Forklift Control Valves

Forklift Control Valve - The earliest 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 thought to be the first feedback control device on record. This particular clock kept time by means of regulating the water level inside a vessel and the water flow from the vessel. A common design, this successful equipment was being made in a similar manner in Baghdad when the Mongols captured the city in 1258 A.D.

A variety of automatic machines throughout history, have been utilized to accomplish certain tasks. A common style utilized during the seventeenth and eighteenth centuries in Europe, was the automata. This particular device was an example of "open-loop" control, featuring dancing figures that would repeat the same job again and again.

Closed loop or feedback controlled devices consist of the temperature regulator common on furnaces. This was developed during 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," which could explain the instabilities demonstrated by the fly ball governor. He made use of differential equations in order to describe 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 start of mathematical control and systems theory. Previous elements of control theory had appeared earlier by not as convincingly and as dramatically as in Maxwell's study.

New developments in mathematical techniques and new control theories made it possible to more accurately control more dynamic systems as opposed to the first model fly ball governor. These updated techniques consist of different 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 cleaner and more efficient processes helped make communication satellites and even traveling in space possible.

Initially, control engineering was practiced as just a part of mechanical engineering. Control theories were originally studied with electrical engineering in view of the fact that electrical circuits can simply be explained with control theory techniques. Nowadays, control engineering has emerged as a unique discipline.

The first controls had current outputs represented with a voltage control input. In order to implement electrical control systems, the correct technology was unavailable at that moment, the designers were left with less efficient systems and the alternative of slow responding mechanical systems. The governor is a very efficient mechanical controller that is still normally utilized by various hydro plants. In the long run, process control systems became available previous to modern power electronics. These process controls systems were often utilized in industrial applications and were devised by mechanical engineers utilizing pneumatic and hydraulic control devices, lots of which are still being used at present.