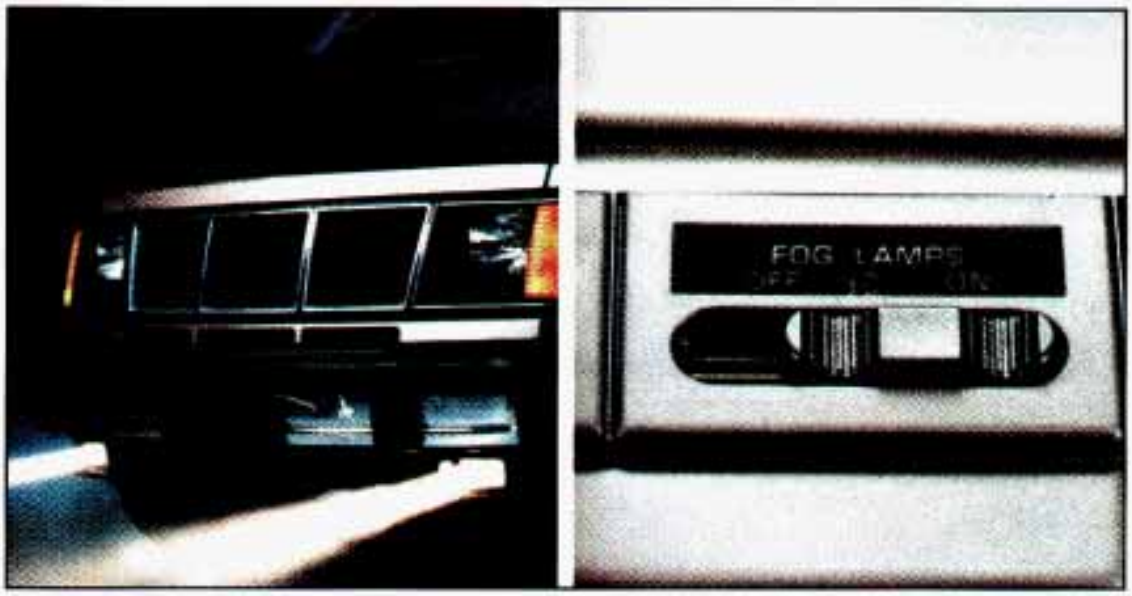
Fog Lamps



P0396

Use your optional fog lamps for better vision in foggy or misty conditions. Your parking lights and/or low beam headlights must be on or your fog lamps won't work.

Your fog lamp switch is in the center of the instrument panel above the radio. Slide the right side of the switch to turn the fog lamps on, and the left side of the switch to turn them off. A warning light in the switch will remind you that your fog lights are on.

Remember, fog lamps alone will not give off as much light as your headlights.

Never use your fog lamps in the dark without turning on your headlights.

Fog lamps will go off whenever your high beam lights come on. When the high beams go off, the fog lamps will come on again.

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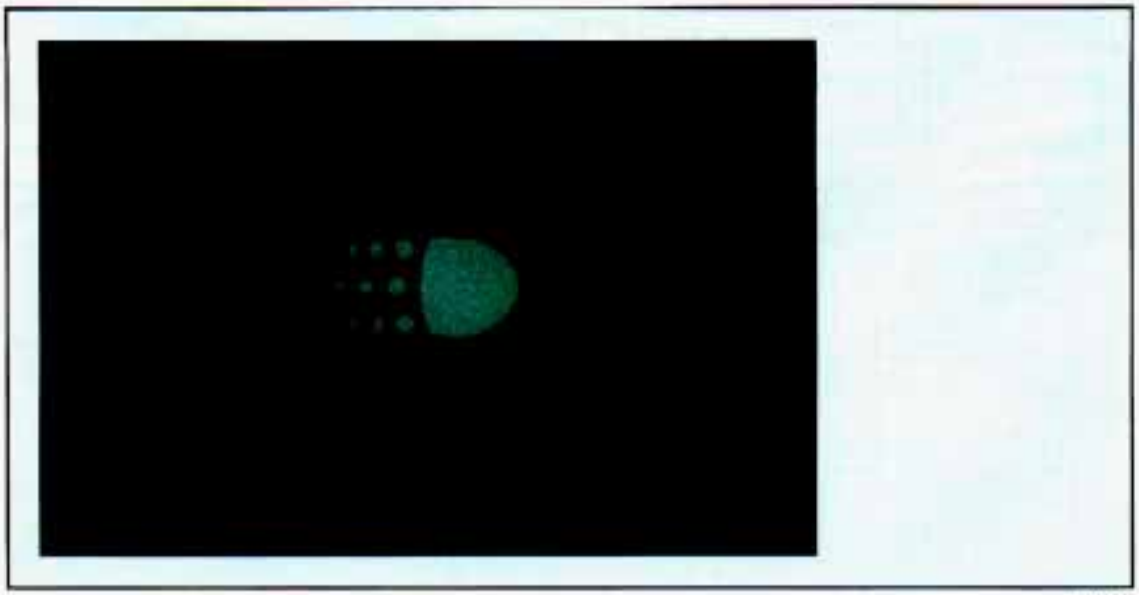
Daytime Running Lights (DRL) Indicator Light (Canada Only)



K3269

If your vehicle was first sold, when new, in Canada, you will have this light on the instrument panel. It goes on whenever the Daytime Running Lights are on.

Daytime Running Lights (Canada Only)

The Canadian Federal Government has decided that "Daytime Running Lights (DRL)" is a useful feature, in that DRL can make your vehicle more visible to pedestrians and other drivers during daylight hours. DRL is required on new vehicles sold in Canada.

The high beam headlights will come on at reduced brightness in daylight when:

- The ignition is on
- The headlight switch is off, and
- The parking brake is released.

When you turn on your headlights, the DRL will switch off and the exterior lights will come on. When you turn off the headlights, the exterior lights will go out and the high beams will change to the reduced brightness of DRL again.

The DRL indicator light on the instrument panel will go on whenever the DRL is on. This light means that only the DRL is on. When you turn on your exterior lights, this light will go out.

Of course, you may still turn on the headlights any time you need to.

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

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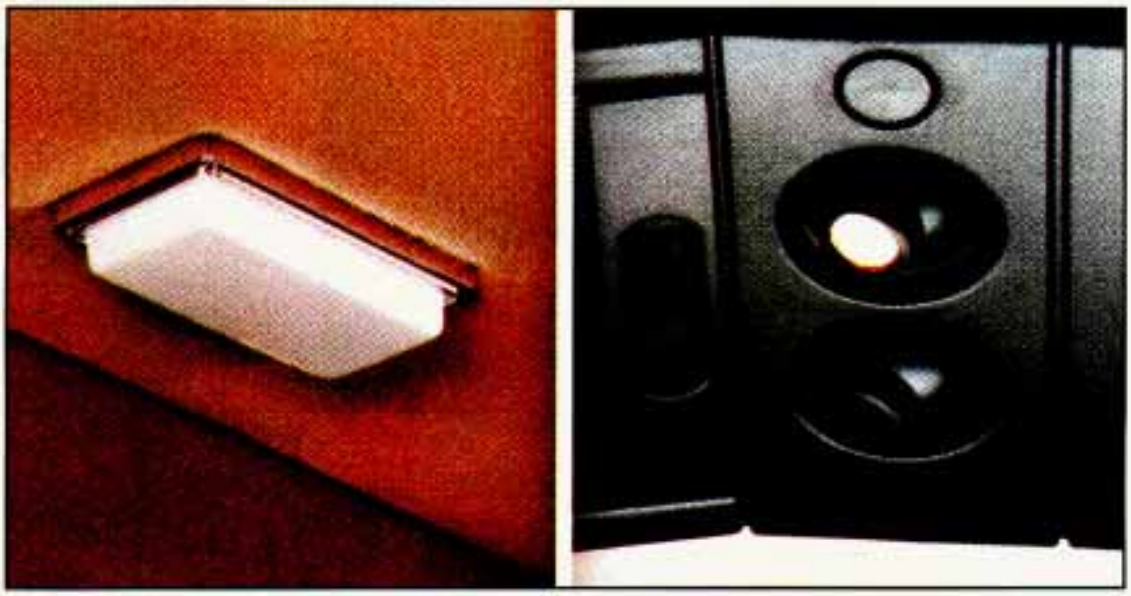
Headlights-On Reminder

If you have this option, a reminder tone will sound when your headlights are turned on and your ignition is in **Off**, **LOCK** or **Acc**. To turn the tone off, press both light switches to the right.

Dome Lights



P0395

The dome lights may come on when you open any of the doors. You can also turn on the dome lights by turning the dimmer dial to the right until it clicks.

Reading Lights

You may have the optional reading lights next to the dome lights. Turn the lights on and off by pressing the switch next to the light.

You can adjust the lights to any desired position by rotating the lamp and they will work when the ignition is on or off. Be sure to turn the lights off before you leave the vehicle.

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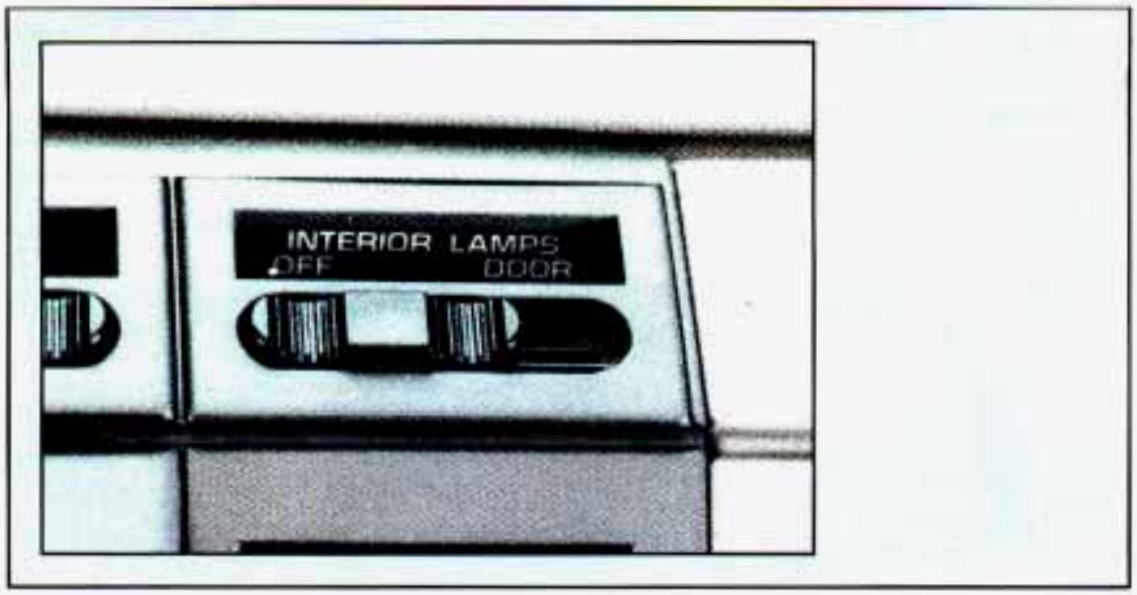
Interior Lights Override Switch

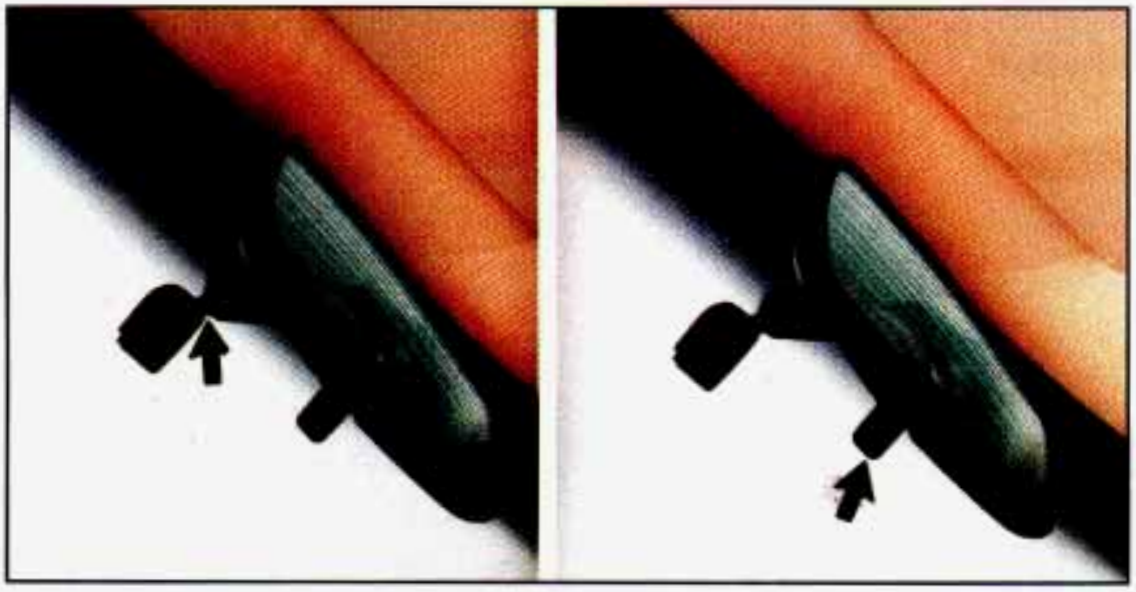


P0393

If you have the optional interior light override switch and it is in the **DOOR** position, your interior lights will work as usual. If the switch is **OFF**, the interior lights will **not** come on when any of the vehicle doors are open. It is on the instrument panel above the radio.

Mirrors

Inside Mirror



P0394

Your inside rearview mirror has two pivots so you can adjust it up and down or side to side.

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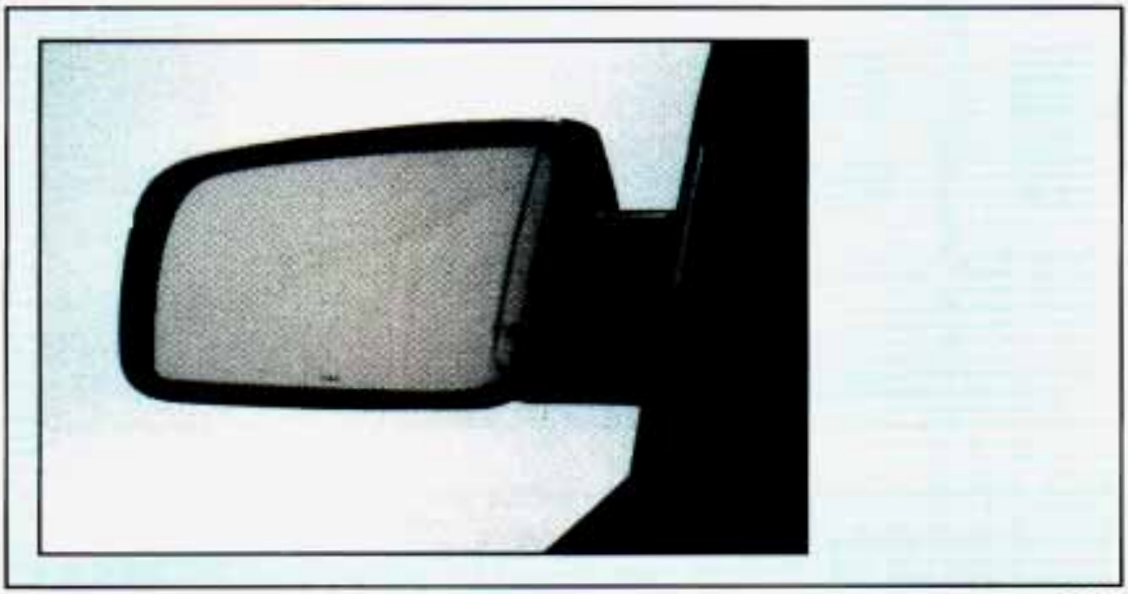
You can also adjust the mirror for day or night driving. Press the tab forward (away from you) for day driving. Pull the tab back (towards you) for night driving.

Outside Mirrors



P0392

Adjust your outside mirrors by hand so you can just see the side of your vehicle.

Your outside mirrors can also be folded in or out. Push the mirror towards the vehicle to move it in. After pushing the mirror out, adjustment will be maintained.

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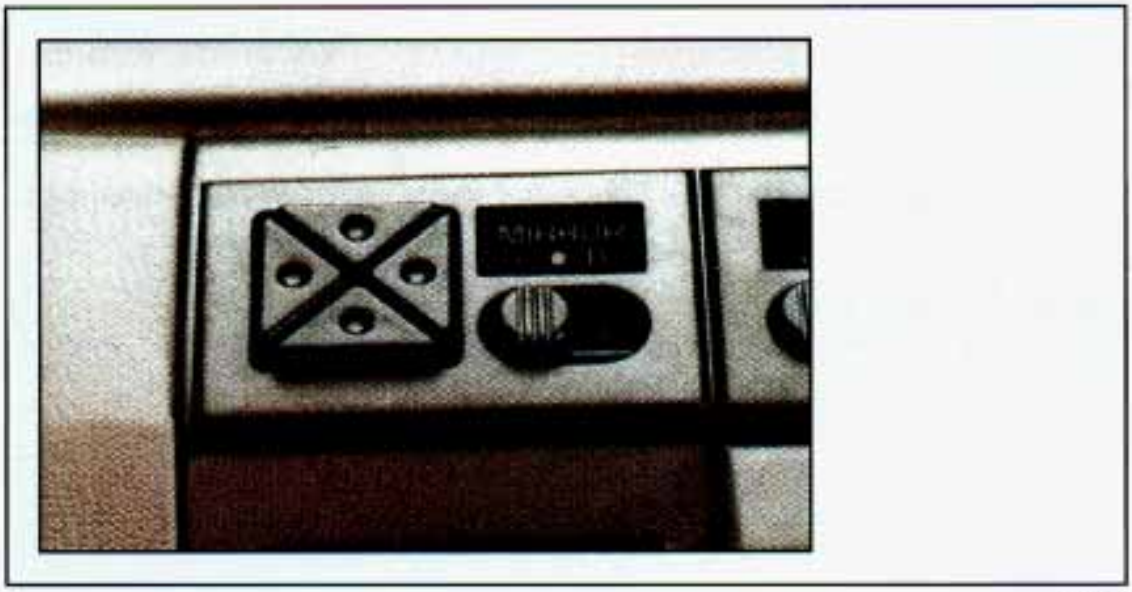
Convex Outside Mirror

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

CAUTION

If you aren't used to a convex mirror, you can hit another vehicle. 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.

Power Mirrors



P0445

Some vehicles come with the optional remote control switch for adjusting the outside mirror. The switch is on the instrument panel above the radio. To move a mirror, slide the switch to **L** for the driver's side mirror or to **R** for the passenger's side mirror. Then, press the four-way pad to move the mirror in the desired direction. To make sure you do not accidentally move a mirror, slide the switch to the middle (off) position.

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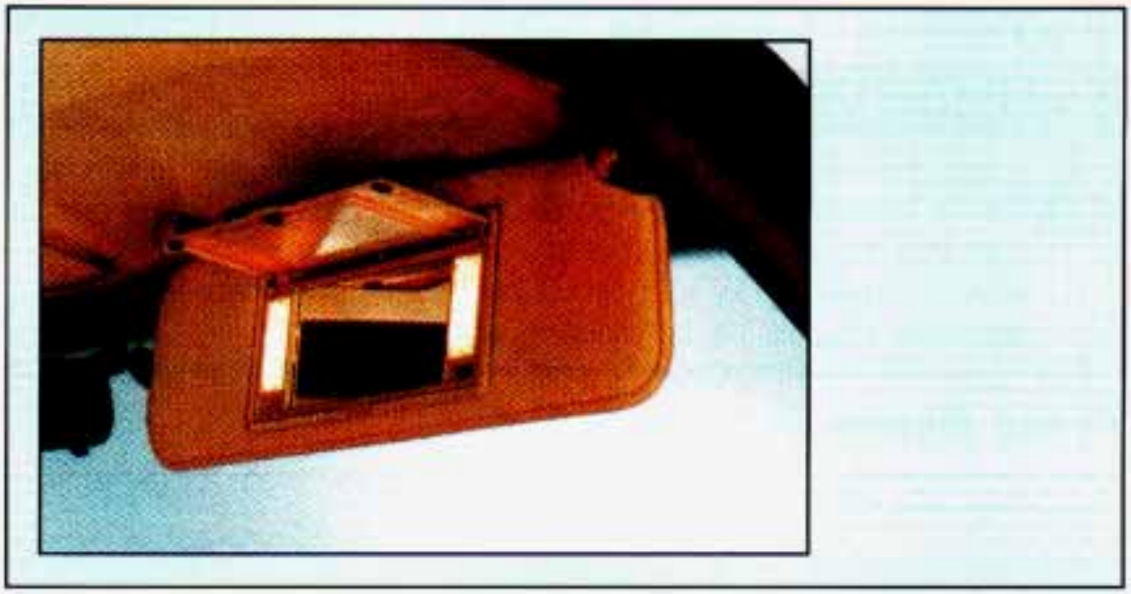
Sun Visor



P0391

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

Visor Vanity Mirror

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

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Luggage Carrier

P0480

If you have the optional luggage carrier, you can load things on top of your vehicle. The luggage carrier has slats attached to the roof, side rails, and tiedowns.

NOTICE

Loading cargo that weighs more than 200 pounds (91 kg) on the luggage carrier may damage your vehicle. When you carry large things, never let them hang over the rear or the sides of your vehicle. Load your cargo so that it rests on the slats and does not scratch or damage the vehicle.

Put the cargo against the side rails and fasten it securely to the luggage carrier. Put the main weight as far forward as you can.

Don't exceed the maximum vehicle capacity when loading your vehicle. For more information on vehicle capacity and loading, see "Loading Your Vehicle" in the Index.

To prevent damage or loss of cargo as you're driving, check now and then to make sure the luggage carrier and cargo are still securely fastened.

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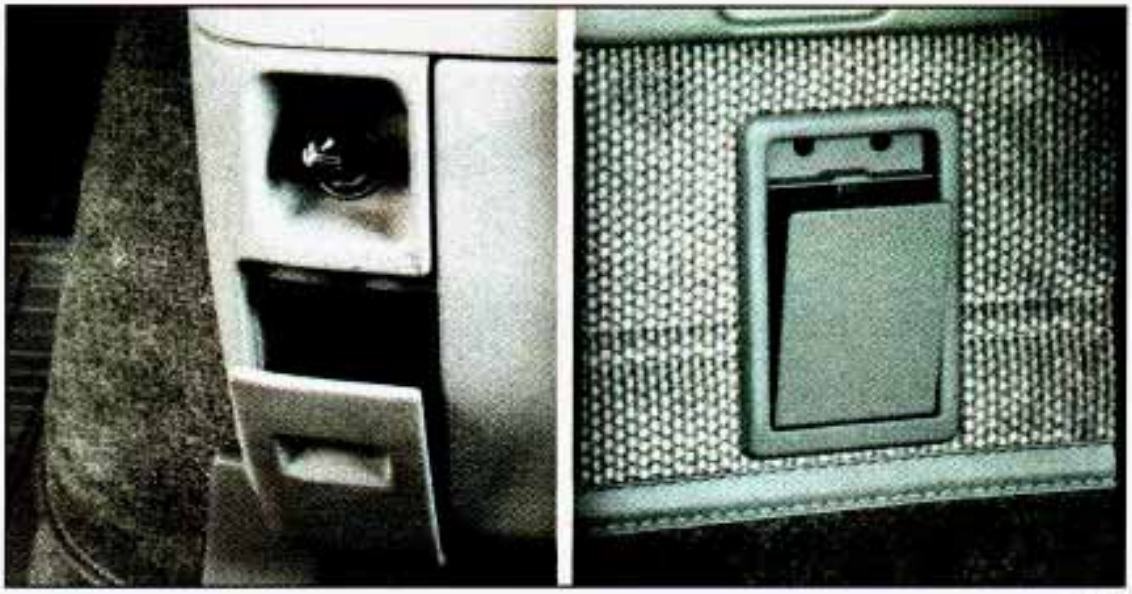
Cigarette Lighter/Ashtrays

Cigarette Lighter



P0428

The optional cigarette lighter is on the left of the engine cover console. To use the lighter, press it in all the way and let go. When it's ready, it will pop back by itself.

Don't hold a cigarette lighter in with your hand while it is heating. If you do, it won't be able to back away from the heating element when it's ready. That can make it overheat, damaging the lighter and the heating element.

Ashtrays

To remove the front ashtray, pull on the front of it while pressing on the inner tab.

To remove the smaller ashtrays on each sidewall, press down on the tabs inside and pull out.

Don't put papers and other things that burn into your ashtrays. If you do, cigarettes or other smoking materials could set them on fire, causing damage.

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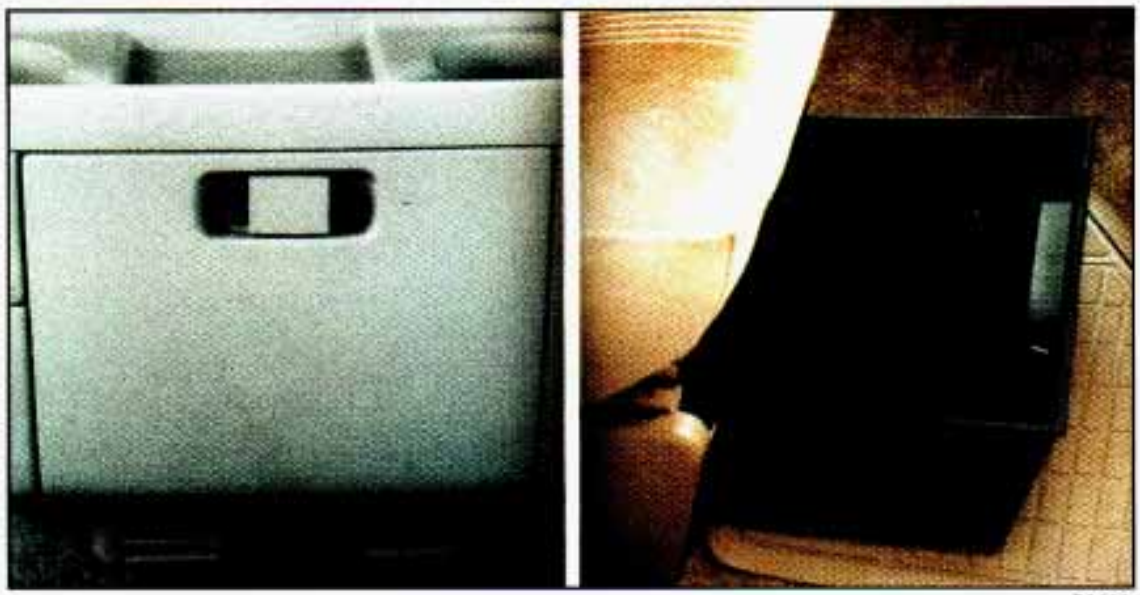
Storage Compartments

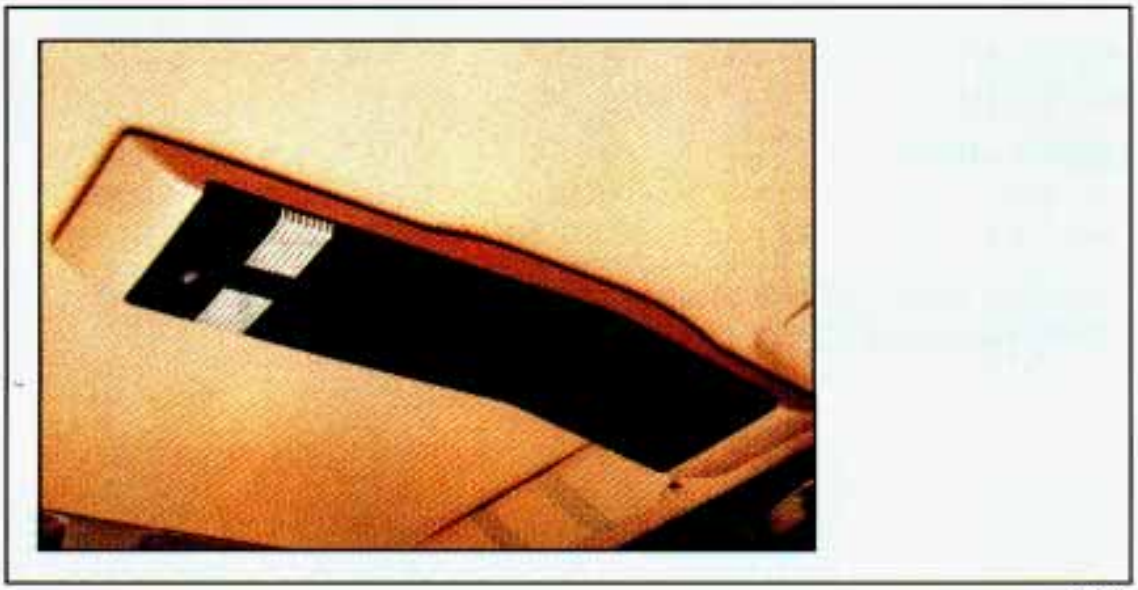


P0426

Your front storage compartment is at the center of the engine cover. To open the compartment, press the two tabs together and pull.

If you have an optional sliding tray storage compartment, it is under the front passenger seat. To open the compartment, slide the latch in the top handle and pull the tray forward.

Roof Console



P0481

The optional roof console has two storage compartments. To open the compartments, push up and slide the door forward. To close the compartments, slide the door back. Use the straps to secure items.

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K3256

To open your optional rear storage compartment, pull up on the handle to remove the cover. To replace the cover, fit the notches on the cover into the storage compartment slots and push down.

To open your optional beverage cooler, lift up on the armrest. The cooler has a drain system that drains off as much fluid as necessary. It also has an ashtray and a cupholder for your convenience.

Instrument Cluster

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

Digital Cluster

The optional digital cluster on your vehicle's instrument panel is displayed electronically and will tell you everything the standard cluster does.

The digital cluster will give readings in either English or Metric. To switch from English to Metric, just press the **E/M** button.

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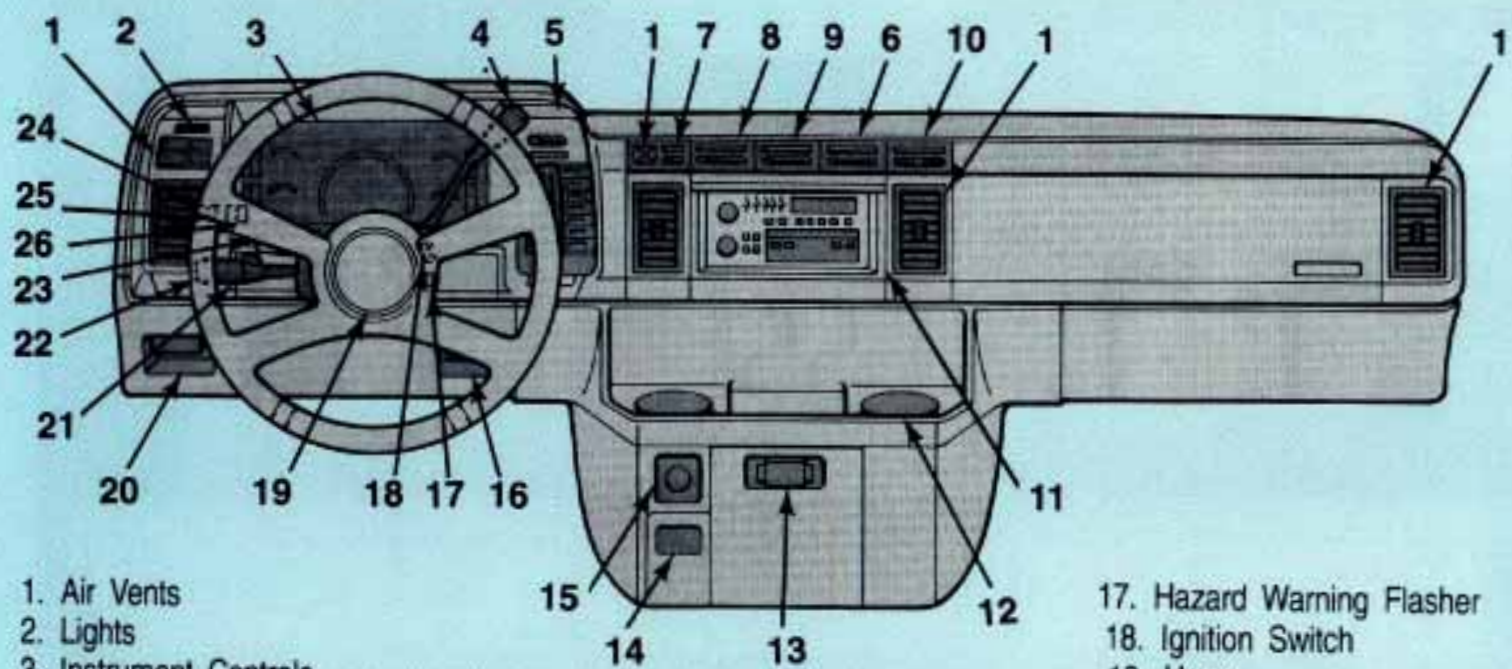
INSTRUMENT PANEL AND CONTROLS



1. Air Vents
2. Lights
3. Instrument Controls
4. Gearshift Lever
5. Climate Control Center
6. Fog Lamp Switch
7. Electric Outside Rearview Mirror Switch
8. Rear Heater Switch
9. Rear Air Conditioner Switch
10. Interior Light Override Switch
11. Audio System
12. Convenience Tray
13. Glove Box
14. Ashtray
15. Cigarette Lighter
16. Hood Release Handle
17. Hazard Warning Flasher
18. Ignition Switch
19. Horn
20. Parking Brake Release Handle
21. Multifunction Lever
22. Cruise Control
23. Tilt Lever
24. Rear Wiper/Washer
25. Hatch Release
26. Rear Window Defogger

P0361

DIGITAL CLUSTER

P0663

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STANDARD CLUSTER

P0666

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Speedometer and Odometer

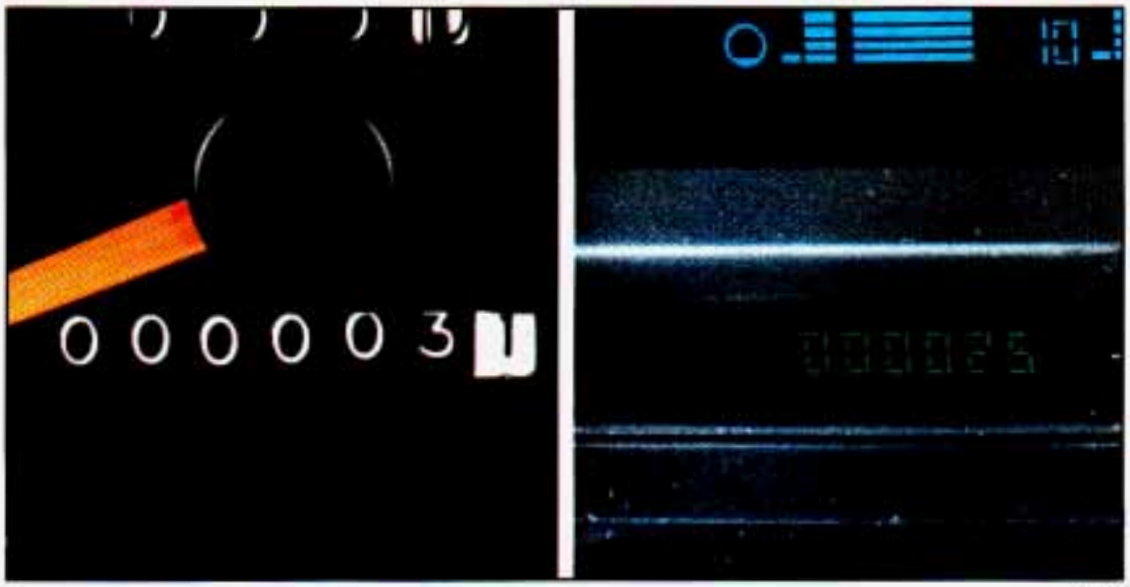
Standard Cluster *Digital Cluster*

P0638

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 U.S.) or kilometers (used in Canada).

Tamper Resistant Odometer

Standard Cluster *Digital Cluster*



P0639

Your odometer is tamper resistant. The odometer will show silver lines between the numbers if someone tries to turn it back.

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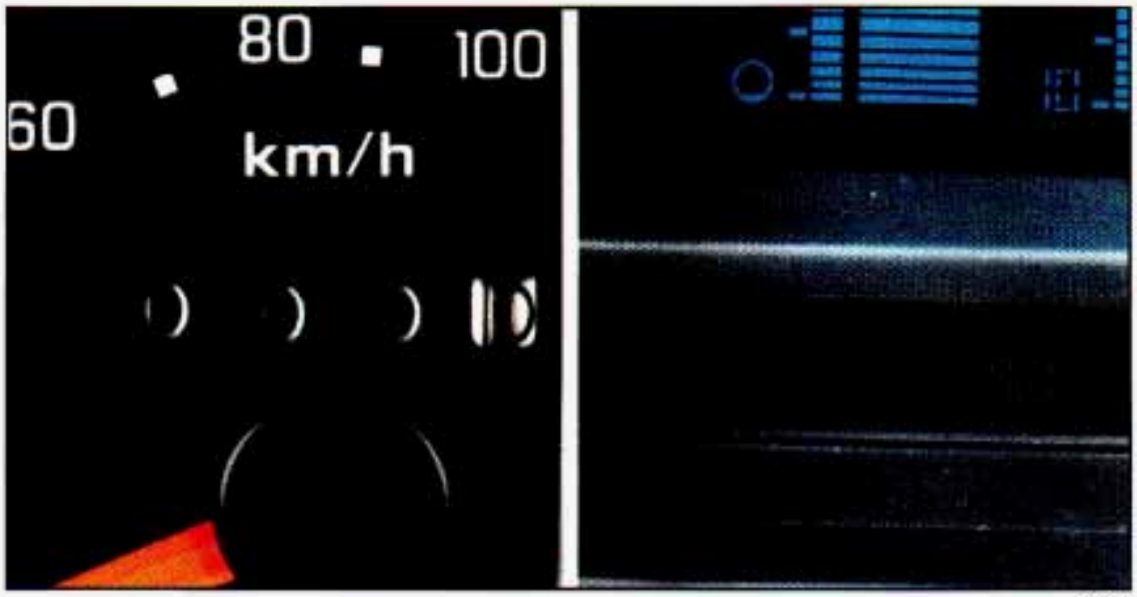
The digital odometer will read **ERROR** if someone tries to turn it back.

You may wonder what happens if your vehicle needs a new odometer installed. If the new one can be set to the mileage total of the old odometer, then 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

Standard Cluster *Digital Cluster*



P0640

The trip odometer can tell you how far your vehicle has been driven since you last set the trip odometer to zero. Make sure button is completely depressed.

To reset the trip odometer on the standard cluster, press the button near the readout.

The trip odometer on the digital cluster will appear in place of your regular odometer when you press the **TRIP** button.

To reset the trip odometer on the digital cluster, press the **RESET** button. To change back to the regular odometer, press the **TRIP** button again.

Warning Lights, Gauges and Indicators

This part describes the warning lights and gages that are 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.

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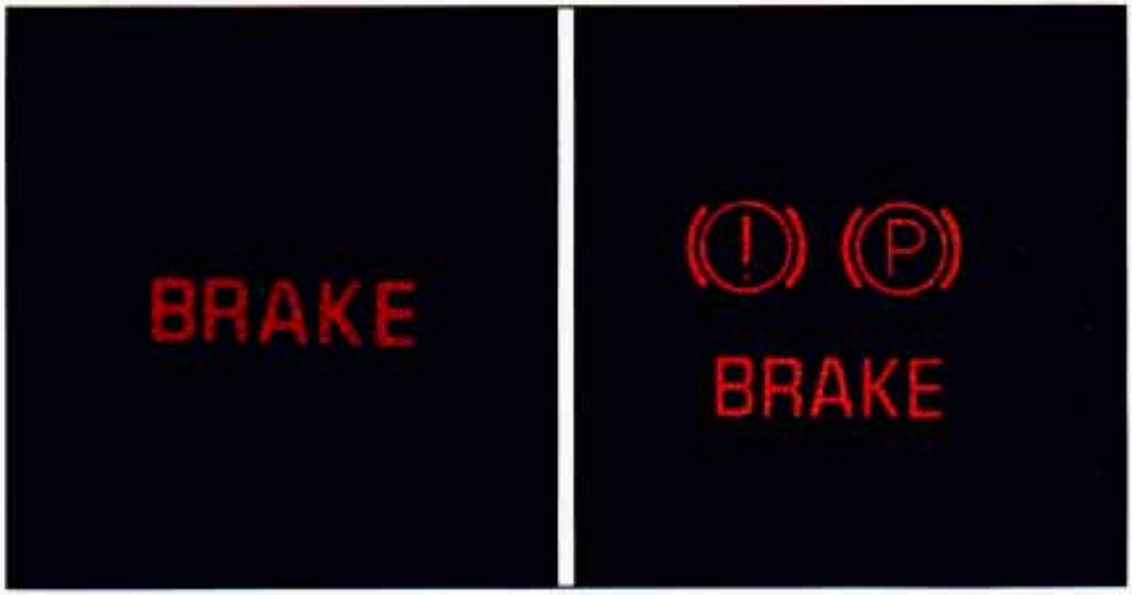
Warning lights go on when there may be or is a problem with one of your vehicle's functions. As you will see in the details on the next few pages, some warning lights come on briefly when you turn the ignition key just to let you know they're working. If you are familiar with this section, you should 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 the 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.

Brake System Warning Light

Standard Cluster ***Digital Cluster***



P0641

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 goes on, there could be a brake problem. Have your brake system inspected right away.

This light should come on as you start the vehicle. If it doesn't come on then, have it fixed so it will be ready to warn you if there's a problem.

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This light will also come on when you set your parking brake, and 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.

If the light comes on while 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 warning light is on. Driving with the brake 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

Standard Cluster ***Digital Cluster***

P0642

With anti-lock, this light will go on when you start your engine and may stay on for a several seconds or so. That's normal.

If the light doesn't come on, have if fixed so it will be ready to warn you if there is a problem.

If the light stays on, or comes on when you're driving, your vehicle needs service. Unless the regular brake system warning light is also on, you will still have brakes, but not anti-lock brakes. If the regular brake system warning light is also on, see "Brake System Warning Light" earlier in this part.

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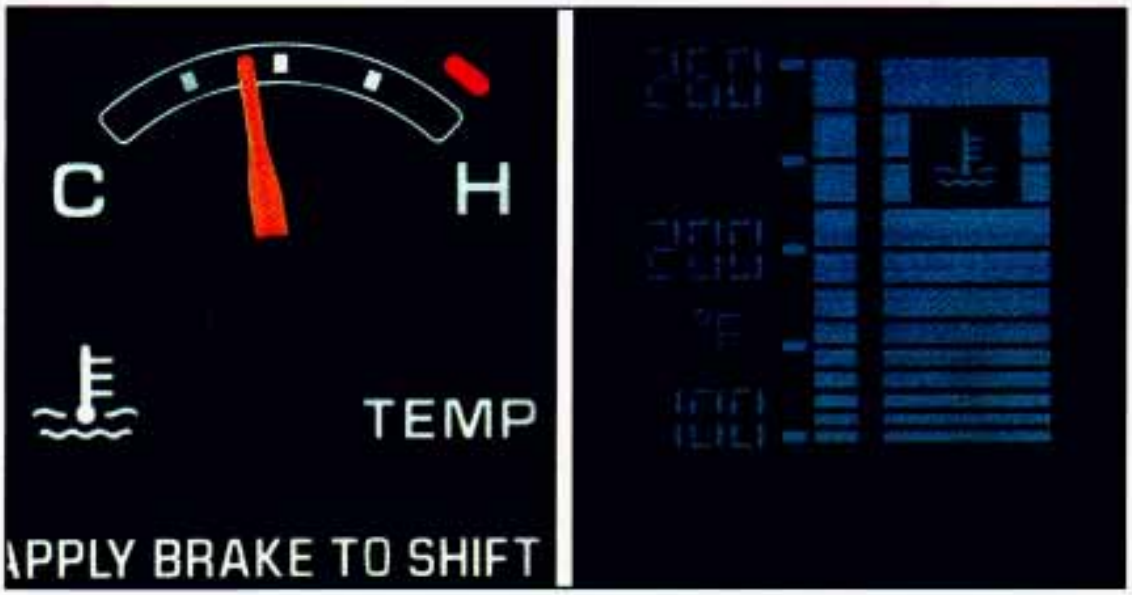
Engine Coolant Temperature Gage

Standard Cluster | Digital Cluster



P0643

If you have the standard cluster, you have a gage that shows the engine coolant temperature. If the gage pointer moves to the **H** (red) side, your engine is too hot!

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

If you have a digital cluster, a box around the temperature symbol will also flash if your engine is too hot.

HOT COOLANT CAN BURN YOU BADLY!

In "*Problems on the Road*," this manual shows what to do. See "Engine Overheating" in the Index.

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Malfunction Indicator Lamp (SERVICE ENGINE SOON Light)

Standard Cluster ***Digital Cluster***

P0644

A computer monitors operation of your fuel, ignition and emission controls system. 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 fixed right away. If it stays on, or it comes on while you are driving, the computer is indicating that you have a problem. You should take your vehicle in for service soon.

NOTICE

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

This light is on the right hand side of your standard cluster. If you have the digital cluster, it is on the left hand side.

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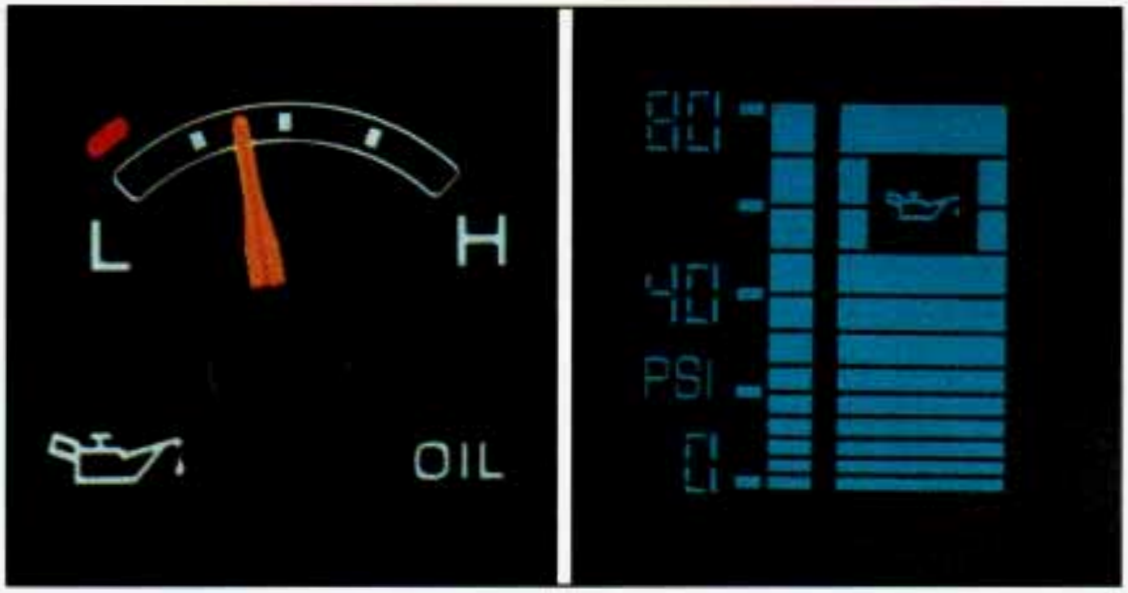
Oil Pressure Gage

Standard Cluster | Digital Cluster



P0645

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 oil pressure.

On the digital cluster, a box around the oil pressure symbol will begin to flash when the oil pressure is low.

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.

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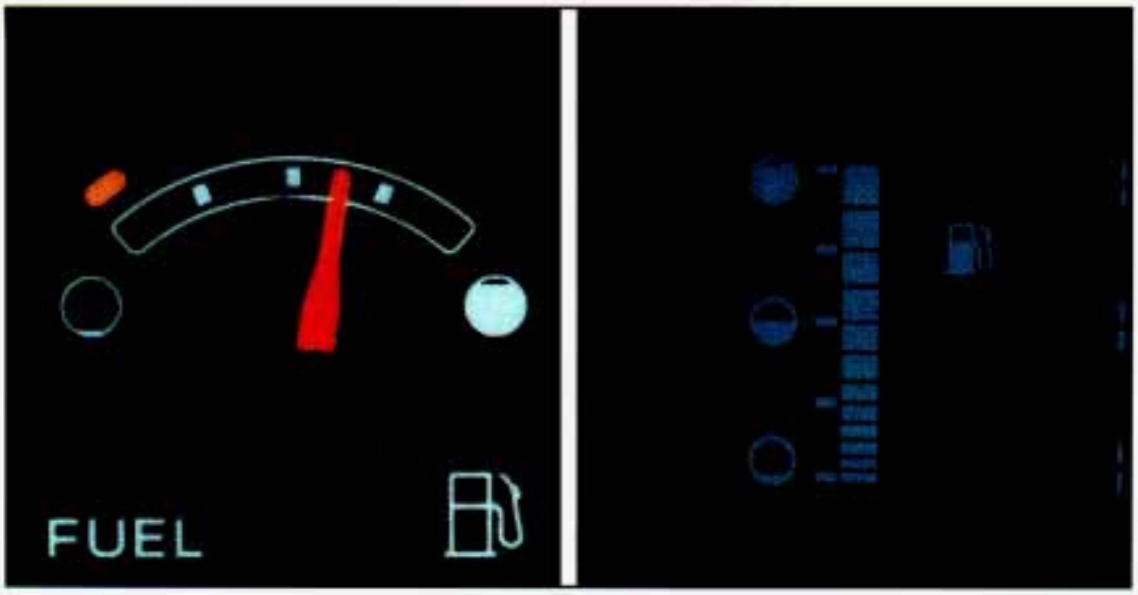
Fuel Gage

Standard Cluster ***Digital Cluster***



P0651

The fuel gage tells you how much fuel you have remaining, when the ignition is on. When the gage first indicates empty you still have a little fuel left, but you should get more fuel as soon as possible.

A box around the fuel gage symbol on the digital cluster will begin to flash when your tank is 1/8 full or less.

Here are four things some owners ask about. None of these indicate a problem with your fuel gage:

- At the gas station, the gas pump shuts off before the gage reads full.
- The fuel tank will take either a little more or a little less fuel to fill up than the gage shows.
- 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.

For your fuel tank capacity, see the Index under "Fluid Capacities."

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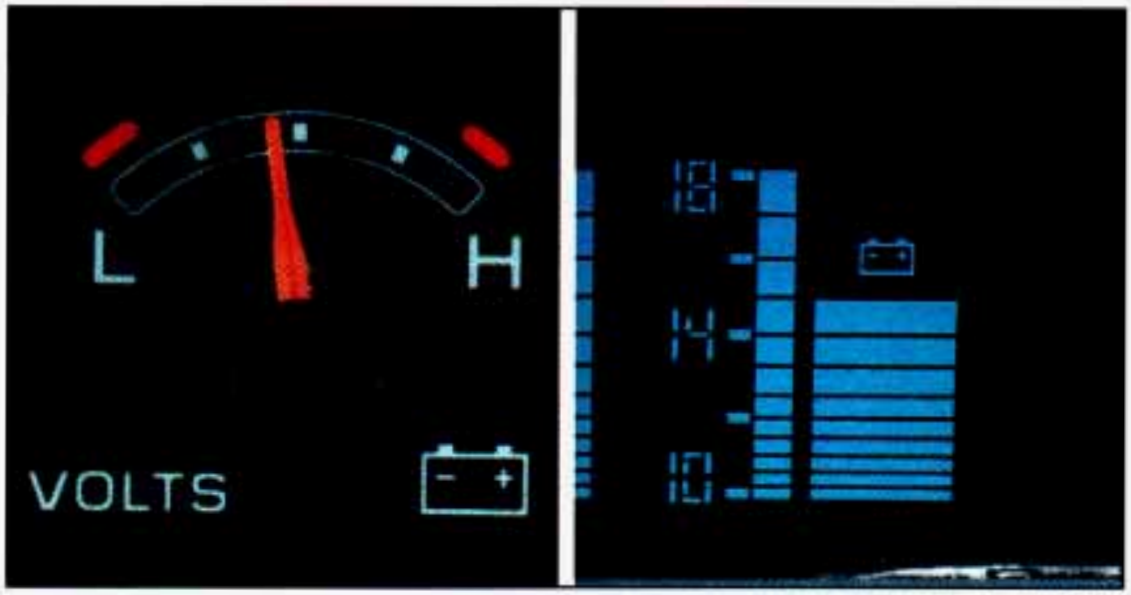
Voltmeter

Standard Cluster | Digital Cluster



P0652

When your engine is not running, but the ignition is on (in the **Run** position), the gage shows your battery's state of charge in DC volts. When the ignition 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 either warning zone indicate a possible problem in the electrical system.

On the digital cluster, a box around the voltmeter symbol will begin to flash when the charging system needs service.

You can only drive for a short time with the readings in either warning zone. If you must drive, turn off all unnecessary accessories.

Indicator Lights

Indicator lights go on when you use your turn signals, change from low beam headlights to high beams, or when you use your hazard flashers. The next few pages will also tell you about the indicator lights on your vehicle and help you locate them.

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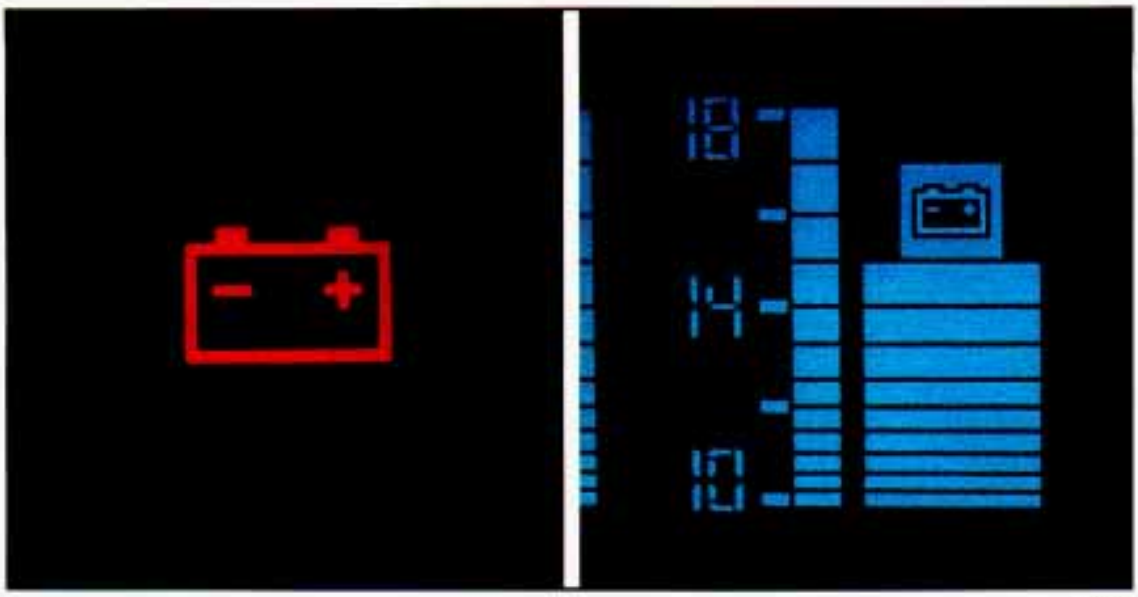
Charging System Light

Standard Cluster ***Digital Cluster***



P0647

The charging system light will come on briefly when you turn the ignition on, but the engine is not running. As a check to show you the light is working. Then it should go out once the engine is running. If it stays on, or comes on while you are driving, you may have a problem with the electrical charging system. It could indicate that you have a loose accessory drive belt, or another electrical problem. Have it checked right away. Driving while this light is on could drain your battery.

The charging system light is on the left bottom corner of your standard cluster. It is part of the digital cluster voltmeter.

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

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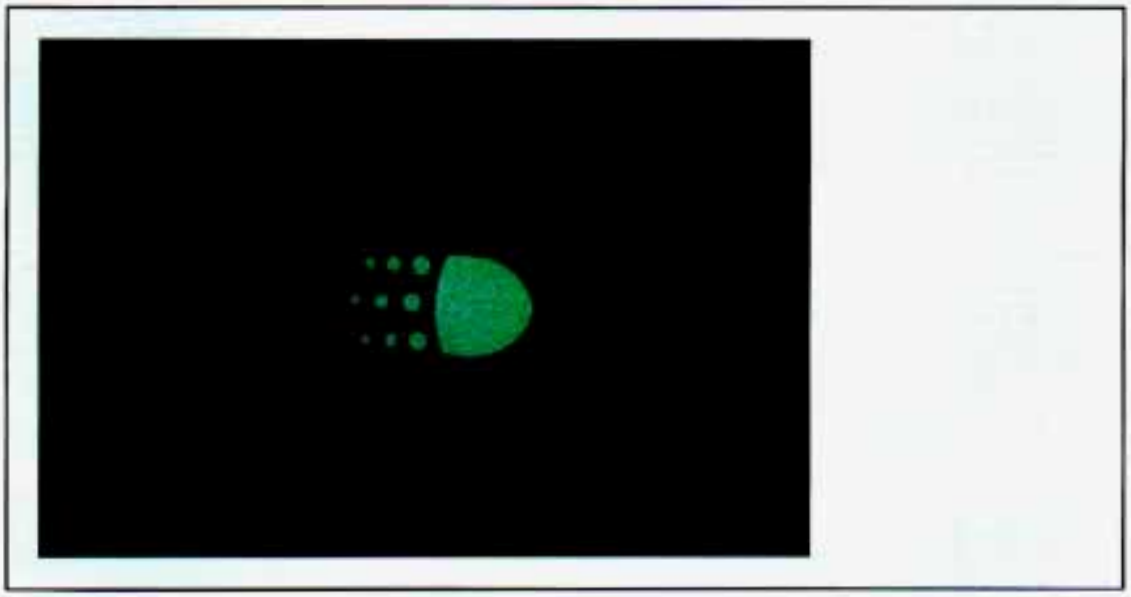
Daytime Running Lights (DRL) Indicator Light (Canadian Vehicles Only)

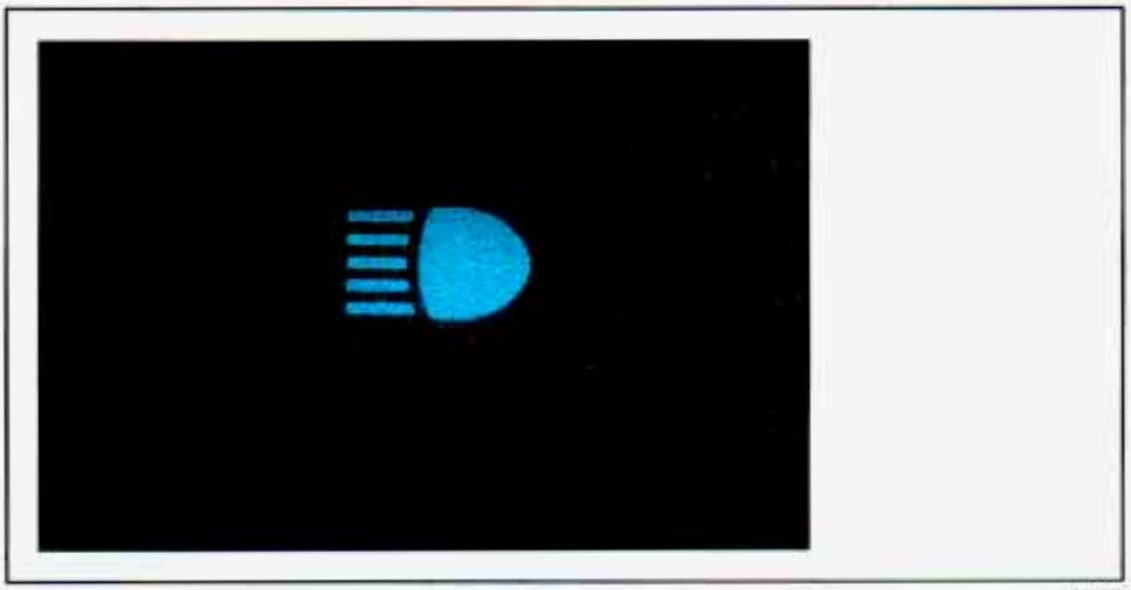


K3269

The DRL indicator is on whenever the ignition and the headlight switch and parking brake are off. For more details about DRL, see "Lights" in this part.

The DRL indicator light is on the lower left of the standard cluster. If you have the digital cluster, it is on the top left.

Headlight High Beam Indicator Light



K3270

The high beam indicator is on whenever you use your high beam headlights. For more details, see "Headlight High-Low Beam Changer" in this part. The

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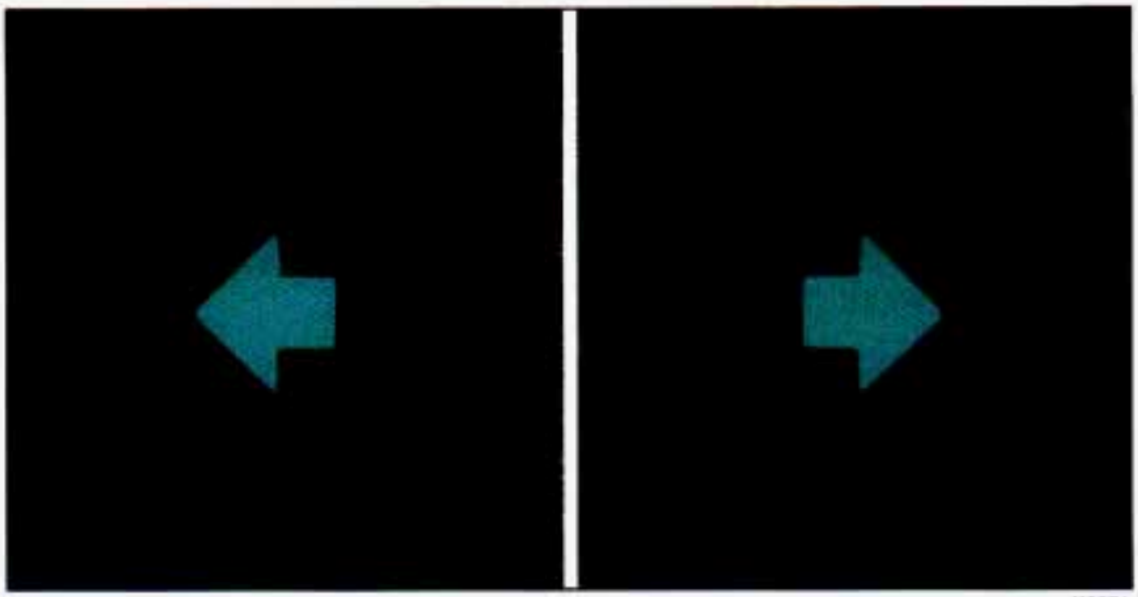
light is on the left hand side of the standard cluster. If you have the digital cluster, it is on the top of the cluster.

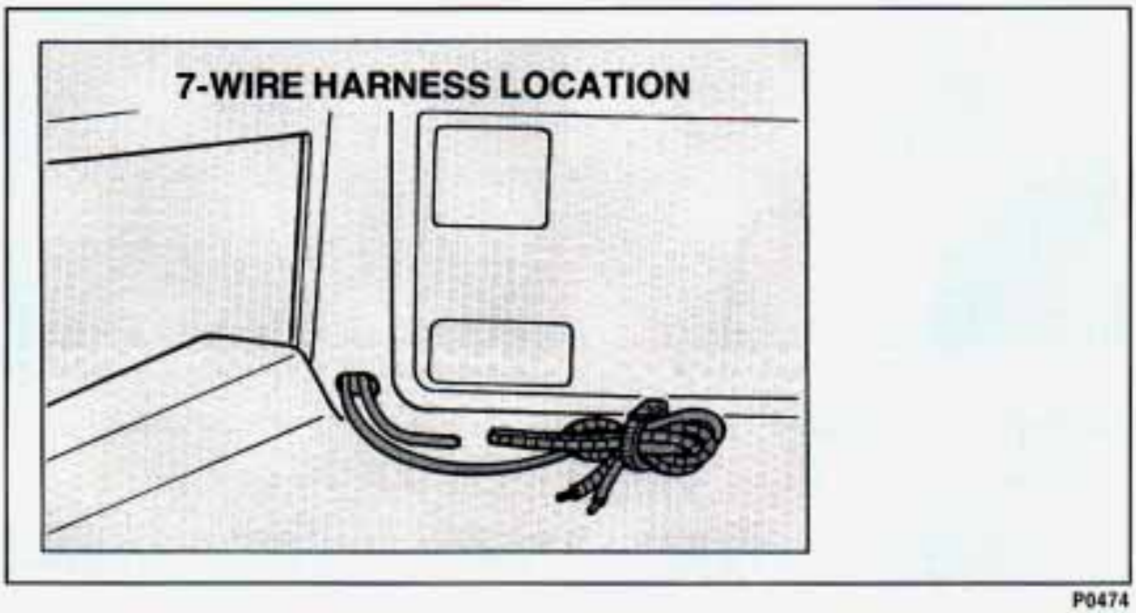
Turn Signal and Lane Change Indicator



K3271

The turn signal indicator is a light with two green arrows. It comes on whenever you signal a turn or lane change. Turn signal arrows are at the top of the standard and digital clusters. For more details, see "Turn and Lane Change Signal" in this part.

Trailer Wiring Harness



P0474

If you have the optional trailering package, your vehicle may have either a 5-wire or a 7-wire harness.

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The 5-wire harness is stored on the right side of the van near the rear wheel well. The harness has no connector, and you should have a qualified service person wire your harness for you.

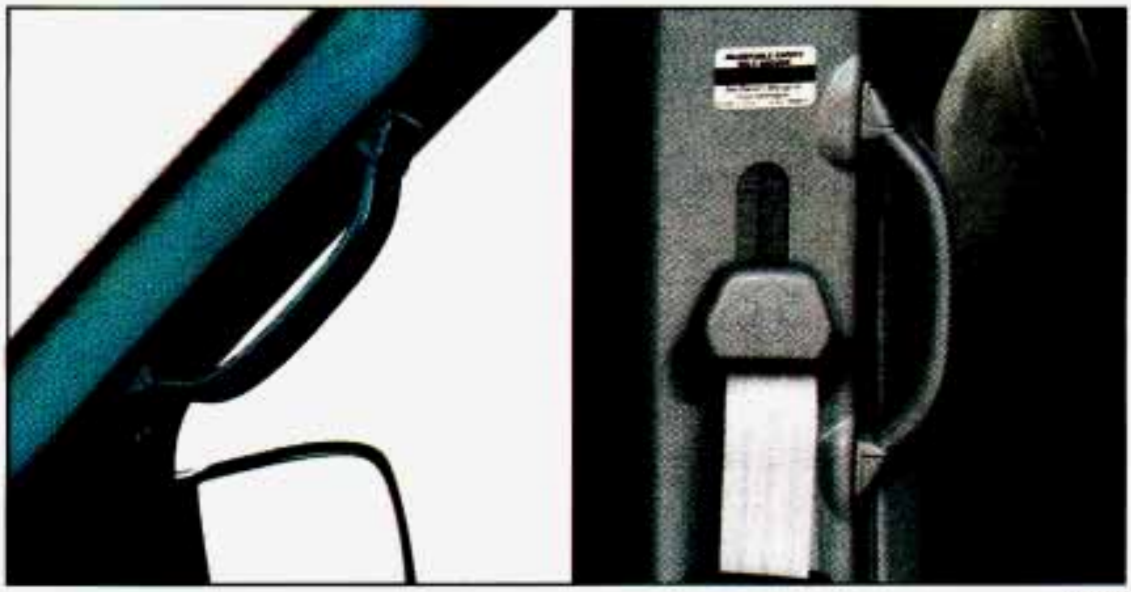
The harness must be routed out of your vehicle between the rear door and the floor, with enough of the harness so that the trailer or the body won't pull it.

The 7-wire harness is stored on the right side of the van near the rear wheel well. This harness has a 30 amp battery feed wire and no connector, and should be wired by a qualified service person. 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.

The harness must be routed out of your vehicle between the rear door and the floor, with enough of the harness left on both sides so that the trailer or the body won't pull it.

Store the harness in its original place. Wrap the harness together and tie it neatly so it won't be damaged.

Assist Handles



P0664

Assist handles are located on the inside front and center vehicle pillars.

Grasp them as necessary to help enter and exit your vehicle.

If you have the optional rear hatch and split-panel doors, you will also have an assist handle on the inside hatch.

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Comfort Controls & Audio Systems

Section 3

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 system supplied with your vehicle.

For explanation of vehicle symbols in this section, refer to "Vehicle Symbols" in Section 0.

Comfort Controls 3-3

Flow-Through Ventilation System 3-3

Heating System 3-5

Heating/Air Conditioning System 3-6

Rear Heater 3-7

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Care of Your Cassette Tape Player 3-22

How to Operate Your ETR® AM-FM Stereo Audio Compact Disc (CD) System 3-23

Care of Your Compact Discs 3-28

Fixed Mast Antenna 3-29

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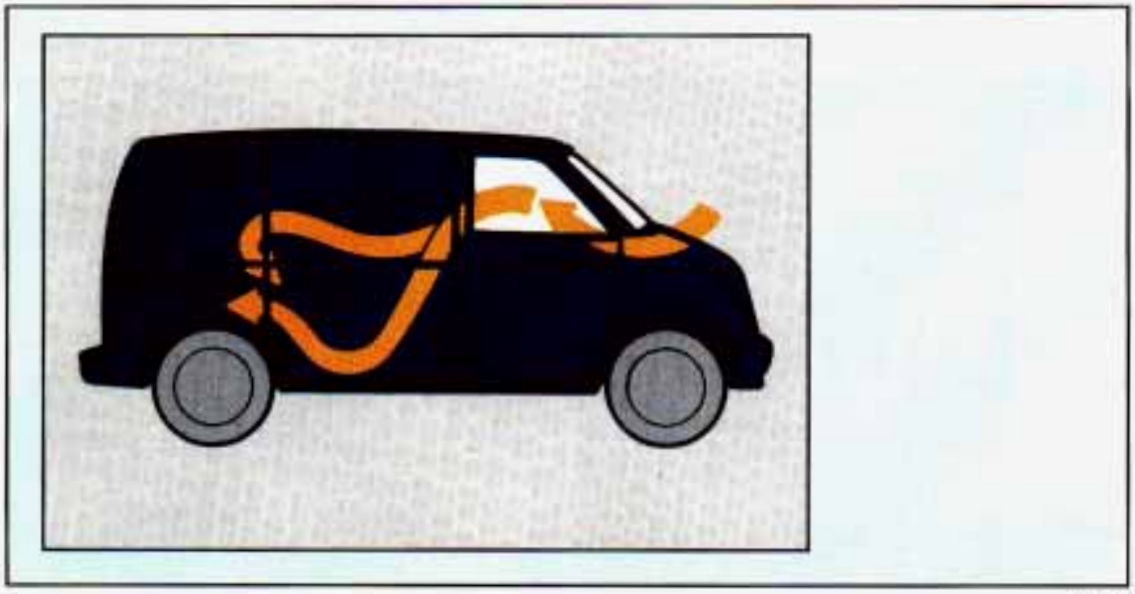
Comfort Controls

Flow-Through Ventilation System



K3302

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 the rear air exhaust valves. Outside air will also enter the vehicle when the heater or the air conditioning fan is running.

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 blower fan to **HIGH** 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.

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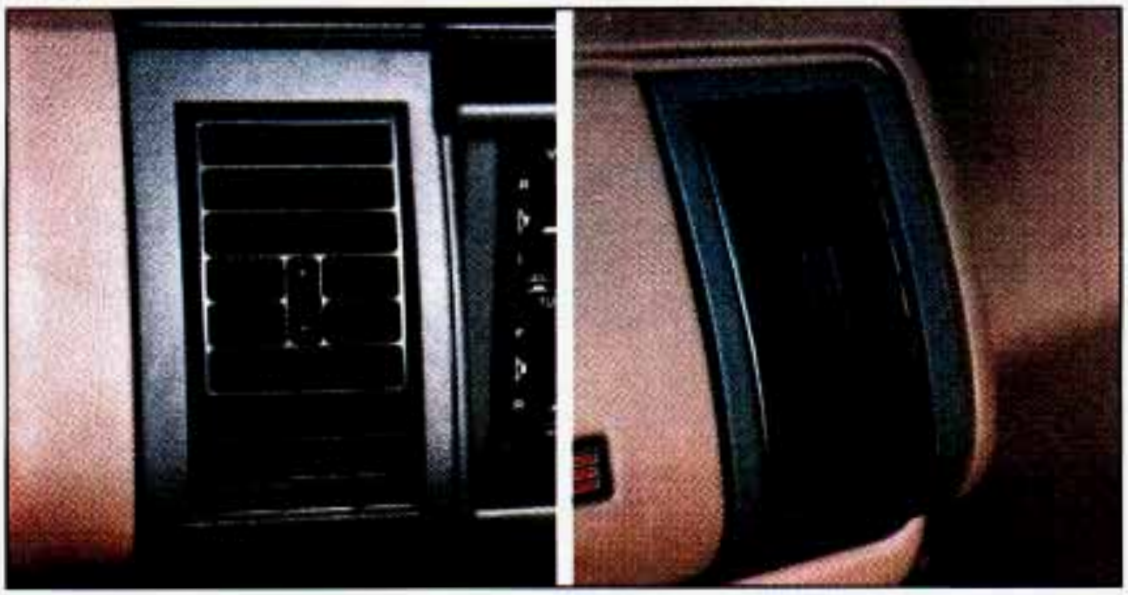
Air Vents

You will find air vents in the center and on the sides of your instrument panel. 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.



PB021

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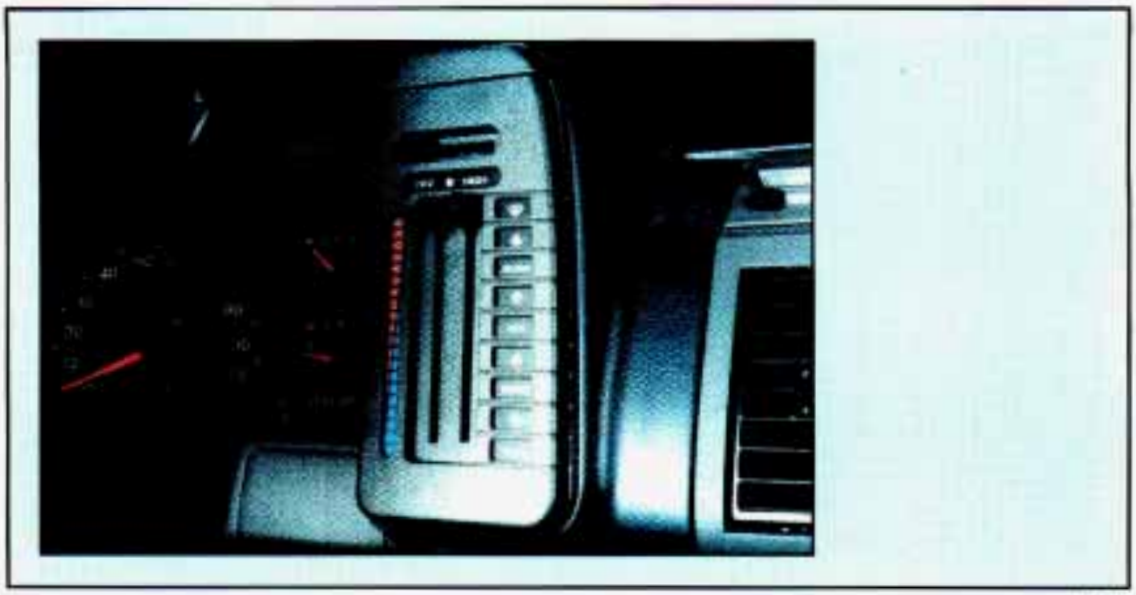
Heating System



P0450

If your vehicle does not have air conditioning, this is what your heating system will look like.

Fan Lever

The top lever has five positions. To increase the air flow, move the lever toward **HIGH**. To decrease the air flow, move it toward **OFF**.

Temperature Lever

The left lever lets you select the temperature of the air flowing into your vehicle. Move the lever up for warmer air. Move the lever down for cooler air.

Function Lever

The right lever can be moved to four different functions.

Defrost: The setting with the defrost symbol operates the defroster. Most of the air comes out near the windshield, with some going to the floor vents. Use this when you get fog or ice on the windshield.

HTR (Heater): Most of the air comes out near the floor. The rest comes out from the defroster vents under the windshield and at the front side windows. This is best for cold weather.

VENT: The air comes out at the vents on your instrument panel and at your front side windows.

BLEND: With this setting, the heated outside air comes out between the heater vents and defroster vents with some air coming through the side vents. Adjust the temperature lever for warmer or cooler air.

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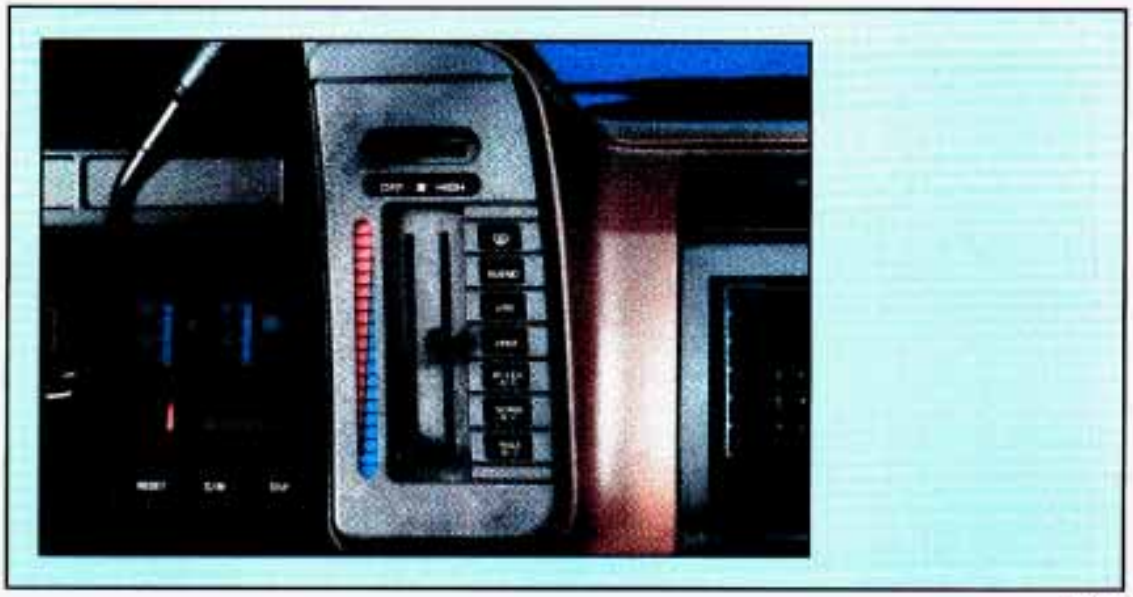
Heating/Air Conditioning System



P0451

If your vehicle has air conditioning, your heating/air conditioning system will look like this.

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

Fan Lever

The top lever has five positions. To increase the air flow, move the lever toward **HIGH**.

Temperature Lever

The left lever lets you select the temperature of the air flowing into your vehicle. Move the lever up for warmer air. Move the lever down for cooler air.

Function Lever

The right lever can be moved to seven different heating and air conditioning functions.

Defrost: The setting with the defrost symbol operates the defroster. Most of the air comes out near the windshield, with some going to the floor vents and side window defrost vents. Use this when you get fog or ice on the windshield.

BLEND: With this setting, the heated outside air comes out between the heater vents and defroster vents, with some air coming through the side vents. Adjust the temperature lever for warmer or cooler air.

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HTR (Heater): Most of the air comes out near the floor. The rest comes out from the defroster vents under the windshield and at the front side windows. This is best for cold weather.

VENT: The air comes out at the vents on your instrument panel and at your front side windows. The air conditioner will not run. Adjust the temperature lever for warmer or cooler air.

BI-LEV A/C: With this, outside air comes in through the heater floor vent and the instrument panel vents. If you move your temperature control lever between cold and hot, cooler air will come out of the upper vents while warmer air comes out of the floor vent. This setting is useful in cool weather with bright sunlight.

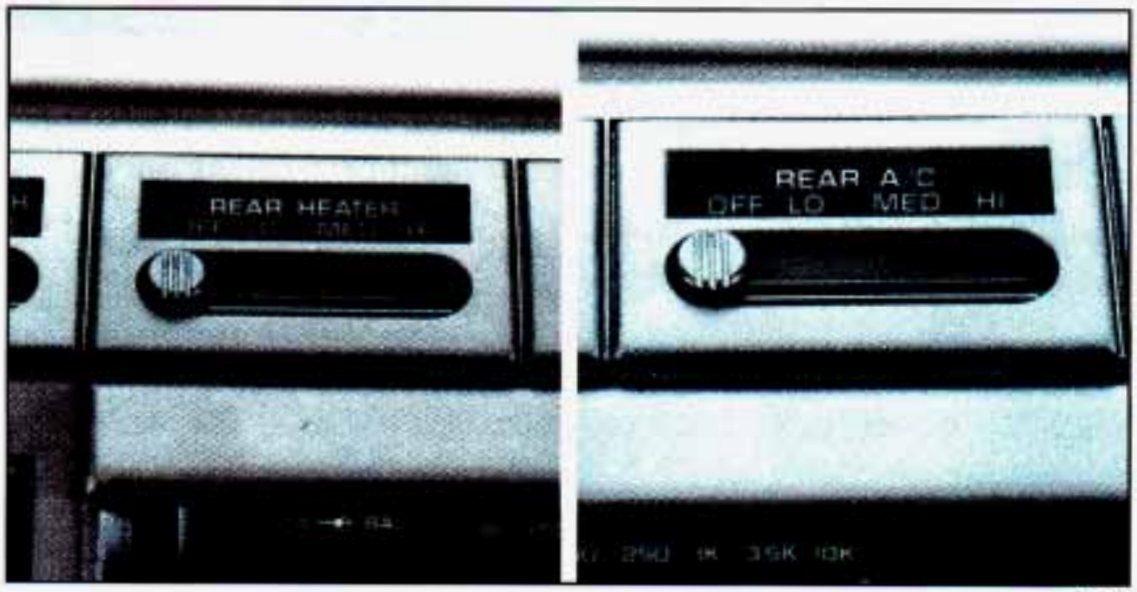
NORM A/C: This setting cools the outside air. If you first used **MAX A/C**, use **NORM A/C** as soon as the vehicle has cooled down, so outside air will be going through your vehicle.

MAX A/C: This cools the air the fastest. Move the other lever all the way to Cold. **MAX A/C** lets in only a little air from the outside. You can use **MAX A/C** at first when it's really hot outside and you need to cool off quickly.

When the air conditioning or defrost is on, you may notice a slight increase or decrease in engine speed.

Rear Heater

You may have the optional rear heater. The three-speed fan switch is above the radio. Slide the lever toward **HI** for warmer air in the rear area. Move the switch to **OFF** to turn the system off.



P0654

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Rear Air Conditioning

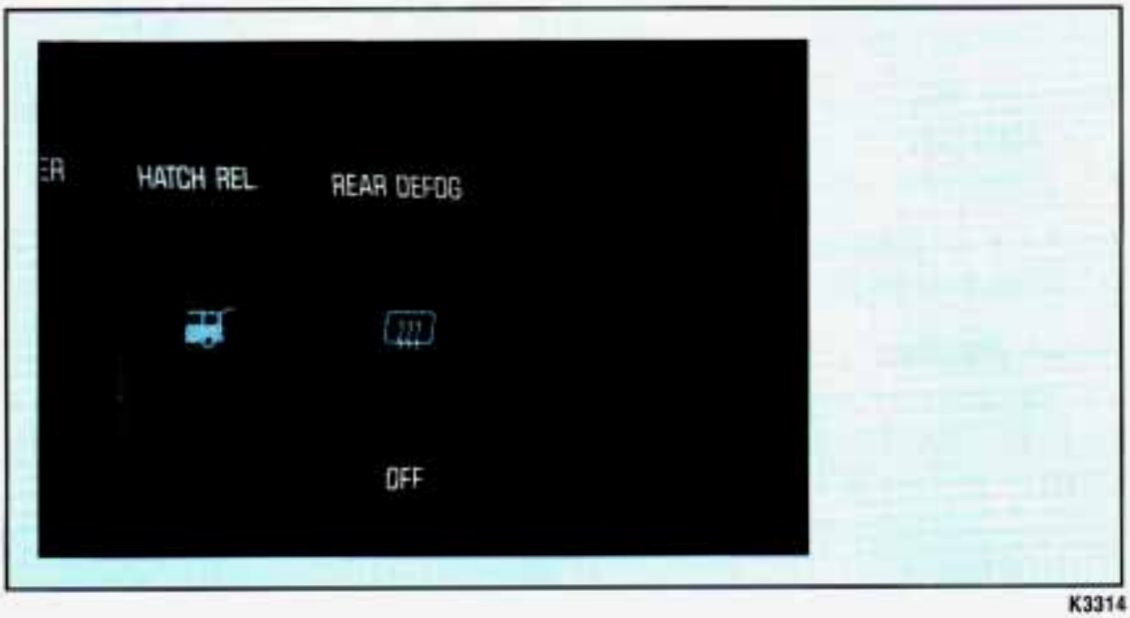
You may have rear air conditioning. The rear air conditioning switch is located above the radio at the top of the instrument panel. Slide the lever toward **HI** for cooler air in the rear area. Slide the lever to **OFF** to turn the system off.

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

The system will only send cooled air if the front system is on. It can still be used to recirculate air, even if the front system is off.

Before using the rear air conditioning, open the windows to clear the vehicle of hot air. Close the windows when using the system.

Rear Window Defogger



K3314

If your vehicle has this option the rear window will have lines running across the glass. These lines heat your window.

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

To turn on the rear window defogger, find the switch marked **Rear Defog** on your instrument panel to the left of the steering column. Press the top of the switch until the light in the switch comes on, then release it. The rear window defogger will only work when the ignition is in the **RUN** position.

You can turn the defogger off at any time by pressing the bottom of the switch. The defogger will shut itself off after several minutes so that the glass

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does not get too hot. If the window still isn't clear, turn the defogger on again.

NOTICE

Scraping the inside of your rear window could cut and damage the defogger. Your warranty would not cover this damage. And don't put decals there, you might have to scrape them off.

Engine Block Heater

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

Audio Systems

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

CAUTION

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 hearing adapts to it.

To help avoid hearing loss or damage:

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

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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, Delco® radio or other systems, and even damage them. And, 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.

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.

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.

AM Stereo

This means the Delco® system can receive C-QUAM® stereo broadcasts. Many AM stations around the country use C-QUAM® to produce stereo, though some do not. (C-QUAM® is a registered trademark of Motorola, Inc.) If your Delco® system can get C-QUAM®, your "STEREO" light will come on when you're receiving it.

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How to Operate Your ETR® AM Radio

K4308

This part tells you how your ETR® AM radio works.

The Upper Knob

The upper knob does these three things:

- It controls the volume.
- It lets you see what station you have. (When the radio is on, push the knob to display the station.)
- It tells you the time. (When the ignition is off, push the knob to display the time.)

The control behind the upper knob moves the sound between the left and right speakers.

The Lower Knob

Turn the lower knob to choose radio stations.

Tone Levers

Two levers control the tone of your radio.

BASS—Slide this lever up to hear more bass.

TREBLE—Slide this lever up to hear more treble.

Adjust these levers to give a pleasing sound. If a station is weak and noisy, move **TREBLE** down to reduce the noise.

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PWR (Power)

The **PWR** button turns your system on and off.

Pushbuttons

The four pushbuttons let you return to favorite stations. To set the pushbuttons, just:

1. Tune in the station.
2. Push **SET**.
3. Within 5 seconds, push one of the four pushbuttons. Whenever you push that button, the preset station will return.

Repeat these steps for each pushbutton.

You can preset three more stations by pushing a pair of buttons next to each other at the same time. Just:

1. Tune in the station.
2. Push **SET**.
3. Within 5 seconds, push two buttons next to each other at the same time. Whenever you push that pair of buttons, the preset station will return.

Repeat these steps for each station you select.

Clock

To set the clock, just:

1. Push **SET** (radio station will be displayed).
2. Within 5 seconds, push and hold **HRS** (time will be displayed) until the correct hour appears.
3. Push and hold **MINS** until the correct minute appears.

To display the clock with the ignition off, push the upper knob. The time will be displayed for a few seconds.

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How to Operate Your ETR® AM-FM Stereo Audio System

K4309

This part tells you how your ETR® AM-FM stereo audio system works.

The Upper Knob

The upper knob does these three things:

- It controls the volume.
- It lets you see what station you have. (When the radio is on, push the knob to display the station.)
- It tells you the time. (When the ignition is off, push the knob to display the time.)

The control behind the upper knob moves the sound between the left and right speakers.

The Lower Knob

Turn the lower knob to choose radio stations. Push it to get AM or FM. An indicator light appears when you tune to an FM stereo station.

The control behind the lower knob moves the sound between your front and rear speakers.

Tone Levers

These two levers control the tone of your radio.

BASS—Slide this lever up to hear more bass.

TREBLE—Slide this lever up to hear more treble.

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Adjust these levers to give a pleasing sound. If a station is weak and noisy, move **TREBLE** down to reduce the noise.

PWR (Power)

The **PWR** button turns your system on and off.

Pushbuttons

The four pushbuttons let you return to favorite stations.

You can set the pushbuttons for up to eight favorite stations (4 AM and 4 FM). Just:

1. Tune in the station.
2. Push **SET**. (SET will be displayed.)
3. Within 5 seconds, push one of the four pushbuttons. Whenever you push that button, the preset station will return.

Repeat these steps for each pushbutton.

You can preset 3 more stations on each band by pushing a pair of buttons next to each other at the same time. Just:

1. Tune in the station.
2. Push **SET**. (SET will be displayed.)
3. Within 5 seconds, push two buttons next to each other at the same time. Whenever you push that pair of buttons, the preset station will return.

Repeat these steps for each pair of buttons.

Scan Button

When you push this, the radio will go to the next station and stay there a few seconds. Then it will go to the next station and pause, and keep doing that. Press **SCAN** again to stop scanning.

Seek Button

This chooses stations also, but it doesn't keep moving as **SCAN** does. When you push **SEEK**, the radio goes to the next station and stays there.

Clock

To set the clock, just:

1. Push **SET**. (SET will be displayed.)
2. Within 5 seconds, push and hold **SCAN** until the correct hour appears.
3. Press and hold **SEEK** until the correct minute appears.

To display the clock with the ignition off, push the upper knob. The time will be displayed for a few seconds.

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How to Operate Your ETR® AM-FM Stereo Audio Cassette System

K4310

This part tells you how your ETR® AM-FM stereo audio cassette sound system works:

The Upper Knob

The upper knob does these four things:

- It controls the volume.
- It lets you know what station you're listening to. (When the radio is on, push the knob to display the station.)
- It tells you the time. (When the ignition is off, push the knob to display the time.)
- It allows you to hear the other side of the tape. (Press knob while cassette is playing.)

The control behind the upper knob moves the sound between your left and right speakers.

The Lower Knob

Turn the lower knob to choose radio stations. Push it to get AM or FM. The control behind the lower knob moves the sound between your front and rear speakers.

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Tone Levers
These two levers control the tone of your radio.

BASS—Slide this lever up to hear more bass.

TREBLE—Slide this lever up to hear more treble.

Adjust these levers to give a pleasing sound. If a station is weak and noisy, move **TREBLE** down to reduce the noise.

PWR (Power)
The **PWR** button turns your system on and off.

DNR® Button
This is the Dynamic Noise Reduction button. It helps remove background hiss noise from the radio or tape player. You may want to leave it pushed in all the time.

DNR® is a registered trademark of National Semiconductor Corporation.

Pushbuttons
The four pushbuttons let you return to favorite stations.

You can set the pushbuttons for up to eight favorite stations (4 AM and 4 FM). Just:

1. Tune in the station.
2. Push **SET**. (SET will be displayed.)
3. Within 5 seconds, push one of the four pushbuttons. Whenever you push that button, the preset station will return.

Repeat these steps for each pushbutton.

You can preset 3 more stations on each band by pushing a pair of buttons next to each other at the same time. Just:

1. Tune in the station.
2. Push **SET**. (SET will be displayed.)
3. Within 5 seconds, push two buttons next to each other at the same time. Whenever you push that pair of buttons, the preset station will return.

Repeat these steps for each pair of buttons.

Scan Button
When you push this, the radio will go to the next station and stay there a few seconds. Then it will go to the next station and pause, and keep doing that. Press **SCAN** again to stop scanning.

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Seek Button

This chooses stations also, but it doesn't keep moving as **SCAN** does. When you push **SEEK**, the radio goes to the next station and stays there.

Clock

To set the clock, just:

1. Push **SET**. (SET will be displayed.)
2. Within 5 seconds, push and hold **SCAN** until the correct hour appears.
3. Press and hold **SEEK** until the correct minute appears.

To display the clock with the ignition off, push the upper knob. The time will be displayed for a few seconds.

Cassette Tape Player

Your tape player is built to work best with tapes that are 30 to 45 minutes long on each side. Tapes longer than that are so thin they may not work well in this player.

To play a cassette tape:

- Have the radio on.
- Insert the tape squarely through the tape door.

The longer side with the tape visible goes in first. If you hear nothing or hear just garbled sound, it may not be in squarely. Push **STOP-EJECT** to remove the tape and start over.

Once the tape is playing, use the upper and lower knobs for volume and balance, just as you do for radio. The arrows show which side of the tape is playing.

- To go **forward** to another part of the tape, push the button with an arrow pointing toward the lighted arrow.
- To go **backward**, push the button with an arrow pointing away from the lighted arrow. To stop the tape, push the **STOP/EJECT** button lightly.
- To go from one side of the tape to the other, push in the upper knob on your radio.
- To remove or stop the tape, push **STOP-EJECT**.

Press **STOP-EJECT** lightly to stop the cassette. Push **STOP-EJECT** again to remove the cassette and start the radio.

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How to Operate Your ETR® AM-FM Stereo Audio Cassette System with Equalizer

K4372

This part tells you how your ETR® AM-FM stereo audio cassette system with equalizer works.

The Upper Knob

The upper knob does these four things:

- It controls the volume.
- It lets you know what station you're listening to. (When the radio is on, push the knob to display the station.)
- It tells you the time. (When the ignition is off, push the knob to display the time.)
- It allows you to hear the other side of the tape. (Press knob while cassette is playing.)

The control behind the upper knob moves the sound between your left and right speakers.

The Lower Knob

Turn the lower knob to choose radio stations. Push it to get AM or FM. An indicator light appears when you tune to an FM stereo station. The control behind the lower knob moves the sound between your front and rear speakers.

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Tone Levers (Equalizer)
The 5 levers near the upper knob control the tone of your radio.

Use the levers to set the bass, midrange, and treble until you get the sound you prefer. The **60** and **250** levers adjust the bass; **1K** is midrange; and **3.5K** and **10K** adjust the treble.

PWR (Power)
The **PWR** button turns your system on and off.

Loud Button
Press this for more bass sound; press again to remove it.

AM-ST Button
Push this button if you want AM stereo. ("STEREO" will be displayed when you are receiving an AM stereo station.)

CrO2 Button
The **CrO2** button lets you set the system for the type of cassette being used. If you are using chrome or metal tapes, push the **CrO2** button in. If you are using standard iron tapes, make sure the button is out.

DNR®
Your audio system has automatic Dynamic Noise Reduction. It helps remove background hiss noise from the radio or tape player.

DNR® is a registered trademark of the National Semiconductor Corporation.

Pushbuttons
The four pushbuttons let you return to favorite stations.

You can set the pushbuttons for up to eight favorite stations (4 AM and 4 FM). Just:

1. Tune in the station.
2. Push **SET**. (SET will be displayed.)
3. Within 5 seconds, push one of the four pushbuttons. Whenever you push that button, the preset station will return.

Repeat these steps for each pushbutton.

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You can preset 3 more stations on each band by pushing a pair of buttons next to each other at the same time. Just:

1. Tune in the station.
2. Push **SET**. (SET will be displayed.)
3. Within 5 seconds, push two buttons next to each other at the same time. Whenever you push that pair of buttons, the preset station will return.

Repeat these steps for each pair of buttons.

Scan Button

When you push this, the radio will go to the next station and stay there a few seconds. Then it will go to the next station and pause, and keep doing that. Press **SCAN** again to stop scanning.

Seek Button

This chooses stations also, but it doesn't keep moving as **SCAN** does. When you push **SEEK**, the radio goes to the next station and stays there.

Clock

To set the clock, just:

1. Push **SET**. (SET will be displayed.)
2. Within 5 seconds, push and hold **SCAN** until the correct hour appears.
3. Press and hold **SEEK** until the correct minute appears.

To display the clock with the ignition off, push the upper knob. The time will be displayed for a few seconds.

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Cassette Tape Player

Your tape player is built to work best with tapes that are 30 to 45 minutes long on each side. Tapes longer than that are so thin they might not work well in this player.

To play a cassette tape:

- Have the radio on.
- Insert the tape squarely through the tape door.

The longer side with the tape visible goes in first. If you hear nothing or hear just garbled sound, it may not be in squarely.

Push **EJECT** to remove the tape and start over.

- Once the tape is playing, use the upper and lower knobs for volume and balance, just as you do for the radio. The arrows show which side of the tape is playing.
- To go **forward** to another part of the tape, push **FWD**.
- To go backward, push **REV**. To stop the tape push the other button lightly.
- To go from one side of the tape to the other, push in the upper knob on your radio. To remove or stop the tape, push **EJECT**.

The **SEARCH** button lets you play a selection again, or skip ahead to the next selection.

To play the selection again:

- Push **SEARCH** button to the right. (The **ON** light will come on.)
- Push **REV** to go back to the beginning of the selection that is playing.

To play the next selection:

- Push **SEARCH** button to the right. (The **ON** light will come on.)
- Push **FWD**. The tape will go to the next selection.

Press **EJECT** to remove the cassette and start the radio.

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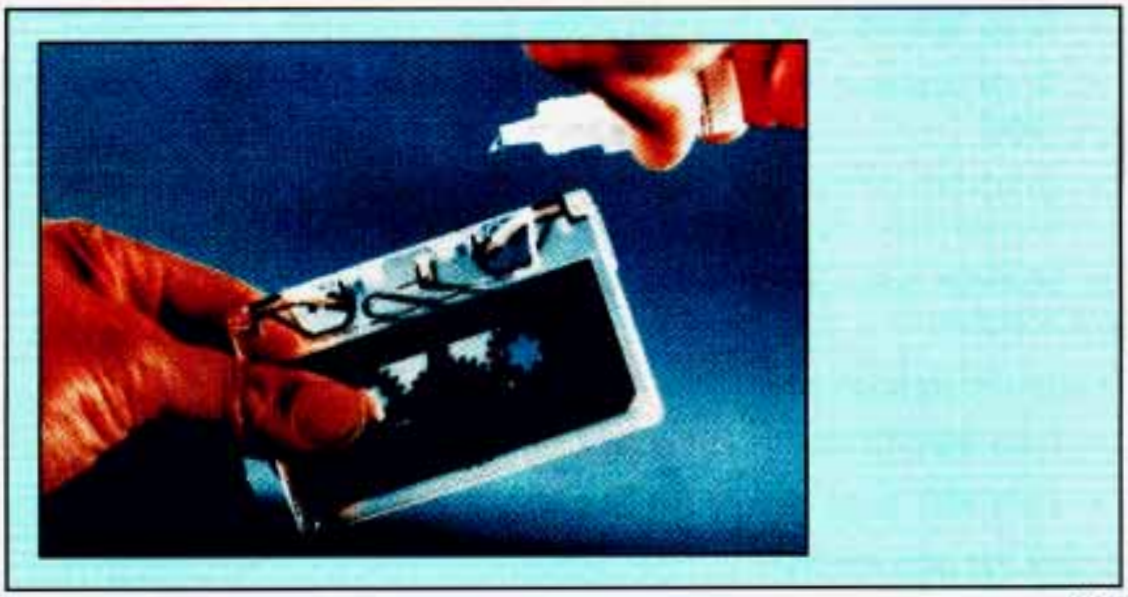
Care of Your Cassette Tape Player

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 cause failure of the tape player.

Your tape player should be cleaned regularly each month or after 15 hours of use. If you notice a reduction in sound quality, try a known good cassette to see if the tape or the player is at fault. If this other cassette has no improvement in sound quality, clean the tape player.

Clean your tape player with a wiping-action, non abrasive cleaning cassette, and follow the directions provided with it.

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



K1313

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How to Operate Your ETR® AM-FM Stereo Audio Compact Disc (CD) System

K0596

This part tells you how your ETR® AM-FM stereo system works:

PWR (Power)

The **PWR** button switches the radio on and off when the ignition is on.

Upper Knob

The upper knob does these two things:

- It controls the volume. Volume will increase when the **VOL** knob is turned clockwise and decrease when turned counterclockwise. Volume will be displayed briefly unless the **L**eft/**R**ight speaker control, **R**ear/**F**ront speaker control, **BASS** or **TREB** are adjusted.
- It controls the mute feature. By pressing the **MUTE** knob, all sound from the radio or CD player stops. By pressing the knob again, or by turning the **VOL** knob clockwise, sound will begin again.

Left/Right Speaker Control

The control behind the upper knob allows you to balance the sound between the right and left speakers. Balance will be displayed briefly when using this control.

Lower Knob

The lower knob does these two things:

- It enables you to tune in different radio stations by turning the knob clockwise or counterclockwise.

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- It enables you to alternate between AM and FM stations by pressing the **BAND** knob. Your selection will be briefly displayed.

Right/Front Speaker Control

The control behind the lower knob fades the sound between your front and rear speakers. Fade levels will be briefly displayed.

SEEK

Pressing the **SEEK ▶** button will cause the receiver to seek the next higher station and stop.

Pressing the **◀ SEEK** button will cause the receiver to seek the next lower station and stop.

SCAN

When you press **SCAN**, the radio will go to the next station and pause, and will keep scanning until you press **SCAN** again. **SC** will be displayed when using this control.

Pushbuttons

The five pushbuttons let you return to favorite stations. They are also used when you play a disc. (See "To Play A Compact Disc".)

To set the pushbuttons for up to ten favorite stations (5 AM and 5 FM):

- Tune in the desired station.
- Push the **SET** button. (**SET** is displayed briefly.)
- Within 5 seconds, push one of the five pushbuttons to store the station. Whenever you press that button, the preset station will return.

Clock

To set the clock, just:

- Press the **SET** pushbutton. The radio may be on or off.
- Within 5 seconds, press and hold either **SEEK ▶** increase the minutes or **◀ SEEK** to decrease the minutes until the correct minute appears on the display.
- Press and hold **SCAN** until the correct hour appears on the display.

RCL

Press the **RCL** button to alternate between time and radio station on the display. **RCL** may be pressed when the ignition is off to see the time.

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BASS

Press the **BASS** ▲ to increase bass tones and ▼ **BASS** to decrease bass tones. Press the center of the control for a preset **BASS** position. The bass level will be displayed briefly when using this control.

TREBLE

Press the **TREB** ▲ to increase the treble tones and ▼ **TREB** to decrease the treble tones. Press the center of the control for a preset **TREB** position. The treble level will be displayed briefly when using this control.

To Play A Compact Disc (CD):

NOTICE

Before you begin, please note: **DO NOT** use mini-discs that are called singles. They won't eject. **USE FULL-SIZE COMPACT DISCS.**

If the disc player is very hot, or if you're driving on a very rough road, a disc may come out or just not play. If you see the word **HOT** on the display, the disc player is too hot to play the disc. Press **RCL** to make the word **HOT** go off the display. When things get back to normal, the disc should play again. Press **PWR** to turn the system on.

Insert a disc part way into the slot, label side up. The player will pull it in. Wait a few seconds and the disc should play.

If the disc comes back out, check whether:

- The disc is upside down.
- It is dirty, scratched, or wet.
- Too much moisture is in the air. (If there is, wait about one hour and try again.)

RCL

Press **RCL** to see what track is playing. Press it again within 5 seconds to see how long it has been playing. The track number also appears when you change the volume or when a new track starts to play.

COMP

Press the **COMP** button to make soft and loud passages more nearly equal in volume. **COMP** appears in the display while using this command.

RDM

The **RDM** button means random and when it is pressed, it causes the CD mechanism to play the tracks in a random order rather than in the sequential 1, 2, 3 order.

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REV
Press and hold the **REV** button to quickly return to a favorite passage. The counter reading will be displayed when using this control.

FWD
Press and hold the **FWD** button to advance quickly within a track. Release it to resume playing. Watch the display to stop at a specific passage.

SCAN
Press **SCAN** to sample each track for approximately 10 seconds. Scanning will continue until the **RDM**, **SCAN** or any other motion button is pressed again.

PREV
If you hold the **PREV** (◀ **SEEK**) button, or press it more than once, the disc will return to previous tracks.

NEXT
Press **NEXT** (**SEEK** ▶) to hear the next track now instead of waiting until the present track is finished. If you hold this button or press it more than once, the disc will advance further.

ST-PL
Press **ST-PL** (Stop-Play) to make the disc stop and the radio play. Press **ST-PL** again to restart the disc at the point where it stopped.

Press **PWR** or turn the ignition key off to stop the disc player. The disc stays in the player and will resume playing at the point where it stopped.

Press **EJECT** to eject the disc and make the radio play. The disc will start at tract 1 when you reinsert it.

Anti-Theft Feature
Delco LOC II® is an Anti-Theft feature for the compact disc player. It can be used or ignored. If ignored, the system plays normally. If it is used, your player won't be usable if it is ever stolen, because it won't turn on.

The instructions below tell you how to enter a secret code into the system. If your car loses battery power for any reason, you must unlock the system with the secret code before the radio will turn on.

To Lock The System:

1. Write down any 6 digit number and keep it in a safe place.
2. Turn the ignition to the "Accessory" or "Run" position.
3. Press the **PWR** button to turn the radio off.

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4. Press the **1** and **4** buttons together. Hold them down until "- - -" shows on the display.

   You are now ready to enter your secret code. **Don't wait more than 15 seconds between steps**.

5. Press **SET** and **000** will appear on the display.
6. Press the **SEEK ▶** button to make the first number appear.
7. Rotate the **TUNE** knob right or left to make the last two numbers agree with your code.
8. Press **BAND** and **000** will appear again. Now you are ready to enter the last three digits of your code.
9. Repeat steps 6 and 7 for the last three digits of your code.
10. Press **BAND** and **rEP** will appear for 5 seconds and then **000** will appear.
11. Repeat steps 6 through 10. This time **SEC** will appear—indicating that the radio is secure.

To Unlock The System After A Power Loss

When battery power is reapplied to a secured radio, the radio won't turn on and **LOC** will appear on the display.

Enter your secret code as follows: pause no more than 15 seconds between steps.

1. Turn the ignition on. (Radio off.)
2. Depress the **SET** button. The display will show **000**.
3. Enter the six digits of the code following steps 6-9 above. The display will show the numbers as entered.
4. Depress the **BAND** knob and the **time** appears—indicating that the disabling sequence was successful. If the display indicates **SEC**, the numbers did not match and the unit is still secured.

Disabling The Theft System

1. Depress presets **1** and **4** for 5 seconds with ignition on and radio power off. The display will show **SEC**, indicating the unit is in the secure mode.
2. Depress the **SET** button. The display will show **000**.
3. Enter the first three digits of the code following steps 6 and 7 of the preceding paragraphs. The display will show the numbers as entered.

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4. Depress the **BAND** knob. The radio will display **000**.
5. Enter the second three digits of the code. The display will show the numbers as entered.
6. Depress the **BAND** knob. If the display shows "- - -", the disabling sequence was successful. The numbers matched the user-selected code or the factory back-up code and the unit is in the UNSECURED mode. If the display shows **SEC**, the disabling sequence was unsuccessful and the numbers did not match either of the codes and the unit will remain in the SECURED mode.

Care of Your Compact Discs

K0557

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.

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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.

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Your Driving and the Road

Section 4

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.

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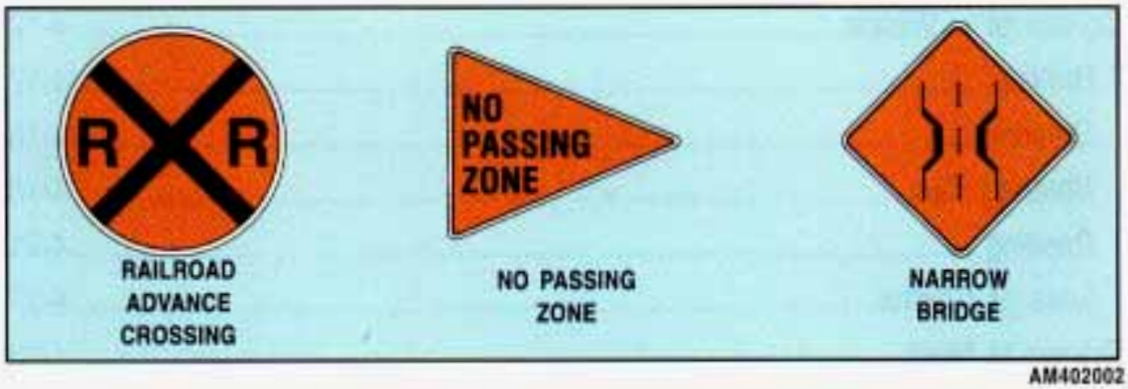
Road Signs

The road signs you see everywhere are coded by color, shape and symbols. It's a good idea to know these codes so that you can quickly grasp the basic meaning or intent of the sign even before you have a chance to read it.

Color of Road Signs

AM402001

RED means **STOP**. It may also indicate that some movement is not allowed. Examples are **DO NOT ENTER** and **WRONG WAY**.



AM402002

YELLOW indicates a general warning. Slow down and be careful when you see a yellow sign. It may signal a railroad crossing ahead, a no-passing zone, or some other potentially dangerous situation. Likewise, a yellow solid line painted on the road means "Don't Cross."

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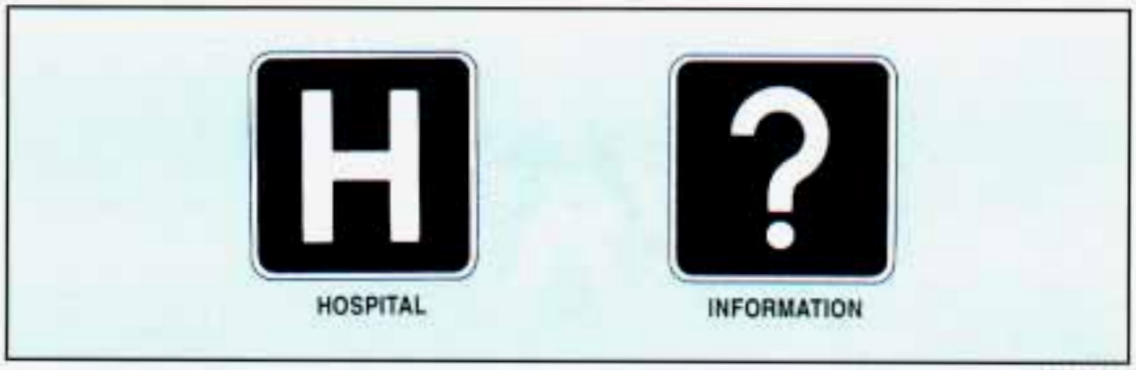
AM402003

ORANGE indicates road construction or maintenance. You'll want to slow down when you see an orange sign, as part of the road may be closed off or torn up. And there may be workers and maintenance vehicles around, too.

AM402004

GREEN is used to guide the driver. Green signs may indicate upcoming freeway exits or show the direction you should turn to reach a particular place.



AM402005

BLUE signs with white letters show motorists' services.

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AM402006

BROWN signs point out recreation areas or points of historic or cultural interest.

Shape of Road Signs

The shape of the sign will tell you something, too.

AM402007

An OCTAGONAL (eight-sided) sign means STOP. It is always red with white letters.

AM402008

A DIAMOND-shaped sign is a warning of something ahead—for example, the end of a divided highway, a curve, steep hill, soft shoulder, or a narrow bridge.

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AM402009

A TRIANGLE pointed downward, indicates YIELD. It assigns the right-of-way to traffic on certain approaches to an intersection.

AM402010

A TRIANGULAR sign also is used on two-lane roads to indicate a NO PASSING ZONE. This sign will be on the left side of the roadway.

AM402011

RECTANGULAR (square or oblong) signs show speed limits, parking regulations, give directions, and such information as distances to cities.

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Symbols on Road Signs

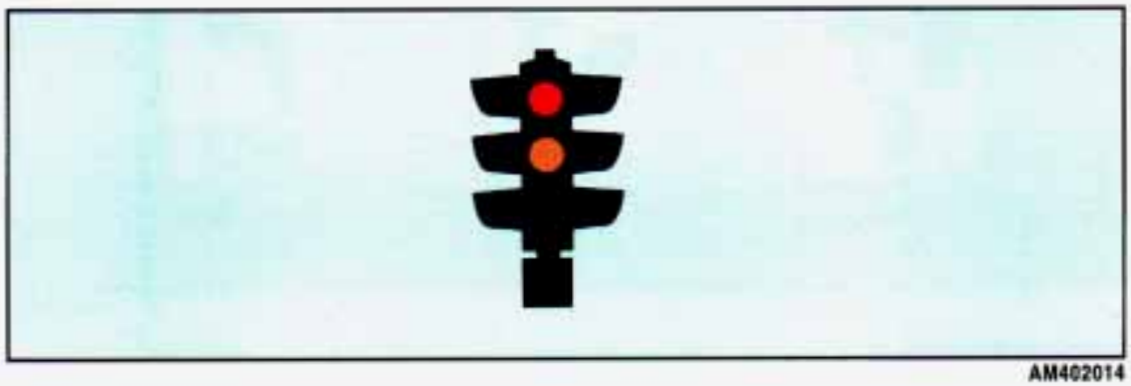
There are many international road signs in use today.

AM402012

The basic message of many of these signs is in pictures or graphic symbols. A picture within a circle with a diagonal line across it shows what **NOT** to do.

AM402013

Traffic Lights



AM402014

We're all familiar with traffic lights or stoplights. Often, green arrows are being used in the lights for improved traffic control. On some multilane roads, green arrows light up, indicating that traffic in one or more lanes can move or make a turn. Green arrows don't mean "go no matter what". You'll still need to

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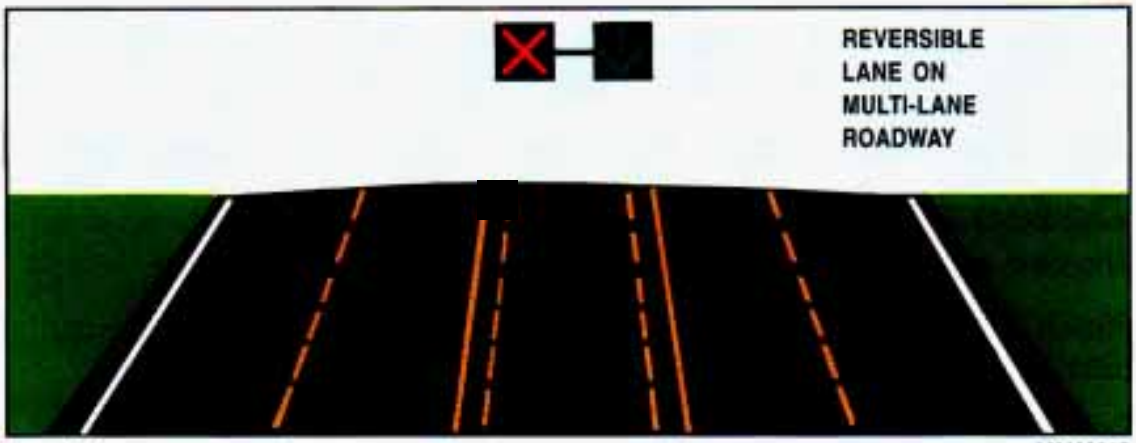
proceed with caution, yielding the right of way to pedestrians and sometimes to other vehicles.

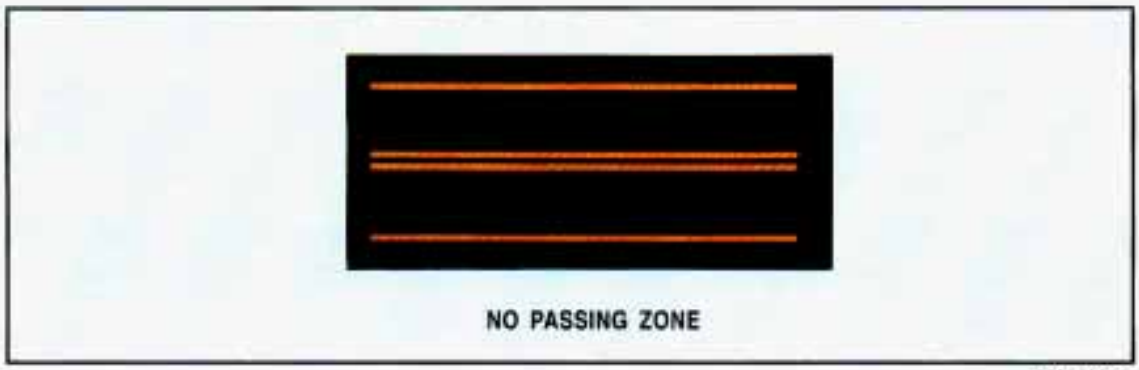
Some traffic lights also use red arrows to signify that you must stop before turning on red.

Many city roads and expressways, and even bridges, use reversible-lane traffic control during rush hours. A red X light above a lane means no driving in that lane at that time. A green arrow means you may drive in that lane. Look for the signs posted to warn drivers what hours and days these systems are in effect.



AM402015

Pavement Markings



AM402016

Pavement markings add to traffic signs and signals. They give information to drivers without taking attention from the roadway. A solid yellow line on your side of the road or lane means "don't cross."

Your Own Signals

Drivers signal to others, too. It's not only more polite, it's safer to let other drivers know what you are doing. And in some places the law requires driver signals.

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Turn and lane change signals: Always signal when you plan to turn or change lanes.

If necessary, you can use hand signals out the window: Left arm straight out for a left turn, down for slow or about-to-stop, and up for a right turn.

Slowing down: If time allows, tap the brake pedal once or twice in advance of slowing or stopping. This warns the driver behind you.

Disabled: Your four-way flashers signal that your vehicle is disabled or is a hazard. See "Hazard Warning Flashers" in the Index.

Traffic Officer

The traffic police officer is also a source of important information. The officer's signals govern, no matter what the traffic lights or other signs say.

The next part discusses some of the road conditions you may encounter.

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.

Expect children to dash out from behind parked cars, often followed by other children. Expect occupants in parked cars to open doors into traffic. Watch for movement in parked cars—someone may be about to open a door.

Expect other drivers to run stop signs when you are on a through street. Be ready to brake if necessary as you go through intersections. You may not have to use the brake, but if you do, you will be ready.

If you're driving through a shopping center parking lot where there are well-marked lanes, directional arrows, and designated parking areas, expect some drivers to ignore all these markings and dash straight toward one part of the lot.

Pedestrians can be careless. Watch for them. In general, you must give way to pedestrians even if you know you have the right of way.

Rear-end collisions are about the most preventable of accidents. Yet they are common. Allow enough following distance. It's the best defensive driving

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maneuver, in both city and rural driving. You never know when the vehicle in front of you is going to brake or turn suddenly.

Here's a final bit of information about defensive driving. The most dangerous time for driving in the U.S. is very early on Sunday morning. In fact, GM Research studies show that the most and the least dangerous times for driving, every week, fall on the same day. That day is Sunday. The most dangerous time is Sunday from 3 a.m. to 4 a.m. The safest time is Sunday from 10 a.m. to 11 a.m. Driving the same distance on a Sunday at 3 a.m. isn't just a little more dangerous than it is at 10 a.m. It's about 134 times more dangerous!

That leads to the next part.

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 takes away three things that anyone needs to drive a vehicle:

- Judgment
- Muscular Coordination
- Vision

Police records show that half of all motor vehicle-related deaths involve alcohol—a driver, a passenger or someone else, such as a pedestrian, had been drinking. In most cases, these deaths are the result of someone who was drinking and driving. Over 25,000 motor vehicle-related deaths occur each year because of alcohol, and thousands of people are injured.

Just how much alcohol is too much if a person plans to drive? Ideally, no one should drink alcohol and then drive. But if one does, then what's "too much"? It can be 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 Content (BAC) of someone who is drinking depends upon four things:

- How much alcohol is in the drink.
- 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.

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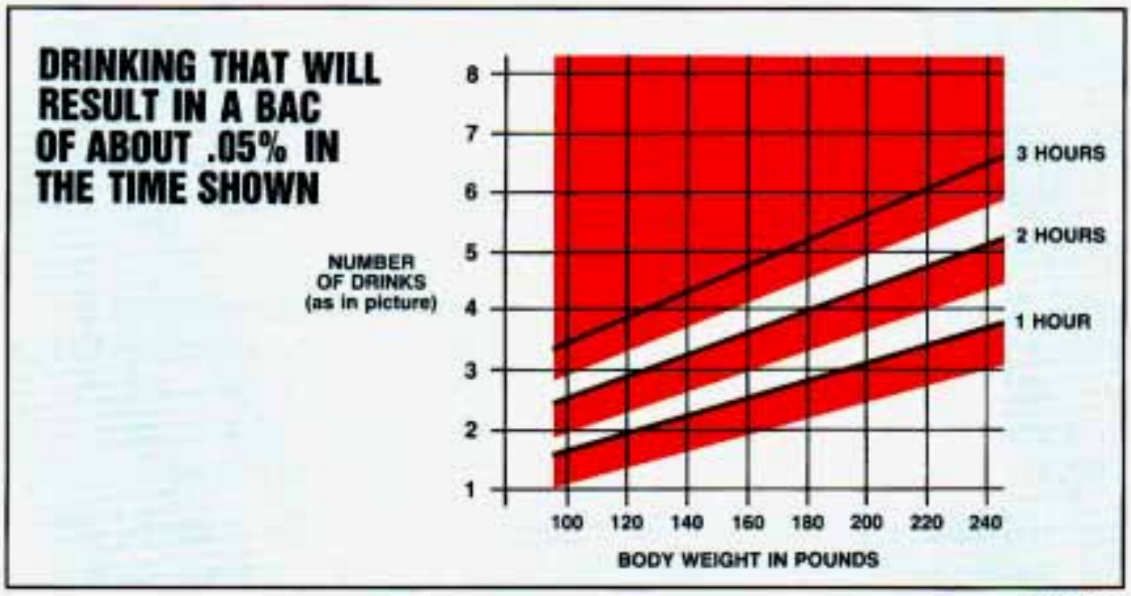

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According to the American Medical Association, a 180-pound (82 kg) person who drinks three 12-ounce (355 ml) bottles of beer in an hour will end up with a BAC of about 0.06 percent. The person would reach the same BAC by drinking three 4-ounce (120 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

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person's BAC would be close to 0.12 percent. A person who consumes food just before or during drinking will have a slightly lower BAC level.

The law in most U.S. states sets the legal limit at a BAC of 0.10 percent. In Canada the limit is 0.08 percent, and in some other countries it's lower than that. 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 it's very important to keep in mind that 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 an accident increases sharply for drivers who have a BAC of 0.05 percent or above. A driver with a BAC level of 0.06 percent (three beers in one hour for a 180-pound or 82 kg person) has doubled his or her chance of having an accident. At a BAC level of 0.10 percent, the chance of that driver having an accident is six times greater; at a level of 0.15 percent, the chances are twenty-five times greater! And, 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 a higher 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. That's especially true for brain, spinal cord and heart injuries. That means that if anyone who has been drinking—driver or passenger—is in a crash, the chance of being killed or permanently disabled is higher than if that person had not been drinking. And we've already seen that the chance of a crash itself is higher for drinking drivers.

CAUTION

Drinking and then driving is very dangerous. Your reflexes, perceptions, and judgment will be affected by even a small amount of alcohol. You could have a serious—or even fatal—accident 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.

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Your Driving and the Road

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.

AN409007

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; and the condition of your brakes.

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Most drivers treat their brakes with care. Some, however, overwork the braking system with poor driving habits.

- 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.
- Don't "ride" the brakes by letting your left foot rest lightly on the brake pedal while driving.

AM410001

CAUTION

"Riding" your brakes can cause them to overheat to the point that they won't work well. You might not be able to stop your vehicle in time to avoid an accident. If you "ride" your brakes, they will get so hot they will require a lot of pedal force to slow you down. Avoid "riding" the brakes.

NOTICE

"Riding" the brakes wears them out much faster. You would need costly brake replacement much sooner than normal, and it also reduces fuel economy.

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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 Brakes (ABS)

Your vehicle has an advanced electronic braking system that can help you keep it under control. When you start your vehicle and begin to drive away, you may hear a momentary motor or clicking noise. This is the ABS system testing itself.

AM415010

Here's how anti-lock works. Let's say the road is wet. You're driving safely. Suddenly an animal jumps out in front of you.

You slam on the brakes. Here's what happens with ABS.

A computer senses that wheels are slowing down.

The computer separately works the brakes at each front wheel and at the 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. You can steer around the obstacle while braking hard.

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AM415020

As you brake, your computer keeps receiving updates on wheel speed and controls braking pressure accordingly.

CAUTION

Anti-lock doesn't change the time you need to get your foot up to the brake pedal. 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.

To Use Four-Wheel Anti-Lock:

Don't pump the brakes. Just hold the brake pedal down and let anti-lock work for you. You may feel the brakes vibrate, or you may notice some noise, but this is normal.

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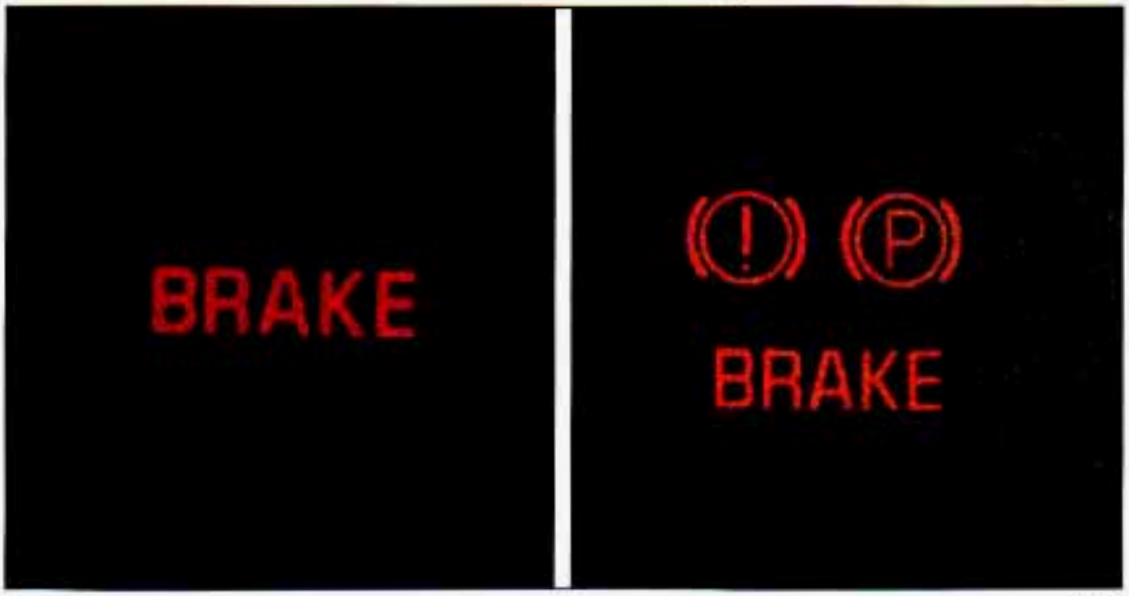
Brake System Warning Light

Standard Cluster | Digital Cluster

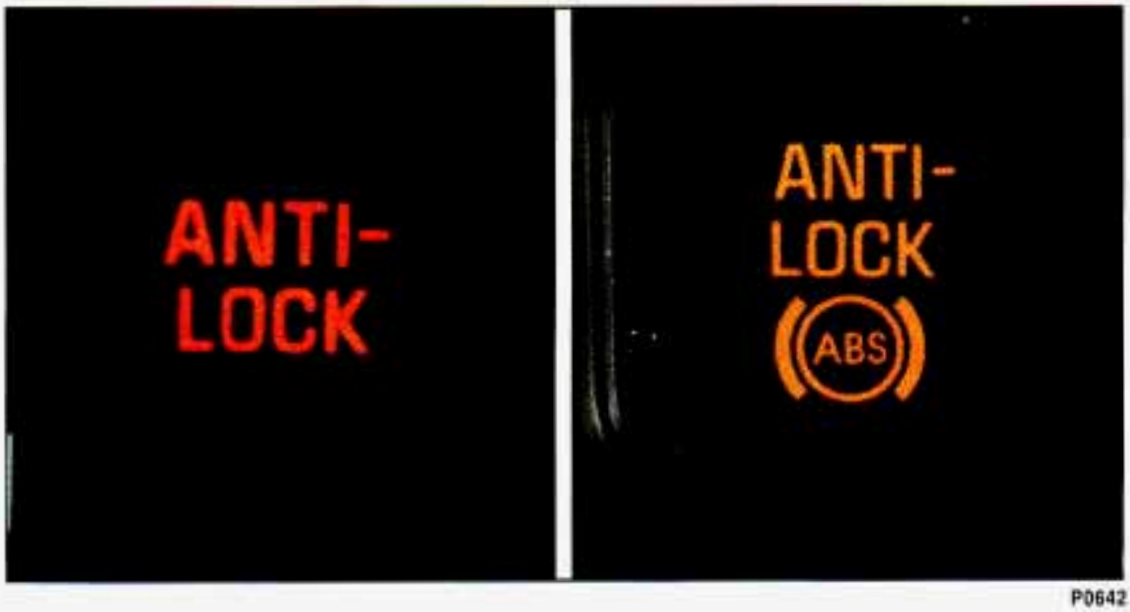


P0641

This light appears on your instrument cluster to warn you if your regular braking system needs service. See "Brake System Warning Light" in the Index.

Anti-lock Brake System Warning Light

Standard Cluster | Digital Cluster



P0642

This light appears on the instrument cluster to warn you if your anti-lock brake system needs service. See "Anti-lock Brake System Warning Light" in the Index.

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Disc Brake Wear Indicators

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 sooner or later 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.

Rear Drum Brakes

Your rear drum brakes don't have the wear indicators, but if you ever hear a rear brake rubbing noise, have the rear brake linings inspected. 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 brakes replaced, have the rear brakes inspected, too.

Brake linings should always be replaced as complete axle sets.

Brake Pedal Travel

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

Brake Adjustment

Every time you 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.

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Braking In Emergencies

Use your anti-lock braking system when you need to. 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 fails to function, 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. Those two control systems—steering and acceleration—can overwhelm those places where the tires meet the road and make you lose control.

What should you do if this ever happens? Let 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.

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When you drive into a curve at night, it's harder to see the road ahead of you because it bends away from the straight beams of your lights. This is one good reason to drive slower.

Steering in Emergencies

K3409

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.

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. You must then be prepared to steer back to your original lane and then brake to a controlled stop.

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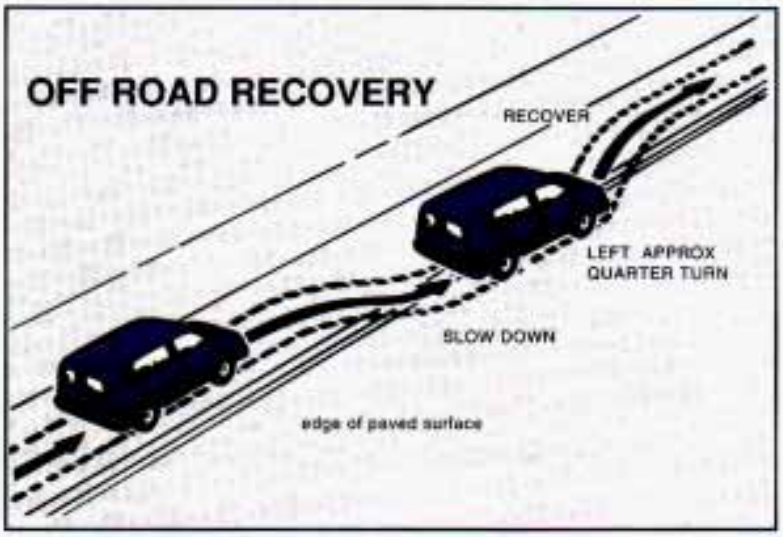
Depending on your speed, this can be rather violent for an unprepared driver. This is one of the reasons driving experts recommend that you use your safety belts and keep both hands on the steering wheel.

The fact that such emergency situations are always possible is a good reason to practice defensive driving at all times.

Off-Road Recovery

You may find sometime 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 is 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 a quarter turn until the right front tire contacts the pavement edge. Then turn your steering wheel to go straight down the roadway.



AM428001

If the shoulder appears to be about four inches (100 mm) or more below the pavement, this difference can cause problems. If there is not enough room to pull entirely onto the shoulder and stop, then follow the same procedures. But if the right tire scrubs against the side of the pavement, do NOT steer more sharply. With too much steering angle, the vehicle may jump back onto the road with so much steering input that it crosses over into the oncoming traffic before you can bring it back under control.

Instead, ease off again on the accelerator and steering input, straddle the pavement once more, then try again.

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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.
- If you suspect that the driver of the vehicle you want to pass isn't aware of your presence, tap the horn a couple of times before passing.
- 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.

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- 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 further 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 lights 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 (as when you turn a corner on a wet, snow- or ice-covered road), ease your foot off the accelerator pedal as soon as you feel the vehicle start to slide. Quickly steer the way you want the vehicle to go. If you start steering quickly enough, your vehicle will straighten out. As it does, straighten the front wheels.

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

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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 braking system (ABS) helps avoid only the braking skid. Steer the way you want to go.

Driving at Night

AN450006

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. Remember, this is the most dangerous time.
- Don't drink and drive (See "Drunken Driving" in the Index for more on this problem.)
- Adjust your inside rearview mirror to reduce the glare from headlights behind you.

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- Since you can't see as well, you may need to slow down and keep more space between you and other vehicles. It's hard to tell how fast the vehicle ahead is going just by looking at its taillights.
- Slow down, especially on higher speed roads. Your headlights 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.

Night Vision

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 headlights, but they also make a lot of things invisible that should remain visible—such as parked cars, obstacles, pedestrians, or even trains blocking railway crossings. You may want to put on your sunglasses after you have pulled into a brightly-lighted service or refreshment area. Eyes shielded from that glare may adjust more quickly to darkness back on the road. But be sure to remove your sunglasses before you leave the service area.

You can be temporarily blinded by approaching lights. 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 headlights), slow down a little. Avoid staring directly into the approaching lights. If there is a line of opposing traffic, make occasional glances over the line of headlights to make certain that one of the vehicles isn't starting to move into your lane. Once you are past the bright lights, give your eyes time to readjust before resuming speed.

High Beams

If the vehicle approaching you has its high beams on, signal by flicking yours to high and then back to low beam. This is the usual signal to lower the headlight beams. If the other driver still doesn't lower the beams, resist the temptation to put your high beams on. This only makes two half-blinded drivers.

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On a freeway, use your high beams only in remote areas where you won't impair approaching drivers. In some places, like cities, using high beams is illegal.

When you follow another vehicle on a freeway or highway, use low beams. True, most vehicles now have day-night mirrors that enable the driver to reduce glare. But outside mirrors are not of this type and high beams from behind can bother the driver ahead.

A Few More Night Driving Suggestions

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. Tobacco smoke also makes inside glass surfaces very filmy and can be a vision hazard if it's left there.

Dirty glass makes lights dazzle and flash more than clean glass would, making the pupils of your eyes contract repeatedly. You might even want to keep a cloth and some glass cleaner in your vehicle if you need to clean your glass frequently.

Remember that your headlights 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 headlights 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.

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Driving in the Rain

AM455013

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. Road spray can often be worse for vision than rain, especially if it comes from a dirty road.

So it is wise to keep your wiping equipment in good shape and keep your windshield washer tank filled. 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.

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AM455019

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 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.

You might not be aware of hydroplaning. You could drive along for some time without realizing your tires aren't in constant contact with the road. You could find out the hard way: when you have to slow, turn, move out to pass—or if you get hit by a gust of wind. You could suddenly find yourself out of control.

Hydroplaning doesn't happen often. But it can if your tires haven't 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,

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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, and be careful.

Some Other Rainy Weather Tips

- Turn on your headlights—not just your parking lights—to help make you more visible to others.
- Look for hard-to-see vehicles coming from behind. You may want to use your headlights even in daytime if it's raining hard.
- 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. If the road spray is so heavy you are actually blinded, drop back. Don't pass until conditions improve. Going more slowly is better than having an accident.
- Use your defogger if it helps.
- Have good tires with proper tread depth. (See "Tires" in the Index.)

Driving in Fog, Mist and Haze

AN459007

Fog can occur with high humidity or heavy frost. It can be so mild that you can see through it for several hundred feet (meters). Or it might be so thick

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that you can see only a few feet (meters) ahead. It may come suddenly to an otherwise clear road. And it can be a major hazard.

When you drive into a fog patch, your visibility will be reduced quickly. The biggest dangers are striking the vehicle ahead or being struck by the one behind. Try to "read" the fog density down the road. If the vehicle ahead starts to become less clear or, at night, if the taillights are harder to see, the fog is probably thickening. Slow down to give traffic behind you a chance to slow down. Everybody then has a better chance to avoid hitting the vehicle ahead.

A patch of dense fog may extend only for a few feet (meters) or for miles (kilometers); you can't really tell while you're in it. You can only treat the situation with extreme care.

One common fog condition—sometimes called mist or ground fog—can happen in weather that seems perfect, especially at night or in the early morning in valley and low, marshy areas. You can be suddenly enveloped in thick, wet haze that may even coat your windshield. You can often spot these fog patches or mist layers with your headlights. But sometimes they can be waiting for you as you come over a hill or dip into a shallow valley. Start your windshield wipers and washer, to help clear accumulated road dirt. Slow down carefully.

Tips on Driving in Fog

If you get caught in fog, turn your headlights on low beam, even in daytime. You'll see—and be seen—better. Use your fog lights if your vehicle has them.

Don't use your high beams. The light will bounce off the water droplets that make up fog and reflect back at you.

Use your defogger. In high humidity, even a light buildup of moisture on the inside of the glass will cut down on your already limited visibility. Run your windshield wipers and washer occasionally. Moisture can build up on the outside glass, and what seems to be fog may actually be moisture on the outside of your windshield.

Treat dense fog as an emergency. Try to find a place to pull off the road. Of course you want to respect another's property, but you might need to put something between you and moving vehicles—space, trees, telephone poles, a private driveway, anything that removes you from other traffic.

If visibility is near zero and you must stop but are unsure whether you are away from the road, turn your lights on, start your hazard warning flashers, and sound your horn at intervals or when you hear approaching traffic.

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Pass other vehicles in fog only if you can see far enough ahead to pass safely. Even then, be prepared to delay your pass if you suspect the fog is worse up ahead. If other vehicles try to pass you, make it easy for them.

City Driving

AM460005

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. Try not to drive around trying to pick out a familiar street or landmark. 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 section, "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.
- Obey all posted speed limits. But remember that they are for ideal road, weather and visibility conditions. You may need to drive below the posted limit in bad weather or when visibility is especially poor.
- Pull to the right (with care) and stop clear of intersections when you see or hear emergency vehicles.

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Freeway Driving

AN461001

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.

Entering the Freeway

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. If traffic is light, you may have no problem. But if it is heavy, find a gap as you move along the entering lane and time your approach. Try to merge into the gap at close to the prevailing speed. Switch on your turn signal, check your rearview mirrors as you move along, and glance over your shoulder as often as necessary. Try to blend smoothly with the traffic flow.

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Driving on the Freeway

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. If you are on a two-lane freeway, treat the right lane as the slow lane and the left lane as the passing lane.

If you are on a three-lane freeway, treat the right lane as the slower-speed through lane, the middle lane as the higher-speed through lane, and the left lane as the passing lane.

Before changing lanes, check your rearview 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.

If you are moving from an outside to a center lane on a freeway having more than two lanes, make sure another vehicle isn't about to move into the same spot. Look at the vehicles two lanes over and watch for telltale signs: turn signals flashing, an increase in speed, or moving toward the edge of the lane. Be prepared to delay your move.

Once you are moving on the freeway, make certain you allow a reasonable following distance. Expect to move slightly slower at night.

Leaving the Freeway

When you want to leave the freeway, move to the proper lane well in advance. Dashing across lanes at the last minute is dangerous. If you miss your exit do not, under any circumstances, stop and back up. Drive on to the next exit.

At each exit point is a deceleration lane. Ideally it should be long enough for you to enter it at freeway speed (after signaling, of course) and then do your braking before moving onto the exit ramp. Unfortunately, not all deceleration lanes are long enough—some are too short for all the braking. Decide when to start braking. If you must brake on the through lane, and if there is traffic close behind you, you can allow a little extra time and flash your brake lights (in addition to your turn signal) as extra warning that you are about to slow down and 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. For example, 40 mph (65 km/h) might seem like only 20 mph (30 km/h). Obviously, this could lead to serious trouble on a ramp designed for 20 mph (30 km/h)!

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Driving On a Long Trip

Although most long trips today are made on freeways, there are still many made on regular highways.

Long-distance driving on freeways and regular highways is the same in some ways. The trip has to be planned and the vehicle prepared, you drive at higher-than-city speeds, and there are longer turns behind the wheel. You'll enjoy your trip more if you and your vehicle are in good shape. Here are some tips for a successful long trip.

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?
- **Lights:** 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?

On the Road

Unless you are the only driver, it is good to share the driving task with others. Limit turns behind the wheel to about 100 miles (160 km) or two hours at a sitting. Then, either change drivers or stop for some refreshment like coffee, tea or soft drinks and some limbering up. But do stop and move around. Eat lightly along the way. Heavier meals tend to make some people sleepy.

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On two-lane highways or undivided multilane highways that do not have controlled access, you'll want to watch for some situations not usually found on freeways. Examples are: stop signs and signals, shopping centers with direct access to the highway, no passing zones and school zones, vehicles turning left and right off the road, pedestrians, cyclists, parked vehicles, and even animals.

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 rearview mirrors frequently and your instruments from time to time. This can help you avoid a fixed stare.
- Wear good sunglasses in bright light. Glare can cause drowsiness. But don't wear sunglasses at night. They will drastically reduce your overall vision at the very time you need all the seeing power you have.
- 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.

As in any driving situation, keep pace with traffic and allow adequate following distances.

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Hill and Mountain Roads

AM470001

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. Don't make your brakes do it all. Shift to a lower gear when you go down a steep or long hill. That way, you will slow down without excessive use of your brakes.

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.

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CAUTION

Coasting downhill in **N** (Neutral) 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 could crash. Always have your ignition on 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. That way, you won't be surprised by a vehicle coming toward you in the same lane.
- It takes longer to pass another vehicle when you're going uphill. You'll want to leave extra room to pass. If a vehicle is passing you and doesn't have enough room, slow down to make it easier for the other vehicle to get by.
- 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 can present special problems. See "Winter Driving" in the Index.

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Parking on Hills

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Hills and mountains mean spectacular scenery. But please be careful where you stop if you decide to look at the view or take pictures. Look for pull-offs or parking areas provided for scenic viewing.

Another part of this manual tells how to use your parking brake (see "Parking Brake" in the Index.) But on a mountain or steep hill, you can do one more thing. You can turn your front wheels to keep your vehicle from rolling downhill or out into traffic.

Here's how:

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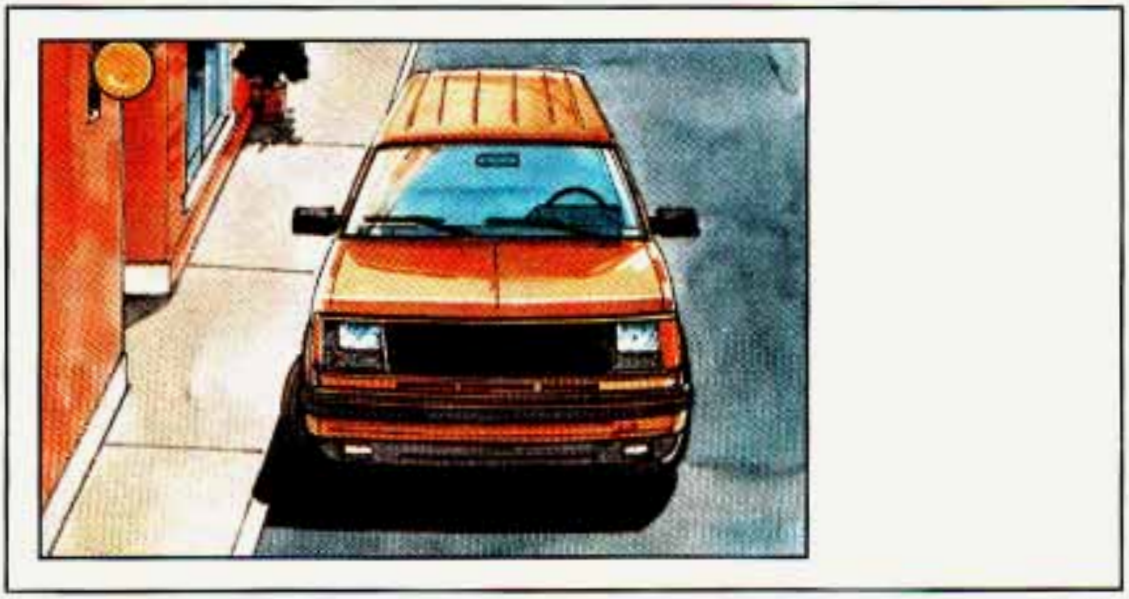
Parking Downhill



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Turn your wheels to the right.

You don't have to jam your tires against the curb, if there is a curb. A gentle contact is all you need.

Parking Uphill

AM470040 AM470047

If there is a curb, turn your wheels to the left if the curb is at the right side of your vehicle.

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If you're going uphill on a one-way street and you're parking on the left side, your wheels should point to the right.

AM470055

If there is no curb when you're parking uphill, turn the wheels to the right.

If there is no curb when you're parking uphill on the left side of a one-way street, your wheels should be turned to the left.

Torque Lock (Automatic Transmission)

If you are parking on a hill and you don't shift your transmission into **P** (Park) properly, the weight of the vehicle may put too much force on the parking pawl in the transmission. You may find it difficult to pull the shift lever out of **P** (Park). This is called torque lock. To prevent torque lock, always be sure to shift into **P** (Park) properly before you leave the driver's seat. To find out how, see "Shifting Into **P** (Park) in the Index."

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

If "torque lock" does occur, you may need to have another vehicle push yours a little uphill to take some of the pressure from the transmission, so you can pull the shift lever out of **P** (Park).

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Winter Driving

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Here are some tips for winter driving:

- Have your vehicle in good shape for winter. Be sure your engine coolant mix is correct.
- Snow tires can help in loose snow, but they may give you less traction on ice than regular tires. If you do not expect to be driving in deep snow, but may have to travel over ice, you may not want to switch to snow tires at all.
- 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 a couple of reflective warning triangles. And, if you will be driving under severe conditions, include a small bag of sand, a piece of old carpet or a couple of burlap bags to help provide traction. Be sure you properly secure these items in your vehicle.

Driving on Snow or Ice

Most of the time, those places where 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.

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AN480019

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 ability to make a hard stop on a slippery road. Even though you have the 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.

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If You're Caught in a Blizzard

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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

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accelerator slightly. This uses less fuel for the heat that you get and it keeps the battery charged. You will need a well-charged battery to restart the vehicle, and possibly for signaling later on with your headlights. Let the heater run for awhile.

Then, shut the engine off and close the window almost all the way to preserve the heat. Start the engine again and repeat this only when you feel really uncomfortable from the cold. But do it as little as possible. Preserve the fuel as long as you can. To help keep warm, you can get out of the vehicle and do some fairly vigorous exercises every half hour or so until help comes.

If You're Stuck in Deep Snow

This manual explains how to get the vehicle out of deep snow without damaging it. See "Rocking Your Vehicle" in the Index.

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.

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 section.

Every vehicle is ready for some trailer towing. If it 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 section. 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.

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If You Do Decide To Pull A Trailer

If you do, here are some important points.

- There are many different laws 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 2,000 pounds (900 kg) or less. You should always use a sway control if your trailer will weigh more than 2,000 pounds (900 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.

Three important considerations have to do with weight:

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. 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 Assistance Center
1908 Colonel Sam Drive,
Oshawa, Ontario L1H 8P7

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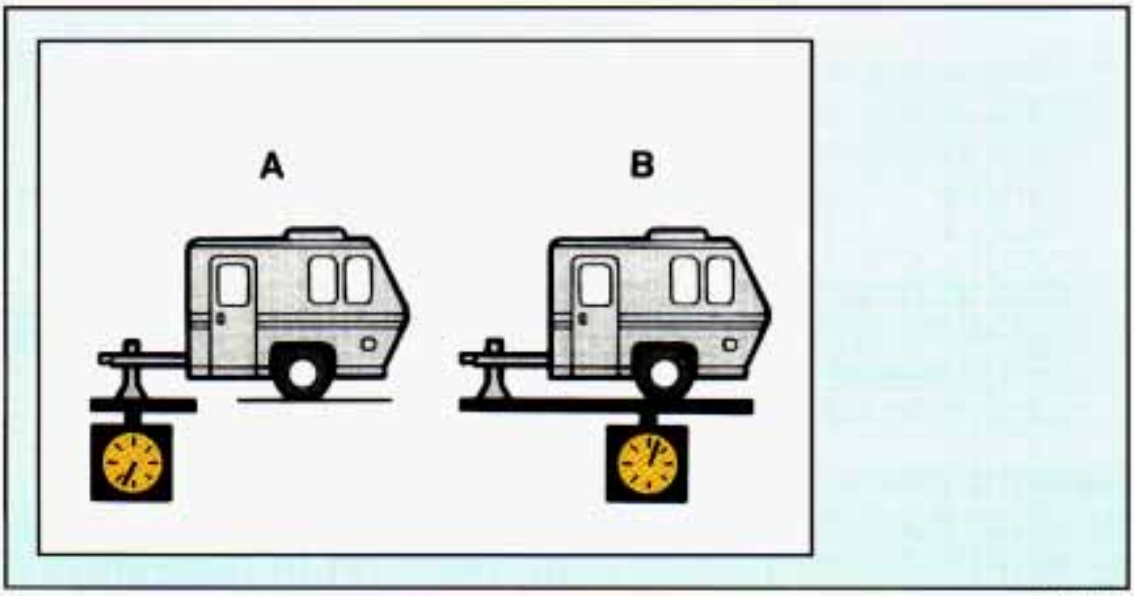
Weight of the Trailer Tongue

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.



AN490002

If you're using a "dead-weight" hitch, the trailer tongue (A) should weigh 10% of the total loaded trailer weight (B). If you have a "weight-distributing" hitch, the trailer tongue (A) should weigh 12% of the total loaded trailer weight (B).

After you've loaded your trailer, weigh the trailer and then the tongue, separately, to see if the weights are proper. If they aren't, you may be able to get them right simply by moving some items around in the trailer.

Total Weight on Your Vehicle's Tires

Be sure your vehicle's tires are inflated to the limit for cold tires. You'll find these numbers on the Certification label at the rear edge of the driver's door (or see the "Tire Loading" in the Index.) Then be sure you don't go over the GVW limit for your vehicle.

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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:

- If you'll be pulling a trailer that, when loaded, will weigh more than 2,000 pounds (900 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 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.
- Don't let the steel in a hitch contact the aluminum on your bumper. If you do, the two will corrode. You can use something like paint or plastic tape to separate the steel and aluminum. The same steel to aluminum problem can happen with fasteners too.

Safety Chains

You should always attach chains between your vehicle and your trailer. Cross the safety chains under the tongue of the trailer so that the tongue will not drop to the road if it becomes separated from the hitch. Instructions about safety chains may be provided by the hitch manufacturer or by the trailer manufacturer. Follow the manufacturer's recommendation for attaching safety chains. Always leave just enough slack so you can turn with your rig. And, never allow safety chains to drag on the ground.

Trailer Brakes

If your trailer weighs more than 1,000 pounds (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 to install, adjust and maintain them properly.

Don't tap into your vehicle's brake system if the trailer's brake system will use more than 0.02 cubic inch (0.3cc) of fluid from your vehicle's master cylinder. If it does, both braking systems won't work well. You could even lose your brakes.

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- Will the trailer brake parts take 3,000 psi (20 650 kPa) of pressure? If not, the trailer brake system must not be used with your vehicle.
- If everything checks out this far, then make the brake fluid tap at the 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 steel brake tubing.

Driving with a Trailer

Towing a trailer requires a certain amount of experience. Before setting out for the open road, you'll want to get to know your rig. Acquaint yourself with the feel of handling and braking with the added weight of the trailer. And always keep in mind that the vehicle you are driving is now a good deal longer and not nearly so responsive as your vehicle is by itself.

Before you start, check the trailer hitch and platform, safety chains, electrical connector, lights, 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.

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.

During your trip, check occasionally to be sure that the load is secure, and that the lights and any trailer brakes are still working.

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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 your 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

When you're turning with a trailer, make wider turns than normal. Do this so your trailer wheels 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 a different turn signal flasher and extra wiring. The green arrows on your instrument panel will flash whenever you signal a turn or lane change. Properly hooked up, the trailer lights will also flash, telling other drivers you're about to turn, change lanes, or stop.

When towing a trailer, the green arrows on your instrument panel will flash for turns even if the bulbs on the trailer are burned out. Thus, you may think drivers behind you are seeing your signal when they are not. It's important to check occasionally to be sure the trailer bulbs are still working.

Driving on Grades

Reduce speed and shift to a lower gear **before** you start down a long or steep downgrade. If you don't shift down, you might have to use your brakes so much that they would get hot and no longer work well.

On a long uphill grade, shift down and reduce your speed to around 45 mph (70 km/h) to reduce the possibility of engine and transmission overheating.

You should use **D** (or as you need to, a lower gear) when towing a trailer. Operating your vehicle in **D** when towing a trailer will minimize heat buildup and extend the life of your transmission.

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Parking on Hills

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 **P** (Park) yet.
2. Have someone place chocks under the trailer wheels.
3. When the wheel chocks are in place, release the regular brakes until the chocks absorb the load.
4. Reapply the regular brakes. Then apply your parking brake, and shift to **P** (Park).
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 adjustment. 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 Light Wiring

See "Trailer Wiring Harness" in the Index.

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Problems on the Road

Section 5

Here you'll find what to do about some problems that can occur on the road.

Hazard Warning Flashers 5- 2

Other Warning Devices 5- 3

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Towing Your Vehicle 5- 7

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If You're Stuck: In Sand, Mud, Ice or Snow 5-32

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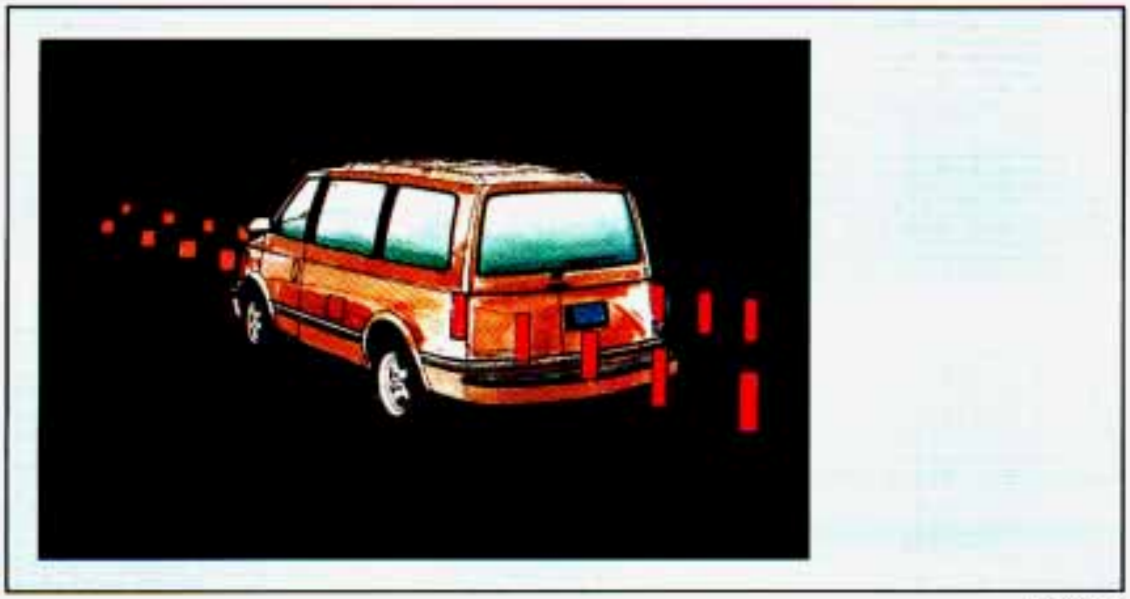
Problems on the Road

Hazard Warning Flashers



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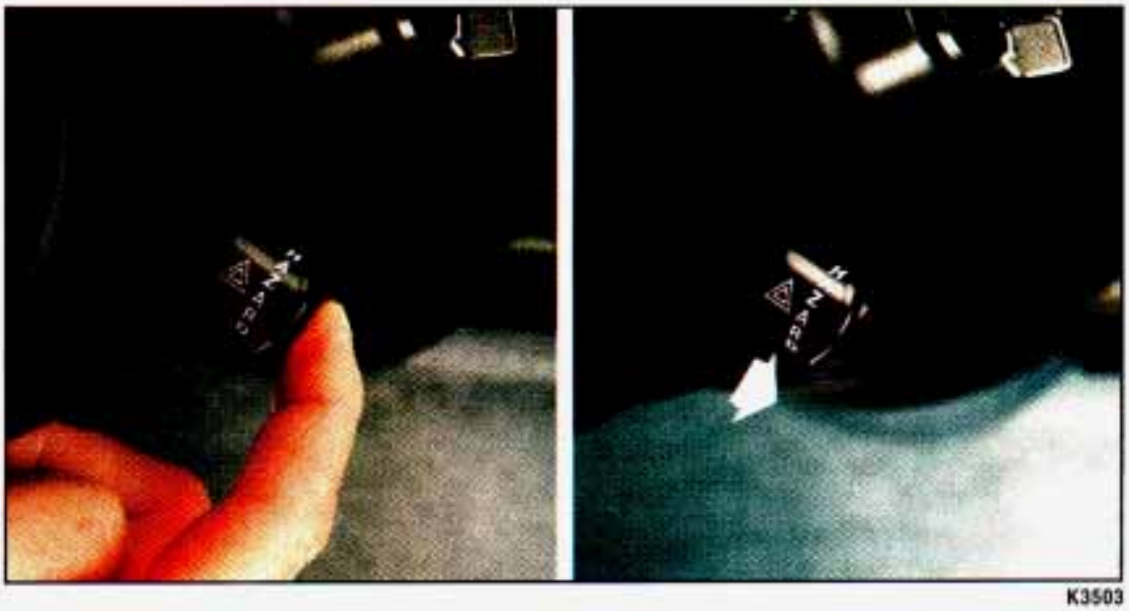
Your hazard warning flashers let you warn others. They also let police know you have a problem. Your front and rear turn signal lights will flash on and off.

But they won't flash if you're braking.



K3503

Press the button in to make your front and rear turn signal lights flash on and off.

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

To turn off the flashers, pull out on the collar.

When the hazard warning flashers are on, your turn signals won't work.

Other Warning Devices

If you carry reflective triangles, you can 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. But please 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. Trying to start your vehicle by pushing or pulling it won't work, and it could damage your vehicle.

To Jump Start 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 12-volt system with a negative ground, both vehicles can be damaged.

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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.

CAUTION

You could be injured if the vehicles roll. Set the parking brake firmly on each vehicle. Put an automatic transmission in **P** (Park) or a manual transmission in **N** (Neutral).

3. Turn off the ignition on both vehicles. Turn off all lights that aren't needed, and radios. This will avoid sparks and help save both batteries. And it could save your radio!

NOTICE

If you leave your radio on, it could be badly damaged. The repairs wouldn't be covered by your warranty.

4. Open the hoods and locate the batteries. Find the positive (+) and the negative (-) terminals on each battery.

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.

You don't need to add water to the Delco Freedom® 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.

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 things you should know. Positive (+) will go to positive (+) and negative (—) will go to negative (—) or a metal engine part. Don't connect (+) to (—) or you'll get a short that would damage the battery and maybe other parts, too.

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CAUTION

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

Dead Battery ***Good Battery***

K3505

6. Connect the red positive (+) cable to the positive (+) terminal of the vehicle with 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 good battery's negative (—) terminal.

   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 part on the engine of the vehicle with the dead battery.
9. Attach the cable about 18 inches (45 cm) away from the dead battery, but not near engine parts that move. The electrical connection is just as good there, but the chance of sparks getting back to the battery is much less.

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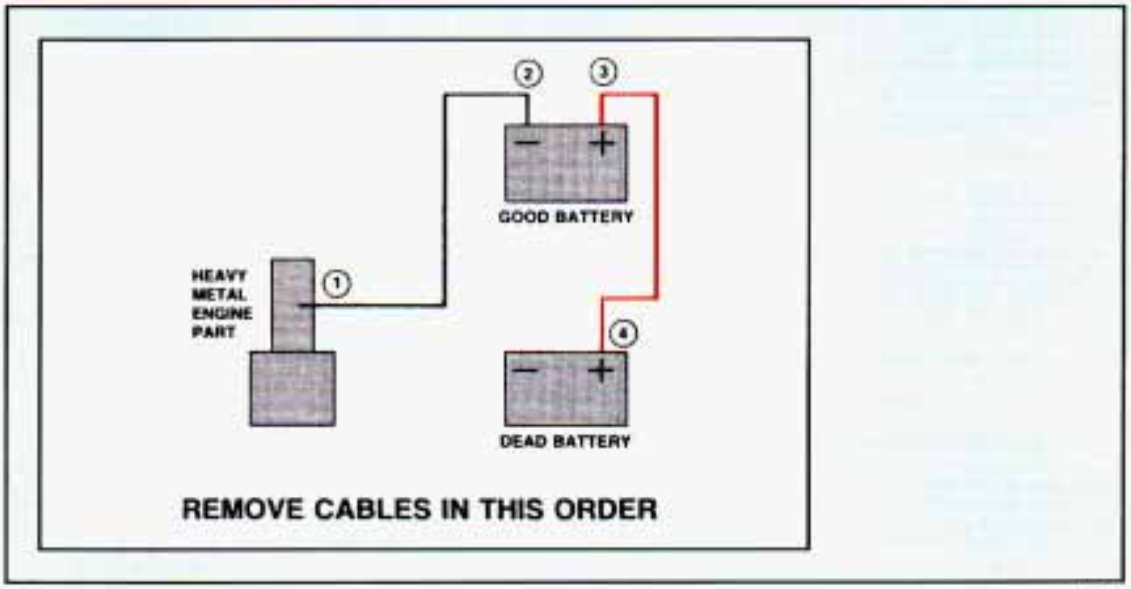
Good Battery *Dead Battery*

K3507

10. Now start the vehicle with the good battery and run the engine for awhile.
11. Try to start the vehicle with the dead battery.

    If it won't start after a few tries, it probably needs service.



K1508

12. Remove the cables in reverse order to prevent electrical shorting. Take care that they don't touch each other or any other metal.

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Towing Your Vehicle

Try to have a GM dealer or a professional towing service tow your vehicle. They can provide the right equipment and know how to tow it without damage.

If your vehicle has been changed or modified since it was factory-new by adding aftermarket items like fog lamps, aero skirting, or special tires and wheels, these things could be damaged during towing.

- Before you do anything, turn on the hazard warning flashers.

  When you call, tell the towing service:

- That, if your vehicle has all-wheel drive or rear-wheel drive with fog lamps, it cannot be towed from the front with sling-type equipment.
- That your vehicle has rear-wheel drive, or that it has the all-wheel-drive option.
- The make, model, and year of your vehicle.
- Whether you can still move the shift lever.
- If there was an accident, what was damaged.

CAUTION

To help avoid injury to you or others:

- Never let passengers ride in a vehicle that is being towed.
- Never tow faster than safe or posted speeds.
- Never tow with damaged parts not fully secured.
- Never get under your vehicle after it has been lifted by the tow truck.
- Always use separate safety chains on each side when towing a vehicle.

When your vehicle is being towed, have the ignition key off. The steering wheel should be clamped in a straight-ahead position, with a clamping device designed for towing service. Do not use the vehicle's steering column lock for this. The transmission should be in **N** (Neutral) and the parking brake released.

If your vehicle has the all-wheel drive option, it can only be towed with all four wheels off the ground. A dolly must be used under the un-raised wheels when towing or the vehicle must be transported on a flat bed carrier.

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Don't have your vehicle towed with the wheels in contact with the ground if it has all-wheel drive. If a vehicle with all-wheel drive must be towed with sling-type or wheel lift equipment, then either the front or rear wheels must be supported on a dolly.

If your vehicle has rear-wheel drive, don't have it towed on the rear wheels unless you must. If a vehicle with rear-wheel drive must be towed on the rear wheels, don't go more than 35 mph (56 km/h) or farther than 50 miles (80 km) or your transmission will be damaged. If these limits must be exceeded, then the rear wheels have to be supported on a dolly.

CAUTION

A vehicle can fall from a car carrier if it isn't properly secured. This can cause a collision, serious personal injury and vehicle damage. The vehicle should be tightly secured with chains or steel cables before it is transported.

Don't use substitutes (ropes, leather straps, canvas webbing, etc.) that can be cut by sharp edges underneath the towed vehicle.

Engine Overheating

You will find a coolant temperature gage and the warning light about a hot engine on your vehicle's instrument panel.

If Steam Is Coming From Your Engine:

P0452

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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 opening 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.

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.

If No Steam Is Coming From Your Engine:

If you get the 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.

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, turn it off.
2. Turn your heater to full hot at the fan speed and open the window as necessary.
3. If you're in a traffic jam, shift to **N** (Neutral).

If you no longer have the overheat warning, you can drive. Just to be safe, drive slower for about ten 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.

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If there's still no sign of steam, push the accelerator until the engine speed is about twice as fast as normal idle speed. Bring the engine speed back to normal idle speed after two or three minutes. Now see if the warning stops. But then, if you still have the warning, TURN OFF THE ENGINE AND GET EVERYONE OUT OF THE VEHICLE until it cools down.

You may decide not to lift the hood but to get service help right away.

P0424

When you decide it's safe to lift the hood, here's what you'll see:

A. Coolant recovery tank

B. Radiator pressure cap

C. Engine fan

If the coolant inside the coolant recovery tank is boiling, don't do anything else until it cools down.

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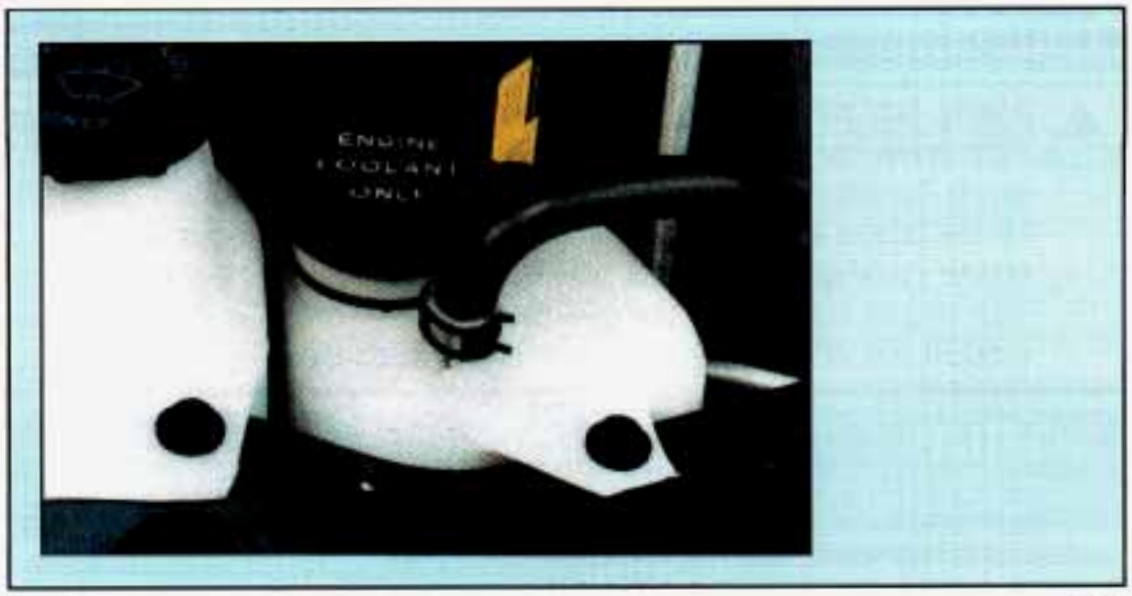

P0453

The coolant level should be at or above **FULL**. If it isn't, you may have a leak 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.

NOTICE

Engine damage from running your engine without coolant isn't covered by your warranty.

If there seems to be no leak, start the engine again to see if the fan runs when the engine does. 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 or above **FULL**, add a 50/50 mixture of **clean water** (preferable distilled) and a proper antifreeze at the coolant recovery tank. (See "Engine Coolant" in the Index for more information about the proper coolant mix.)

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CAUTION

Adding only plain water to your cooling system can be dangerous. Plain water, or some other liquid like alcohol, can boil before the proper coolant mix will. Your vehicle's coolant warning system is set for the proper coolant mix. With plain water or the wrong mix, 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 mix of **clean water** and a proper antifreeze.

NOTICE

In cold weather, water can freeze and crack the engine, radiator, heater core and other parts. Use the recommended coolant.

P0408

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 or above **FULL**, start your vehicle.

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If the overheat warning continues, there's one more thing you can try. You can add the proper coolant mix 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 pressure 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.

P0425

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How to Add Coolant to the Radiator

P0422

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 to the left 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.

P0423

3. Fill the radiator with the proper mix, up to the base of the filler neck.

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4. Then fill the coolant recovery tank to **FULL**.

P0658

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 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 mix through the filler neck until the level reaches the base of the filler neck.

P0407

8. Then replace the pressure cap. Be sure the arrows on the pressure cap line up like this.

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Engine Fan Noise

This 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 every day driving conditions, the clutch is not engaged. This improves fuel economy and reduces fan noise. Under heavy vehicle loading, trailer towing and/or high outside temperatures, the fan speed increases when the clutch engages. So you may hear an increase in fan noise. This is normal and should not be mistaken as the transmission slipping or making extra shifts. It is merely the cooling system functioning properly. The fan will slow down when additional cooling is not required and the clutch disengages.

You may also hear this fan noise when you start the engine. It will go away as the fan clutch 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, 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 your tire goes flat, the next part shows how to use your jacking equipment to change a flat tire safely.

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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 **P** (Park).
3. Turn off the engine.

To be even more certain the vehicle won't move, you can put chocks 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.

AM545006

The following pages will tell you how to use the jack and change a tire.

The equipment you'll need is in the rear of your vehicle.

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Jack Storage

P0420

Your jack, extension, ratchet and wheel blocks are stored by your vehicle's rear doors, along the passenger side wall.

To remove your jack cover, take off the plastic wing nut by turning it counterclockwise. Lift up on the latch and pull the jack cover off.

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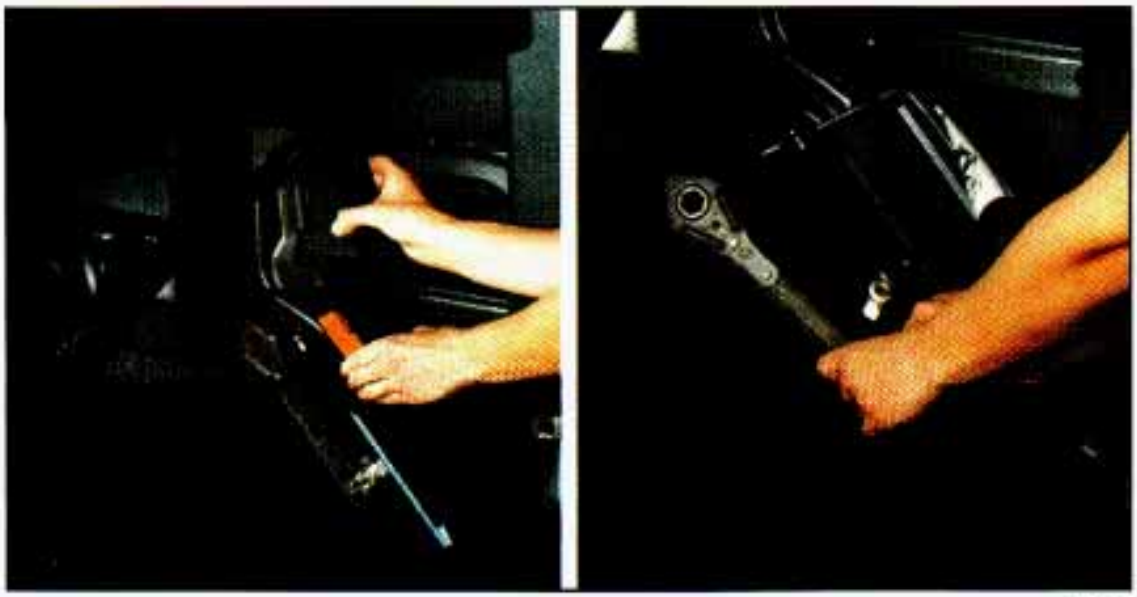

K3524

Remove the wheel blocks and jack by turning the wing nut counterclockwise. Remove the wing nut and washer then pull the wheel blocks and jack off the bolt.

To remove the ratchet and extension by turning the wing nut counterclockwise. Remove the wing nut and retainer and take out the ratchet and extension.

Spare Tire

K3526

Your spare tire is stored underneath your vehicle. You will use the ratchet and extension to lower the spare tire.

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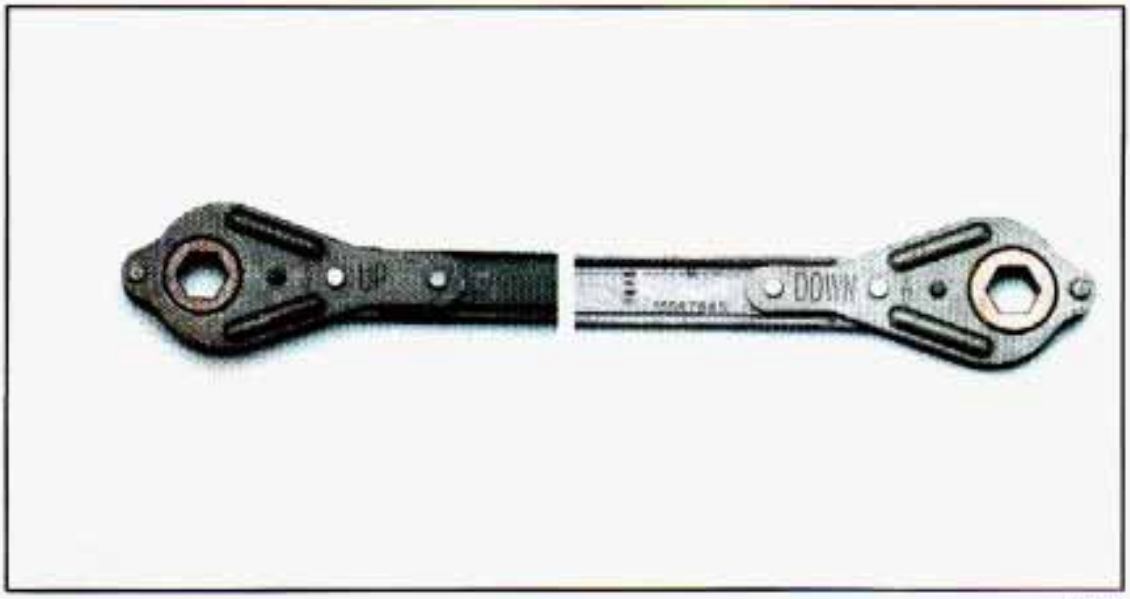

K3533

The ratchet has an **UP** side and a **DOWN** side.

P0418

Attach the ratchet, with the **DOWN** side facing you, to the extension. The extension has a socket end and a flat (screwdriver shaped) 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. Keep turning the ratchet until the spare tire can be pulled out from under the vehicle.

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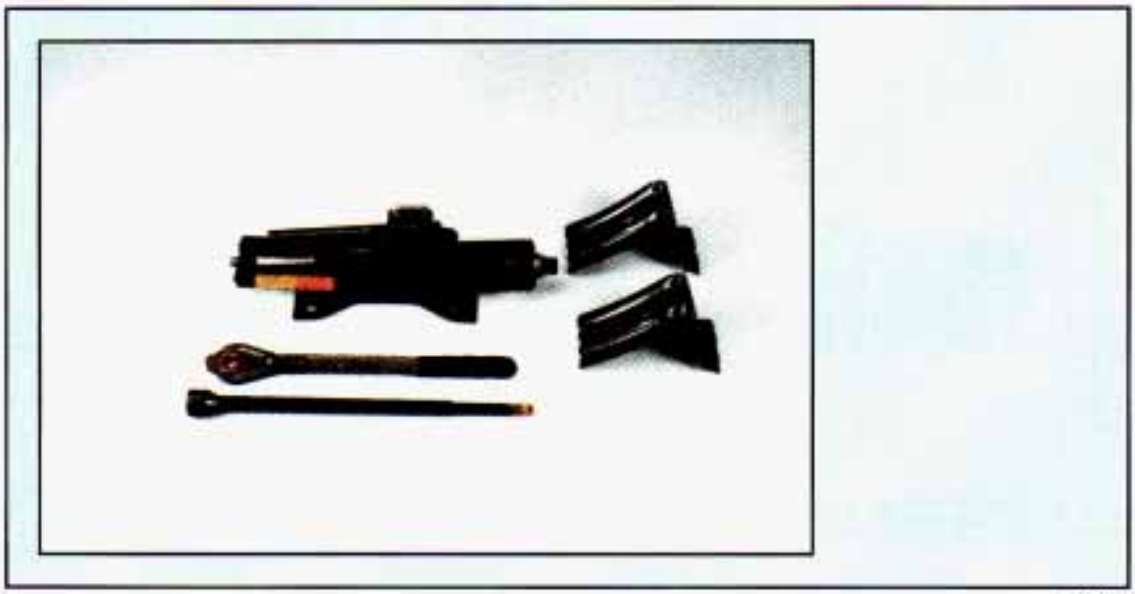
K3529

When the tire has been lowered, tilt the retainer at the end of the cable and pull it through the wheel opening.

Changing the Tire



K3530

Start with the jack, ratchet, extension and wheel blocks.

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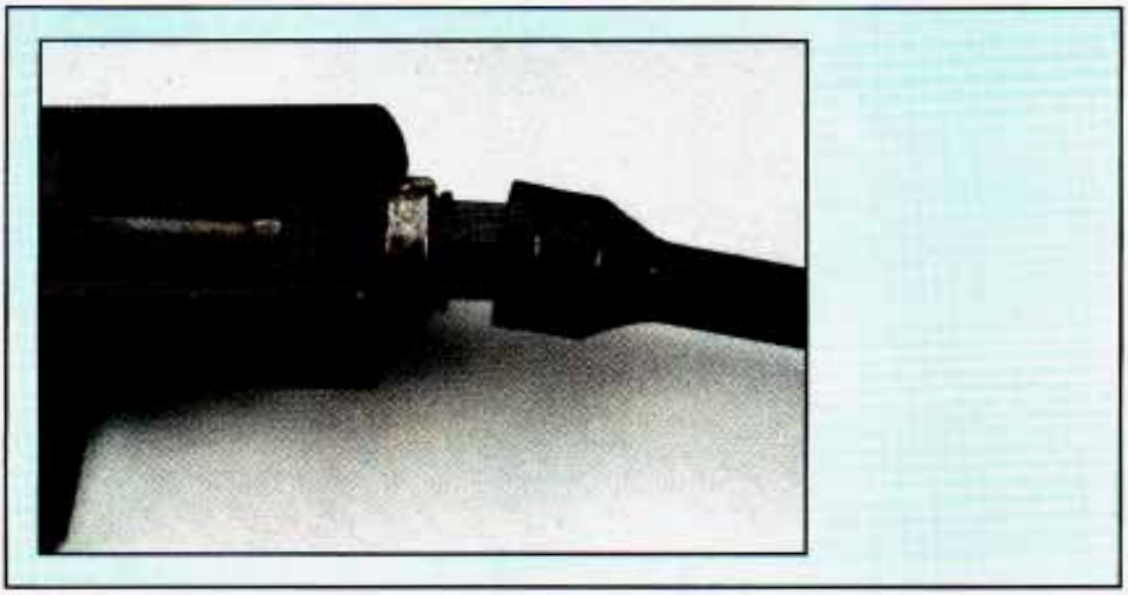
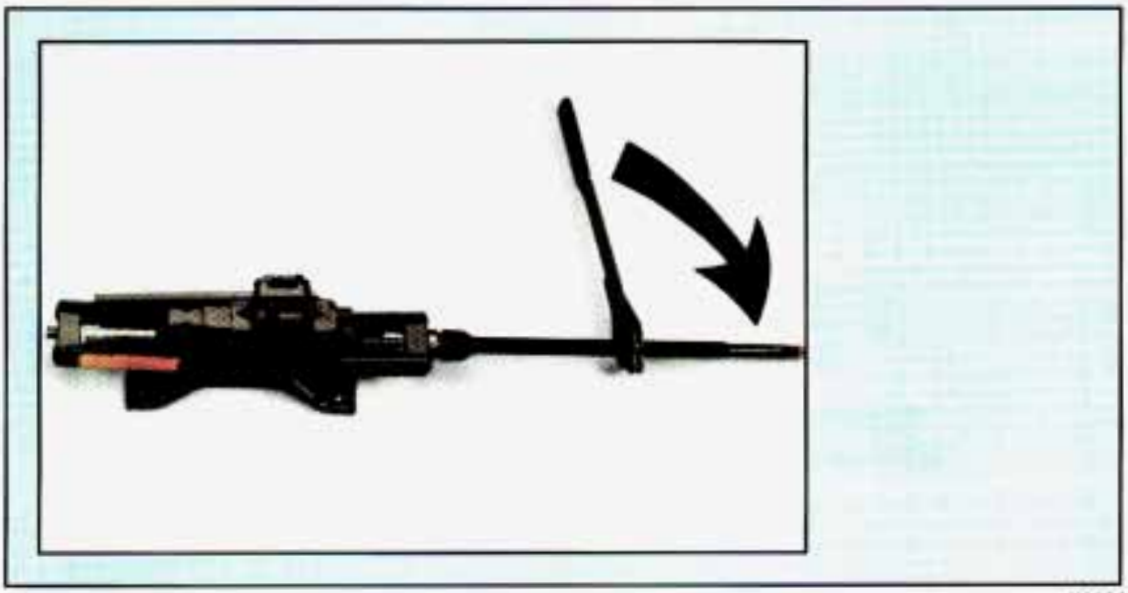


K3531

The jack has a bolt on the end.

Attach the socket end of the extension to the jack bolt like this.



K3534

Attach the ratchet to the extension with the **UP** side facing you.

Rotate the ratchet clockwise. That will raise the lift head a little. Before raising the vehicle, do the following things.

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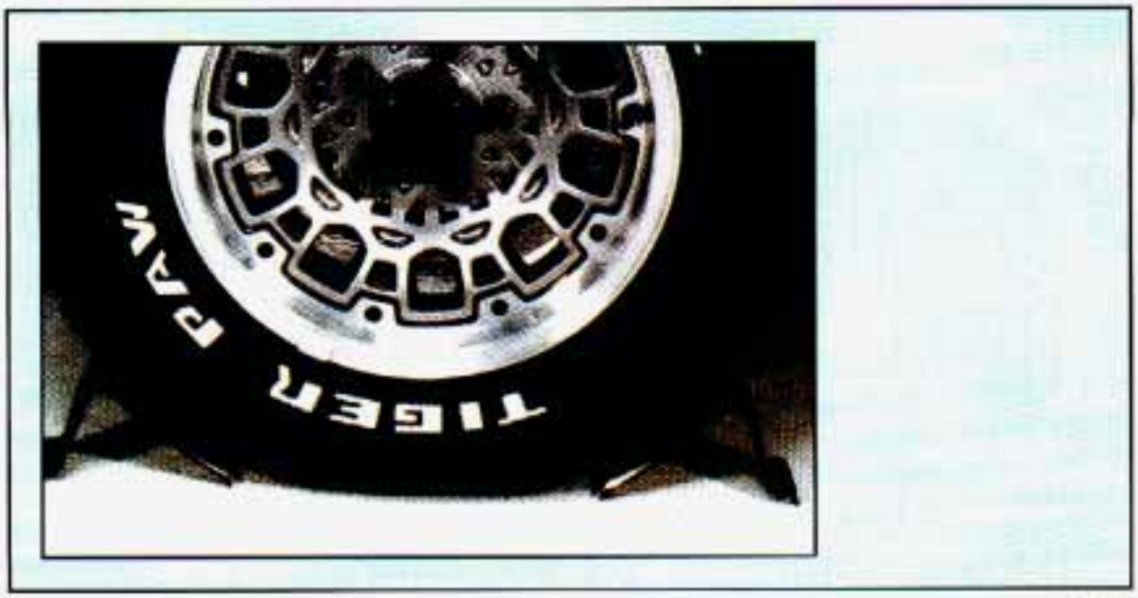

P0456

You have two wheel blocks stored with your jack. Place 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.

Put your spare tire near the flat tire.

Remove the wheel trim.

P0458

If there is a wheel cover, remove it by using the flat end of the extension. Pry along the edge of the wheel cover until it comes off. Be careful; the rim edges may be sharp. Don't try to remove it with your bare hands.

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P0459

If the wheel has a center cap, you do not have to remove the center cap to loosen the wheel nuts. Place the ratchet and socket on the wheel nut with the center cap on.

P0462

With **DOWN** facing you, use the ratchet and socket to loosen all the wheel nuts. Don't remove them yet.

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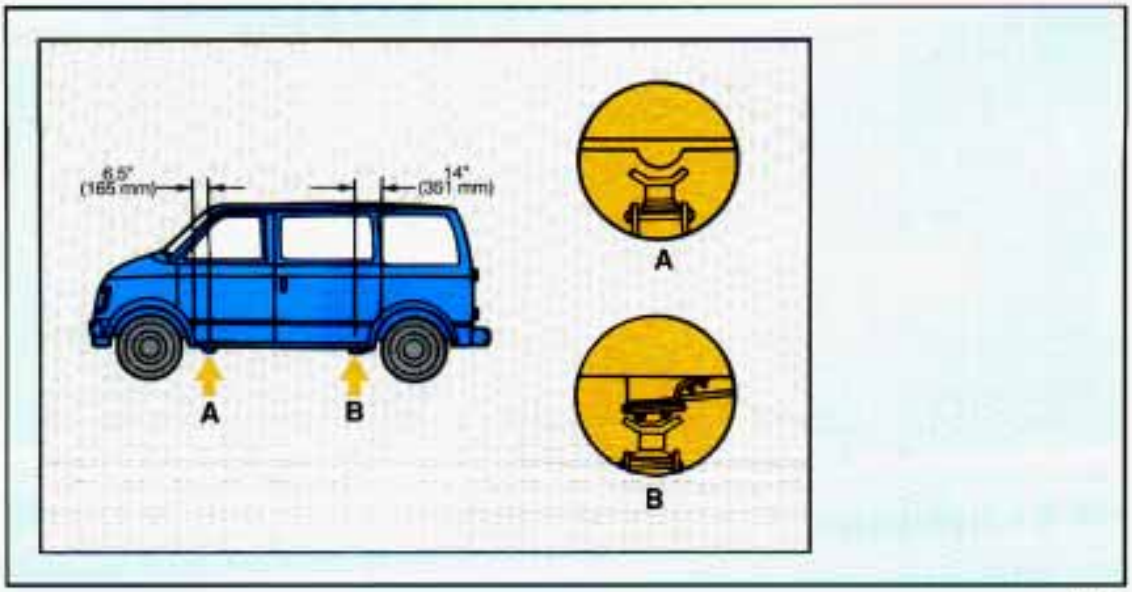

K3536

Position jack under the vehicle.

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.

NOTICE

Raising your vehicle with the jack improperly positioned will damage the vehicle or may allow the vehicle to fall off the jack. Be sure to fit the jack lift head into the proper location before raising your vehicle.

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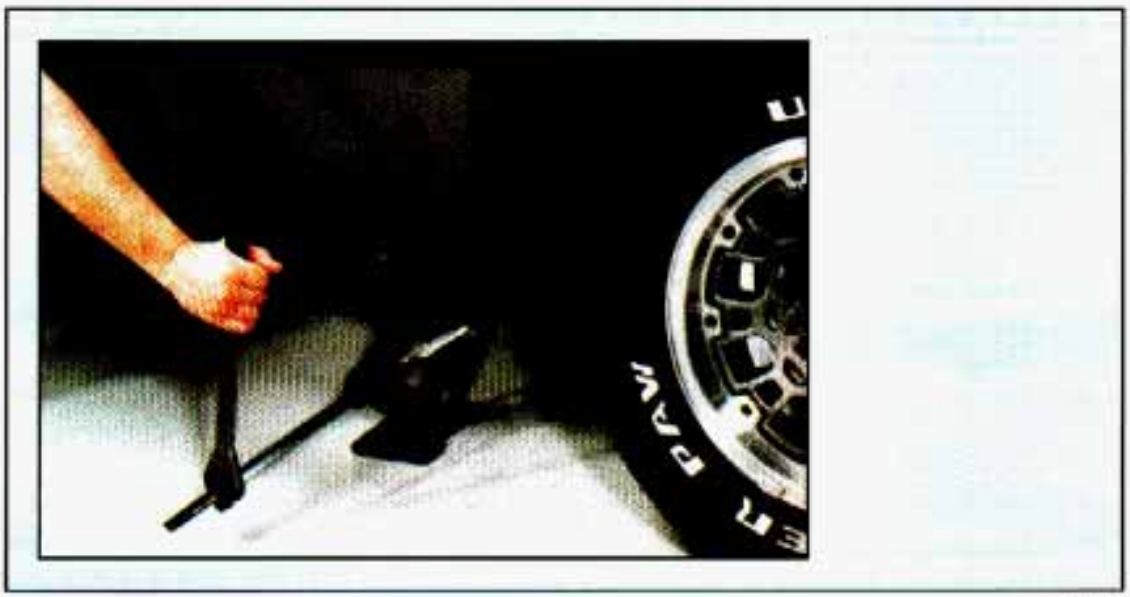
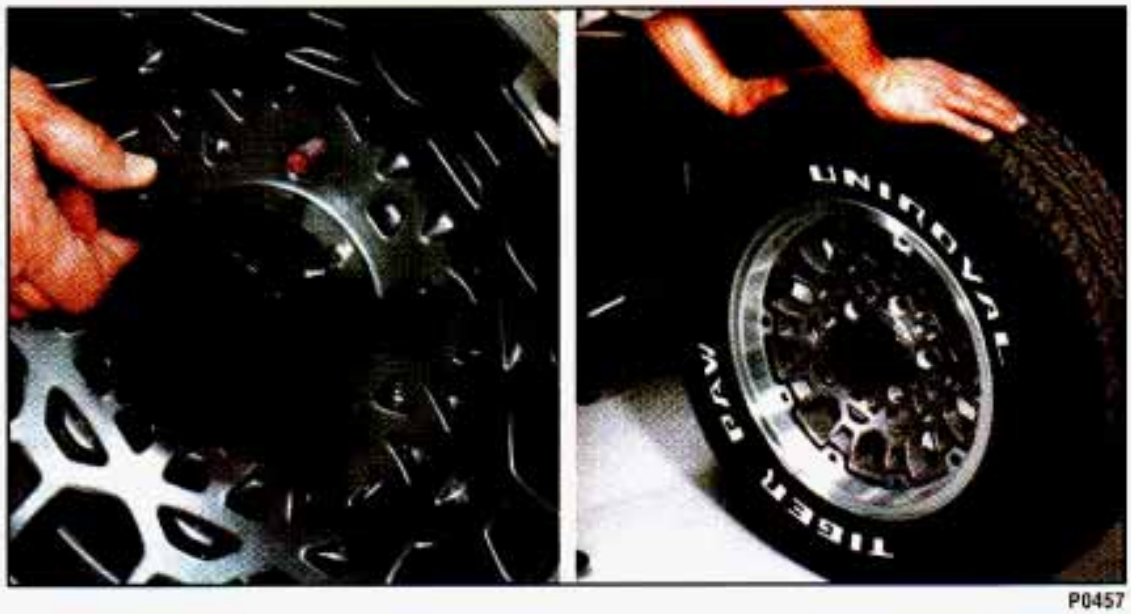


P0463

Raise the vehicle by rotating the ratchet clockwise. Make sure the **UP** marking faces you. Raise the vehicle far enough off the ground so there is enough room for the spare tire to fit.



P0457

Remove all the wheel nuts and take off the flat tire.

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K3543

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 fall 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.

Remove any rust or dirt from the wheel bolts, mounting surfaces or spare wheel. Place the spare on the wheel mounting surface.

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.

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P0464

Replace the wheel nuts with the rounded end of the nuts toward the wheel. Tighten each nut by hand until the wheel is held against the hub.

P0390

Lower the vehicle by rotating the ratchet counterclockwise. Lower the jack completely.

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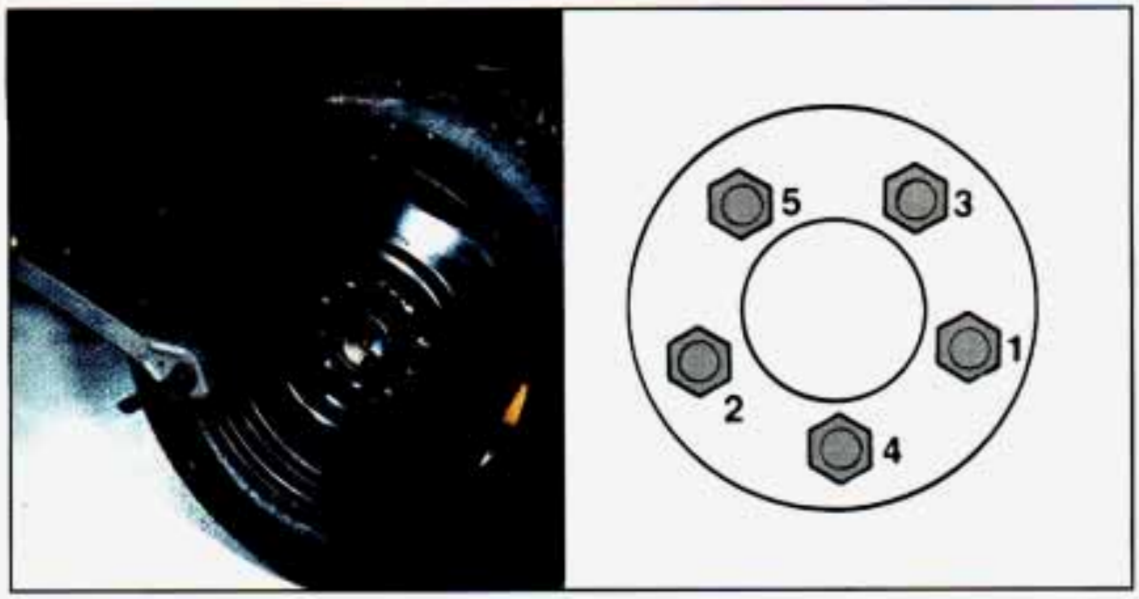

P0465

Tighten the wheel nuts firmly in a criss-cross sequence as shown. Rotate the ratchet clockwise with the **UP** marking facing you.

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 the right kind.

Stop somewhere as soon as you can and have the wheel nuts tightened with a torque wrench to the proper torque.

For proper wheel nut torque, see "Wheel Nut Torque" in the Index.

Don't try to put a wheel cover on your compact spare tire. It won't fit. Store the wheel cover in the trunk until you have the flat tire repaired or replaced.

NOTICE

Wheel covers won't fit on your compact spare. If you try to put a wheel cover on your compact spare, you could damage the cover or the spare.

Remove the wheel blocks.

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Storing the Tire and Jack

Storing the Tire

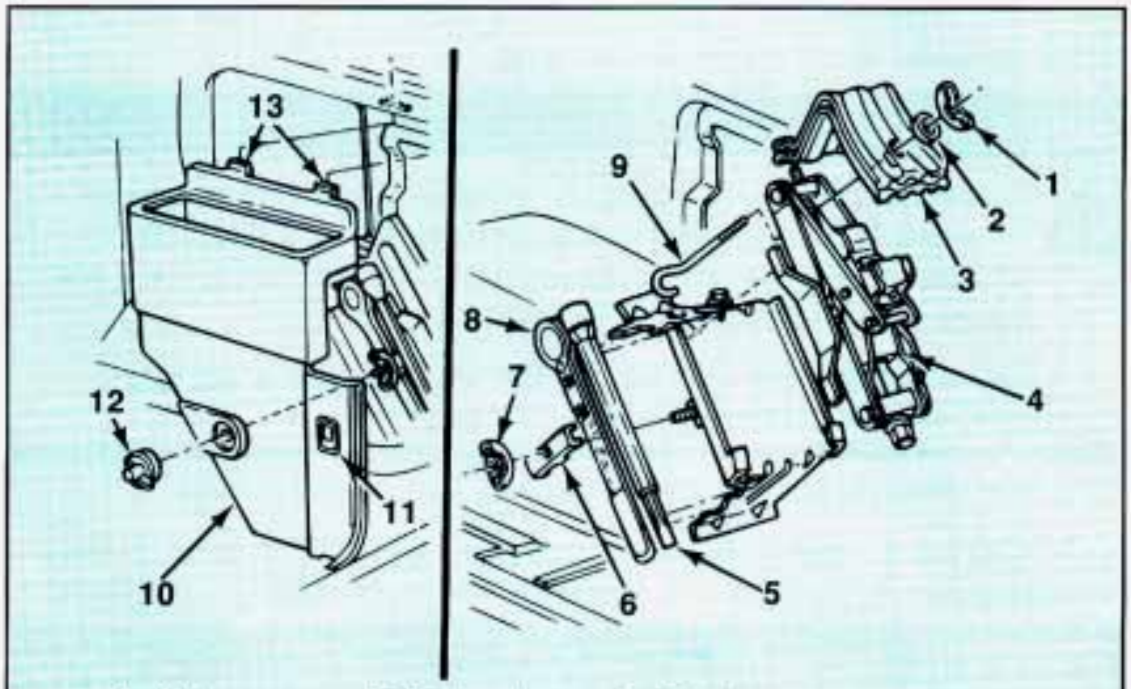
Put the tire on the ground at the rear of the vehicle, with the valve stem pointed down.

Pull the retaining bar through the center of the wheel, making sure it is properly attached. Attach the ratchet, with the **UP** side facing you, to the extension.

Put the flat end of the extension on an angle through the hole in the rear door frame, above the bumper. Turn the ratchet clockwise until the tire is against the underside of the vehicle.

You will hear two "clicks" when the tire is up all the way. Try to move the tire with your hands to make sure it is securely in place.

Storing the Jacking Equipment



1. Nut
2. Washer
3. Wheel Blocks
4. Jack
5. Extension
6. Retainer
7. Nut
6. Ratchet
9. Bolt
10. Jack Cover
11. Latch
12. Retainer
13. Tabs

K3547

Return the jack, ratchet, extension and wheel blocks to the proper location in the rear storage area. Replace all bolts, retainers and wing nuts in the proper location. Secure the jacking equipment in its proper location and replace the jack storage cover.

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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.

Compact Spare Tire

Although the compact spare was fully inflated when your vehicle was new, it can lose air after a time. Check the inflation pressure regularly. It should be 60 psi (420 kPa). The compact spare is made to go up to 3,000 miles (5000 km), so you can finish your trip and have your full-size tire repaired or replaced where you want. Of course, it's best to replace your spare with a full-size tire as soon as you can. Your spare will last longer and be in good shape in case you need it again.

NOTICE

Don't take your compact spare through an automatic car wash with guide rails. The compact spare can get caught on the rails. That can damage the tire and wheel, and maybe other parts of your vehicle.

Don't use your compact spare on some other vehicle.

And don't mix your compact spare or wheel with other wheels or tires. They won't fit. Keep your spare and its wheel together.

NOTICE

Tire chains won't fit your compact spare. Using them will damage your vehicle and destroy the chains too. Don't use tire chains on your compact spare.

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.

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If You're Stuck: In Sand, Mud, Ice or Snow

What you **don't** want to do when your vehicle is stuck is to spin your wheels. 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.

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 **R** (Reverse) 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. 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.

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Service & Appearance Care

Section 6

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 section devoted to its appearance care.

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Service

Your General Motors 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. GM parts have one of these marks:

K1604

Doing Your Own Service Work

If you want to do some of your own service work, you'll want to get the proper General Motors Service Manual. It tells you much more about how to service your vehicle than this manual can. To order the proper service manual, see "Service Publications" in the Index.

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 if you try to do service work on a vehicle without knowing enough about it.

- Be sure you have sufficient knowledge, experience, and 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.

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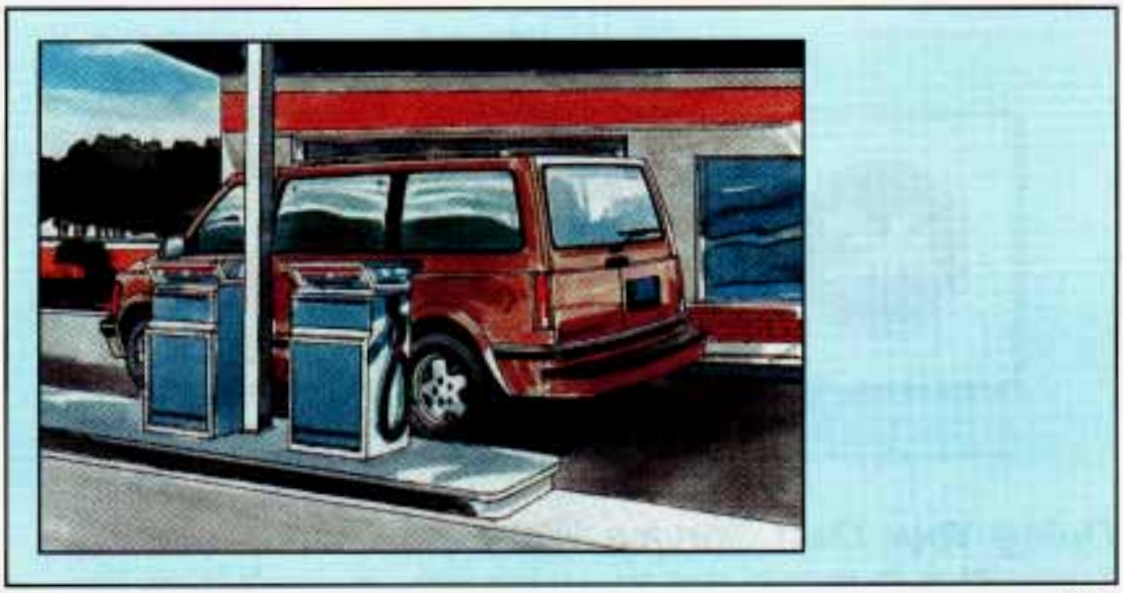
NOTICE

If you try to do your own service work without knowing enough about it, your vehicle could be damaged.

Fuel



K3650

The 8th digit of your Vehicle Identification Number (VIN) shows the code letter for your engine. You will find the VIN at the top left of your instrument panel. (See "Vehicle Identification Number" in the Index.)

Use regular unleaded gasoline rated at 87 octane or higher. With the 4.3L (Code W) engine, use premium unleaded gasoline rated at 91 octane or higher for high power performance, when towing a trailer or with a high payload requirement. But when operating with a light load as a normal condition, you may use middle grade or regular unleaded gasolines.

The gasoline you use should meet specifications ASTM D4814 in the U.S. and CGSB 3.5-92 in Canada. These fuels should have the proper additives, so you should not have to add anything to the fuel.

In the U.S. and Canada, it's easy to be sure you get the right kind of gasoline (unleaded). You'll see **UNLEADED** right on the pump. And only unleaded nozzles will fit into your vehicle's filler neck.

Be sure the posted octane is at least 91 for premium, 89 for middle grade and 87 for regular. If the octane is less than 87, you may get a heavy knocking noise when you drive. If it's bad enough, it can damage your engine.

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If you're using fuel rated at 91 octane or higher and you still hear heavy knocking, your engine needs service. But don't worry if you hear a little pinging noise when you're accelerating or driving up a hill. That's normal, and you don't have to buy a higher octane fuel to get rid of pinging. It's the heavy, constant knock that means you have a problem.

What about gasoline with blending materials that contain oxygen, such as MTBE or alcohol?

MTBE is "methyl tertiary-butyl ether." Fuel that is no more than 15% MTBE is fine for your vehicle.

Ethanol is ethyl or grain alcohol. Properly-blended fuel that is no more than 10% **ethanol** is fine for your vehicle.

Methanol is methyl or wood alcohol.

NOTICE

Fuel that is more than 5% **methanol** is bad for your vehicle. Don't use it. 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. And even at 5% or less, there must be "cosolvents" and corrosion preventers in this fuel to help avoid these problems.

Gasolines for Cleaner Air

Your use of gasoline with detergent additives will help prevent deposits from forming in your engine and fuel system. That helps keep your engine in tune and your emission control system working properly. It's good for your vehicle, and you'll be doing your part for cleaner air.

Many gasolines are now blended with materials called oxygenates. General Motors recommends that you use gasolines with these blending materials, such as MTBE and ethanol. By doing so, you can help clean the air, especially in those parts of the country that have high carbon monoxide levels.

In addition, some gasoline suppliers are now producing reformulated gasolines. These gasolines are specially designed to reduce vehicle emissions. General Motors recommends that you use reformulated gasoline. By doing so, you can help clean the air, especially in those parts of the country that have high ozone levels.

You should ask your service station operators if their gasolines contain detergents and oxygenates, and if they have been reformulated to reduce vehicle emissions.

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Fuels in Foreign Countries

If you plan on driving in another country outside the U.S. or Canada, unleaded fuel may be hard to find. Do not use leaded gasoline. If you use even one tank full, your emission controls won't work well or at all. With continuous use, spark plugs can get fouled, the exhaust system can corrode, and your engine oil can deteriorate quickly. Your vehicle's oxygen sensor will be damaged. All of that means costly repairs that 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.

You can also write us at the following address for advice. Just tell us where you're going and give your Vehicle Identification Number (VIN).

General Motors of Canada, Limited
International Export Sales
P.O. Box 828
Oshawa, Ontario L1H 7N1, Canada

Filling Your Tank

P0389

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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.

The cap is behind a hinged door on the left side of your vehicle.

Your optional fuel filler door release button is in the upper corner of the driver's side stepwell.

While refueling, hang the cap inside the fuel door.

To take off the cap, turn it slowly to the left (counterclockwise).

CAUTION

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

When you put the cap back on, turn it to the right until you hear a clicking noise.

NOTICE

If you need a new 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 or have proper venting and your fuel tank and emissions system might be damaged.

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Checking Things Under the Hood

P0469

Hood Release

To open the hood, first pull the handle inside the vehicle.

Then go to the front of the vehicle and release the secondary hood release.

K3605

Lift the hood, release the hood prop from its retainer and put the hood prop into the slot in the hood.

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CAUTION

Things that burn can get on hot engine parts and start a fire. These include liquids like gasoline, 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.

Before closing the hood, be sure all the filler caps are on properly.

K3607

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 just let the hood down and close it firmly.

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.

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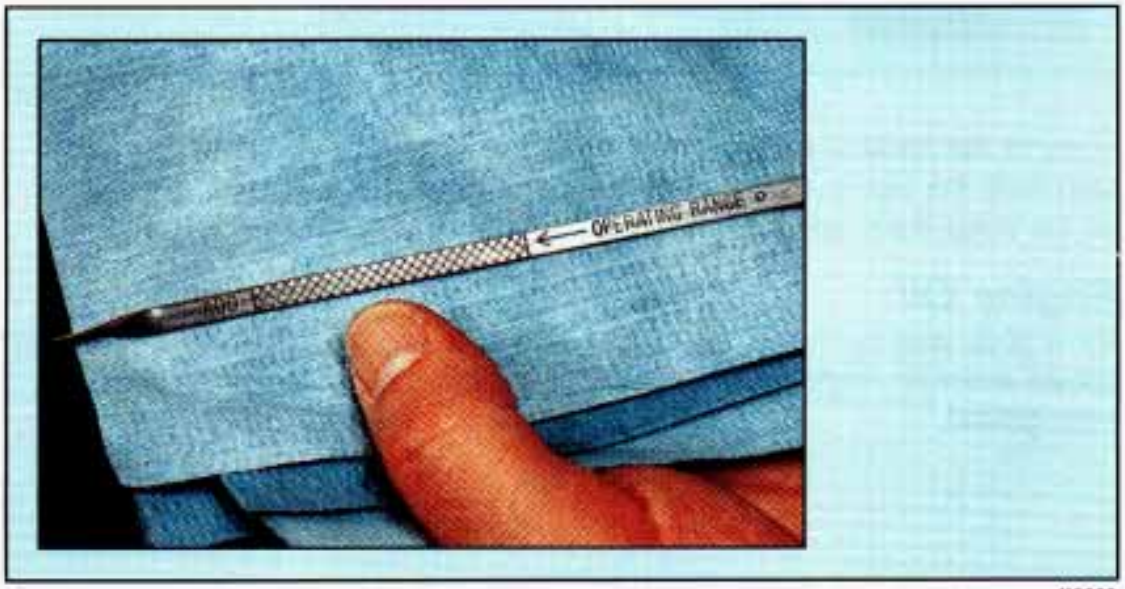
K3608

Turn off the engine and give the oil a few minutes to drain back down into the oil pan. If you don't, the oil dipstick might not show the actual level.

To Check Engine Oil: 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 lower.



K3609

When to Add Oil: If the oil is at or below the ADD line, then you'll need to add some oil. But you must use the right kind. This section explains what kind of oil to use. For crankcase capacity see "Capacities and Specifications" in the Index.

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P0384

NOTICE

Don't add too much oil. If your engine has so much oil that the level gets above the cross-hatched area that shows the proper operating range, your engine could be damaged. For crankcase capacity, see "Capacities and Specifications" in the Index.

Just 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.

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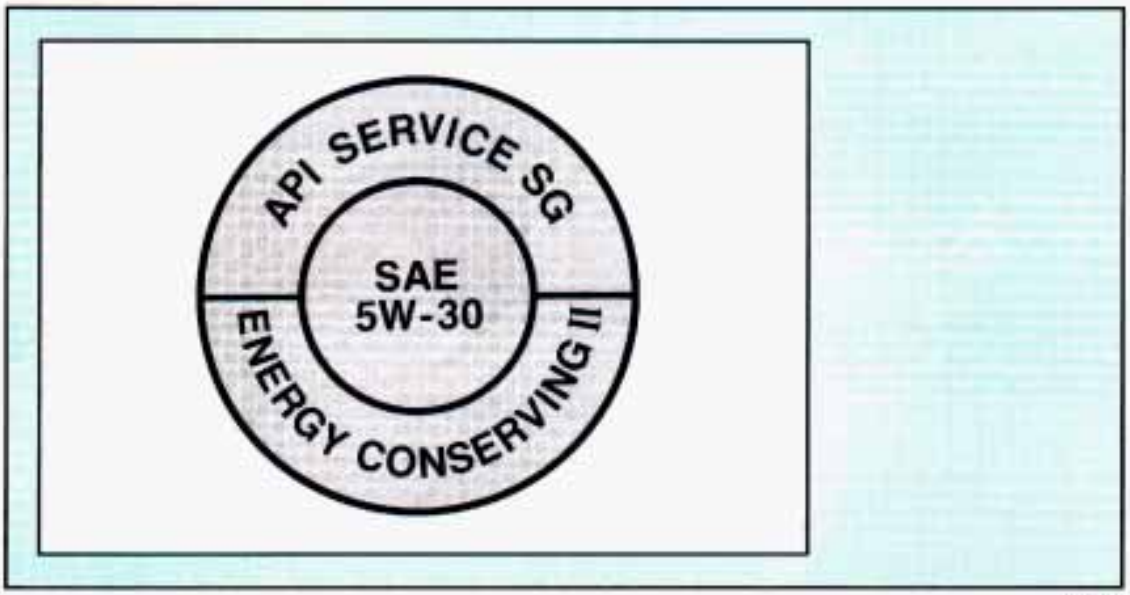

K0704

What Kind of Oil to Use:

Look for three things:

- SG

  SG must be on the oil container, either by itself or combined with other quality designations, such as SG/CC, SG/CD, SF, SG, CC, etc. These letters show American Petroleum Institute (API) levels of quality.

NOTICE

If you use oils that don't have the SG designation, you can cause engine damage not covered by your warranty.

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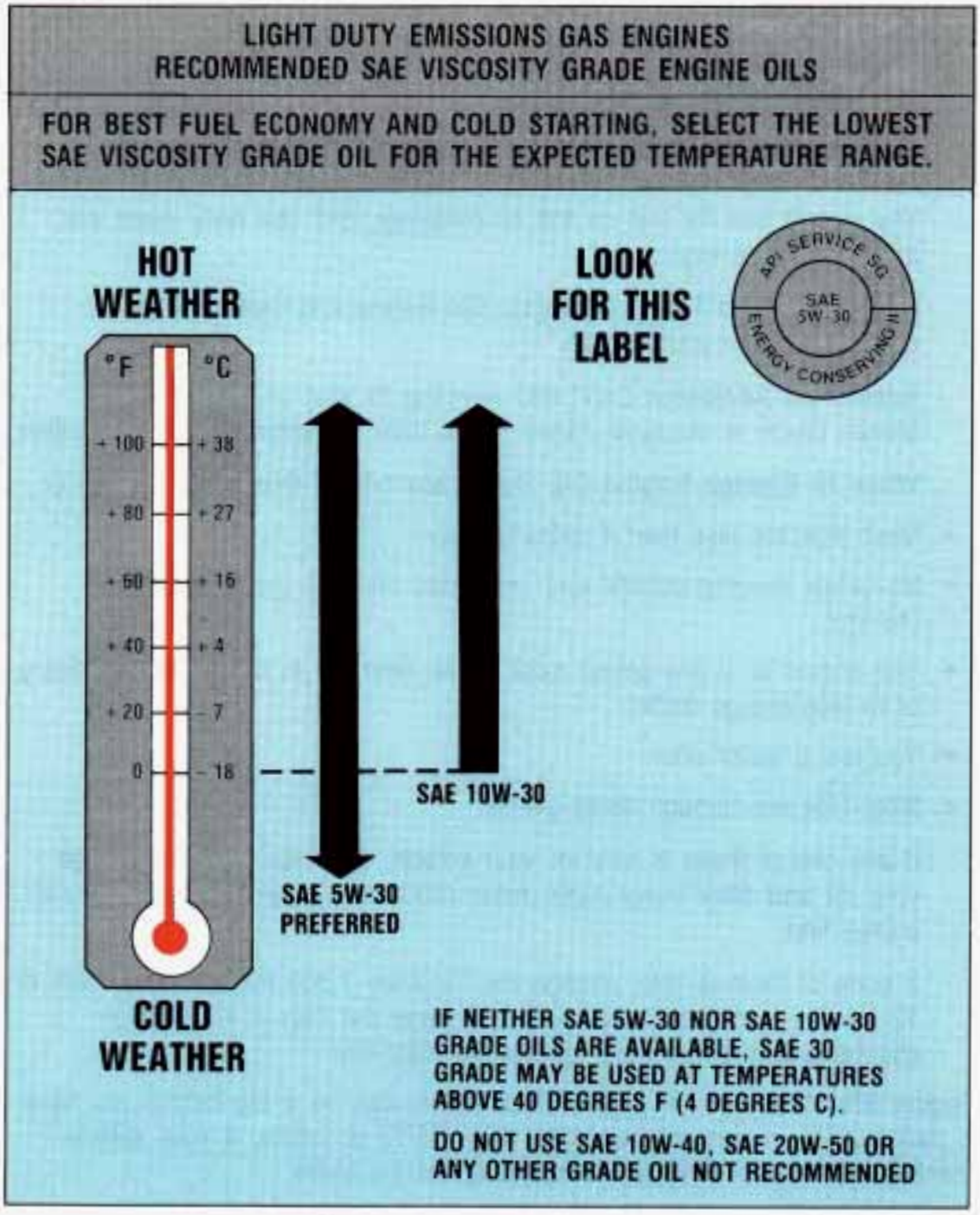

P0344

- SAE 5W-30

  As shown in this chart, 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 10W-40 or SAE 20W-50.

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- Energy Conserving II

  Oils with these words on the container will help you save fuel.

  The doughnut-shaped logo (symbol) is used on most oil containers to help you select the correct oil.

  You should look for this on the oil container, and use **only** those oils that display the logo.

  GM Goodwrench® oil (in Canada, GM Engine Oil) meets all the requirements for your vehicle.

  Engine Oil Additives: Don't add anything to your oil. Your General Motors dealer is ready to advise if you think something should be added.

  When to Change Engine Oil: See if any one of these is true for you:

- Most trips are less than 4 miles (6 km).
- It's below freezing outside and most trips are less than 10 miles (16 km).
- The engine is at low speed most of the time (as in door-to-door delivery, or in stop-and-go traffic).
- You tow a trailer often.
- Most trips are through dusty places.

  If any one of these is true for your vehicle, then you need to change your **oil and filter** every 3,000 miles (5000 km) or 3 months—whichever comes first.

  If none of them is true, change the oil every 7,500 miles (12 500 km) or 12 months—whichever comes first. Change the filter at the first oil change and at every other oil change after that.

Engine Block Heater: An engine block heater can be a big help if you have to park outside in very cold weather, 0°F (-18°C) or colder. If your vehicle has this option, see "Engine Block Heater" in the Index.

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What to Do with Used Oil:

CAUTION

⚠ Used engine oil contains things that have caused skin cancer in laboratory animals. 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.

Used oil can be a real threat to the environment. If you change your own oil, be sure to drain all free-flowing oil from the filter before disposal. Don't ever dispose of it 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 Cover

In order to replace your air cleaner filter, you will have to remove your engine cover. It is inside your vehicle behind the instrument panel extension.

To Remove the Engine Cover:

P0382

1. Move both front seats as far back as they will go.
2. Remove the instrument panel extension by removing the two screws and two nuts. The screws are on each side at the top of the extension. The nuts are on the bottom of the extension.

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P0383

3. Grasp the bottom of the extension. Lift up and then pull out.
4. Disconnect the electrical connector for the cigarette lighter. Set the extension aside.

P0380

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5. Grasp the top of the heater duct and pull down gently to remove.

P0381

6. Remove the bolt from the engine cover bracket. Loosen the nut and move the bracket out of the way.

P0659

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7. Lift up on each of the two latches at the bottom of the cover.

P0379

8. Remove the two screws at the engine cover using a long handled screwdriver. The screws are not suppose to come out of the cover, only from the front of dash. When removing the cover, be careful not to damage the instrument panel or the trim.
9. Grasp the bottom of the cover and slide it backwards. Then, lift it up and out of the vehicle.

To Install the Engine Cover:

1. Lift the engine cover into the vehicle and slide it all the way forward. Make sure the rubber seal is over the latches.
2. Install the two screws at the engine cover. Do not tighten the screws all the way.
3. Press down on each of the two latches at the bottom of the cover. Make sure they are secure.
4. Tighten the two screws at the engine cover.
5. Turn the bracket into position and install the bolt. Tighten the nut at the other end of the bracket.
6. Put the heater duct over the engine cover studs. Push up on the duct gently until it snaps into place.
7. Reconnect the electrical connector for the cigarette lighter.

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8. Grasp the bottom of the instrument panel extension and install the top into the groove first. Then, push the bottom of the extension into place.
9. Install the two nuts and two screws on the extension.

Air Cleaner

P0483

To Remove the Air Cleaner Filter:

If you have the 4.3L engine (VIN Code Z) with the round air cleaner, you must first remove the engine cover before changing the filter. (See "Engine Cover" earlier in this section.) After removing the engine cover, unscrew the wing nut to take the cover off the air cleaner. After changing the filter, put the cover back on and be sure the wing nut is properly tightened. Be sure air cleaner lid is correctly positioned to seal out dust and contaminants that are harmful to your engine.

If you have the 4.3L engine (VIN Code W) with the square air cleaner, you can change the air cleaner filter without removing the engine cover. Just lift the hood, unsnap both clips and remove the top. After changing the filter, snap both clips to secure the air cleaner. Be sure air cleaner lid is correctly positioned to seal out dust and contaminants that are harmful to your engine.

Refer to the Maintenance Schedule to determine when to replace the air cleaner filter. See "Scheduled Maintenance Services" in the Index.

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CAUTION

Operating the engine with the air cleaner 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 off.

NOTICE

If the air cleaner 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 in place when you're driving.

Automatic Transmission Fluid

When to Check and Change:

A good time to check your automatic transmission fluid level is when the engine oil is changed. Refer to the Maintenance Schedule to determine when to change your fluid. 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 a GM 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, starting a fire. 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.

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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).

To check transmission fluid hot: 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 **D** (Third Gear) until the engine temperature gage moves and then remains steady for ten minutes. Then follow the hot check procedures.

To check transmission fluid cold: A cold check is made after the vehicle has been sitting for 8 hours or more with the engine off and is used only as a reference. Let the engine run at idle for 5 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. A hot check must follow when fluid is added during a cold check.

To check the fluid hot or cold:

- Park your vehicle on a level place.
- Place the shift lever in **P** (Park) with the parking brake applied.
- 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 **P** (Park).
- Let the engine run at idle for three minutes or more.

Then, without shutting off the engine, follow these steps:

K3619

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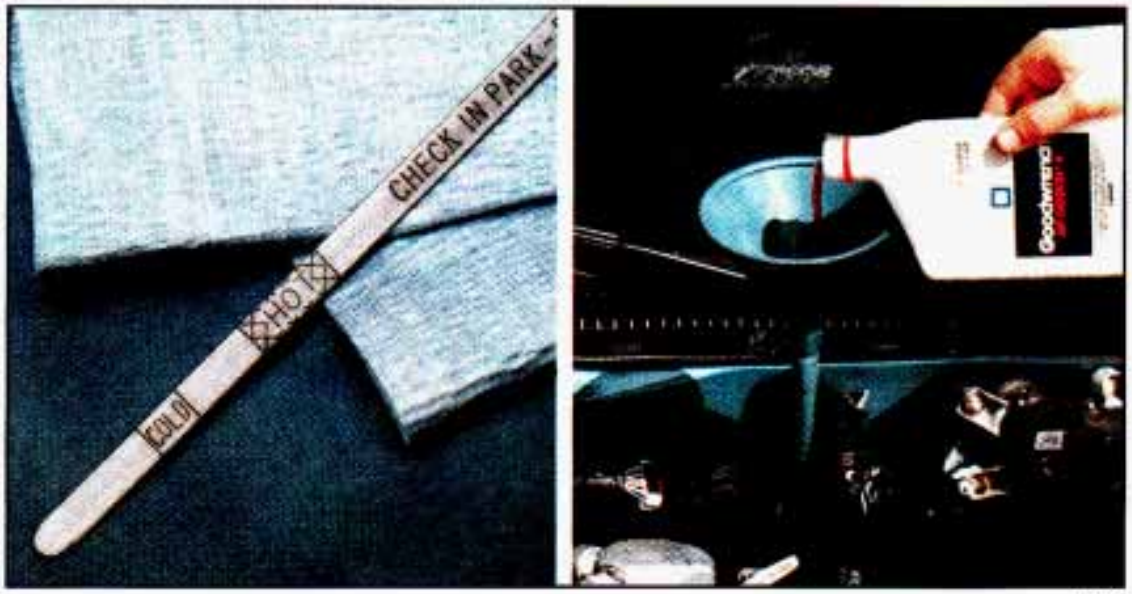
1. Pull out the dipstick and wipe it with a clean rag or paper towel.
2. Push it back in all the way, wait 3 seconds and then pull it back out again.



P0656

3. Check both sides of the dipstick, and read the lower level. The fluid level must be in the COLD area for a cold check or in the HOT area or cross-hatched area for a hot check.
4. If the fluid level is where it should be, push the dipstick back in all the way.

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.

If the fluid level is low, add only enough to bring the level up to the COLD area for a cold check or the HOT area for a hot check. It doesn't take much fluid, generally less than a pint. Don't overfill. We recommend you use only fluid labeled DEXRON®IIE, because fluids with that label are made especially for your automatic transmission. Damage caused by other fluid than DEXRON®IIE 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.

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Rear Axle

When to Check and Change Lubricant:

Refer to the Maintenance Schedule to determine how often to check the lubricant and when to change it. See "Scheduled Maintenance Services" in the Index.

How to Check Lubricant:

K3198

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.

All-Wheel Drive

If you have an all-wheel drive vehicle, be sure to perform the lubricant checks described in this section. However, they have two additional systems that need lubrication.

Transfer Case

When to Check Lubricant:

Refer to the Maintenance Schedule to determine how often to check the lubricant. See "Periodic Maintenance Inspections" in the Index.

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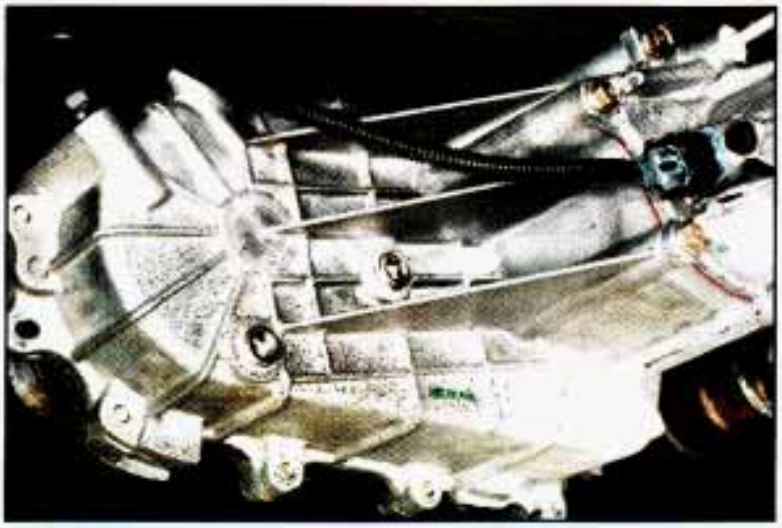
How to Check Lubricant:



K3170

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.

Front Axle

When to Check and Change Lubricant:

Refer to the Maintenance Schedule to determine how often to check the lubricant and when to change it. See "Scheduled Maintenance Services" in the Index.

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How to Check Lubricant:

K0998

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.

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Engine Coolant

P0453

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.

The proper coolant for your vehicle will:

- Give freezing protection down to -20°F (-29°C) or -40°F (-40°C) for Canadian vehicles and vehicles with the cold climate option.
- Give boiling protection up to 258°F (125°C).
- Protect against rust and corrosion.
- Help keep the proper engine temperature.
- Let the warning gages work as they should.

What to Use:

Use a mixture of **clean water** (preferably distilled) and antifreeze that meets "GM Specification 6038-M," which won't damage aluminum parts. Also use GM Engine Coolant Supplement (sealer) with a complete coolant change. If you use these, you don't need to add anything else.

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CAUTION

Adding only plain water to your cooling system can be dangerous. Plain water, or some other liquid like alcohol, can boil before the proper coolant mix will. Your vehicle's coolant warning system is set for the proper coolant mix. With plain water or the wrong mix, 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 mix of clean water and a proper antifreeze.

NOTICE

If you use an improper coolant mix, your engine could overheat and be badly damaged. The repair cost wouldn't be covered by your warranty. Too much water in the mix can freeze and crack the engine, radiator, heater core and other parts.

Some conditions, such as air trapped in the cooling system, can affect the coolant level in the radiator. Check the coolant level when the engine is cold and follow the steps under "Adding Coolant" for the proper way to add coolant.

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.

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Adding Coolant

P0408

To Check Coolant: When your engine is cold, the coolant level should be at **COLD LEVEL**, or a little higher.

When your engine is warm, the level should be up to **COLD LEVEL**, or a little higher.

To Add Coolant: If you need more coolant, add the proper mix **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 mix 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.

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Radiator Pressure Cap

P0407

NOTICE

Your radiator pressure cap is a 15 psi (105 kPa) pressure-type cap and must be tightly installed to prevent coolant loss and possible engine damage from overheating. Be sure the arrows on the pressure cap line up with overflow tube on the radiator filler neck.

When you replace your radiator pressure cap, an AC® cap is recommended.

Thermostat

Engine coolant temperature is controlled by a thermostat in the engine coolant system. The thermostat stops the flow of coolant through the radiator until the coolant reaches a preset temperature.

When you replace your thermostat, an AC® thermostat is recommended.

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Power Steering Fluid

P0665

How To Check Power Steering Fluid:

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.

- When the engine compartment is hot, the level should be at the **HOT** mark.
- When the engine compartment is cool, the level should be at the **FULL COLD** mark.

What to Add:

Refer to the Maintenance Schedule to determine what kind of fluid to use. See "Recommended Fluids and Lubricants" in the Index.

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P0667

NOTICE

When adding power steering fluid or making a complete fluid change, always use the proper fluid. Failure to use the proper fluid can cause leaks and damage hoses and seals.

Windshield Washer Fluid

P0406

To Add:

Open the cap labeled **WINDSHIELD WASHER FLUID ONLY**. Add washer fluid until the bottle is full.

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NOTICE

- When using a 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 3/4 full when it's very cold. This allows for expansion, which could damage the tank if it is completely full.
- Don't use radiator antifreeze in your windshield washer. It can damage your washer system and paint.

Brake Master Cylinder

P0405

Your brake master cylinder is here. It is filled with DOT-3 brake fluid.

There are only two reasons why the brake fluid level in your master cylinder 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.

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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.

Refer to the Maintenance Schedule to determine when to check your brake fluid. See "Periodic Maintenance Inspections" in the Index.

To Check Brake Fluid:

You can check the brake fluid without taking off the cap. Just look at the windows on the brake fluid reservoir. The fluid levels should be above **MIN**. If they aren'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 levels are above **MIN** and below the top of each window.

What To Add:

When you do need brake fluid, use only DOT-3 brake fluid—such as Delco Supreme II® (GM Part No. 1052535). Use new brake fluid from a sealed container only.

NOTICE

- DOT-5 Silicone brake fluid can damage your vehicle. Don't use it.
- Don't let someone put in the wrong kind of fluid. 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.
- Brake fluid can damage paint, so be careful not to spill brake fluid on your vehicle.

Replacing Brake System Parts

The braking system on a modern 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. Vehicles we design and test have top-quality GM brake parts in them, as your vehicle does when it is new. When you replace parts of your

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braking system—for example, when your brake linings wear down and you have to have new ones put in—be sure you get new genuine 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.

Hydro-Boost Brake System (Hydraulic Pump)

The power steering pump is also used as the Hydro-Boost pump. Refer to "Power Steering Fluid" in this section when checking the fluid level or adding fluid.

Fluid Leak Check

After the vehicle has been parked for awhile, inspect the surface beneath the vehicle for water, oil, fuel or other fluids. Water dripping from the air conditioning system is normal. If you notice fuel leaks or fumes, the causes should be found and corrected at once.

Battery

Every new GM vehicle has a Delco Freedom® battery. You never have to add water to one of these. When it's time for a new battery, we recommend a Delco Freedom® battery. Get one that has the catalog number shown on the original battery's label.

Vehicle Storage

If you're not going to drive your vehicle for 25 days or more, take off 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.

For more information on vehicle storage, contact your dealer's service department, or write to:

Adistra Corporation 171 Hamilton Street
Plymouth, MI 48170

In Canada, write to:

General Motors of Canada, Limited
Customer Services Department
Oshawa, Ontario L1J5Z6

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Bulb Replacement

Before replacing any bulbs, make sure all lights are off and the vehicle is not running.

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. Take special care when handling and disposing of halogen bulbs.

Headlights

P0404

1. Open the hood.
2. Remove the four Torxhead® screws from the headlight bezel. Pull the bezel out so you can see the parking/turn-signal sockets.
3. Press the tab and turn the socket to the left to remove the socket from the bezel. If the socket does not have a tab, turn the socket to the left.

   Set the bezel aside.

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P0403

4. Remove the four retainer screws and the retainer.
5. Pull the connector out and unplug the light.
6. Install the new bulb into the connector.
7. Reverse steps 1-5 to reinstall the headlight.

Front Parking/Turn Signal Lights

1. Open the hood.
2. Remove the four Torxhead screws from the headlight bezel. Pull the bezel out so you can see the parking/turn signal lights.

P0401

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3. Press the tab and turn the socket to the left to remove the socket from the bezel.

   If the socket does not have a tab, turn the socket to the left to remove the socket from the bezel.

4. Pull out the bulb and replace it with the new bulb.
5. Reverse steps 1-3 to reinstall the headlight.

Taillights

P0402

1. Open the rear door.
2. Remove the two screws behind the door. Pull out the taillight assembly so you can see the socket.

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P0400

3. Press the tab and turn the socket to the left to remove the socket from the bezel.

   If the socket does not have a tab, turn the socket to the left to remove the socket from the bezel.

4. Pull out the bulb and replace it with the new bulb.
5. Reverse steps 1-3 to reinstall the taillight.

Other Maintenance Items

Front Suspension and Steering Linkage

The Maintenance Schedule will tell you how often to lubricate the fittings. See "Recommended Fluids and Lubricants" in the Index for the proper lubricant to use.

Front Wheel Bearings (Two-Wheel Drive)

If your vehicle is two-wheel drive, the front wheel bearings must be cleaned and repacked at certain intervals. The Maintenance Schedule will tell you how often this must be done.

Single Belt Accessory Drive

Your new vehicle uses a serpentine belt that is lighter, more durable and fuel efficient than systems with several belts.

The belt runs over or around the pulleys on the engine. A tensioner is used to keep the belt tight at all times. The tensioner also makes replacing the belt easier. If you need to replace the belt, be sure to get the correct

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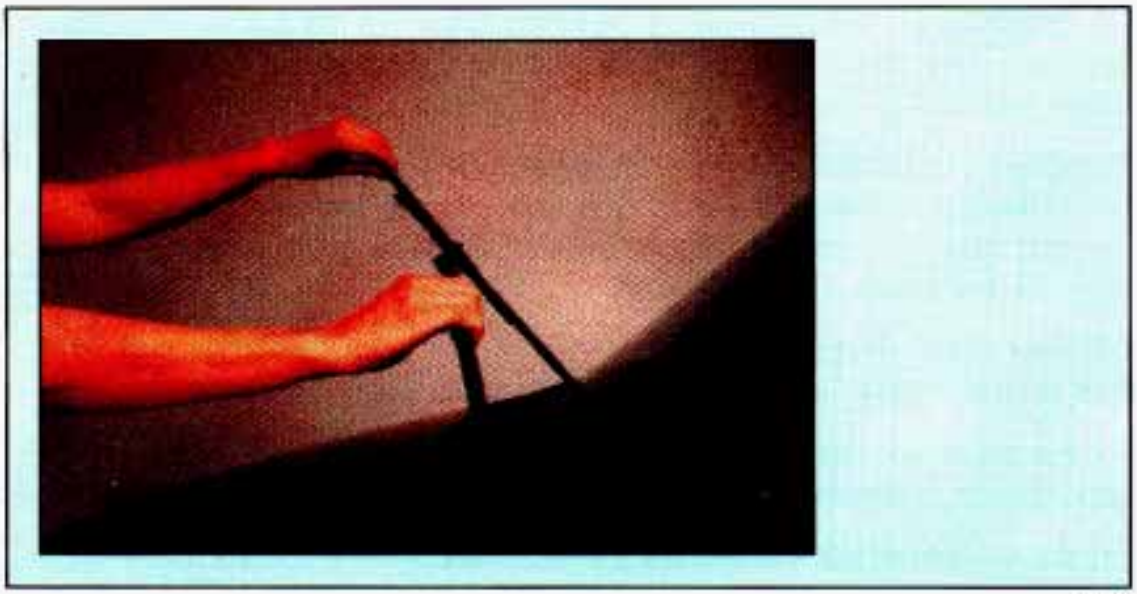
replacement belt. Your dealership or parts supplier can help you with this. The Accessory Drive Belt Routing label on your vehicle will show you how to route the belt your vehicle uses.

Windshield Wiper Blade Inserts



K3630

To replace your wiper blade inserts, pinch the two tabs on the wiper arm and slide the insert out of the blade. When you slide the new one into place, be sure the tabs are locked in position.

Air Conditioning

Every now and then have your dealership check your air conditioning system to be sure it has not lost any cooling ability. If you think the system is not working properly, have your dealership check it out as soon as possible.

The air conditioning will not work when the temperature is below 40°F (4°C).

Lubrication

Accelerator Control System

Refer to the Maintenance Schedule to determine how often the accelerator linkage pivot points must be lubricated and what type of lubricant to use.

Accelerator cables and cruise control cables should not be lubricated. Any cables that are worn or are hard to pull should be replaced.

When cleaning the engine compartment with water or steam, avoid directing the flow onto the throttle linkage in a manner that would cause moisture to enter the cables.

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Hood Latches and Hood Hinge

The Maintenance Schedule will tell you how often to lubricate the hood latch and hood hinge assembly. See "Recommended Fluids and Lubricants" in the Index for the proper lubricant to use.

Propeller Shaft Slip Splines/Universal Joints

The Maintenance Schedule will tell you how often the slip splines must be lubricated. See "Recommended Fluids and Lubricants" in the Index for the proper lubricant to use.

Constant Velocity Joints (All-Wheel Drive Only)

The Maintenance Schedule will tell you how often to lubricate the the constant velocity joints. See "Recommended Fluids and Lubricants" in the Index for the proper lubricant to use.

Sliding Door Tracks

Your vehicle's sliding door has three tracks which need lubrication.

For the upper and lower tracks, open the door, wipe the track clean and then lubricate with Lubriplate® White Grease.

For the outside middle track, close the door after you finish the upper and lower tracks. Then, wipe the track clean and lubricate with Lubriplate® White Grease.

Body

Normal use of your vehicle will cause metal-to-metal wear at some points on the cab and body if they are not lubricated.

For exposed surfaces, such as door checks, door lock bolts, lock striker plates, dovetail bumper wedges, etc., a thin film of engine oil should be applied.

Where oil holes are provided in the body or cab, a dripless oil can be used.

The seat adjusters and seat track should be lubricated with chassis grease.

Door weatherstrips and rubber hood bumpers should be lightly coated with a rubber lubricant.

Never use too much of any lubricant and be sure to wipe up any extra lubricant when you are finished.

Some parts that need lubricating are hard to get at. Window regulators and controls are inside the doors. You can get to these by removing the trim panels.

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The Maintenance Schedule will tell you how often to lubricate these items. See "Recommended Fluids and Lubricants" in the Index for the proper lubricant to use.

Lock Cylinders

To be sure your locks operate properly, they must be lubricated. The Maintenance Schedule will tell you how often to lubricate them. See "Recommended Fluids and Lubricants" in the Index for the proper lubricant to use.

You should not use penetrating oils because they could wash out the factory installed lubricant and cause the lock to bind. De-icers which contain alcohol could also wash away the lubricant, so be sure to lubricate the lock after using a de-icer of this type.

Exhaust System

To help prevent damage to your exhaust system, do not continue to drive your vehicle if you notice:

- Engine misfiring
- Loss of performance
- Other unusual operating conditions

Have your engine and exhaust system serviced regularly.

Three-Way Catalytic Converter

Your vehicle's three-way catalytic converter is designed to reduce the pollutants in your vehicle's exhaust. Use only unleaded fuel in your vehicle. If you use leaded fuel, you could damage your three-way catalytic converter, and other emission control components.

Malfunction Indicator Lamp (SERVICE ENGINE SOON light)

The Malfunction Indicator Lamp (**SERVICE ENGINE SOON**light) on your instrument panel lets you know when your emission system needs service. The light will come on briefly when you start your engine to let you know that the system is working. If it does not come on when you start your engine, or if it comes on and stays on while you're driving, your system may need service. Your vehicle should still be driveable, but you should have your system serviced right away.

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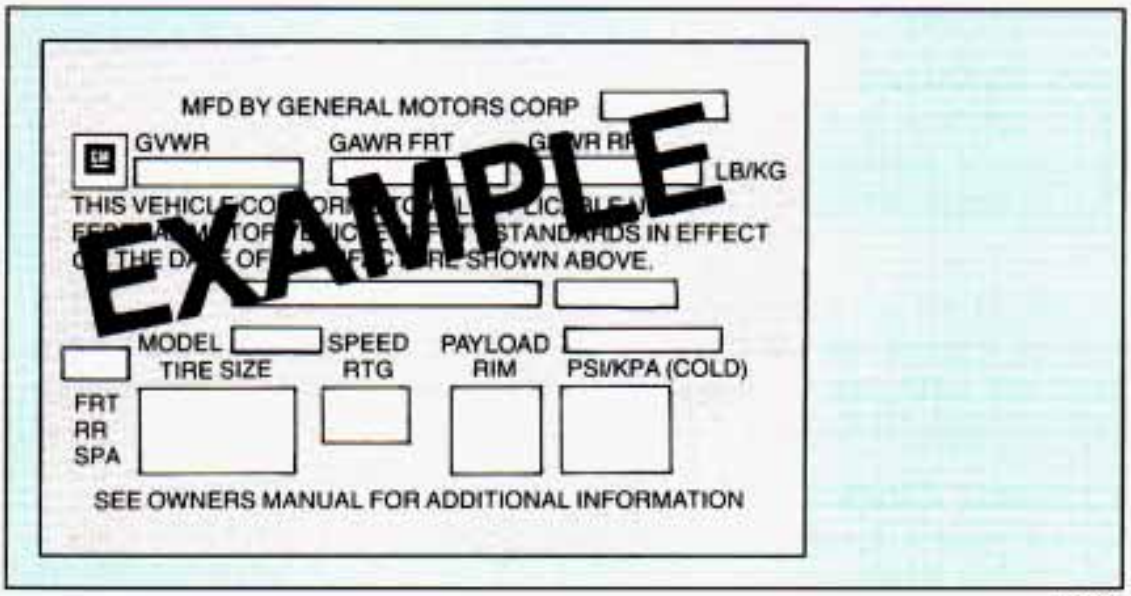
Loading Your Vehicle



K3651

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 vehicle weight capacity of your vehicle. This is called the GVWR (Gross Vehicle Weight Rating). 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 Gross Axle Weight Rating (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 the maximum front and rear GAWRs. If you do, parts on your vehicle can break, or it can change the way your vehicle handles. These could cause you to lose control. Also, overloading can shorten the life of your vehicle.

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Using heavier suspension components to get added durability might not change your weight ratings. Ask your dealer to help you load your vehicle the right way.

NOTICE

Your warranty does not cover parts or components that fail because of overloading.

If you put things inside your vehicle—like suitcases, tools, packages, or anything else—they will go as fast as the vehicle goes. If you have to stop or turn quickly, or if there is a crash, they'll keep going.

CAUTION

Things you put inside your vehicle can strike and injure people in a sudden stop or turn, or in a crash.

- Put things in the cargo area of your vehicle. Try to spread the weight evenly.
- Never stack heavier things, like suitcases, inside the vehicle so that some of them are above the tops of the seats.
- 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.

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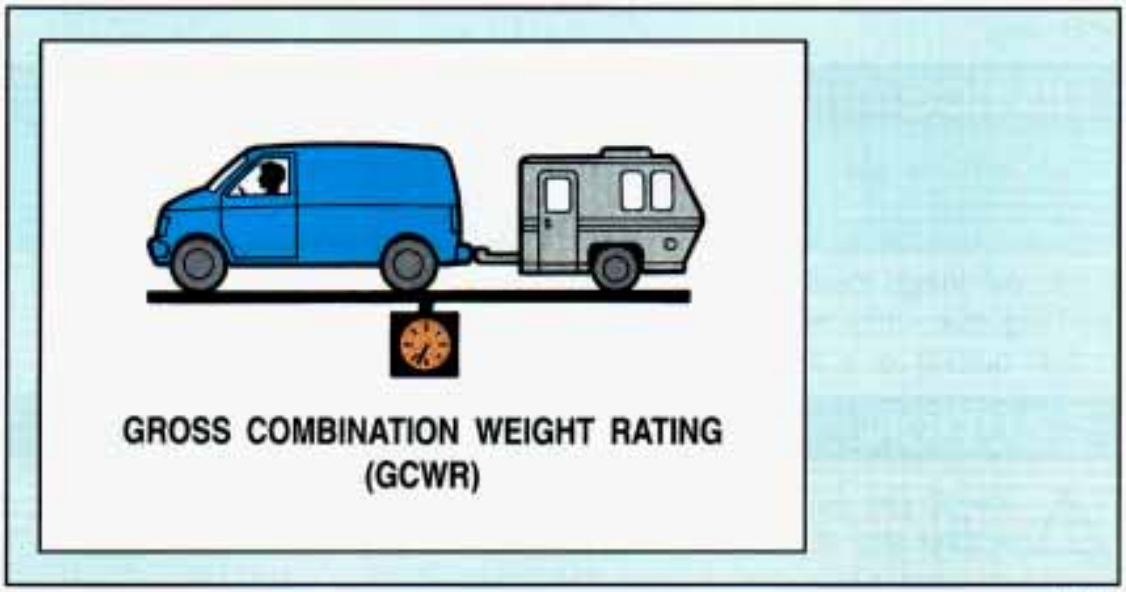
Trailering Package



P0471

If your vehicle comes 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 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.

NOTICE

Your warranty doesn't cover parts or components that fail because of overloading.

Tires

We don't make tires. Your new vehicle comes with high quality tires made by a leading tire manufacturer. These tires are warranted by the tire manufacturers and their warranties are delivered with every new vehicle. If your spare tire is a different brand than your road tires, you will have a tire warranty folder from each of these manufacturers.

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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 the tires are cold.
- Overinflated tires are more likely to be cut, punctured, or broken by sudden impact (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.
- Don't drive over 85 mph (135 km/h) even if it's legal, unless you have the correct high speed rated tires.

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 a mile.

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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:

- Too much flexing
- Too much heat
- Tire overloading
- Bad wear
- Bad handling
- Bad fuel economy.

If your tires have too much air (overinflation), you can get:

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

When to Check: Check your tires once a month or more. Don't forget your compact spare tire. It should be at 60 psi (420 kPa).

How to Check: Use a good quality pocket-type gage to check tire pressure. Simply looking at the tires will not tell you the pressure, especially if you have radial tires—which may look properly inflated even if they're underinflated.

If your tires have valve caps, be sure to put them back on. They help prevent leaks by keeping out dirt and moisture.

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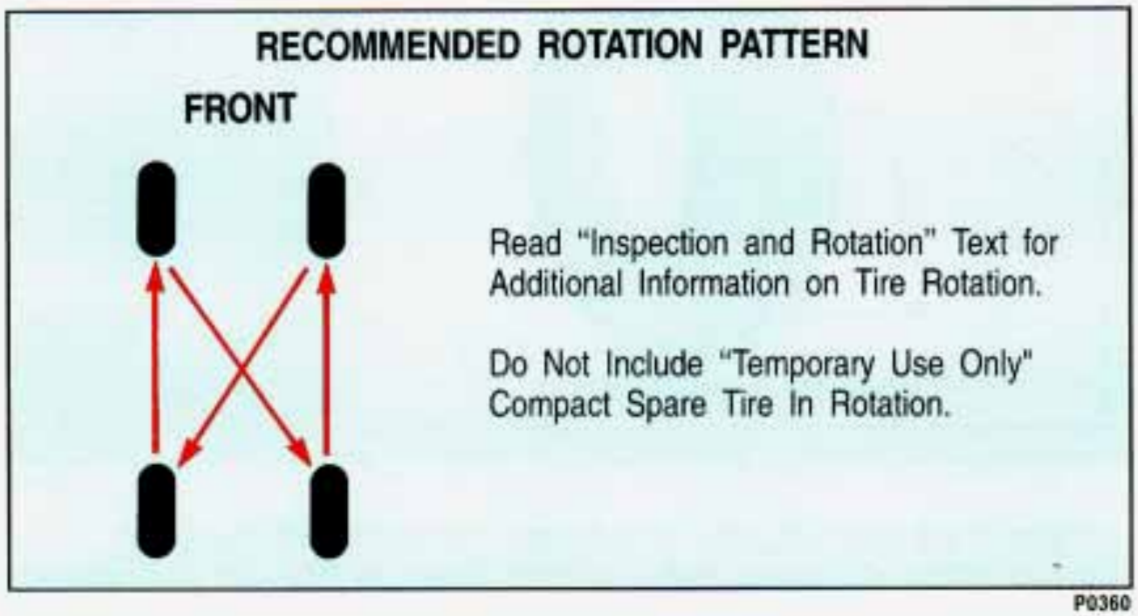
Tire Inspection and Rotation

To make your tires last longer, have them inspected and rotated at the mileages recommended in the Maintenance Schedule. See "Scheduled Maintenance Services" in the Index.



P0360

Use this rotation pattern.

If your vehicle has front tires with different load ratings or tread designs (such as all season vs. on/off road) than the rear tires, don't rotate your tires front to rear.

After the tires have been rotated, adjust the front and rear inflation pressure 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 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.)

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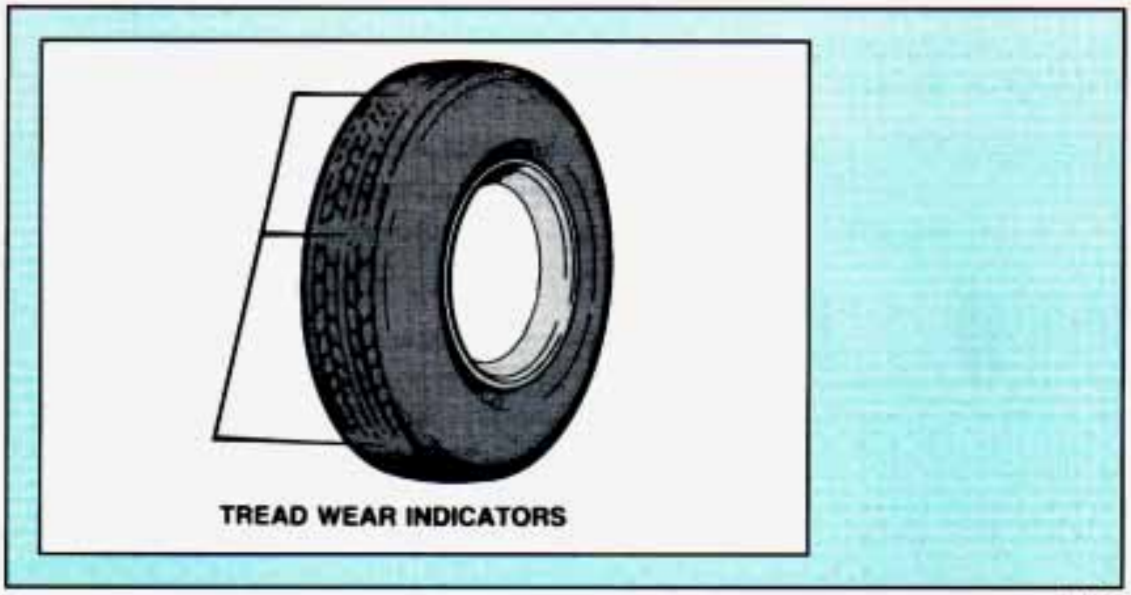
When It's Time for New Tires



K1656

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 2/32 inch (1.6 mm) or less of tread remaining.

You need a new tire if:

- You can see the indicators at three 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 because of the size or location of the damage.

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 a "MS" (for mud and snow).

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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 (like radial and bias-belted tires) the vehicle may not handle properly, and you could have a crash. Be sure to use the same size and type tires on all wheels.

It's all right to drive with your compact spare, though. It was developed for limited use on your vehicle.

Uniform Tire Quality Grading

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.)

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—A, B, C

The traction grades, from highest to lowest are: A, B, and C. They 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 braking (straight-ahead) traction tests and does not include cornering (turning) traction.

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

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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.

These grades are molded on the sidewalls of passenger car tires.

While the tires available as standard or optional equipment on General Motors vehicles may vary with respect to these grades, all such tires meet General Motors performance standards and have been approved for use on General Motors vehicles. All passenger type (P Metric) tires must conform to Federal safety requirements in addition to these grades.

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.

In most cases, you will not need to have your wheels aligned again. 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. If wheel nuts keep coming loose the wheel, wheel bolts, and wheel nuts should be replaced. If the wheel leaks air out, replace it (except some aluminum wheels, which can sometimes be repaired). See your GM 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 you have the right wheel, wheel bolts, and wheel nuts for your vehicle.

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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/odometer calibration, headlight aim, bumper height, vehicle ground clearance, and tire or tire chain clearance to the body and chassis.

Used Replacement Wheels

CAUTION

Putting a used wheel on your vehicle is dangerous. You can't know how it's been used or how many miles it's been driven. It could fail suddenly and cause an accident. If you have to replace a wheel use a **new** GM original equipment wheel.

Tire Chains

NOTICE

If your vehicle has P245/60R15 size tires, don't use tire chains; they can damage your vehicle.

If you have other size tires, use tire chains only when you must. Use only SAE Class "S" type chains that are the proper size for your tires. Install them on the rear axle tires and tighten them as tightly as possible with the ends securely fastened. Drive slowly and follow the chain manufacturer's instructions. If you can hear the chains contacting your vehicle, stop and retighten them. If the contact continues, slow down until it stops. Driving too fast with chains on will damage your vehicle.

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Appearance Care

P0399

CAUTION

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 in a container to clean your vehicle, be sure to follow the 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.

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NOTICE

Don't use any of these unless this manual says you can. In many uses, they will damage your vehicle:

- 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 with a clean, damp cloth.

Your GM dealer has two GM cleaners—a solvent-type spot lifter and a foam-type powdered cleaner. They will clean normal spots and stains very well.

Here are some cleaning tips:

- Always read the instructions on the cleaner label.
- Clean up stains as soon as you can—before they set.
- Use a clean cloth or sponge, and change to a clean area often. A soft brush may be used if stains are stubborn.
- Use solvent-type cleaners in a well ventilated area only. If you use them, don't saturate the stained area.
- If a ring forms after spot cleaning, clean the entire area immediately or it will set.

Using Foam-Type Cleaner on Fabric

- Vacuum and brush the area to remove any loose dirt.
- Always clean a whole trim panel or section. Mask surrounding trim along stitch or welt lines.
- Mix Multi-Purpose Powdered Cleaner following the directions on the container label.
- Use suds only and apply with a clean sponge.
- Don't saturate the material.
- Don't rub it roughly.

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- As soon as you've cleaned the section, use a sponge to remove the suds.
- Rinse the section with a clean, wet sponge.
- Wipe off what's left with a slightly damp paper towel or cloth.
- Then dry it immediately with an air hose, a hair dryer or a heat lamp.

NOTICE

Be careful with a hair dryer or heat lamp. You could scorch the fabric.

- Wipe with a clean cloth.

Using Solvent-Type Cleaner on Fabric

First, see if you have to use solvent-type cleaner at all. Some spots and stains will clean off better with just water and mild soap.

If you need to use it, then:

- Gently scrape excess soil from the trim material with a clean, dull knife or scraper. Use very little cleaner, light pressure and clean cloths (preferably cheesecloth). Cleaning should start at the outside of the stain, "feathering" toward the center. Keep changing to a clean section of the cloth.
- When you clean a stain from fabric, immediately dry the area with an air hose, hair dryer, or heat lamp to help prevent a cleaning ring. (See previous NOTICE.)

Fabric Protection

Your vehicle has upholstery that has been treated with Scotchgard™ Fabric Protector, a 3M product. Scotchgard™ protects fabrics by repelling oil and water, which are the carriers of most stains. Even with this protection, you still need to clean your upholstery often to keep it looking new.

Further information on cleaning is available by calling 1-800-433-3296 (in Minnesota, 1-800-642-6167).

Special Cleaning Problems

Greasy or Oily Stains: Like grease, oil, butter, margarine, shoe polish, coffee with cream, chewing gum, cosmetic creams, vegetable oils, wax crayon, tar and asphalt.

- Carefully scrape off excess stain.
- Then follow the solvent-type instructions above.

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- Shoe polish, wax crayon, tar and asphalt will stain if left on a vehicle seat fabric. They should be removed as soon as possible. Be careful, because the cleaner will dissolve them and may cause them to bleed.

Non-Greasy Stains: Like catsup, coffee (black), egg, fruit, fruit juice, milk, soft drinks, wine, vomit, urine and blood.

- Carefully scrape off excess stain, then sponge the soiled area with cool water.
- If a stain remains, follow the foam-type instructions above.
- 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.
- Finally, if needed, clean lightly with solvent-type cleaner.

Combination Stains: Like candy, ice cream, mayonnaise, chili sauce and unknown stains.

- Carefully scrape off excess stain, then clean with cool water and allow to dry.
- If a stain remains, clean it with solvent-type cleaner.

Cleaning Vinyl or Leather

Just 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 solvent-type vinyl/leather cleaner.

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.

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.

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Glass

Glass should be cleaned often. GM Glass Cleaner (GM Part No. 1050427) or a liquid household glass cleaner will remove normal tobacco smoke and dust films.

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, Backglass and Wiper Blades

If the windshield is not clear after using the windshield washer, or if the wiper blade chatters when running, wax or other material may be on the blade or windshield.

Clean the outside of the windshield with GM Windshield Cleaner, Bon-Ami Powder® (GM Part No. 1050011). The windshield is clean if beads do not form when you rinse it with water.

Clean the blade by wiping vigorously with a cloth soaked in full strength windshield washer solvent. Then rinse the blade with water.

Wiper blades should be checked on a regular basis and replaced when worn.

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. Don't use strong soaps or chemical detergents. Use liquid hand, dish or car washing (non-detergent) soaps. Don't use cleaning agents 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 a 100% cotton towel to avoid surface scratches and water spotting.

High pressure vehicle washes may cause water to enter your vehicle.

Finish Care

Occasional waxing or mild polishing of your vehicle 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.)

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Your vehicle has a "basecoat/clearcoat" finish. The clearcoat gives more depth and gloss to the colored basecoat.

NOTICE

Machine compounding or aggressive polishing on a basecoat/clearcoat paint finish may dull the finish or leave swirl marks.

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 GM 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 a high polish, is recommended for all bright metal parts.

Aluminum Wheels (If So Equipped)

Your aluminum wheels have a protective coating similar to the painted surface of your vehicle. Don't use strong soaps, chemicals, chrome polish, or other abrasive cleaners on them because you could damage this coating. After rinsing thoroughly, a wax may be applied.

NOTICE

If you have aluminum wheels, don't use an automatic vehicle wash that has hard silicon carbide cleaning brushes. These brushes can take off the protective coating.

Weatherstrips

These are places where glass or metal meets rubber. Silicone grease there will make them last longer, seal better, and not stick or squeak. Apply silicone grease with a clean cloth at least every six months.

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.

Foreign Material

Calcium chloride and other salts, ice melting agents, road oil and tar, tree sap, bird droppings, chemicals from industrial chimneys, and other foreign matter can damage your vehicle's finish if they remain on painted surfaces. Use cleaners that are marked safe for painted surfaces for these stains.

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Finish Damage

Any stone chips, fractures or deep scratches in the finish should be repaired right away. Bare metal will corrode quickly and may develop into a major repair expense.

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 vehicle washing system can do this for you.

Fiberglass Springs

NOTICE

Don't use corrosive or acidic cleaning agents, engine degreasers, aluminum cleaning agents or other harsh solvents to clean fiberglass springs; they'll damage the springs.

Chemical Paint Spotting

Some weather and atmospheric conditions can create a chemical fallout. Airborne pollutants 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 caused this, General Motors 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 comes first.

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Appearance Care Materials Chart

PART NUMBER	SIZE	DESCRIPTION	USAGE
1050172	16 oz. (0.473L)	Tar and Road Oil Remover	Removes old waxes, polishes, tar and road oil
1050173	16 oz. (0.473L)	Chrome Cleaner and Polish	Removes rust and corrosion on chrome and stainless steel
1050174	16 oz. (0.473L)	White Sidewall Tire Cleaner	Cleans white and black tires
1050214	32 oz. (0.946L)	Vinyl/Leather Cleaner	Spot and stain removal on leather or vinyl
1050244	16 oz. (0.473L)	Fabric Cleaner	Spot and stain removal on cloth and fabric
1050427	23 oz. (0.680L)	Glass Cleaner	Glass cleaning and spot cleaning on vinyls
1050429	6 lbs. (2.72 kg)	Multi-Purpose Powder Cleaner	Cleans vinyl and cloth on door trim, seats, and carpet—also tires and mats
1050729	8 oz. (0.237L)	Vinyl Top Cleaner	Cleaning of vinyl tops
1051055	16 oz. (0.473L)	Preservatone	Vinyl top dressing
1051398	8 oz. (0.237L)	Spot Lifter	Spot and stain removal on cloth and fabric
1052870	16 oz. (0.473L)	Wash-Wax (conc.)	Exterior wash
1050201	16 oz. (0.473L)	Magic Mirror Cleaner-Polish	Exterior cleaner and polish
			T0077

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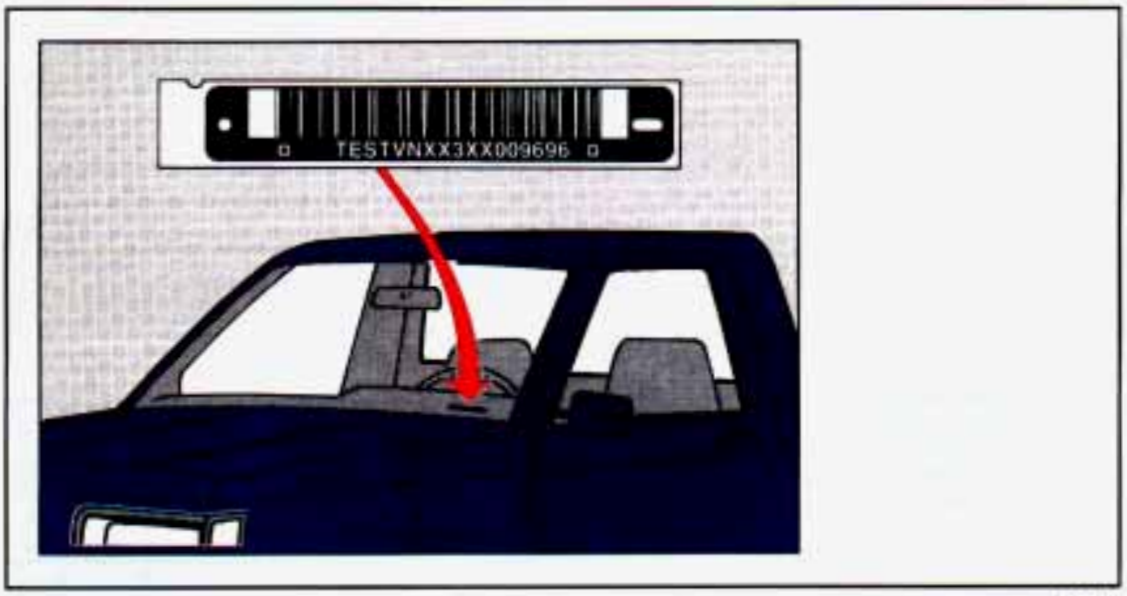
Vehicle Identification Number (VIN)



K0641

This is the legal identifier for your vehicle. It appears on a plate in the front corner of the instrument panel, on the driver's side. You can see it if you look through the windshield from outside your vehicle. The VIN also appears on the Vehicle Certification and Service Parts labels and the certificates of title and registration.

Engine Identification

The eighth character in your VIN is the engine code for your GM engine. This code will help you identify your engine, specifications, and replacement parts in this section.

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VEHICLE IDENTIFICATION NUMBER (VIN)

2 G C D C 1 4 K 8 P 1 1 3 2 1 6 6

Nation of Origin
1 = US Built
2 = Canadian Built

Manufacturers
G=General Motors

Code	Make
A	Chevrolet Bus*
B	Chevrolet Incomplete
C	Chevrolet Truck
D	GMC Incomplete
H	Oldsmobile MPV
J	GMC Bus*
K	GMC MPV
N	Chevrolet MPV
T	GMC Truck

*When van seating exceeds 10 passengers

GVWR/BRAKE SYSTEM

Code	GVWR Range	Brake System
B	3,001-4,000	Hydraulic
C	4,001-5,000	Hydraulic
D	5,001-6,000	Hydraulic
E	6,001-7,000	Hydraulic
F	7,001-8,000	Hydraulic
G	8,001-9,000	Hydraulic
H	9,001-10,000	Hydraulic
J	10,001-14,000	Hydraulic
K	14,001-16,000	Hydraulic

Code	Series
1	1/2 Ton
2	3/4 Ton
3	1 Ton

Check Digit

Code	Body Type
0	Chassis Only
1	Hi-Cube/Cutaway Van
2	Forward Control
3	Four-Door Cab/Utility
4	Two-Door Cab
5	Van/Short Van
6	Suburban
7	Motor Home Chassis
8	Two-Door Utility
9	Extended Cab/Extended Van

Line and Chassis Type

Code	Line	Chassis Type
C	Conventional Cab	4x2
D	Military Truck	4x4
K	Conventional Cab	4x4
G	Van	4x2
P	Forward Control	4x2
S	Sm Conventional Cab	4x2
T	Sm Conventional Cab	4x4
M	Sm Van	4x2
L	Sm Van	4x4
H	Chassis Cutaway	4x2

Engine Type and Make

Code	Producer	Type	RPO
A	CPC	2.5L L4 TBI	L38
C	CPC	6.2L V8 Diesel	LH6
F	CPC	6.5L V8 Diesel-Turbo	L65
H	CPC	5.0L V8 TBI	LO3
J	CPC	6.2L V8 Diesel	LL4
K	CPC	5.7L V8 TBI	LO5
N	CPC	7.4L V8 TBI	L19
R	CPC	2.8L V6 TBI	LL2
W	CPC	4.3L V6 CPI	L35
Z	CPC	4.3L V6 TBI	LB4

Production Sequence Number

Code	Year
P	1993

Assembly Plant

B	Baltimore, MD
E	Pontiac, MI
J	Janesville, WI
K	Linden, NJ
Z	Fort Wayne, IN
O	Pontiac, MI
1	Oshawa, ON
2	Moraine, OH
3	Detroit, MI
4	Scarsborough, ON
7	Lordstown, OH
8	Shreveport, LA

P0172

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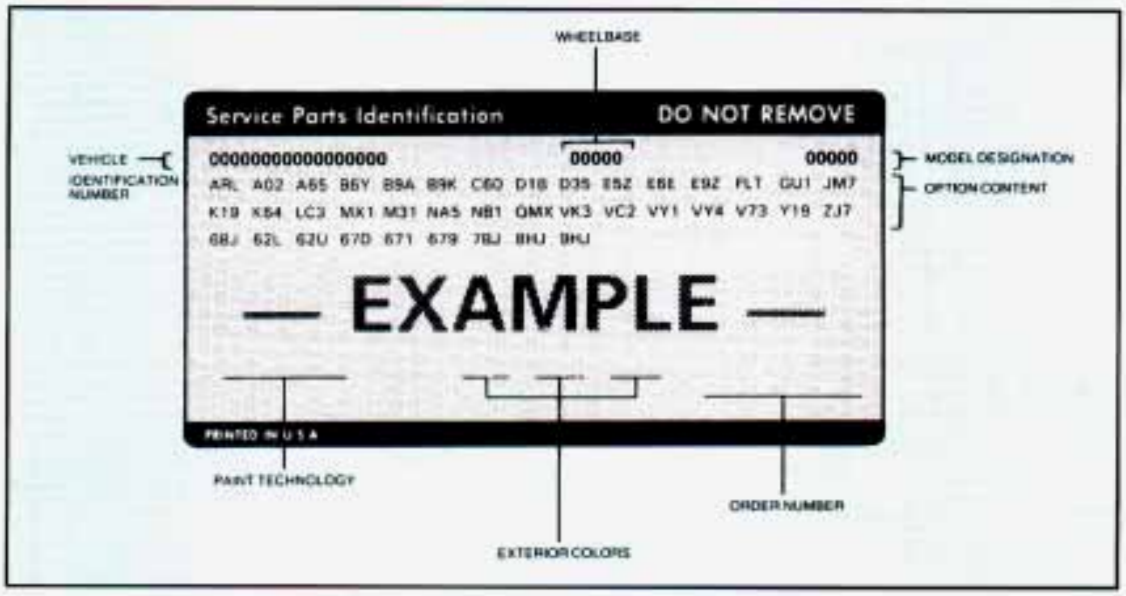
Service Parts Identification Label



K2680

You'll find this label on the inside of the glove box door. It's very helpful if you ever need to order parts. On this label is:

- Your VIN.
- Its model designation.
- Paint information.
- A list of all production options and special equipment.

Be sure that this label is not removed from the vehicle.

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 of it can just keep other things from working as they should.

Fuses and Circuit Breakers

The wiring circuits in your vehicle are protected from short circuits by a combination of fuses, circuit breakers, and fusible thermal links in the wiring itself. This greatly reduces the chance of fires caused by electrical problems. See "Fuses and Circuit Breakers" in the Index for more information.

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Headlights

The headlight wiring is protected by a circuit breaker in the light switch. An electrical overload will cause the lights to go on and off, or in some cases to remain off. If this happens, have your headlight wiring checked right away.

Windshield Wipers

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. If the overload is caused by some electrical problem and not snow, etc., be sure to get it fixed.

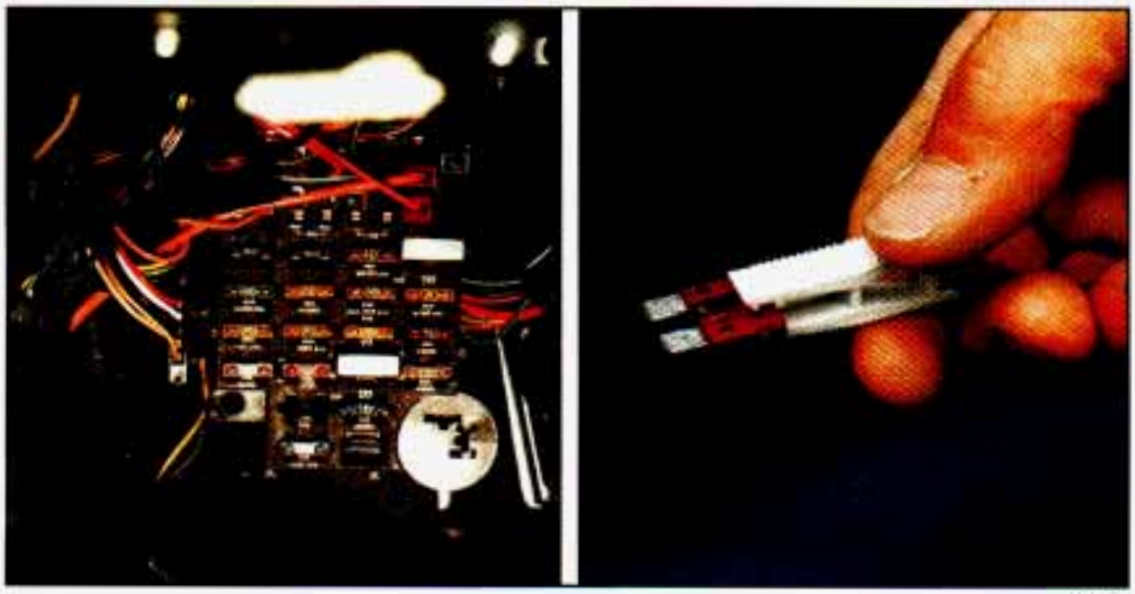
Power Windows and Other Power Options

Circuit breakers in the fuse panel protect the power windows and other power accessories. When the current load is too heavy, the circuit breaker opens and closes, protecting the circuit until the problem is fixed or goes away.

Trailer Wiring Harness

The optional seven-wire trailer wiring harness is protected by an in-line fuse in the battery feed wire. This fuse is near the junction block. See "Trailer Wiring Harness" in the Index.

Fuse Block



K3629

The fuse block is under the instrument panel on the driver's side. You can remove the cover with a screwdriver and then remove fuses with a fuse extractor. To remove fuses if you don't have one, hold the end of the fuse between your thumb and index finger and pull straight out.

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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 correct value. 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 value you need. Replace it as soon as you can. See "Fuses and Circuit Breakers" in the Index for more information.

Capacities and Specification Charts

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.

Engine Identification

ENGINE IDENTIFICATION					
Liter Displacement	Type	VIN Engine Code	Fuel System	Produced By	Emissions
4.3L	V6	Z	TBI*	U.S.	L.D.
4.3L	V6	W	CPI**	U.S.	L.D.

* Throttle Body Electronic Fuel Injection
** Central Port Electronic Fuel Injection

T0004

Wheel Nut Torque

Base or Optional Wheel	100 ft. lbs. (140 N·m)

T0216

Cooling System

ENGINE	VIN CODE	QUANTITY	
		Without Rear Heater	With Rear Heater
4.3L	Z	13.5 Quarts (12.8 Liters)	16.5 Quarts (15.5 Liters)
4.3L	W	13.5 Quarts (12.8 Liters)	16.5 Quarts (15.5 Liters)

All quantities are approximate.
After refill, the level MUST be checked.

T0006

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Air Conditioning Refrigerants

Not all air conditioning refrigerants are the same. If the air conditioning system in your vehicle needs refrigerant, be sure the proper refrigerant is used. If you're not sure, ask your GM dealer.

Air Conditioning Refrigerant Capacity

TYPE	SYSTEM	QUANTITY
R-12	C-60	3.00 lbs. (1.4 kg)
R-12	C-69	3.75 lbs. (1.7 kg)
		T0239

Crankcase

ENGINE	VIN CODE	QUANTITY	
		Without Filter	With Filter
4.3L	Z	4 Quarts (3.8 Liters)	4.5 Quarts (4.3 Liters)
4.3L	W	4 Quarts (3.8 Liters)	4.5 Quarts (4.3 Liters)

All quantities are approximate.
After refill, the level MUST be checked.

T0186

Fuel Tank

TYPE	QUANTITY
Standard	27 Gallons (102 Liters)

Quantity is approximate.

T0187

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Light Bulb Data

Lamp or Bulb	Quantity	Trade No.	Power Rating at 12.8V, Watts
Exterior Lights:			
Headlamps	2	6052	65/55
Halogen	2	H6054	65/35
			Candle Power
Park, Signal Lamp	2	2057	32/2
Tail, Stop Lamps	2	2057	32/2
Marker Lamps	4	194	2
Back-up Lamp	2	1156	32
License Lamp	1	194	2
Interior Lights:			
Dome Lamps (w/o Roof Console)	2	211-2	12
Dome Lamps (with Roof Console)	3	211-2	12
Glove Box Lamp	1	194	2
Visor Vanity Mirror Lamps	4	194	2
Stepwell Lamp	3	211-2	6
Reading Lamp (with Roof Console)	4	906	6
Reading Lamp (w/o Roof Console)	2	906	6
Ashtray Lamp	1	161	1
Heater or A/C Control	2	194	2
Instrument Cluster Lights:†			
Generator Indicator Lamp[1]	1	PC74	.7
Instrument Cluster Illum.[1]	6	PC94	2
Headlamp Beam Indicator Lamp[1]	1	PC74	.7
Headlamp Beam Indicator Lamp[2]	1	PC161	1
Malfunction Indicator Lamp (Service Engine Soon)[1]	1	PC74	.7
Malfunction Indicator Lamp (Service Engine Soon)[2]	1	PC194	2
Directional Indicator[1]	2	PC74	.7
Directional Indicator[2]	2	PC194	2
Brake Warning Indicator Lamp[1]	1	PC74	.7
Brake Warning Indicator Lamp[2]	1	PC194	2
Transmission Indicator Dial[2]	1	PC194	2

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Lamp or Bulb	Quantity	Trade No.	Power Rating at 12.8V, Watts
Safety Belt Warning[1]	1	PC74	.7
Safety Belt Warning[2]	1	PC194	2
Daytime Running Lights Indicator[1]	1	PC74	.7
Daytime Running Lights Indicator[2]	1	PC161	1
Antilock Warning Indicator[1]	1	PC74	.7
Antilock Warning Indicator[2]	1	PC194	2
Air Bag[1]	1	PC74	.7
Air Bag[2]	1	PC194	2

[1]With Standard Instrument Cluster
[2]With Digital Instrument Cluster
†A PC part number indicates that the bulb and base are one assembly and must be replaced as such.

T0008

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Fuses and Circuit Breakers Usage

Name	Circuits Protected	Fuse	Circuit Breaker
Inst. Lps.	Instrument Panel Lamps, Radio Dial Lamps, Heater Lamps	10 Amp	
Pwr. Acc.	Power Door Locks, Power Seat		30 Amp
Horn-Dm.	Horn Relay, Digital Clock, Cigarette Lighter, Dome Lights, Radio Memory, Glove Box Lamp	30 Amp	
Gages	Instrument Cluster Gages, Brake Switch, Audio Alarm, Headlight Switch Illumination, Ash Tray Illumination, Cruise Control	20 Amp	
Aux. Htr. A/C	Auxiliary Heater-Rear A/C (if equipped)	25 Amp	
Stop-Haz.	Stop Lamps, Hazard Flash, Digital Instrument Cluster	20 Amp	
Tail Lps.	Headlamp Switch, Tail and Parking Lamps	20 Amp	
Turn B/U	Direction Signal Flash, Back Up Lamps	20 Amp	
Htr. A/C	Front Heater & Air Conditioning	20 Amp	
Radio	Radio	10 Amp	
ECM B	Engine Control Module	10 Amp	
ECM I	Engine Control Module	10 Amp	
Pwr. Wdo.	Power Windows		30 Amp
Wiper	Windshield Wiper	25 Amp	
Brake	Anti-Lock Brake System, Speedometer	15 Amp	
Fog Lamps***	Fog Lamps	15 Amp	
DRL**	Canadian Daytime Running Lights	10 Amp	
Pow. Mirrors*	Power Mirror	3 Amp	
Trailer*	Trailer Wiring Harness	30 Amp	

*In-line fuse.
**Canada only.
***In-line fuse (certain models).

T0007

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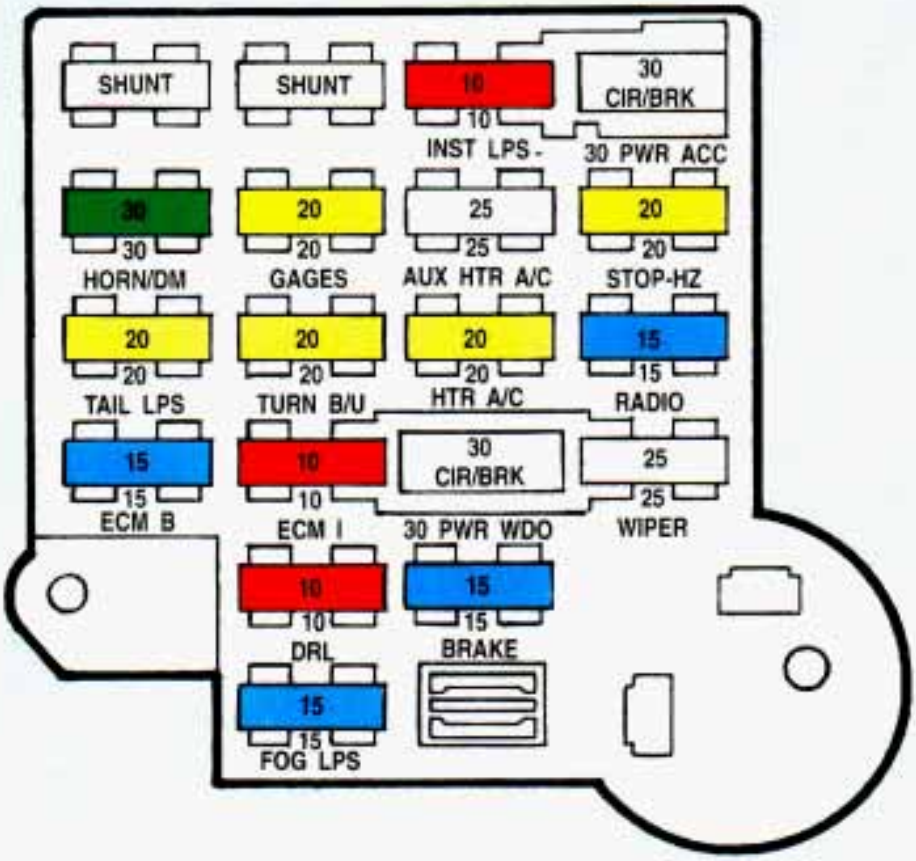
FUSE LEGEND	
5 AMP	TAN
7.5 AMP	BROWN
10 AMP	RED
15 AMP	BLUE
20 AMP	YELLOW
25 AMP	CLEAR
30 AMP	GREEN



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Service Replacement Part and Filter Recommendations Table

Engine (VIN)	Oil Filter	Air Cleaner Filter	PCV Valve	Spark* Plugs	Fuel Filter	Radiator Cap
4.3L (Z)	PF51	A773C	CV789C	.CR43TS	GF481	RC36
4.3L (W)	PF51	A1163C	CV892C	.CR43TS	GF481	RC36

*Use copper-cored resistor type spark plugs.

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Scheduled Maintenance Services

Section 7

This section covers the maintenance required for your vehicle. Your vehicle needs these services to retain its safety, dependability, and emission control performance.

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GM Protection Plan

Have you purchased the GM Protection Plan? The Plan supplements your new vehicle warranties. See your GM dealer for details.

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Scheduled Maintenance Services

A Word About Maintenance

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 GM vehicles, maintenance needs vary. You may even need more frequent checks and replacements than you will find in the schedules in this section. So please read this section and note how you drive. If you have any questions on how to keep your vehicle in good condition, see your GM dealer, the place many GM owners choose to have their maintenance work done. Your dealer can be relied upon to use proper parts and practices.

Your Vehicle And The Environment

Proper vehicle maintenance not only helps keep your vehicle in good working condition, but it also helps the environment. All recommended maintenance procedures are important. Improper vehicle maintenance or the removal of important components can significantly affect the quality of the air we breathe. Improper fluid levels or even the wrong tire inflation can increase the level of emissions from your vehicle. To help protect our environment, and to help keep your vehicle in good condition, please maintain your vehicle properly.

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 are skilled enough to do some work on your vehicle, you will probably want to get the service information GM publishes. You will find a list of publications and how to get them in Section 8, "Customer Assistance Information". See "Service Publications" in the Index.

The Maintenance Record provides a place for you to record the maintenance performed on your vehicle. Whenever any maintenance is performed, be sure to write it down in this section. This will help you determine when your next maintenance should be done. In addition, it is a good idea to keep your maintenance receipts. They may be needed to qualify your vehicle for warranty repairs.

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Scheduled Maintenance Services

This part tells you the maintenance services you should have done and when you should schedule them. Your GM dealer knows your vehicle best and wants you to be happy with it. If you go to your dealer for all your service needs, you'll know that GM-trained and supported service people will perform the work using genuine GM parts.

These schedules are for vehicles that:

- carry passengers and cargo within the recommended limits. You will find these limits on your vehicle's Certification Label. See "Loading Your Vehicle" in the Index.
- are driven on regular road surfaces, and within legal driving limits, as described in Section 4, "Your Driving and the Road".
- use the proper fuel. See "Fuel" in the Index.

Selecting The Proper Maintenance Schedule

Your driving conditions and how you use your vehicle will help you determine which schedule to use. The schedules are found later in this section.

MAINTENANCE SCHEDULE I

Is any one of these true for your vehicle?

- Most trips are less than 4 miles (6 kilometers).
- Most trips are less than 10 miles (16 kilometers) and the outside temperatures are below freezing.
- The engine is at low speed most of the time (as in stop-and-go traffic, door-to-door delivery, or other commercial uses).
- You operate in dusty areas frequently.
- You tow a trailer.

If any one (or more) of these is true for your driving, follow Schedule I. The chart for Schedule I has plus signs (+).

MAINTENANCE SCHEDULE II

Follow Schedule II ONLY if none of the above conditions are true. The chart for Schedule II has dots (•).

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Scheduled Maintenance Services

SCHEDULED MAINTENANCE SERVICES FOR

Item No.	If your driving conditions meet those specified in "Scheduled Maintenance Services" in this Section, use Maintenance Schedule I (+).								
	Service	Miles (000)	3	6	7.5	9	12	15	18
		Kilometers (000)	5	10	12.5	15	20	25	30
1	Engine Oil Change* —Every 3 Months, or		+	+		+	+	+	+
	Oil Filter Change* —Every 3 Months, or		+	+		+	+	+	+
2	Chassis Lubrication—Every 12 Months, or		+	+		+	+	+	+
3	Cooling System Service*—Every 24 Months or								
4	Air Cleaner Filter Replacement*								
5	Front Wheel Bearing Repack (2WD Only)							+	
6	Transmission Service**								
7	Fuel Filter Replacement*								
8	Spark Plugs Replacement*								
9	Spark Plug Wire Inspection*								
10	Engine Timing Check*								
11	Fuel Tank, Cap and Lines Inspection*								
12	Engine Accessory Drive Belt Inspection*								
13	Tire and Wheel Rotation			+					
14	Drive Axle Service		+	+		+	+	+	+
15	Brake Systems Inspection**								

FOOTNOTES:
*An Emission Control Service
**See "Explanation of Scheduled Maintenance Services" in this section.

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MAINTENANCE SCHEDULE I

21	22.5	24	27	30	33	36	37.5	39	42	45	48	51	52.5	54	57	60
35	37.5	40	45	50	55	60	62.5	65	70	75	80	85	87.5	90	95	100
+		+	+	+	+	+		+	+	+	+	+		+	+	+
+		+	+	+	+	+		+	+	+	+	+		+	+	+
+		+	+	+	+	+		+	+	+	+	+		+	+	+
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+		+	+	+	+	+		+	+	+	+	+		+	+	+

THE SERVICES SHOWN ON THIS CHART UP TO 60,000 MILES (100 000 km) ARE TO BE DONE AFTER 60,000 MILES AT THE SAME INTERVALS.

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Scheduled Maintenance Services

SCHEDULED MAINTENANCE SERVICES FOR

Item No.	If your driving conditions meet those specified in "Scheduled Maintenance Services" in this Section, use Maintenance Schedule II (•).							
	Service	Miles (000)	3	6	7.5	9	12	15	18
		Kilometers (000)	5	10	12.5	15	20	25	30
1	Engine Oil Change* —Every 12 Months, or				•			•	
	Oil Filter Change* —Every 12 Months, or				•				
2	Chassis Lubrication—Every 12 Months, or				•			•	
3	Cooling System Service*—Every 24 Months or								
4	Air Cleaner Element Replacement*								
5	Front Wheel Bearing Repack (2WD Only)								
6	Transmission Service**								
7	Fuel Filter Replacement*								
8	Spark Plugs Replacement*								
9	Spark Plug Wire Inspection*								
10	Engine Timing Check*								
11	Fuel Tank, Cap and Lines Inspection*								
12	Engine Accessory Drive Belt Inspection*								
13	Tire and Wheel Rotation				•				
14	Drive Axle Service				•				
15	Brake Systems Inspection**								

FOOTNOTES:
*An Emission Control Service
**See "Explanation of Scheduled Maintenance Services" in this section.

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MAINTENANCE SCHEDULE II

21	22.5	24	27	30	33	36	37.5	39	42	45	48	51	52.5	54	57	60
35	37.5	40	45	50	55	60	62.5	65	70	75	80	85	87.5	90	95	100
	•			•			•			•			•			
	•															
	•			•			•			•			•			•
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	•			•			•			•			•			•

THE SERVICES SHOWN ON THIS CHART UP TO 60,000 MILES (100 000 km) ARE TO BE DONE AFTER 60,000 MILES AT THE SAME INTERVALS.

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Scheduled Maintenance Services

Explanation Of Scheduled Maintenance Services

Below are explanations of the services listed in the maintenance charts.

The proper fluids and lubricants to use are listed in this section. 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.

1. **ENGINE OIL AND OIL FILTER CHANGE*** —ALWAYS USE SG OR SG/CE QUALITY, ENERGY CONSERVING II OILS OF THE PROPER VISCOSITY. To determine the preferred viscosity oil for your vehicle's engine (e.g. SAE 5W-30). See "Engine Oil" in the Index.

2. **CHASSIS LUBRICATION** —Lubricate the front suspension, king pin bushings, steering linkage, transfer case shift linkage, parking brake cable guides, propshaft splines, universal joints and brake pedal springs at the intervals specified on the proper maintenance schedule or at every engine oil change, whichever comes first.

   Ball joints and king pin bushings should not be lubricated unless their temperature is 10°F (-12°C), or higher. When the weather is cold, let them warm up before lubrication or they could be damaged.

   Also, be sure to check all the vehicle fluid levels at this time.

3. **COOLING SYSTEM SERVICE*** —Drain, flush and refill system with new coolant. See the Index under "Engine Coolant" for the proper coolant and mixture to use in your vehicle.

   Also inspect the hoses and replace them if they are cracked, swollen, or deteriorated. Tighten all hose clamps. Clean the outside of the radiator and air conditioning condenser. Wash the radiator neck. To ensure proper operation, pressure test the radiator and cap.

4. **AIR CLEANER FILTER REPLACEMENT*** —Replace at specified intervals. Replace more often under dusty conditions. Ask your dealer for the proper replacement intervals for your driving conditions.

5. **FRONT WHEEL BEARING REPACK (2-WHEEL DRIVE ONLY)** —Clean and repack the front wheel bearings at each brake relining, or at the specified interval, whichever comes first.

   * An Emission Control Service

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6. **TRANSMISSION SERVICE**

Change the transmission fluid and filter every 15,000 miles (25 000 km). 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.
- Frequent trailer pulling.
- Uses such as taxi, police, delivery or other commercial service.

If the vehicle is not used mainly under any of these conditions, change the fluid and filter every 30,000 miles (50 000 km). See "Automatic Transmission Fluid" in the Index for more information.

7. **FUEL FILTER REPLACEMENT*** —Replace the fuel filter at the specified interval or sooner if clogged.
8. **SPARK PLUGS REPLACEMENT*** —Replace spark plugs with the type listed in Section 6. See "Specification Charts" in the Index.
9. **SPARK PLUG WIRE INSPECTION*** —Clean wires and inspect for burns, cracks or other damage. Check the wire boot fit at the distributor and at the spark plugs. Replace wires as needed.
10. **ENGINE TIMING CHECK AND DISTRIBUTOR CHECK** —Adjust timing to underhood label specifications. Inspect the inside and outside of the distributor cap and rotor for cracks, carbon tracking and corrosion. Clean or replace as needed.
11. **FUEL TANK, CAP AND LINES INSPECTION*** —Inspect the fuel tank, cap and lines for damage or leaks. Remove fuel cap, inspect gasket for an even filler neck imprint, and any damage. Replace parts as needed.
12. **ENGINE ACCESSORY DRIVE BELT INSPECTION*** —Inspect belt. Look for cracks, fraying, wear, and proper tension. Adjust or replace as needed.

* An Emission Control Service

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13. **TIRE AND WHEEL ROTATION AND INSPECTION** —For proper wear and maximum tire life, rotate tires at the first 6,000 miles (10 000 kilometers) for Schedule I or 7,500 miles (12 500 kilometers) for Schedule II and then every 7,500 miles (12 500 kilometers) thereafter. Follow the instructions and patterns shown in Section 6. Check tires for uneven wear or damage. If irregular or premature wear is apparent, check wheel alignment. Also, check for damaged wheels. See "Tires" in the Index for more information.

14. **DRIVE AXLE SERVICE** —Check rear/front axle fluid level and add as needed. Check constant velocity joints and axle seals for leaking.

    - **Locking differential** —Drain fluid at first oil change and refill. Check fluid level and add as needed at subsequent oil changes. In dusty areas, or trailer towing applications drain fluid at every 15,000 miles (24 135 kilometers) and refill.†
    - **Standard differential** —Check fluid level and add as needed at every oil change. In dusty areas, or trailer towing applications, drain fluid every 15,000 miles (24 135 kilometers) and refill.†

15. **BRAKE SYSTEM INSPECTION** —When the engine oil is changed, inspect the lines and hoses for proper hookup, binding, leaks, cracks, chafing, etc. Check the parking brake adjustment, and the fluid level in the master cylinder. A low fluid level can indicate worn disc brake pads which may need to be serviced.†

    When the wheels are removed for rotation, 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, parking brake, etc., at the same time.

    Inspect brakes more often if driving habits or conditions result in frequent braking.

†A fluid loss in these systems may indicate a problem. Have them inspected and repaired at once.

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Owner Checks and Services

Listed below are owner checks and services which would be made at the time period specified to help ensure proper safety, emission performance, and dependability 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 this section.

At Least Once a Month

Tire inflation pressure check —Check the tires for proper inflation. If they are low, inflate them to the level specified on the Certification/Tire label or in Section 6. See "Inflation-Tire Pressure" in the Index.

At Least Once a Year

Key lock cylinder lubrication —Lubricate key lock cylinders with one of the lubricants recommended in this section.

Transmission neutral start switch operation

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 manual parking brake and the regular brake. See "Brakes" and "Parking Brake" in the Index. Do not use the accelerator pedal.
3. Be ready to turn off the engine immediately if it starts.
4. Try to start the engine in each gear. The starter should work only in **P** (Park) or **N** (Neutral).

Steering column lock operation —While parked, try to turn the key to **Lock** in each gear shift position. The key should turn to **Lock** only when the gear shift is in **P** (Park). The key should come out only in **Lock**.

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Parking brake and transmission P (Park) mechanism operation —

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 you begin 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 manual parking brake.

- To check the parking brake: With the engine running and the transmission in **N** (Neutral), slowly remove foot pressure from the regular brake pedal. Do this until the vehicle is held by the parking brake only.
- To check the **P** (Park) mechanism's holding ability: Apply the regular brake and shift to **P** (Park). Release the manual parking brake, then slowly release the regular brake.

Lap and shoulder belts condition and operation —Inspect belt system, including: webbing, buckles, latch plates, retractors, guide loops and anchors. Have a belt assembly replaced if the webbing has been cut or otherwise damaged.

Body Lubrication Service —Lubricate all body door hinges including the tailgate, tailgate handle pivot points, and tailgate mounted spare tire carrier (if equipped), lubricate the body hood, fuel door and rear compartment hinges, latches, any locks and any moving seat hardware. Lubricate the hood safety lever pivot and prop rod pivot. More frequent lubrication may be required when exposed to a corrosive environment.

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Periodic Maintenance Inspections

Listed below are inspections and services which should be performed at least twice a year (for instance, each spring or fall). You should let your GM dealer's service department or other qualified service center do these jobs. Make sure any necessary repairs are completed at once.

Steering and Suspension Inspection† —Inspect front and rear suspension and steering system for damaged, loose or missing parts, signs of wear or lack of lubrication. Inspect power steering lines and hoses for proper hook-up, binding, leaks, cracks, chafing, etc. (On vehicles equipped with manual steering gear, check for seal leakage.) Lubricate the steering linkage.

Accelerator Control System —Lubricate all pivot points with engine oil, except the TBI throttle shaft. Do not lubricate the cam pulley. Remove all external deposits from pulley. Do not oil any accelerator or cruise control cables. Replace any cables that have high effort or excessive wear.

Exhaust System Inspection —Inspect the complete system including the three-way catalytic converter. 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 buildup in the floor pan or could let exhaust fumes seep into the passenger compartments.

Drive Axle Service —Check rear/front axle fluid level and add as needed. Check constant velocity joints and axle seals for leaking.

Transfer Case (all-wheel drive) Inspection† —Every 12 months or at oil change intervals, check front axle and transfer case and add lubricant when necessary. Oil the control lever pivot point (except L Van) and all exposed control linkage. Check vent hose at transfer case for kinks and proper installation.

†A fluid loss in these systems may indicate a problem. Have them inspected and repaired at once.

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Recommended Fluids & Lubricants

NOTE: Fluids and lubricants identified below by name, part number or specification may be obtained from your GM Dealer.

USAGE	FLUID/LUBRICANT
Engine Oil	GM Goodwrench Motor Oil or equivalent for API Service SG or SG/CE of the recommended viscosity.
Engine Coolant	Mixture of water and a good quality ethylene glycol base antifreeze conforming to GM-6038-M (GM Part No. 1052103).
Hydraulic Brake Systems	Delco Supreme 11® brake fluid (GM Part No. 1052535 or DOT-3).
Parking Brake Cables	Chassis lubricant meeting requirements of GM-6031-M (GM Part No. 1052497).
Power Steering System	GM Power Steering Fluid (GM Part No. 1050017) or equivalent conforming to GM spec 9985010.
Manual Steering Gear	GM Lubricant (GM Part No. 1052182) or equivalent.
Automatic Transmission	DEXRON® IIE Automatic Transmission Fluid (GM Part No. 1051855).
Differential: a. Standard — Front and Rear Axle b. Locking	a. SAE-80W-90 gear lubricant (GM Part No. 1052271). b. SAE-80W-90 gear lubricant (GM Part No. 1052271).
Transfer Case	Dexron® IIE Automatic Transmission Fluid (GM Part No. 1051855).
Column Shift, Propeller Shaft Slip Splines and Universal Joints.	Chassis lubricant meeting requirements of NLGI Grade 2, Category LB or GC-LB (GM Part No. 1052497).
Hood Latch Assembly a. Pivots and spring anchor b. Release Pawl	a. Engine oil (GM Part No. 1050109). b. Chassis lubricant meeting requirements of GM-6031-M (GM Part No. 1052497).
Front Wheel Bearings	Wheel bearing lubricant meeting requirements of NLGI Grade 2, Category GC or GC-LB (GM Part No. 1051344).
Constant Velocity Universal Joint	Chassis lubricant meeting requirements of GM-6031-M (GM Part No. 1052497)
Automatic Transmission Shift Linkage, Floor Shift Linkage, Hood and Door Hinges, Body Door Hinge Pins, Folding Seat, Fuel Door Hinge	Engine oil

(Continued next page)
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Recommended Fluids & Lubricants (Cont'd.)

USAGE	FLUID/LUBRICANT
Key Lock Cylinders	GM Multi-Purpose lubricant (GM Part No. 12345120) or a synthetic light weight engine oil (SAE 5W-30).
Chassis Lubrication	Chassis lubricant meeting requirements of GM-6031, (GM Part No. 1052497).
Windshield Washer Solvent and Anti-freeze	GM Optikleen® washer solvent (GM Part No. 1051515) or equivalent.
Weatherstrip	Silicone grease (GM Part No. 1052863) or equivalent.
Gas Line	Gas Line De-Icer (GM Part No. 1051516)
Weather Strips	Spray-A-Squeek (GM Part No. 1052277)
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Maintenance Record

After each of the preceding Scheduled Maintenance Services is performed, record the date, odometer reading, services performed (list item numbers) and who performed the services in the appropriate column. In addition, retain copies of your receipts. It is suggested that receipts be kept with your Owner's Manual.

Date	Odometer	Maintenance Performed	Serviced By
			T0260

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Service Station Checks

It is important for you or a service station attendant to perform these under-hood checks at each fuel fill.

- Check the engine oil level and add if necessary.
- Check the engine coolant level and add if necessary.
- Check the windshield washer fluid level and add if necessary.

See these items in the Index for information on how to check them.

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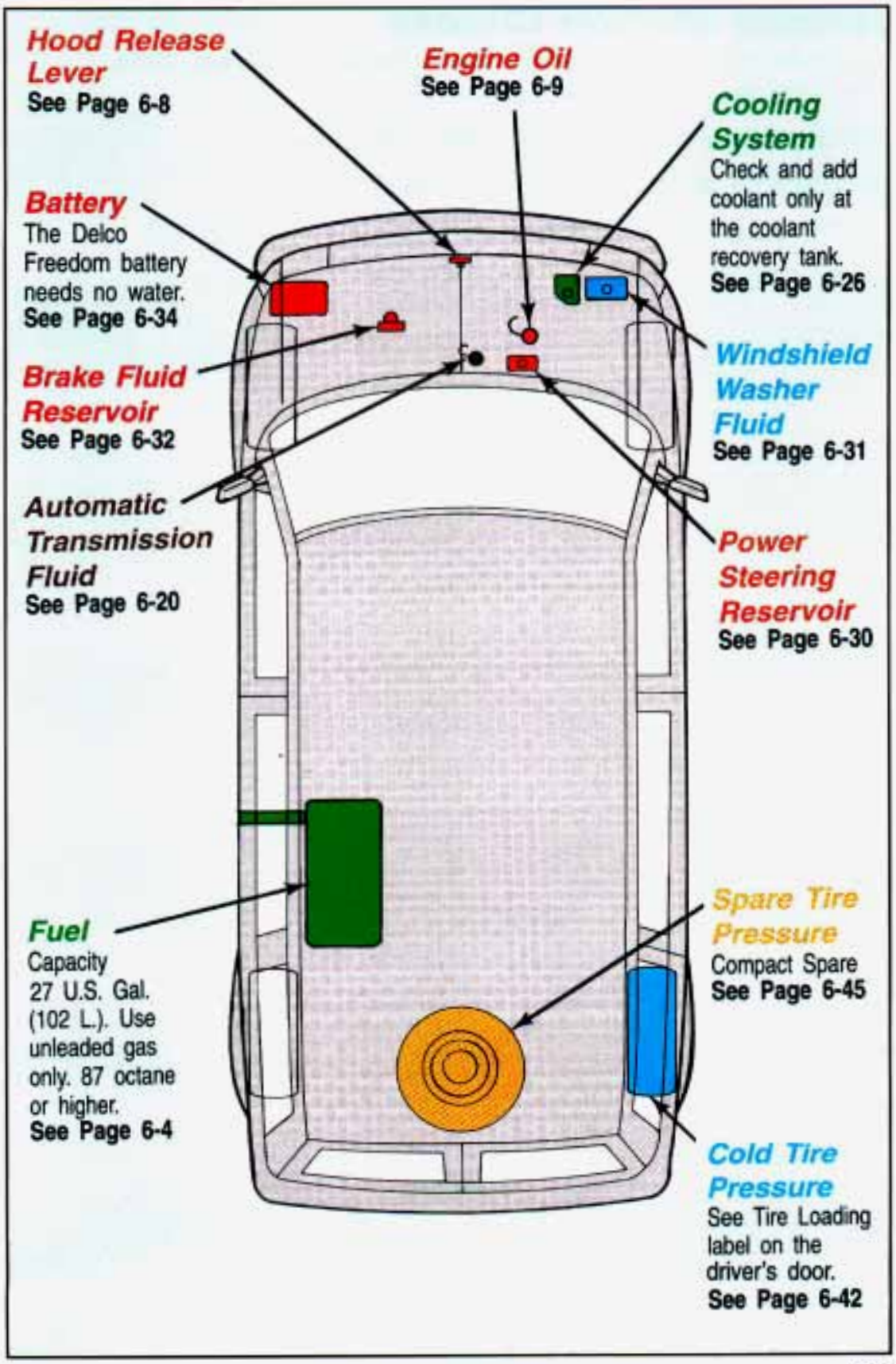
Scheduled Maintenance Services



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Customer Assistance Information

Section 8

Here you will find out how to contact Chevrolet if you need assistance. This section also tells you how to obtain service publications and how to report any safety defects.

Customer Satisfaction Procedure 8-2

Customer Assistance for Hearing/Speech Impaired 8-3

GM Participation in Better Business Bureau Mediation/Arbitration Program.... 8-3

Reporting Safety Defects 8-4

Roadside Assistance 8-5

Service Publications 8-6

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Customer Assistance Information

Customer Satisfaction Procedure

Your satisfaction and goodwill are important to your dealer and Chevrolet. Normally, any concern 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. Complaints can often 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 Chevrolet's Customer Assistance Center by calling 1-800-222-1020. In Canada, contact the GM of Canada Customer Assistance Center in Oshawa by calling 1-800-263-3777 (English) or 1-800-263-7854 (French).

In Mexico, call (525) 254-3777. In Puerto Rico or U. S. Virgin Islands, call 1-809-763-1315. In all other overseas locations, contact GM International Export Sales in Canada by calling 1-416-644-4112.

For prompt assistance, please have the following information available to give the Customer Assistance Representative:

- Your name, address, telephone number
- Vehicle Identification Number (This is available from the vehicle registration or title, or the plate attached to the left top of the instrument panel and visible through the windshield.)
- Dealership name and location
- Vehicle delivery date and present mileage
- Nature of concern

We encourage you to call the toll-free number listed previously in order to give your inquiry prompt attention. However, if you wish to write Chevrolet, write to: Chevrolet Motor Division, Chevrolet Customer Assistance Center, P.O. Box 7047, Troy, MI 48007-7047.

A listing of all Chevrolet offices and offices outside the U.S. which can assist you can also be found in the warranty booklet. These services are not available in Canada.

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When contacting Chevrolet, please remember that your concern will likely be resolved in the dealership, using the dealership's facilities, equipment and personnel. That is why we suggest you follow Step One first if you have a concern.

Customer Assistance for the Hearing or Speech Impaired (TDD)

To assist owners who have hearing difficulties, Chevrolet has installed special TDD (Telecommunications Devices for the Deaf) equipment at its Customer Assistance Center. Any hearing or speech impaired customer who has access to a TDD or conventional teletypewriter (TTY) can communicate with Chevrolet by dialing:

In the United States 1-800-TDD-CHEV

In Canada 1-800-263-3830

GM Participation in Better Business Bureau Mediation/Arbitration Program*

*This program may not be available in all states, depending on state law. Canadian owners refer to your warranty booklet.

General Motors reserves the right to change eligibility limitations and/or to discontinue its participation in this program.

Our experience has shown that the Customer Satisfaction Procedure described earlier in this section has been very successful in achieving customer satisfaction. However, if you have not been substantially satisfied, Chevrolet wants you to be aware of GM's voluntary participation in a no-charge mediation/arbitration program called BBB AUTO LINE. This program is administered by the Council of Better Business Bureaus through local Better Business Bureaus. The program can resolve individual disputes involving vehicle repairs and the interpretation of your New Vehicle Limited Warranty.

We prefer that you not resort to BBB AUTO LINE until after a final decision is made under the Customer Satisfaction Procedure. However, you may file a claim at any time by contacting your local Better Business Bureau (BBB) at the following toll-free number: 1-800-955-5100. For further information about filing a claim, you may also write to: BBB AUTO HOTLINE, Council of Better Business Bureaus, 4200 Wilson Boulevard, Suite 800, Arlington, Virginia 22203.

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Customer Assistance Information

In order to file a claim, you will have to provide your name and address, the vehicle identification number (VIN) of your vehicle, and a statement of the nature of your complaint. BBB staff may try to help resolve your dispute through mediation. If mediation is not successful, or if you do not wish to participate in mediation, eligible customers may present their case to an impartial third-party arbitrator at an informal hearing. The arbitrator will render a decision in your case, which you may accept or reject. If you accept a valid arbitrator decision, GM will be bound by that decision. The entire dispute settlement process should ordinarily take about 40 days from the time you file your complaint to the time a decision is rendered (or 47 days if you did not first contact your dealer or Chevrolet).

We encourage you to use this program before or instead of resorting to the courts. We believe it offers advantages over courts in most jurisdictions because it is fast, free of charge, and informal (lawyers are not usually present, although you may retain one at your expense if you choose). Arbitrators make decisions based on the principals of fairness and equity, and are not required to duplicate the functions of courts by strictly applying state or federal law. If you wish to go to court, however, we do not require that you first file a claim with BBB AUTO LINE* unless state law provides otherwise. Whatever your preference may be, remember that if you are unhappy with the results of BBB AUTO LINE, you can still go to court because an arbitrator's decision is binding on GM but not on you, unless you accept it.

Eligibility is limited by vehicle age/mileage, and other factors. For further information concerning the program, call the BBB at 1-800-955-5100. You may also call the Chevrolet Customer Assistance Center.

*Some states may require that you file a claim with BBB AUTO LINE before resorting to state-operated procedures (including court).

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.

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To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (or 366-0123 in the Washington, DC 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 at Box 8880, Ottawa, Ontario K1G 3J2.

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 1-800-222-1020, or write: Chevrolet Motor Division, Customer Assistance Center, Post Office Box 7047, Troy, Michigan 48007-7047. 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 Assistance Center, 1908 Colonel Sam Drive, Oshawa, Ontario L1H 8P7.

Chevrolet/Geo Roadside Assistance

To enhance Chevrolet's strong commitment to customer satisfaction, Chevrolet is excited to announce the establishment of the Chevrolet/Geo Roadside Assistance Center. As the owner of a 1993 Chevrolet/Geo, membership in Roadside Assistance is free.

Roadside Assistance is available 24 hours a day, 365 days a year, by calling 1-800-CHEV USA (1-800-243-8872). This toll-free number will provide you over-the-phone roadside assistance with minor mechanical problems. If your problem cannot be resolved over the phone, our advisors have access to a nationwide network of dealer recommended service providers. The following services are available:

- Towing
- Locksmith
- Tire repair
- Glass replacement
- Rental car or taxi
- Additional services as necessary

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Customer Assistance Information

The Roadside Assistance Center uses companies that will provide you with quality and priority service. When roadside services are required, our advisors will explain any payment obligations that may be incurred for utilizing outside services.

For prompt assistance when calling, please have the following available to give the advisor:

- Vehicle Identification Number
- License plate number
- Vehicle color
- Vehicle location
- Telephone number where you can be reached
- Description of problem

Please refer to the Roadside Assistance brochure inside your portfolio for full program details.

In Canada, call 1-800-268-6800 for details on Roadside Assistance.

Service Publications

Information on how to obtain Product Service Publications, Subscriptions and Indexes as described below is applicable only in the fifty U.S. states (and the District of Columbia) and only for light trucks with GVWR less than 10,000 pounds (4536 kg).

In Canada, information pertaining to Product Service Bulletins and Indexes can be obtained by writing to: General Motors of Canada Limited, Service Publications Department, 1908 Colonel Sam Dr., Oshawa, Ontario L1H 8P7.

Chevrolet regularly sends its dealers useful service bulletins about Chevrolet products. Chevrolet monitors product performance in the field. We then prepare bulletins for servicing our products better. Now, you can get these bulletins too.

Bulletins cover various subjects. Some pertain to the proper use and care of your vehicle. Some describe costly repairs. Others describe inexpensive repairs which, if done on time with the latest parts, may avoid future costly repairs. Some bulletins tell a technician how to repair a new or unexpected condition. Others describe a quicker way to fix your vehicle. They can help a technician service your vehicle better.

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Most bulletins apply to conditions affecting a small number of cars or trucks. Your Chevrolet dealer or a qualified technician may have to determine if a specific bulletin applies to your vehicle.

You can subscribe to all Chevrolet bulletins by calling Helm, Inc. at 1-800-782-4356. This way you'll get them as they come out.

Individual PSP's

If you don't want to buy all the PSP's issued by Chevrolet for all car and truck models in the model year, you can buy individual PSP's, such as those which may pertain to a particular model. To do this, you will first need to see our index of PSP's. It provides a variety of information. Here's what you'll find in the index and how you can get one:

What You'll Find in the Index:

- A list of all PSP's published by Chevrolet in a model year (1989 or later). PSP's covering all models of Chevrolet cars or light trucks less than 10,000 pounds (4536 kg) GVWR are listed in the same index.
- Ordering information so you can buy the specific PSP's you may want.
- Price information for the PSP's you may want to buy.

How You Can Get an Index:

Indexes are published periodically. Most of the PSP's which could potentially apply to the most recent Chevrolet models will be listed in the most recent publication for that model year. This means you may want to wait until the end of the model year before ordering an index, if you are interested in buying PSP's pertaining to a current model year truck.

Some PSP's pertaining to a particular model year vehicle may be published in later years, and these would be listed in the later year's index. When you order an index for a model year that is not over yet, we'll send you the most recently published issue. Check the ordering form for indexes for earlier model years.

Cut out the ordering form, fill it out, and mail it in. We will then see to it that an index is mailed to you. There is no charge for indexes for the 1989-1993 model years.

Toll-Free Telephone Number

If you want an additional ordering form for an index or a subscription, just call toll-free and we'll be happy to send you one. Automated recording equipment will take your name and mailing address. The number to call is 1-800-551-4123.

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Customer Assistance Information

Copies at Participating Dealers

Copies of Indexes and individual PSP's are at your participating Chevrolet dealer. You can ask to see them.

A VERY IMPORTANT REMINDER: These PSP's are meant for technicians. They are not meant for the "do-it-yourselfer." Technicians have the equipment, tools, safety instructions, and know-how to do a job quickly and safely.

Chevrolet reserves the right to change these procedures without notice.

Service Publications

You can get these Product Service Publications by using the order form at the end of this section. You can also get Service Manuals and Owner Publications.

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1993 CHEVROLET TRUCK SERVICE PUBLICATIONS ORDERING INFORMATION

The following publications covering the operation and servicing of your vehicle can be purchased by filling out the Service Publications Order Form in this book and mailing it with your check, money order or credit card information to Helm, Incorporated (address listed below).

CURRENT PUBLICATIONS FOR 1993 CHEVROLET ASTRO VAN

PRODUCT SERVICE PUBLICATIONS

Product Service Publications (PSP's), are bulletins, letters and articles published for trained dealer service personnel. See Service Publications listed previously in this section.

A cumulative index is published quarterly during the current model year. The indexes list all PSP's published by Chevrolet in the model year.

PSP Index

Year	Form Number	Price
1993	PSPI-93	Free
1992	PSPI-92	Free
1991	PSPI-91	Free
1990	PSPI-90	Free

NOTE: Form Numbers for individual Product Service Publications may be found in the PSP Index. Prices are $4.00 for the first PSP and $2.00 for each additional PSP on the same order.

PSP Bound Bulletin Book (Complete Year Bulletins)

Year	Description	Form Number	Price
1991	All PSP's	PSP-91-4	$40.00
1990	All PSP's	PSP-90-4	40.00

For subscription information call Helm, Incorporated.

SERVICE MANUALS

Service Manuals have the diagnosis, repair and overhaul information on engines, transmission, axle, suspension, brakes, electrical, steering, body, etc.

Model	Form Number	Price
1993 Chevrolet Astro Van	ST-372-93K	$50.00

OWNER'S INFORMATION

Owner publications are written directly for owners and intended to provide basic operational information about the vehicle. The Owner's Manual includes the Maintenance Schedule for all models.

1993 Chevrolet Astro Van Owner's Manual

In Portfolio: *Includes Portfolio, Owner's Manual and Warranty Booklet.*

1993	Chevrolet Astro Van In-Portfolio	15669692	$15.00

Without Portfolio: *Includes Owner's Manual.*

1993	Chevrolet Astro Van Without Portfolio	C-9310	$11.00

CURRENT & PAST MODEL ORDER FORMS

Service Publications are available for current and past model Chevrolet vehicles. To request an order form, please specify year and model name of vehicle.

Address all inquiries to: HELM, INCORPORATED
P.O. Box 07130
Detroit, MI 48207

Credit Card Orders ONLY: 1-800-782-4356

For information and inquiries call: (313) 883-1430

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PUBLICATION FORM NUMBER**	ITEM DESCRIPTION	VEHICLE MODEL NAME	VEHICLE MODEL YEAR	QTY.	PRICE EACH*	TOTAL PRICE
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15669692	Owner's Manual In-Portfolio	Chevrolet Astro Van	1993		$15.00	
C-9310	Owner's Manual Without-Portfolio	Chevrolet Astro Van	1993		$11.00	

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**Orders for Individual Product Service Publications cannot be filled without the appropriate bulletin numbers. These numbers may be found in the PSP Index. Your first Product Service Publication costs $4.00; each additional PSP costs $2.00.

NOTE: All listed prices are quoted in U.S. funds. Canadian residents are to make checks payable in U.S. funds and are to include $6.50 for additional postage and handling. Requests for manuals printed in French should be directed to Canadian General Motors dealerships.

Please allow adequate time for postal service.

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