Control Valve for Forklift

Forklift Control Valves - The first automatic control systems were being utilized more that 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 clock kept time by means of regulating the water level in a vessel and the water flow from the vessel. A common style, this successful tool was being made in a similar fashion in Baghdad when the Mongols captured the city in 1258 A.D.

Different automatic equipment throughout history, have been utilized to be able to complete particular jobs. A common desing utilized throughout the 17th and 18th centuries in Europe, was the automata. This machine was an example of "open-loop" control, consisting dancing figures that would repeat the same job repeatedly.

Feedback or also known as "closed-loop" automatic control machines include the temperature regulator found on a furnace. This was developed during the year 1620 and accredited to Drebbel. Another example is the centrifugal fly ball governor developed in the year 1788 by James Watt and utilized for regulating steam engine speed.

J.C. Maxwell, who discovered the Maxwell electromagnetic field equations, wrote a paper in 1868 "On Governors," that could clarify the instabilities exhibited by the fly ball governor. He used differential equations to explain the control system. This paper demonstrated the usefulness and importance of mathematical models and methods in relation to understanding complicated phenomena. It even 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.

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

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

Initially, control engineering was carried out as a part of mechanical engineering. Additionally, control theory was firstly studied as part of electrical engineering for the reason that electrical circuits can 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. Because the proper technology in order to implement electrical control systems was unavailable at that moment, 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 various hydro factories. Eventually, process control systems became offered previous to 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, many of which are still being used today.