Forklift Hydraulic Control Valves

Hydraulic Control Valves for Forklift - The control valve is actually a tool which routes the fluid to the actuator. This device will comprise cast iron or steel spool that is positioned inside of housing. The spool slides to various positions inside the housing. Intersecting grooves and channels direct the fluid based on the spool's position.

The spool is centrally located, help in place by springs. In this particular position, the supply fluid could be blocked and returned to the tank. When the spool is slid to a direction, the hydraulic fluid is directed to an actuator and provides a return path from the actuator to tank. When the spool is transferred to the other direction, the return and supply 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 position.

The directional control is usually designed to be stackable. They usually have a valve per hydraulic cylinder and one fluid input which supplies all the valves within the stack.

So as to prevent leaking and deal with the high pressure, tolerances are maintained really tight. Typically, the spools have a clearance with the housing of less than a thousandth of an inch or 25 Ã‚µm. In order to avoid jamming the valve's extremely sensitive components and distorting the valve, the valve block would be mounted to the machine' frame by a 3-point pattern.

The position of the spool may be actuated by mechanical levers, hydraulic pilot pressure, or solenoids which push the spool left or right. 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, while other valves are designed to be on-off. The control valve is one of the most pricey and sensitive parts of a hydraulic circuit.