

Forklift Control Valve

Forklift Control Valve - Automatic control systems were first developed 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 in 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.

Throughout history, various automatic machines have been utilized to accomplish specific tasks or to simply entertain. A popular European design through the 17th and 18th centuries was the automata. This particular machine was an example of "open-loop" control, consisting dancing figures which will repeat the same task over and over.

Feedback or likewise known as "closed-loop" automatic control tools consist of the temperature regulator seen on a furnace. This was developed in 1620 and accredited to Drebbel. Another example is the centrifugal fly ball governor developed in 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 1868 "On Governors," which can explain the instabilities exhibited by the fly ball governor. He made use of differential equations to be able to describe the control system. This paper exhibited the usefulness and importance of mathematical models and methods in relation to comprehending complicated phenomena. It also 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.

Within the following one hundred years control theory made huge strides. New developments in mathematical techniques made it feasible to more accurately control significantly more dynamic systems as opposed to the first fly ball governor. These updated techniques comprise various developments in optimal control during 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 has helped make cleaner engines, with more efficient and cleaner methods helped make communication satellites and even traveling in space possible.

In the beginning, control engineering was carried out as a part of mechanical engineering. Also, control theory was first studied as part of electrical engineering since electrical circuits can often be simply described with control theory techniques. Now, control engineering has emerged as a unique practice.

The very first control relationships had a current output which was represented with a voltage control input. For the reason that the proper technology to implement electrical control systems was unavailable then, designers left with the choice of slow responding mechanical systems and less efficient systems. The governor is a really effective mechanical controller which is still usually used by some hydro factories. In the long run, 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 utilizing pneumatic and hydraulic control machines, a lot of which are still being utilized these days.