Hydraulic Control Valve for Forklift

Forklift Hydraulic Control Valves - The control valve is actually a tool that directs the fluid to the actuator. This device would include cast iron or steel spool that is situated within a housing. The spool slides to different positions in the housing. Intersecting channels and grooves direct the fluid based on the spool's location.

The spool has a central or neutral position which is maintained with springs. In this particular position, the supply fluid is blocked or returned to the tank. If the spool is slid to one 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 return and supply 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.

The directional control is typically made to be stackable. They usually have a valve per hydraulic cylinder and a fluid input that supplies all the valves within the stack.

In order to prevent leaking and deal with 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 Ã?â??Ã?Âµm. In order to prevent distorting the valve block and jamming the valve's extremely sensitive components, the valve block would be mounted to the machine' frame by a 3-point pattern.

The location of the spool could be actuated by mechanical levers, hydraulic pilot pressure, or solenoids that push the spool right or left. 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 controls the stack of directional control valves by flow performance and capacity. Several of these valves are designed to be proportional, as a valve position to the proportional flow rate, whereas other valves are designed to be on-off. The control valve is among the most sensitive and expensive parts of a hydraulic circuit.