

Control Valve for Forklift

Forklift Control Valve - Automatic control systems were first created 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 first feedback control machine on record. This clock kept time by way of regulating the water level in a vessel and the water flow from the vessel. A popular style, this successful equipment was being made in the same manner in Baghdad when the Mongols captured the city in 1258 A.D.

All through history, a variety of automatic equipments have been used to accomplish specific tasks or to simply entertain. A common European design through the seventeenth and eighteenth centuries was the automata. This particular machine was an example of "open-loop" control, consisting dancing figures that would repeat the same task again and again.

Feedback or otherwise known as "closed-loop" automatic control tools comprise the temperature regulator seen on a furnace. This was developed in 1620 and accredited to Drebbel. One more example is the centrifugal fly ball governor developed in the year 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," which could describe the instabilities exhibited by the fly ball governor. He used differential equations in order to explain the control system. This paper demonstrated the usefulness and importance of mathematical methods and models in relation to understanding complex phenomena. It even signaled the beginning of mathematical control and systems theory. Previous elements of control theory had appeared before but not as convincingly and as dramatically as in Maxwell's study.

New developments in mathematical techniques and new control theories made it possible to more precisely 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 advancement in stochastic, robust, optimal and adaptive control methods in the 1970s and the 1980s.

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

Primarily, control engineering was carried out as a part of mechanical engineering. Additionally, control theory was firstly studied as part of electrical engineering for the reason that electrical circuits could often be simply explained with control theory methods. Now, control engineering has emerged as a unique discipline.

The very 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 moment, designers left with the option of slow responding mechanical systems and less efficient systems. The governor is a very effective mechanical controller which is still often utilized by some hydro factories. Ultimately, 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 using hydraulic and pneumatic control equipments, many of which are still being used today.