

Control Valve for Forklift

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

Various automatic devices throughout history, have been utilized to be able to accomplish certain jobs. A common style used all through the seventeenth and eighteenth centuries in Europe, was the automata. This tool was an example of "open-loop" control, comprising dancing figures which will repeat the same job over and over.

Closed loop or otherwise called feedback controlled devices include the temperature regulator common on furnaces. This was developed in 1620 and accredited to Drebbel. One more example is the centrifugal fly ball governor developed in 1788 by James Watt and used for regulating steam engine speed.

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 made use of differential equations. This paper exhibited the importance and helpfulness of mathematical methods and models in relation to comprehending complex phenomena. It even signaled the start of systems theory and mathematical control. Previous elements of control theory had appeared before by not as dramatically and as convincingly as in Maxwell's analysis.

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

New technology and applications 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.

In the beginning, control engineering was practiced as just a part of mechanical engineering. Control theories were originally studied with electrical engineering since electrical circuits could simply be described with control theory techniques. Currently, control engineering has emerged as a unique practice.

The first controls had current outputs represented with a voltage control input. To implement electrical control systems, the right technology was unavailable at that moment, 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 used by several hydro factories. In the long run, process control systems became available before modern power electronics. These process controls systems were usually used in industrial applications and were devised by mechanical engineers using pneumatic and hydraulic control machines, lots of which are still being utilized today.