

Control Valve for Forklift

Forklift Control Valve - Automatic control systems were primarily developed over 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 first feedback control device on record. This particular clock kept time by regulating the water level in a vessel and the water flow from the vessel. A popular design, this successful tool was being made in a similar fashion in Baghdad when the Mongols captured the city in 1258 A.D.

Different automatic machines all through history, have been utilized to complete certain jobs. A popular style used 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 again and again.

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

The Maxwell electromagnetic field equations, discovered by J.C. Maxwell wrote a paper in 1868 "On Governors," that was able to describing the exhibited by the fly ball governor. So as to describe the control system, he used differential equations. This paper demonstrated the usefulness and importance of mathematical models and methods in relation to comprehending complicated phenomena. It likewise signaled the start of systems theory and mathematical control. Previous elements of control theory had appeared before by not as convincingly and as dramatically as in Maxwell's study.

In the following one hundred years control theory made huge strides. New developments in mathematical methods made it feasible to more precisely control considerably more dynamic systems as opposed to the original fly ball governor. These updated methods comprise different developments in optimal control during the 1950s and 1960s, followed by development in robust, stochastic, optimal and adaptive control methods in the 1970s and the 1980s.

New applications and technology of control methodology have helped produce 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 initially studied with electrical engineering since electrical circuits could simply be explained with control theory methods. Now, control engineering has emerged as a unique discipline.

The first controls had current outputs represented with a voltage control input. 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 normally utilized by various hydro plants. Eventually, process control systems became obtainable prior to modern power electronics. These process controls systems were usually used in industrial applications and were devised by mechanical engineers making use of pneumatic and hydraulic control machines, many of which are still being utilized nowadays.