

Forklift Control Valve

Forklift Control Valve - 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 thought to be the first feedback control tool on record. This clock kept time by means of regulating the water level inside a vessel and the water flow from the vessel. A common style, this successful device was being made in the same manner in Baghdad when the Mongols captured the city in 1258 A.D.

Various automatic machines through history, have been used in order to complete particular jobs. A popular desing utilized through the 17th and 18th centuries in Europe, was the automata. This machine was an example of "open-loop" control, comprising dancing figures which will repeat the same job again and again.

Closed loop or also called feedback controlled tools consist of the temperature regulator common on furnaces. This was developed in the year 1620 and attributed to Drebbel. One more example is the centrifugal fly ball governor developed in 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 describing the exhibited by the fly ball governor. In order to describe the control system, he utilized differential equations. This paper exhibited the usefulness and importance of mathematical methods and models in relation to understanding complicated phenomena. It likewise signaled the start of mathematical control and systems theory. Previous elements of control theory had appeared before by not as convincingly and as dramatically as in Maxwell's study.

Within the following 100 years control theory made huge strides. New developments in mathematical techniques made it feasible to more precisely control considerably more dynamic systems than the original fly ball governor. These updated techniques include different developments in optimal control in the 1950s and 1960s, followed by progress in stochastic, robust, optimal and adaptive control techniques during the 1970s and the 1980s.

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

Initially, control engineering was practiced as just a part of mechanical engineering. Control theories were at first studied with electrical engineering as electrical circuits can simply be explained with control theory methods. Nowadays, control engineering has emerged as a unique discipline.

The first controls had current outputs represented with a voltage control input. So as to implement electrical control systems, the correct technology was unavailable at that time, 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 normally used by some hydro factories. Ultimately, process control systems became obtainable previous to modern power electronics. These process controls systems were often used in industrial applications and were devised by mechanical engineers using pneumatic and hydraulic control devices, lots of which are still being utilized at present.