Hydraulic Control Valve for Forklift

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

The spool has a neutral or central location which is maintained with springs. In this position, the supply fluid is blocked or returned to the tank. If 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. If the spool is moved to the other direction, the return and supply paths are switched. As soon as the spool is enabled to return to the neutral or center location, the actuator fluid paths become blocked, locking it into place.

The directional control is normally intended to be stackable. They normally have one valve for each hydraulic cylinder and a fluid input that supplies all the valves within the stack.

Tolerances are maintained really tightly, in order to deal with the higher pressures and to avoid leaking. The spools would often have a clearance within the housing no less than 25 Ã‚Âµm or a thousandth of an inch. In order 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.

Solenoids, a hydraulic pilot pressure or mechanical levers might actuate or push the spool right or left. A seal allows a part of the spool to protrude outside the housing where it is easy to get to to the actuator.

The main valve block is normally a stack of off the shelf directional control valves chosen by capacity and flow performance. Several valves are designed to be on-off, whereas some are designed to be proportional, like in valve position to flow rate proportional. The control valve is amongst the most expensive and sensitive parts of a hydraulic circuit.