SPECIFICATIONS

CAPACITIES - APPROXIMATE FLUID

Fluid Capacities

Application	Specification	
	Metric	English
IMPORTANT: **All capacities are approximate. When adding, be sure to fill to the appropriate level, as recommended in this manual.**		
Air Conditioning Refrigerant R134a	0.79 kg	1.75 lbs
Cooling System	11.9 L	12.6 qts
Engine Oil with Filter	6.1 L	6.5 qts
Fuel Tank	68.0 L	18.0 gals
Rear Axle Differential		
• Lubricant	1.6 L	1.69 qts
• Limited-Slip Additive	118 ml	4.0 ounces
Transmission Fluid		
• Drain and Fill Automatic Transmission	4.7 L	5.0 qts
• Overhaul Automatic Transmission	10.2 L	10.8 qts
• Overhaul Manual Transmission	3.8 L	4.1 qts
Power Steering Approximate	0.81 L	1.7 pts
Wheel Nut Torque	140 N.m	100 lb ft

Engine Specifications

Engine	VIN Code	Transmission	Spark Plug Gap	Firing Order
LS1 V8	G	Automatic	1.0 mm (0.040 in)	1-8-7-2-6-5-4-3
LS1 V8	G	Manual	1.0 mm (0.040 in)	1-8-7-2-6-5-4-3
LS6 V8	S	Manual	1.0 mm (0.040 in)	1-8-7-2-6-5-4-3

Engine Data

Engine	Horsepower	Torque	Displacement	Compression Ratio
LS1 Automatic Transmission	350 @ 5200 RPM	360 lb ft @ 4000 RPM	5.7 L	10.1:1
LS1 Manual Transmission	350 @ 5200 RPM	375 lb ft @ 4400 RPM	5.7 L	10.1:1

LS6	405 @ 6000 RPM	400 lb ft @ 4800 RPM	5.7 L	10.5:1

FLUID AND LUBRICANT RECOMMENDATIONS

Fluid and Lubricant Recommendations

Application	Fluid/Lubricant
Automatic Transmission	DEXRON(R)-III Automatic Transmission Fluid
Engine Coolant	A 50/50 mixture of clean, drinkable water and use only DEX-COOL(R) Coolant
Engine Oil	The engine requires a special oil meeting GM Specification 4718M. Oils meeting this specification may be identified as synthetic, and should also be identified with the American Petroleum Institute (API) Certified for Gasoline Engines STARBURST symbol. However, not all Synthetic API oils with the STARBURST symbol will meet this GM Specification. Look for and use ONLY an oil that meets GM Specification 4718M.
Hinges, Hood and Door	Multi-Purpose Lubricant, Superlube(R) GM P/N 12346241 (Canadian P/N 10953474) or equivalent
Hood Latch Assembly, Secondary Latch, Pivots, Spring Anchor and Release Pawl	Lubriplate(R) Lubricant Aerosol GM P/N 1234629 (Canadian P/N 992723) or equivalent lubricant meeting requirements of NLGI #2, Category LB or GC-LB
Hydraulic Brake System	Delco Supreme 11(R) Brake Fluid equivalent DOT-3 Brake Fluid
Hydraulic Clutch System	Hydraulic Clutch Fluid GM P/N 12345347 (Canadian P/N 10953517) or equivalent DOT-3 Brake Fluid
Key Lock Cylinders	Multi-Purpose Lubricant, Superlube(R) GM P/N 12346241 (Canadian P/N 10953474) or equivalent
Manual Transmission	DEXRON(R)-III Automatic Transmission Fluid
Power Steering System	GM Power Steering Fluid GM P/N 1052884 (Canadian P/N 993294)
Rear Axle Limited-Slip Differential	SAE 75W-90 Synthetic Axle Lubricant, GM P/N 12378261 (Canadian P/N 10953455) or equivalent meeting GM Specification 9986115. With a complete drain and refill add 118 ml (4 oz) of Limited-Slip Differential Lubricant Additive GM P/N 1052358 (Canadian P/N 992694) or equivalent
Weatherstrip Conditioning	Dielectric Silicone Grease GM P/N 12345579 (Canadian P/N 992887) or equivalent
Windshield Washer Solvent	GM Optikleen(R) Washer Solvent or equivalent

TIRE INFLATION PRESSURE SPECIFICATIONS (1)

Tire Inflation Pressure Specifications (1)

	Specification	

Application	Metric	English
Tires, Front and Rear	210 kPa	30 psi
Compact Spare	420 kPa	60 psi

MAINTENANCE ITEMS

Maintenance Items

Part	GM Part Number	AC Delco Part Number
Air Cleaner Filter	25042562	A917C
Coolant Surge Cap	10296465 15 psi (105 kPa)	-
Engine Oil Filter	25010633	PF4
Fuel Filter	25121293	GF-819
Passenger Compartment Air Filter (2)	52482929	-
PCV Valve	25179136	CV948C
Spark Plugs	12571164	41-985
Windshield Wiper Blades (Hook Type)	Length: 55.9 cm (22 inches) Type: 9 mm x 3 mm Shephard's Hook	

MAINTENANCE

USING THE MAINTENANCE SCHEDULE

Because of all the different ways that customers use their vehicles, maintenance needs vary. Some vehicles may need more frequent inspections and replacements.

This schedule is for vehicles that adhere to certain driving conditions:

- Vehicles that carry passengers and cargo within recommended limits - These limits are described on the vehicle's Certification/Tire label. Refer to **Label - Vehicle Certification** and **Tire Placard** .
- Vehicles that are driven on reasonable road surfaces within legal driving limits
- Vehicles that use the recommended fuel

Perform the services in **Scheduled Maintenance** when indicated. Refer to **Additional Required Services** and **Maintenance Footnotes** for further information.

Refer to **Owner Checks and Services** for information on the following conditions:

- What parts should be inspected
- When to perform the inspection
- What can be done to help keep the vehicle in good condition

Refer to **Fluid and Lubricant Recommendations** and to **Maintenance Items** for the proper replacement parts, fluids, and lubricants to use. All parts should be replaced and all necessary repairs done before the vehicle is

driven.

SCHEDULED MAINTENANCE

When the CHANGE ENGINE OIL light comes on, service is required for the vehicle. On vehicles driven under the best conditions, the engine oil life system may not indicate that vehicle service is necessary for over a year. However the engine oil and filter must be changed at least once a year and at this time the system must be reset.

If the engine oil life system is ever reset accidentally, the customer must have the vehicle serviced within 5 000 km (3,000 mi) since your last service. Reset the oil life system whenever you change the oil. Refer to **GM Oil Life System - Resetting** for information on the engine Oil Life System and resetting the system.

When the CHANGE ENGINE OIL light appears, certain services and inspections are required. Required services are described in the following paragraphs for Maintenance I and Maintenance II. It is recommended that the first service on a vehicle be Maintenance I, the second service be Maintenance II and that you alternate between the two thereafter. However, in some cases, Maintenance II may be required more often.

Maintenance I

Use Maintenance I if the CHANGE ENGINE OIL light comes on within 10 months since vehicle was purchased or if Maintenance II was performed.

Maintenance II

Use Maintenance II if the previous service performed was Maintenance I. Always use Maintenance II whenever the CHANGE ENGINE OIL light comes on 10 months or more since the last service or if the CHANGE ENGINE OIL light has not come on at all for one year.

Scheduled Maintenance

Service	Maintenance I	Maintenance II
Change the engine oil and filter. Reset the oil life system. Refer to **GM Oil Life System - Resetting** .	X	X
Visually inspect for any leaks or damage. Refer to footnote (13) in **Maintenance Footnotes** .	X	X
Inspect the engine air cleaner filter. If necessary, replace the filter. Refer to **Air Cleaner Element Replacement** in Engine Controls-5.7L. Refer to footnote (1) in **Maintenance Footnotes** .	X	X
Inspect tires for inflation pressure and wear. Refer to **Tire Diagnosis - Irregular or Premature Wear** in Tires and Wheels.	X	X
Inspect the brake system. Refer to footnote (3) in **Maintenance Footnotes** .	X	X
Inspect the engine coolant and the windshield washer fluid levels. Add fluid as needed.	X	X
Perform any needed additional services. Refer to **Additional Required Services** .	X	X

Inspect the suspension and steering components. Refer to footnote (4) in **Maintenance Footnotes** .	-	X
Inspect the engine cooling system. Refer to footnote (5) in **Maintenance Footnotes** .	-	X
Inspect the wiper blades. Refer to footnote (6) in **Maintenance Footnotes** .	-	X
Inspect the restraint system components. Refer to footnote (7) in **Maintenance Footnotes** .	-	X
Lubricate the body components. Refer to footnote (8) in **Maintenance Footnotes** .	-	X

ADDITIONAL REQUIRED SERVICES

Perform the following services during the first maintenance (Maintenance I or Maintenance II) after the indicated kilometers (miles) shown for each item.

Additional Required Services

Service	41 500 km (25,000 mi)	83 000 km (50,000 mi)	125 000 km (75,000 mi)	166 000 km (100,000 mi)	207 500 km (125,000 mi)	240 000 km (150,000 mi)
Inspect the fuel system for damage or leaks.	X	X	X	X	X	X
Inspect the exhaust system for loose or damaged components.	X	X	X	X	X	X
Replace the engine air cleaner filter. Refer to **Air Cleaner Element Replacement** in Engine Controls-5.7L.	X	X	X	X	X	X
For severe service, change the automatic transmission fluid and filter. Refer to footnote (10) in **Maintenance Footnotes** .	-	X	-	X	-	X
For normal service, change the automatic transmission fluid and filter.	-	-	-	X	-	-
Replace the spark plugs.	-	-	-	X	-	-
Engine cooling system service or every 5 years, whichever occurs first. Refer to footnote (11) in **Maintenance Footnotes** .	-	-	-	-	-	X
Inspect the engine accessory drive belt.	-	-	-	-	-	X

MAINTENANCE FOOTNOTES

Footnotes

(1)

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

(2)

Lubricate the suspension, steering linkage, transaxle shift linkage and the underbody contact points and linkage.

(3)

Visually inspect the brake lines and the hoses for proper hook-up, binding, leaks, cracks, chafing, etc. Inspect the disc brake pads for wear and inspect the rotors for surface condition. Inspect other brake parts, including the calipers, the parking brake, etc. Inspect the parking brake adjustment.

(4)

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

(5)

Visually inspect the hoses and replace any that are cracked, swollen or deteriorated. Inspect all pipes, fittings and clamps. Replace as needed. To help ensure proper operation, pressure test the cooling system and the pressure cap, and clean the outside of the radiator and the air conditioning condenser at least once a year.

(6)

Visually inspect the wiper blades for wear or cracking. Replace all blade inserts that appear worn or damaged or that streak or miss areas of the windshield.

(7)

Verify that the safety belt reminder light and all of the belts, buckles, latch plates, retractors and anchorages are working properly. If the vehicle has a built-in child restraint, verify that the harness straps, latch plates, buckle, clip, child head restraint and anchorages are working properly. Look for any other loose or damaged safety belt system parts. Repair anything that might keep a safety belt system from

doing the job. Replace any torn or frayed safety belts. Also look for any opened or broken air bag coverings, and repair or replace these parts. The air bag system does NOT need regular maintenance.

(8)

Lubricate all key lock cylinders, hood latch assembly, secondary latch, pivots, spring anchor, release pawl, rear compartment hinges, outer liftgate handle pivot points, rear door detent link, roller mechanism, liftgate handle pivot points, latch bolt, fuel door hinge, cargo door hinge, locks and folding seat hardware. Lubricate the hood and door hinges, rear folding seats, liftgate hinges, fuel door hinge, power sliding door cable and sliding door tracks. More frequent lubrication may be required when the vehicle has been exposed to a corrosive environment. Applying silicone grease on weather-strips with a clean cloth will ensure longer life, create a better seal, and prevent sticking or squeaking.

(9)

If the vehicle is driven regularly under dusty conditions, the filter may require replacement more often.

(10)

Change the automatic transaxle or VTi variable transaxle fluid if the vehicle is mainly driven under one or more of the following conditions:

- In heavy city traffic where the outside temperature regularly reaches 32° C (90° F) or higher
- In hilly or mountainous terrain
- When doing frequent trailer towing
- In uses such as found in taxi, police or delivery service

(11)

Drain, flush and refill the cooling system. Refer to **Draining and Filling Cooling System** in Engine Cooling for the proper procedure. Inspect the hoses. Clean the radiator, the condenser, the pressure cap, and the filler neck. Pressure test the cooling system and the pressure cap.

(12)

Inspect the throttle system for interference or binding and for damaged or missing parts. Replace parts as needed. Replace any components that have high effort or excessive wear. Do NOT lubricate the accelerator or the cruise control cables.

(13)

A fluid loss in any vehicle system could indicate a problem. Inspect and repair the system and inspect the fluid level. Add fluid if needed.

(14)

For supercharged engines only: Inspect he supercharger oil level and add the proper supercharger oil. Refer to **Capacities - Approximate Fluid** .

EXPLANATION OF SCHEDULED SERVICES

Engine Oil

If the LOW OIL LEVEL message appears on the Driver Information Center (DIC), test the engine oil level right away. Although the driver should test the engine oil level regularly, this message is an added reminder.

What Kind of Engine Oil to Use

Two factors should be considered when determining type of oil to use in a vehicle:

- The engine requires oil meeting GM Standard GM6094M. Use only oil that meets this standard.

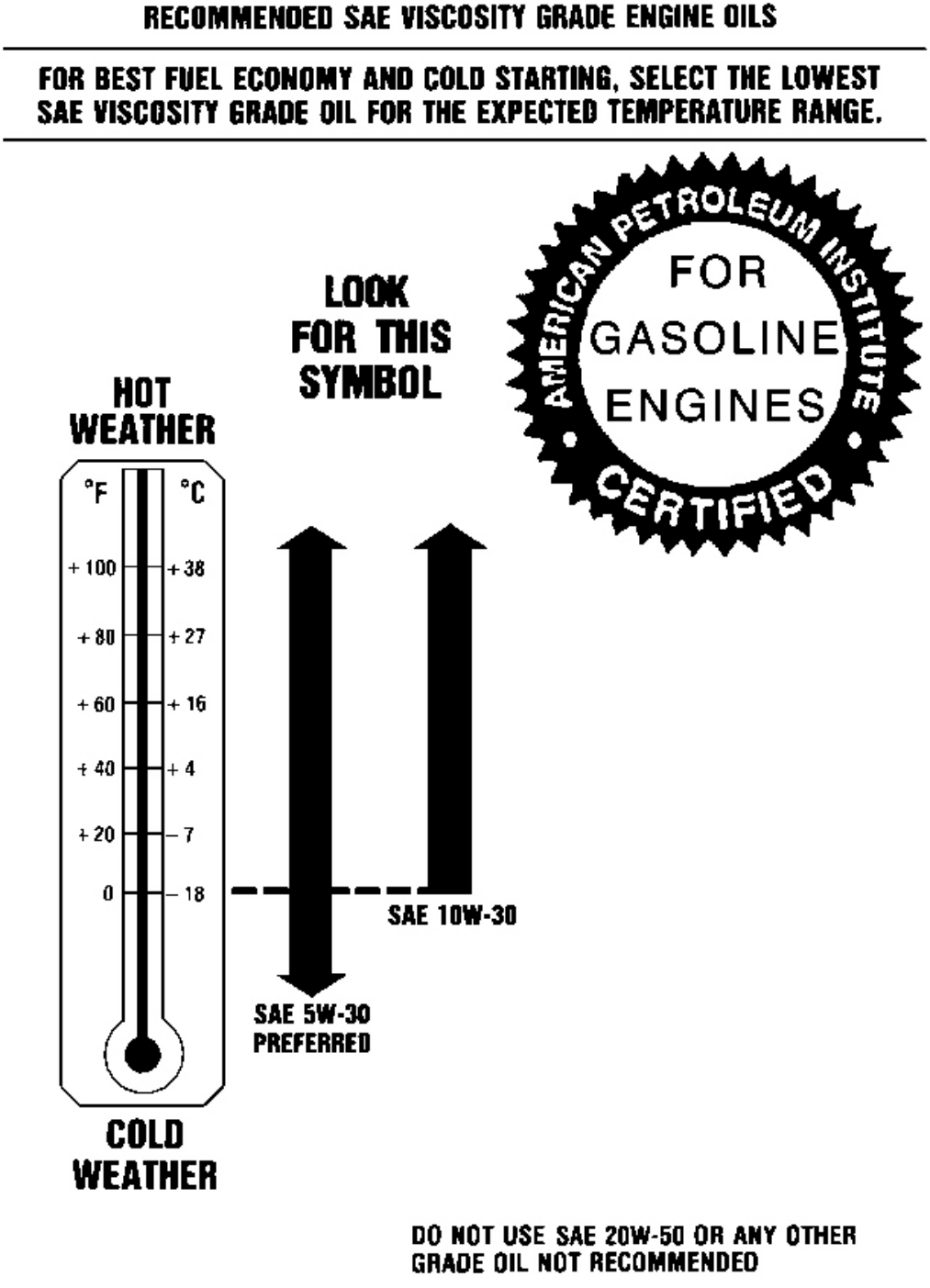

Fig. 1: Engine Oil Viscosity (United States And Canada)

Courtesy of GENERAL MOTORS CORP.

- SAE 5W-30 is the only viscosity grade recommended for use in GM vehicles.
    - If the temperature is greater than -18° C (0° F) and if SAE 5W-30 is not available, you may use SAE 10W-30.

      Oils meeting these requirements should also have the starburst symbol on the container. This symbol indicates that the oil has been certified by the American Petroleum Institute (API).

    - If the temperature falls below -20° C (-4° F), it is recommended that you use either an SAE 5W-30 synthetic oil or an SAE 0W-30 oil. Both will provide easier cold starting and better protection for your engine at extremely low temperature.

Engine Oil Additives

Do NOT engine oil additives. The recommended oils with the starburst symbol that meet GM Standard GM6094M are all that is needed for good performance and engine protection.

When to Change Engine Oil-GM Oil Life System

The vehicle has a computer system that tells the owner when to change the engine oil and filter. This system is based on engine revolutions and engine temperature, and not on mileage. Based on driving conditions, the mileage at which an oil change will be indicated can vary considerably. For the oil life system to work properly, the system must be reset every time the oil is changed.

When the system has calculated that oil life has been diminished, the system will indicate that an oil change is necessary. A CHANGE ENGINE OIL message in the Driver Information Center (DIC) will come on. The oil should be changed within the next two gasoline fill-ups after this message appears. It is possible that, if the car is being driven under the best condition, the oil life system may not indicate that an oil change is necessary for over a year. However, the engine oil and filter must be changed at least once a year and at this time the system must be reset

If the system is ever rest accidentally, the oil must be changed within 5000 km (3,000 mi) since the last oil change. Reset the oil life system whenever the oil is changed.

Tire and Wheel Inspection and Rotation

Due to dissimilar front and rear tire sizes, tires and wheels assemblies cannot be rotated. Each tire and wheel should be used only in the position it is in.

Inspect your tires and wheels regularly for unusual wear and damage. Refer to **Tire Rotation** in Tires and Wheels.

Engine Air Cleaner/Filter

Inspect the air cleaner filter every oil change and replace at the first oil change after 40 000 km (25,000 mi).

Automatic Transaxle Fluid

It is not necessary to check the transaxle fluid level. A transaxle fluid leak is the only reason for fluid loss. Change both the fluid and filter every 83 000 km (50,000 mi) if the vehicle is mainly driven under one or more of these conditions:

- In heavy city traffic where the outside temperature regularly reaches 32° C (90° F) or higher
- In hilly or mountainous terrain
- When doing frequent trailer towing
- Uses such as found in taxi, police or delivery service

Manual Transmission Fluid

It is not necessary to check the transmission fluid level. A transmission fluid leak is the only reason for fluid loss. Refer to **Fluid and Lubricant Recommendations** .

Hydraulic Clutch

The hydraulic clutch linkage is self-adjusting. This system does not have its own reservoir. The reservoir receives fluid from the brake master cylinder reservoir. Refer to **Master Cylinder Reservoir Replacement** .

Cooling System

The cooling system is filled with DEX-COOL engine coolant. This coolant is designed to remain in the vehicle for 5 years or for 166 000 km (100,000 mi), whichever occurs first, if you add only DEX-COOL extended life coolant.

Power Steering Fluid

It is not necessary to regularly check power steering fluid unless you suspect there is a leak in the system or you hear an unusual noise. A fluid loss in this system could indicate a problem. Have the system inspected and repaired. Refer to **Power Steering Fluid Leaks** in Power Steering

Windshield Washer Fluid

When adding windshield washer fluid, be sure to read the instructions before use. If operating the vehicle in an area where the temperature may fall below freezing, use a fluid that has sufficient protection against freezing.

Brake Fluid

Your brake master cylinder reservoir is filled with DOT-3 brake fluid.

There are only two reasons why the brake fluid level in the reservoir might go down:

- The brake fluid goes down to an acceptable level during normal brake lining wear. When new linings are put in, the fluid level goes back up.

- The fluid may be leaking out of the brake system. If so, fix the brake system.

Adding brake fluid will not correct a leak. If you add fluid when the linings are worn, then the reservoir will contain too much fluid when new brake linings are installed. You should add or remove brake fluid, as necessary, only when work is being done on the brake hydraulic system.

Inspect brake lines and hoses for proper hook-up binding, leaks, cracks or chafing. Inspect disc brake pads for wear. Refer to **Brake Pad Inspection** in Disc Brakes. Inspect the rotors for poor surface condition. Inspect other brake system components, including brake calipers and the parking brake. Test the parking brake adjustment. The brakes may need to be inspected more often if the customer's driving habits or conditions result in frequent braking.

GM OIL LIFE SYSTEM - RESETTING

Resetting Procedure

Follow this procedure to reset the GM Oil Life System (tm):

1. Turn the ignition to ON with the engine off.
2. Press the TRIP button so the OIL LIFE percentage is displayed.
3. Press the RESET and hold for two seconds. OIL LIFE REMAIN percent will appear.

OWNER CHECKS AND SERVICES

The following information covers the tests, inspections, and services required to train the safety, dependability, and emission control performance of the vehicle.

Complete the necessary repairs and procedures on time. Use only the recommended fluids and lubricants. Refer to **Fluid and Lubricant Recommendations** .

At Each Fuel Fill

Perform the following underhood procedures at each fuel fill.

Engine Oil Level

Inspect the engine oil level and add the proper oil when necessary. Refer to **Fluid and Lubricant Recommendations** .

NOTE: It is important to check your oil regularly and keep it at the proper level. Failure to keep your engine oil at the proper level can cause damage to your engine not covered by your warranty.

Engine Coolant Level

Inspect the engine coolant level and add DEX-COOL(R) coolant mixture when necessary. Refer to **Fluid and**

Lubricant Recommendations .

Windshield Washer Fluid Level

Inspect the fluid level in the windshield washer tank and add the proper fluid when necessary. Refer to **Fluid and Lubricant Recommendations** .

At Least Once a Month

Tire Inflation

Visually inspect tires including the spare tire. Verify that the tires are inflated to the pressures specified on the Certification/Tire label located on the driver door lock pillar. Refer to **Label - Vehicle Certification** .

Cassette Tape Player Service

If applicable, clean the tape player for every 50 hours of tape play.

At Least Once a Year

Starter Switch Check

CAUTION: When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.

CAUTION: When performing this check, the vehicle could move suddenly. Personal injury or property damage may result. Make sure there is enough room around the vehicle, in case the vehicle does move. Do not use the accelerator pedal, and be ready to turn OFF the engine immediately if it starts.

1. Ensure that you have enough room around the vehicle, which should be parked on a level surface.
2. Firmly apply both the park brake and the regular brake.
3. Start the engine:
   - 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, the 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 is not pushed all the way down, the vehicle needs service.

Automatic Transmission Shift Lock Control Check

CAUTION: When you are doing this inspection, the vehicle could move

suddenly. If the vehicle moves, you or others could be injured.

CAUTION: When performing this check, the vehicle could move suddenly. Personal injury or property damage may result. Make sure there is enough room around the vehicle, in case the vehicle does move. Do not use the accelerator pedal, and be ready to turn OFF the engine immediately if it starts.

1. Ensure that you have enough room around the vehicle, which should be parked on a level surface.
2. Firmly apply the parking brake. 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.
4. Without applying the regular brake, try to move the shift lever out of PARK (P) with normal effort.
5. If the shift lever moves out of PARK (P), the vehicle needs service.

Ignition Transmission Lock Check

1. With the vehicle parked, set the parking brake.
2. 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.
3. On all vehicles, the key should come out only in LOCK.

Park Brake and Automatic Transmission PARK (P) Mechanism Check

CAUTION: When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.

CAUTION: When performing this check, the vehicle could move suddenly. Personal injury or property damage may result. Make sure there is enough room around the vehicle, in case the vehicle does move. Do not use the accelerator pedal, and be ready to turn OFF the engine immediately if it starts.

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.

Follow this procedure to test the park brake and the automatic transmission PARK mechanism:

1. Park on a fairly steep hill, with the vehicle facing downhill.
2. Keep your foot on the hydraulic brake pedal.
3. With the park brake set, perform the following test:
    1. Start the engine.
    2. Place the transmission in NEUTRAL.
    3. Slowly remove foot pressure from the regular brake pedal. If the vehicle moves, refer to **Park Brake Adjustment** in Park Brake.
4. In order to check the PARK (P) mechanism of an automatic transmission, additionally perform the following test:
    1. Shift to PARK (P).
    2. Release all brakes. If the vehicle moves, refer to **Park Brake Adjustment** in Park Brake.

Underbody Flushing Service

At least every spring, use plain water to flush any corrosive materials from the underbody. Clean thoroughly any areas where mud and other debris can collect.