

FLOW CONTROL VALVE

Fluid flow from the pump enters the lift cylinder through the check ball, 1, and the flow control valve needle and seat, 2. When the needle valve is closed or severely restricted, fluid pressure opens the check valve and flows to the lift cylinder during the raising cycle. The one-way check valve prevents fluid from returning to the lift cylinder, and the lift arms remain at their set height.

During the lowering cycle, the fluid being exhausted from the lift cylinder must return to the reservoir via the needle valve and seat. The needle valve control knob, 3, must be adjusted to obtain the desired rate of drop.

The high-pressure safety valve, 4, located in the flow control valve body, protects the lift cylinder against shock loads. When cylinder pressure exceeds 250 +/- 20 bars (3625 +/- 290 psi), the safety valve opens and allows the cylinder fluid to escape to the sump.

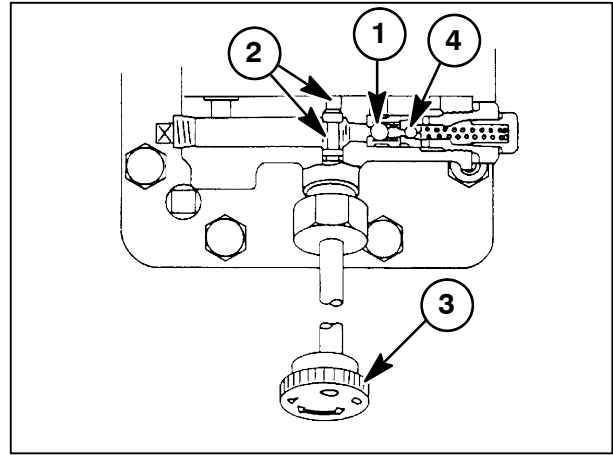


Figure 8-14

LINKAGE OPERATION—SINGLE LEVER—POSITION CONTROL

The single-lever hydraulic system uses a single-quadrant control lever, 1, which is connected to the control valve spool by internal linkage, to maintain mounted implements at a constant height relative to the tractor.

When the control lever is moved, the internal linkage and control valve spool activate the hydraulic system, and the lift arms, 7, respond to the movement of the control lever, 1, by either raising, lowering, or remaining in neutral condition. The rod, 6, which is connected to the lift arm, actuates the feedback links, 3, 4, and 5, to move the control valve spool to the neutral position when the desired height is reached.

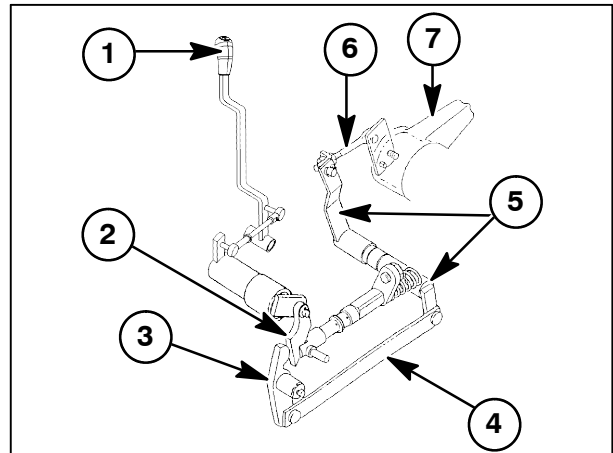


Figure 8-15

POSITION CONTROL OPERATION— NEUTRAL POSITION TO RAISE

When the position control lever, 1, is moved to the raise position, the cam, 2, is rotated between the cam, 3, and the control valve spool, 8, forcing the control valve inward into a raise position. Pump fluid then flows to the lift cylinder, and the lift arms raise.

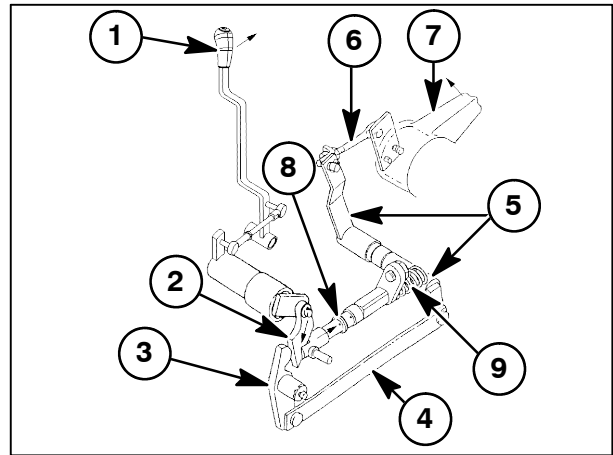


Figure 8-16

RAISE POSITION TO NEUTRAL POSITION

When the lift arms, 7, raise, the feedback link, 4, moves rearward allowing the spring-loaded control valve spool, 8, to move forward (outward) to the neutral position. Pump fluid flow is redirected to the sump, and the lift arms stop raising.

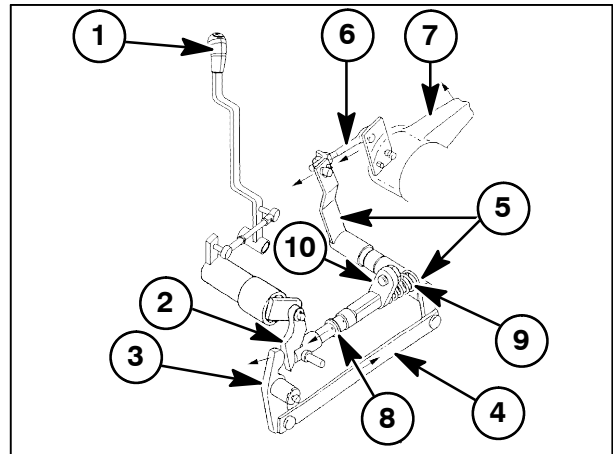


Figure 8-17

NEUTRAL POSITION TO LOWERING POSITION

When the control lever, 1, is moved to the lowering position, the cam, 2, is moved upward, reducing the pressure on the control valve spool, 8. The spring, 9, then moves the control valve spool forward (outward) and pump fluid flow is directed to the sump. The lowering arm and screw, 10, moves toward the valve spool (not shown) pushing it off its seat. This allows the cylinder fluid to exhaust to the sump via the flow control valve and lowers the lift arms.

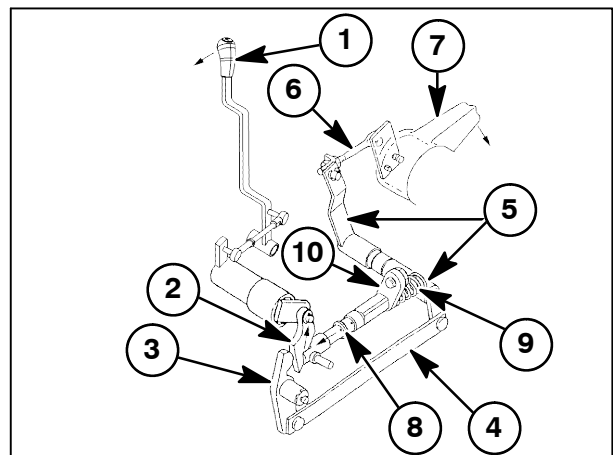


Figure 8-18