

Forklift Control Valve

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

Different automatic devices through history, have been utilized to carry out specific jobs. A common style utilized through the 17th and 18th centuries in Europe, was the automata. This particular piece of equipment was an example of "open-loop" control, featuring dancing figures that will repeat the same task repeatedly.

Feedback or "closed-loop" automatic control devices include 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 the year 1788 by James Watt and utilized for regulating steam engine speed.

J.C. Maxwell, who discovered the Maxwell electromagnetic field equations, wrote a paper in the year 1868 "On Governors," which could clarify the instabilities demonstrated by the fly ball governor. He utilized differential equations so as to explain the control system. This paper exhibited the importance and helpfulness of mathematical methods and models in relation to understanding complex phenomena. It even signaled the start of systems theory and mathematical control. Previous elements of control theory had appeared before by not as convincingly and as dramatically as in Maxwell's analysis.

New control theories and new developments in mathematical techniques made it possible to more accurately control more dynamic systems as opposed to the initial model fly ball governor. These updated methods comprise various developments in optimal control in the 1950s and 1960s, followed by progress in robust, stochastic, optimal and adaptive control methods 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 space travel and communication satellites possible.

In the beginning, control engineering was carried out as just a part of mechanical engineering. Control theories were originally studied with electrical engineering because electrical circuits can simply be explained with control theory methods. Currently, control engineering has emerged as a unique practice.

The first control relationships had a current output which was represented with a voltage control input. As the correct technology to be able to implement electrical control systems was unavailable at that moment, designers left with the choice of slow responding mechanical systems and less efficient systems. The governor is a very efficient mechanical controller that is still usually used by various hydro factories. Ultimately, process control systems became obtainable prior to modern power electronics. These process controls systems were normally used in industrial applications and were devised by mechanical engineers using hydraulic and pneumatic control equipments, lots of which are still being used nowadays.