Hand Lever Moved to Lower Implement, Showing Path of Oil to and from Rockshaft Piston

Here the spool type control valve (1) has been pulled out from its "home" position by use of the hand lever, this action released the pressure on the regulator valve piston (5) through the open port "B". This allows the spring (7) to return the check valve (6) to its seat which places the system on high pressure as described previously.

Oil from the pump flows from port "C" around the control valve, out port "D" to the front of the check actuator valve (10) and through the front check valve (9) to the front side of the rockshaft piston (2).

Oil pressure on the check actuator valve (10) causes the actuator to force the rear check valve (11) off its seat allowing the trapped oil at the rear of the rockshaft piston (2) to escape through the port "E", through the drilling in the control valve (1), out port "B" to the reservoir and back to the pump.

The stem of the check actuator valve (10) is made to form a restriction in the valve bushing port when the piston is forced back by oil pressure, this restriction slows down the movement of the trapped oil from the rear side of the rockshaft piston (2) on its lowering cycle. This tends to prevent the implement weight from being dropped suddenly as the operator moves the hand lever, thus maintaining the same speed in lowering the implement as developed in the raising cycle. Because the pump is delivering oil to the small front area of the rockshaft piston and because the piston speed is restricted, part of the oil is being released through the high pressure safety valve (3) during the lowering cycle, through port "X". The rockshaft, its piston and the operating lever (12) move toward the rear until the control valve operating lever (12) is moved to the position of the dotted lines. This places the spool type control valve (1) in the "home" position. Control valve ports being closed, pressure again moves the regulating valve piston (5) to balance off the system to low pressure range, approximately 30 psi. There being no pressure on either the front or rear of the check valve actuator (10), the check valves (9 and 11) are closed trapping fluid on both sides of the rockshaft piston (2), thus holding the rockshaft at whatever position it was in when the control valve (1) reached "home" position.