

Control Valve for Forklift

Forklift Control Valves - Automatic control systems were first created over two thousand years ago. The ancient water clock of Ktesibios in Alexandria Egypt dating to the 3rd century B.C. is thought to be the very first feedback control tool on record. This particular clock kept time by way of regulating the water level within a vessel and the water flow from the vessel. A popular design, this successful tool was being made in the same manner in Baghdad when the Mongols captured the city in 1258 A.D.

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

Closed loop or otherwise called feedback controlled machines include the temperature regulator common on furnaces. This was developed during the year 1620 and accredited to Drebbel. One more example is the centrifugal fly ball governor developed during the year 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 the year 1868 "On Governors," that was able to explaining the exhibited by the fly ball governor. In order to explain the control system, he used differential equations. This paper exhibited the usefulness and importance of mathematical models and methods in relation to understanding complex phenomena. It likewise signaled the beginning of systems theory and mathematical control. Previous elements of control theory had appeared earlier by not as dramatically and as convincingly as in Maxwell's study.

In the next 100 years control theory made huge strides. New developments in mathematical methods made it feasible to more accurately control considerably more dynamic systems than the original fly ball governor. These updated methods consist of different 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 carried out as a part of mechanical engineering. Additionally, control theory was initially studied as part of electrical engineering because electrical circuits can often be simply explained with control theory techniques. Now, 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. In view of the fact that the correct technology to implement electrical control systems was unavailable then, designers left with the option of slow responding mechanical systems and less efficient systems. The governor is a very efficient mechanical controller which is still normally used by various hydro plants. Eventually, process control systems became offered previous to modern power electronics. These process controls systems were normally utilized in industrial applications and were devised by mechanical engineers using hydraulic and pneumatic control equipments, many of which are still being used nowadays.