

## Control Valves for Forklift

Control Valve for Forklift - Automatic control systems were first established more than two thousand years ago. The ancient water clock of Ktesibios in Alexandria Egypt dating to the third century B.C. is considered to be the very 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 popular style, this successful tool was being made in a similar way in Baghdad when the Mongols captured the city in 1258 A.D.

Through history, a variety of automatic equipments have been used in order to accomplish specific tasks or to simply entertain. A common European design in the seventeenth and eighteenth centuries was the automata. This particular machine was an example of "open-loop" control, featuring dancing figures which would repeat the same task again and again.

Closed loop or likewise called feedback controlled equipments consist of the temperature regulator common on furnaces. This was actually developed in the year 1620 and accredited 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," that could describe the instabilities exhibited by the fly ball governor. He made use of differential equations to be able to describe the control system. This paper demonstrated 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 but not as dramatically and as convincingly as in Maxwell's analysis.

New developments in mathematical techniques and new control theories made it possible to more accurately control more dynamic systems compared to the initial model fly ball governor. These updated techniques comprise various developments in optimal control during 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 has helped make cleaner engines, with more efficient and cleaner methods helped make communication satellites and even traveling in space possible.

Initially, control engineering was performed as a part of mechanical engineering. Also, control theory was first studied as part of electrical engineering since electrical circuits can often be simply explained with control theory methods. Now, control engineering has emerged as a unique discipline.

The very first controls had current outputs represented with a voltage control input. To implement electrical control systems, the right technology was unavailable at that time, the designers were left with less efficient systems and the choice of slow responding mechanical systems. The governor is a very effective mechanical controller that is still normally used by some hydro plants. Eventually, process control systems became offered before modern power electronics. These process controls systems were usually utilized in industrial applications and were devised by mechanical engineers utilizing pneumatic and hydraulic control equipments, lots of which are still being utilized at present.