Hydraulic Control Valve for Forklift

Hydraulic Control Valves for Forklift - The job of directional control valves is to route the fluid to the desired actuator. Usually, these control valves include a spool located inside of a housing created either of steel or cast iron. The spool slides to various places inside the housing. Intersecting grooves and channels direct the fluid based on the spool's location.

The spool is centrally situated, 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 a 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. Once the spool is enabled to return to the neutral or center position, the actuator fluid paths become blocked, locking it into position.

Usually, directional control valves are made in order to be stackable. They normally have one valve for each hydraulic cylinder and one fluid input that supplies all the valves within the stack.

So as to avoid leaking and tackle the high pressure, tolerances are maintained really 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 prevent jamming the valve's extremely sensitive components and distorting the valve, the valve block would be mounted to the machine' frame by a 3-point pattern.

The position of the spool may be actuated by mechanical levers, hydraulic pilot pressure, or solenoids that push the spool right or left. A seal allows a portion of the spool to protrude outside 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, as a proportional flow rate to the valve position, whereas some valves are designed to be on-off. The control valve is one of the most sensitive and pricey components of a hydraulic circuit.