

Forklift Control Valves

Forklift Control Valve - Automatic control systems were first created over two thousand years ago. The ancient water clock of Ktesibios in Alexandria Egypt dating to the 3rd century B.C. is thought to be the first feedback control equipment on record. This particular clock kept time by regulating the water level in a vessel and the water flow from the vessel. A common design, this successful device was being made in the same manner in Baghdad when the Mongols captured the city in 1258 A.D.

Through history, a variety of automatic machines have been utilized so as to simply entertain or to accomplish specific tasks. A popular European design all through the seventeenth and eighteenth centuries was the automata. This piece of equipment was an example of "open-loop" control, featuring dancing figures that will repeat the same task again and again.

Feedback or "closed-loop" automatic control machines consist of the temperature regulator seen on a furnace. This was actually developed in the year 1620 and attributed to Drebbel. Another example is the centrifugal fly ball governor developed during 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," which was able to explaining the exhibited by the fly ball governor. To be able 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 complex phenomena. It also signaled the beginning of systems theory and mathematical control. Previous elements of control theory had appeared earlier by not as dramatically and as convincingly as in Maxwell's analysis.

Within the following one hundred years control theory made huge strides. New developments in mathematical methods made it possible to more accurately control significantly more dynamic systems compared to the original fly ball governor. These updated techniques include different developments in optimal control in the 1950s and 1960s, followed by development in robust, stochastic, adaptive and optimal control methods during the 1970s and the 1980s.

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

In the beginning, control engineering was performed as just a part of mechanical engineering. Control theories were firstly studied with electrical engineering because electrical circuits could simply be described with control theory techniques. At present, control engineering has emerged as a unique discipline.

The first control partnerships had a current output that was represented with a voltage control input. As the proper technology to be able to implement electrical control systems was unavailable at that time, designers left with the choice of slow responding mechanical systems and less efficient systems. The governor is a very efficient mechanical controller that is still usually utilized by some hydro factories. Eventually, process control systems became obtainable previous to modern power electronics. These process controls systems were normally utilized in industrial applications and were devised by mechanical engineers making use of pneumatic and hydraulic control equipments, many of which are still being used these days.