Hydraulic Control Valve for Forklift

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

The spool is centrally positioned, help in place by 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 routed to an actuator and provides a return path from the actuator to tank. If 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 place.

Normally, directional control valves are made in order to be stackable. They generally have a valve per hydraulic cylinder and a fluid input which supplies all the valves within the stack.

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

The position of the spool could be actuated by hydraulic pilot pressure, mechanical levers, 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 easy to get to to the actuator.

The main valve block is normally a stack of off the shelf directional control valves chosen by flow performance and capacity. Several 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 one of the most costly and sensitive parts of a hydraulic circuit.