

Forklift Control Valve

Forklift Control Valve - Automatic control systems were first created more than two thousand years ago. The ancient water clock of Ktesibios in Alexandria Egypt dating to the 3rd century B.C. is thought to be the very first feedback control machine on record. This particular clock kept time by regulating the water level inside a vessel and the water flow from the vessel. A common design, this successful equipment was being made in a similar fashion in Baghdad when the Mongols captured the city in 1258 A.D.

A variety of automatic equipment throughout history, have been used so as to accomplish particular tasks. A common style utilized through the seventeenth and eighteenth centuries in Europe, was the automata. This particular device was an example of "open-loop" control, consisting dancing figures which will repeat the same job over and over.

Feedback or "closed-loop" automatic control tools include the temperature regulator seen on a furnace. This was actually developed in 1620 and attributed to Drebbel. Another example is the centrifugal fly ball governor developed during 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 1868 "On Governors," that was able to describing the exhibited by the fly ball governor. So as to describe the control system, he used differential equations. This paper demonstrated the usefulness and importance of mathematical models and methods in relation to understanding complicated phenomena. It likewise 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.

Within the following 100 years control theory made huge strides. New developments in mathematical techniques made it possible to more accurately control significantly 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 advancement in stochastic, robust, optimal and adaptive control methods during 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.

In the beginning, control engineering was carried out as just a part of mechanical engineering. Control theories were at first studied with electrical engineering since electrical circuits could simply be described with control theory techniques. At present, control engineering has emerged as a unique practice.

The first controls had current outputs represented with a voltage control input. In order to implement electrical control systems, the correct technology was unavailable at that moment, the designers were left with less efficient systems and the alternative of slow responding mechanical systems. The governor is a really effective mechanical controller that is still usually utilized by several hydro plants. Eventually, process control systems became offered prior to modern power electronics. These process controls systems were often used in industrial applications and were devised by mechanical engineers utilizing pneumatic and hydraulic control machines, many of which are still being used nowadays.