Control Valves for Forklift

Control Valve for Forklift - The earliest automatic control systems were being utilized over two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock made in the 3rd century is believed 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 style, this successful equipment was being made in the same fashion in Baghdad when the Mongols captured the city in 1258 A.D.

Various automatic tools all through history, have been used in order to complete specific tasks. A popular style used in the 17th and 18th centuries in Europe, was the automata. This tool was an example of "open-loop" control, consisting dancing figures which will repeat the same job repeatedly.

Closed loop or also called feedback controlled devices include the temperature regulator common on furnaces. This was developed during 1620 and attributed 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," which was able to describe the instabilities demonstrated by the fly ball governor. He made use of differential equations in order to explain the control system. This paper demonstrated the usefulness and importance of mathematical methods and models in relation to comprehending 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 study.

In the next one hundred years control theory made huge strides. New developments in mathematical techniques made it feasible to more accurately control significantly more dynamic systems than the original fly ball governor. These updated methods include different developments in optimal control during the 1950s and 1960s, followed by development in stochastic, robust, optimal and adaptive control techniques during the 1970s and the 1980s.

New applications and technology of control methodology have helped produce 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 just a part of mechanical engineering. Control theories were initially studied with electrical engineering as electrical circuits can simply be described with control theory techniques. Currently, 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 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 usually utilized by some hydro plants. In the long run, process control systems became available prior 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 devices, lots of which are still being used these days.