Forklift Hydraulic Control Valves

Forklift Hydraulic Control Valves - The control valve is a device that directs the fluid to the actuator. This device would comprise cast iron or steel spool that is located in a housing. The spool slides to various positions in the housing. Intersecting channels and grooves direct the fluid based on the spool's position.

The spool is centrally located, help in place with springs. In this particular position, the supply fluid could be blocked and returned to the tank. When the spool is slid to one direction, the hydraulic fluid is routed to an actuator and provides a return path from the actuator to tank. When 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 location, the actuator fluid paths become blocked, locking it into place.

The directional control is normally intended to be stackable. They generally have a valve for each and every hydraulic cylinder and a fluid input which supplies all the valves inside the stack.

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

The position of the spool could be actuated by hydraulic pilot pressure, mechanical levers, or solenoids that push the spool left or right. A seal allows a part of the spool to protrude outside 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, as a proportional flow rate to the valve position, whereas some valves are designed to be on-off. The control valve is one of the most sensitive and expensive components of a hydraulic circuit.