Hydraulic Control Valves for Forklift

Forklift Hydraulic Control Valve - The job of directional control valves is to direct the fluid to the desired actuator. Usually, these control valves consist of a spool positioned inside of a housing created either of cast iron or steel. The spool slides to various places in the housing. Intersecting grooves and channels route the fluid based on the spool's location.

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. If the spool is slid to one side, 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 other side, the return and supply paths are switched. When the spool is enabled to return to the center or neutral position, the actuator fluid paths become blocked, locking it into position.

Typically, directional control valves are built in order to be stackable. They usually have one valve per hydraulic cylinder and a fluid input which supplies all the valves in the stack.

Tolerances are maintained very tightly, to be able to handle the higher pressures and in order to avoid leaking. The spools will often have a clearance inside the housing no less than 25 Ã?â??Ã?Âµm or a thousandth of an inch. To be able to avoid jamming the valve's extremely sensitive parts and distorting the valve, the valve block will be mounted to the machine' frame with a 3-point pattern.

The position of the spool could be actuated by mechanical levers, hydraulic pilot pressure, or solenoids that push the spool left or right. A seal enables a portion of the spool to stick out 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, like a proportional flow rate to the valve position, whereas other valves are designed to be on-off. The control valve is one of the most sensitive and pricey components of a hydraulic circuit.