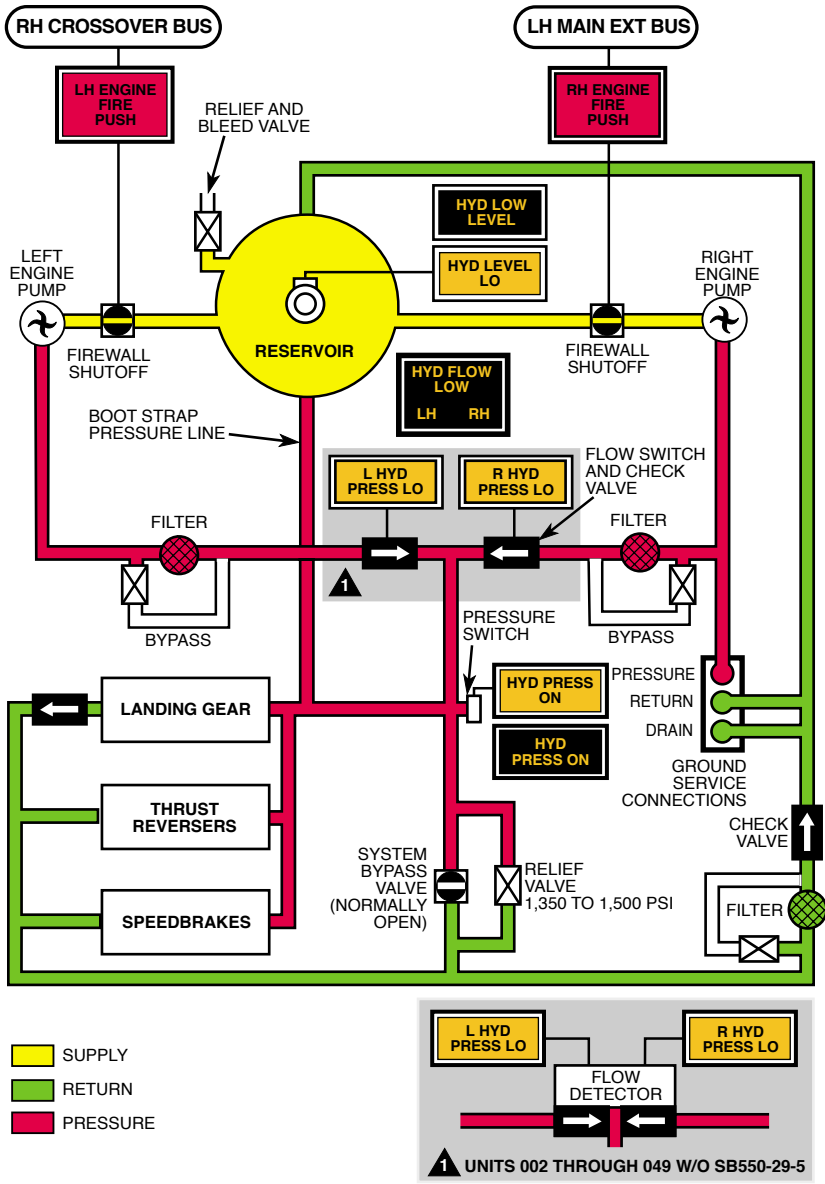


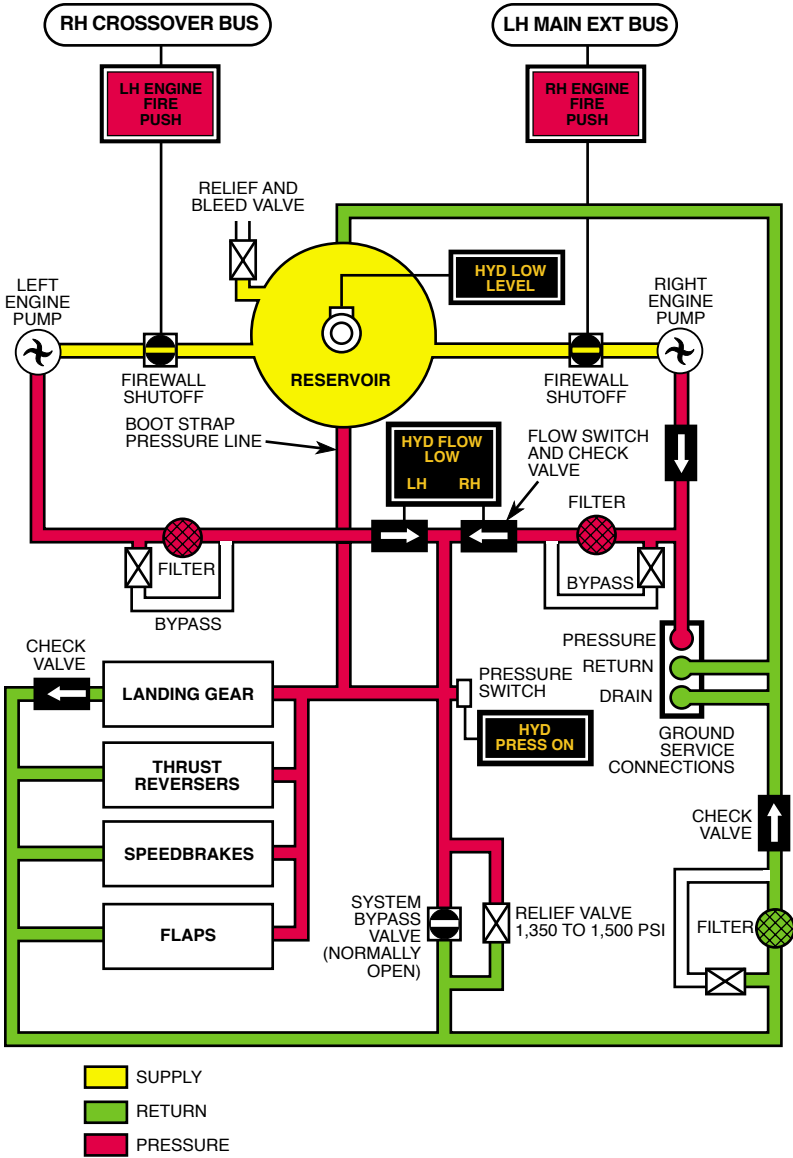
# Hydraulic System

Citation; CI; CII; CII-627



# Hydraulic System

## Citation SII



# Hydraulic System

An open-center hydraulic system supplies 1,500 PSI pressure for operation of the:

- landing gear
- thrust reversers (if installed)
- speedbrakes
- flaps (**SII only**).

With the engines running, each constant-displacement engine-driven hydraulic pump draws fluid from the self-pressurizing reservoir through an electrically operated firewall shutoff valve. If reservoir fluid level drops to approximately the REFILL (0.2 gals) mark, the reservoir's low fluid level warning switch illuminates the HYD LEVEL LO (**C0; C1**) or HYD LOW LEVEL annunciator.

From each pump, pressurized fluid flows through a filter before reaching the check valve flow detector or flow switch check valve. If a filter begins clogging, its bypass valve opens when a pressure differential of 100 PSID is sensed between the input and output side of the filter to route fluid around the filter.

On **Citation/Citation I units 001 to 470 without SB 500-29-06 and Citation II units 002 to 049 and 064 without SB 550-29-05**, the check valve flow detector measures the differential pressure between the two engine-driven pump outputs. If one pump loses pressure or fails, pressure from the operating pump shifts the flow detector switch to illuminate the HYD FLOW LOW or HYD PRESS LO (**C0; C1**) annunciator. Actuating differential pressure linearly varies with hydraulic system pressure. At 60 PSI, a differential pressure of 25 PSID illuminates the annunciator. At 1,500 PSI, 170 PSID illuminates the annunciator. Check valves prevent reverse flow from an operating pump to an inoperative pump.

On **Citation/Citation I units 471 and subsequent and previous aircraft with SB 500-29-6, Citation II units 002 to 049 and 064 with SB 550-29-05, and Citation II units 050 and subsequent**, two flow switch check valves replace the check valve flow detector. If a pump's output drops to 1.33 GPM, the flow switch closes to illuminate the HYD PRESS LO (**C0; C1**) or HYD FLOW LOW annunciator. Check valves prevents reverse flow from an operating pump to an inoperative pump.

After flowing through the check valve flow detector or flow switch check valve, the two hydraulic pressure flows combine. During no load conditions, the electrically operated bypass valve opens so fluid flows continuously through the system. In this condition, fluid returns to the hydraulic reservoir through a filter and check valve.

During landing gear, thrust reverser (if installed), speedbrake, or flap (**SII only**) operation, the bypass valve closes to provide pressure to the using system. As system pressure builds, a relief valve in-line with the bypass valve begins opening at 1,350 PSI and fully opens at 1,500 PSI to maintain system pressure at 1,500 PSI. A pressure switch also closes with an increasing pressure of 125 to 165 PSI to illuminate the HYD PRESS ON annunciator to indicate normal system operation.

## Hydraulic System

<b>Power Source</b>	L/R engine-driven hydraulic pumps
<b>Distribution</b>	Hydraulic reservoir L/R engine-driven hydraulic pumps Hydraulic bypass valve Hydraulic manifolds
<b>Control</b>	LH/RH ENG FIRE PUSH switchlights Landing gear handle Speedbrake switch Thrust reverser lever (optional) Flap lever ( <b>SII</b> )
<b>Monitor</b>	LH/RH ENG FIRE PUSH switchlights Annunciators HYD PRESS ON L/R HYD FLOW LO ( <b>CII 550 and sub; SII</b> ) L/R HYD PRESS LO ( <b>CII 002 to 549</b> ) SPEED BRAKE EXTEND HYD LOW LEVEL ARM/UNLOCK/DEPLOY T/R lights Flap position indicator ( <b>SII</b> ) Landing gear annunciators
<b>Protection</b>	Circuit breakers  Pressure relief valve in reservoir low pressure area opens to drain excess fluid when reservoir fills to capacity  If one hydraulic pump fails, either pump can operate the system (at a reduced rate)  Pushing the ENG FIRE PUSH switchlight closes the corresponding hydraulic and fuel firewall shutoff valves and TR isolation valve to stop flammable liquid flow to the affected engine.  Flaps (blow up protection)  Refer to appropriate system section for protection in a specific aircraft system.

