

Radiator Installation Guide



This radiator installation guide is intended as a reference to be used as general guidance by those with the automotive knowledge, experience, tools, and facilities necessary to conduct this work in accordance with mandated safety protocols. This guide is not appropriate for those without adequate automotive knowledge and repair qualifications. Professional service is recommended when replacing the radiator.

Safety First! Wear gloves and safety goggles and ensure the vehicle engine is cool before proceeding. It is important to wait until the radiator is cool to touch (if possible, 8+ hours) as most engines are designed to operate with coolant temperatures over 160°F. Failure to ensure the engine/radiator is cool can result in serious burns/injury.

RECOMMENDED TOOLS:

- Gloves and safety glasses
- Plier, wrench, ratchet and socket, and screwdriver sets
- Antifreeze or premixed coolant, rags and drain pan
- New hose clamps and radiator cap
- If needed, car jack and stand set

BEFORE REMOVING THE RADIATOR

1. Disconnect battery (disconnect the negative cable first, then positive) and secure battery cables to avoid accidentally activating the engine during repair.
2. AFTER ENSURING THE ENGINE IS COOL AND RADIATOR IS COOL TO TOUCH, carefully remove the radiator cap. Take caution as coolant in radiator is pressurized.
3. Drain the radiator. Most radiators will have a drain plug. Otherwise, the bottom radiator hose can be disconnected to drain coolant. Always collect and dispose of coolant as mandated by local waste facilities. Never dispose of coolant on ground or storm water channels.
4. Where applicable, engine oil and transmission oil cooler lines will need to be disconnected before removing the radiator. Take caution to not bend or damage these lines, especially if constructed of malleable aluminum, to prevent leaks. Like, coolant disposal, engine/transmission oil should be collected and disposed as mandated by local waste facilities.
5. Ensure the A/C condenser is supported to prevent damage to the A/C system. If the condenser is damaged and requires repair, take caution, and consult the manufacturer's specifications and EPA guidelines for proper procedures regarding refrigerant and A/C system repair.
6. Take note/photo of surrounding mounts, bolts and fan shrouds to ensure installation of new radiator matches (radiator mounts vary by application). Fan shrouds could be clipped or bolted directly to the radiator or mounted to the support panel.
7. Disconnect any electrical connections fitted to the radiator.
8. Disconnect any hoses/lines fitted to the radiator and inspect for damage. Cracks or excessive wear may lead to coolant leaks if not replaced.
9. Remove radiator and compare to the new replacement radiator. Some brackets, electrical sensors, or mounts may need to be reused/replaced.

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TECH TIP

#182

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BEFORE INSTALLING THE NEW RADIATOR

1. With climate control settings on high heat, flush the system with a water hose. Place the water hose into the bottom radiator hose pointing towards the engine. Unless the thermostat is closed, water should cycle through the bottom radiator hose to the top radiator hose. System flush is complete when water coming out of the top radiator hose runs clear.
2. Transfer and install all necessary items (brackets, electrical sensors, mounts, etc.) from the old radiator onto the new replacement radiator.

INSTALLING THE NEW RADIATOR

1. Gently place the new radiator into engine without bending the radiator fins.
2. Carefully hand thread mounting bolts and reconnect engine and transmission oil lines. Tighten bolts and fittings per manufacturer's specifications and inspect for proper fit. Do not use power tools. Cross threading bolts may void warranty.
3. Reconnect fan shrouds and electrical connections. Again, tighten per manufacturer's specifications and inspect for proper fit.
4. Reconnect hose lines using new hose clamps.
5. Refer to the manufacturer's specifications for coolant requirements (typically, a 50/50 antifreeze and distilled/deionized water mixture). Premixed aftermarket options ensure proper mix and save time.
6. Check and renew engine/transmission oil per manufacturer's specifications.
7. Before replacing the radiator cap, ensure all lines and electrical connections are reconnected and start the vehicle leaving the radiator cap off. Climate settings should be on high heat and fan speed on max setting. This will remove excess air. If the vehicle is equipped with an air bleed valve (usually located at the highest point of the cooling system), it must be opened to let air out. Wait until the vehicle reaches operating temperature. At operating temperature, the thermostat will open, and coolant flow will be noticeable as the engine temperature increases. Take note of coolant level in reservoir tank and refill as needed.
8. Inspect fittings, hoses, and engine/transmission oil lines. Note: transmission lines can only be checked with the engine running.
9. Install NEW radiator cap. Do not reuse old radiator cap.
10. Test drive the vehicle to verify climate control and engine cooling system are in operating condition. Keep an eye on the temperature gauge. If the temperature is above normal operating temperature, station the vehicle and allow the engine to cool completely. When the engine is cooled and radiator is cool to touch, repeat installation procedure to identify faults (non-secure fittings, trapped air bubbles, cracks/leaks in hose lines, etc.).

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