

### GENERAL

The Citation XLS utilizes a phosphate ester-based open center concept to operate the landing gear, flaps, speed brakes, two-position horizontal stabilizer and the thrust reversers. A separate independent system is used for the main wheel antiskid/power brake system.

### RESERVOIR

The fluid for the system is contained in a hydraulic bootstrap reservoir located in the aft tailcone area. The reservoir contains an external tapered-piston rod and housing, and the piston extends or retracts based on fluid level in the system. Markings on the piston rod housing indicate refill, full and overfill levels. Any time the fluid level drops below the refill position, the rod will activate a microswitch and cause the amber LO HYD LEVEL annunciator to illuminate. Servicing requires equipment capable of delivering hydraulic fluid under pressure. Bleeding or relieving an overfill condition is accomplished by opening a relief valve located on the reservoir (right hand wing root area). Relieved excess fluid is drained overboard through the underbelly vent mast. Any internal leakage is collected and drained through an overboard vent line.

### PUMPS

Hydraulic power is provided by two positive displacement engine-driven pumps, each mounted on the engine accessory case. Either pump is capable of supplying enough power to operate the gear, flaps, speed brakes, two-position horizontal stabilizer and thrust reversers. From each pump, hydraulic fluid is routed through filters and flow switch check valve assemblies to the bypass valve and relief valve. In the event that either pump output should drop to less than 0.45 gallons per minute, +0.10 or -0.10 gallons per minute (GPM), the respective LO HYD FLOW annunciator panel light will illuminate. The light will extinguish when pump output reaches a minimum of 1.33 GPM.

### NORMAL OPERATION

When the landing gear, flaps, speed brakes, two-position horizontal stabilizer or thrust reversers are actuated, a bypass valve closes enabling the system to pressurize to 1500 PSI. At the same time, the respective control valve opens, allowing flow to go to the selected system. A relief valve which maintains system pressure at 1500 PSI is in parallel with the bypass valve. The relief valve starts to open at 1350 PSI and is fully open at 1500 PSI. The HYD PRESS light illuminates on the annunciator panel any time the system is pressurized. Once the selected cycle is complete, the respective control valve closes, the bypass valve opens and the system reverts to the low pressure, open center state.

# Cessna Citation XLS - Hydraulics

Figure 2-9

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