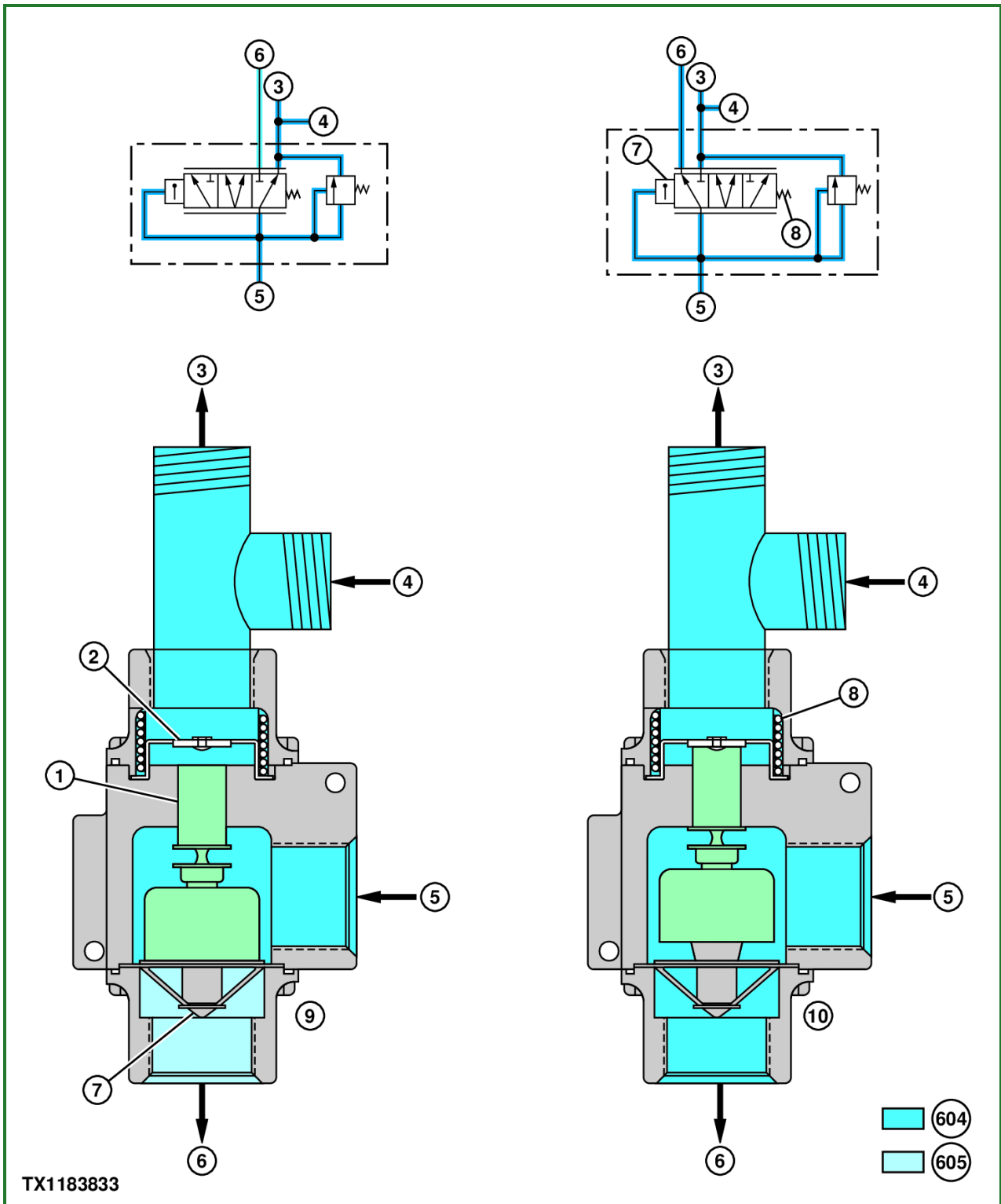


Thermal Bypass Valve Operation



TX1183833-UN: Thermal Bypass Valve

LEGEND:

- 1 - Valve Spool
- 2 - Seat
- 3 - To Transmission
- 4 - From Cooler
- 5 - From Torque Converter
- 6 - To Cooler
- 7 - Thermostat
- 8 - Spring

- 9 - Bypass Mode
- 10 - Cooling Mode
- 604 - Converter-Out Flow
- 605 - To Cooler (valve closed) Flow

The thermal bypass valve is used to maintain the transmission oil temperature at a level which provides optimum torque converter performance.

The thermal valve contains a standard automotive-type thermostat (7) element connected to a hollow valve spool (1).

Bypass Mode— When oil temperatures are low, the valve allows oil from torque converter (5) to bypass the transmission oil cooler by flowing through valve spool (1), then back to transmission (3).

Passages in the valve allow a small amount of oil to flow to the cooler. This allows the cooler to warm slowly, avoiding thermal shock.

Cooling Mode— When oil temperature increases to a predetermined threshold, thermostat (7) starts to open allowing oil from torque converter (5) to flow to cooler (6). When the thermostat goes to the full open position, valve spool (1) is forced against seat (2), closing the bypass.

The spring-loaded seat acts as a relief valve in the event oil flow to cooler (6) is blocked.

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