Hydraulic Control Valves for Forklift

Hydraulic Control Valves for Forklift - The job of directional control valves is to be able to direct the fluid to the desired actuator. Normally, these control valves consist of a spool located within a housing created either from steel or cast iron. The spool slides to different places within the housing. Intersecting grooves and channels direct the fluid based on the spool's location.

The spool has a neutral or central location which is maintained by springs. In this particular location, the supply fluid is blocked or 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. If the spool is moved to the opposite direction, the supply and return paths are switched. As soon as the spool is allowed to return to the neutral or center location, the actuator fluid paths become blocked, locking it into place.

Usually, directional control valves are designed to be able to be stackable. They normally have a valve for each hydraulic cylinder and a fluid input that supplies all the valves inside the stack.

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

A hydraulic pilot pressure, mechanical levers, or solenoids can actuate or push the spool right or left. 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 capacity and flow performance. Some of these valves are designed to be proportional, like a proportional flow rate to the valve position, while other valves are designed to be on-off. The control valve is amongst the most pricey and sensitive components of a hydraulic circuit.