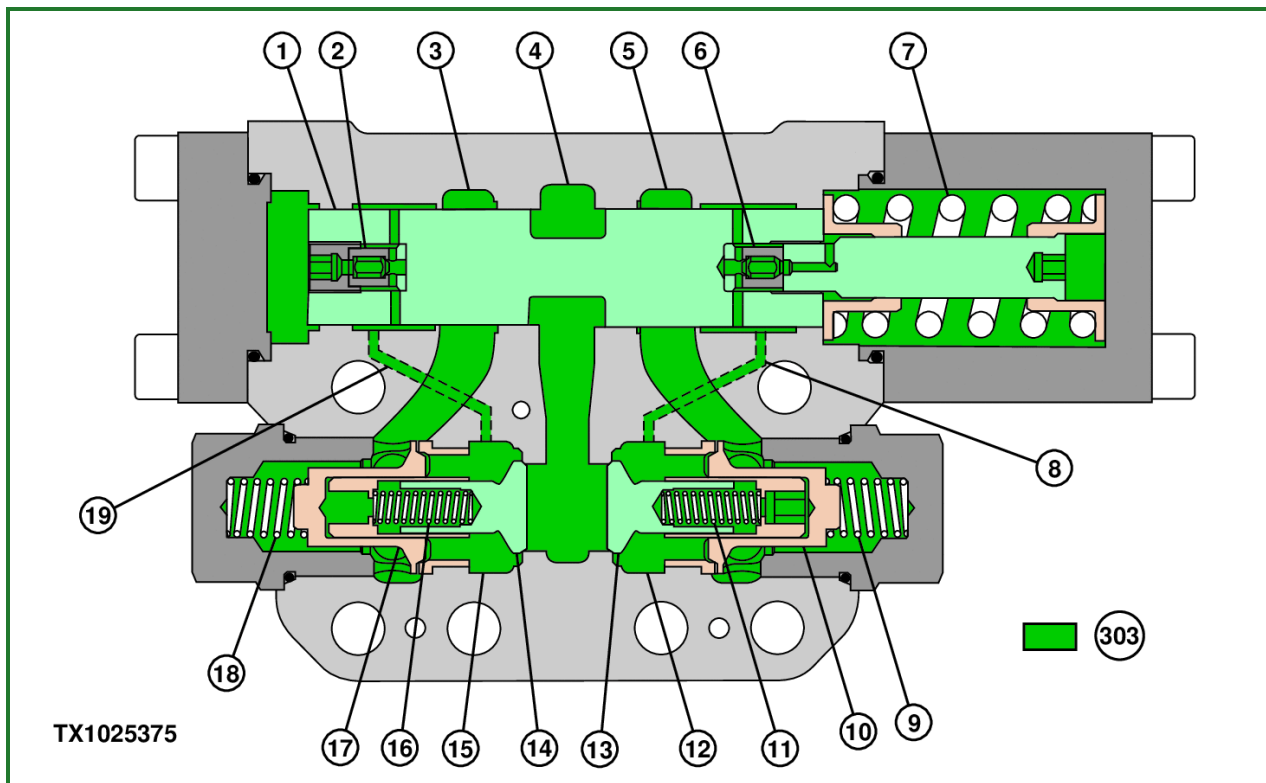


Counterbalance Valve Operation

The counterbalance valve, located at the head end of the travel motor, ensures smooth start and stop of travel operation and prevents machine overspeeding when traveling down a slope.

Neutral Mode



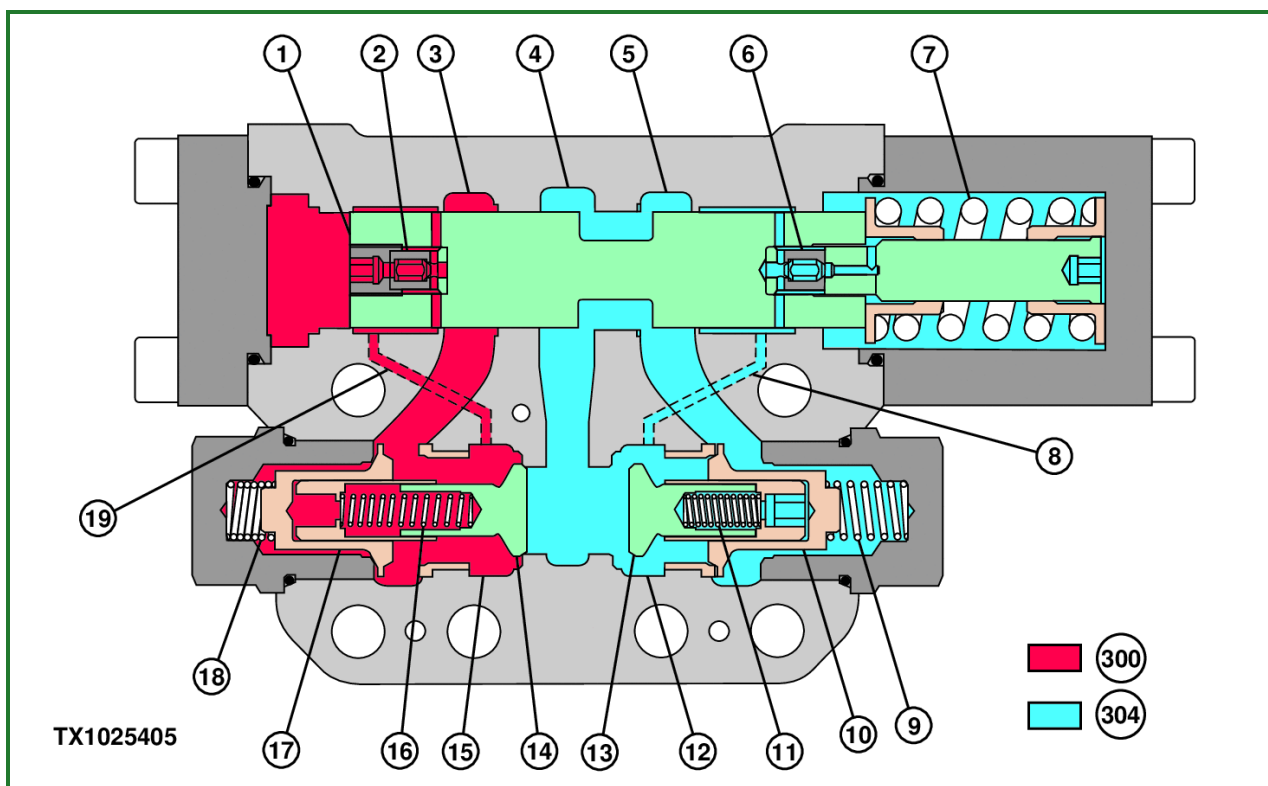
TX1025375-UN: Counterbalance Valve Neutral Mode

LEGEND:

- 1 - Counterbalance Spool
- 2 - Orifice
- 3 - To Travel Motor Port A
- 4 - Return Oil Passage
- 5 - To Travel Motor Port B
- 6 - Orifice
- 7 - Counterbalance Spool Centering Spring
- 8 - Internal Passage
- 9 - Check Valve Spring
- 10 - Check Valve
- 11 - Check Valve Spring
- 12 - Port B from Travel Valve
- 13 - Check Valve
- 14 - Check Valve
- 15 - Port A from Travel Valve
- 16 - Check Valve Spring
- 17 - Check Valve
- 18 - Check Valve Spring
- 19 - Internal Passage
- 303 - Trapped Oil

When the counterbalance valve is in neutral, oil from the travel valve ports (12 and 15) is blocked. The check valve springs (9, 11, 16, and 18) hold the check valves (10, 13, 14, and 17) closed. The counterbalance spool centering spring (7) holds the counterbalance spool (1) in the center position, blocking oil flow to the travel motor ports (3 and 5).

Travel Mode



TX1025405-UN: Travel Mode—Forward Shown

LEGEND:

- 1 - Counterbalance Spool
- 2 - Orifice
- 3 - To Travel Motor Port A
- 4 - Return Oil Passage
- 5 - To Travel Motor Port B
- 6 - Orifice
- 7 - Counterbalance Spool Centering Spring
- 8 - Internal Passage
- 9 - Check Valve Spring
- 10 - Check Valve
- 11 - Check Valve Spring
- 12 - Port B from Travel Valve
- 13 - Check Valve
- 14 - Check Valve
- 15 - Port A from Travel Valve
- 16 - Check Valve Spring
- 17 - Check Valve
- 18 - Check Valve Spring
- 19 - Internal Passage
- 300 - Pressure Oil to Travel Motor
- 304 - Return Oil from Travel Motor