

Forklift Control Valve

Forklift Control Valve - Automatic control systems were primarily established more than two thousand years ago. The ancient water clock of Ktesibios in Alexandria Egypt dating to the 3rd century B.C. is believed to be the very first feedback control machine on record. This particular clock kept time by regulating the water level inside a vessel and the water flow from the vessel. A popular style, this successful machine was being made in a similar way in Baghdad when the Mongols captured the city in 1258 A.D.

Various automatic machines throughout history, have been used in order to complete particular jobs. A common style used during 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 task repeatedly.

Feedback or also known as "closed-loop" automatic control tools include the temperature regulator seen on a furnace. This was actually developed during the year 1620 and accredited to Drebbel. Another example is the centrifugal fly ball governor developed during 1788 by James Watt and utilized for regulating steam engine speed.

J.C. Maxwell, who discovered the Maxwell electromagnetic field equations, wrote a paper in 1868 "On Governors," that can describe the instabilities exhibited by the fly ball governor. He utilized differential equations to be able to describe the control system. This paper exhibited the usefulness and importance of mathematical methods and models in relation to comprehending complex phenomena. It likewise signaled the beginning of mathematical control and systems theory. Previous elements of control theory had appeared earlier by not as convincingly and as dramatically as in Maxwell's analysis.

In the following one hundred years control theory made huge strides. New developments in mathematical techniques made it possible to more precisely control significantly more dynamic systems as opposed to the first fly ball governor. These updated techniques consist of different developments in optimal control in the 1950s and 1960s, followed by development in stochastic, robust, optimal and adaptive control techniques in the 1970s and the 1980s.

New applications and technology of control methodology has helped produce cleaner engines, with more efficient and cleaner processes helped make communication satellites and even traveling in space possible.

At first, control engineering was carried out 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. Nowadays, control engineering has emerged as a unique practice.

The first controls had current outputs represented with a voltage control input. So as to implement electrical control systems, the correct technology was unavailable then, the designers were left with less efficient systems and the alternative of slow responding mechanical systems. The governor is a really efficient mechanical controller which is still often used by some hydro plants. In the long run, process control systems became available 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, lots of which are still being utilized today.