Hydraulic Control Valve for Forklift

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

The spool has a neutral or central location that is maintained by springs. In this particular position, the supply fluid is blocked or 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 transferred to the other side, the supply and return paths are switched. Once the spool is enabled to return to the center or neutral location, the actuator fluid paths become blocked, locking it into position.

The directional control is typically made to be stackable. They normally have one valve for each hydraulic cylinder and one fluid input which supplies all the valves in the stack.

Tolerances are maintained really tightly, to be able to deal with the higher pressures and so as to avoid leaking. The spools would normally have a clearance within 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 by a 3-point pattern.

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

The main valve block controls the stack of directional control valves by flow performance and capacity. Some 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 amongst the most expensive and sensitive components of a hydraulic circuit.