STEERING VALVE
SPC50

OPERATIONAL DESCRIPTION

The main steering valve controls the flow of oil in the steering system. The valve contains the following parts: the main spool assembly, the compensator spool assembly, the overload/anti-cavitation valve assemblies (two) and a main relief valve assembly.

The compensator spool will automatically maintain the inlet pressure slightly higher than the maximum pressure at either cylinder port. This ready condition will provide fast steering response when needed. The spool has the following three basic positions:

1. Priority position - The spool will be seated during a no oil flow condition or when all the oil flow is needed for steering.

2. Excess flow position - The spool will move to the extreme right when oil flows into the valve if no oil flow is needed for steering.

3. Flow divider position - The spool can move anywhere between the above two positions to provide:

   A. Needed flow for steering,

   B. Maintain working pressure so it is slightly higher than the maximum pressure at either cylinder port. This pressure is sensed on the right end through cross-drilled orifice,

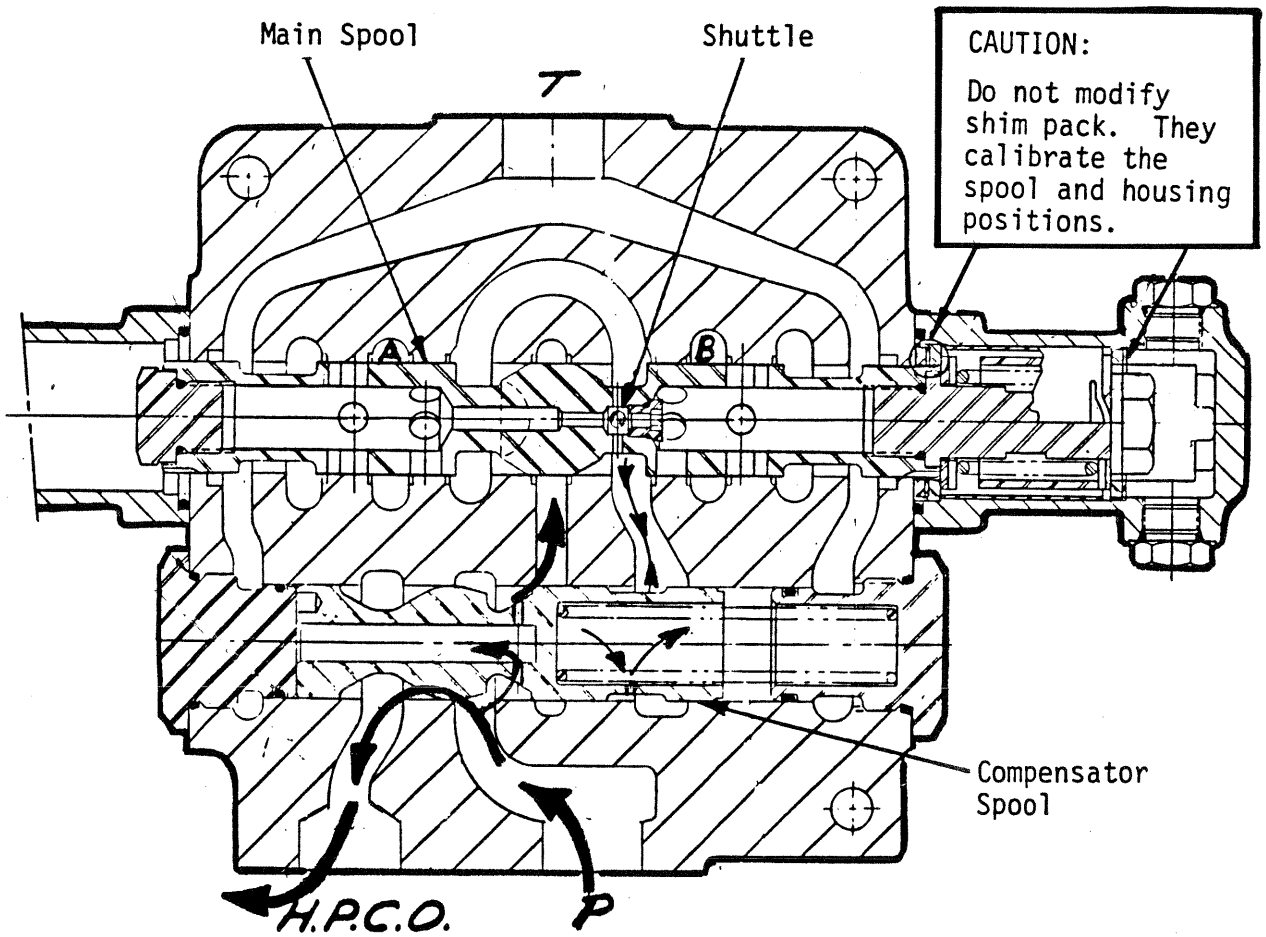
   C. Excess flow goes out H.P.C.O. port.

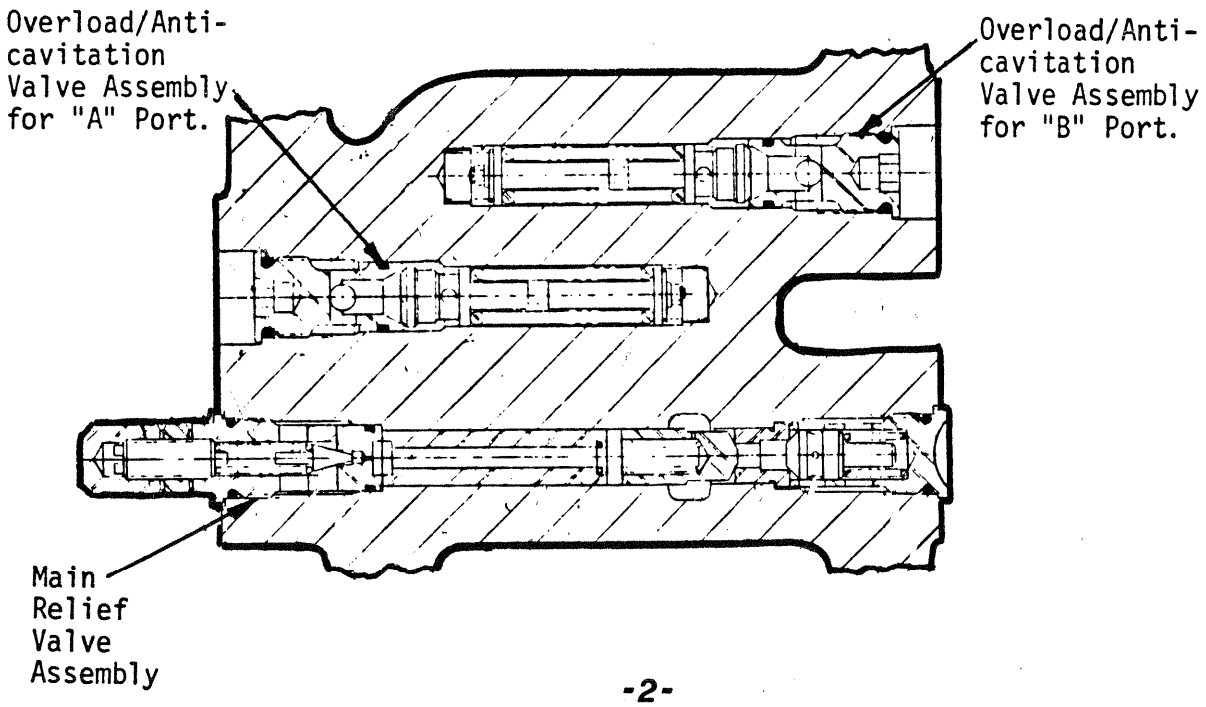
The main spool directs the oil flow to and from the cylinders. It is shifted when pilot pressure (0 to 185 PSI) is applied to either of the end caps. The shuttle valve in the center of the spool senses the pressure from both cylinder ports and allows the highest pressure to be applied to the right end of the compensator spool.

The overload/anti-cavitation valves protect the cylinders from excessive pressure and/or cavitation conditions.

The main relief valve limits the maximum pressure in the steering system.

MAIN STEERING VALVE (Cutaway)





MAIN STEERING VALVE(ANSI)