Forklift Hydraulic Control Valve

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

The spool has a central or neutral position which is maintained by springs. In this particular position, the supply fluid is returned to the tank or blocked. 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 moved to the opposite side, the supply and return 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.

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

Tolerances are maintained really tightly, so as to deal with the higher pressures and to prevent leaking. The spools would often have a clearance within the housing no less than 25 Ã?â??Ã?Âµm or a thousandth of an inch. To be able to prevent distorting the valve block and jamming the valve's extremely sensitive components, the valve block would be mounted to the machine' frame by a 3-point pattern.

A hydraulic pilot pressure, mechanical levers, or solenoids may actuate or push the spool right or left. A seal enables 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 usually a stack of off the shelf directional control valves chosen by capacity and flow performance. Several valves are designed to be on-off, whereas others are designed to be proportional, like in flow rate proportional to valve position. The control valve is amongst the most sensitive and costly parts of a hydraulic circuit.