Hydraulic Control Valve for Forklift

Hydraulic Control Valve for Forklift - The function of directional control valves is to route the fluid to the desired actuator. Generally, these control valves include a spool situated inside of a housing made either of steel or cast iron. 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 situated, help in place with springs. In this particular position, the supply fluid can be blocked and returned to the tank. If 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. If the spool is transferred to the other direction, the supply and return paths are switched. As soon as the spool is allowed to return to the center or neutral location, the actuator fluid paths become blocked, locking it into place.

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

In order to avoid leaking and tackle the high pressure, tolerances are maintained really tight. Usually, the spools have a clearance with the housing of less than a thousandth of an inch or 25 Ã‚Âµm. To be able to avoid 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.

The position of the spool may be actuated by mechanical levers, hydraulic pilot pressure, or solenoids that push the spool right or left. A seal enables a part of the spool to stick out the housing where it is accessible to the actuator.

The main valve block is normally a stack of off the shelf directional control valves chosen by flow performance and capacity. Some valves are designed to be on-off, while others are designed to be proportional, like in valve position to flow rate proportional. The control valve is among the most sensitive and costly components of a hydraulic circuit.