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 considered to be the very first feedback control device on record. This particular clock kept time by way of regulating the water level in a vessel and the water flow from the vessel. A common style, this successful machine was being made in the same fashion in Baghdad when the Mongols captured the city in 1258 A.D.

Throughout history, various automatic devices have been used to accomplish specific tasks or to simply entertain. A popular European design through the 17th and 18th centuries was the automata. This particular machine was an example of "open-loop" control, featuring dancing figures which will repeat the same task repeatedly.

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

J.C. Maxwell, who discovered the Maxwell electromagnetic field equations, wrote a paper in 1868 "On Governors," that was able to clarify the instabilities demonstrated by the fly ball governor. He made use of differential equations in order to explain the control system. This paper exhibited the usefulness and importance of mathematical models and methods in relation to understanding 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 study.

New control theories and new developments in mathematical techniques made it possible to more accurately control more dynamic systems as opposed to the initial model fly ball governor. These updated methods comprise different developments in optimal control during the 1950s and 1960s, followed by development in robust, stochastic, optimal and adaptive control techniques in the 1970s and the 1980s.

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

Originally, control engineering was carried out as just a part of mechanical engineering. Control theories were at first studied with electrical engineering because electrical circuits can 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 proper 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 very efficient mechanical controller that is still often used by some hydro plants. In the long run, process control systems became offered before modern power electronics. These process controls systems were usually used in industrial applications and were devised by mechanical engineers utilizing pneumatic and hydraulic control equipments, a lot of which are still being utilized nowadays.