

## Forklift Control Valve

Control Valves 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 considered 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 style, this successful tool was being made in a similar manner in Baghdad when the Mongols captured the city in 1258 A.D.

A variety of automatic equipment throughout history, have been used to accomplish certain tasks. A common style utilized through the 17th and 18th centuries in Europe, was the automata. This tool was an example of "open-loop" control, consisting dancing figures which will repeat the same task repeatedly.

Feedback or otherwise known as "closed-loop" automatic control machines consist of the temperature regulator found on a furnace. This was actually developed during 1620 and attributed to Drebbel. Another example is the centrifugal fly ball governor developed during 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 utilized differential equations in order to explain the control system. This paper demonstrated the importance and helpfulness of mathematical models and methods in relation to comprehending 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.

Within the next 100 years control theory made huge strides. New developments in mathematical methods made it feasible to more accurately control significantly more dynamic systems compared to the original fly ball governor. These updated methods comprise different developments in optimal control in the 1950s and 1960s, followed by progress in robust, stochastic, 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 methods and have helped make communication and space travel satellites possible.

Originally, control engineering was practiced as just a part of mechanical engineering. Control theories were at first studied with electrical engineering since electrical circuits could simply be described with control theory techniques. Currently, control engineering has emerged as a unique discipline.

The first control relationships had a current output that was represented with a voltage control input. In view of the fact that the proper technology so as to implement electrical control systems was unavailable then, designers left with the alternative of slow responding mechanical systems and less efficient systems. The governor is a really efficient mechanical controller which is still normally used by various hydro factories. Eventually, process control systems became obtainable prior to modern power electronics. These process controls systems were normally used in industrial applications and were devised by mechanical engineers using pneumatic and hydraulic control machines, lots of which are still being used today.