

Control Valves for Forklift

Forklift Control Valve - Automatic control systems were first created over two thousand years ago. The ancient water clock of Ktesibios in Alexandria Egypt dating to the 3rd century B.C. is thought to be the first feedback control equipment on record. This particular clock kept time by way of regulating the water level in a vessel and the water flow from the vessel. A popular design, this successful machine was being made in the same fashion in Baghdad when the Mongols captured the city in 1258 A.D.

Various automatic devices throughout history, have been utilized to complete particular jobs. A common desing utilized all through the seventeenth and eighteenth centuries in Europe, was the automata. This tool was an example of "open-loop" control, featuring dancing figures which would repeat the same job again and again.

Feedback or otherwise known as "closed-loop" automatic control devices consist of the temperature regulator seen on a furnace. This was developed during the year 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 the speed of steam engines.

J.C. Maxwell, who discovered the Maxwell electromagnetic field equations, wrote a paper in 1868 "On Governors," which was able to describe the instabilities demonstrated by the fly ball governor. He utilized differential equations to be able to describe the control system. This paper exhibited the usefulness and importance of mathematical models and methods in relation to understanding complex phenomena. It even signaled the beginning 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 one hundred years control theory made huge strides. New developments in mathematical techniques made it possible to more precisely control significantly more dynamic systems compared to the first fly ball governor. These updated methods consist of various developments in optimal control in the 1950s and 1960s, followed by advancement in stochastic, robust, optimal and adaptive control methods in 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 space travel and communication satellites possible.

At first, control engineering was carried out as just a part of mechanical engineering. Control theories were initially studied with electrical engineering in view of the fact that electrical circuits can simply be described with control theory methods. Today, control engineering has emerged as a unique discipline.

The very first controls had current outputs represented with a voltage control input. So as to implement electrical control systems, the proper technology was unavailable then, the designers were left with less efficient systems and the alternative of slow responding mechanical systems. The governor is a really effective mechanical controller which is still normally used by several hydro plants. Eventually, process control systems became obtainable previous to modern power electronics. These process controls systems were often used in industrial applications and were devised by mechanical engineers making use of pneumatic and hydraulic control equipments, lots of which are still being used at present.