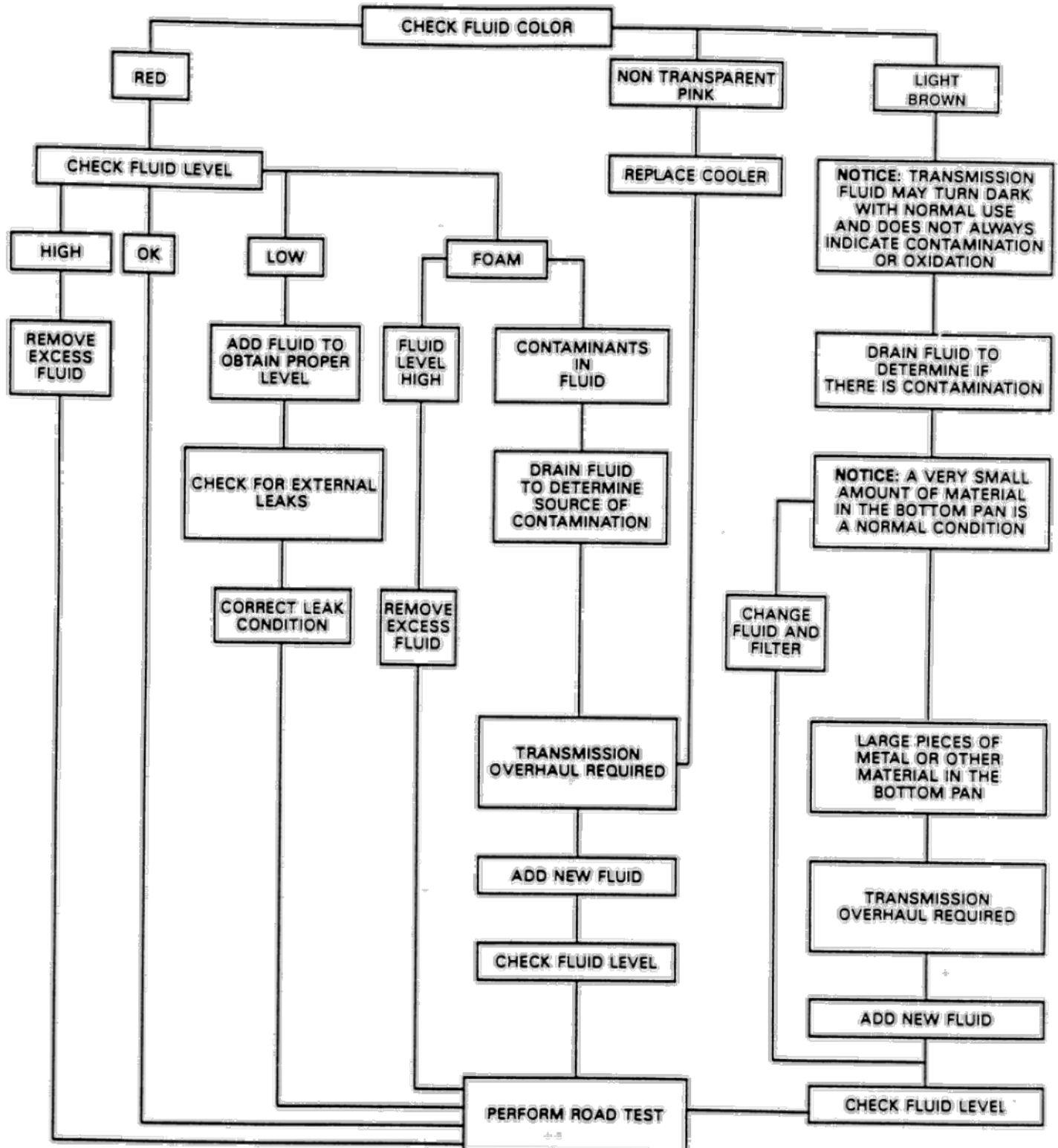
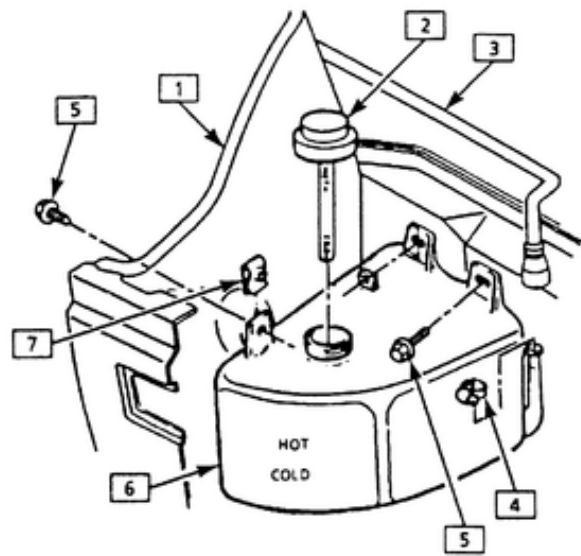
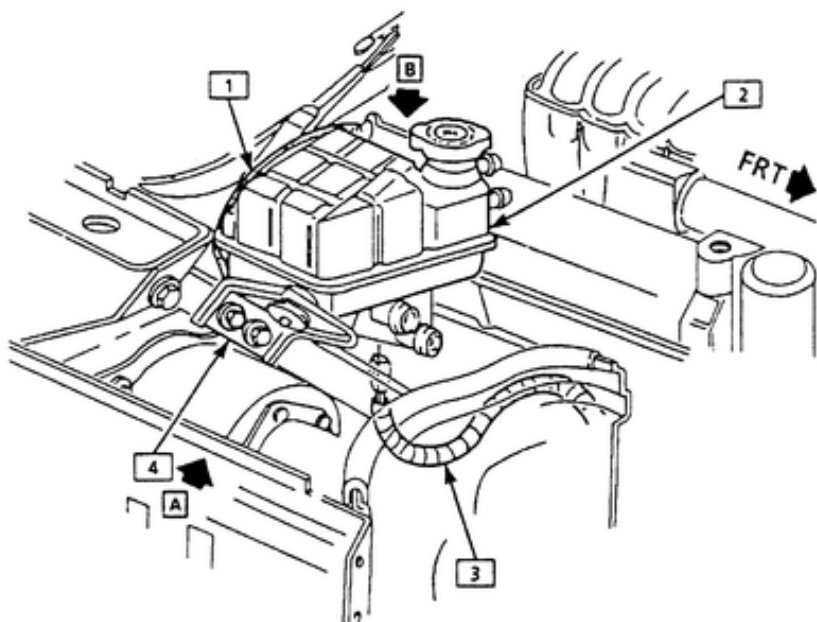


NOTE: FLUID LEVEL TO BE IN CROSS-HATCHED AREA ON FLUID LEVEL INDICATOR BLADE. CHECK AT OPERATING TEMPERATURE.

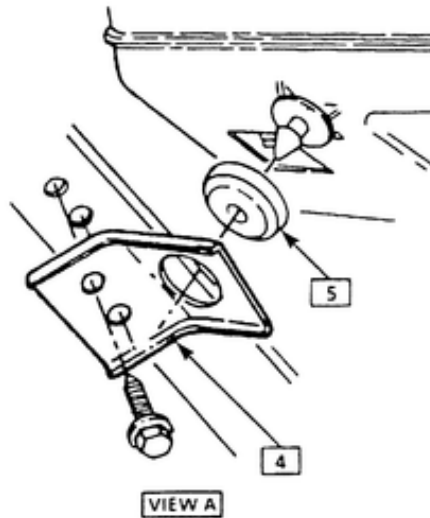
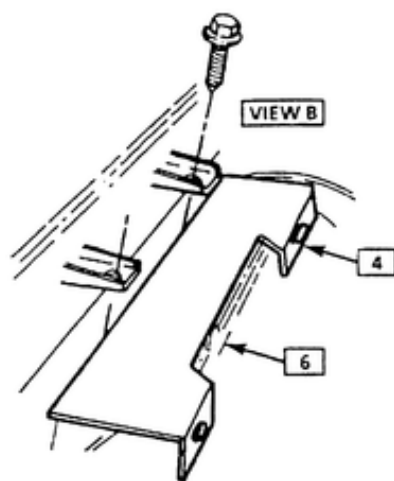


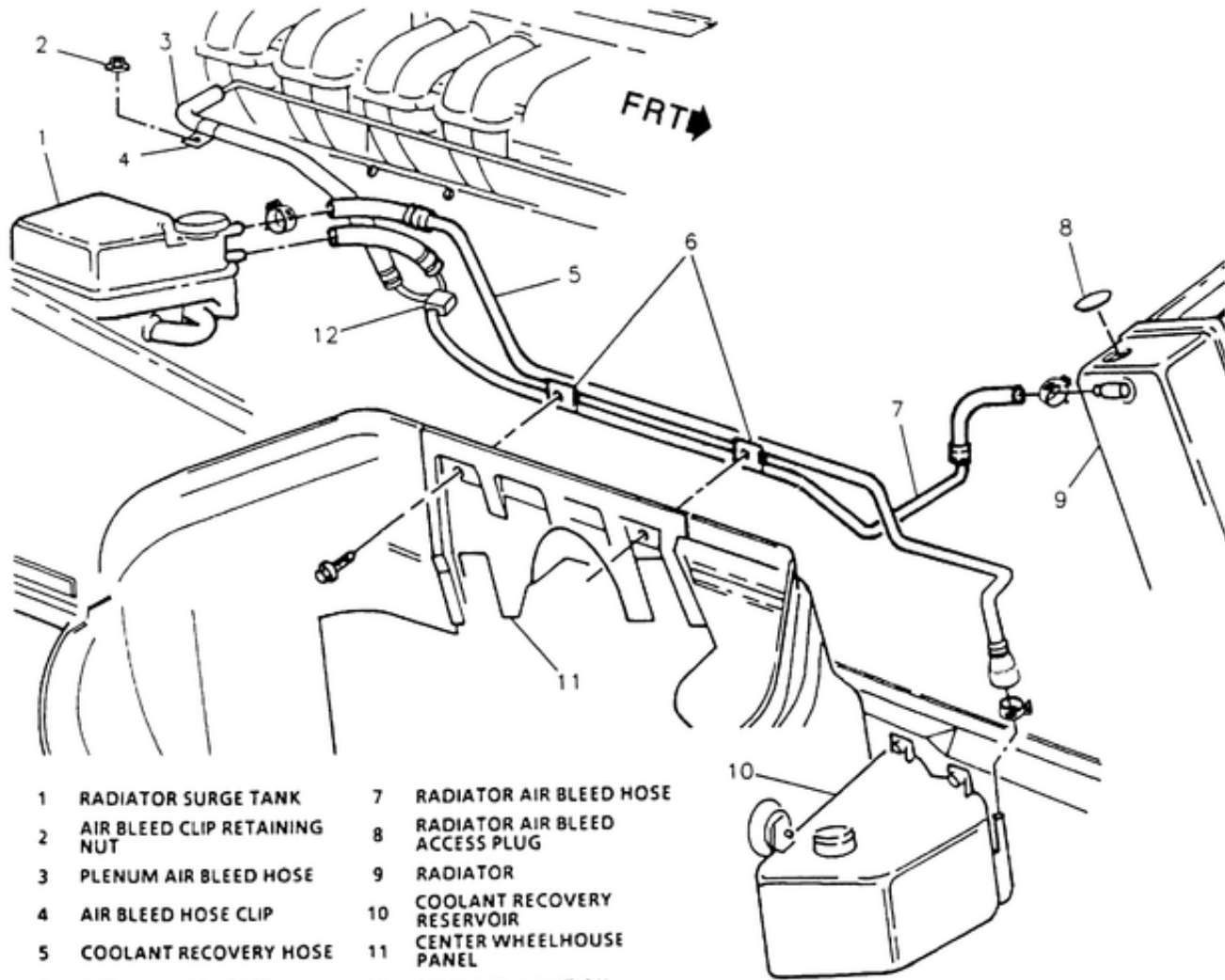


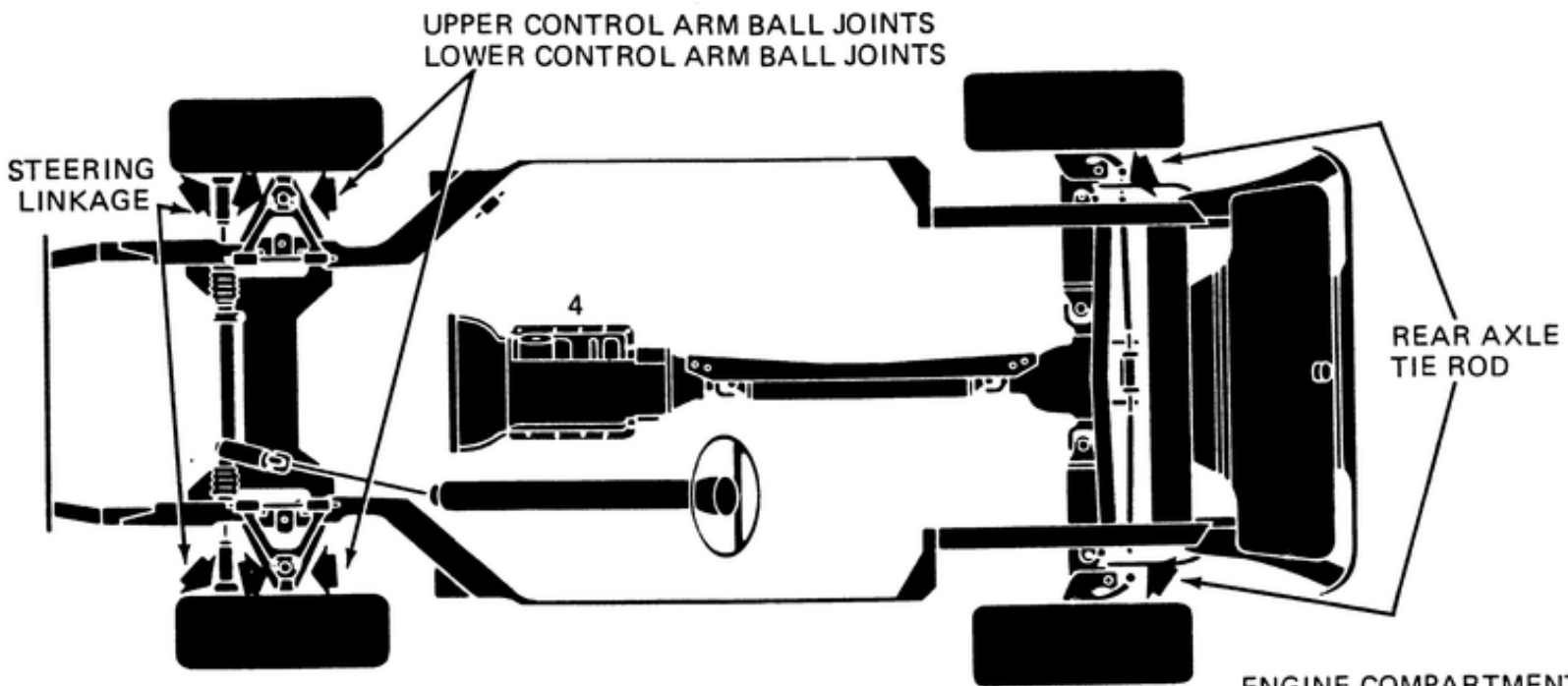
-
- 1 WHEELHOUSE LOWER FRONT - RIGHT-HAND PANEL
 - 2 COOLANT RECOVERY RESERVOIR CAP
 - 3 COOLANT RECOVERY RESERVOIR HOSE
 - 4 COOLANT RECOVERY RESERVOIR HOSE CLAMP
 - 5 COOLANT RECOVERY RESERVOIR RETAINER BOLT
 - 6 COOLANT RECOVERY RESERVOIR
 - 7 COOLANT RECOVERY RESERVOIR RETAINING NUT



- 1 HOSE - W/S WASHER NOZZLE
- 2 RADIATOR SURGE TANK
- 3 WIRE HARNESS - LOW COOLANT SENSOR
- 4 MOUNTING BRACKET
- 5 GROMMET
- 6 EVAPORATOR HOUSING



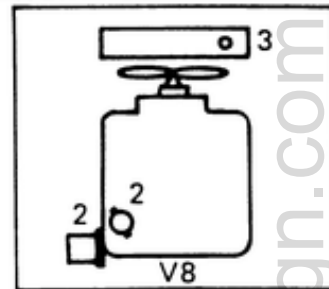


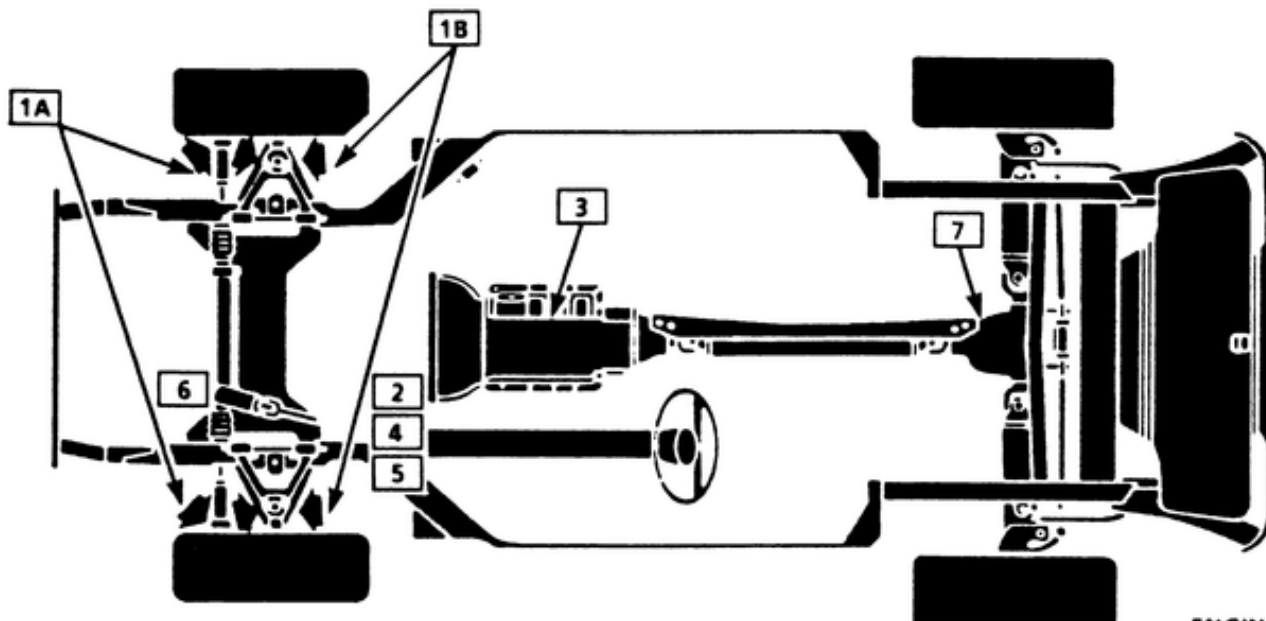


LUBRICATION POINTS

- 1 CHASSIS
2. ENGINE OIL AND FILTER
3. COOLING SYSTEM
4. AUTO TRANSMISSION FLUID

ENGINE COMPARTMENT

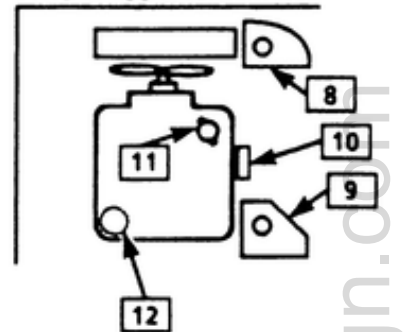


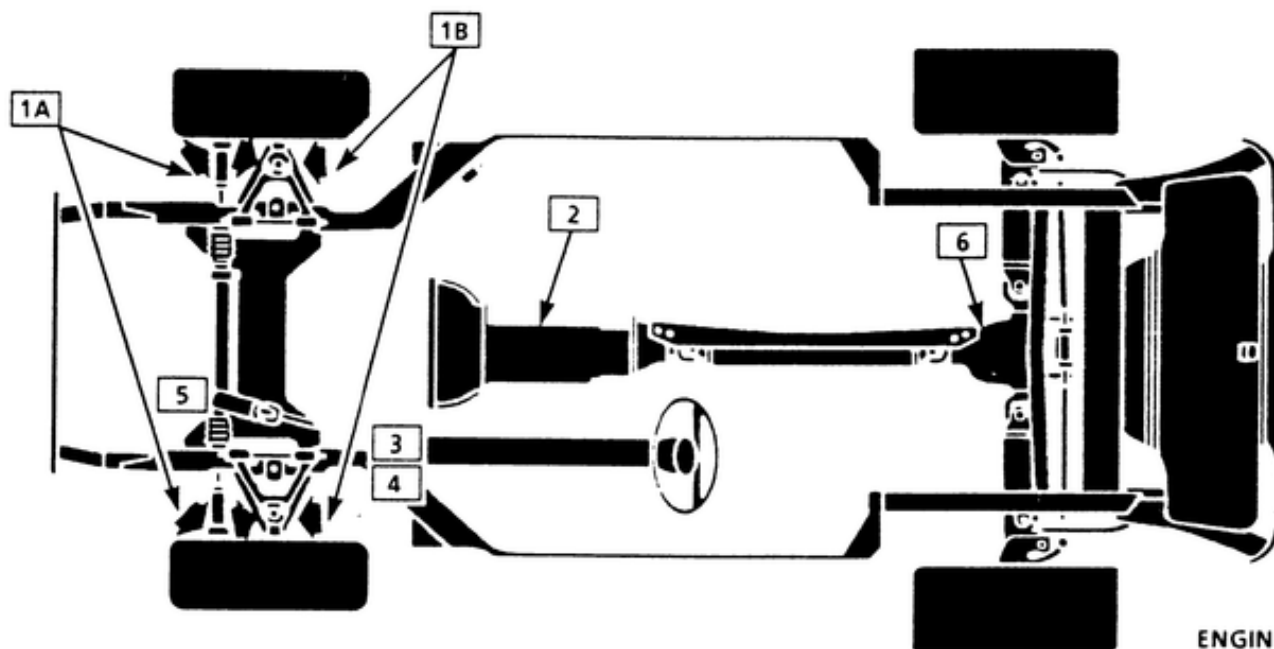


- 1** LUBRICATION POINTS
 - 1A** STEERING LINKAGE
 - 1B** UPPER AND LOWER CONTROL ARM BALL JOINTS
- 2** AUTOMATIC "TRANS FLUID" DIPSTICK
- 3** MANUAL TRANSMISSION FILL PLUG
- 4** BRAKE FLUID RESERVOIR
- 5** HYDRAULIC CLUTCH FLUID RESERVOIR

- 6** POWER STEERING FLUID RESERVOIR
- 7** REAR AXLE FILL PLUG
- 8** COOLANT RECOVERY RESERVOIR
- 9** COOLANT FILL RESERVOIR
- 10** ENGINE OIL LEVEL DIPSTICK
- 11** "ENGINE OIL FILL" CAP
- 12** ENGINE OIL FILTER

ENGINE COMPARTMENT

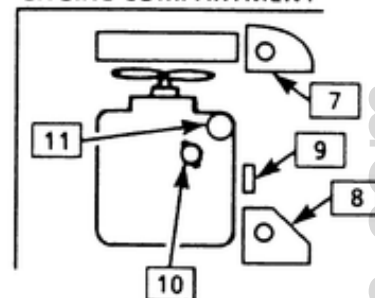


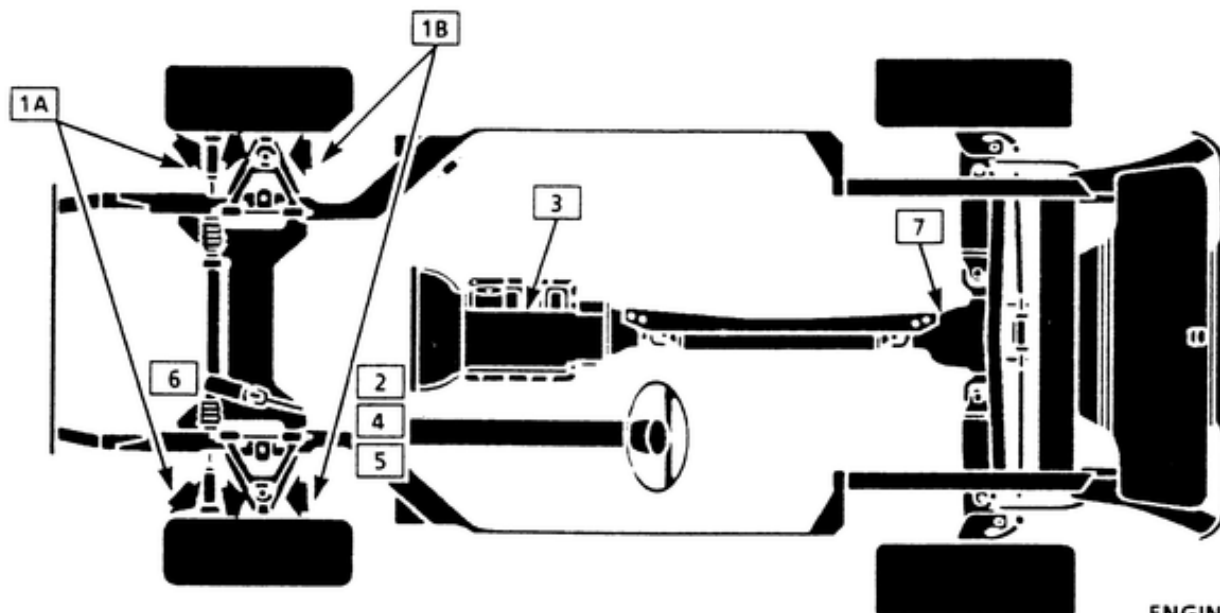


- 1 LUBRICATION POINTS
 - 1A STEERING LINKAGE
 - 1B UPPER AND LOWER CONTROL ARM BALL JOINTS
- 2 MANUAL TRANSMISSION FILL PLUG
- 3 BRAKE FLUID RESERVOIR
- 4 HYDRAULIC CLUTCH FLUID RESERVOIR
- 5 POWER STEERING FLUID RESERVOIR

- 6 REAR AXLE FILL PLUG
- 7 COOLANT RECOVERY RESERVOIR
- 8 RADIATOR SURGE TANK
- 9 ENGINE OIL LEVEL DIPSTICK
- 10 "ENGINE OIL FILL" CAP
- 11 ENGINE OIL FILTER

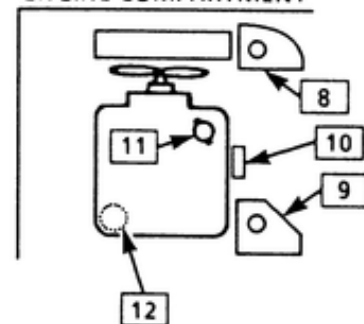
ENGINE COMPARTMENT

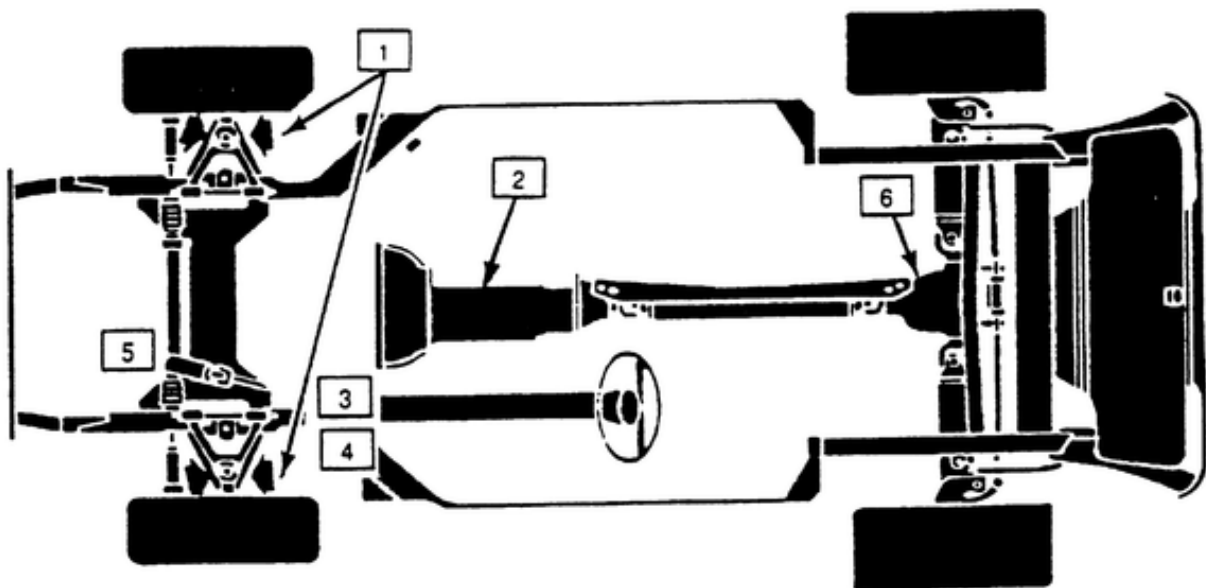




- | | |
|---|---|
| 1 LUBRICATION POINTS | 6 POWER STEERING FLUID RESERVOIR |
| 1A STEERING LINKAGE | 7 REAR AXLE FILL PLUG |
| 1B UPPER AND LOWER CONTROL ARM BALL JOINTS | 8 COOLANT RECOVERY RESERVOIR |
| 2 AUTOMATIC "TRANS FLUID" DIPSTICK | 9 RADIATOR SURGE TANK |
| 3 MANUAL TRANSMISSION FILL PLUG | 10 ENGINE OIL LEVEL DIPSTICK |
| 4 BRAKE FLUID RESERVOIR | 11 "ENGINE OIL FILL" CAP |
| 5 HYDRAULIC CLUTCH FLUID RESERVOIR | 12 ENGINE OIL FILTER |

ENGINE COMPARTMENT





1 LUBRICATION POINTS - UPPER AND LOWER CONTROL ARM BALL JOINTS

2 MANUAL TRANSMISSION FILL PLUG

3 BRAKE FLUID RESERVOIR

4 HYDRAULIC CLUTCH FLUID RESERVOIR

5 POWER STEERING FLUID RESERVOIR

6 REAR AXLE FILL PLUG

7 COOLANT RECOVERY RESERVOIR

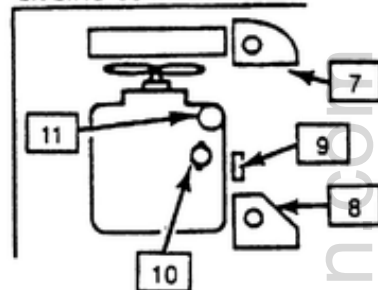
8 RADIATOR HIGH FILL RESERVOIR

9 ENGINE OIL LEVEL DIPSTICK

10 *ENGINE OIL FILL* CAP

11 ENGINE OIL FILTER

ENGINE COMPARTMENT



1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

When adding fluid or refilling the transmission, use only Dexron(r) II or its latest superseding grade of automatic transmission fluid for 1984-91 vehicles. For 1992-96 vehicles, use Dexron® IIE or III automatic transmission fluid.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

Check the automatic transmission fluid level at each oil change. Driving with too much or too little transmission fluid can damage the transmission. The fluid level should be checked only when the transmission is at normal operating temperature. If your vehicle has been driven at highway speeds for a long time, in city traffic in hot weather, or pulling a trailer, wait for about 30 minutes for the fluid to cool down so a correct reading can be read.

1. Park the car on a level surface, with the parking brake on. Start the engine and let it idle for about 15 minutes for 1984–90 vehicles or about 5 minutes for 1991–96 vehicles. With the brake firmly applied, move the transmission through all the gears and then back to **P**, pausing for about 3 seconds in each gear.
2. For 1992–96 vehicles, allow the engine to idle for about 3 more minutes.
3. Remove the dipstick and carefully touch the wet end of the dipstick to see if the fluid is cool, warm, or hot. Wipe it clean and then reinsert it firmly for about 3 seconds. Be sure that it has been pushed all the way in. Remove the dipstick again and check the fluid level while holding it horizontally. Read both sides of the dipstick, using the lowest level.

Fig. 1: Pull the automatic transmission fluid dipstick from the tube, located at the rear of the engine

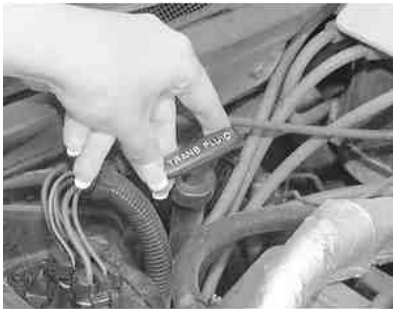
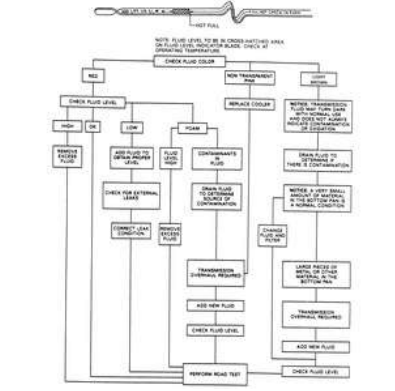


Fig. 2: Automatic transmission fluid color, level and condition check



- A. If fluid is cool (room temperature), the level should be about $\frac{1}{8} - \frac{3}{8}$ in. (3–10mm) below the ADD/COLD mark.
 - B. If fluid is warm, the level should be close to the **ADD** mark, either above or below.
 - C. If fluid is too hot to touch, the level should be at the **FULL/HOT** mark.
4. If the fluid level is low, add Dexron(r) II, IIE or III Automatic Transmission Fluid (ATF), as applicable, through the dipstick tube. This is easily done with the aid of a funnel. Check the level often as you are filling the transmission. Be extremely careful not to overfill it. Overfilling will cause slippage, seal damage and overheating. Approximately 1 pint (0.473L) of ATF will raise the fluid level from one notch/line to the other.

Fig. 3: Using a funnel, SLOWLY add a small amount of fluid through the dipstick tube, stopping often to check the level



NOTE: Transmission fluid should be red in color when the fluid is new. If the fluid on the dipstick appears discolored (brown or black), or smells burnt, serious transmission troubles (probably due to overheating) should be suspected. The transmission should be inspected by a qualified technician to locate the cause of the burnt fluid.

1990 Chevrolet CORVETTE

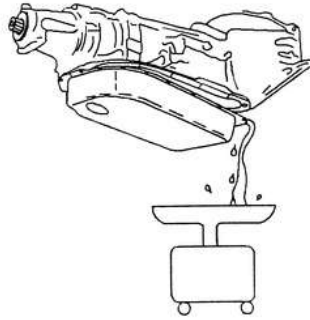
Submodel: | Engine Type: V8 | Liters: 5.7

Fuel Delivery: FI | Fuel: GAS

The automatic transmission fluid and filter should be changed every 15,000 miles (24,000km) if your vehicle is driven in heavy city traffic in hot weather, in hilly or mountainous terrain, frequent trailer pulling, or uses such as found in taxi, police car or delivery service. If your vehicle is driven under other than listed above conditions, change the fluid and filter every 100,000 miles (160,000 km).

1. Raise and support the car on jackstands.
2. If equipped, remove the upper and lower underbody braces.
3. Place an suitable drain pan under the transmission.

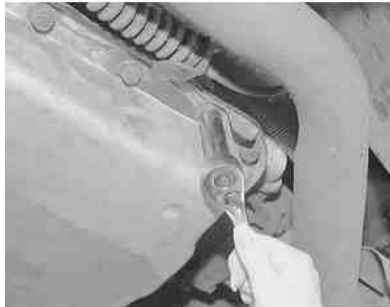
Fig. 1: Place a drain pan of sufficient capacity under the transmission pan



NOTE: When removing the oil pan bolts, be careful not to damage the oil pan sealing surfaces.

4. Remove the oil pan bolts from the sides and front of the pan only.

Fig. 2: Loosen and remove the oil pan bolts from the front and sides of the pan



5. Loosen the rear oil pan bolts about 4 turns each.

Fig. 3: Loosen the rear oil pan bolts about 4 turns, then carefully pry the front of the pan down, and allow the fluid to drain



Fig. 4: Allow as much fluid drain as possible before removing the rear pan bolts



6. Lightly tap the oil pan with a rubber mallet or gently pry it downward to allow fluid to drain.

WARNING

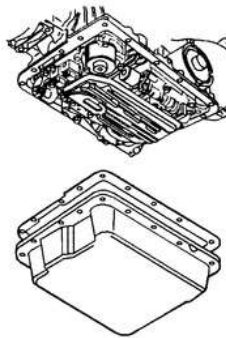
Do not damage the transmission case or oil pan sealing surfaces.

7. Remove the remaining oil pan bolts, then remove the oil pan and pan gasket.

Fig. 5: Remove the remaining bolts, then carefully lower the pan and dump any remaining fluid in a suitable container



Fig. 6: Remove the transmission oil pan and gasket

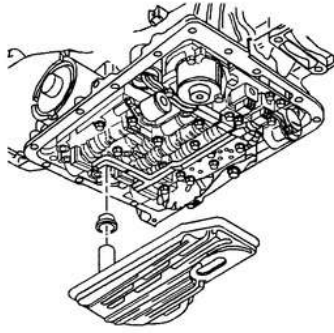


8. Remove the filter and seal. The seal may stick in the transmission case.

Fig. 7: Remove the transmission filter and seal



Fig. 8: If the filter seal does not come out of the filter, it is stuck in the transmission case and must be removed



9. Inspect the fluid color and the filter. Pry the metal crimping away from the top of the filter, then pull it apart. The filter may contain the following evidence that may require further investigation:
 - A. Clutch material
 - B. Bronze slivers indicating bushing wear
 - C. Steel particles
10. Clean the transmission case and oil pan gasket surfaces with suitable solvent and air dry. Make sure to remove all traces of the old gasket. If equipped, remove the magnet and clean it off before reinstalling it.

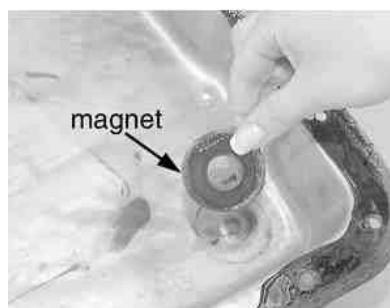
Fig. 9: Remove and discard the pan gasket, then use a suitable scraper to carefully clean the mating surfaces



Fig. 10: Make sure to thoroughly clean the pan before reinstalling it



Fig. 11: Remove the transmission pan magnet, and clean it off before reinstalling it



To install:

11. Coat the seal with a small amount of Transjel(r).
12. Install the new seal onto the filter neck.
13. Position the new filter into the case.
14. Install the oil pan and new gasket.

NOTE: Inspect the oil pan screws and washer assemblies. The screws must not be used if the conical washer is reversed. Failure to replace the screw and washer assembly may result in improper fastening of system components.

15. Install the oil pan bolts and tighten them to 15 ft. lbs. (20 Nm) for 1984–88 vehicles or to 97 inch lbs. (11 Nm) for 1989–96 vehicles.
16. Carefully lower the car.
17. Fill the transmission to proper level with Dexron(r) II, IIE or III fluid.
18. Check cold fluid level reading for initial fill. Do NOT overfill the transmission.
19. Follow the fluid level check procedure described earlier.
20. Check the oil pan gasket for leaks.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

When adding or replacing the brake fluid, always use a top quality fluid, such as Delco Supreme II or equivalent DOT-3 fluid. DO NOT allow the master cylinder reservoir to remain open for long periods of time; brake fluid absorbs moisture from the air, reducing its effectiveness and causing corrosion in the lines.

NOTE: Avoid spilling brake fluid on any of the vehicle's painted surfaces, wiring cables or electrical connections. Brake fluid will damage paint and electrical connections. If any fluid is spilled on the vehicle, flush with water to lessen damage.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7

Fuel Delivery: FI | Fuel: GAS

The master cylinder is located in the left rear section of the engine compartment. The brake master cylinder consists of an aluminum body and a translucent nylon reservoir with minimum fill indicators.

1. Check the master cylinder body for cracks. Inspect the area around the master cylinder for brake fluid. Leaks are indicated if there is at least a drop of fluid. A damp condition is not normal.
2. Inspect the level of the brake fluid to assure it is at the correct height. Clean the top of the reservoir cap so that all dirt is removed. Remove the cap(s) or reservoir cover and the reservoir diaphragm.

Fig. 1: Clean all of the dirt from the master cylinder cap, to avoid contaminating the system when you remove the cap



Fig. 2: The master cylinder reservoir has MAX (1) and MIN (2) fill lines

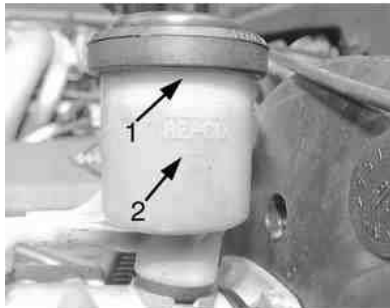


Fig. 3: Remove the master cylinder reservoir cap by pulling it off the top of the reservoir. Note the cap diaphragm



3. Inspect the brake fluid level. Add clean DOT-3 brake fluid as required to bring the fluid level to the line located inside the neck of the reservoir fill opening.

Fig. 4: Add fluid, from a fresh, sealed container, until it reaches the MAX mark on the reservoir



4. Install the reservoir cap.

Fig. 5: If the cap diaphragm is extended due to low fluid levels . . .



Fig. 6: . . . make sure to push it back into place before reinstalling it



WARNING

Any sudden decrease in the fluid level indicates a possible leak in the system and should be checked out immediately. Do not allow brake fluid to spill on the vehicle's finish; it will remove the paint. In case of a spill, flush the area with water and mild soap.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

Chassis lubrication can be performed with a pressurized grease gun or by using a hand-operated grease gun. Wipe the grease fittings clean before greasing in order to prevent the possibility of forcing any dirt into the component.

Fig. 1: Maintenance locations and chassis lubrication points — 1984–89 5.7L (VIN 8) engine

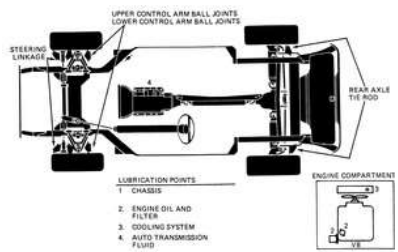


Fig. 2: Lower ball joint grease fitting location

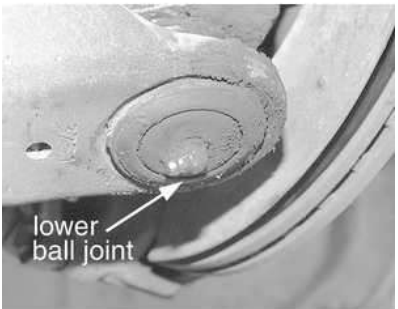


Fig. 3: Steering linkage (outer tie rod end) grease fitting location



Fig. 4: Rear axle tie rod end grease fitting location



Fig. 5: Maintenance and chassis lubrication points — 1990
—91 5.7L (VIN 8) engine

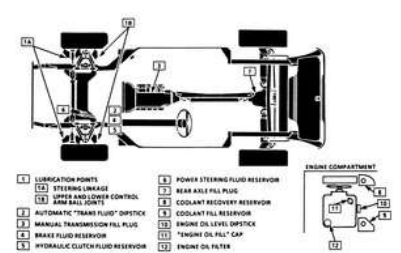


Fig. 6: Maintenance and lubrication fitting locations — 5.7L
(VIN J) engine

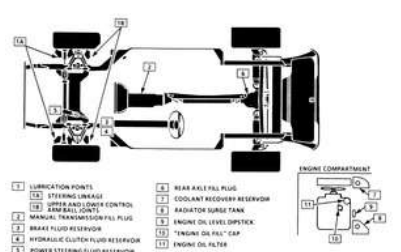


Fig. 7: Maintenance and lubrication fitting locations — 5.7L
(VIN P) engine

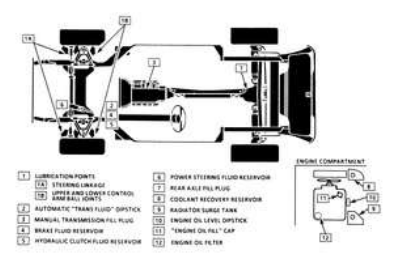
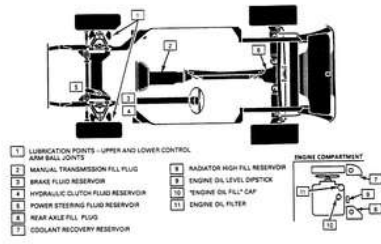


Fig. 8: Maintenance and lubrication fitting locations — 5.7L
(VIN 5) engine



1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

WARNING
Do not use silicon, mineral or paraffin based oil in the clutch hydraulic system. These oil based fluids will damage the clutch system seals and rubber parts in the cylinders.
When adding fluid to the hydraulic clutch system, use only hydraulic clutch fluid, GM part number 12345347, or equivalent.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

The clutch master cylinder is normally located below the brake master cylinder. The reservoir for it is located right beside the brake master cylinder and is made of translucent nylon. The fluid level of the reservoir should be kept near the top of the observation window. Before removing the cap to the reservoir, clean all dirt from the area. This will prevent system contamination due to particles falling into the reservoir when the caps are removed.

Fig. 1: Some clutch master cylinder reservoirs have a baffle under the reservoir cap to help keep contaminants out

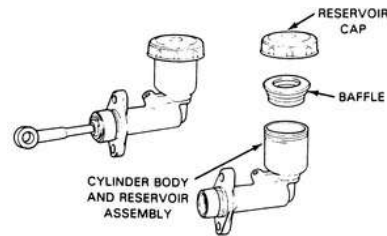
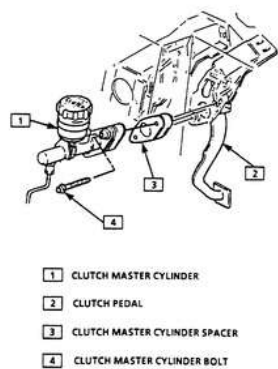


Fig. 2: The clutch master cylinder and reservoir are mounted next to the brake master cylinder



1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

CAUTION

When draining the coolant, keep in mind that cats and dogs are attracted by ethylene glycol antifreeze, and are quite likely to drink any that is left in an uncovered container or in puddles on the ground. This will prove fatal in sufficient quantity. Always drain the coolant into a sealable container. Coolant should be reused unless it is contaminated or several years old (in which case it should be taken to a recycling facility such as a service station).

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7

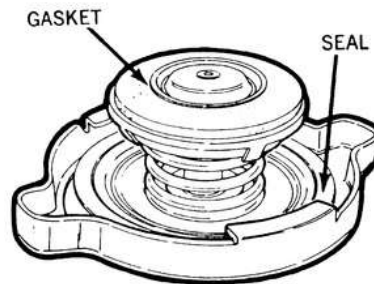
Fuel Delivery: FI | Fuel: GAS

[Checking the Radiator Cap Seal](#)

While you are checking the coolant level, check the radiator cap for a worn or cracked gasket. If the cap doesn't seal properly, fluid will be lost and the engine will overheat.

Worn caps should be replaced with a new one.

Fig. 1: Be sure the rubber gasket on the radiator cap has a tight seal

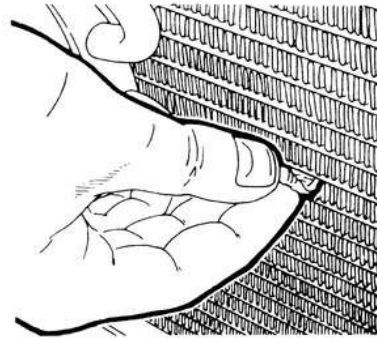


[Checking the Radiator for Debris](#)

Periodically clean any debris; leaves, paper, insects, etc. from the radiator fins. Pick the large pieces off by hand. The smaller pieces can be washed away with water pressure from a hose.

Carefully straighten any bent radiator fins with a pair of needle nose pliers. Be careful, the fins are very soft. Don't wiggle the fins back and forth too much. Straighten them once and try not move them again.

Fig. 2: Periodically remove all debris from the radiator fins



1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7

Fuel Delivery: FI | Fuel: GAS

CAUTION

Do not remove a radiator cap or radiator surge tank cap, as applicable, while the engine and radiator are still hot. Danger of burns by scalding fluid and steam under pressure may result!

1. Park the vehicle on a level surface, and allow the engine to thoroughly cool.
2. With a cool engine, slowly rotate the radiator cap or radiator surge tank cap, as applicable, counterclockwise to the detent without pressing down on the cap.
3. Wait until any remaining pressure is relieved by listening for a hissing sound.
4. After all the pressure is relieved, press down on the cap and continue to rotate the cap counterclockwise.

Fig. 1: NEVER take the radiator cap off when the engine is hot!



Fig. 2: When you remove the radiator cap, check the gaskets and make sure they are OK



5. With a suitable container to catch the fluid under the radiator, open the radiator drain cock.

Fig. 3: The radiator drain cock is located at the bottom right hand corner of the radiator

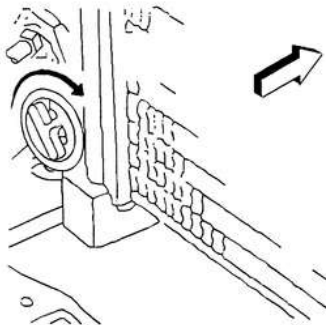


Fig. 4: You must turn the radiator drain cock counterclockwise to open it

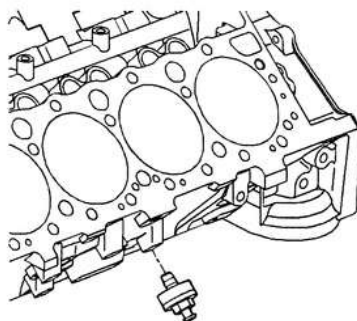


6. If equipped, position a drain pan, then remove all engine block plugs, as applicable.

NOTE: On VIN P, J and 5 engines, a large amount of coolant will be left in the system after the radiator drain cock has been opened and the coolant drained. A lot of coolant will come pouring out when the knock sensors is removed or thermostat housing separated, as applicable. Avoid contacting the coolant, as much as possible.

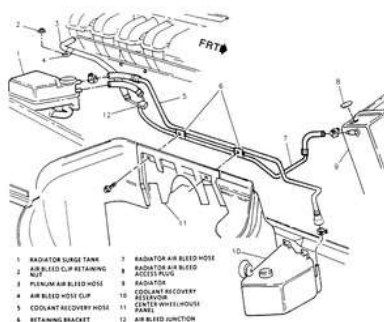
7. For 1992–96 5.7L (VIN P and 5) engines, perform the following:
 - A. If equipped, open the air bleed valves on the thermostat housing and the throttle body unit.
 - B. Position a suitable drain pan under the knock sensors.
 - C. Remove the engine knock sensors from the lower right and left hand side of the engine block.
 - D. If equipped, remove the engine block coolant drain hole plug.

Fig. 5: On some vehicles, it is necessary to remove the knock sensors to fully drain the cooling system



8. For 1990–95 5.7L (VIN J) engines, perform the following:
 - A. Place a suitable drain pan under the thermostat housing.
 - B. Remove the thermostat from the thermostat housing, being careful not to scratch housing mating surfaces or damage the seal on the thermostat during removal.

Fig. 6: Exploded view of the radiator surge tank, air bleed and overflow hoses — 1995 vehicle shown, others similar



9. Allow the system to drain completely.
10. Close the radiator drain cock and install the engine block drain plug, knock sensors and/or thermostat and housing, as applicable.

NOTE: Use a 50/50 mixture of water and Ethylene Glycol antifreeze (1984–95 vehicles) or DEX-COOL® (1996 vehicles). Freezing protection should be appropriate for temperatures of -34°F (-37°C).

11. Fill the cooling system through the radiator/surge tank neck. If equipped, close the air bleed vent when bubbles disappear and only engine coolant is visible.
12. Fill the reservoir assembly to the "COLD" mark. Install the coolant reservoir cap/dipstick.
13. Firmly set the parking brake. Run the engine with the radiator cap off, until normal operating temperature is reached.

CAUTION

Under some conditions, ethylene glycol is flammable. To avoid being burned when adding engine coolant, do not spill it on the exhaust system or on hot engine parts.

14. With the engine idling, add engine coolant to the radiator until the level reaches the bottom of the radiator fill neck.

Fig. 7: Add coolant to the radiator until the level reaches the bottom of the fill neck



NOTE: On 1988–90 5.7L (VIN 8) engines, when filling the engine coolant system, add 6 engine coolant supplement sealant pellets (GM part no. 3634621 or equivalent) to the system. On 1992–96 5.7L (VIN P) engines, add 6 engine coolant sealant pellets when filling the engine coolant system.

15. Install the radiator cap or surge tank cap, as applicable. After running the engine until normal operating temperature is reached, inspect the system for leaks.

NOTE: The "LOW COOLANT" warning indicator lamp may come on after this procedure. After operating the vehicle so that the engine heats up and cools down three times, this indicator should go out. If the "LOW COOLANT" warning indicator lamp does not go out, or fails to come on at ignition check and the coolant is above "COLD" mark in reservoir, electrical diagnosis performed by a certified technician is required. If at any time the "TEMP" warning indicator lamp comes on, immediate action is required. Turn off the engine and allow the vehicle to cool down. Do not remove the coolant recovery reservoir cap at this time.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

When adding or changing the fluid in the system, create a 50/50 mixture of high quality ethylene glycol antifreeze and water for 1984–95 vehicles. For 1996 vehicles, use a 50/50 mixture of ethylene based DEX-COOL(r) and water.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7

Fuel Delivery: FI | Fuel: GAS

The cooling system should be drained, thoroughly flushed and refilled at least every 30,000 miles or 24 months. This operation should be done with the engine cold.

1. Drain the cooling system as described earlier in this section.

WARNING

Do NOT use a chemical flush in these engines!

2. Fill the cooling system with warm water and start the engine. Run the engine until normal operating temperature is reached.
3. At this point, turn the engine off and again drain the cooling system.
4. Repeat this procedure until the fluid draining from the system is nearly colorless.
5. Remove, empty and reinstall the coolant recovery reservoir assembly.
6. Fill the cooling system with a 50/50 mixture of ethylene glycol antifreeze, as outlined in the previous procedure.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

The fluid level may be checked by observing the fluid level marks of the coolant recovery reservoir or by unscrewing and reading the recovery reservoir dipstick. The level should be between the **HOT** and **COLD** mark when the system is at normal operating temperature. When the engine is cold, the fluid level should be above the **HOT** mark on the reservoir or dipstick, as applicable. Only add coolant to bring the level to the full **HOT** mark.

CAUTION
Should it be necessary to remove the radiator cap or radiator surge tank cap, make sure that the system has had time to cool, reducing the internal pressure. If the system is opened while the engine is still hot, scalding fluid and steam may be blown out under pressure.

Fig. 1: Relation of the coolant recovery reservoir and radiator — 1984–88 vehicles

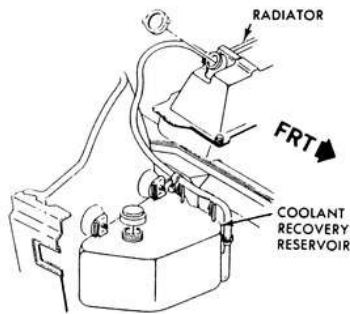


Fig. 2: Most vehicles have a dipstick that is screwed into the top of the coolant recovery reservoir

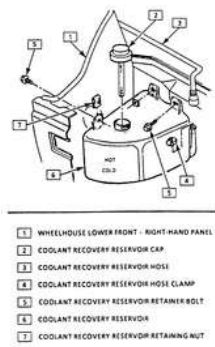


Fig. 3: Some later model vehicles have a radiator surge tank in place of a radiator cap

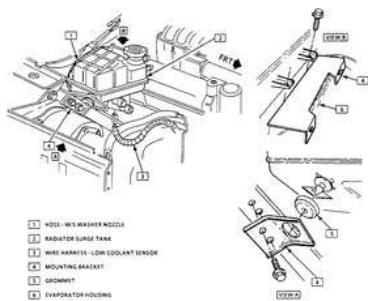


Fig. 4: The coolant recovery reservoir has HOT (1) and COLD (2) marks stamped into the side of it

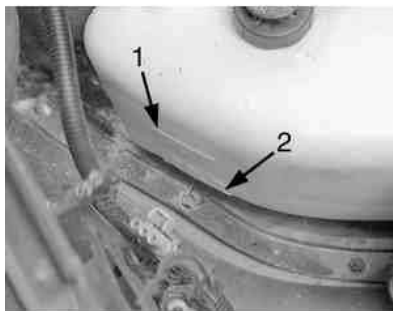


Fig. 5: If equipped, unscrew the reservoir cap/dipstick in order to get a fluid level reading



Fig. 6: If the fluid level is low, add coolant to the recovery reservoir until it reaches the proper level



1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7

Fuel Delivery: FI | Fuel: GAS

NOTE: Although the manufacturer recommends changing the filter at the first oil change and then at every other oil change, (unless 12 months pass between changes), we recommend changing the filter with each service. It is a small price to pay for extra protection.

Under normal operating conditions, the oil is to be changed every 7500 miles (12,000 km) or 12 months, whichever occurs first. When driving conditions frequently include dusty or polluted areas, trailer towing, idling for long periods of time, low speed operation, when operating at temperatures below freezing or driving short distances (under 4 miles or 6.4km), change the oil and filter more frequently. Under these circumstances, oil has a greater chance of building up sludge and contaminants which could damage your engine. If your vehicle use fits into one or more of these categories (as it does for most vehicles), it is suggested that the oil and filter be changed every 3000 miles (5000 km) or 3 months, whichever comes first.

The oil should be disposed of properly after it is drained from the vehicle. Store the oil in a suitable container and take the container to an official oil recycling station. Most gas stations or oil and lube facilities will take the used oil at little or no expense to you.

Oil should always be changed after the engine has been running long enough to bring it up to normal operating temperature. Hot oil will flow more easily and will carry more contaminants than will cold oil. The oil drain plug is located on the bottom of the oil pan (bottom of the engine, underneath the car). The oil filter is located on the left side of most engines covered by this manual. To change the oil and filter:

1. Run the engine until it reaches normal operating temperature.
2. Raise the front of the vehicle and support it safely using a suitable pair of jackstands.
3. Slide a drain pan of a least 6 quarts capacity under the oil pan. Wipe the drain plug and surrounding area clean using an old rag.

CAUTION

The EPA warns that prolonged contact with used engine oil may cause a number of skin disorders, including cancer! You should make every effort to minimize your exposure to used engine oil. Protective gloves should be worn when changing the oil. Wash your hands and any other exposed skin areas as soon as possible after exposure to used engine oil. Soap and water, or waterless hand cleaner should be used.

4. Loosen the drain plug using a ratchet, short extension and socket or a box-wrench. Turn the plug out by hand, using a rag to shield your fingers from the hot oil. By keeping an inward pressure on the plug as you unscrew it, oil won't escape past the threads and you can remove it without being burned by hot oil.

NOTE: If the drain plug is equipped with a removable washer or gasket, check its condition and replace, if necessary, to provide a leakproof seal.

Fig. 1: Use a 13mm box-end wrench or ratchet to loosen the oil pan drain plug



Fig. 2: Keep an inward pressure on the drain plug while loosening it, so hot oil does not drip onto your hands



5. Quickly withdraw the plug and move your hands out of the way. Allow the oil to drain completely into the pan, then install and carefully tighten the drain plug. Be careful not to overtighten the drain plug, otherwise you'll be buying a new pan or a replacement plug for stripped threads.

Fig. 3: Quickly withdraw the plug and allow the oil to drain completely



Fig. 4: Make sure you thoroughly clean the oil pan drain plug threads to avoid stripping the pan threads



Fig. 5: Also, make sure to clean the oil pan drain plug mating surface



NOTE: Although some manufacturers recommend changing the oil filter every other oil change, we recommend the filter be changed each time you change your oil. The old filter will contain up to a quart of dirty oil, which will contaminate the clean oil. Also, the benefit of clean oil is quickly lost if the old filter is clogged. The added protection for your engine far outweighs the few dollars saved by using an old filter.

6. Move the drain pan under the oil filter. Use a strap-type or cap-type filter wrench to loosen and remove the oil filter from the engine block. Keep in mind that it's holding about one quart of hot, dirty oil.
7. Empty the old filter into the drain pan and properly dispose of the filter.

Fig. 6: You can use a cap-type oil filter wrench with a socket to loosen the oil filter



Fig. 7: Carefully lower the oil filter. Remember, it's holding about a quart of hot, dirty oil



8. Using a clean rag, wipe off the filter adapter on the engine block. Be sure that the rag doesn't leave any lint which could clog an oil passage.

Fig. 8: Use a clean, lint-free rag to wipe off the engine block filter adapter



9. Coat the rubber gasket on the filter with fresh oil, then spin it onto the engine by hand. When the gasket touches the adapter surface, give it another $\frac{1}{3} - \frac{1}{2}$ turn (but no more, or you'll squash the gasket and it will leak).

Fig. 9: Before installing a new oil filter, lightly coat the rubber gasket with clean oil



10. Refill the engine with the correct amount of fresh oil. Please refer to the Capacities chart in this section.
11. Check the oil level on the dipstick. It is normal for the level to be a bit above the full mark. Start the engine and allow it to idle for a few minutes.
WARNING
Do not run the engine above idle speed until it has built up oil pressure, as indicated when the oil light goes out.
12. Shut off the engine and allow the oil to flow back to the crankcase for a minute, then recheck the oil level. Check around the filter and drain plug for any leaks, and correct as necessary.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7

Fuel Delivery: FI | Fuel: GAS

Every time you stop for fuel, check the engine oil, making sure the engine has fully warmed and the vehicle is parked on a level surface. Because it takes some time for the oil to drain back to the oil pan, you should wait a few minutes before checking your oil. If you are doing this at a fuel stop, first fill the fuel tank, then open the hood and check the oil. Don't get so carried away as to forget to pay for the fuel; most station attendants won't believe that you forgot!

1. Make sure the car is parked on level ground.

NOTE: For the Corvette ZR-1, equipped with the 5.7L (VIN J) engine, the engine oil should be checked with the engine cold for the most accurate reading. If the engine is warm, allow ample time for it to cool before checking the oil level.

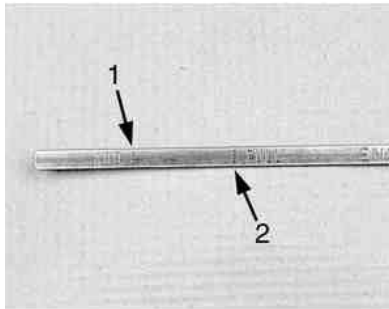
2. For most engines, when checking the oil level, it is best for the engine to be at normal operating temperature, although checking the oil immediately after stopping will lead to a false reading. Wait a few minutes after turning off the engine to allow the oil to drain back into the crankcase.
3. Open the hood and locate the dipstick which will be in a guide tube mounted in the engine block. Pull the dipstick from its tube, wipe it clean (using a clean, lint free rag) and then reinsert it.

Fig. 1: Pull the dipstick out of the tube



4. Pull the dipstick out again and, holding it horizontally, read the oil level. The oil should be between the FULL and ADD marks on the dipstick. The oil is below the ADD mark, add oil of the proper viscosity through the capped opening in the top of the valve cover. See the oil and fuel recommendations listed earlier in this section for the proper viscosity and rating of oil to use.

Fig. 2: The engine oil level should be between the ADD (1) and FULL (2) marks on the dipstick



5. Insert the dipstick and check the oil level again after adding any oil. Approximately one quart of oil will raise the level from the ADD mark to the FULL mark. Be sure not to overfill the crankcase and waste the oil. Excess oil will generally be consumed at an accelerated rate.

WARNING

DO NOT overfill the crankcase. It may result in oil-fouled spark plugs, oil leaks caused by oil seal failure or engine damage due to oil foaming.

Fig. 3: If the level is low, remove the engine oil fill cap, located on the valve cover



Fig. 4: Then, using a funnel, add the proper type and amount of oil



1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

Used fluids such as engine oil, transmission fluid, antifreeze and brake fluid are hazardous wastes and must be disposed of properly. Before draining any fluids, consult with your local authorities; in many areas, waste oil, antifreeze, etc. is being accepted as a part of recycling programs. A number of service stations and auto parts stores are also accepting waste fluids for recycling.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

The Society Of Automotive Engineers (SAE) grade number indicates the viscosity of the engine oil and thus its ability to lubricate at a given temperature. The lower the SAE grade number, the lighter the oil; the lower the viscosity, the easier it is to crank the engine in cold weather. Oil viscosities should be chosen from those oils recommended for the lowest anticipated temperatures during the oil change interval. With the proper viscosity, you will be assured of easy cold starting and sufficient engine protection.

Fig. 1: Look for the API oil identification label when choosing your engine oil



Multi-viscosity oils (5W-30, 10W-30 etc.) offer the important advantage of being adaptable to temperature extremes. They allow easy starting at low temperatures, yet they give good protection at high speeds and engine temperatures. This is a decided advantage in changeable climates or in long distance driving.

Fig. 2: Recommended SAE engine oil viscosity grades for 5.7L (VIN 8, P and 5) engines

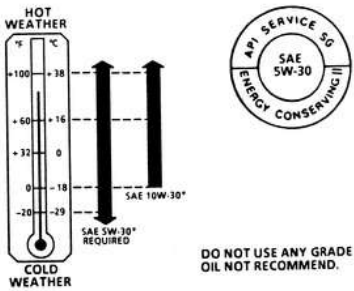
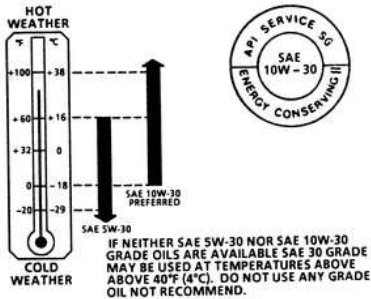


Fig. 3: Recommended SAE engine oil viscosity grades for 5.7L (VIN J) engines



The American Petroleum Institute (API) designation indicates the classification of engine oil used under certain given operating conditions. Only oil designated for Service SJ, or latest superseding oil grade, should be used. Oils of the SH type perform a variety of functions inside the engine in addition to their basic function as a lubricant. Through a balanced system of metallic detergents and polymeric dispersants, the oil prevents the formation of high and low temperature deposits and also keeps sludge and particles of dirt in suspension. Acids, particularly sulfuric acid, as well as other byproducts of combustion, are neutralized. Both the SAE grade number and the API designation can be found on the side of the oil bottle.

Synthetic Oils

There are excellent synthetic and fuel-efficient oils available that, under the right circumstances, can help provide better fuel mileage and better engine protection. However, these advantages come at a price, which can be significantly more than the price per quart of conventional motor oils.

Before pouring any synthetic oils into your car's engine, you should consider the condition of the engine and the type of driving you do. It is also wise to check the vehicle manufacturer's position on synthetic oils.

Generally, it is best to avoid the use of synthetic oil in both brand new and older, high mileage engines. New engines require a proper break-in, and the synthetics are so slippery that they can impede this; most manufacturers recommend that you wait at least 5,000 miles (8,000 km) before switching to a synthetic oil. Conversely, older engines are looser and tend to lose more oil; synthetics will slip past worn parts more readily than regular oil. If your car already leaks oil, (due to worn parts or bad seals/gaskets), it may leak more with a synthetic inside.

Consider your type of driving. If most of your accumulated mileage is on the highway at higher, steadier speed, a synthetic oil will reduce friction and probably help deliver better fuel mileage. Under such ideal highway conditions, the oil change interval can be extended, as long as the oil filter can operate effectively for the extended life of the oil. If the filter can't do its job for this extended period, dirt and sludge will build up in your engine's crankcase, sump, oil pump and lines, no matter what type of oil is used. If using synthetic oil in this manner, you should continue to change the oil filter at the recommended intervals.

Cars used under harder, stop-and-go, short hop circumstances should always be serviced more frequently, and for these cars synthetic oil may not be a wise investment. Because of the necessary shorter change interval needed for this type of driving, you cannot take advantage of the long recommended change interval of most synthetic oils.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7

Fuel Delivery: FI | Fuel: GAS

NOTE: Some fuel additives contain chemicals that can damage the catalytic converter and/or oxygen sensor. Read all of the labels carefully before using any additive in the engine or fuel system.

All of the vehicles covered by this manual are designed to run on unleaded fuel. The use of a leaded fuel in a car requiring unleaded fuel will plug the catalytic converter and render it inoperative. It will also increase exhaust backpressure to the point where engine output will be severely reduced. The minimum octane rating of the unleaded fuel being used must be at least 87, which usually means regular unleaded, but some high performance engines may require higher ratings. Fuel should be selected for the brand and octane which performs best with your engine. Judge a gasoline by its ability to prevent pinging, its engine starting capabilities (cold and hot) and general all weather performance.

As far as the octane rating is concerned, if your engine's compression ratio is 9.0:1 or lower, in most cases a regular unleaded grade of gasoline can be used. If the compression ratio is higher than 9.0:1, use a premium grade of unleaded fuel.

The use of a fuel too low in octane (a measure of anti-knock quality) will result in spark knock. Since many factors such as altitude, terrain, air temperature and humidity affect operating efficiency, knocking may result even though the recommended fuel is being used. If persistent knocking occurs, it may be necessary to switch to a higher grade of fuel. Continuous or heavy knocking may result in engine damage.

NOTE: Your engine's fuel requirement can change with time, mainly due to carbon build-up, which will in turn change the compression ratio. If you engine pings, knocks or diesels (runs with the ignition OFF) switch to a higher grade of fuel. Sometimes, just changing brands will cure the problem. If it becomes necessary to retard the timing from the specifications, don't change it more than a few degrees. Retarded timing will reduce power output and fuel mileage, in addition to making the engine run hotter.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

Lubricate the throttle lever, and the accelerator pedal lever at the support inside the car with clean engine oil.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

The gas tank filler door, car door, and rear hatch or trunk lid hinges should be wiped clean and lubricated with clean engine oil. Silicone spray also works well on seals, but must be applied more often. Use engine oil to lubricate the trunk or hatch lock mechanism and the lock bolt and striker. The door lock cylinders can be lubricated easily with a shot of silicone spray or one of the many dry penetrating lubricants commercially available.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

Clean the latch surfaces and apply clean engine oil to the latch pilot bolts and the spring anchor. Use the engine oil to lubricate the hood hinges as well. Use a chassis grease to lubricate all the pivot points in the latch release mechanism.

1990 Chevrolet CORVETTE

Submodel: | **Engine Type:** V8 | **Liters:** 5.7
Fuel Delivery: FI | **Fuel:** GAS

Use chassis grease on the parking brake cable where it contacts the guides, links, levers, and pulleys. The grease should be water resistant for durability.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

Lubricate the shift linkage with water resistant chassis grease which meets GM Specification 6031M or its equal.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7

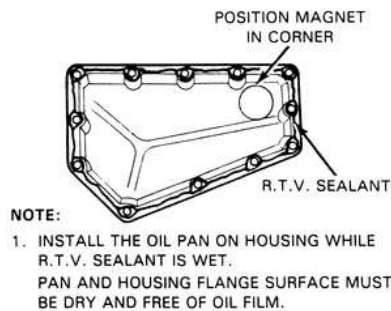
Fuel Delivery: FI | Fuel: GAS

[1984-88 Vehicles](#)

To drain the overdrive unit and replace the oil filter, perform the following procedure.

1. Raise and safely support the vehicle.
2. For convertibles, remove the upper and lower underbody braces.
3. Place a suitable drain pan under the overdrive oil pan, then remove the pan attaching bolts from the front and sides of the pan.
4. Loosen the rear pan bolts about 4 turns each.
5. Carefully pry the pan loose, allowing the fluid to drain into the pan.
6. Unfasten the remaining bolts, then remove the fluid pan.
7. Drain any fluid remaining in the pan into the drain pan. Remove and clean the pan magnet. Clean the fluid pan with a suitable solvent, then allow to dry thoroughly .
8. Unfasten any necessary retainers, then remove the filter from the transmission.

Fig. 1: Positioning of the magnet, and RTV sealant application locations



To install:

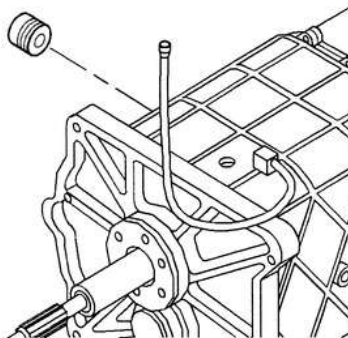
9. Install a new filter and secure with any necessary retainers.
- NOTE: The case and pan flange surfaces must be free of oil before applying the RTV sealant.**
10. Install the magnet in the oil pan as shown in the accompanying figure. Apply a bead of RTV sealant to the oil pan flange, then place the pan in position while the RTV is stills wet. The bead of RTV should be applied as shown in the accompanying figure.
 11. Install the oil pan-to-case bolts and tighten to 6-8 ft. lbs. (8-10 Nm).
 12. Fill the overdrive unit with Dexron® III, or equivalent automatic transmission fluid.
 13. For convertibles, install the upper and lower underbody braces.
 14. Carefully lower the vehicle.

[1989-96 Vehicles](#)

On these vehicles, the fluid in the manual transmission does not require changing. If you do choose to change the transmission fluid, perform the following procedure. The transmission fluid should be drained after a short period of operation when the oil is warm. This allows any existing moisture absorbed by the oil to be expelled when the oil is drained.

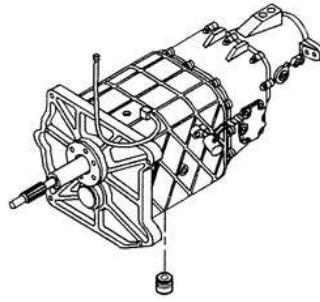
1. Raise and safely support the vehicle with safety stands.
2. Clean the dirt and oil from around the fill plug and the oil drain plug.
3. Remove the oil fill plug.

Fig. 2: Clean and remove the oil fill plug



4. Position a suitable drain pan under the oil drain plug and allow the oil to drain into a suitable container.

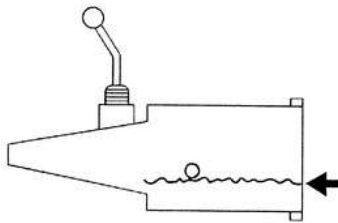
Fig. 3: Location of the manual transmission drain plug



To install:

5. Install the oil drain plug and tighten to 26 ft. lbs. (35 Nm).
6. Fill the transmission with the proper type and amount of fluid to the level of the fill plug, then install the plug.

Fig. 4: Fill the transmission case to the level of the fill plug



7. Carefully lower the vehicle.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

According to General Motors, the manual transmission fluid on 1984–88 Corvettes, equipped with the 4-speed manual transmission (with automatic overdrive), does not require changing. However the fluid in the overdrive unit must be changed every 30,000 miles (50,000km). Dexron(r) II, or its latest superseding grade of automatic transmission fluid is the only type of fluid that can be used on these vehicles. The use of any other fluids or additives may damage the transmission.

On 1989–96 vehicles, equipped with the 6-speed manual transmission, General Motors does not give an interval for changing the fluid. The only service required is to check the fluid level and add if necessary. The required fluid on this vehicle is manual transmission fluid SAE 5W-30, GM part no. 1052931, or equivalent gear lubricant.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7

Fuel Delivery: FI | Fuel: GAS

To check or add fluid to the manual transmission on these vehicles, perform the following:

1. Carefully raise the car and support on jackstands as close to level as possible.
2. Clean the dirt and/or foreign material from around the filler plug, then remove the filler plug.
3. If lubricant begins to trickle out of the hole, there is enough and you need not go any further. Otherwise, carefully insert your finger (watch out for sharp threads) and check to see if the oil is up to the edge of the hole.
4. If not, add the proper type of oil through the hole until the level is up to the edge of the hole.
5. Install and tighten the filler plug to 26 ft. lbs. (35 Nm).

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

On 1984–91 vehicles, use GM power steering fluid, part nos. 1050017 or 1052884, or equivalent, meeting requirements 9985010. For 1992–96 vehicles, use GM power steering fluid, part no. 12345867 or 12345866, or equivalent.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

The power steering pump used on these models has a remote reservoir assembly. The fluid reservoir cap has a fluid level indicator attached, which shows the fluid level.

Power steering fluid level should be checked at least twice a year. To prevent possible overfilling, check the fluid level only when the fluid has warmed to operating temperatures and the wheels are turned straight ahead. If the level is low, fill the pump reservoir until the fluid level measures between the COLD and HOT marks on the reservoir dipstick. Low fluid level usually produces a moaning sound as the wheels are turned (especially when standing still or parking) and increases steering wheel effort.

Fig. 1: The power steering fluid reservoir is marked with FULL HOT (1) and FULL COLD (2) lines



Fig. 2: Unscrew the power steering reservoir cap/dipstick



Fig. 3: The dipstick is marked on both sides. On one side it has markings for FULL COLD (1), and the other side has markings for FULL HOT (2) and ADD (3)

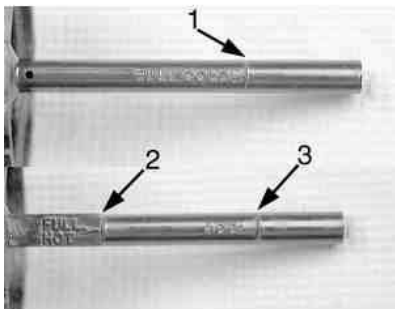


Fig. 4: Add the proper type of power steering fluid, until the level reaches the proper mark



1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7

Fuel Delivery: FI | Fuel: GAS

Fig. 1: Use ratchet and extension combination with a 13mm socket to loosen the rear axle drain plug

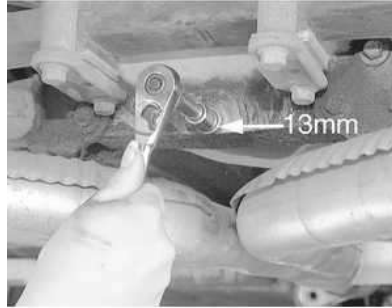
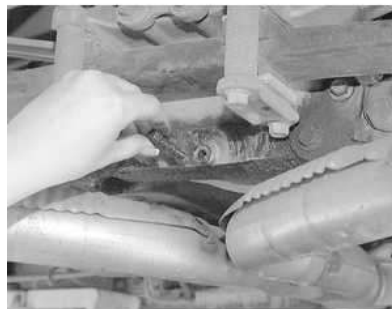


Fig. 2: After the drain plug has been loosened, you can unthread it by hand



Fig. 3: Withdraw the drain plug, and allow the fluid to drain



The rear axle should have the gear lubricant changed every 7,500 miles (12,000km). Be sure to add 4 oz. (118mL) of GM limited slip additive part No. 1052358.

1. Raise the car and safely support on jackstands. Place a suitable container under the differential to catch the fluid.
2. If necessary, Remove the bolts retaining the parking brake cable guides and position aside.
3. Clean all dirt from the area around the drain plug.
4. Unfasten the drain plug using a 13mm socket, then allow the fluid to drain into the drain pan.

To install:

5. Install the drain plug and tighten securely.
6. Fill the differential with fluid through the fill plug and add limited slip additive, as required.
7. Install the parking brake cable guides, if removed.
8. The fluid level should reached a level within $\frac{3}{8}$ in. (10mm) of the filler plug hole. Replace the filler plug.
9. Carefully lower the car and inspect for leaks.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

On limited slip differential rear axle assemblies, use 4 fl. oz. of limited slip differential additive lubricant and SAE 80W-90 GL-5 gear lubricant.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7

Fuel Delivery: FI | Fuel: GAS

The gear lubricant in the rear axle should be checked every 12 months or 15,000 miles (24,000km).

1. Raise the car and safely support on jackstands as close to level as possible.
2. Remove the filler plug from the right side of the differential carrier housing.

Fig. 1: The rear axle fill plug has tag on it listing the type of fluid required



Fig. 2: Use a ratchet with a hex socket to loosen the filler plug

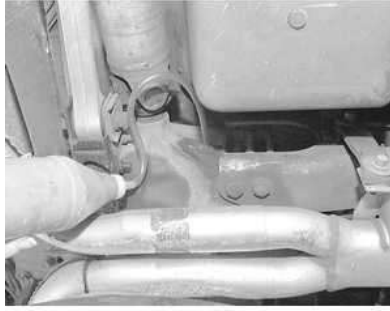


Fig. 3: Finish unscrewing the plug by hand, then remove it



3. If lubricant begins to trickle out of the hole, there is enough and you need not go any further. Otherwise, carefully insert your finger (watch out for sharp threads) and check to see if the lubricant is up to the edge of the hole. The fluid level should be maintained from flush with the bottom of the opening, to no lower than $\frac{1}{4}$ in. (6mm) below the opening.
4. If not, add oil through the hole until the level is at the edge of the hole. Most gear lubricants come in a plastic squeeze bottle with a nozzle or a pump-type device, making additions simple.

Fig. 4: If necessary, add fluid through the fill plug opening, using a plastic squeeze bottle with a tube attached to it



5. Install the filler plug and tighten to 8–11 ft. lbs. (10–15 Nm) for 1984–88 vehicles, to 30 ft. lbs. (41 Nm) for 1989–95 or to 11 ft. lbs. (15 Nm) for 1996 vehicles.
6. Carefully lower the vehicle.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

The power rack and pinion assembly used on these vehicles is a sealed unit, no level checks or fluid additions are ever necessary.

1990 Chevrolet CORVETTE

Submodel: | Engine Type: V8 | Liters: 5.7
Fuel Delivery: FI | Fuel: GAS

The front wheel bearing assembly used on these vehicles is a sealed, non-serviceable unit. No wheel bearing adjustments are necessary or possible. For bearing removal and installation procedures, please refer to Section 8 of this manual.