Control Valve for Forklift

Forklift Control Valve - The first automatic control systems were being used over two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock built in the 3rd century is considered to be the very first feedback control machine on record. This particular clock kept time by way of regulating the water level inside a vessel and the water flow from the vessel. A popular 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 devices have been utilized in order to accomplish specific tasks or to simply entertain. A popular European style in the seventeenth and eighteenth centuries was the automata. This particular tool was an example of "open-loop" control, consisting dancing figures that would repeat the same job again and again.

Feedback or "closed-loop" automatic control tools include the temperature regulator found on a furnace. This was actually developed in the year 1620 and accredited to Drebbel. One more example is the centrifugal fly ball governor developed during 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," that was able to explaining the exhibited by the fly ball governor. To explain the control system, he utilized differential equations. This paper exhibited the importance and helpfulness of mathematical models and methods in relation to comprehending complex phenomena. It even signaled the start of systems theory and mathematical control. Previous elements of control theory had appeared earlier by not as convincingly and as dramatically as in Maxwell's analysis.

In the following 100 years control theory made huge strides. New developments in mathematical techniques made it feasible to more precisely control considerably more dynamic systems as opposed to the first fly ball governor. These updated techniques comprise various developments in optimal control during the 1950s and 1960s, followed by development in stochastic, robust, optimal and adaptive control methods during the 1970s and the 1980s.

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

In the beginning, control engineering was performed as a part of mechanical engineering. What's more, control theory was firstly studied as part of electrical engineering because electrical circuits could often be simply explained with control theory methods. 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. In view of the fact that the proper technology so as to implement electrical control systems was unavailable at that time, designers left with the option of slow responding mechanical systems and less efficient systems. The governor is a very efficient mechanical controller that is still often used by some hydro plants. In the long run, process control systems became offered before modern power electronics. These process controls systems were usually utilized in industrial applications and were devised by mechanical engineers making use of hydraulic and pneumatic control devices, lots of which are still being used these days.