Hydraulic Control Valve for Forklift

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

The spool has a central or neutral position that is maintained with springs. In this position, the supply fluid is returned to the tank or blocked. If the spool is slid to a side, the hydraulic fluid is directed to an actuator and provides a return path from the actuator to tank. When the spool is moved to the other side, the supply and return paths are switched. As soon as the spool is enabled to return to the center or neutral place, the actuator fluid paths become blocked, locking it into place.

Usually, directional control valves are built so as to be stackable. They usually have a valve for each and every hydraulic cylinder and one fluid input that supplies all the valves in the stack.

Tolerances are maintained really tightly, in order to tackle the higher pressures and so as to avoid leaking. The spools will often have a clearance within the housing no less than 25 Ã?â??Ã?Âµm or a thousandth of an inch. To be able to prevent distorting the valve block and jamming the valve's extremely sensitive components, the valve block will 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 right or left. A seal enables a portion of the spool to stick out the housing where it is accessible to the actuator.

The main valve block is usually a stack of off the shelf directional control valves chosen by flow performance and capacity. Several valves are designed to be on-off, whereas some are designed to be proportional, like in flow rate proportional to valve position. The control valve is one of the most expensive and sensitive parts of a hydraulic circuit.