

Control Valve for Forklift

Forklift Control Valve - Automatic control systems were initially created 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 very first feedback control equipment on record. This clock kept time by way of regulating the water level inside a vessel and the water flow from the vessel. A common design, this successful device was being made in a similar way in Baghdad when the Mongols captured the city in 1258 A.D.

A variety of automatic devices all through history, have been utilized so as to complete specific jobs. A common style used all through the seventeenth and eighteenth centuries in Europe, was the automata. This device was an example of "open-loop" control, featuring dancing figures which will repeat the same job repeatedly.

Closed loop or also called feedback controlled machines comprise the temperature regulator common on furnaces. This was actually developed during the year 1620 and attributed to Drebbel. One more example is the centrifugal fly ball governor developed in 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 the year 1868 "On Governors," which could describe the instabilities demonstrated by the fly ball governor. He utilized differential equations to explain the control system. This paper demonstrated the importance and helpfulness of mathematical methods and models 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 dramatically and as convincingly as in Maxwell's analysis.

In the following 100 years control theory made huge strides. New developments in mathematical techniques made it feasible to more precisely control significantly more dynamic systems as opposed to the first fly ball governor. These updated techniques include various developments in optimal control in the 1950s and 1960s, followed by advancement in robust, stochastic, optimal and adaptive control techniques in the 1970s and the 1980s.

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

Originally, control engineering was performed as just a part of mechanical engineering. Control theories were at first studied with electrical engineering because electrical circuits can simply be described with control theory methods. Currently, control engineering has emerged as a unique practice.

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 in order to implement electrical control systems was unavailable at that time, designers left with the alternative of slow responding mechanical systems and less efficient systems. The governor is a really effective mechanical controller that is still often utilized by some hydro plants. Ultimately, process control systems became offered 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 devices, a lot of which are still being used nowadays.