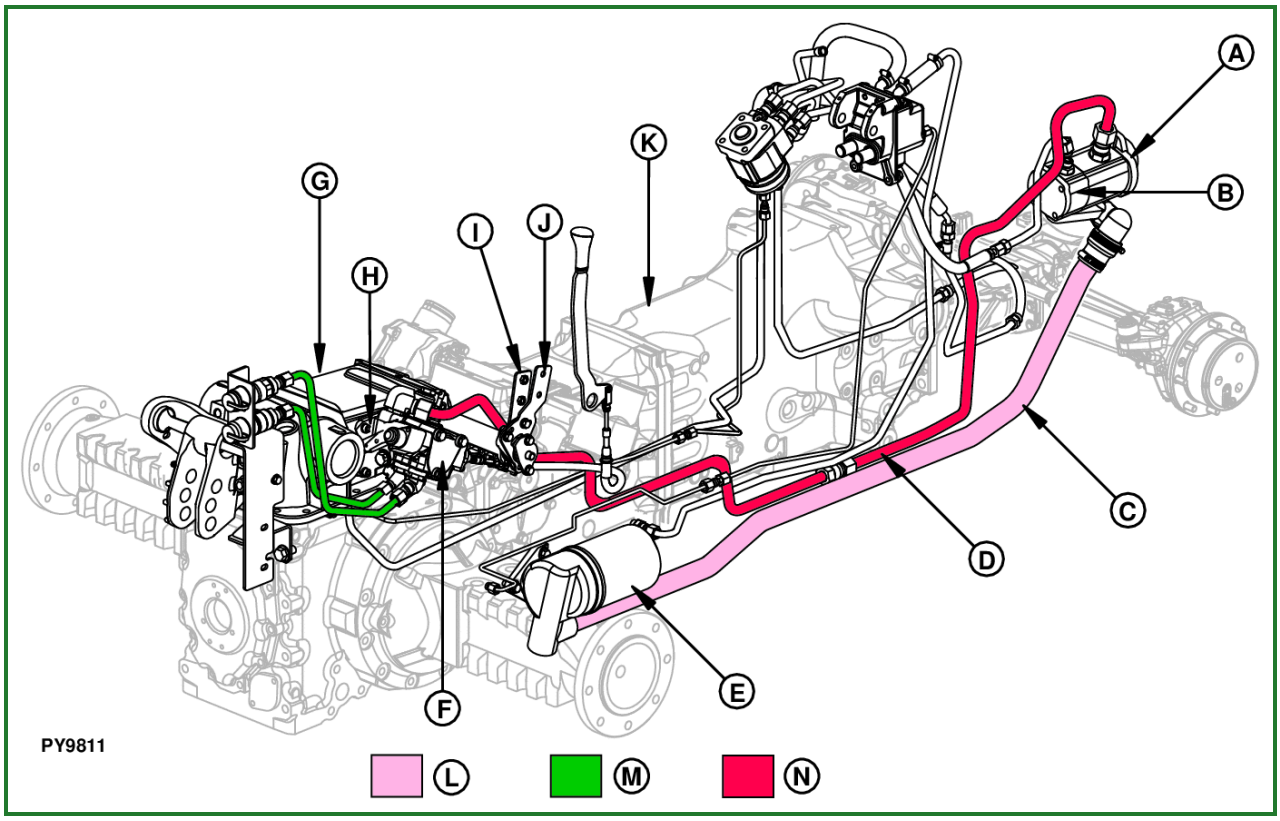
Hydraulic System Operation



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LEGEND:

A - Hydraulic Pump

B - Steering Pump

C - Suction Line

D - Pressure Line

E - Filter/Manifold

F - Rear SCV

G - Rockshaft Housing

H - Main Relief Valve

I - Draft Control Lever

J - Position Control Lever

K - Transmission Case

L - Suction Oil

M - Trapped Oil

N - Pump Pressure Oil

FUNCTION:

The hydraulic system provides:

- Filtered oil to the power steering system.
- Lubrication oil to the transmission.
- Hydraulic power to the rockshaft for hitch operation.

MAJOR COMPONENTS:

- Hydraulic Pump
- Filter/Manifold
- Reservoir (Transmission Case)

- Rockshaft
- Rate-of-Drop Valve
- Selective Control Valve
- Pressure Lines
- Suction Line
- Hitch Control Levers

THEORY OF OPERATION:

The hydraulic system is equipped with 11.9 cm^3(0.73 cu in.) and 19.2 cm^3(1.17 cu in.), external-gear, constant-displacement pumps. Steering pump (B) (11.9 cm^3[0.73 cu in.]) provides fluid power to the power steering system and to lubricate the transmission.

Hydraulic pump (A) (19.2 cm^3[1.17 cu in.]) provides hydraulic power to the rockshaft housing (G) for hitch operation and optional equipment. The hitch is of category 2, with draft sensing through the center link.

The hydraulic system has an open-center design. This means that pressurized oil flows continuously through the valves and lines as long as the valves are in a Neutral position. For this reason, there must always be a way for the oil to return to the reservoir.

Transmission case (K) of the tractor serves as a reservoir for the hydraulic oil. Proper level must be maintained for adequate transmission lubrication and oil supply to hydraulic and steering pumps (A and B).

The engine drives the hydraulic pump from the camshaft drive gear. As the hydraulic pump turns, a low-pressure area develops in suction line (C). Oil then moves from the transmission case through mesh filter, then on through suction line (C) to the inlet side of the hydraulic pumps.

Oil flows from the outlet side of the hydraulic pump, through pressure line (D) to rockshaft housing (G). Main relief valve (H) limits hydraulic system pressure to a range of 19000—20000 kPa (190—200 bar) (2755—2900 psi). If the system encounters sufficient resistance to oil flow due to a heavy load or restriction, the main relief valve opens allowing oil to return to the reservoir.

Oil flows from rockshaft housing to hitch valve, which controls the amount of oil to rockshaft housing (G). Then hitch rises at a constant rate regardless of engine speed.

When in Park position, the control valve passes oil to the sump. When control valve is actuated by movement of draft control lever (I), position control lever, or by the draft sensing linkage, oil passes to or from the rockshaft cylinder, raising or lowering the 3-point hitch.

NOTE:

See Steering System Operation in Section 260, Group 10.

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