

Steering and Hydraulic System Operation

Steering Unit Neutral Position

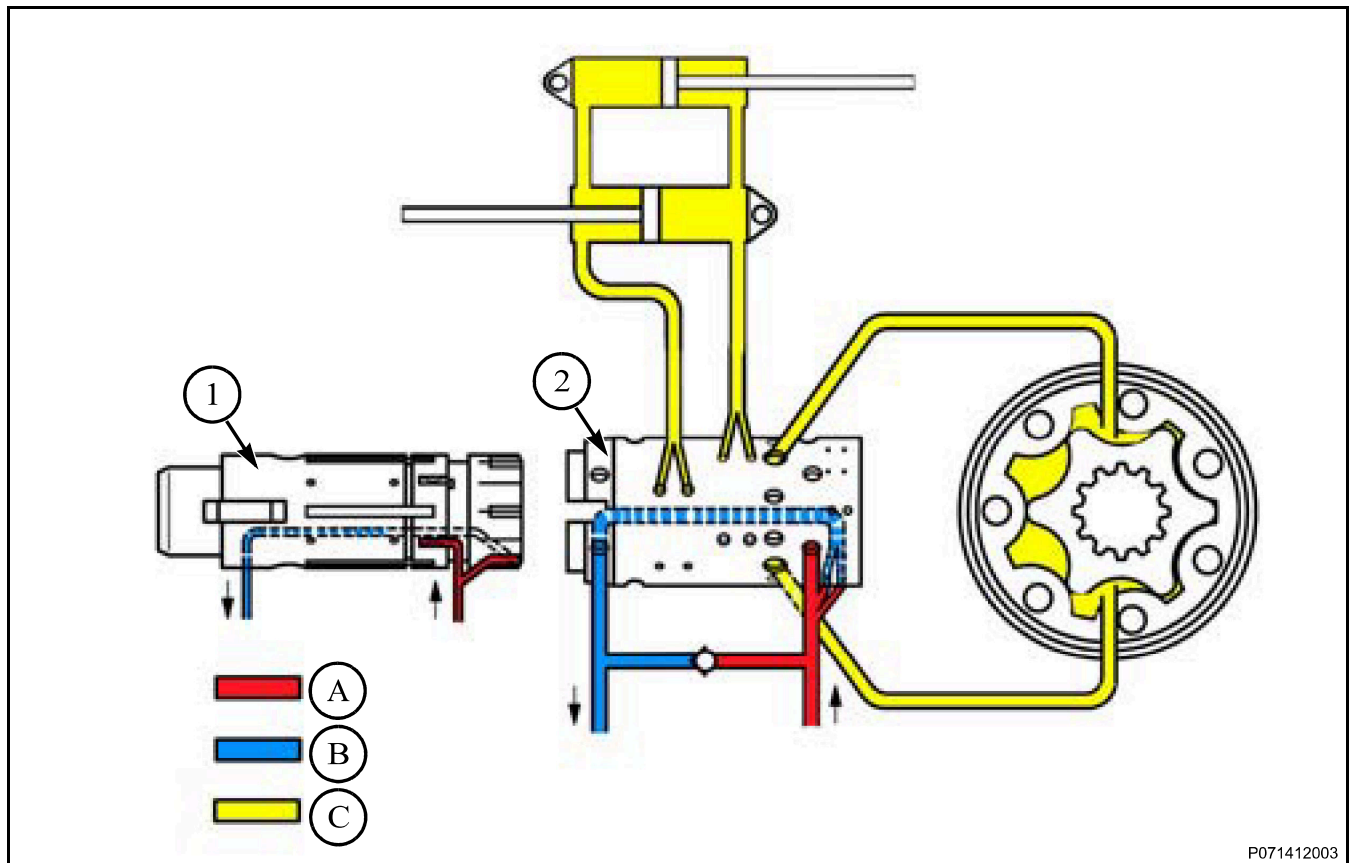


FIG. 1

FIG. 1: Steering Unit in Neutral

- (A) Pump Pressure
- (B) Return Flow
- (C) Trapped Oil

Hydraulic oil flow from priority valve is routed to pressure port on steering unit. When there is no operator input, spool valve (1) is centered in sleeve (2) by springs and blocks flow to directional spool in steering valve.

Steering Unit Left Turn Position

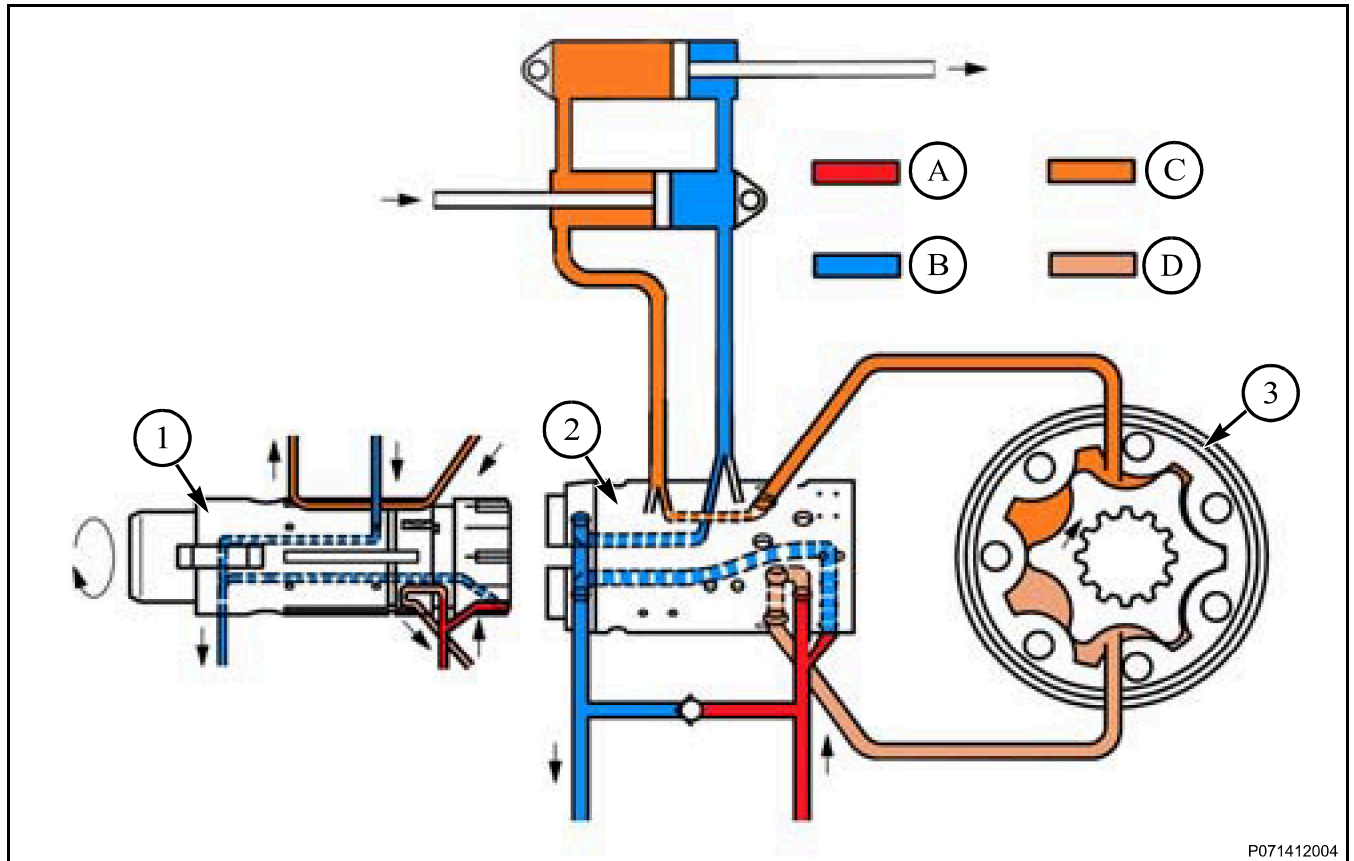


FIG. 2

FIG. 2: Steering Unit Left Turn Position

- (A) Pump Pressure
- (B) Return Flow
- (C) Directional Flow
- (D) Directional Supply Oil

Hydraulic oil flow from priority valve is routed to pressure port on steering unit. When operator turns wheel to left, spool valve (1) rotates in sleeve (2) and routes oil flow to rotor and stator (3). Oil then flows to appropriate steering cylinders.

Once operator stops turning steering wheel, springs connecting spool valve and sleeve center spool in sleeve and block off passages to steering cylinders.

In the event machine loses power or hydraulic pressure, machine can still be steered with manual effort. Power assistance is no longer provided.

In this case, turning steering wheel compresses centering springs and rotor and stator are driven mechanically. Operator must turn steering wheel as a hand pump, that in turn pumps oil into system. Oil returning from steering cylinders is routed back to pressure passage, pulled into rotor and stator, compressed, and sent to steering valve. Pressure created by turning steering wheel is proportional to torque applied on steering wheel. A considerable amount of force on steering wheel is required to turn machine in this case.