Forklift Hydraulic Control Valve

Hydraulic Control Valve for Forklift - The control valve is actually a device that directs the fluid to the actuator. This tool would include cast iron or steel spool that is situated within a housing. The spool slides to various positions within the housing. Intersecting grooves and channels route the fluid based on the spool's location.

The spool has a central or neutral position which is maintained with springs. In this particular location, the supply fluid is blocked or 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. When the spool is allowed to return to the neutral or center position, the actuator fluid paths become blocked, locking it into place.

The directional control is usually designed to be stackable. They normally have a valve for every hydraulic cylinder and a 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 prevent leaking. The spools would usually have a clearance in the housing no less than 25 Ã‚Âµm or a thousandth of an inch. To be able to prevent 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.

Solenoids, a hydraulic pilot pressure or mechanical levers may actuate or push the spool left or right. A seal allows a part of the spool to protrude outside the housing where it is accessible to the actuator.

The main valve block controls the stack of directional control valves by capacity and flow performance. Some of these valves are designed to be proportional, like a proportional flow rate to the valve position, while other valves are designed to be on-off. The control valve is amongst the most sensitive and costly parts of a hydraulic circuit.