

GMC SIERRA

2001

DIESEL SUPPLEMENT



SILVERADO

The 2001 GM Diesel Engine Owner's Manual Supplement for Trucks

2-1 Features and Controls

This section explains how to start and operate your vehicle.

5-1 Problems on the Road

This section tells what to do if you have a problem while driving, such as an overheated engine, etc.

6-1 Service and Appearance Care

Here the manual tells you how to keep your vehicle running properly.

7-1 Maintenance Schedule

This section tells you when to perform vehicle maintenance and what fluids and lubricants to use.

This supplement contains information that pertains to the operation of your diesel engine. It also contains your Diesel Maintenance Schedule. The sections in this supplement correspond to the sections in your owner's manual. This supplement, along with your owner's manual, will assist you in the proper use and maintenance of your vehicle.

Please keep this supplement with the owner's manual in your vehicle, so it will be there if you ever need it while you're on the road. If you sell your vehicle, leave the owner's manual supplement and the owner's manual with the vehicle.

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 notice.

For Canadian Owners Who Prefer a French Language Manual:

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

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Part No. 15728519 A First Edition

Section 2 Features and Controls

Here you can learn about starting your diesel engine. Also explained are the instrument panel clusters and the warning systems that tell you if everything is working properly -- and what to do if you have a problem. Use this section along with the information in Section 2 of your owner's manual.

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Starting Your Diesel Engine

Your diesel engine starts differently than a gasoline engine.

Automatic Transmission

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

NOTICE:

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

Manual Transmission

Move your shift lever to NEUTRAL and hold the clutch pedal to the floor while starting the engine. Your vehicle won't start if the clutch pedal is not all the way down -- that's a safety feature.

Starting Your Engine

1. Turn your ignition key to RUN.
Observe the WAIT TO START light. (This light may not come on if the engine is hot.)
2. As soon as the WAIT TO START light goes off, IMMEDIATELY turn the ignition key to START.
When the engine starts, let go of the key.

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.

NOTICE:

If the WAIT TO START light stays on, it means that your vehicle could have one of several problems, so you should have it serviced right away.

3. If the engine does not start after 15 seconds of cranking, turn the ignition key to OFF. Wait one minute for the starter to cool, then try the same steps again.

If you're trying to start your engine after you've run out of fuel, follow the steps in "Running Out of Fuel." See "Diesel Fuel Requirements and Fuel System" in the Index.

When your engine is cold, let it run for a few minutes before you move your vehicle. This lets oil pressure build up. Your engine will sound louder when it's cold.

NOTICE:

If you're not in an idling vehicle and the engine overheats, you wouldn't be there to see the coolant temperature gage. This could damage your vehicle. Don't let your engine run when you're not in your vehicle.

Cold Weather Starting (Diesel Engine)

The following tips will help you get good starting in cold weather.

Use the recommended engine oil when the outside temperature drops below freezing. See "Engine Oil" in the Index. When the outside temperature drops below 0°F (-18°C), use of the engine coolant heater is recommended.

See "Diesel Fuel Requirements and Fuel System" in the Index for information on what fuel to use in cold weather.

If Your Diesel Engine Won't Start

If you've run out of fuel, look at "Running Out of Fuel." See "Diesel Fuel Requirements and Fuel System" in the Index.

If you're not out of fuel, and your engine won't start, do this:

Turn your ignition key to RUN. IMMEDIATELY after the WAIT TO START light goes off, turn the ignition key to START.

If the light doesn't go off, wait a few seconds, then try starting your engine again. And, see your dealer as soon as you can for a starting system check.

If the light comes on and then goes off and you know your batteries are charged, but your engine still won't start, your vehicle needs service.

If the light does not come on when the engine is cold, your vehicle needs service.

If your batteries don't have enough charge to start your engine, see "Battery" in the owner's manual.

Be sure you have the right oil for your engine, and that you've changed the oil at the proper times. If you use the wrong oil, your engine may be harder to start.

If the engine starts, runs a short time, then stops, your vehicle needs service.



CAUTION:

Do not use gasoline or starting "aids," such as ether, in the air intake. They could damage your engine. There could also be a fire, which could cause serious personal injury.

Engine Coolant Heater

In very cold weather, 0°F (-18°C) or colder, the engine coolant heater can help. You'll get easier starting and better fuel economy during engine warm-up. Usually, the coolant heater should be plugged in a minimum of four hours prior to starting your vehicle.

To Use the Engine Coolant Heater

1. Turn off the engine.
2. Open the hood and unwrap the electrical cord. The cord is located on the passenger's side of the engine compartment, near the right side engine mount.
3. Plug it into a normal, grounded 110-volt AC outlet.



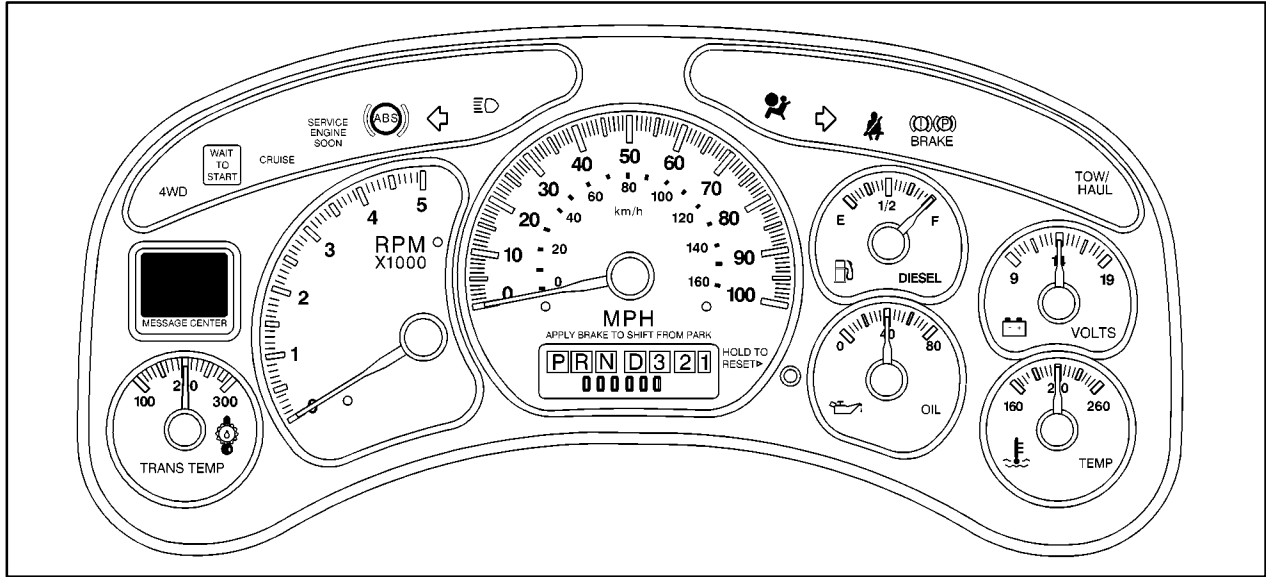
CAUTION:

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

4. Before starting the engine, be sure to unplug and store the cord as it was before to keep it away from moving engine parts. If you don't, it could be damaged.

How long should you keep the coolant heater plugged in? The answer depends on the outside temperature. You may wish to use your coolant heater to improve ease of starting at temperatures between 0°F (-20°C) and -20°F (-29°C). Keep the coolant heater plugged in for a minimum of 4 hours. However, above -20°F (-29°C) use of the coolant heater shouldn't be necessary. At temperatures below -20°F (-29°C) the coolant heater should remain plugged in for at least 8 hours. It will not harm either the coolant heater or the vehicle to leave the coolant heater plugged in longer than the times stated. Be sure to remove and store the cord before starting the engine. See "Diesel Fuel Requirements and Fuel System" in the Index for information on what fuel to use in cold weather.

Instrument Panel Cluster



United States version shown, Canada similar.

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 you have and many other things you'll need to know to drive safely and economically.

Warning Lights, Gages and Indicators

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

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

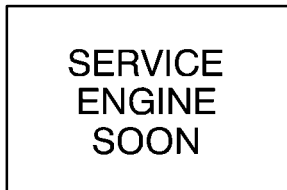
Warning lights come on when there may be or is a problem with one of your vehicle's functions. As you will see in the details on the next few pages, some warning lights come on briefly when you start the engine just to let you know they're working. If you are familiar with this section, you should not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

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

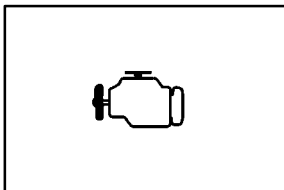
When one of the warning lights comes on and stays on when you are driving, or when one of the gages shows there may be a problem, check the section that tells you what to do about it. Please follow this manual's advice. Waiting to do repairs can be costly -- and even dangerous. So please get to know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

Your vehicle may also have a message center that works along with the warning lights and gages. See "Message Center" in the Index.

**Malfunction Indicator Lamp
(Service Engine Soon Light)
(Check Engine Light)**



United States



Canada

Your vehicle is equipped with a computer which monitors operation of the fuel, timing and emission control systems.

This system is called OBD II (On-Board Diagnostics-Second Generation) and is intended to assure that emissions are at acceptable levels for the life of the vehicle, helping to produce a cleaner environment. The SERVICE ENGINE SOON light comes on to indicate when service is required. Malfunctions often will be indicated by the system before any problem is apparent. This may prevent more serious damage to your vehicle. This system is also designed to assist your service technician in correctly diagnosing any malfunction.

NOTICE:

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

NOTICE:

Modifications made to the engine, transmission, exhaust, intake or fuel system of your vehicle or the replacement of the original tires with other than those of the same Tire Performance Criteria (TPC) can affect your vehicle's emission controls and may cause the SERVICE ENGINE SOON or CHECK ENGINE light to come on. Modifications to these systems could lead to costly repairs not covered by your warranty. This may also result in a failure to pass a required Emission Inspection/Maintenance test.

If the Light Comes On

This light should come on, as a check to show you it is working, when the ignition is on and the engine is not running. If it doesn't, have it repaired. This light will also come on if an emission control system malfunction has been detected on your vehicle. Dealer or qualified service center diagnosis and service may be required.

You also may be able to correct the emission system malfunction by considering the following:

Did you just drive through a deep puddle of water?

If so, your electrical system may be wet. The condition will usually be corrected when the electrical system dries out. A few driving trips should turn the light off.

Are you low on fuel?

As your engine starts to run out of fuel, your engine may not run as efficiently as designed since small amounts of air are sucked into the fuel line. The system can detect this. Adding fuel should correct this condition. It will take a few driving trips to turn the light off.

If none of the above steps have made the light turn off, have your dealer or qualified service center check the vehicle. Your dealer has the proper test equipment and diagnostic tools to fix any mechanical or electrical problems that may have developed.

Emissions Inspection and Maintenance Programs

Some state/provincial and local governments have or may begin programs to inspect the emission control equipment on your vehicle. Failure to pass this inspection could prevent you from getting a vehicle registration.

Here are some things you need to know in order to help your vehicle pass an inspection.

Your vehicle will not pass this inspection if the SERVICE ENGINE SOON or CHECK ENGINE light is on or not working properly.

Your vehicle will not pass this inspection if the OBD (on-board diagnostic) system determines that critical emission control systems have not been completely diagnosed by the system. The vehicle would be considered not ready for inspection. This can happen if you have recently replaced your battery or if your battery has run down. The diagnostic system is designed to evaluate critical emission control systems during normal driving. This may take several days of routine driving. If you have done this and your vehicle still does not pass the inspection for lack of OBD system readiness, see your dealer or qualified service center to prepare the vehicle for inspection.

Wait To Start Light

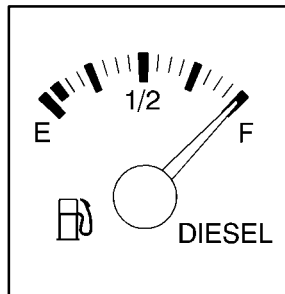


Your diesel engine has a glow plug system to aid in starting your vehicle.

An instrument panel WAIT TO START light shows that the system is functioning properly and tells you when the engine is ready to be started.

For more information, see “Starting Your Diesel Engine” in the Index.

Fuel Gage



When the ignition is on, the fuel gage shows you approximately how much fuel you have left in your tank.

The gage will first indicate E (Empty) before you are out of fuel, but you should get more fuel as soon as possible.

Listed are four situations you may experience with your fuel gage:

- At the gas station, the fuel pump shuts off before the gage reads F (Full).
- It takes a little more or less fuel to fill up than the fuel gage indicated. For example, the gage may have indicated the tank was half full, but it actually took a little more or less than half the tank's capacity to fill the tank.
- The gage moves a little when you turn a corner or speed up.
- The gage doesn't go back to E (Empty) when you turn off the ignition.

None of these indicate a problem with the fuel gage.

For information on how to fill your fuel tank, see "Fuel, Filling Your Tank" in the Index.

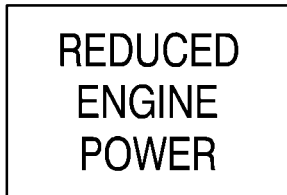
For your fuel tank capacity, see "Fuel, Tank Capacity" in the Owner's Manual.

Your vehicle also has a fuel cooler. To clean, power wash the bottom of the vehicle.

Message Center

The message center is located above the transmission temperature gage (if equipped) on the instrument panel cluster. It gives you important safety and maintenance facts. When you turn the ignition on, the entire center lights up for just a few seconds. (The battery display will stay on while the key is in RUN until the engine is started.)

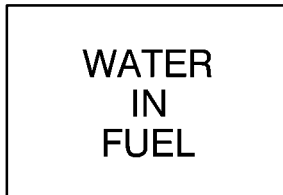
Reduced Engine Power



On diesel engines, a computer monitors the operation of the electronic accelerator.

If this message comes on while you are driving, the computer is indicating that your vehicle has a problem. You should take your vehicle in for service soon.

Water in Fuel



This light will come on to warn you if there is water in the diesel fuel system.

For more information on how this message works, see “Diesel Fuel Requirements and Fuel System” in the Index.

Section 5 Problems on the Road

Here you'll find out what to do about some problems that can occur on the road. Use this section along with the information in Section 5 of your owner's manual.

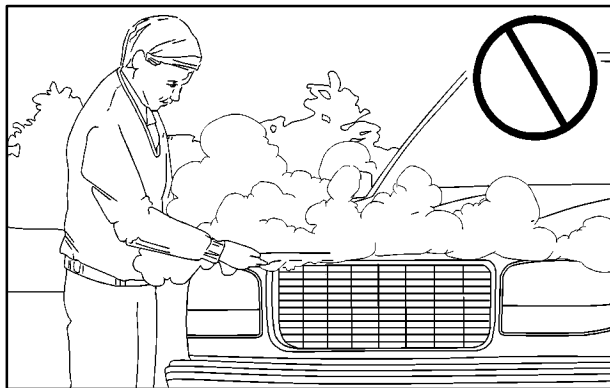
5-2 Engine Overheating
5-2 If Steam is Coming From Your Engine
5-3 If No Steam is Coming From Your Engine

5-4 Cooling System (Diesel Engine)
5-5 How to Add Coolant to the Coolant
Surge Tank

Engine Overheating

You will find a coolant temperature gage on the instrument cluster. In addition, the message center has the following warnings that may appear. **LOW COOLANT**, **CHECK COOLANT TEMP** and **ENGINE OVERHEATED**. See your owner's manual for more information.

If Steam Is Coming From Your Engine



⚠ CAUTION:

Steam from an overheated engine can burn you badly, even if you just open the hood. Stay away from the engine if you see or hear steam coming from it. Just turn it off and get everyone away from the vehicle until it cools down. Wait until there is no sign of steam or coolant before you open the hood.

If you keep driving when your engine is overheated, the liquids in it can catch fire. You or others could be badly burned. Stop your engine if it overheats, and get out of the vehicle until the engine is cool.

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 an engine overheat warning but see or hear no steam, the problem may not be too serious. Sometimes the engine can get a little too hot when you:

- Climb a long hill on a hot day.
- Stop after high-speed driving.
- Idle for long periods in traffic.
- Tow a trailer. See “Driving on Grades” in the Owner’s Manual.

If you get the overheat warning with no sign of steam, try this for a minute or so:

1. If you have an air conditioner and it’s on, turn it off.
2. Turn on your heater to full hot at the highest fan speed and open the window as necessary.
3. If you’re in a traffic jam, shift to NEUTRAL (N); otherwise, shift to the highest gear while driving -- DRIVE (D).

If you no longer have the overheat warning, you can drive. Just to be safe, drive slower for about 10 minutes. If the warning doesn’t come back on, you can drive normally.

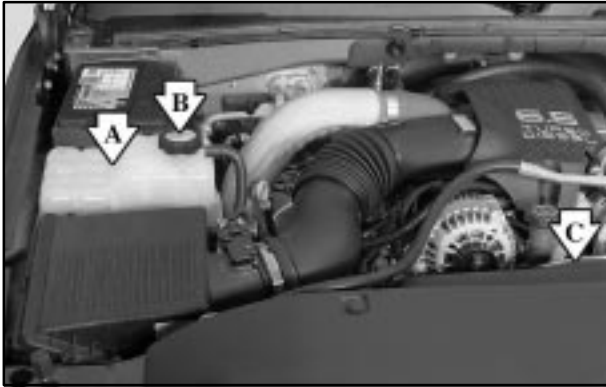
If the warning continues, pull over, stop, and park your vehicle right away.

If there’s still no sign of steam, push down the accelerator until the engine speed is about twice as fast as normal idle speed for at least three minutes while you’re parked. If you still have the warning, *turn off the engine and get everyone out of the vehicle* until it cools down.

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

Cooling System (Diesel Engine)

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



- A. Coolant Surge Tank
- B. Coolant Surge Tank Pressure Cap
- C. Engine Fan

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



When the engine is cold, the coolant level should be at or above the FILL COLD mark. 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.

NOTICE:

When adding coolant, it is important that you use only DEX-COOL[®] (silicate-free) coolant. If coolant other than DEX-COOL is added to the system, premature engine, heater core or radiator corrosion may result. In addition, the engine coolant will require change sooner -- at 30,000 miles (50 000 km) or 24 months, whichever occurs first. Damage caused by the use of coolant other than DEX-COOL[®] is not covered by your new vehicle warranty.

If there seems to be no leak, start the engine again. See if the engine cooling fan speed increases when idle speed is doubled by pushing the accelerator pedal down. If it doesn't, your vehicle needs service. Turn off the engine.

How to Add Coolant to the Coolant Surge Tank

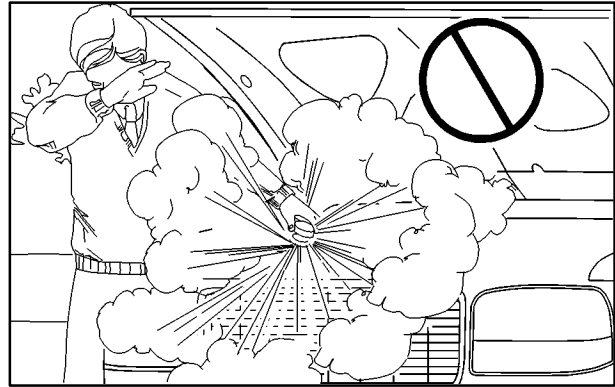
NOTICE:

The diesel engine has a specific coolant fill procedure. Failure to follow this procedure could cause your engine to overheat and be severely damaged.

If you haven't found a problem yet, but the coolant level isn't at or above the FILL COLD mark, add a 50/50 mixture of *clean, drinkable water* and DEX-COOL[®] coolant at the coolant surge tank, but be sure the cooling system, including the coolant surge tank pressure cap, is cool before you do it. See "Engine Coolant" in the Index for more information.

⚠ CAUTION:

Steam and scalding liquids from a hot cooling system can blow out and burn you badly. They are under pressure, and if you turn the coolant surge tank pressure cap -- even a little -- they can come out at high speed. Never turn the cap when the cooling system, including the coolant surge tank pressure cap, is hot. Wait for the cooling system and coolant surge tank pressure cap to cool if you ever have to turn the pressure cap.





CAUTION:

Adding only plain water to your cooling system can be dangerous. Plain water, or some other liquid like alcohol, can boil before the proper coolant mixture will. Your vehicle's coolant warning system is set for the proper coolant mixture. With plain water or the wrong mixture, your engine could get too hot but you wouldn't get the overheat warning. Your engine could catch fire and you or others could be burned. Use a 50/50 mixture of clean, drinkable water and DEX-COOL[®] coolant.

NOTICE:

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



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.



1. You can remove the coolant surge tank pressure cap when the cooling system, including the coolant surge tank pressure cap and upper radiator hose, is no longer hot. Turn the pressure cap slowly counterclockwise (left) about one full turn. If you hear a hiss, wait for that to stop. A hiss means there is still some pressure left.

If you hear a hiss, wait for that to stop. A hiss means there is still some pressure left.

2. Then keep turning the pressure cap slowly, and remove it.
3. After the engine cools, open the air bleed valve on the thermostat housing.



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.

4. Fill with the proper mixture. Add coolant until you see a steady stream of coolant coming from the bleed valve.
5. Close the bleed valve.
6. Rinse or wipe the spilled coolant from the engine and compartment.



7. Then fill the coolant surge tank with the proper mixture, to slightly above the fill mark.



8. With the coolant surge tank pressure cap off, start the engine and let it run until you can feel the upper radiator hose getting hot. Watch out for the engine cooling fan.

By this time, the coolant level inside the coolant surge tank may be lower. If the level is lower, add more of the proper mixture to the coolant surge tank until the level reaches the FILL COLD mark.



9. Then replace the pressure cap. Be sure the pressure cap is hand-tight.

Section 6 Service and Appearance Care

Here you will find information about the care of your vehicle. This section begins with service and diesel fuel information, and then it shows how to check important fluid and lubricant levels. There is also technical information about your vehicle. Use this section along with the information in Section 6 of your owner's manual.

6-2	Diesel Fuel Requirements and Fuel System	6-23	Automatic Transmission Fluid (Allison [®] Only)
6-12	Filling Your Tank	6-27	Engine Coolant
6-13	Filling a Portable Fuel Container	6-30	Surge Tank Pressure Cap
6-16	Engine Oil (Diesel Engines)	6-31	Specification Charts
6-20	Automatic Transmission Fluid (Except Allison [®] Transmission)		

Diesel Fuel Requirements and Fuel System

Some states and provinces have restrictions on the purchase of diesel fuel for light-duty vehicles and require you to buy permits or pay special taxes. Some of these restrictions apply only to residents, and others apply to both residents and visitors. These restrictions can change. To learn the current restrictions in any state or province, contact your auto club, the police or other officials.

Diesel Engine Fuel

NOTICE:

Diesel fuel or fuel additives not recommended in this manual could damage your fuel system and engine. Your warranty wouldn't cover this damage. And:

- **Diesel fuel that has been mixed with engine oil could damage your engine and emission controls. Check with the service station operator to make sure the diesel fuel has not been mixed with engine oil.**
- **If you ever run out of diesel fuel, it can be difficult to restart your engine. “Running Out of Fuel,” later in this section, tells you how to get it started again. To avoid all this, never let your tank get empty.**

What Fuel to Use

In the United States, for best results use Number 2-D diesel fuel year-round (above and below freezing conditions) as oil companies blend Number 2-D fuel to address climate differences. Number 1-D diesel fuel may be used in very cold temperatures (when it stays below 0°F or -18°C); however, it will produce a power and fuel economy loss. Avoid the use of Number 1-D diesel fuel in warm or hot climates. It may result in stalling, poor starting when the engine is hot and may damage the fuel injection system.

At a minimum, the diesel fuel you use should meet specifications ASTM D975-98a (Grade Low Sulfur) in the United States. In addition, the Engine Manufacturers Association (EMA) has identified properties of an improved diesel fuel for better engine performance and durability. Diesel fuels corresponding to the EMA Recommended Guideline on Premium Diesel Fuel (FQP-1A) could provide better starting, less noise and better vehicle performance. If there are questions about the fuel you are using, please contact your fuel supplier.

Diesel fuel may foam when you fill your tank. This can cause the automatic pump nozzle to shut off, even though your tank isn't full. If this happens, just wait for the foaming to stop and then continue to fill your tank.

CAUTION:

Heat coming from the engine may cause the fuel to expand and force the fuel out of your tank. If something ignites the fuel, a fire could start and people could be burned. To help avoid this, fill your fuel tank only until the automatic nozzle shuts off. Don't try to "top it off."

What Fuel to Use in Canada

Canadian fuels are blended for seasonal changes. Diesel Type “A” fuel is blended for better cold weather starting (below 0°F or -18°C); however, you may notice some power and fuel economy loss. If Type “A” fuel is used in warmer temperatures, stalling and hard starting may occur. Diesel Type “B” fuel is blended for temperatures above 0°F (-18°C). The emission control system requires the use of diesel fuel with low-sulfur (.05% by weight) content. Both low- and higher-sulfur fuels will be available in Canada. Only low-sulfur diesel fuels are available in the United States. It is important that diesel-powered trucks are refueled only with low-sulfur fuel. Use of fuels with higher-sulfur content will affect the function of the emission components and may cause reduced performance, excessive smoke and unpleasant odor.

At a minimum, the diesel fuel you use should meet specifications CAN/CGSB-3.517-93 (Low Sulfur Diesel) in Canada. In addition, the Engine Manufacturers Association (EMA) has identified properties of an improved diesel fuel for better engine performance and durability. Diesel fuels corresponding to the EMA description could provide better starting, less noise and better vehicle performance. If there are questions about the fuel you are using, please contact your fuel supplier.

Very Cold Weather Operation

Follow the instructions listed previously under the heading “What Fuel to Use.”

NOTICE:

Never use home heating oil or gasoline in your diesel engine. They can cause engine damage.

In cold weather, your fuel filter may become clogged (waxed). To unclog it, move the vehicle to a warm garage area and warm the filter to between 32°F and 50°F (0°C to 10°C). You won’t need to replace it. Additional information on the fuel filter follows.

Water in Fuel

CAUTION:

Diesel fuel containing water is still flammable. You could be burned. If you ever try to drain water from your fuel, keep sparks, flames and smoking materials away from the mixture.

NOTICE:

If there is water in your diesel fuel and the weather is warm or humid, fungus and bacteria can grow in the fuel. They can damage your fuel system. You’ll need a diesel fuel biocide to sterilize your fuel system. Your dealer can advise you if you ever need this.

If your fuel tank needs to be purged to remove water, see your dealer or a qualified technician. Improper purging can damage your fuel system.

Sometimes, water can be pumped into your fuel tank along with your diesel fuel. This can happen if a service station doesn’t regularly inspect and clean its fuel tanks, or if it gets contaminated fuel from its suppliers.

If this happens, a WATER IN FUEL light will come on. If it does, the water must be drained. Your dealer can show you how to do this.

WATER IN FUEL

This light also should come on briefly when you start your engine, as a check. If it doesn't, have it fixed so it will be there to let you know if you ever do get water in your fuel.

If the light comes on at any other time, use this chart.

Water In Fuel Light Chart

Problem	Recommended Action
Light comes on intermittently.	Drain water from fuel filter.
Light stays on: <ul style="list-style-type: none">• At temperatures above freezing.	Drain fuel filter immediately. If no water can be drained and light stays on, see your dealer for assistance.

Problem	Recommended Action
<ul style="list-style-type: none">• At temperatures below freezing.	Drain fuel filter immediately. If no water can be drained -- water may be frozen in water drain system. Water may be frozen in the fuel lines. Move the vehicle to a warm location to thaw out.
<ul style="list-style-type: none">• Immediately after refueling, large amount of water possibly pumped into fuel tank.	Fuel tank purging required. See your dealer for assistance.

NOTICE:

If you drive when this warning light is on, you can damage your fuel injection system and your engine. If the light comes on right after you refuel, it means water was pumped into your fuel tank. Turn off your engine immediately. Then, have the water drained at once.

Hard starting, hesitation or “flat” performance at high speed or during hard acceleration may be an indication of premature fuel filter plugging due to dirty or contaminated fuel. The filter element may need to be changed if this happens. See “Fuel Filter Replacement” later in this section.

To drain water, do the following:

1. Stop and park the vehicle in a safe place.
Turn off the engine and apply the parking brake.
2. Remove the fuel cap.
3. Place a fuel-resistant container under the filter. The filter drain valve is located on the passenger’s side of the engine, on the bottom of the fuel filter.



4. Open the drain valve by turning two to three turns. When fuel empties from the valve, all the water has been drained. Close the valve hand tight.

5. Start the engine and allow it to idle until clear fuel is observed. If no liquid comes out, your vehicle needs service.
6. Stop the engine and close the water drain valve.
7. Remove the fuel-resistant container and properly dispose of the contaminated fuel. To find out how to properly dispose of contaminated diesel fuel, see “What to Do with Used Oil” in the “Engine Oil (Diesel Engines)” part, later in this section.
8. Install the fuel cap.

If the WATER IN FUEL message comes on again after driving a short distance or the engine runs rough or stalls, a large amount of water has probably been pumped into the fuel tank. The fuel tank should be purged.

Fuel Priming

In order for the fuel system to work properly, the fuel lines must be full of fuel and contain no air. If air gets into the fuel lines, it will be necessary to prime the fuel lines to eliminate air before operating the vehicle.

Q: How does air get into the fuel lines?

A: One of the following may have happened:

- The vehicle ran out of fuel, or
- The fuel filter was removed for servicing or replacement, or
- The fuel lines were removed or disconnected for servicing.

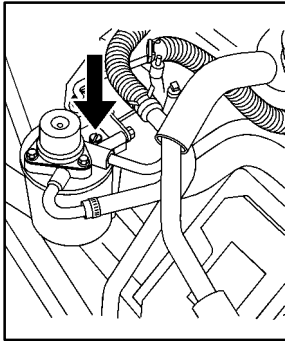
If one or more of the above occur, it is very likely that air has entered your fuel system and that you will need to prime the fuel system before operating the vehicle. Air in the fuel lines will not harm the engine or the vehicle.

However, the engine may not be able to start until the fuel system is primed and the air is removed.

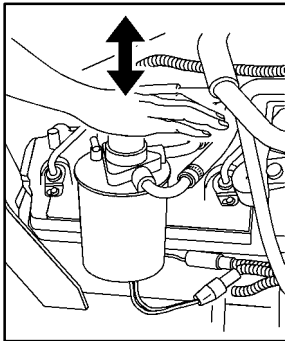
Q: How do I prime the vehicle?

A: Your vehicle is equipped with a priming pump which is part of the engine mounted fuel filter. The priming pump is hand operated and is designed to bring fuel to the engine to eliminate any air that may be in the fuel lines. To prime the engine, do the following:

1. You must correct the condition which caused the loss of prime by making sure there is fuel in the tank.
2. Make sure the fuel filter has been installed and properly tightened.
3. Make sure the fuel lines are properly connected and the fuel filter is cool enough to touch.
4. Remove any dirt from the fuel filter head and vent valve by wiping with a cloth.



5. Open the fuel filter vent valve by turning the screw counterclockwise several full turns, with a flathead screwdriver or a coin. The vent valve is located on top of the fuel filter housing.



6. Repeatedly push down on the fuel filter primer pump with the palm of your hand. The pump is also located on top of the fuel filter housing. Let the pump return upward between pushes.

7. Operate the priming pump until a small bit amount of fuel seeps from the vent valve. When you see the fuel, the filter is now full of fuel and the system should be primed.
8. Close the vent valve. Clean any fuel which accumulated on the fuel filter. Start the engine and let idle for a few minutes. Check the filter for leaks.

Running Out of Fuel (Diesel Engines)

CAUTION:

Diesel fuel is flammable. It could start a fire if it gets on hot engine parts. You could be burned. Don't let too much fuel flow from the air bleed valve, and wipe up any spilled fuel with a cloth.

To restart your engine:

1. If you're parked on a level surface, add at least two gallons of fuel. However, if you're parked on a slope, you may need to add up to five gallons of fuel.
2. Follow the fuel priming procedure earlier in this section to prime the fuel filter.
3. Close the air bleed valve.
4. Turn the ignition key to START for 10 to 15 seconds at a time until your engine starts. If the engine tries to run, but does not run smoothly, increase the rpm a little using the accelerator pedal. This will help force air through the system.

Fuel Filter Replacement (Diesel Engines)

If you want to change the fuel filter yourself, here's how to do it:



CAUTION:

Diesel fuel is flammable. It could start a fire if something ignites it, and you could be burned. Don't let it get on hot engine parts, and keep matches or other ignition sources away.

First, drain any water from the filter following the procedure for draining water listed previously.

Your vehicle's engine should be off until the end of the following procedure.

The fuel filter is located on the passenger's side of the engine.

1. Apply the parking brake.



2. Unplug the water sensor wire connected to the fuel filter and unscrew the entire filter housing.
3. Lift the element out of the filter housing using a cloth. If there is any dirt on the sealing surface of the filter, clean it off. Remove and reuse the water sensor float switch located on the bottom of the fuel filter.
4. Put in the new filter.
5. Reinstall and tighten the filter container and reconnect the diagnostic wire to engine.
6. Use the fuel filter priming procedure earlier in this section to prime the fuel filter.
7. Tighten the air bleed valve by turning clockwise until hand tight.
8. Start your engine and let it idle for five minutes. Check your fuel filter and air bleed valve for leaks.

Filling Your Tank



The fuel cap is located behind a hinged door on the driver's side of your vehicle.

For chassis-cab models, refuel the front tank first, or in instances when only a partial fuel fill is desired. An automatic transfer mechanism will maintain approximately equal fuel levels in both tanks, so no switching is required by the operator.



While refueling your vehicle hang the tether from the hook on the filler door.

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

Be careful not to spill diesel fuel. Clean fuel from painted surfaces as soon as possible. See “Cleaning the Outside of Your Vehicle” in your owner’s manual. When you put the cap back on, turn it to the right (clockwise) until you hear a clicking sound. Make sure you fully install the cap.

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 properly.

Filling a Portable Fuel Container

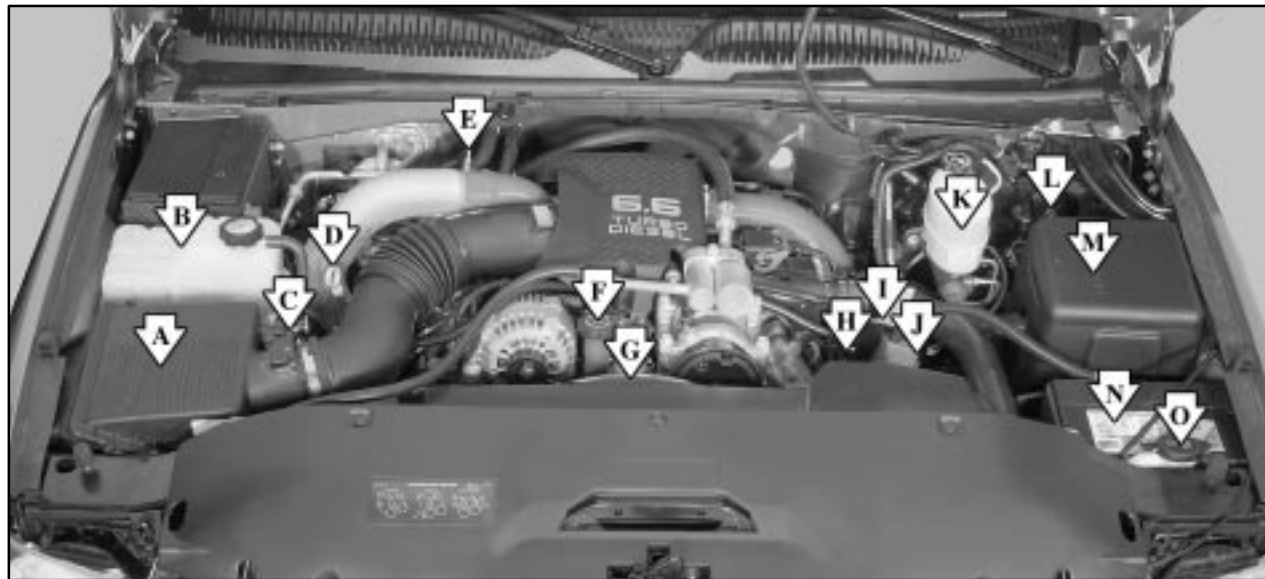
CAUTION:

Never fill a portable fuel container while it is in your vehicle. Static electricity discharge from the container can ignite the gasoline vapor. You can be badly burned and your vehicle damaged if this occurs. To help avoid injury to you and others:

- Dispense gasoline only into approved containers.
- Do not fill a container while it is inside a vehicle, in a vehicle’s trunk, pickup bed or on any surface other than the ground.
- Bring the fill nozzle in contact with the inside of the fill opening before operating the nozzle. Contact should be maintained until the filling is complete.
- Don’t smoke while pumping gasoline.

Engine Compartment Overview

When you open the hood on the 6.6L DURAMAX™ Diesel Engine you'll see:



- A. Engine Air Cleaner/Filter
- B. Coolant Surge Tank
- C. Engine Air Cleaner/Filter Restriction Indicator
- D. Engine Oil Dipstick
- E. Automatic Transmission Dipstick (If Equipped)
- F. Engine Oil Fill Cap
- G. Engine Fan
- H. Power Steering Fluid
- I. Remote Negative (-) Terminal
- J. Remote Positive (+) Terminal
- K. Brake Fluid Reservoir
- L. Clutch Fluid Reservoir (If Equipped)
- M. Fuse/Relay Center
- N. Battery
- O. Windshield Washer Fluid Reservoir

Engine Oil (Diesel Engines)

Checking Engine Oil

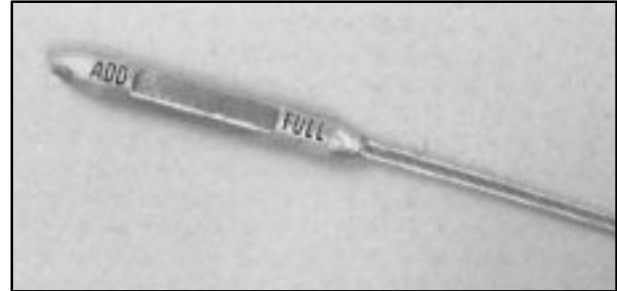
It's a good idea to check your engine oil level every time you get fuel. In order to get an accurate reading, the oil must be warm and the vehicle must be on level ground.



The engine oil dipstick has a yellow ring handle and is located on the passenger's side of the engine compartment. See "Engine Compartment Overview" in the Index for more information on its location.

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

Pull out the dipstick and clean it with a paper towel or a cloth, then push it back in all the way. Remove it again, keeping the tip down.



When to Add Engine Oil

If the oil is at or below the ADD line, then you'll need to add at least one quart of oil. But you must use the right kind. This part explains what kind of oil to use. For crankcase capacity, see "Capacities and Specifications" in the Index.

NOTICE:

Don't add too much oil. If your engine has so much oil that the oil level gets above the proper operating range, your engine could be damaged.



The engine oil fill cap is located near the center of the engine compartment. See "Engine Compartment Overview" in the Index for more information on its location.

Be sure to fill it enough to put the level somewhere in the proper operating range. Push the dipstick all the way back in when you're through.

What Kind of Engine Oil to Use

Look for these two things:

- CH-4 or CG-4

Oils designated as API CH-4 or CG-4 are best for your vehicle. The CH-4 or CG-4 designations may appear either alone, together or in combination with other API designations, such as API CH-4/SJ, CG-4/SH or CH-4/CG-4/SJ.

These letters show American Petroleum Institute (API) levels of quality.

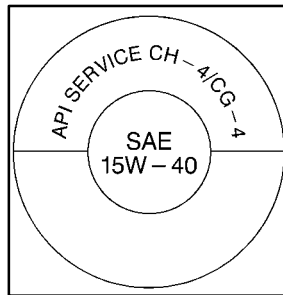
NOTICE:

If you use oils that don't have one of these designations either CH-4 or CG-4, you can cause engine damage which is not covered by your warranty.

- SAE 15W-40

As shown in the viscosity chart, SAE 15W-40 is best for your vehicle. However, you can use SAE 10W-30 at temperatures above 0°F (-18°C). When it's very cold, below 0°F (-18°C), you should use SAE 5W-40 to improve cold starting.

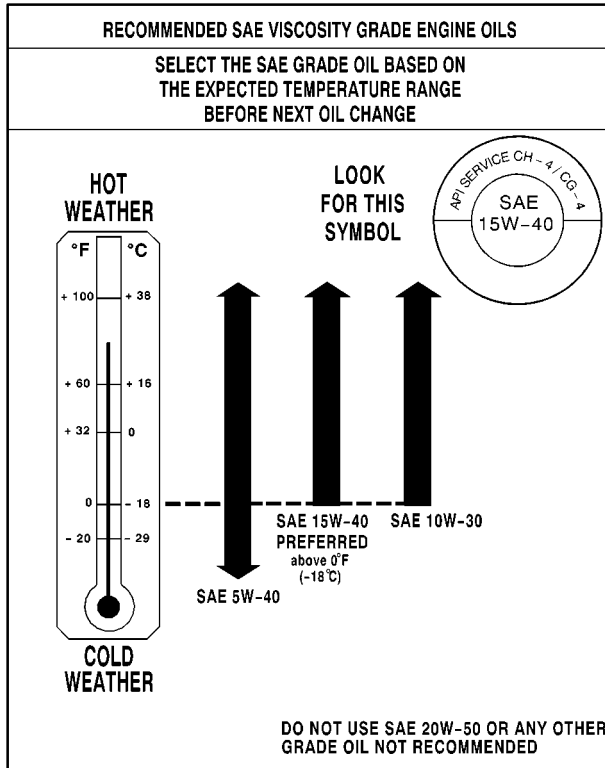
These numbers on the oil container show its viscosity, or thickness. Do not use other viscosity oils such as SAE 10W-40 or SAE 20W-50.



This doughnut-shaped logo (symbol) is used on most oil containers to help you select the correct oil. It means that the oil has been certified by the American Petroleum Institute.

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

GM Goodwrench[®] oil of the recommended viscosity grades meets all the requirements for your vehicle.



Engine Oil Additives

Don't add anything to your oil. The recommended oils with the API service symbol are all you will need for good performance and engine protection.

When to Change Engine Oil

If any one of these is true for you, use the short trip/city maintenance schedule:

- Most trips are less than 5 to 10 miles (8 to 16 km). This is particularly important when outside temperatures are below freezing.
- Most trips include extensive idling (such as frequent driving in stop-and-go traffic).
- Most trips are through dusty areas.
- You operate your four-wheel-drive vehicle off-road frequently.
- You frequently tow a trailer or use a carrier on top of your vehicle.

Driving under these conditions causes engine oil to break down sooner. If any of these is true for your vehicle, then you need to change your oil and filter every 5,000 miles (8 000 km) or 3 months -- whichever occurs first.

If none of them is true, use the long trip/highway maintenance schedule. Change the oil and filter every 7,500 miles (12 000 km) or 12 months -- whichever occurs first. Driving a vehicle with a fully warmed engine under highway conditions causes engine oil to break down slower.

What to Do with Used Oil

Did you know that used engine oil contains certain elements that may be unhealthy for your skin and could even cause cancer? Don't let used oil stay on your skin for very long. Clean your skin and nails with soap and water, or a good hand cleaner. Wash or properly throw away clothing or rags containing used engine oil. See the manufacturer's warnings about the use and disposal of oil products.

Used oil can be a 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 oil by putting it in the trash, pouring it on the ground, into sewers, or into streams or bodies of water. Instead, recycle it by taking it to a place that collects used oil. If you have a problem properly disposing of your used oil, ask your dealer, a service station or a local recycling center for help.

Automatic Transmission Fluid (Except Allison[®] Transmission)

When to Check and Change

A good time to check your automatic transmission fluid level is when the engine oil is changed.

Change both the fluid and filter every 50,000 miles (83 000 km).

See "Scheduled Maintenance Services" in the Index.

How to Check

Because this operation can be a little difficult, you may choose to have this done at the dealership service department.

If you do it yourself, be sure to follow all the instructions here, or you could get a false reading on the dipstick.

NOTICE:

Too much or too little fluid can damage your transmission. Too much can mean that some of the fluid could come out and fall on hot engine parts or exhaust system parts, starting a fire. Be sure to get an accurate reading if you check your transmission fluid.

Wait at least 30 minutes before checking the transmission fluid level if you have been driving:

- When outside temperatures are above 90°F (32°C).
- At high speed for quite a while.
- In heavy traffic -- especially in hot weather.
- While pulling a trailer.

To get the right reading, the fluid should be at normal operating temperature, which is 180°F to 200°F (82°C to 93°C).

Get the vehicle warmed up by driving about 15 miles (24 km) when outside temperatures are above 50°F (10°C). If it's colder than 50°F (10°C), drive the vehicle in THIRD (3) until the engine temperature gage moves and then remains steady for 10 minutes.

A cold fluid check can be made after the vehicle has been sitting for eight hours or more with the engine off, but this is used only as a reference. Let the engine run at idle for five minutes if outside temperatures are 50°F (10°C) or more. If it's colder than 50°F (10°C), you may have to idle the engine longer. Should the fluid level be low during this cold check, you *must* check the fluid hot before adding fluid. Checking the fluid hot will give you a more accurate reading of the fluid level.

Checking the Fluid Level

Prepare your vehicle as follows:

- Park your vehicle on a level place. Keep the engine running.
- With the parking brake applied, place the shift lever in PARK (P).
- With your foot on the brake pedal, move the shift lever through each gear range, pausing for about three seconds in each range. Then, position the shift lever in PARK (P).
- Let the engine run at idle for three minutes or more.

Then, without shutting off the engine, follow these steps:



1. The transmission dipstick has a red handle and is located at the rear of the engine compartment toward the passenger's side. See "Engine Compartment Overview" in the Index for more information on its location. Flip the handle up and then pull out the dipstick and wipe it with a clean rag or paper towel.
2. Push it back in all the way, wait three seconds and then pull it back out again.



3. Check both sides of the dipstick, and read the lower level. The fluid level must be in the COLD area, below the cross-hatched area, for a cold check or in the HOT area or cross-hatched area for a hot check.
4. If the fluid level is in the acceptable range, push the dipstick back in all the way; then flip the handle down to lock the dipstick in place.

How to Add Fluid

Refer to the Maintenance Schedule to determine what kind of transmission fluid to use. See “Recommended Fluids and Lubricants” in the Index.

Add fluid only after checking the transmission fluid while it is hot. (A cold check is used only as a reference.) If the fluid level is low, add only enough of the proper fluid to bring the level up to the HOT area for a hot check. It doesn't take much fluid, generally less than one pint (0.5 L). *Don't overfill.*

NOTICE:

We recommend you use only fluid labeled DEXRON®-III, because fluid with that label is made especially for your automatic transmission. Damage caused by fluid other than DEXRON®-III is not covered by your new vehicle warranty.

- After adding fluid, recheck the fluid level as described under “How to Check.”
- When the correct fluid level is obtained, push the dipstick back in all the way; then flip the handle down to lock the dipstick in place.

Automatic Transmission Fluid (Allison® Only)

When to Check and Change

A good time to check your automatic transmission fluid level is when the engine oil is changed.

Change both the fluid and filter every 25,000 miles (41 500 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.
- When doing frequent trailer towing.
- Uses such as found in taxi, police or delivery service.

If you do not use your vehicle under any of these conditions, change the fluid and filter every 50,000 miles (83 000 km).

See “Scheduled Maintenance Services” in the Index.

How to Check

Because this operation can be a little difficult, you may choose to have this done at the dealership service department.

If you do it yourself, be sure to follow all the instructions here, or you could get a false reading on the dipstick.

NOTICE:

Too much or too little fluid can damage your transmission. Too much can mean that some of the fluid could come out and fall on hot engine parts or exhaust system parts, starting a fire. 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.

Checking the Fluid Level

Prepare your vehicle as follows:

- Park your vehicle on a level place. Keep the engine running.
- With the parking brake applied, place the shift lever in PARK (P).
- With your foot on the brake pedal, run the engine for at least one minute and shift to DRIVE (D). Then shift to NEUTRAL (N) and then REVERSE (R) to fill the hydraulic system. Then, position the shift lever in PARK (P).
- Allow the engine to run at idle (500 - 800 rpm). Slowly release the brake pedal.

Then, without shutting off the engine, follow these steps:

Cold Check Procedure

The purpose of the cold check is to determine if the transmission has enough fluid to be operated safely until a hot check can be made. The fluid level rises as fluid temperature increases. **DO NOT** fill above the **COLD CHECK** band if the transmission fluid is below normal operating temperatures.

1. Pull out the dipstick and wipe it with a clean rag or paper towel.
2. Push it back in all the way, wait three seconds and then pull it back out again.
3. Insert the dipstick into the tube and remove. Check the fluid level reading. Repeat the check procedure to verify the reading.
4. If the fluid level is within the COLD CHECK band, the transmission may be operated until the fluid is hot enough to perform a hot check. If the fluid level is not within the COLD CHECK band, add or drain fluid as necessary to bring the level into the middle of the COLD CHECK band.
5. Perform a hot check at the first opportunity after the normal operating temperature of 160°F (71°C) to 200°F (93°C) is reached.
6. If the fluid level is in the acceptable range, push the dipstick back in all the way.

Hot Check Procedure

The fluid must be hot to ensure an accurate check. The fluid level rises as temperature increases.

1. Operate the transmission in DRIVE (D) range until the normal operating temperature of 160°F (71°C) to 200°F (93°C) is reached.
2. Pull out the dipstick and wipe it with a clean rag or paper towel.
3. Push it back in all the way, wait three seconds and then pull it back out again. Repeat the check procedure to verify the reading.
4. Safe operating level is within the HOT RUN band on the dipstick. The width of the HOT RUN band represents approximately 1.06 quart (1.0 liter) of fluid at normal operating temperature.
5. If the fluid level is not within the HOT RUN band, add or drain fluid as necessary to bring the fluid level to within the HOT RUN band.
6. If the fluid level is in the acceptable range, push the dipstick back in all the way.

Consistency of Readings

Always check the fluid level at least twice using the procedures described previously. Consistency (repeatable readings) is important to maintaining proper fluid level. If inconsistent readings persist, check the transmission breather to be sure it is clean and unclogged. If readings are still inconsistent, contact your dealer.

How to Add Fluid

Refer to the Maintenance Schedule to determine what kind of transmission fluid to use. See “Recommended Fluids and Lubricants” in the Index.

Add fluid only after checking the transmission fluid while it is hot. (A cold check is used only as a reference.) If the fluid level is low, add only enough of the proper fluid to bring the level up to the HOT area for a hot check. It doesn't take much fluid, generally less than one pint (0.5 L). *Don't overfill.*

NOTICE:

We recommend you use only fluid labeled DEXRON®-III, because fluid with that label is made especially for your automatic transmission. Damage caused by fluid other than DEXRON®-III is not covered by your new vehicle warranty.

- After adding fluid, recheck the fluid level as described under “How to Check.”
- When the correct fluid level is obtained, push the dipstick back in all the way.

Engine Coolant

The cooling system in your vehicle is filled with DEX-COOL[®] engine coolant. This coolant is designed to remain in your vehicle for 5 years or 150,000 miles (240 000 km), whichever occurs first, if you add only DEX-COOL[®] extended life coolant.

The following explains your cooling system and how to add coolant when it is low. If you have a problem with engine overheating, see “Engine Overheating” in the Index.

A 50/50 mixture of clean, drinkable water and DEX-COOL[®] coolant will:

- Give freezing protection down to -34°F (-37°C).
- Give boiling protection up to 265°F (129°C).
- Protect against rust and corrosion.
- Help keep the proper engine temperature.
- Let the warning lights and gages work as they should.

NOTICE:

When adding coolant, it is important that you use only DEX-COOL[®] (silicate-free) coolant. If coolant other than DEX-COOL is added to the system, premature engine, heater core or radiator corrosion may result. In addition, the engine coolant will require change sooner -- at 30,000 miles (50 000 km) or 24 months, whichever occurs first. Damage caused by the use of coolant other than DEX-COOL[®] is not covered by your new vehicle warranty.

What to Use

Use a mixture of one-half *clean, drinkable water* and one-half DEX-COOL[®] coolant which won't damage aluminum parts. If you use this coolant mixture, you don't need to add anything else.

CAUTION:

Adding only plain water to your cooling system can be dangerous. Plain water, or some other liquid like alcohol, can boil before the proper coolant mixture will. Your vehicle's coolant warning system is set for the proper coolant mixture. With plain water or the wrong mixture, your engine could get too hot but you wouldn't get the overheat warning. Your engine could catch fire and you or others could be burned. Use a 50/50 mixture of clean, drinkable water and DEX-COOL[®] coolant.

NOTICE:

If you use an improper coolant mixture, your engine could overheat and be badly damaged. The repair cost wouldn't be covered by your warranty. Too much water in the mixture can freeze and crack the engine, radiator, heater core and other parts.

If you have to add coolant more than four times a year, have your dealer check your cooling system.

NOTICE:

If you use the proper coolant, you don't have to add extra inhibitors or additives which claim to improve the system. These can be harmful.

Checking Coolant



The coolant surge tank is located on the passenger's side of the engine compartment. See "Engine Compartment Overview" in the Index for more information on its location.

CAUTION:

Turning the surge tank pressure cap when the engine and radiator are hot can allow steam and scalding liquids to blow out and burn you badly. Never turn the surge tank pressure cap -- even a little -- when the engine and radiator are hot.

The vehicle must be on a level surface. When your engine is cold, the coolant level should be at the line mark.

LOW
COOLANT

If the LOW COOLANT light comes on and stays on, it means you're low on engine coolant.

Adding Coolant

If you need more coolant, add the proper DEX-COOL[®] coolant mixture *at the surge tank*, but only when the engine is cool. If the surge tank is empty, see "Engine Overheating" in the Index for the proper fill procedure.

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 replacing the pressure cap, make sure it is hand-tight.

Surge Tank Pressure Cap



The surge tank pressure cap must be tightly installed.

NOTICE:

Your surge tank pressure cap is a unique 15 psi (105 kPa) pressure-type cap for use with surge tank cooling systems only. It must be tightly installed to prevent coolant loss and possible engine damage from overheating.

Specification Charts

Engine Identification

Engine	6.6L
Type	V8
VIN Code	1
Fuel System	Turbo Diesel

Cooling System Capacity

Automatic Transmission	21.8 quarts (20.7 L)
Manual Transmission	21.4 quarts (20.3 L)

All quantities are approximate. After refill, the level *MUST* be checked as outlined under “Engine Cooling System” in Section 5.

Crankcase Capacity

Engine	VIN	Quantity with filter change -- Quarts (L)
6.6L V8	1	10.0 quarts (9.5 L)

All quantities are approximate. After refill, the level *MUST* be checked as outlined under “Engine Oil And Filter Recommendations” in Section 6.

Oil filter should be changed at *EVERY* oil change.

Service Replacement Part and Filter Recommendations

Oil Filter	97214983* (GM part number)
Engine Air Cleaner/Filter	See your dealer for part numbers
Fuel Filter	See your dealer for part numbers

* Use only the specified oil filter. Failure to use the proper filter can result in engine damage not covered by your warranty.

Section 7 Maintenance Schedule

This section covers the maintenance required for your vehicle. Your vehicle needs these services to retain its safety, dependability and emission control performance.

7-2	Introduction	7-40	Part B: Owner Checks and Services
7-4	Part A: Scheduled Maintenance Services	7-45	Part C: Periodic Maintenance Inspections
7-5	Scheduled Maintenance	7-47	Part D: Recommended Fluids and Lubricants
7-8	Short Trip/City Scheduled Maintenance -- Diesel Engines	7-50	Part E: Maintenance Record
7-26	Long Trip/Highway Scheduled Maintenance -- Diesel Engines		

IMPORTANT:
KEEP ENGINE OIL
AT THE PROPER
LEVEL AND CHANGE AS
RECOMMENDED



Have you purchased the GM Protection Plan? The Plan supplements your new vehicle warranties. See your Warranty and Owner Assistance booklet or your dealer for details.

Introduction

Your Vehicle and the Environment

Proper vehicle maintenance not only helps to keep your vehicle in good working condition, but also helps the environment. All recommended maintenance procedures are important. Improper vehicle maintenance can even affect the quality of the air we breathe. Improper fluid levels or the wrong tire inflation can increase the level of emissions from your vehicle. To help protect our environment, and to keep your vehicle in good condition, please maintain your vehicle properly.

Maintenance Requirements

Maintenance intervals, checks, inspections and recommended fluids and lubricants as prescribed in this manual are necessary to keep your vehicle in good working condition. Any damage caused by failure to follow recommended maintenance may not be covered by warranty.

How This Section is Organized

This maintenance schedule is divided into five parts:

“Part A: Scheduled Maintenance Services” shows what to have done and how often. Some of these services can be complex, so unless you are technically qualified and have the necessary equipment, you should let your dealer’s service department or another qualified service center do these jobs.

CAUTION:

Performing maintenance work on a vehicle can be dangerous. In trying to do some jobs, you can be seriously injured. Do your own maintenance work only if you have the required know-how and the proper tools and equipment for the job. If you have any doubt, have a qualified technician do the work.

If you want to get the service information, see “Service and Owner Publications” in the Index of your owner’s manual.

“Part B: Owner Checks and Services” tells you what should be checked and when. It also explains what you can easily do to help keep your vehicle in good condition.

“Part C: Periodic Maintenance Inspections” explains important inspections that your dealer’s service department or another qualified service center should perform.

“Part D: Recommended Fluids and Lubricants” lists some recommended products necessary to help keep your vehicle properly maintained. These products, or their equivalents, should be used whether you do the work yourself or have it done.

“Part E: Maintenance Record” is a place for you to record and keep track of the maintenance performed on your vehicle. Keep your maintenance receipts. They may be needed to qualify your vehicle for warranty repairs.

Part A: Scheduled Maintenance Services

Using Your Maintenance Schedule

We at General Motors want to help you keep your vehicle in good working condition. But we don't know exactly how you'll drive it. You may drive very short distances only a few times a week. Or you may drive long distances all the time in very hot, dusty weather. You may use your vehicle in making deliveries. Or you may drive it to work, to do errands or in many other ways.

Because of all the different ways people use their vehicles, maintenance needs vary. You may need more frequent checks and replacements. So please read the following and note how you drive. If you have any questions on how to keep your vehicle in good condition, see your dealer.

This part tells you the maintenance services you should have done and when you should schedule them. If you go to your dealer for your service needs, you'll know that GM-trained and supported service people will perform the work using genuine GM parts.

The proper fluids and lubricants to use are listed in Part D. Make sure whoever services your vehicle uses these. All parts should be replaced and all necessary repairs done before you or anyone else drives the vehicle.

These schedules are for vehicles that:

- carry passengers and cargo within recommended limits. You will find these limits on your vehicle's Certification/Tire label. See "Loading Your Vehicle" in your owner's manual.
- are driven on reasonable road surfaces within legal driving limits.
- are driven off-road in the recommended manner. See "Off-Road Driving With Your Four-Wheel-Drive Vehicle" in the owner's manual.
- use the recommended fuel. See "Fuel" in the Index.

Selecting the Right Schedule

First you'll need to decide which of the two schedules is right for your vehicle. Here's how to decide which schedule to follow:

Scheduled Maintenance

Short Trip/City Definition -- Diesel Engines

Follow the Short Trip/City Scheduled Maintenance if any one of these conditions is true for your vehicle:

- Most trips are less than 5 to 10 miles (8 to 16 km). This is particularly important when outside temperatures are below freezing.
- Most trips include extensive idling (such as frequent driving in stop-and-go traffic).
- You operate your vehicle in dusty areas or off-road frequently.
- You frequently tow a trailer or use a carrier on top of your vehicle.
- The vehicle is used for delivery service, police, taxi or other commercial application.

One of the reasons you should follow this schedule, if you operate your vehicle under any of these conditions, is that these conditions cause engine oil to break down sooner.

Short Trip/City Intervals -- Diesel Engines

At 5,000 Miles (8 000 km) If Vehicle is Used to Tow a Trailer: Rear Axle Fluid Change Recommended After the First 500 Miles (800 km) of Trailer Towing.

Every 5,000 Miles (8 000 km): Engine Oil and Filter Change (or every 3 months, whichever occurs first). Chassis Lubrication (or every 3 months, whichever occurs first). Rear/Front Axle Fluid Check. Constant Velocity Joint Check. Tire Rotation.

Every 10,000 Miles (16 000 km): Passenger Compartment Air Filter Replacement (if equipped).

Every 15,000 Miles (24 000 km): Shields and Underhood Insulation Inspection. Thermostatically Controlled Engine Cooling Fan Check (or every 12 months, whichever occurs first). Air Intake System Inspection.

(Continued)

Scheduled Maintenance

Short Trip/City Intervals -- Diesel Engines

Every 25,000 Miles (40 000 km): Automatic Transmission Service (Allison[®] transmission under severe conditions only). Fuel Cap Replacement, if driving in dusty conditions.

Every 30,000 Miles (48 000 km): Fuel Filter Replacement.

Every 50,000 Miles (80 000 km): Automatic Transmission Service.

Every 60,000 Miles (96 000 km): Engine Accessory Drive Belt Inspection.

Every 150,000 Miles (240 000 km): Cooling System Service (or every 60 months, whichever occurs first).

These intervals only summarize maintenance services. Be sure to follow the complete scheduled maintenance on the following pages.

Long Trip/Highway Definition -- Diesel Engines

Follow this scheduled maintenance *only* if none of the conditions from the Short Trip/City Scheduled Maintenance are true. Do not use this schedule if the vehicle is used for trailer towing, driven in a dusty area or used off paved roads. Use the Short Trip/City schedule for these conditions.

Driving a vehicle with a fully warmed engine under highway conditions causes engine oil to break down slower.

Scheduled Maintenance

Long Trip/Highway Intervals -- Diesel Engines

Every 7,500 Miles (12 000 km): Engine Oil and Filter Change (or every 12 months, whichever occurs first). Chassis Lubrication (or every 12 months, whichever occurs first). Rear/Front Axle Fluid Check. Constant Velocity Joint Check. Tire Rotation.

Every 15,000 Miles (24 000 km): Passenger Compartment Air Filter Replacement (if equipped). Shields and Underhood Insulation Inspection. Thermostatically Controlled Engine Cooling Fan Check (or every 12 months, whichever occurs first). Air Intake System Inspection.

Long Trip/Highway Intervals -- Diesel Engines

Every 30,000 Miles (48 000 km): Fuel Filter Replacement.

Every 50,000 Miles (80 000 km): Automatic Transmission Service.

Every 60,000 Miles (96 000 km): Engine Accessory Drive Belt Inspection.

Every 150,000 Miles (240 000 km): Cooling System Service (or every 60 months, whichever occurs first).

These intervals only summarize maintenance services. Be sure to follow the complete scheduled maintenance on the following pages.

Short Trip/City Scheduled Maintenance -- Diesel Engines

The services shown in this schedule up to 100,000 miles (160 000 km) should be performed after 100,000 miles (160 000 km) at the same intervals. The services shown at 150,000 miles (240 000 km) should be performed at the same interval after 150,000 miles (240 000 km).

See “Owner Checks and Services” and “Periodic Maintenance Inspections” following.

Footnotes

† *The U.S. Environmental Protection Agency or the California Air Resources Board has determined that the failure to perform this maintenance item will not nullify the emissions warranty or limit recall liability prior to the completion of the vehicle’s useful life. We, however, urge that all recommended maintenance services be performed at the indicated intervals and the maintenance be recorded.*

Lubricate the front suspension, kingpin bushings, steering linkage, transmission shift linkage, transfer case shift linkage, parking brake cable guides, and brake pedal springs. Ball joints and kingpin bushings should not be lubricated unless their temperature is 10° F (-12° C) or higher, or they could be damaged.

+ A good time to check your brakes is during tire rotation. See “Brake System Inspection” under “Periodic Maintenance Inspections” in Part C of this schedule.

Short Trip/City Scheduled Maintenance -- Diesel Engines

5,000 Miles (8 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. If your vehicle is used to pull a trailer, a rear axle fluid change is recommended after a break-in period. Change the rear axle fluid after the first 500 miles (800 km) of trailer towing. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*

10,000 Miles (16 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)

DATE	
ACTUAL MILEAGE	SERVICED BY:

DATE	
ACTUAL MILEAGE	SERVICED BY:

(Continued)

Short Trip/City Scheduled Maintenance -- Diesel Engines

10,000 Miles (16 000 km) (Continued)

- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. (See footnote +.)
- If Equipped: Replace passenger compartment air filter.

15,000 Miles (24 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. (See footnote +.)

DATE	
ACTUAL MILEAGE	SERVICED BY:

Short Trip/City Scheduled Maintenance -- Diesel Engines

- Inspect shields and underhood insulation for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

20,000 Miles (32 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*

DATE	
ACTUAL MILEAGE	SERVICED BY:

(Continued)

Short Trip/City Scheduled Maintenance -- Diesel Engines

20,000 Miles (32 000 km) (Continued)

- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. (See footnote +.)
- If Equipped: Replace passenger compartment air filter.

25,000 Miles (40 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. (See footnote +.)

DATE	
ACTUAL MILEAGE	SERVICED BY:

Short Trip/City Scheduled Maintenance -- Diesel Engines

- Replace fuel filler cap if driving in dusty conditions.
An Emission Control Service.
- Allison Transmission Only: Change automatic transmission fluid and filters if the vehicle is mainly driven under one of these conditions:
 - In heavy city traffic where the outside temperature regularly reaches 90°F (32°C) or higher.
 - In hilly or mountainous terrain.
 - When doing frequent trailer towing.
 - Uses such as found in taxi, police or delivery service.

If you do not use your vehicle under any of these conditions, change the fluid and filter every 50,000 miles (80 000 km).

30,000 Miles (48 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.

DATE	
ACTUAL MILEAGE	SERVICED BY:

(Continued)

Short Trip/City Scheduled Maintenance -- Diesel Engines

30,000 Miles (48 000 km) (Continued)

- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. (See footnote +.)
- If Equipped: Replace passenger compartment air filter.
- Inspect shields and underhood insulation for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Replace fuel filter. See “Fuel Filter” in the Index. *An Emission Control Service. (See footnote †.)*

Short Trip/City Scheduled Maintenance -- Diesel Engines

35,000 Miles (56 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*

40,000 Miles (64 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*
- If Equipped: Replace passenger compartment air filter.

DATE	
ACTUAL MILEAGE	SERVICED BY:

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ACTUAL MILEAGE	SERVICED BY:

Short Trip/City Scheduled Maintenance -- Diesel Engines

45,000 Miles (72 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*
- Inspect shields and underhood insulation for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

DATE	
ACTUAL MILEAGE	SERVICED BY:

Short Trip/City Scheduled Maintenance -- Diesel Engines

50,000 Miles (80 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*
- If Equipped: Replace passenger compartment air filter.
- Replace fuel filler cap if driving in dusty conditions.
An Emission Control Service.
- Change automatic transmission fluid and filter. Manual transmission fluid doesn’t require change.
- Automatic Transfer Case Only: Change transfer case fluid.

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ACTUAL MILEAGE	SERVICED BY:

Short Trip/City Scheduled Maintenance -- Diesel Engines

55,000 Miles (88 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*

DATE	
ACTUAL MILEAGE	SERVICED BY:

60,000 Miles (96 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.

DATE	
ACTUAL MILEAGE	SERVICED BY:

Short Trip/City Scheduled Maintenance -- Diesel Engines

- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. (*See footnote +.*)
- If Equipped: Replace passenger compartment air filter.
- Inspect shields and underhood insulation for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Replace fuel filter. See “Fuel Filter” in the Index. *An Emission Control Service. (See footnote †.)*
- Inspect engine accessory drive belt. *An Emission Control Service.*

Short Trip/City Scheduled Maintenance -- Diesel Engines

65,000 Miles (104 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*

DATE	
ACTUAL MILEAGE	SERVICED BY:

70,000 Miles (112 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*
- If Equipped: Replace passenger compartment air filter.

DATE	
ACTUAL MILEAGE	SERVICED BY:

Short Trip/City Scheduled Maintenance -- Diesel Engines

75,000 Miles (120 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*
- Replace fuel filler cap if driving in dusty conditions.
An Emission Control Service.
- Allison Transmission Only: Change automatic transmission fluid and filters if the vehicle is mainly driven under one of these conditions:
 - In heavy city traffic where the outside temperature regularly reaches 90°F (32°C) or higher.
 - In hilly or mountainous terrain.
 - When doing frequent trailer towing.
 - Uses such as found in taxi, police or delivery service.

If you do not use your vehicle under any of these conditions, change the fluid and filter every 50,000 miles (80 000 km).

DATE	
ACTUAL MILEAGE	SERVICED BY:

Short Trip/City Scheduled Maintenance -- Diesel Engines

80,000 Miles (128 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*
- If Equipped: Replace passenger compartment air filter.

DATE	
ACTUAL MILEAGE	SERVICED BY:

85,000 Miles (136 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*

DATE	
ACTUAL MILEAGE	SERVICED BY:

Short Trip/City Scheduled Maintenance -- Diesel Engines

90,000 Miles (144 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*
- If Equipped: Replace passenger compartment air filter.
- Inspect shields and underhood insulation for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

DATE	
ACTUAL MILEAGE	SERVICED BY:

(Continued)

Short Trip/City Scheduled Maintenance -- Diesel Engines

90,000 Miles (144 000 km) (Continued)

- If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Replace fuel filter. See “Fuel Filter” in the Index. *An Emission Control Service.* (See footnote †.)

95,000 Miles (152 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first). *An Emission Control Service.*
- Lubricate chassis components (or every 3 months, whichever occurs first). *(See footnote #.)*
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*

DATE	
ACTUAL MILEAGE	SERVICED BY:

Short Trip/City Scheduled Maintenance -- Diesel Engines

100,000 Miles (160 000 km)

- Change engine oil and filter (or every 3 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 3 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*
- If Equipped: Replace passenger compartment air filter.
- Replace fuel filler cap if driving in dusty conditions.
An Emission Control Service.
- Change automatic transmission fluid and filter. Manual transmission fluid doesn’t require change.
- Automatic Transfer Case Only: Change transfer case fluid.

150,000 Miles (240 000 km)

- Drain, flush and refill the cooling system (or every 60 months since last service, whichever occurs first). See “Engine Coolant” in your owner’s manual for what to use.
An Emission Control Service.

DATE	
ACTUAL MILEAGE	SERVICED BY:

DATE	
ACTUAL MILEAGE	SERVICED BY:

Long Trip/Highway Scheduled Maintenance -- Diesel Engines

The services shown in this schedule up to 100,000 miles (160 000 km) should be performed after 100,000 miles (160 000 km) at the same intervals. The services shown at 150,000 miles (240 000 km) should be performed at the same interval after 150,000 miles (240 000 km).

See “Owner Checks and Services” and “Periodic Maintenance Inspections” following.

Footnotes

† *The U.S. Environmental Protection Agency or the California Air Resources Board has determined that the failure to perform this maintenance item will not nullify the emissions warranty or limit recall liability prior to the completion of the vehicle’s useful life. We, however, urge that all recommended maintenance services be performed at the indicated intervals and the maintenance be recorded.*

Lubricate the front suspension, kingpin bushings, steering linkage, transmission shift linkage, transfer case shift linkage, parking brake cable guides, and brake pedal springs. Ball joints and kingpin bushings should not be lubricated unless their temperature is 10° F (-12° C) or higher, or they could be damaged.

+ A good time to check your brakes is during tire rotation. See “Brake System Inspection” under “Periodic Maintenance Inspections” in Part C of this schedule.

Long Trip/Highway Scheduled Maintenance -- Diesel Engines

7,500 Miles (12 000 km)

- Change engine oil and filter (or every 12 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 12 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. If your vehicle is used to pull a trailer, a rear axle fluid change is recommended after a break-in period. Change the rear axle fluid after the first 500 miles (800 km) of trailer towing. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*

15,000 Miles (24 000 km)

- Change engine oil and filter (or every 12 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 12 months, whichever occurs first).
(See footnote #.)

DATE	
ACTUAL MILEAGE	SERVICED BY:

DATE	
ACTUAL MILEAGE	SERVICED BY:

(Continued)

Long Trip/Highway Scheduled Maintenance -- Diesel Engines

15,000 Miles (24 000 km) (Continued)

- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. (*See footnote +.*)
- If Equipped: Replace passenger compartment air filter.
- Inspect shields and underhood insulation for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

Long Trip/Highway Scheduled Maintenance -- Diesel Engines

22,500 Miles (36 000 km)

- Change engine oil and filter (or every 12 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 12 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*

DATE	
ACTUAL MILEAGE	SERVICED BY:

30,000 Miles (48 000 km)

- Change engine oil and filter (or every 12 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 12 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.

DATE	
ACTUAL MILEAGE	SERVICED BY:

(Continued)

Long Trip/Highway Scheduled Maintenance -- Diesel Engines

30,000 Miles (48 000 km) (Continued)

- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. (See footnote +.)
- If Equipped: Replace passenger compartment air filter.
- Inspect shields and underhood insulation for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Replace fuel filter. See “Fuel Filter” in the Index. *An Emission Control Service. (See footnote †.)*

Long Trip/Highway Scheduled Maintenance -- Diesel Engines

37,500 Miles (60 000 km)

- Change engine oil and filter (or every 12 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 12 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*

DATE	
ACTUAL MILEAGE	SERVICED BY:

45,000 Miles (72 000 km)

- Change engine oil and filter (or every 12 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 12 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.

DATE	
ACTUAL MILEAGE	SERVICED BY:

(Continued)

Long Trip/Highway Scheduled Maintenance -- Diesel Engines

45,000 Miles (72 000 km) (Continued)

- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. (See footnote +.)
- If Equipped: Replace passenger compartment air filter.
- Inspect shields and underhood insulation for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

50,000 Miles (76 000 km)

- Change automatic transmission fluid and filter. Manual transmission fluid doesn’t require change.
- Automatic Transfer Case Only: Change transfer case fluid.

DATE	
ACTUAL MILEAGE	SERVICED BY:

Long Trip/Highway Scheduled Maintenance -- Diesel Engines

52,500 Miles (84 000 km)

- Change engine oil and filter (or every 12 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 12 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*

DATE	
ACTUAL MILEAGE	SERVICED BY:

60,000 Miles (96 000 km)

- Change engine oil and filter (or every 12 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 12 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.

DATE	
ACTUAL MILEAGE	SERVICED BY:

(Continued)

Long Trip/Highway Scheduled Maintenance -- Diesel Engines

60,000 Miles (96 000 km) (Continued)

- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. (See footnote +.)
- If Equipped: Replace passenger compartment air filter.
- Inspect shields and underhood insulation for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Replace fuel filter. See “Fuel Filter” in the Index. *An Emission Control Service. (See footnote †.)*
- Inspect engine accessory drive belt. *An Emission Control Service.*

Long Trip/Highway Scheduled Maintenance -- Diesel Engines

67,500 Miles (108 000 km)

- Change engine oil and filter (or every 12 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 12 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*

DATE	
ACTUAL MILEAGE	SERVICED BY:

75,000 Miles (120 000 km)

- Change engine oil and filter (or every 12 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 12 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.

DATE	
ACTUAL MILEAGE	SERVICED BY:

(Continued)

Long Trip/Highway Scheduled Maintenance -- Diesel Engines

75,000 Miles (120 000 km) (Continued)

- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. (See footnote +.)
- If Equipped: Replace passenger compartment air filter.
- Inspect shields and underhood insulation for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*

Long Trip/Highway Scheduled Maintenance -- Diesel Engines

82,500 Miles (132 000 km)

- Change engine oil and filter (or every 12 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 12 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*

DATE	
ACTUAL MILEAGE	SERVICED BY:

90,000 Miles (144 000 km)

- Change engine oil and filter (or every 12 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 12 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.

DATE	
ACTUAL MILEAGE	SERVICED BY:

(Continued)

Long Trip/Highway Scheduled Maintenance -- Diesel Engines

90,000 Miles (144 000 km) (Continued)

- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. (See footnote +.)
- If Equipped: Replace passenger compartment air filter.
- Inspect shields and underhood insulation for damage or looseness. Adjust or replace as required. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Check the air intake system installation to assure that gaskets are properly sealed and that all hose connections, fasteners and other components are tight. Also check to be sure that the air cleaner housing is properly seated and the cover fits tightly. Tighten connections and fasteners or replace damaged parts as necessary. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- If your engine has a thermostatically controlled cooling fan, inspect hoses and ducts for proper hook-up (or every 12 months, whichever occurs first). Be sure the valve works properly. *This is a Noise Emission Control Service. Applicable only to vehicles sold in the United States.*
- Replace fuel filter. See “Fuel Filter” in the Index. *An Emission Control Service. (See footnote †.)*

Long Trip/Highway Scheduled Maintenance -- Diesel Engines

97,500 Miles (156 000 km)

- Change engine oil and filter (or every 12 months, whichever occurs first).
An Emission Control Service.
- Lubricate chassis components (or every 12 months, whichever occurs first).
(See footnote #.)
- Check rear/front axle fluid level and add fluid as needed. Check constant velocity joints and axle seals for leaking. See “Recommended Fluids and Lubricants” in the Index for the proper fluid to use.
- Rotate tires. See “Tire Inspection and Rotation” in your owner’s manual for proper rotation pattern and additional information. See “Tires” in your owner’s manual. *(See footnote +.)*

DATE	
ACTUAL MILEAGE	SERVICED BY:

100,000 Miles (160 000 km)

- Change automatic transmission fluid and filter. Manual transmission fluid doesn’t require change.
- Automatic Transfer Case Only: Change transfer case fluid.

DATE	
ACTUAL MILEAGE	SERVICED BY:

150,000 Miles (240 000 km)

- Drain, flush and refill the cooling system (or every 60 months since last service, whichever occurs first). See “Engine Coolant” in your owner’s manual for what to use.
An Emission Control Service.

DATE	
ACTUAL MILEAGE	SERVICED BY:

Part B: Owner Checks and Services

Listed in this part are owner checks and services which should be performed at the intervals specified to help ensure the safety, dependability and emission control performance of your vehicle.

Be sure any necessary repairs are completed at once. Whenever any fluids or lubricants are added to your vehicle, make sure they are the proper ones, as shown in Part D.

At Each Fuel Fill

It is important for you or a service station attendant to perform these underhood checks at each fuel fill.

Engine Oil Level Check

Check the engine oil level and add the proper oil if necessary. See “Engine Oil” in the Index for further details.

Engine Coolant Level Check

Check the engine coolant level and add DEX-COOL[®] coolant mixture if necessary. See “Engine Coolant” in the Index for further details.

Windshield Washer Fluid Level Check

Check the windshield washer fluid level in the windshield washer tank and add the proper fluid if necessary. See “Windshield Washer Fluid” in your owner’s manual for further details.

At Least Once a Month

Tire Inflation Check

Make sure tires are inflated to the correct pressures. Don’t forget to check your spare tire. See “Tires” in your owner’s manual for further details.

Cassette Deck Service

Clean cassette deck. Cleaning should be done every 50 hours of tape play. See “Audio Systems” in your owner’s manual for further details.

At Least Twice a Year

Restraint System Check

Make sure the safety belt reminder light and all your belts, buckles, latch plates, retractors and anchorages are working properly. Look for any other loose or damaged safety belt system parts. If you see anything that might keep a safety belt system from doing its job, have it repaired. Have any torn or frayed safety belts replaced.

Also look for any opened or broken air bag coverings, and have them repaired or replaced. (The air bag system does not need regular maintenance.)

Wiper Blade Check

Inspect wiper blades for wear or cracking. Replace blade inserts that appear worn or damaged or that streak or miss areas of the windshield. Also see “Wiper Blades, Cleaning” in your owner’s manual.

Spare Tire Check

At least twice a year, after the monthly inflation check of the spare tire determines that the spare is inflated to the correct tire inflation pressure, make sure that the spare tire is stored securely. Push, pull, and then try to rotate or turn the tire. If it moves, use the ratchet/wheel wrench to tighten the cable. See “Storing the Spare Tire and Tools” in your owner’s manual.

Engine Air Cleaner Filter Restriction Indicator Check

Your vehicle has an indicator located on the air cleaner in the engine compartment that lets you know when the air cleaner filter is dirty and needs to be changed. Check indicator at least twice a year or when your engine oil is changed, whichever occurs first. See “Air Cleaner” in the Index of your owner’s manual for more information. Inspect your air cleaner filter restriction indicator more often if the vehicle is used in dusty areas or under off road conditions.

Weatherstrip Lubrication

Silicone grease on weatherstrips will make them last longer, seal better, and not stick or squeak. Apply silicone grease with a clean cloth. During very cold, damp weather more frequent application may be required. See “Recommended Fluids and Lubricants” in the Index.

Manual Transmission Check

Check the transmission fluid level; add if needed. See “Manual Transmission Fluid” in your owner’s manual. Check for leaks. A fluid leak is the only reason for fluid loss. Have the system inspected and repaired if needed.

Automatic Transmission Check

Check the transmission fluid level; add if needed. See “Automatic Transmission Fluid” in the Index. A fluid loss may indicate a problem. Check the system and repair if needed.

Hydraulic Clutch System Check

Check the fluid level in the clutch reservoir. See “Hydraulic Clutch Fluid” in your owner’s manual. A fluid loss in this system could indicate a problem. Have the system inspected and repaired at once.

At Least Once a Year

Key Lock Cylinders Service

Lubricate the key lock cylinders with the lubricant specified in Part D.

Body Lubrication Service

Lubricate all body hood and body door hinges, body door hinge pins, hood latch assembly, secondary latch, pivots, spring anchor, release pawl, tailgate hinge, tailgate linkage, tailgate handle pivot points, latch bolt, fuel door hinge, locks and folding seat hardware. Part D tells you what to use. More frequent lubrication may be required when exposed to a corrosive environment.

Starter Switch Check

CAUTION:

When you are doing this check, the vehicle could move suddenly. If it does, you or others could be injured. Follow the steps below.

1. Before you start, be sure you have enough room around the vehicle.
2. Firmly apply both the parking brake and the regular brake. See “Parking Brake” in the Index if necessary.

NOTE: Do not use the accelerator pedal, and be ready to turn off the engine immediately if it starts.

3. On automatic transmission vehicles, try to start the engine in each gear. The starter should work only in PARK (P) or NEUTRAL (N). If the starter works in any other position, your vehicle needs service.

On manual transmission vehicles, put the shift lever in NEUTRAL (N), push the clutch down halfway and try to start the engine. The starter should work only when the clutch is pushed down all the way to the floor. If the starter works when the clutch isn't pushed all the way down, your vehicle needs service.

Automatic Transmission Shift Lock Control System Check

CAUTION:

When you are doing this check, the vehicle could move suddenly. If it does, you or others could be injured. Follow the steps below.

1. Before you start, be sure you have enough room around the vehicle. It should be parked on a level surface.
2. Firmly apply the parking brake. See “Parking Brake” in your owner's manual if necessary.

NOTE: Be ready to apply the regular brake immediately if the vehicle begins to move.

3. With the engine off, turn the key to the RUN position, but don't start the engine. Without applying the regular brake, try to move the shift lever out of PARK (P) with normal effort. If the shift lever moves out of PARK (P), your vehicle needs service.

Ignition Transmission Lock Check

While parked, and with the parking brake set, try to turn the ignition key to LOCK in each shift lever position.

- With an automatic transmission, the key should turn to LOCK only when the shift lever is in PARK (P).
- With a manual transmission, the key should turn to LOCK only when you press the key release button.

On all vehicles, the key should come out only in LOCK.

Parking Brake and Automatic Transmission PARK (P) Mechanism Check

Park on a fairly steep hill, with the vehicle facing downhill. Keeping your foot on the regular brake, set the parking brake.

- To check the parking brake's holding ability: With the engine running and transmission in NEUTRAL (N), slowly remove foot pressure from the regular brake pedal. Do this until the vehicle is held by the parking brake only.
- To check the PARK (P) mechanism's holding ability: With the engine running, shift to PARK (P). Then release the parking brake followed by the regular brake.

Underbody Flushing Service

At least every spring, use plain water to flush any corrosive materials from the underbody. Take care to clean thoroughly any areas where mud and other debris can collect. Flush clean the fuel cooler attached to the frame near the fuel tank.

CAUTION:

When you are doing this check, your vehicle could begin to move. You or others could be injured and property could be damaged. Make sure there is room in front of your vehicle in case it begins to roll. Be ready to apply the regular brake at once should the vehicle begin to move.

Part C: Periodic Maintenance Inspections

Listed in this part are inspections and services which should be performed at least twice a year (for instance, each spring and fall). *You should let your dealer's service department or other qualified service center do these jobs. Make sure any necessary repairs are completed at once.*

Proper procedures to perform these services may be found in a service manual. See "Service and Owner Publications" in your owner's manual.

Steering and Suspension Inspection

Inspect the front and rear suspension and steering system for damaged, loose or missing parts, signs of wear or lack of lubrication. Inspect the power steering lines and hoses for proper hook-up, binding, leaks, cracks, chafing, etc.

Exhaust System Inspection

Inspect the complete exhaust system. Inspect the body near the exhaust system. Look for broken, damaged, missing or out-of-position parts as well as open seams, holes, loose connections or other conditions which could cause a heat build-up in the floor pan or could let exhaust fumes into the vehicle. See "Engine Exhaust" in your owner's manual.

Engine Cooling System Inspection

Inspect the hoses and have them replaced if they are cracked, swollen or deteriorated. Inspect all pipes, fittings and clamps; replace as needed. Clean the outside of the radiator and air conditioning condenser. To help ensure proper operation, a pressure test of the cooling system and pressure cap is recommended at least once a year.

Transfer Case and Front Axle (Four-Wheel Drive) Inspection

Every 12 months or at engine oil change intervals, check front axle and transfer case and add lubricant when necessary. A fluid loss could indicate a problem; check and have it repaired, if needed. On manual shift transfer case, oil the control lever pivot point. Check vent hose at transfer case for kinks and proper installation. More frequent lubrication may be required on off-road use.

Brake System Inspection

Inspect the complete system. Inspect brake lines and hoses for proper hook-up, binding, leaks, cracks, chafing, etc. Inspect disc brake pads for wear and rotors for surface condition. Inspect other brake parts, including calipers, parking brake, etc. You may need to have your brakes inspected more often if your driving habits or conditions result in frequent braking.

Part D: Recommended Fluids and Lubricants

NOTE: Fluids and lubricants identified below by name, part number or specification may be obtained from your dealer.

USAGE	FLUID/LUBRICANT
Engine Oil (Diesel Engine)	Engine oil with the letters CH-4 or CG-4 is best for your vehicle. The CH-4 or CG-4 designation may appear either alone, or in combination with other API designations, such as API CH-4/SJ, CG-4/SH or CH-4/CG-4/SJ. These letters show American Petroleum Institute (API) levels of quality. To determine the preferred viscosity for your vehicle's diesel engine, see "Engine Oil" in the Index.

USAGE	FLUID/LUBRICANT
Engine Coolant	50/50 mixture of clean, drinkable water and use only GM Goodwrench [®] DEX-COOL [®] or Havoline [®] DEX-COOL [®] Coolant. See "Engine Coolant" in the Index.
Hydraulic Brake System	Delco Supreme 11 [®] Brake Fluid (GM Part No. 12377967 or equivalent DOT-3 brake fluid).
Windshield Washer Solvent	GM Optikleen [®] Washer Solvent (GM Part No. 1051515) or equivalent.
Hydraulic Clutch System	Hydraulic Clutch Fluid (GM Part No. 12345347 or equivalent DOT-3 brake fluid).
Power Steering System	GM Power Steering Fluid (GM Part No. 1052884 - 1 pint, 1050017 - 1 quart, or equivalent).

USAGE	FLUID/LUBRICANT
Manual Transmission (5-Speed with Low Gear, RPO MW3)	GM Goodwrench Synthetic Manual Transmission Fluid (GM Part No. 12346190 - 1 qt.) or equivalent SAE 75W-85 GL-4 gear oil.
Manual Transmission (5-Speed without Low Gear, RPO MG5)	Synchromesh Transmission Fluid (GM Part No. 12345349 or equivalent).
Manual Transmission (6-Speed)	TranSynd™ Synthetic Automatic Transmission Fluid (GM Part No. 12378515).
Automatic Transmission	DEXRON®-III Automatic Transmission Fluid.
Key Lock Cylinders	Multi-Purpose Lubricant, Superlube® (GM Part No. 12346241 or equivalent).

USAGE	FLUID/LUBRICANT
Floor Shift Linkage	Lubriplate® Lubricant Aerosol (GM Part No. 12346293 or equivalent) or lubricant meeting requirements of NLGI # 2 Category LB or GC-LB.
Chassis Lubrication	Chassis Lubricant (GM Part No. 12377985 or equivalent) or lubricant meeting requirements of NLGI # 2, Category LB or GC-LB.
Front Axle	SAE 80W-90 Axle Lubricant (GM Part No. 1052271 or equivalent).
Rear Axle	SAE 75W-90 Synthetic Axle Lubricant (GM Part No. 12378261) or equivalent meeting GM Specification 9986115.
Manual Transfer Case	DEXRON®-III Automatic Transmission Fluid.

USAGE	FLUID/LUBRICANT
Automatic Transfer Case	AUTO-TRAK II Fluid (GM Part No. 12378508).
Front Axle Propshaft Spline or One-Piece Propshaft Spline (Two-Wheel Drive with Auto. Trans.)	Spline Lubricant, Special Lubricant (GM Part No. 12345879) or lubricant meeting requirements of GM 9985830.
Rear Driveline Center Spline	Chassis Lubricant (GM Part No. 12377985 or equivalent) or lubricant meeting requirements of NLGI # 2, Category LB or GC-LB.
Hood Latch Assembly, Secondary Latch, Pivots, Spring Anchor and Release Pawl	Lubriplate [®] Lubricant Aerosol (GM Part No. 12346293 or equivalent) or lubricant meeting requirements of NLGI # 2, Category LB or GC-LB.

USAGE	FLUID/LUBRICANT
Hood Hinges	Multi-Purpose Lubricant, Superlube [®] (GM Part No. 12346241 or equivalent).
Body Door Hinge Pins, Tailgate Hinge and Linkage, Folding Seat and Fuel Door Hinge	Multi-Purpose Lubricant, Superlube [®] (GM Part No. 12346241 or equivalent).
Tailgate Handle Pivot Points, Hinges, Latch Bolt and Linkage	Multi-Purpose Lubricant, Superlube [®] (GM Part No. 12346241 or equivalent).
Weatherstrip Conditioning	Dielectric Silicone Grease (GM Part No. 12345579 or equivalent).
Weatherstrip Squeaks	Synthetic Grease with Teflon, Superlube [®] (GM Part No. 12371287 or equivalent).

Part E: Maintenance Record

After the scheduled services are performed, record the date, odometer reading and who performed the service in the boxes provided after the maintenance interval. Any additional information from “Owner Checks and Services” or “Periodic Maintenance” can be added on the following record pages. Also, you should retain all maintenance receipts. Your owner information portfolio is a convenient place to store them.

Maintenance Record			
DATE	ODOMETER READING	SERVICED BY	MAINTENANCE PERFORMED

