

Forklift Control Valves

Forklift Control Valve - Automatic control systems were initially 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 way of regulating the water level in a vessel and the water flow from the vessel. A popular design, this successful device was being made in the same manner in Baghdad when the Mongols captured the city in 1258 A.D.

A variety of automatic devices all through history, have been utilized to be able to carry out particular jobs. A popular desing utilized throughout the 17th and 18th centuries in Europe, was the automata. This machine was an example of "open-loop" control, consisting dancing figures which will repeat the same job over and over.

Feedback or also known as "closed-loop" automatic control tools consist of the temperature regulator seen on a furnace. This was actually developed during the year 1620 and attributed to Drebbel. Another example is the centrifugal fly ball governor developed during 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 the year 1868 "On Governors," which was able to explain the instabilities exhibited by the fly ball governor. He used differential equations to be able to explain the control system. This paper demonstrated the importance and helpfulness of mathematical models and methods in relation to comprehending complicated phenomena. It even signaled the beginning 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.

New control theories and new developments in mathematical techniques made it possible to more accurately control more dynamic systems compared to the first model fly ball governor. These updated methods comprise different developments in optimal control in the 1950s and 1960s, followed by development in robust, stochastic, adaptive and optimal control techniques during the 1970s and the 1980s.

New technology and applications 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 carried out as just a part of mechanical engineering. Control theories were initially studied with electrical engineering as electrical circuits could simply be described with control theory methods. At present, control engineering has emerged as a unique discipline.

The first control relationships had a current output that was represented with a voltage control input. As the right technology so as 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 efficient mechanical controller that is still often utilized by several hydro plants. In the long run, process control systems became accessible prior to modern power electronics. These process controls systems were often used in industrial applications and were devised by mechanical engineers making use of pneumatic and hydraulic control machines, lots of which are still being used these days.