

RADIATOR INSTALLATION SHEET

Thank you for purchasing a Spectra Premium radiator. Please take a few minutes to review these installation

and maintenance procedures to insure proper system operation and warranty guidelines.



SPECTRA
PREMIUM™
forming the *future*

COOLING SYSTEM MAINTENANCE AND RADIATOR REPLACEMENT PROCEDURES

COMMON PROBLEMS

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① ELECTROLYSIS

Electrolysis is caused by inadequate ph level in the system or bad electrical accessory grounds.

② CONTAMINATION AND ADDITIVES

Contamination and additives can clog passages and reduce overall heat transfer. Pure coolant liquid or mixing different types of liquids will also cause sludging in the system. **Only use a 50/50 mix of water and coolant liquid.**

③ INADEQUATE Ph LEVEL

Inadequate ph level of the cooling liquid causes inner tube blooming that restricts flow and increases engine temperature. Prevent these conditions with proper cooling system maintenance.

④ PRESSURE CAP

The pressure cap maintains constant system pressure to prevent cooling liquid from boiling. Coolant needs to be circulated from the overflow reservoir to prevent air from entering the system. The cap must be inspected on a regular basis.

⑤ MAINTENANCE

Regular maintenance requires that the thermostat be replaced each time the coolant is flushed or during radiator replacement. Install the proper temperature range thermostat for maximum engine performance and fuel efficiency.

⑥ EXCESSIVE EXTERNAL WEAR

Radiator excessive external wear is mostly caused by aging or road debris. Deteriorating or damaged cooling fins will reduce overall heat transfer. Replacement is necessary with complete system testing.

RADIATOR INSTALLATION

The radiator is an integral component of the vehicle's engine cooling system. Always refer to the repair manual for complete installation instructions.

***Caution: Cooling systems contain extremely hot fluids and steam, along with moving parts. Proceed with extreme caution! Engine coolant is extremely poisonous if ingested. Never leave coolant uncovered and always dispose of at a government authorized facility.**

Radiator removal

1. Refer to the repair manual for specific guidelines for the vehicle being serviced.
2. Disconnect the negative terminal cable from the battery.
3. Air bag sensors are located near most radiators; refer to the repair manual for instructions to disarm the air bag prior to removing the radiator as required.
4. Allow the vehicle, radiator, engine and coolant to cool completely before proceeding.
5. Slowly and cautiously remove the radiator cap.
6. Drain the old coolant through the drain tap or if the radiator does not have one remove the bottom radiator hose.
*** Caution! Refer to above!**
7. Disconnect engine and transmission lines from the radiator tanks using proper hand wrench tools. Extreme care should be taken not to strip cooler fittings or damage transmission oil lines. Plug all lines to avoid fluid loss and contamination.
8. Remove upper mounting brackets and rubber mounts. Disconnect/remove or slide back the fan shroud or electric fan assembly.
9. Disconnect all radiator hoses, sensors and fittings from the radiator tanks.
10. Remove any fasteners attaching the radiator and air conditioning condenser.
*** Caution! Make sure condenser is supported in place. The air conditioning system operates under very high pressure. Air conditioning lines should never be disconnected without properly draining A.C. refrigerant by a certified A.C. technician using properly approved recovery equipment.**
11. Carefully remove the radiator from the vehicle.

Radiator installation

- 1) Place new radiator back into the vehicle.
- 2) Hand- thread transmission and/or engine cooling lines back into the radiator tanks.
Stripping or cross threading coolers, plug or fittings will void manufactures warranty.
- 3) Tighten all line fittings using hand wrenches. Only torque to manufacturer's specifications. Do not over tighten.
- 4) Reconnect and tighten all radiator hose connections and tighten drain tap securely.
- 5) Reconnect air conditioning condenser fasteners, fan shroud and electric fan assembly where applicable.
- 6) Your cooling system was holding used coolant. After the new radiator has been installed your entire cooling system needs to be flushed with proper flushing chemicals using an approved flush + fill machine or kit :
Failure to completely flush the system will void the manufacturer's warranty on the radiator.
- 7) Filling your system with new radiator coolant :
 - i) Only use coolant that is recommended by the vehicle manufacturer;
 - ii) Never mix different types of used or old contaminated coolant;
 - iii) Always mix coolant 50/50 with distilled or deionised water. Never use tap water.
 - iv) Pre-mixed solutions may be used in some cases. Refer to repair manual for approval and recommendations.
 - v) Fill the cooling system to the required level as outlined in the repair manual. In some cases the vehicle must be raised during the filing process to allow for the fill point to be above the heater core for proper purging during the filling process.
Important, some vehicles are equipped with bleeder valves to remove any air bubbles in the cooling system. Usually located near the thermostat housing, the valve needs to be opened to bleed the system when starting the vehicle (Step 8). Close the valve when air bubbles cease. Refer to repair manual.
- 8) Start the vehicle with your heater control switches inside the vehicle on the 'High' heat position.
- 9) Allow the vehicle to warm-up long enough for the thermostat to open allowing coolant to flow. You will notice the radiator hose will become warm to hot.
Caution: Surfaces and hoses become very hot. As the coolant level drops, top off with the exact same mix used in the filling process. Stop when the coolant level settles to just below the radiator filler neck or fill line. Use a new radiator cap as specified for your vehicle. Refer to repair manual for the proper radiator cap specifications. Fill the coolant recovery bottle located inside the engine compartment to the required level again with the exact same mix of coolant used in the filling and purging process.
- 10) While engine is running check all fittings hoses and lines for any leaks.
- 11) After driving your vehicle for a few miles after the installation allow the vehicle to completely cool down. Top off the systems to the full mark again and make sure the same type and mixture of coolant is used.
- 12) Annual cooling system maintenance is required to insure proper cooling system operation.