Forklift Hydraulic Control Valve

Forklift Hydraulic Control Valves - The control valve is a device which routes the fluid to the actuator. This tool will consist of steel or cast iron spool that is located inside of housing. The spool slides to various positions inside the housing. Intersecting channels and grooves direct the fluid based on the spool's position.

The spool has a central or neutral position which is maintained with springs. In this particular position, the supply fluid is returned to the tank or blocked. When the spool is slid to one direction, 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 side, 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 position.

Typically, directional control valves are made to be able to be stackable. They generally have a valve for each and every hydraulic cylinder and one fluid input which supplies all the valves inside the stack.

Tolerances are maintained very tightly, to be able to deal with the higher pressures and to be able to prevent leaking. The spools would often have a clearance within the housing no less than 25 Ã?â??Ã?Âµm or a thousandth of an inch. 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.

Mechanical levers, solenoids or a hydraulic pilot pressure can actuate or push the spool left or right. A seal enables a part 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 some are designed to be proportional, like in valve position to flow rate proportional. The control valve is among the most sensitive and expensive components of a hydraulic circuit.