

Forklift Control Valve

Control Valve for Forklift - 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 thought to be the very first feedback control machine on record. This clock kept time by way of regulating the water level within a vessel and the water flow from the vessel. A common design, this successful machine was being made in a similar way in Baghdad when the Mongols captured the city in 1258 A.D.

Different automatic machines all through history, have been used to be able to accomplish specific jobs. A popular style used all through the seventeenth and eighteenth centuries in Europe, was the automata. This device was an example of "open-loop" control, comprising dancing figures that will repeat the same job repeatedly.

Feedback or likewise known as "closed-loop" automatic control machines comprise the temperature regulator found on a furnace. This was developed during the year 1620 and attributed to Drebbel. Another example is the centrifugal fly ball governor developed during 1788 by James Watt and used for regulating steam engine speed.

J.C. Maxwell, who discovered the Maxwell electromagnetic field equations, wrote a paper in the year 1868 "On Governors," that was able to clarify the instabilities demonstrated by the fly ball governor. He made use of differential equations to be able to explain the control system. This paper demonstrated the usefulness and importance of mathematical models and methods in relation to comprehending complicated phenomena. It also signaled the beginning of mathematical control and systems theory. Previous elements of control theory had appeared before by not as dramatically and as convincingly as in Maxwell's study.

In the next 100 years control theory made huge strides. New developments in mathematical methods made it feasible to more precisely control considerably more dynamic systems than the first 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 techniques in the 1970s and the 1980s.

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

Initially, control engineering was carried out as just a part of mechanical engineering. Control theories were originally studied with electrical engineering in view of the fact that electrical circuits can simply be explained with control theory techniques. Today, control engineering has emerged as a unique discipline.

The first control relationships had a current output which was represented with a voltage control input. In view of the fact that the correct technology to be able 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 effective mechanical controller that is still usually utilized by some hydro factories. Ultimately, process control systems became accessible before modern power electronics. These process controls systems were often used in industrial applications and were devised by mechanical engineers using hydraulic and pneumatic control machines, lots of which are still being used nowadays.