

Transmission Cooling - Overview

2.7L EcoBoost, 3.3L Duratec-V6, 3.5L EcoBoost With: Transmission Fluid Heat Exchanger, 5.0L 32V Ti-VCT

The transmission fluid cooling system for the 2.7L EcoBoost, 3.3L Duratec-V6, 3.5L EcoBoost with a transmission fluid heat exchanger and the 5.0L 32V Ti-VCT engines consists of a heat exchanger mounted to the transmission. The heat exchanger has both transmission fluid and engine coolant flowing through it in separate chambers. When the transmission fluid is cooler than the engine coolant, the heat exchanger warms the transmission fluid. When the transmission fluid is warmer than the engine coolant, the heat exchanger cools the transmission fluid. Transmission fluid cooler tubes and engine coolant tubes connect the heat exchanger to the transmission and the radiator hoses, respectively.

3.0L Duratorq-TDCi - V6 Engine

The transmission fluid cooling system for the 3.0L Duratorq-TDCi - V6 engine consists of a heat exchanger mounted to the LH frame rail near the transmission. The heat exchanger has both transmission fluid and engine coolant flowing through it in separate chambers. When the transmission fluid is cooler than the engine coolant, the heat exchanger warms the transmission fluid. When the transmission fluid is warmer than the engine coolant, the heat exchanger cools the transmission fluid. Transmission fluid cooler tubes and engine coolant tubes connect the heat exchanger to the transmission and the radiator hoses, respectively. A transmission fluid heater coolant control valve stops or allows coolant flow through the heat exchanger depending on engine coolant and transmission fluid temperatures.

3.5L EcoBoost With: Transmission Fluid Cooler - Air to Oil

The transmission fluid cooling system for the 3.5L EcoBoost with a transmission fluid cooler - air to oil engine, consists of a transmission fluid warmer with an integral bypass valve and an external transmission fluid cooler. Transmission fluid cooler tubes and hoses connect the various components together.

The transmission fluid warmer has engine coolant flowing through it to warm the transmission fluid during the engine warm-up period. A coolant control valve attached to the coolant return hose allows coolant flow through the warmer when the transmission fluid is cold. At a predetermined temperature, the PCM signals the valve to close, shutting off coolant flow to the warmer. The transmission fluid bypass valve on the warmer directs transmission fluid either back to the transmission or to the cooler depending on transmission fluid temperature.

Transmission fluid travels from the transmission to the transmission fluid warmer, then to the transmission fluid cooler and back to the transmission. The transmission fluid coolers transfer heat to the ambient air.