Forklift Hydraulic Control Valves

Hydraulic Control Valve for Forklift - The control valve is a tool that directs the fluid to the actuator. This device would consist of cast iron or steel spool which is situated inside of housing. The spool slides to various positions inside the housing. Intersecting grooves and channels direct the fluid based on the spool's location.

The spool has a neutral or central location that is maintained with springs. In this location, the supply fluid is blocked or returned to the tank. If 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. When the spool is transferred to the opposite side, the supply and return paths are switched. Once the spool is allowed to return to the neutral or center position, the actuator fluid paths become blocked, locking it into position.

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

Tolerances are maintained extremely tightly, in order to tackle the higher pressures and so as to avoid leaking. The spools would normally have a clearance inside the housing no less than 25 Ã?â??Ã?Âµm or a thousandth of an inch. In order to prevent jamming the valve's extremely sensitive parts and distorting the valve, the valve block will be mounted to the machine' frame by a 3-point pattern.

The position of the spool could be actuated by hydraulic pilot pressure, mechanical levers, or solenoids that push the spool right or left. A seal allows 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 capacity and flow performance. Several of these valves are designed to be proportional, as a proportional flow rate to the valve position, whereas other valves are designed to be on-off. The control valve is among the most sensitive and costly components of a hydraulic circuit.