Hydraulic Control Valve for Forklift

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

The spool has a central or neutral location that is maintained with springs. In this particular location, the supply fluid is returned to the tank or blocked. When the spool is slid to one side, the hydraulic fluid is routed to an actuator and provides a return path from the actuator to tank. When the spool is transferred to the opposite direction, the supply and return paths are switched. Once the spool is allowed to return to the neutral or center place, the actuator fluid paths become blocked, locking it into place.

Normally, directional control valves are designed so as to be stackable. They generally have a valve for each and every hydraulic cylinder and one fluid input that supplies all the valves within the stack.

In order to prevent leaking and deal with 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?â??Ã?Âµm. In order to avoid distorting the valve block and jamming the valve's extremely sensitive components, the valve block would be mounted to the machine' frame with a 3-point pattern.

Mechanical levers, solenoids or a hydraulic pilot pressure could actuate or push the spool left or right. A seal enables a portion of the spool to stick out the housing where it is accessible 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, while some are designed to be proportional, as in valve position to flow rate proportional. The control valve is one of the most sensitive and pricey components of a hydraulic circuit.