

Forklift Control Valves

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 constructed in the third century is considered to be the very first feedback control tool on record. This particular clock kept time by regulating the water level inside a vessel and the water flow from the vessel. A popular style, this successful device was being made in the same way in Baghdad when the Mongols captured the city in 1258 A.D.

All through history, a variety of automatic machines have been utilized in order to accomplish specific tasks or to simply entertain. A common European style all through the 17th and 18th centuries was the automata. This piece of equipment was an example of "open-loop" control, comprising dancing figures which will repeat the same job over and over.

Feedback or likewise known as "closed-loop" automatic control machines comprise the temperature regulator seen on a furnace. This was actually developed in 1620 and attributed to Drebbel. One more example is the centrifugal fly ball governor developed during 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 1868 "On Governors," which was able to describe the exhibited by the fly ball governor. So as to explain the control system, he used differential equations. This paper exhibited the usefulness and importance of mathematical methods and models in relation to understanding complicated phenomena. It also signaled the start of systems theory and mathematical control. Previous elements of control theory had appeared earlier but not as dramatically and as convincingly as in Maxwell's analysis.

New developments in mathematical techniques and new control theories made it possible to more precisely control more dynamic systems compared to the original model fly ball governor. These updated techniques include various developments in optimal control in the 1950s and 1960s, followed by development in stochastic, robust, adaptive and optimal control methods in the 1970s and the 1980s.

New applications and technology of control methodology have helped make cleaner auto engines, more efficient and cleaner chemical methods and have helped make communication and space travel satellites possible.

Originally, control engineering was performed as just a part of mechanical engineering. Control theories were initially studied with electrical engineering since electrical circuits can simply be explained with control theory techniques. Currently, control engineering has emerged as a unique practice.

The first control relationships had a current output which was represented with a voltage control input. As the correct technology to implement electrical control systems was unavailable at that moment, designers left with the alternative of slow responding mechanical systems and less efficient systems. The governor is a very efficient mechanical controller which is still usually utilized by some hydro plants. Eventually, process control systems became available previous to modern power electronics. These process control systems were normally utilized in industrial applications and were devised by mechanical engineers using hydraulic and pneumatic control devices, lots of which are still being used at present.