Control Valves for Forklift

Control Valves for Forklift - The first automated control systems were being utilized over two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock made 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 within a vessel and the water flow from the vessel. A common style, this successful equipment was being made in a similar way in Baghdad when the Mongols captured the city in 1258 A.D.

Through history, different automatic devices have been used in order to accomplish specific tasks or to simply entertain. A popular European design all through the seventeenth and eighteenth centuries was the automata. This particular machine was an example of "open-loop" control, comprising dancing figures that would repeat the same job over and over.

Closed loop or otherwise called feedback controlled machines comprise the temperature regulator common on furnaces. This was developed in the year 1620 and accredited to Drebbel. Another example is the centrifugal fly ball governor developed during 1788 by James Watt and utilized for regulating the speed of steam engines.

The Maxwell electromagnetic field equations, discovered by J.C. Maxwell wrote a paper in 1868 "On Governors," that was able to explaining the exhibited by the fly ball governor. To be able to explain the control system, he made use of differential equations. This paper demonstrated the importance and helpfulness of mathematical methods and models in relation to understanding complicated phenomena. It also signaled the beginning of mathematical control and systems theory. Previous elements of control theory had appeared before 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 accurately control more dynamic systems as opposed to the first model fly ball governor. These updated techniques comprise various developments in optimal control in the 1950s and 1960s, followed by progress in stochastic, robust, optimal and adaptive control methods in the 1970s and the 1980s.

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

Primarily, control engineering was carried out as a part of mechanical engineering. Moreover, control theory was initially studied as part of electrical engineering since electrical circuits could often be simply explained with control theory techniques. At present, control engineering has emerged as a unique discipline.

The very first control relationships had a current output which was represented with a voltage control input. Since the proper technology so as 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 very effective mechanical controller that is still often utilized by some hydro plants. Eventually, process control systems became accessible before modern power electronics. These process controls systems were normally utilized in industrial applications and were devised by mechanical engineers making use of hydraulic and pneumatic control machines, a lot of which are still being utilized at present.