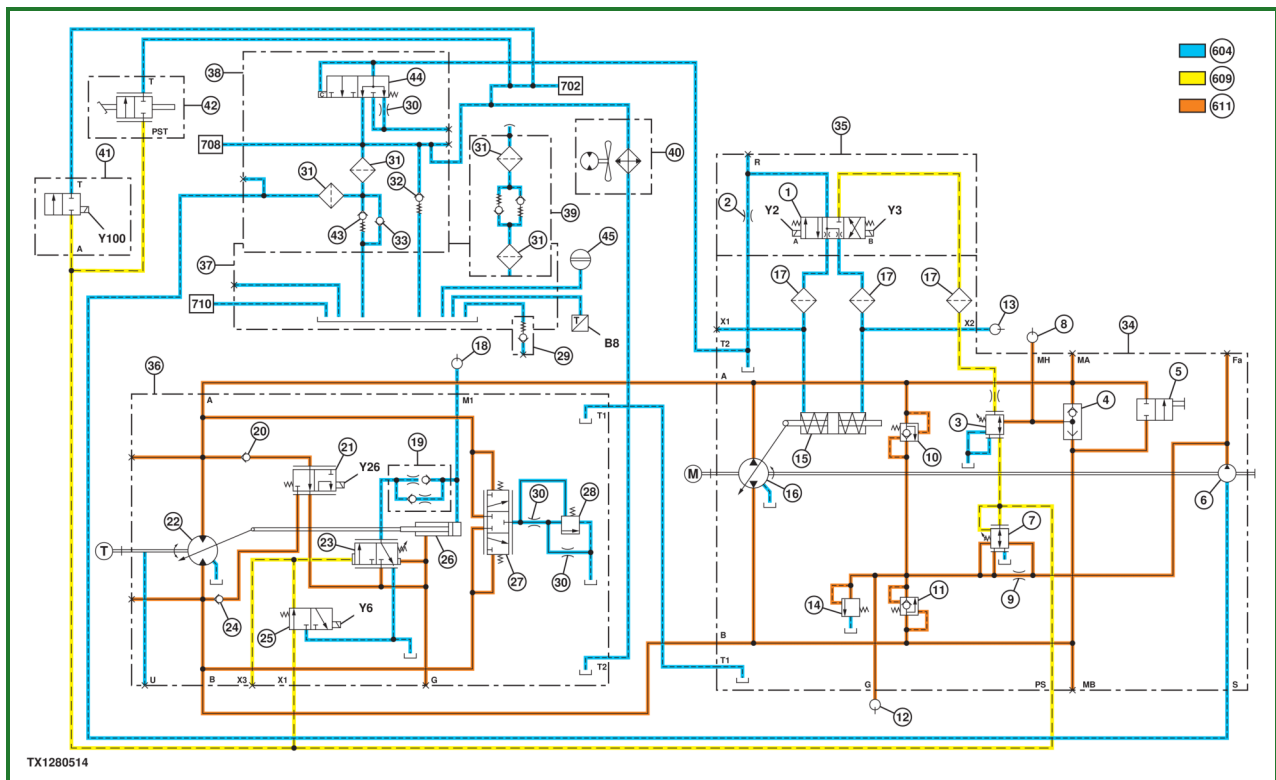


Hydrostatic Transmission Operation—Neutral



TX1280514-UN: Hydrostatic Transmission Operation (neutral)

LEGEND:

- 1 - Directional Control Valve
- 2 - Directional Dampening Orifice
- 3 - Pressure Override Valve
- 4 - Pressure Override Check Valve
- 5 - Towing Bypass Valve
- 6 - Charge Pump
- 7 - Control Pressure Regulating Valve
- 8 - High-Pressure Diagnostic Port
- 9 - Control Pressure Regulating Valve Orifice
- 10 - Reverse High-Pressure Relief Valve
- 11 - Forward High-Pressure Relief Valve
- 12 - Neutral Charge Pressure Diagnostic Port
- 13 - Forward Control Pressure Diagnostic Port
- 14 - Neutral Charge Pressure Relief Valve
- 15 - Servo Piston
- 16 - Hydrostatic Pump
- 17 - Fine Screen (3 used)
- 18 - Begin Regulation Diagnostic Port
- 19 - Rate-of-Shift Valve
- 20 - Motor Inlet Check Valve
- 21 - Directional Solenoid Valve
- 22 - Hydrostatic Motor
- 23 - Displacement Control Valve
- 24 - Motor Inlet Check Valve
- 25 - Speed Range Solenoid Valve
- 26 - Servo Piston

27 - Shuttle Valve
 28 - Operating Charge Relief Valve
 29 - Reservoir Drain Valve
 30 - Orifice (2 used)
 31 - Screen (4 used)
 32 - Return Bypass Valve
 33 - Suction Bypass Valve
 34 - Hydrostatic Pump
 35 - Hydrostatic Pump Control
 36 - Hydrostatic Motor
 37 - Reservoir
 38 - Return/Suction Filter
 39 - Fill Cap (with vacuum regulator/relief valve)
 40 - Oil Cooler
 41 - Creep Control Valve (if equipped)
 42 - Inching Valve
 43 - Pressure Holding Valve
 44 - Temperature Bypass Valve
 45 - Oil Level Sight Glass
 604 - Return and Suction Pressure Oil
 609 - Control Pressure Oil
 611 - Charge Pressure Oil
 702 - Steering Valve Return Flow
 708 - Control Valve Block Return Flow
 710 - Hydraulic Pump Suction
 B8 - Hydraulic Oil Temperature Switch
 Y2 - Forward Travel Solenoid
 Y3 - Reverse Travel Solenoid
 Y6 - Speed Range Solenoid
 Y26 - Directional Solenoid
 Y100 - Manual Inching Angle Sensor Solenoid

Directional Control in Neutral— When the forward, neutral, and reverse (FNR) range switch, located on the front of the single lever loader control, is at N (neutral) position, the forward and reverse travel solenoids (Y2 and Y3) of the directional control valve (1) are de-energized. With both solenoids de-energized, the directional valve spool blocks the control pressure oil (609). At this position, both sides of the servo piston (15) are open to return, allowing the servo piston springs to hold the servo piston at the center position. With the pump servo piston at the center position, the pump swash plate is held at the neutral position (90 degrees relative to the pump input shaft). Even though the pump piston assembly is rotating at engine speed, the pistons do not reciprocate and there is no oil flow. Pressure is equal at both sides of the closed-loop and the machine does not move. [See Hydrostatic Pump Swash Plate Operation](#) . (Group 9020-05.)

Charge Pump Suction— When the engine is operating, the charge pump (6), located between the hydrostatic pump and loader hydraulic pump, draws oil from the reservoir return/suction filter (38). To prevent pump cavitation, the pressure holding valve (43) maintains a positive pressure at the inlet side of the charge pump. During cold start situations, the return bypass valve (32) opens, allowing cold oil to bypass the filter and flow into the reservoir. The fill cap (39) contains a vacuum regulator/relief valve that prevents pressures in the reservoir from getting too high and allows filtered air to enter the reservoir as oil cools. [See Hydraulic System Operation](#) . (Group 9025-05.)

Charge Pump Pressure— The charge pump provides oil flow and pressure to the control pressure regulating valve (7), reverse and forward high-pressure relief valves (10 and 11), neutral charge pressure relief valve (14),