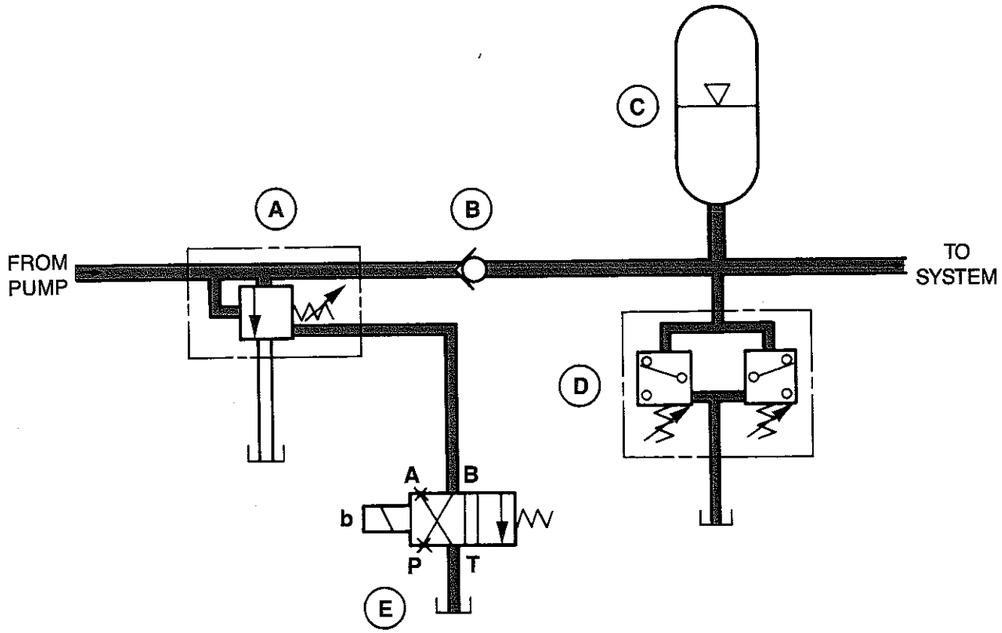



### A. CHARGING

An accumulator can be used to:

- Maintain the pressure during a holding operation.
- Augment pump delivery during short periods of large volume demand.
- Absorb hydraulic shock.

This circuit shows one method of unloading the pump when the accumulator is fully charged. It consists of relief valve (A), check valve (B), accumulator (C), dual pressure switch (D) and directional valve (E). Pressure setting of (A) is higher than the high setting of (D).

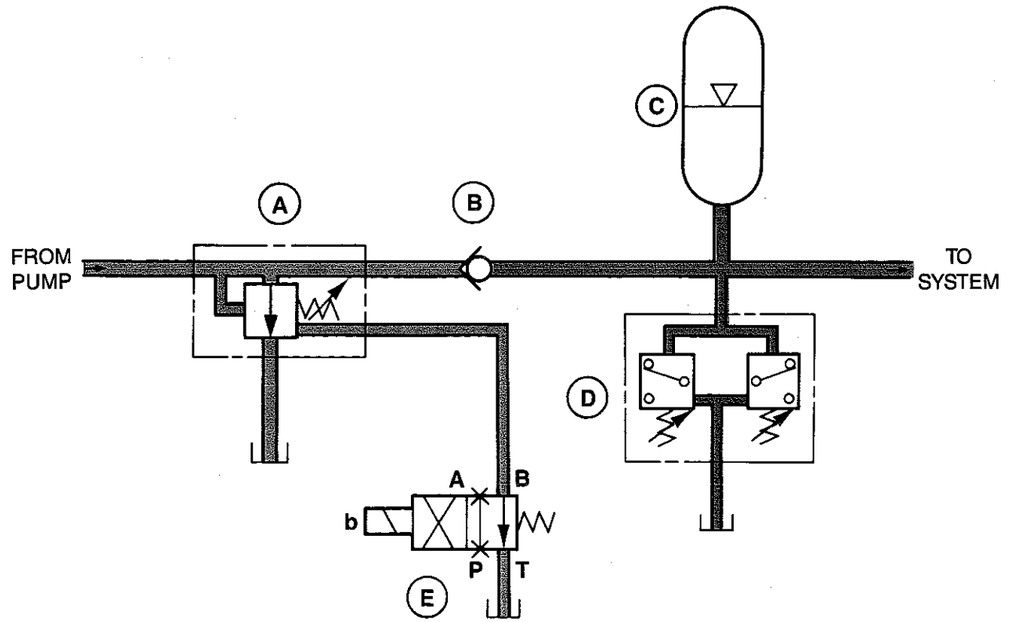
The electric control circuit performs the following operations: 1) energizes solenoid (Eb) when pump motor is started; 2) de-energizes (Eb) when system pressure reaches the high setting of switch (D); 3) energizes (Eb) when system pressure reduces to the low setting of switch (D); 4) de-energzies (Eb) when pump motor is stopped.

View A shows circuit condition when system pressure is below the low setting of switch (D). Solenoid (Eb) is energized to shift valve (E) and blocks the vent connection of valve (A). Valve (A) is devented and pump delivery is directed through valve (B) into the system. Accumulator (C) is charged with fluid if system volumetric demand is less than delivery rate of the pump.

**Figure 19-3. Accumulator pump unloading (electric control). (1 of 2)**








### B. UNLOADING

View B shows circuit condition when accumulator (C) is charged and system pressure has reached the high setting of switch (D). Solenoid (Eb) is de-energized to vent valve (A). The pump is unloaded, its delivery being returned freely to tank through valve (A). Check valve (B) closes to permit accumulator (C) to hold pressure and maintain a volume supply in the system.

Charging and unloading continue automatically until pump motor is stopped. The dual pressure switch provides means to adjust the pressure difference between pump "cut-in" and pump "cut-out." The high setting of switch (D) is the maximum pressure control for the system with overload protection provided by valve (A).

**Figure 19-3. Accumulator pump unloading (electric control). (2 of 2)**