Forklift Hydraulic Control Valve

Forklift Hydraulic Control Valve - The control valve is actually a device which directs the fluid to the actuator. This device would comprise cast iron or steel spool which is situated in a housing. The spool slides to various places in the housing. Intersecting channels and grooves route the fluid based on the spool's position.

The spool is centrally situated, help in place by springs. In this particular location, the supply fluid could be blocked and returned to the tank. 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. When the spool is moved to the other side, the return and supply paths are switched. When the spool is allowed to return to the neutral or center location, the actuator fluid paths become blocked, locking it into place.

The directional control is typically designed to be stackable. They generally have one valve for every hydraulic cylinder and a fluid input that supplies all the valves within the stack.

To be able to avoid 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 Âµm. In order to prevent 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.

The position of the spool can be actuated by hydraulic pilot pressure, mechanical levers, or solenoids that push the spool left or right. A seal enables a part of the spool to stick out 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. Several of these valves are designed to be proportional, like a valve position to the proportional flow rate, while some valves are designed to be on-off. The control valve is amongst the most pricey and sensitive components of a hydraulic circuit.