



THERMAL VOLUME ACCUMULATOR

The **thermal volume accumulator** is designed to protect the working accumulators thermally as well as control the stop/start switch for pump/electric motor control. The differential area between the full piston area side and the rod side of the T.V.A. insures that the electric motor/ pump combination **does not** shut off until all of the working accumulators are filled and have “topped-out” on each upper head. Once all the working accumulators are filled, the T.V.A. piston and rod moves “upward” and the actuating disc trips the motor/pump switch thus shutting off the motor.

When the isolation valve or control system is activated, the working accumulators to stroke the actuators is opened and the T.V.A. actuates “downward” and trips the motor switch and the pump starts. Once the working accumulators “bottom-out”, the pump continues operating until all the working accumulators are refilled.

The thermal protection feature of the T.V.A. is based on the position of the piston and rod when the motor/pump switch is off. The T.V.A. has a common nitrogen head with the N² tank and this allows the piston/rod to move upward to compensate for thermal expansion of the hydraulic fluid in the working accumulators since they are all “topped-out” and can’t move to compensate for thermal expansion.