

Control Valve for Forklift

Forklift Control Valve - The earliest mechanized control systems were being utilized more than two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock made in the 3rd century is thought to be the first feedback control device on record. This particular clock kept time by way of regulating the water level inside a vessel and the water flow from the vessel. A common style, this successful device was being made in the same fashion in Baghdad when the Mongols captured the city in 1258 A.D.

Throughout history, different automatic machines have been utilized to be able to simply entertain or to accomplish specific tasks. A common European style throughout the 17th and 18th centuries was the automata. This device was an example of "open-loop" control, featuring dancing figures which will repeat the same task over and over.

Feedback or likewise known as "closed-loop" automatic control machines consist of the temperature regulator seen on a furnace. This was developed in 1620 and accredited to Drebbel. One more 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," which was able to explaining the exhibited by the fly ball governor. To explain the control system, he utilized differential equations. This paper exhibited the importance and helpfulness of mathematical models and methods in relation to comprehending complicated phenomena. It even signaled the start of mathematical control and systems theory. Previous elements of control theory had appeared earlier but 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 than the original model fly ball governor. These updated methods comprise various developments in optimal control during the 1950s and 1960s, followed by advancement in stochastic, robust, adaptive and optimal control techniques 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.

At first, control engineering was practiced as a part of mechanical engineering. As well, control theory was first studied as part of electrical engineering since electrical circuits could often be simply 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. In order to implement electrical control systems, the proper technology was unavailable at that moment, the designers were left with less efficient systems and the choice of slow responding mechanical systems. The governor is a really efficient mechanical controller which is still often used by various hydro plants. In the long run, process control systems became offered before 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 devices, a lot of which are still being used nowadays.