Hydraulic Control Valve for Forklift

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

The spool is centrally located, help in place by springs. In this particular location, the supply fluid could be blocked and returned to the tank. If the spool is slid to a direction, 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. Once the spool is allowed to return to the center or neutral place, the actuator fluid paths become blocked, locking it into position.

Typically, directional control valves are made so as to be stackable. They usually have one valve for each and every hydraulic cylinder and one fluid input that supplies all the valves inside the stack.

Tolerances are maintained really tightly, to be able to deal with the higher pressures and in order to avoid leaking. The spools would often have a clearance within the housing no less than 25 Ã?â??Ã?Âµm or a thousandth of an inch. So as to avoid distorting the valve block and jamming the valve's extremely sensitive parts, the valve block will be mounted to the machine' frame by a 3-point pattern.

The position of the spool can be actuated by mechanical levers, hydraulic pilot pressure, or solenoids which push the spool right or left. 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 normally 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, like in valve position to flow rate proportional. The control valve is one of the most expensive and sensitive components of a hydraulic circuit.