

It is recommended that the engine cooling system be flushed at 15,000 miles intervals or once each year, whichever comes first. The system has a maximum fluid capacity of 3 gallons. Use only ethylene glycol antifreeze mixtures made for use in aluminum engines.

Do these important checks first to determine if the cooling system needs to be flushed. You will need a one medium screwdriver, one 13mm socket wrench, one 10mm open-end wrench, a garden-type water hose with a variable control nozzle, and a DMC cooling system pressure tester (see side bar, page A-9). With the engine off and cold and referring to Figure B-1:

1. Check the coolant reservoir (Item 1) level to make sure it is half full.
2. When it's cold, remove the coolant reservoir cap (Item 2) and pressure test it using the pressure tester adapter to make sure it holds 15 psi.
3. Next, attach the pressure tester to the coolant reservoir and pump up the system to 15 psi. (NOTE: If it takes more than 30 pumps to reach 15 psi, it is a good indication that there is air in the system. The air will compress, but the water will not, and that means the system must be flushed.) Also look for leaks and look to see if any water hoses are bulging or expanded. If any are, either tighten their clamps to stop the leaks or replace the bad hoses.
4. Check to make sure both cooling fans are working and

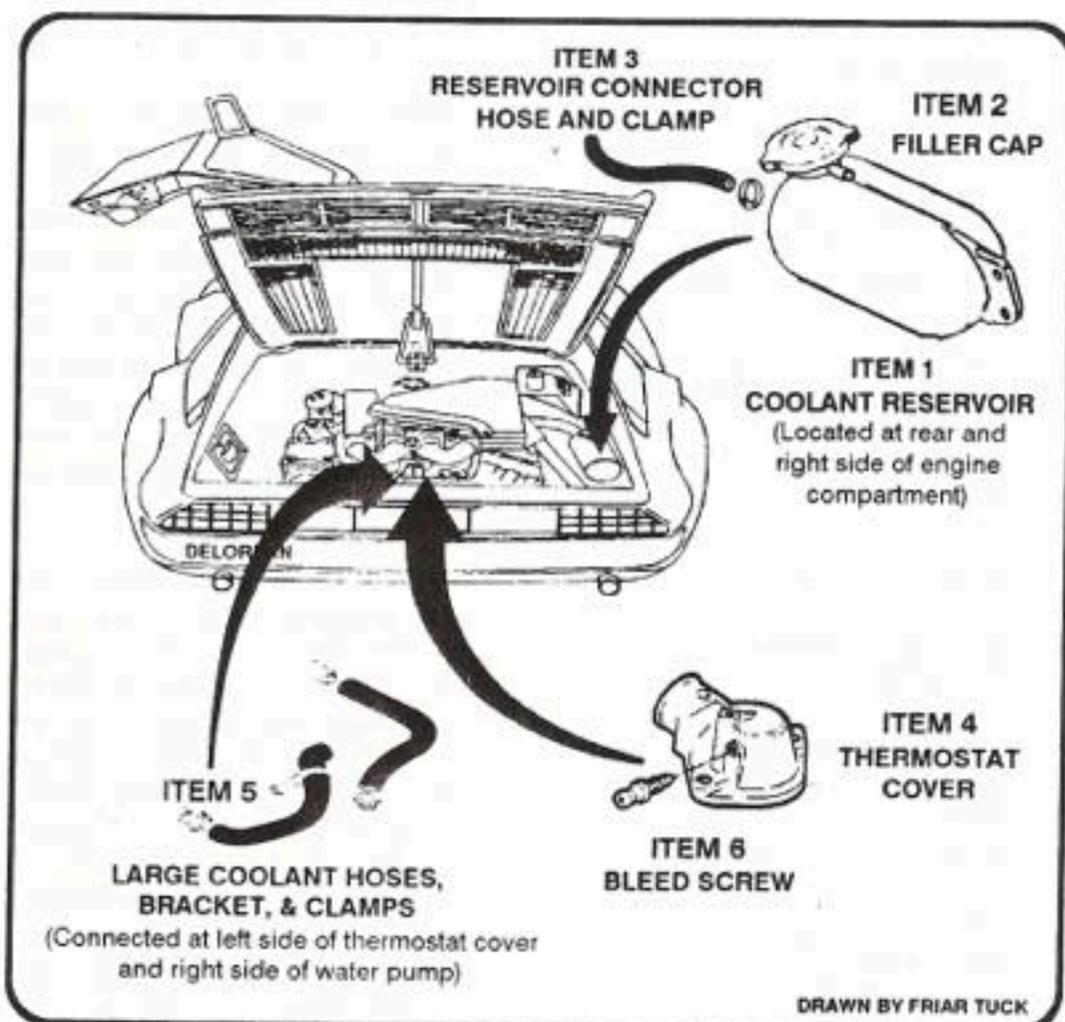


Figure B-1. Cooling System Check Items.

turning in the right direction. (NOTE: The engine must be hot before the fans will start turning. It may take 10 to 15 minutes before the fans will turn on.)

If the foregoing testing indicates that the cooling system needs to be flushed, move the car to a location where excess water can drain away safely. While referring to Figure B-1 again, do the following things:

1. Unscrew the clamp on the coolant reservoir connector hose (Item 3).
2. Remove the filler cap (Item 2) from the coolant reservoir.
3. Connect the water hose to the to the reservoir connec-

tor hose and start water running through the engine's cooling system. Do this for at least three to five minutes until all air and coolant are expelled through the filler cap opening and the running water is clear.

4. Now reconnect the connector hose and tighten its clamp.

What the above does is force all the air and coolant from one end of the engine to the other and through the water pump and the right water pump hose to the coolant reservoir and out the filler cap opening.

Continuing on, do these things:

1. Locate the thermostat cover (Item 4) which is on top of the

water pump housing and the large hose (Item 5) which is attached to it.

2. Loosen the hose clamp and the hose bracket. Remove the hose from the thermostat cover. Insert the garden hose into the large water hose opening and wrap a rag around it to seal the opening.
2. Next, turn on the water and force out any remaining air and colored coolant water until the reservoir bottle overflows at the filler cap and the water looks clear. Then remove the rag and water hose.
3. Now carefully pour new ethylene glycol antifreeze into the large hose opening. Since the antifreeze mixture is heavier than water, it will force any remaining water out of the system. The first gallon will go into the system easily while the last one-half gallon will go in more slowly. Keep the hose elevated as high as possible to take advantage of gravity.
4. Put the garden hose back into the opening, wrap the rag around it again, and put water into the system until the antifreeze mixture is clearly visible coming out of the filler cap opening. Now, quickly stop the water flow so as not to lose too much of the mixture.
5. Quickly reconnect the large hose to the thermostat cover and tighten the clamp to prevent any more loss of water. Now, fill the coolant reservoir all the way to the top until it overflows. Then...
6. Connect the pressure tester to the coolant reservoir filler cap opening and pump up

the system to 15 psi. Wait five minutes. If the pressure drops during the five minutes, this is indicative of a leak somewhere in the system. Look closely in the engine compartment and under the car to see if there are any leaks. If there are, tighten the hose clamps to stop them. But, if the system holds at 15 psi for five minutes it is considered to be secure.

7. While the 15 psi pressure is still applied, loosen the bleed screw (Item 6) with the 10mm open end wrench to start bleeding any remaining air from the system. When doing this, make sure the left large hose is lower than the thermostat cover to let air rise into the cover and be expelled through the bleed screw. As the air and water bleed out of the system, look at the coolant reservoir liquid level. When it drops to the half-full level, close and tighten the bleed screw.
8. Reinstall the large hose's support bracket and make sure the hose is clear of the air conditioning belt. Now start the engine and allow it to run for about five to ten minutes, or until the pointer on the temperature gauge reaches the first mark, which is about 160° F and no higher than 220° F. At this temperature, the thermo switch in the left-hand cooling pipe (see Figure A-9) should activate and turn on both cooling fans simultaneously. If the fans do not start running, that indicates there is a problem in the fan fail system (refer to pages A-4, A-9, and A-10 about checking the fan fail circuit).

IMPORTANT NOTES AND PRECAUTIONS

1. Do not overfill the cooling system. Leave room for expansion of the coolant mixture. This will keep the coolant from escaping through the overflow hose (attached to the coolant reservoir) when the engine is hot.
2. Do not remove the coolant reservoir filler cap while the engine is hot. This could cause scalding and burning of the skin. So, for your personal safety, wait until the engine cools down.
3. Do not pour cold water into the cooling system while the engine is hot. This could cause cracking of engine parts due to the sudden contact of the cold water with hot metal. Wait until the engine cools down.
4. If you notice that the cooling system requires frequent refilling, check for leaks by looking under the car. If you can, tighten the hose clamp(s) to stop the leak(s). If you cannot stop the leak(s), note where any are occurring from and bring the car to your nearest service center for correction of the problem.
5. Make sure all cooling water hose connections are tight and that the gasket on the coolant reservoir filler cap is in good condition.
6. When servicing or refilling the cooling system, *be sure* to use only an ethylene glycol antifreeze mixture made especially for use in aluminum engines. Make sure the mixture used consists of no more than 50% demineralized water and 50% ethylene glycol.