

Forklift Control Valves

Forklift Control Valve - Automatic control systems were first established more than two thousand years ago. The ancient water clock of Ktesibios in Alexandria Egypt dating to the third century B.C. is considered to be the first feedback control tool on record. This clock kept time by regulating the water level in a vessel and the water flow from the vessel. A popular story, this successful machine was being made in the same manner in Baghdad when the Mongols captured the city in 1258 A.D.

A variety of automatic machines throughout history, have been utilized so as to complete particular tasks. A common device used in the 17th and 18th centuries in Europe, was the automata. This device was an example of "open-loop" control, comprising dancing figures that would repeat the same task over and over.

Closed loop or feedback controlled equipments comprise the temperature regulator common on furnaces. This was developed in the year 1620 and accredited to Drebbel. Another example is the centrifugal fly ball governor developed during the year 1788 by James Watt and used 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 could clarify the instabilities exhibited by the fly ball governor. He made use of differential equations to explain the control system. This paper demonstrated the importance and helpfulness of mathematical methods and models in relation to understanding complicated phenomena. It even signaled the beginning of mathematical control and systems theory. Previous elements of control theory had appeared before but not as dramatically and as convincingly as in Maxwell's analysis.

Within the next one hundred years control theory made huge strides. New developments in mathematical methods made it possible to more accurately control considerably more dynamic systems compared to the first fly ball governor. These updated methods 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 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.

In the beginning, control engineering was practiced as just a part of mechanical engineering. Control theories were originally studied with electrical engineering since electrical circuits can simply be described with control theory techniques. Now, 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 proper technology to be able to implement electrical control systems was unavailable then, designers left with the option of slow responding mechanical systems and less efficient systems. The governor is a really effective mechanical controller that is still normally used by some hydro factories. Ultimately, process control systems became obtainable previous to modern power electronics. These process controls systems were usually utilized in industrial applications and were devised by mechanical engineers making use of hydraulic and pneumatic control equipments, many of which are still being utilized today.