

Control Valves for Forklift

Forklift Control Valve - The earliest automatic control systems were being used over two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock made in the third century is considered to be the first feedback control tool on record. This particular 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 equipment was being made in the same fashion in Baghdad when the Mongols captured the city in 1258 A.D.

Through history, different automatic machines have been used in order to accomplish specific tasks or to simply entertain. A common European style in the 17th and 18th centuries was the automata. This particular machine was an example of "open-loop" control, comprising dancing figures which would repeat the same task repeatedly.

Feedback or likewise known as "closed-loop" automatic control devices include the temperature regulator seen on a furnace. This was actually developed in the year 1620 and attributed to Drebbel. Another example is the centrifugal fly ball governor developed in 1788 by James Watt and utilized 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 be able to explain the control system. This paper exhibited the usefulness and importance of mathematical models and methods in relation to comprehending complex phenomena. It also signaled the start of systems theory and mathematical control. Previous elements of control theory had appeared before by not as dramatically and as convincingly 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 different developments in optimal control in the 1950s and 1960s, followed by advancement in robust, stochastic, optimal and adaptive control methods in the 1970s and the 1980s.

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

Initially, control engineering was carried out as a part of mechanical engineering. As well, control theory was firstly studied as part of electrical engineering as electrical circuits could often be simply explained with control theory methods. Now, control engineering has emerged as a unique practice.

The very first controls had current outputs represented with a voltage control input. To implement electrical control systems, the right technology was unavailable at that moment, the designers were left with less efficient systems and the option of slow responding mechanical systems. The governor is a very effective mechanical controller which is still normally used by several hydro plants. Eventually, 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 making use of hydraulic and pneumatic control machines, a lot of which are still being used today.