

## Control Valves for Forklift

Control Valve for Forklift - Automatic control systems were primarily established more than two thousand years ago. The ancient water clock of Ktesibios in Alexandria Egypt dating to the third century B.C. is believed to be the first feedback control device on record. This clock kept time by means of regulating the water level within a vessel and the water flow from the vessel. A common design, this successful machine was being made in a similar way in Baghdad when the Mongols captured the city in 1258 A.D.

Through history, various automatic equipments have been utilized to accomplish specific tasks or to simply entertain. A common European design during the 17th and 18th centuries was the automata. This particular device was an example of "open-loop" control, consisting dancing figures which will repeat the same task repeatedly.

Closed loop or also called feedback controlled machines include the temperature regulator common on furnaces. This was actually developed in 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.

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. To be able to explain the control system, he made use of differential equations. This paper exhibited the importance and helpfulness of mathematical models and methods in relation to understanding complicated phenomena. It also 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.

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

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

At first, control engineering was performed as a part of mechanical engineering. Additionally, control theory was initially studied as part of electrical engineering as electrical circuits could often be simply described with control theory methods. Today, control engineering has emerged as a unique discipline.

The first control partnerships had a current output that was represented with a voltage control input. For the reason that the proper technology to implement electrical control systems was unavailable at that moment, designers left with the choice of slow responding mechanical systems and less efficient systems. The governor is a very efficient mechanical controller which is still normally utilized by various hydro plants. Eventually, process control systems became offered prior to modern power electronics. These process controls systems were usually utilized in industrial applications and were devised by mechanical engineers utilizing pneumatic and hydraulic control machines, many of which are still being utilized today.