

Forklift Control Valve

Forklift Control Valve - The earliest mechanized control systems were being used more than two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock constructed in the third century is considered to be the very first feedback control device on record. This clock kept time by means of regulating the water level within a vessel and the water flow from the vessel. A popular design, this successful equipment was being made in a similar manner in Baghdad when the Mongols captured the city in 1258 A.D.

Through history, different automatic equipments have been utilized in order to accomplish specific tasks or to simply entertain. A common European style in the seventeenth and eighteenth centuries was the automata. This particular tool was an example of "open-loop" control, comprising dancing figures that would repeat the same job repeatedly.

Feedback or likewise known as "closed-loop" automatic control equipments comprise the temperature regulator found on a furnace. This was actually developed in 1620 and accredited to Drebbel. Another example is the centrifugal fly ball governor developed in 1788 by James Watt and used for regulating steam engine speed.

The Maxwell electromagnetic field equations, discovered by J.C. Maxwell wrote a paper in the year 1868 "On Governors," which was able to explain the exhibited by the fly ball governor. In order to describe the control system, he made use of differential equations. This paper demonstrated the usefulness and importance of mathematical models and methods in relation to comprehending complicated phenomena. It likewise signaled the beginning of mathematical control and systems theory. Previous elements of control theory had appeared earlier but not as dramatically and as convincingly as in Maxwell's study.

In the next one hundred years control theory made huge strides. New developments in mathematical methods made it possible to more precisely control considerably more dynamic systems than the original fly ball governor. These updated techniques include different developments in optimal control in the 1950s and 1960s, followed by progress in stochastic, robust, optimal and adaptive control techniques in the 1970s and the 1980s.

New applications and technology of control methodology has helped make cleaner engines, with more efficient and cleaner methods helped make communication satellites and even traveling in space possible.

At first, control engineering was performed as a part of mechanical engineering. What's more, control theory was firstly studied as part of electrical engineering since electrical circuits could often be simply described with control theory methods. Nowadays, control engineering has emerged as a unique discipline.

The first controls had current outputs represented with a voltage control input. To implement electrical control systems, the correct technology was unavailable then, the designers were left with less efficient systems and the choice of slow responding mechanical systems. The governor is a very efficient mechanical controller that is still normally used by some hydro factories. In the long run, process control systems became accessible prior to modern power electronics. These process controls systems were normally used in industrial applications and were devised by mechanical engineers utilizing hydraulic and pneumatic control equipments, lots of which are still being used at present.