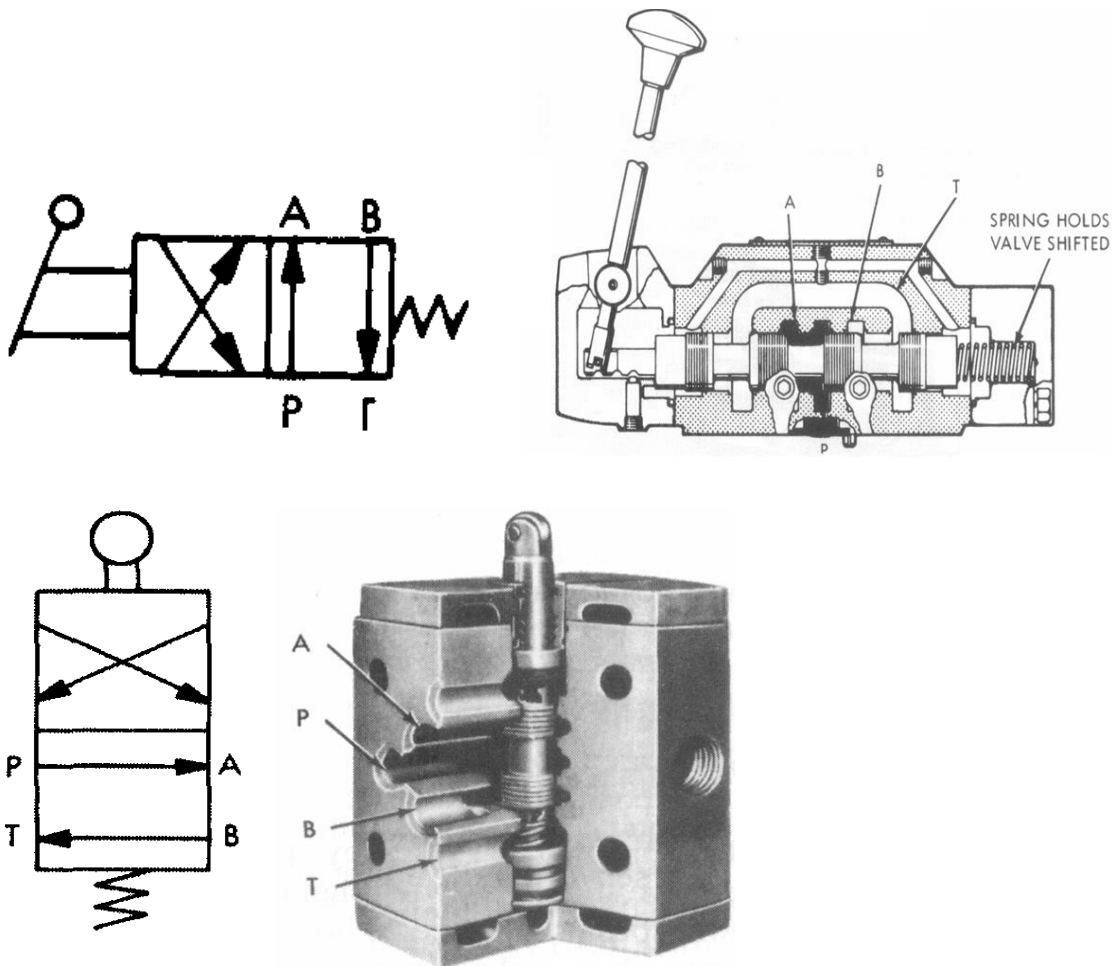


## Types of Actuators

### Manually Actuated Valves

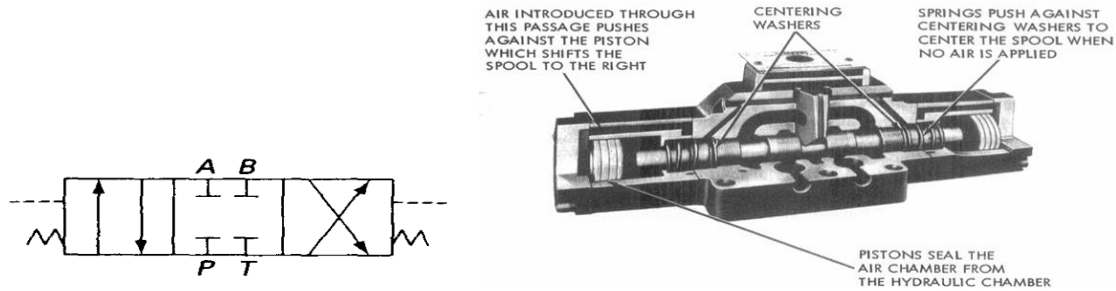
The spool is spring-loaded at both ends, it is a spring-centered, three-position directional control valve.

when the valve is unactuated (no hand force on lever), the valve will assume its center position due to the balancing opposing spring forces





### Pilot-Actuated Valves



- This type of valves is to be shifted by applying air pressure against a piston at either end of the valve spool.
- Such a design is illustrated by the cutaway view of the figure below, springs (located at both ends of the spool) push against centering washers to center the spool when no air is applied.
- When air is introduced through the left end passage, its pressure pushes against the piston to shift the spool to the right.
- Removal of this left end air supply and introduction of air through the right end passage causes the spool to shift to the left.

### Solenoid-Actuated Valves

When the electric coil (solenoid) is energized, it creates a magnetic force that pulls the armature into the coil. This causes the armature to push on the push pin to move the spool of the valve.

