Hydraulic Control Valve for Forklift

Hydraulic Control Valves for Forklift - The job of directional control valves is to be able to route the fluid to the desired actuator. Normally, these control valves comprise a spool positioned in a housing made either from steel or cast iron. The spool slides to different places 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 location, the supply fluid can 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. If the spool is moved to the opposite direction, the return and supply paths are switched. Once the spool is enabled to return to the neutral or center position, the actuator fluid paths become blocked, locking it into place.

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

In order to avoid leaking and handle the high pressure, tolerances are maintained extremely 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 by a 3-point pattern.

A hydraulic pilot pressure, mechanical levers, or solenoids might actuate or push the spool right or left. A seal enables a portion of the spool to protrude outside the housing where it is easy to get to to the actuator.

The main valve block controls the stack of directional control valves by capacity and flow performance. Some of these valves are designed to be proportional, like a proportional flow rate to the valve position, whereas some valves are designed to be on-off. The control valve is one of the most costly and sensitive components of a hydraulic circuit.