Forklift Control Valves

Forklift Control Valve - The first automated control systems were being used over two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock made in the third century is believed to be the very first feedback control machine on record. This particular clock kept time by means of regulating the water level within a vessel and the water flow from the vessel. A common design, this successful device was being made in the same fashion in Baghdad when the Mongols captured the city in 1258 A.D.

Throughout history, different automatic tools have been utilized so as to accomplish specific tasks or to simply entertain. A common European design throughout 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 over and over.

Feedback or "closed-loop" automatic control devices consist of the temperature regulator found on a furnace. This was developed during 1620 and accredited to Drebbel. One more example is the centrifugal fly ball governor developed during the year 1788 by James Watt and utilized 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 explaining the exhibited by the fly ball governor. To explain the control system, he made use of differential equations. This paper demonstrated the importance and helpfulness of mathematical models and methods in relation to understanding complex phenomena. It also signaled the beginning of systems theory and mathematical control. Previous elements of control theory had appeared before by not as dramatically and as convincingly as in Maxwell's analysis.

In the next one hundred years control theory made huge strides. New developments in mathematical methods made it possible to more accurately control significantly more dynamic systems as opposed to the first fly ball governor. These updated methods consist of various developments in optimal control during the 1950s and 1960s, followed by development in stochastic, robust, adaptive and optimal control techniques during the 1970s and the 1980s.

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

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

The first controls had current outputs represented with a voltage control input. So as to implement electrical control systems, the correct technology was unavailable then, the designers were left with less efficient systems and the alternative of slow responding mechanical systems. The governor is a really effective mechanical controller which is still normally used by some hydro plants. In the long run, process control systems became offered before modern power electronics. These process controls systems were normally used in industrial applications and were devised by mechanical engineers using hydraulic and pneumatic control machines, lots of which are still being utilized nowadays.