STEERING CIRCUIT

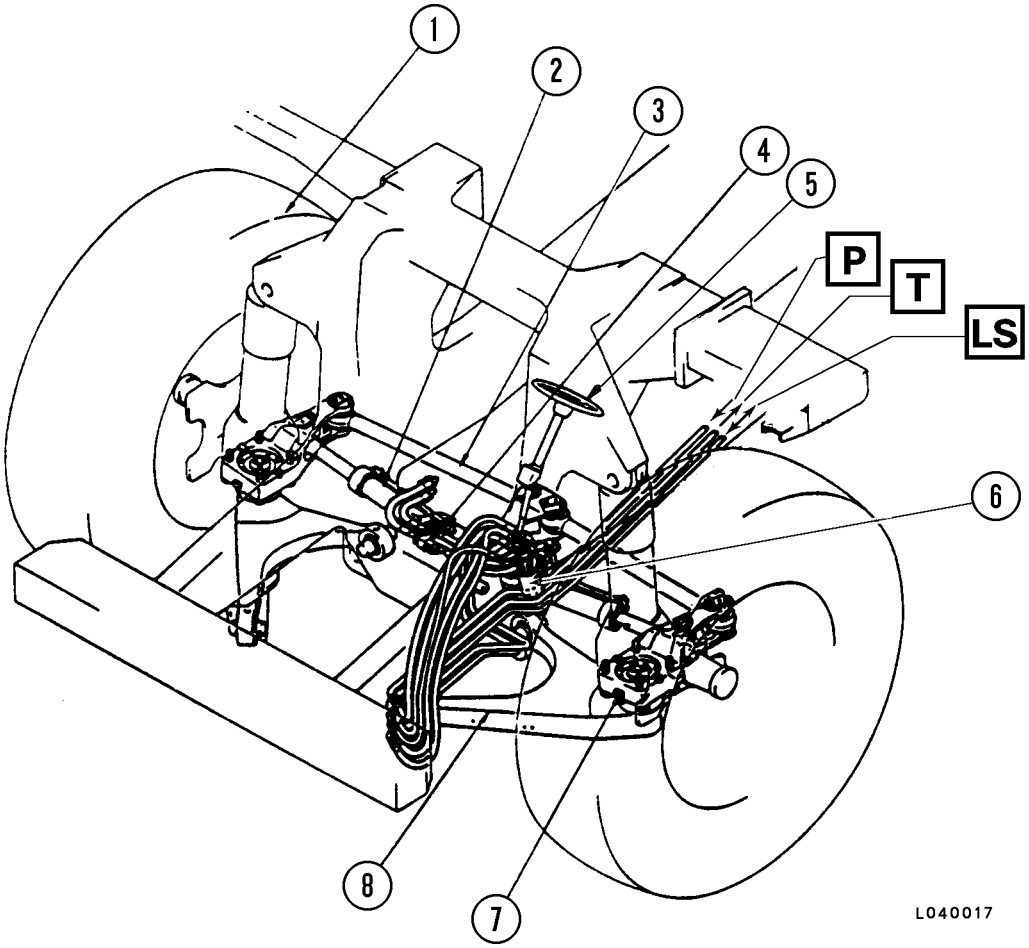

FIGURE 4-1. STEERING SYSTEM COMPONENTS

1. Tire
2. Steering Cylinder
3. Tie Rod
4. Crossover Relief Valve
5. Steering Wheel
6. Steering Control Valve
7. Knuckle
8. Arm (A-Frame)

P: From Demand Valve
T: To Hydraulic Tank
LS: To Demand Valve

STEERING CIRCUIT OPERATION

The steering system is a self-metering, power steering type. When the steering wheel (5, Figure 4-1) is rotated, the steering control valve (6) is actuated causing the oil to flow into the steering cylinder (2). Extending one steering cylinder while retracting the opposite steering cylinder will change the angle of the front wheels, allowing the operator to steer the truck as desired. The tie rod (3), attached to the knuckle (7) maintains a constant angular relationship between the left and right wheels.

The truck is also equipped with an automatic emergency steering system to provide oil pressure to the steering circuit in the event of a loss of oil supply from the engine driven steering pump. Refer to page L4-12 for a description of the emergency steering system components.

Additional information describing steering circuit operation can be found in the description of the following system components.

DEMAND VALVE

The demand valve (Figure 4-2) divides the oil sent from the steering pump and the hoist pump sending it to the proper circuit according to a pressure signal received from the steering control valve. If the operator is raising the dump body and no steering is required, all oil is directed to the hoist circuit. When steering is required, the amount of oil needed to steer the truck is directed to the steering valve.

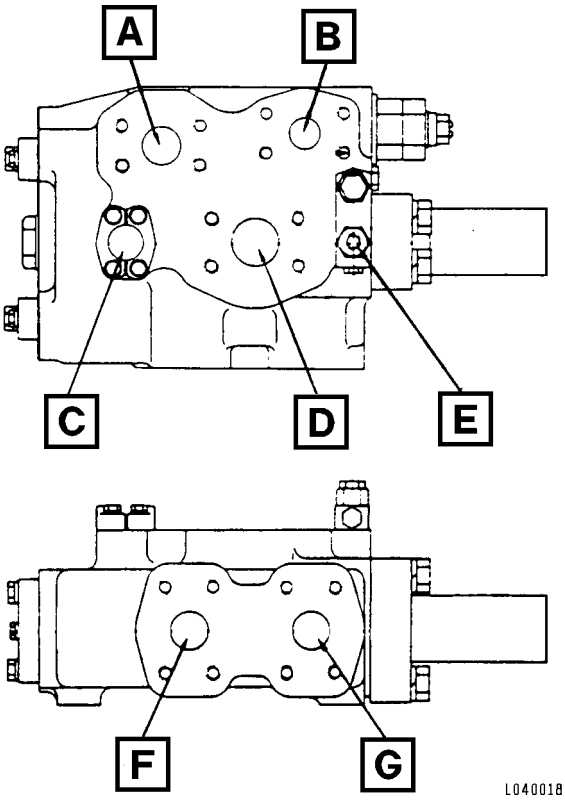

FIGURE 4-2. DEMAND VALVE ASSEMBLY

A: To Steering Valve
B: To Hydraulic Tank
C: Emergency Steering Pump Port
D: To Hoist Valve
E: From Steering Valve (LS Port)
F: From Steering Pump
G: From Hoist Pump

STEERING CONTROL VALVE

The steering control valve (Figure 4-3) is mounted under the cab floor and is connected to the steering column by a short drive shaft.

When the operator rotates the steering wheel, steering circuit oil is directed through the crossover relief valve manifold to the steering cylinders.

Pages L4-4 through L4-11 describe the various operating conditions of both the steering control valve and the demand valve.

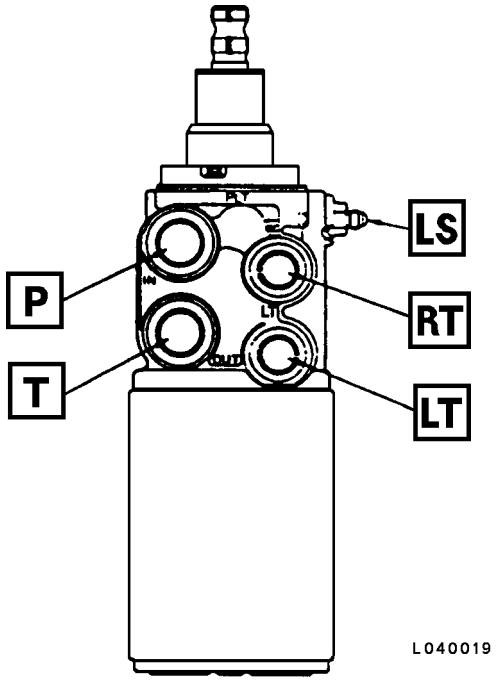

FIGURE 4-3. STEERING CONTROL VALVE ASSEMBLY

P: From Demand Valve
T: To Hydraulic Tank
LT: To Steering Cylinder
R: To Steering Cylinder
LS: To Demand Valve