Forklift Hydraulic Control Valve

Forklift Hydraulic Control Valves - The job of directional control valves is to direct the fluid to the desired actuator. Usually, these control valves consist of a spool positioned in a housing created either from steel or cast iron. The spool slides to various places in the housing. Intersecting channels and grooves route the fluid based on the spool's position.

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

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

In order to avoid leaking and deal with the high pressure, tolerances are maintained extremely tight. Normally, the spools have a clearance with the housing of less than a thousandth of an inch or 25 Ã?â??Ã?Âµm. To be able to avoid distorting the valve block and jamming the valve's extremely sensitive components, the valve block will be mounted to the machine' frame by a 3-point pattern.

A hydraulic pilot pressure, mechanical levers, or solenoids could actuate or push the spool left or right. A seal enables 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, like a valve position to the proportional flow rate, whereas some valves are designed to be on-off. The control valve is one of the most sensitive and pricey parts of a hydraulic circuit.