

Overcooling as Detrimental as Overheating

Overcooling can cause as much damage to an engine as overheating. Overcooling most commonly occurs when the coolant bypasses a defective water temperature regulator and flows directly to the radiator preventing the engine from reaching normal operating temperature.

Routinely check water temperature regulators to ensure that they open and close properly and that they are free of any defects. Check bonnet type regulators for dents or grooves that can prevent them from sealing properly. Coolant can also flow around a water temperature regulator that is working properly, which can falsely indicate overcooling.

Low ambient temperature, combined with a light load, will also cause overcooling, even though the coolant does not flow through the radiator under these conditions. Always make sure temperature gauges are working properly. Check them for accuracy by comparing the coolants in the water temperature regulator housing to what the gauge indicates. Confirm coolant temperature using a Thermistor Thermometer. Replace any defective gauges immediately.

Inspect the water temperature regulator housing and counterbores that the regulators fit in to. Be sure all surfaces are clean, smooth and free from any foreign material. Check the radiator housing seal for “cocking,” which can also cause the coolant to flow past the regulator and seal. If there is a bleed hole, make sure it’s open.

Open vent lines can cause overcooling during low loads or while idling the engine overnight, installing a check valve typically corrects this problem.

Overcooling is most severe when a high sulfur fuel is used. High sulfur fuel will increase wear levels when an engine doesn’t reach an operating temperature over 175°F or 80°C.