

Control Valve for Forklift

Control Valves for Forklift - The first automated control systems were being used over two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock made in the third century is believed to be the very first feedback control equipment on record. This clock kept time by means of 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.

Through history, different automatic equipments have been utilized in order to accomplish specific tasks or to simply entertain. A popular European style through the seventeenth and eighteenth centuries was the automata. This piece of equipment was an example of "open-loop" control, featuring dancing figures which will repeat the same task repeatedly.

Feedback or "closed-loop" automatic control tools include the temperature regulator found on a furnace. This was 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.

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

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

New applications and technology of control methodology have helped produce cleaner auto engines, more efficient and cleaner chemical methods and have helped make space travel and communication satellites possible.

Originally, control engineering was carried out as just a part of mechanical engineering. Control theories were initially studied with electrical engineering in view of the fact that electrical circuits can simply be explained with control theory methods. Nowadays, 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. For the reason that the proper 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 often utilized by some hydro plants. Eventually, process control systems became obtainable previous to modern power electronics. These process controls systems were usually used in industrial applications and were devised by mechanical engineers making use of pneumatic and hydraulic control machines, a lot of which are still being used at present.