New Surge Tank Design

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Freightliner Service Bulletin

General Information

The new surge tank for vehicles with EPA07 engines is mounted on the radiator instead of on the frontwall. This may seem to be a disadvantage, as most engine cooling system designs require the surge tank to be as high as possible above the engine and radiator. Such tanks usually consist of a single chamber with a volume of pressurized air at the top of the tank, and fluid (coolant) below.

When the surge tank is mounted on the radiator, however, the height factor is limited, so the tank must be designed to provide the same advantage as a surge tank that is mounted higher. This is done by using a dualchamber surge tank and reversing the location of the air volume and the coolant.

As the coolant expands, it travels down a tube in a seam at the outside edge of the surge tank. It then fills the empty lower chamber. As it cools, the coolant travels back up the pipe, into the upper chamber, leaving the lower chamber filled with pressurized air.

When the engine is cold, the upper chamber is full of coolant and a small air space, and the lower chamber contains no coolant; only air. See **Fig. 1**. When the engine is hot, the upper chamber will be completely full (no air space) and the lower chamber will have some coolant in it.

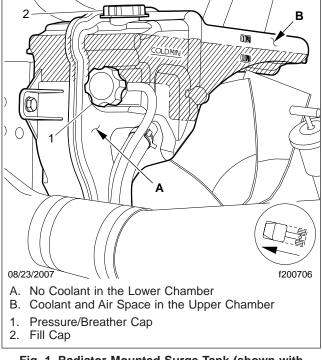


Fig. 1, Radiator-Mounted Surge Tank (shown with engine cold)

Service Instructions

Do not open the surge tank when the engine is hot. This can allow hot, scalding coolant to shoot out forcefully, which could cause severe personal injury. Open the surge tank only when the engine is cold.

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Since both chambers of the surge tank are pressurized, do not open or fill the system unless the engine is cold. Check the coolant level only when the engine is cold, and add coolant to the surge tank only at the upper (fill) cap. The cap on the side of the surge tank is a pressure/breather cap that regulates the maximum tank pressure. Do not loosen or remove this cap unless you suspect it to be defective.

Warranty

This is an informational bulletin only; warranty does not apply.