

This is a system pressure regulated load sensing control combined with pressure cut-off. It can also be used as a pressure compensated control (see figure 1).

Load Sensing (LS) with Pressure Cut-Off

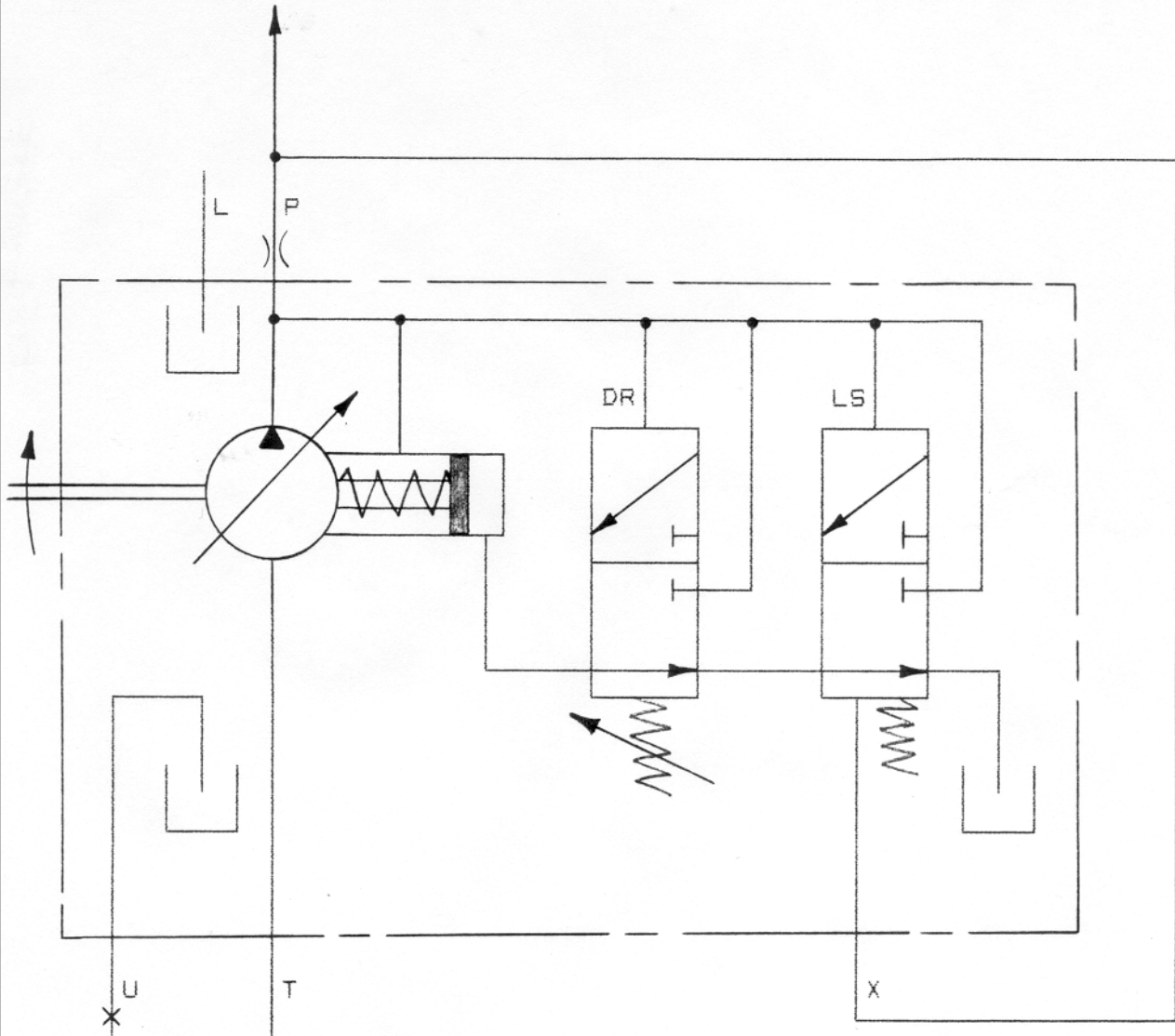
The load sensing control intends to supply only the required amount of flow to the user, independent of pressure. This is achieved by destroking the pump as the pressure difference between the pump discharge and load. ie: the pressure after the system control valves exceeds 20 bar. As the system control valves are operated according to user requirement, an increase of the pressure drop over the normal value of 20 bar indicates excessive pump flow.

Main piston 1 is moved by actuation pressure, acts directly on the swash plate lever, against spring 2 which holds the pump fully stroked as actuation pressure is vented to tank. Spring 3 represents a load of 20 bar at the area of spool 4. Pump discharge pressure acts on one side of spool 4 and load pressure plus spring 3 on the other side. When pump discharge pressure exceeds the load pressure by more than 20 bar, spool 4 starts to shift, closing the connection of actuating pressure. Metering of pump discharge pressure into the actuator chamber moves main piston 1 out, destroking the pump. The resulting smaller flow through the system valves reduces the discharge pressure/load pressure ΔP of 20 bar occurs again.

Pressure Cut-Off – Spool 5 acts as a spring loaded HP relief valve. When the preset relief pressure at the pump discharge is exceeded, spool 5 connects pump discharge pressure to the actuating area, destroking the pump.

Pressure Compensator (DR)

Connecting pump discharge pressure to both sides of spool 4 by an outside line or installing a slug to stop spool 4 from shifting eliminates load sensing. This control is know as a spring adjusted pressure compensated control. The adjustment by bolt 8 will change the force on springs 6 and 7 to the pressure which is to be held constant. Spool 5 will move against the spring load of 6 plus 7 when the preset pressure is exceeded. The shifted spool 5 connects discharge pressure to the actuating area, destroking the pump until the pressure is back to the preset value



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R CONTROL - LOAD SENSING (LS) and PRESSURE CU JFF

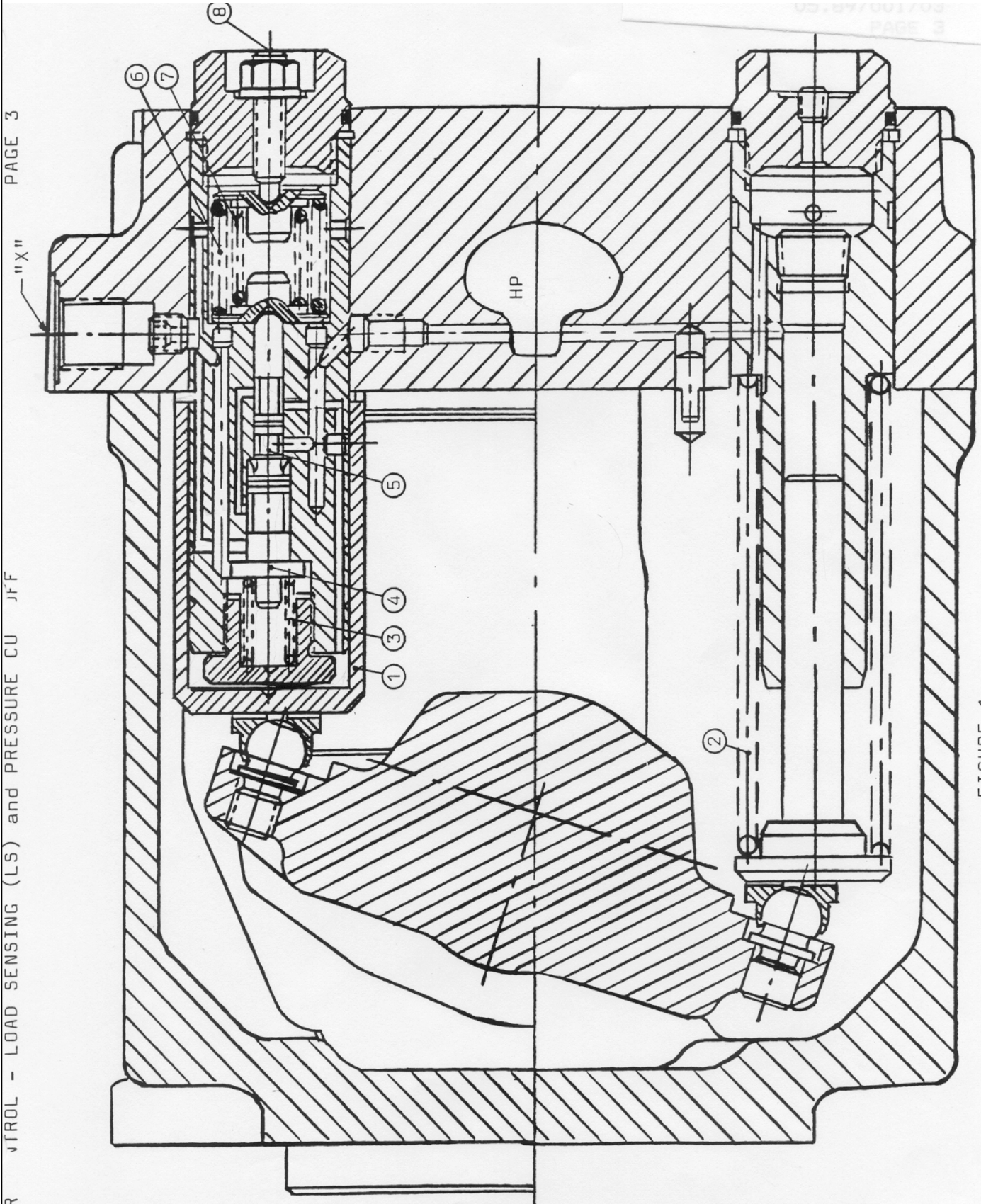


FIGURE 1