

Control Valve for Forklift

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

Different automatic tools throughout history, have been used to be able to carry out specific tasks. A common style used during the 17th and 18th centuries in Europe, was the automata. This particular piece of equipment was an example of "open-loop" control, comprising dancing figures that will repeat the same job again and again.

Closed loop or also called feedback controlled equipments consist of the temperature regulator common on furnaces. This was actually developed in 1620 and attributed to Drebbel. One more example is the centrifugal fly ball governor developed in 1788 by James Watt and utilized for regulating steam engine speed.

The Maxwell electromagnetic field equations, discovered by J.C. Maxwell wrote a paper in 1868 "On Governors," which was able to describing the exhibited by the fly ball governor. So as to describe the control system, he utilized differential equations. This paper exhibited the importance and helpfulness of mathematical models and methods in relation to understanding complex phenomena. It likewise signaled the start of systems theory and mathematical control. Previous elements of control theory had appeared earlier by not as convincingly and as dramatically as in Maxwell's analysis.

In the following 100 years control theory made huge strides. New developments in mathematical methods made it possible to more precisely control significantly more dynamic systems compared to the first fly ball governor. These updated techniques comprise different developments in optimal control during the 1950s and 1960s, followed by development in stochastic, robust, adaptive and optimal control methods in the 1970s and the 1980s.

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

Primarily, control engineering was practiced as a part of mechanical engineering. Furthermore, control theory was firstly studied as part of electrical engineering for the reason that electrical circuits could often be simply explained with control theory techniques. Currently, control engineering has emerged as a unique discipline.

The very first controls had current outputs represented with a voltage control input. So as to implement electrical control systems, the correct technology was unavailable at that time, the designers were left with less efficient systems and the alternative of slow responding mechanical systems. The governor is a really efficient mechanical controller that is still normally used by several hydro plants. Ultimately, process control systems became offered prior to modern power electronics. These process controls systems were normally used in industrial applications and were devised by mechanical engineers making use of hydraulic and pneumatic control equipments, many of which are still being utilized these days.