

## Control Valve for Forklift

Forklift Control Valves - Automatic control systems were first developed over two thousand years ago. The ancient water clock of Ktesibios in Alexandria Egypt dating to the 3rd century B.C. is believed to be the very first feedback control tool 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 common design, this successful equipment was being made in the same fashion in Baghdad when the Mongols captured the city in 1258 A.D.

Through history, different automatic machines have been used in order to simply entertain or to accomplish specific tasks. A common European design during the 17th and 18th centuries was the automata. This particular piece of equipment was an example of "open-loop" control, comprising dancing figures that would repeat the same job over and over.

Feedback or otherwise known as "closed-loop" automatic control machines consist of the temperature regulator seen on a furnace. This was actually developed in the year 1620 and accredited to Drebbel. One more example is the centrifugal fly ball governor developed during 1788 by James Watt and utilized for regulating the speed of steam engines.

The Maxwell electromagnetic field equations, discovered by J.C. Maxwell wrote a paper in the year 1868 "On Governors," which was able to explaining the exhibited by the fly ball governor. In order to describe the control system, he used differential equations. This paper exhibited the importance and helpfulness of mathematical models and methods in relation to comprehending complex phenomena. It also signaled the beginning 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 analysis.

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

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

At first, control engineering was performed as just a part of mechanical engineering. Control theories were at first studied with electrical engineering in view of the fact that electrical circuits could simply be explained with control theory methods. Today, control engineering has emerged as a unique practice.

The first controls had current outputs represented with a voltage control input. In order to implement electrical control systems, the proper technology was unavailable then, the designers were left with less efficient systems and the option of slow responding mechanical systems. The governor is a very efficient mechanical controller which is still usually utilized by various hydro plants. Ultimately, process control systems became accessible previous to modern power electronics. These process controls systems were usually used in industrial applications and were devised by mechanical engineers utilizing hydraulic and pneumatic control machines, many of which are still being used today.