Forklift Hydraulic Control Valve

Hydraulic Control Valve for Forklift - The control valve is a tool which directs the fluid to the actuator. This tool will consist of steel or cast iron spool that is located within a housing. The spool slides to various positions in 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 with springs. In this location, the supply fluid is blocked or returned to the tank. When 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 return and supply paths are switched. When the spool is enabled 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 one valve per hydraulic cylinder and one fluid input that supplies all the valves in the stack.

Tolerances are maintained very tightly, to be able to deal with the higher pressures and to be able to prevent leaking. The spools will usually have a clearance in the housing no less than 25 Ã‚Âµm or a thousandth of an inch. So as to prevent distorting the valve block and jamming the valve's extremely sensitive components, the valve block will be mounted to the machine' frame with a 3-point pattern.

Solenoids, a hydraulic pilot pressure or mechanical levers may actuate or push the spool right or left. A seal enables 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 valve position to the proportional flow rate, whereas some valves are designed to be on-off. The control valve is among the most pricey and sensitive parts of a hydraulic circuit.