

## Forklift Hydraulic Control Valves

Forklift Hydraulic Control Valve - The control valve is a tool which routes the fluid to the actuator. This device will comprise cast iron or steel spool which is situated within a housing. The spool slides to various places within the housing. Intersecting grooves and channels route the fluid based on the spool's position.

The spool has a central or neutral location that is maintained with springs. In this location, the supply fluid is blocked or returned to the tank. When 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 return and supply 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.

Usually, directional control valves are made to be able to be stackable. They normally have a valve per hydraulic cylinder and one fluid input which supplies all the valves in the stack.

Tolerances are maintained extremely tightly, to be able to handle the higher pressures and so as to prevent leaking. The spools would usually have a clearance inside the housing no less than 25 Åµm or a thousandth of an inch. In order to avoid jamming the valve's extremely sensitive components and distorting the valve, the valve block would 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 right or left. A seal enables a part 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 capacity and flow performance. Some 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 among the most pricey and sensitive components of a hydraulic circuit.