

Control Valves for Forklift

Control Valves for Forklift - Automatic control systems were first established more than 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 first feedback control tool on record. This particular clock kept time by way of regulating the water level inside a vessel and the water flow from the vessel. A common design, this successful tool was being made in a similar way in Baghdad when the Mongols captured the city in 1258 A.D.

Through history, various automatic equipments have been used to be able to accomplish specific tasks or to simply entertain. A popular European style through the 17th and 18th centuries was the automata. This device was an example of "open-loop" control, consisting dancing figures which will repeat the same task over and over.

Closed loop or also called feedback controlled equipments comprise the temperature regulator common on furnaces. This was developed during the year 1620 and accredited to Drebbel. Another example is the centrifugal fly ball governor developed during 1788 by James Watt and utilized for regulating steam engine speed.

J.C. Maxwell, who discovered the Maxwell electromagnetic field equations, wrote a paper in the year 1868 "On Governors," that can clarify the instabilities exhibited by the fly ball governor. He utilized differential equations 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 systems theory and mathematical control. Previous elements of control theory had appeared earlier by not as dramatically and as convincingly as in Maxwell's analysis.

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 techniques consist of various developments in optimal control during the 1950s and 1960s, followed by development in stochastic, robust, adaptive and optimal control techniques in the 1970s and the 1980s.

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

In the beginning, control engineering was practiced as just a part of mechanical engineering. Control theories were originally studied with electrical engineering since electrical circuits can simply be described with control theory methods. Today, control engineering has emerged as a unique discipline.

The first control partnerships had a current output which was represented with a voltage control input. As the right technology 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 really effective mechanical controller which is still normally used by various hydro factories. Eventually, process control systems became obtainable before modern power electronics. These process controls systems were often used in industrial applications and were devised by mechanical engineers using pneumatic and hydraulic control equipments, lots of which are still being utilized today.