

Control Valves for Forklift

Forklift Control Valves - 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 thought to be the very first feedback control equipment 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 machine was being made in the same fashion in Baghdad when the Mongols captured the city in 1258 A.D.

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

Feedback or "closed-loop" automatic control equipments consist of the temperature regulator seen on a furnace. This was developed during 1620 and accredited to Drebbel. Another example is the centrifugal fly ball governor developed in the year 1788 by James Watt and used for regulating steam engine speed.

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. In order to describe the control system, he used differential equations. This paper exhibited the importance and helpfulness of mathematical models and methods in relation to understanding complicated phenomena. It also signaled the beginning of systems theory and mathematical control. Previous elements of control theory had appeared earlier by not as dramatically and as convincingly as in Maxwell's study.

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

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

Primarily, control engineering was carried out as a part of mechanical engineering. As well, control theory was initially studied as part of electrical engineering as electrical circuits can often be simply explained with control theory methods. Currently, control engineering has emerged as a unique practice.

The first controls had current outputs represented with a voltage control input. In order to implement electrical control systems, the correct technology was unavailable at that time, 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 usually used by various hydro factories. Ultimately, process control systems became accessible previous to modern power electronics. These process controls systems were often utilized in industrial applications and were devised by mechanical engineers utilizing pneumatic and hydraulic control devices, a lot of which are still being utilized these days.