Forklift Hydraulic Control Valves

Hydraulic Control Valve for Forklift - The control valve is actually a tool which directs the fluid to the actuator. This device would include cast iron or steel spool that is situated in a housing. The spool slides to various positions in the housing. Intersecting grooves and channels route the fluid based on the spool's location.

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

The directional control is typically made to be stackable. They generally have a valve for every hydraulic cylinder and one fluid input that supplies all the valves in the stack.

To be able to avoid leaking and handle the high pressure, tolerances are maintained very tight. Normally, the spools have a clearance with the housing of less than a thousandth of an inch or 25 Ã‚Âµm. So as to avoid 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 could actuate or push the spool left or right. A seal allows a portion of the spool to stick out the housing where it is accessible 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, like a valve position to the proportional flow rate, while other valves are designed to be on-off. The control valve is among the most costly and sensitive components of a hydraulic circuit.