Hydraulic Control Valves for Forklift

Forklift Hydraulic Control Valve - The control valve is a tool which routes the fluid to the actuator. This tool will include cast iron or steel spool that is located within a housing. The spool slides to different positions inside the housing. Intersecting channels and grooves route the fluid based on the spool's location.

The spool is centrally situated, help in place by springs. In this particular position, the supply fluid can be blocked and 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 moved to the opposite direction, the supply and return paths are switched. Once the spool is allowed to return to the center or neutral position, the actuator fluid paths become blocked, locking it into place.

The directional control is usually designed to be stackable. They normally have one valve per hydraulic cylinder and one fluid input which supplies all the valves in the stack.

So as to prevent leaking and tackle the high pressure, tolerances are maintained really tight. Usually, the spools have a clearance with the housing of less than a thousandth of an inch or 25 Âµm. In order to avoid jamming the valve's extremely sensitive parts and distorting the valve, the valve block would be mounted to the machine' frame by a 3-point pattern.

Solenoids, a hydraulic pilot pressure or mechanical levers may actuate or push the spool right or left. A seal allows a portion of the spool to protrude outside 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. Several valves are designed to be on-off, while others are designed to be proportional, like in flow rate proportional to valve position. The control valve is among the most pricey and sensitive components of a hydraulic circuit.