Forklift Hydraulic Control Valves

Forklift Hydraulic Control Valve - The job of directional control valves is to be able to direct the fluid to the desired actuator. Generally, these control valves comprise a spool located in a housing made either of cast iron or steel. The spool slides to different locations within the housing. Intersecting grooves and channels route the fluid based on the spool's location.

The spool is centrally located, help in place with springs. In this particular location, the supply fluid can be blocked and returned to the tank. When 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. When the spool is transferred to the other direction, the supply and return paths are switched. When the spool is allowed to return to the center or neutral location, the actuator fluid paths become blocked, locking it into place.

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

Tolerances are maintained really tightly, so as to tackle the higher pressures and to be able to avoid leaking. The spools will usually have a clearance inside the housing no less than 25 Ã?â??Ã?Âµm or a thousandth of an inch. So as 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 might actuate or push the spool right or left. A seal enables a portion of the spool to protrude outside the housing where it is accessible to the actuator.

The main valve block controls the stack of directional control valves by flow performance and capacity. Some of these valves are designed to be proportional, like a proportional flow rate to the valve position, while some valves are designed to be on-off. The control valve is one of the most sensitive and pricey components of a hydraulic circuit.