Control Valve for Forklift

Forklift Control Valve - The first automated control systems were being utilized over two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock constructed in the 3rd century is considered to be the very first feedback control tool on record. This particular clock kept time by regulating the water level inside a vessel and the water flow from the vessel. A popular design, this successful device was being made in the same fashion in Baghdad when the Mongols captured the city in 1258 A.D.

Various automatic tools through history, have been used to accomplish specific jobs. A common style used during the 17th and 18th centuries in Europe, was the automata. This tool was an example of "open-loop" control, consisting dancing figures that would repeat the same task repeatedly.

Closed loop or otherwise called feedback controlled tools include the temperature regulator common on furnaces. This was developed in 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.

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. So as to explain the control system, he used differential equations. This paper exhibited the importance and helpfulness of mathematical methods and models in relation to comprehending complex 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 precisely control more dynamic systems than the initial model fly ball governor. These updated methods consist of various developments in optimal control during the 1950s and 1960s, followed by advancement in stochastic, robust, adaptive and optimal 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 methods helped make communication satellites and even traveling in space possible.

Initially, control engineering was practiced as just a part of mechanical engineering. Control theories were originally studied with electrical engineering as electrical circuits could simply be explained with control theory methods. Nowadays, control engineering has emerged as a unique practice.

The very first control relationships had a current output that was represented with a voltage control input. Since the right technology so as to implement electrical control systems was unavailable at that time, designers left with the alternative of slow responding mechanical systems and less efficient systems. The governor is a very effective mechanical controller which is still normally used by various hydro plants. Eventually, process control systems became obtainable before modern power electronics. These process controls systems were usually utilized in industrial applications and were devised by mechanical engineers utilizing pneumatic and hydraulic control machines, a lot of which are still being utilized these days.