Forklift Control Valves

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

Different automatic tools through history, have been utilized to complete particular jobs. A common desing used throughout the 17th and 18th centuries in Europe, was the automata. This particular machine was an example of "open-loop" control, comprising dancing figures which would repeat the same job again and again.

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

J.C. Maxwell, who discovered the Maxwell electromagnetic field equations, wrote a paper in the year 1868 "On Governors," that could describe the instabilities demonstrated by the fly ball governor. He made use of differential equations to describe the control system. This paper demonstrated the usefulness and importance of mathematical methods and models in relation to understanding complicated phenomena. It also signaled the start of mathematical control and systems theory. Previous elements of control theory had appeared earlier by not as dramatically and as convincingly as in Maxwell's analysis.

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

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

Initially, control engineering was performed as a part of mechanical engineering. Additionally, control theory was initially studied as part of electrical engineering because electrical circuits can often be simply explained with control theory techniques. Today, control engineering has emerged as a unique practice.

The first control relationships had a current output which was represented with a voltage control input. Since the proper technology to be able to implement electrical control systems was unavailable then, designers left with the choice of slow responding mechanical systems and less efficient systems. The governor is a really effective mechanical controller that is still often utilized by various hydro plants. In the long run, process control systems became offered prior to modern power electronics. These process controls systems were often used in industrial applications and were devised by mechanical engineers utilizing hydraulic and pneumatic control machines, many of which are still being used today.