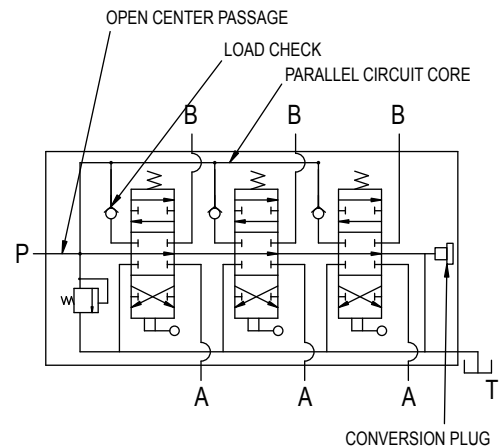


PARALLEL CIRCUIT SVW, SVM, SVH, SVR, AND SVL WORK SECTIONS

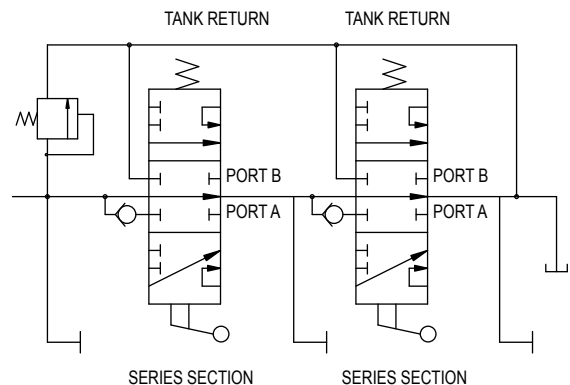
Parallel circuit sections are by far the most common. The SVW, SVM, SVH, SVR, AND SVL are all parallel circuit construction. They can be combined together in any order in an assembly. When any one of the spools is shifted it blocks off the open center passage thru the valve. The oil then flows into the parallel circuit core making oil available to all spools. If more than one spool is fully shifted then oil will go to the spool with the lowest pressure requirements. However, it is possible to meter the flow to the spool with the least load and power two unequal loads.

The SVM and SVR sections have metering notches machined into the spool to allow for better “feathering” of a load. The spool travel is also a little longer .281 vs. .250 for the standard sections. The SVL section combines both a 4-way directional valve and a double pilot operated check valve. This provides very low leakage when the spool is in neutral. When the spool is shifted, oil is directed through a work port check to the cylinder. Pressure on the work port applies pressure to the shuttle spool opening the opposite check valve and allowing oil to return into the valve. Depending upon load pressures, the metering of the spool may be affected. In some cases a one way restrictor in a work port may be beneficial.



SERIES CIRCUIT SVS WORK SECTIONS

A series circuit valve is most commonly used to control more than one hydraulic component simultaneously. The entire circuit flow is available to each valve section that is actuated. In a two spool series valve with both spools actuated, the oil flows from the inlet to the work port of the first section. The return flow of the first section is directed to the open center core of the second section. (In a parallel valve the return oil from the work port is directed to the tank core.) From the open center core of the second section, the oil flows to the work port with the return oil going to the outlet. In a series circuit valve, the summation of the pressures required for each work section will equal the total pressure required for the circuit. The total pressure required must not exceed the system relief setting or the pump pressure rating. It is not required to have a SV Series section as the last section, unless series flow is required to a downstream valve. In this application, a power beyond plug must be used in the outlet section.



COMBINED SERIES / PARALLEL CIRCUITS

The SV Series circuit valve sections may be stacked with SV parallel circuit valve sections. This allows both series and parallel control in the same valve assembly.

In the valve assembly shown below, the first, third and fourth sections are parallel. The second section is series. The first parallel section has priority over all downstream valves. When the spool of the first parallel section is actuated, the return oil from the work port is directed to the tank core, thus oil flow to downstream sections is cut off. The second and third sections are in series with each other as is the second and fourth sections. The third and fourth sections are in parallel with each other.

SERIES MOTOR SPOOL

The SV Series Motor Spool provides control of reversible hydraulic motors. Both work ports are connected to the open center core in the neutral position. It should be noted that in the neutral position, the work ports will be equally pressurized to the same pressure that is required of any downstream valve sections and that a work port relief in the section will also limit the pressure of any other sections in the valve. The series motor spool should not be used to control a hydraulic cylinder as unwanted cylinder drift may occur in the neutral position.

CLOSED CENTER APPLICATIONS

The SV Series Circuit Valve sections cannot be used in a closed center valve assembly.

