

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 built in the third century is thought to be the very first feedback control equipment on record. This clock kept time by regulating the water level within a vessel and the water flow from the vessel. A common design, this successful machine was being made in the same manner in Baghdad when the Mongols captured the city in 1258 A.D.

Through history, different automatic devices have been utilized to accomplish specific tasks or to simply entertain. A common European style in the seventeenth and eighteenth centuries was the automata. This particular piece of equipment was an example of "open-loop" control, consisting dancing figures that would repeat the same task again and again.

Feedback or otherwise known as "closed-loop" automatic control machines include the temperature regulator seen on a furnace. This was actually developed in the year 1620 and accredited to Drebbel. One more example is the centrifugal fly ball governor developed in 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," which was able to explaining the exhibited by the fly ball governor. In order to explain the control system, he used differential equations. This paper demonstrated the importance and helpfulness of mathematical models and methods in relation to comprehending complicated phenomena. It also signaled the start of mathematical control and systems theory. Previous elements of control theory had appeared earlier by not as convincingly and as dramatically as in Maxwell's analysis.

New developments in mathematical techniques and new control theories made it possible to more precisely control more dynamic systems as opposed to the original model fly ball governor. These updated techniques include various developments in optimal control in the 1950s and 1960s, followed by progress in stochastic, robust, adaptive and optimal control techniques in 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.

Originally, control engineering was performed as just a part of mechanical engineering. Control theories were firstly studied with electrical engineering for the reason that electrical circuits can simply be described 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 proper technology was unavailable at that time, the designers were left with less efficient systems and the choice of slow responding mechanical systems. The governor is a really effective mechanical controller which is still often used by various hydro factories. Eventually, process control systems became obtainable prior to modern power electronics. These process controls systems were often used in industrial applications and were devised by mechanical engineers using hydraulic and pneumatic control devices, a lot of which are still being used nowadays.