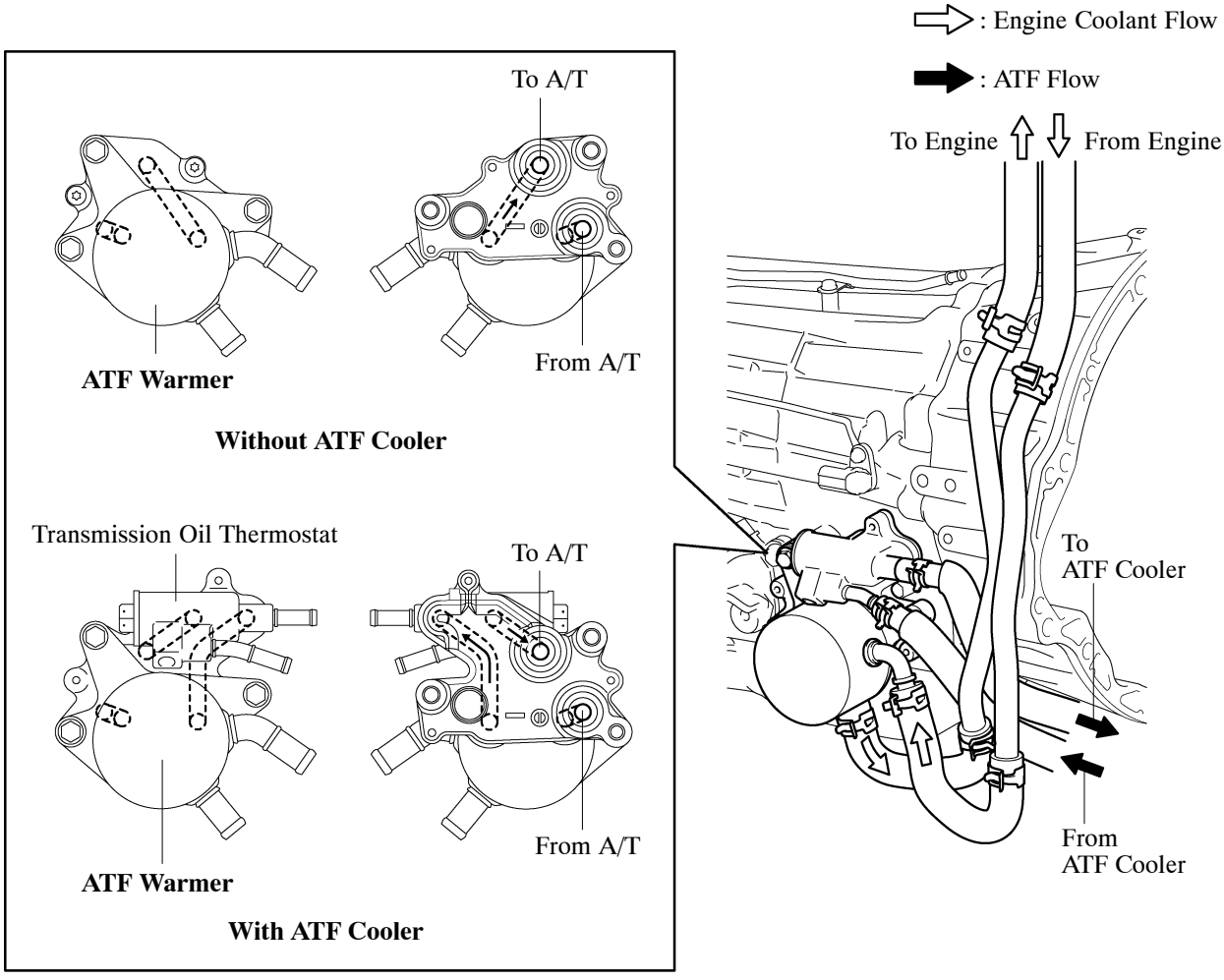
■ATF WARMER

1. General

The ATF warmer uses engine coolant to warm up the ATF quickly and keep the ATF temperature higher (within limits). Consequently, the friction losses of the automatic transmission are quickly reduced, thus improving fuel economy.

- Models equipped with an ATF cooler have a transmission oil thermostat to switch the ATF passages.

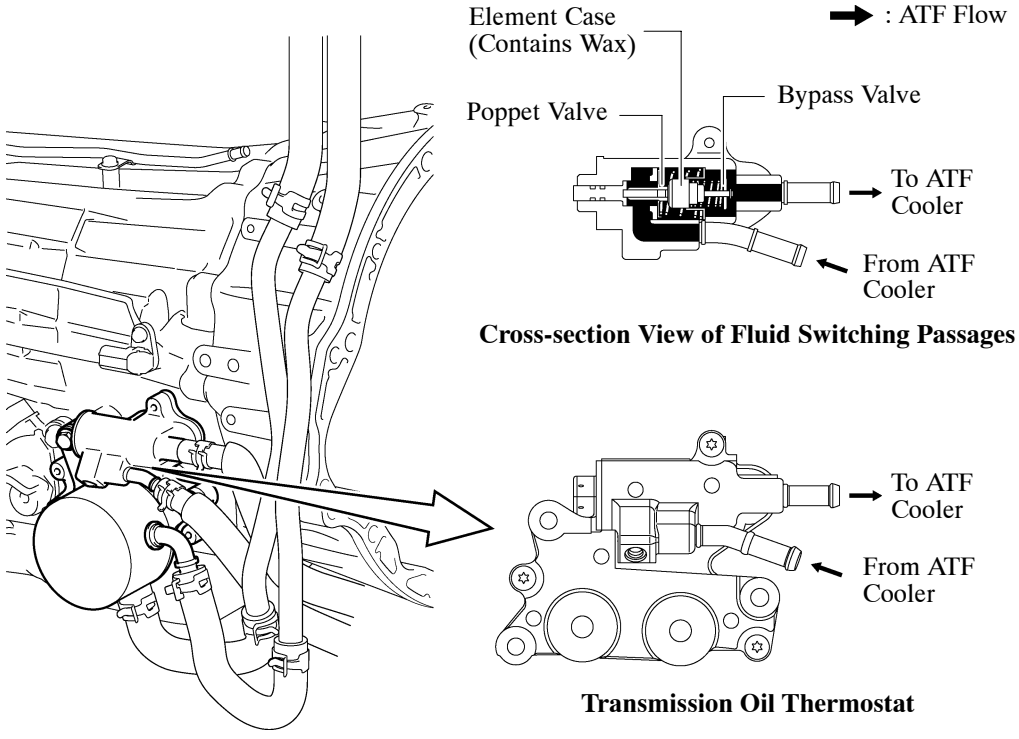


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2. Transmission Oil Thermostat

The transmission oil thermostat consists of the poppet valve, bypass valve and element case (contains wax). When the ATF temperature changes from low to high, the wax will expand to start to open the poppet valve and close the bypass valve, thus switching the ATF passages.

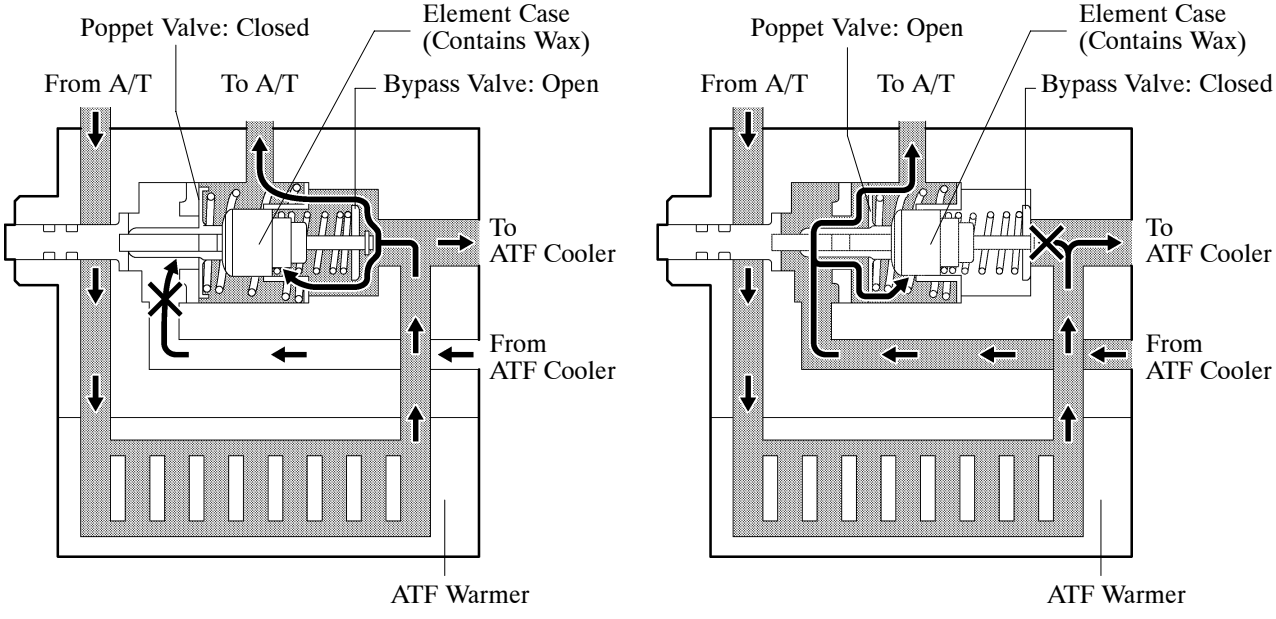


Cross-section View of Fluid Switching Passages

Transmission Oil Thermostat

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▶ Operation of Transmission Oil Thermostat ◀



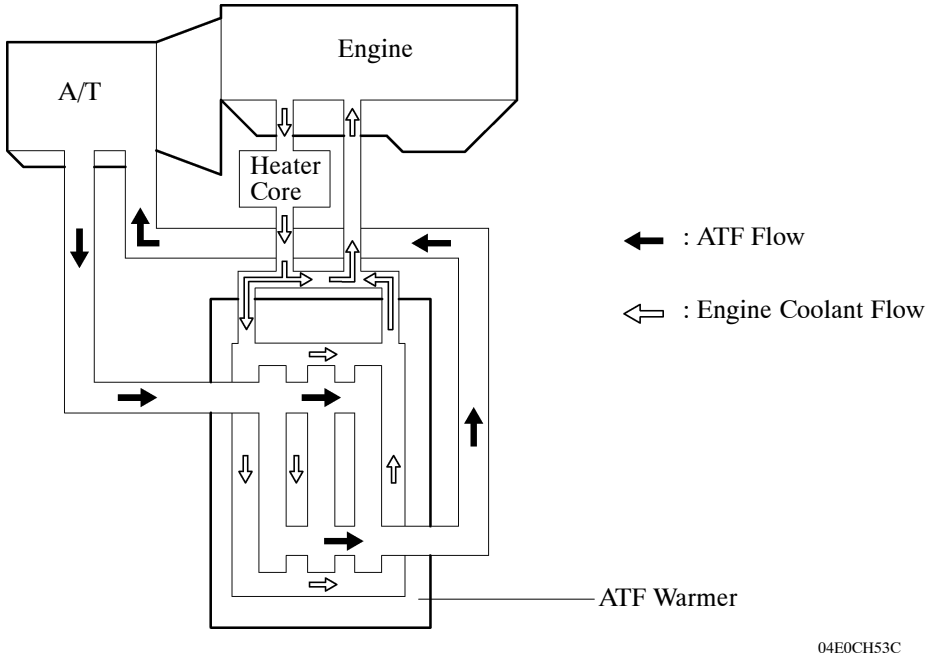
ATF Temperature: Low

ATF Temperature: High

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3. ATF and Engine Coolant Circuits

Models without ATF Cooler



Models with ATF Cooler

- When the ATF is at a low temperature, it is warmed up by the engine coolant in the ATF warmer.
- When the ATF is at a high temperature, it flows to the ATF warmer and then to the ATF cooler, thus it is cooled down.

