Hydraulic Control Valves for Forklift

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

The spool has a central or neutral location which is maintained with springs. In this position, the supply fluid is blocked or returned to the tank. When the spool is slid to a side, the hydraulic fluid is routed to an actuator and provides a return path from the actuator to tank. If the spool is transferred to the other side, the return and supply paths are switched. When the spool is enabled to return to the neutral or center position, the actuator fluid paths become blocked, locking it into position.

The directional control is usually designed to be stackable. They generally have a valve for each and every hydraulic cylinder and a fluid input which supplies all the valves inside the stack.

Tolerances are maintained really tightly, so as to tackle the higher pressures and to be able to prevent leaking. The spools would usually have a clearance inside the housing no less than 25 Ã?â??Ã?Âµm or a thousandth of an inch. In order to prevent 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.

The location of the spool may be actuated by mechanical levers, hydraulic pilot pressure, or solenoids which push the spool right or left. A seal enables a portion of the spool to protrude outside the housing where it is easy to get to 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 valve position to the proportional flow rate, whereas some valves are designed to be on-off. The control valve is among the most expensive and sensitive parts of a hydraulic circuit.