Forklift Control Valve

Forklift Control Valve - The first mechanized control systems were being utilized 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 clock kept time by regulating the water level inside a vessel and the water flow from the vessel. A common design, this successful device was being made in the same way in Baghdad when the Mongols captured the city in 1258 A.D.

All through history, a variety of automatic devices have been utilized to accomplish specific tasks or to simply entertain. A common European style through the 17th and 18th 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 also known as "closed-loop" automatic control equipments consist of the temperature regulator found on a furnace. This was actually developed during 1620 and attributed to Drebbel. Another example is the centrifugal fly ball governor developed during 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 the year 1868 "On Governors," that could clarify the instabilities demonstrated by the fly ball governor. He made use of differential equations so as to describe the control system. This paper demonstrated the usefulness and importance of mathematical models and methods in relation to comprehending complicated phenomena. It even signaled the start of mathematical control and systems theory. Previous elements of control theory had appeared before by not as convincingly and as dramatically as in Maxwell's analysis.

Within the following one hundred years control theory made huge strides. New developments in mathematical techniques made it possible to more accurately control significantly more dynamic systems compared to the first fly ball governor. These updated techniques include various developments in optimal control during the 1950s and 1960s, followed by advancement in robust, stochastic, adaptive and optimal control methods in the 1970s and the 1980s.

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

In the beginning, control engineering was practiced as a part of mechanical engineering. As well, control theory was initially studied as part of electrical engineering since electrical circuits can often be simply explained with control theory techniques. Nowadays, control engineering has emerged as a unique practice.

The very first control relationships had a current output that was represented with a voltage control input. As the right technology in order 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 normally 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 equipments, many of which are still being utilized today.