

Forklift Control Valves

Forklift Control Valve - The earliest automatic control systems were being utilized more than two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock made in the third century is thought to be the first feedback control equipment on record. This particular clock kept time by means of regulating the water level in a vessel and the water flow from the vessel. A popular style, this successful machine was being made in the same manner in Baghdad when the Mongols captured the city in 1258 A.D.

Various automatic devices throughout history, have been used so as to complete particular jobs. A popular design utilized during the 17th and 18th centuries in Europe, was the automata. This device was an example of "open-loop" control, consisting of dancing figures that will repeat the same task repeatedly.

Closed loop or otherwise called feedback controlled machines include the temperature regulator common on furnaces. 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 the speed of steam engines.

The Maxwell electromagnetic field equations, discovered by J.C. Maxwell wrote a paper in the year 1868 "On Governors," that was able to describe the exhibited by the fly ball governor. So as to explain the control system, he utilized differential equations. This paper exhibited the importance and helpfulness of mathematical models and methods in relation to understanding complex phenomena. It even signaled the beginning of mathematical control and systems theory. Previous elements of control theory had appeared earlier but not as dramatically and as convincingly as in Maxwell's analysis.

In the following one hundred years control theory made huge strides. New developments in mathematical methods made it possible to more precisely control considerably more dynamic systems compared to the first fly ball governor. These updated methods consist of various developments in optimal control during the 1950s and 1960s, followed by development in robust, stochastic, adaptive and optimal control methods during the 1970s and the 1980s.

New applications and technology of control methodology have helped make cleaner auto engines, more efficient and cleaner chemical processes and have helped make communication and space travel satellites possible.

At first, control engineering was carried out as a part of mechanical engineering. Also, control theory was first studied as part of electrical engineering because electrical circuits could often be simply described with control theory methods. Today, control engineering has emerged as a unique practice.

The first control relationships had a current output which was represented with a voltage control input. In view of the fact that the right technology 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 really efficient mechanical controller which is still normally used by several hydro factories. Ultimately, process control systems became accessible prior to modern power electronics. These process control systems were normally used in industrial applications and were devised by mechanical engineers utilizing hydraulic and pneumatic control devices, a lot of which are still being utilized these days.