

Forklift Control Valves

Forklift Control Valve - The first automatic control systems were being used over two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock built in the 3rd century is considered to be the first feedback control device on record. This clock kept time by means of regulating the water level inside a vessel and the water flow from the vessel. A popular design, this successful machine was being made in a similar way in Baghdad when the Mongols captured the city in 1258 A.D.

Through history, different automatic devices have been utilized in order to accomplish specific tasks or to simply entertain. A common European design through the seventeenth and eighteenth centuries was the automata. This device was an example of "open-loop" control, consisting dancing figures that would repeat the same task again and again.

Feedback or also known as "closed-loop" automatic control tools consist of the temperature regulator seen on a furnace. This was actually developed during 1620 and attributed to Drebbel. One more example is the centrifugal fly ball governor developed in the year 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 1868 "On Governors," which was able to explaining the exhibited by the fly ball governor. To be able to describe the control system, he made use of differential equations. This paper demonstrated the importance and helpfulness 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 before by not as dramatically and as convincingly as in Maxwell's study.

Within the next 100 years control theory made huge strides. New developments in mathematical techniques made it possible to more accurately control significantly more dynamic systems than the original fly ball governor. These updated techniques comprise different developments in optimal control in the 1950s and 1960s, followed by advancement in stochastic, robust, adaptive and optimal control techniques during the 1970s and the 1980s.

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

Initially, control engineering was carried out as a part of mechanical engineering. Also, control theory was initially studied as part of electrical engineering because electrical circuits can often be simply described with control theory methods. Now, control engineering has emerged as a unique discipline.

The first control relationships had a current output which was represented with a voltage control input. As the proper technology in order to implement electrical control systems was unavailable at that time, designers left with the alternative of slow responding mechanical systems and less efficient systems. The governor is a very effective mechanical controller that is still normally used by various hydro plants. Ultimately, process control systems became offered previous to modern power electronics. These process controls systems were usually used in industrial applications and were devised by mechanical engineers utilizing hydraulic and pneumatic control machines, a lot of which are still being used nowadays.