

Forklift Control Valve

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

Through history, various automatic equipments have been utilized in order to simply entertain or to accomplish specific tasks. A common European style through the seventeenth and eighteenth centuries was the automata. This particular device was an example of "open-loop" control, comprising dancing figures which will repeat the same task again and again.

Closed loop or feedback controlled equipments include the temperature regulator common on furnaces. This was developed during the year 1620 and attributed to Drebbel. Another example is the centrifugal fly ball governor developed in 1788 by James Watt and used for regulating the speed of steam engines.

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

Within the next 100 years control theory made huge strides. New developments in mathematical methods made it possible to more accurately control considerably more dynamic systems than the first fly ball governor. These updated methods comprise different developments in optimal control during the 1950s and 1960s, followed by development in robust, stochastic, optimal and adaptive control methods during the 1970s and the 1980s.

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

In the beginning, control engineering was performed as a part of mechanical engineering. As well, control theory was firstly studied as part of electrical engineering as electrical circuits can often be simply explained with control theory techniques. Today, control engineering has emerged as a unique discipline.

The very first controls had current outputs represented with a voltage control input. To be able to implement electrical control systems, the proper technology was unavailable at that time, the designers were left with less efficient systems and the alternative of slow responding mechanical systems. The governor is a really efficient mechanical controller that is still often utilized by some hydro plants. Eventually, process control systems became obtainable before modern power electronics. These process control systems were usually utilized in industrial applications and were devised by mechanical engineers utilizing pneumatic and hydraulic control equipments, lots of which are still being used nowadays.