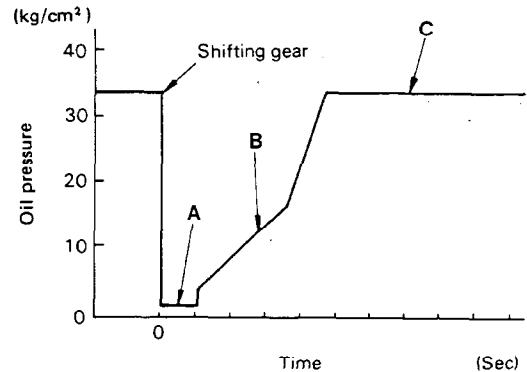


MODULATING VALVE AND QUICK RETURN VALVE

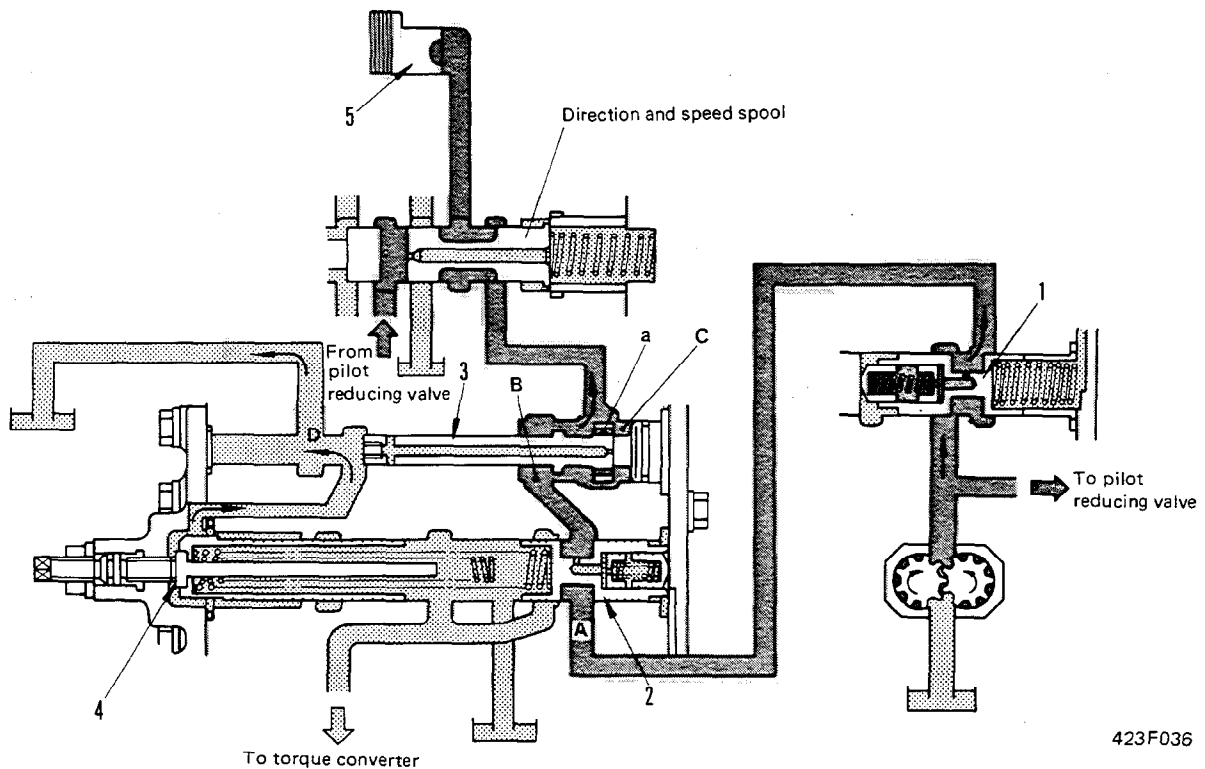
Function

- The modulating valve and quick return valve act together to raise the transmission clutch pressure slowly. In this way, they reduce the shock when shifting gear, and prevent the generation of peak torque in the power train. As a result, operator fatigue is reduced, and at the same time, operator comfort and the durability of the power train are increased.



1) Immediately after shifting gear (Point A on Fig. 423F035)

423F035



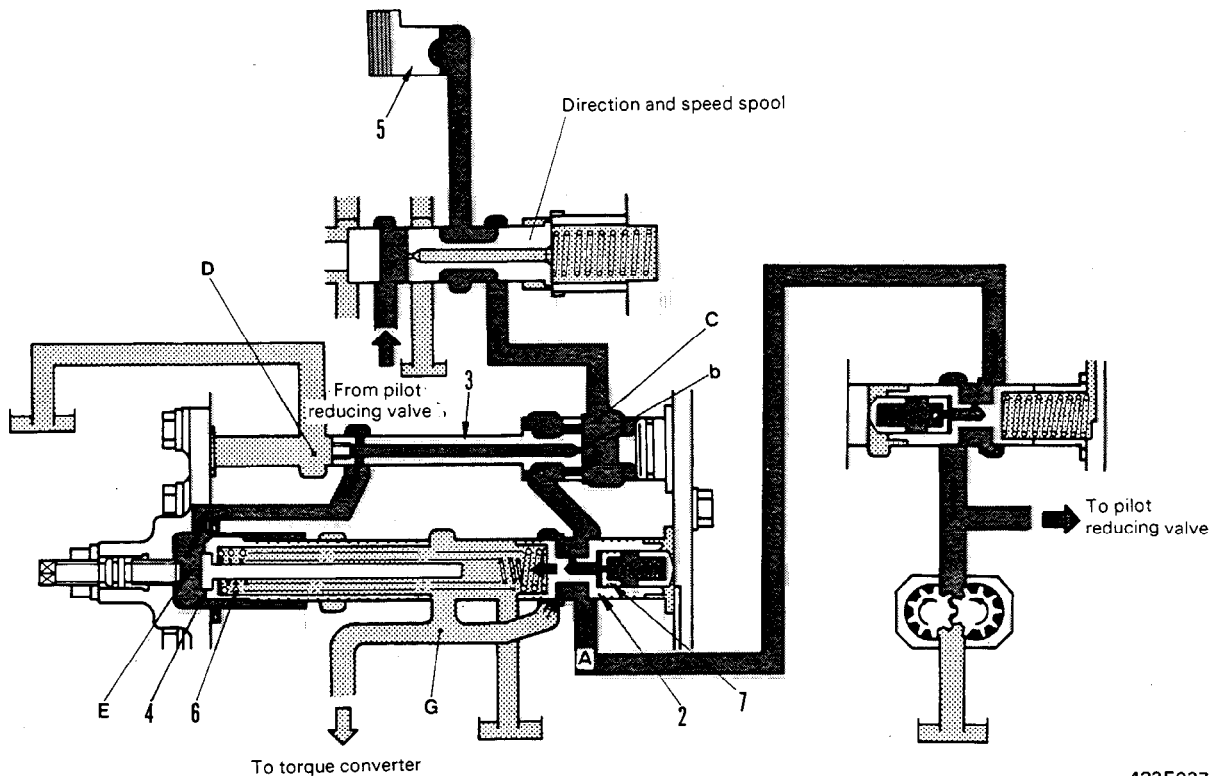
423F036

Operation

- The oil sent from the pump flows from priority valve (1) through port A, passes through modulating valve (2), and enters port B of quick return valve (3). The oil passes through orifice "a" of quick return valve (3) and flows to the clutch piston, which has been actuated. However when it passes through orifice "a" it creates a

difference in pressure between port B and port C. The quick return valve moves to the right and the oil flows to clutch (5). In addition, when quick return valve (3) moves to the right, drain port D is opened, and the pressurized oil at the rear of piston (4) flows to the drain circuit.

2) Clutch pressure rising (Point B on Fig. 423F035)



423F037

Operation

- As the pressure at the clutch piston rises, the pressure at port C also rises. Quick return valve (3) is pushed back to the left and drain port D is closed. The oil from the pump flows from port C to the clutch piston, and at the same time it flows from orifice "b" through quick return valve (3) and enters port E. The oil at port E acts on the modulating piston (4). It pushes back spring (6) and moves piston (4) to the right.

At the same time, pressurized oil also passes through the orifice and enters poppet (7) of modulating valve (2). It moves modulating valve (2) to the left and some of the oil at port A flows to port G.