Forklift Hydraulic Control Valves

Hydraulic Control Valve for Forklift - The function of directional control valves is to be able to direct the fluid to the desired actuator. Usually, these control valves include a spool positioned in a housing created either of cast iron or steel. The spool slides to various positions within the housing. Intersecting grooves and channels direct the fluid based on the spool's position.

The spool is centrally positioned, help in place by springs. In this particular position, the supply fluid could be blocked and returned to the tank. If the spool is slid to one direction, 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 other side, the supply and return paths are switched. When the spool is allowed to return to the neutral or center place, the actuator fluid paths become blocked, locking it into place.

Typically, directional control valves are designed to be able to be stackable. They generally have one valve for each and every hydraulic cylinder and a fluid input which supplies all the valves within the stack.

Tolerances are maintained very tightly, to be able to deal with the higher pressures and to be able to avoid leaking. The spools would usually have a clearance within the housing no less than 25 Ã‚Âµm or a thousandth of an inch. To be able to avoid jamming the valve's extremely sensitive parts and distorting the valve, the valve block will be mounted to the machine' frame by a 3-point pattern.

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

The main valve block is usually a stack of off the shelf directional control valves chosen by capacity and flow performance. Some valves are designed to be on-off, whereas others are designed to be proportional, like in flow rate proportional to valve position. The control valve is among the most sensitive and costly components of a hydraulic circuit.