Forklift Hydraulic Control Valve

Hydraulic Control Valve for Forklift - The job of directional control valves is to be able to direct the fluid to the desired actuator. Usually, these control valves include a spool located inside of a housing made either from cast iron or steel. The spool slides to various places inside the housing. Intersecting grooves and channels route 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 a 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 direction, the supply and return paths are switched. Once the spool is allowed to return to the neutral or center location, the actuator fluid paths become blocked, locking it into position.

The directional control is typically made to be stackable. They generally have a valve for each and every hydraulic cylinder and a fluid input that supplies all the valves within the stack.

So as to prevent leaking and tackle the high pressure, tolerances are maintained very tight. Typically, the spools have a clearance with the housing of less than a thousandth of an inch or 25 Ã?â??Ã?Âµm. In order to prevent jamming the valve's extremely sensitive components 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 can 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. Some valves are designed to be on-off, whereas some are designed to be proportional, as in flow rate proportional to valve position. The control valve is amongst the most sensitive and costly parts of a hydraulic circuit.