Forklift Hydraulic Control Valve

Hydraulic Control Valves for Forklift - The function of directional control valves is to direct the fluid to the desired actuator. Generally, these control valves comprise a spool positioned in a housing made either of cast iron or steel. The spool slides to different positions in the housing. Intersecting grooves and channels route the fluid based on the spool's position.

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

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

Tolerances are maintained extremely tightly, in order to tackle the higher pressures and to prevent leaking. The spools would usually have a clearance within the housing no less than 25 Ã‚Âµm or a thousandth of an inch. So as to prevent jamming the valve's extremely sensitive parts and distorting the valve, the valve block will 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 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 capacity and flow performance. Several of these valves are designed to be proportional, like a valve position to the proportional flow rate, whereas some valves are designed to be on-off. The control valve is among the most sensitive and costly components of a hydraulic circuit.