

Forklift Control Valve

Forklift Control Valve - The earliest mechanized control systems were being used more than two thousand years ago. In Alexandria, Egypt, the ancient Ktesibios water clock constructed in the 3rd century is believed 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 popular style, this successful device was being made in a similar way in Baghdad when the Mongols captured the city in 1258 A.D.

Various automatic equipment all through history, have been used to be able to accomplish certain tasks. A popular style utilized through the 17th and 18th centuries in Europe, was the automata. This machine was an example of "open-loop" control, consisting of dancing figures that will repeat the same task repeatedly.

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

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

New control theories and new developments in mathematical techniques made it possible to more accurately control more dynamic systems than the first model fly ball governor. These updated techniques consist of different developments in optimal control in the 1950s and 1960s, followed by advancement in robust, stochastic, 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. In addition, control theory was first studied as part of electrical engineering because electrical circuits could often be simply described with control theory methods. Today, control engineering has emerged as a unique discipline.

The very first control relationships had a current output that was represented with a voltage control input. Because the correct technology so as to implement electrical control systems was unavailable at that time, designers left with the choice of slow responding mechanical systems and less efficient systems. The governor is a really efficient mechanical controller that is still often used by some hydro factories. Eventually, process control systems became offered previous to modern power electronics. These process control systems were usually used in industrial applications and were devised by mechanical engineers using pneumatic and hydraulic control devices, many of which are still being used at present.