Hydraulic Control Valves for Forklift

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

The spool has a neutral or central location which is maintained by springs. In this location, the supply fluid is returned to the tank or blocked. If the spool is slid to one 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 other side, the supply and return paths are switched. As soon as the spool is allowed to return to the neutral or center position, the actuator fluid paths become blocked, locking it into position.

The directional control is normally intended 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 handle the high pressure, tolerances are maintained extremely tight. Typically, the spools have a clearance with the housing of less than a thousandth of an inch or 25 Ã?â??Ã?Âµm. So as to prevent distorting the valve block and jamming the valve's extremely sensitive components, the valve block will be mounted to the machine' frame with 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 portion of the spool to stick out the housing where it is accessible to the actuator.

The main valve block is generally a stack of off the shelf directional control valves chosen by flow performance and capacity. Several 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 expensive components of a hydraulic circuit.