

## Hydraulic Control Valve for Forklift

Forklift Hydraulic Control Valves - The control valve is actually a device which directs the fluid to the actuator. This tool will comprise steel or cast iron spool which is positioned inside of housing. The spool slides to different places within the housing. Intersecting grooves and channels direct the fluid based on the spool's position.

The spool is centrally located, held in place by springs. In this particular location, the supply fluid can be blocked and returned to the tank. When 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. If the spool is moved to the opposite direction, the supply and return paths are switched. Once the spool is enabled to return to the center or neutral location, the actuator fluid paths become blocked, locking it into position.

The directional control is normally made to be stackable. They generally have one valve for each and every hydraulic cylinder and a fluid input that supplies all the valves within the stack.

Tolerances are maintained very tightly, so as to tackle the higher pressures and to be able to prevent leaking. The spools would normally have a clearance inside the housing no less than  $25\text{ }\mu\text{m}$  or a thousandth of an inch. So as to avoid jamming the valve's extremely sensitive components and distorting the valve, the valve block will be mounted to the machine's frame by a 3-point pattern.

A hydraulic pilot pressure, mechanical levers, or solenoids might actuate or push the spool left or right. A seal allows 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 usually a stack of off the shelf directional control valves chosen by flow performance and capacity. Some valves are designed to be on-off, while some are designed to be proportional, as in flow rate proportional to valve position. The control valve is among the most sensitive and pricey parts of a hydraulic circuit.