Hydraulic Control Valves for Forklift

Forklift Hydraulic Control Valves - The control valve is actually a tool that directs the fluid to the actuator. This device will comprise steel or cast iron spool that is located within a housing. The spool slides to different places inside the housing. Intersecting channels and grooves direct the fluid based on the spool's location.

The spool is centrally located, help in place by springs. In this particular location, the supply fluid could be blocked and returned to the tank. When the spool is slid to one side, the hydraulic fluid is routed to an actuator and provides a return path from the actuator to tank. When the spool is moved to the opposite direction, the return and supply paths are switched. As soon as the spool is allowed to return to the neutral or center location, the actuator fluid paths become blocked, locking it into position.

The directional control is normally made to be stackable. They usually have one valve per hydraulic cylinder and a fluid input which supplies all the valves in the stack.

So as to prevent leaking and deal with the high pressure, tolerances are maintained extremely tight. Normally, the spools have a clearance with the housing of less than a thousandth of an inch or 25 Ã‚Âµm. To be able to prevent jamming the valve's extremely sensitive components and distorting the valve, the valve block would be mounted to the machine' frame with a 3-point pattern.

Solenoids, a hydraulic pilot pressure or mechanical levers might actuate or push the spool left or right. A seal enables a portion of the spool to stick out the housing where it is easy to get to to the actuator.

The main valve block controls the stack of directional control valves by flow performance and capacity. Several of these valves are designed to be proportional, as a valve position to the proportional flow rate, whereas other valves are designed to be on-off. The control valve is among the most costly and sensitive components of a hydraulic circuit.