

DIAGNOSIS AND TESTING > ENGINE COOLING > COMPONENT TESTS

Cooling System Pressure Test

 **WARNING:** Always allow the engine to cool before opening the cooling system. Do not unscrew the coolant pressure relief cap when the engine is operating or the cooling system is hot. The cooling system is under pressure; steam and hot liquid can come out forcefully when the cap is loosened slightly. Failure to follow these instructions may result in serious personal injury.



NOTE: Vehicles have a pressure relief cap on the degas bottle and no radiator cap.

1.

Turn the engine OFF.

2.

Check the engine coolant level and adjust as necessary.

3.

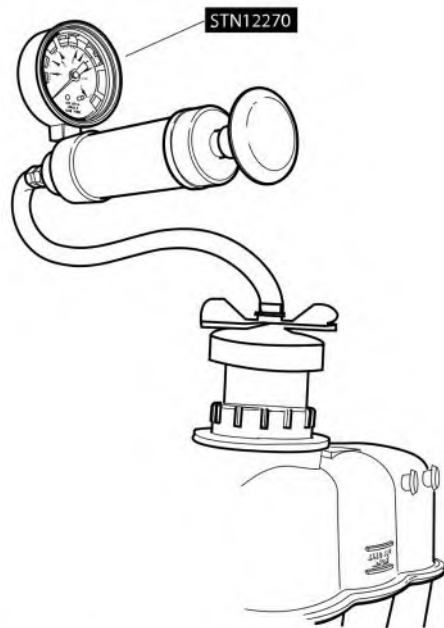
Remove the degas bottle cap. Inspect the degas bottle cap and degas bottle for any issues that would cause improper sealing, such as for cross-threading, burrs, damaged o-ring, etc. If any issues are found, **INSTALL** a new cap and/or degas bottle.

4.

Attach the Pressure Tester and adaptor (Snap-On TA53 or equivalent), to the degas bottle cap. The cap must hold pressure of 145 kPa +/- 21 kPa (21 PSI +/- 3 PSI). If any issues are found, **INSTALL** a new cap.

5.

Attach the Pressure Tester and adaptor (Snap-On TA52, AST ASSFZ-47, Redline RDL95-0750 or equivalent) to the degas bottle.



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NOTE: Do not pressurize the cooling system beyond the maximum pressure listed in the SPECIFICATIONS , or cooling system components can be damaged.



NOTE: If the plunger of the pressure tester is pressed too fast, an erroneous pressure reading will result.

6.

To pressurize the engine cooling system, slowly press the plunger of the pressure test pump and increase the pressure to between 124 - 138 kPa (18 - 20 PSI). Observe the gauge reading for approximately 2 minutes. Pressure should not drop during this time. If the pressure drops within this time, inspect for leaks and repair as necessary.

7.

If no leaks are found and the pressure drops, the leak may be internal to the engine. Inspect the coolant for engine oil and the engine oil for coolant. REFER to: ENGINE SYSTEM - GENERAL INFORMATION .

8.

If the pressure does not drop remove the cooling system Pressure Tester and adaptor from degas bottle.

9.

Install the degas bottle cap until it contacts the hard stop.

Thermostat

Install a new thermostat only after at least one of the following tests and checks have been carried out:

- Pinpoint Test B or C
- Thermostat Visual Inspection

Thermostat Visual Inspection

1.

Remove the thermostat.

2.

Examine the thermostat for signs of damage including:

- Valve not fully seated (light visible through the valve)
- Foreign material lodged in the main valve
- Bent or broken frame or flange
- Bent or broken spring
- Wax leaking from wax reservoir or a bulge in the reservoir
- Any other damage or distortion



NOTE: If no damage is found during the inspection, do not attempt to open the thermostat using hot water or other heat sources. This method is not an accurate means to test the function of the thermostat and may damage the thermostat.

3.

If damage is found during the inspection, remove any foreign material or broken pieces and install a new thermostat.

Radiator Leak Test, Removed From Vehicle



NOTE: Never leak test an aluminum radiator in the same water that copper/brass radiators are tested in. Flux and caustic cleaners may be present in the cleaning tank and they will damage aluminum radiators.



NOTE: Clean the radiator before leak testing to avoid contamination of tank.

1.

Leak test the radiator in clean water with air pressurized to the maximum pressure listed in the Specifications table.