

Forklift Control Valve

Forklift Control Valve - The earliest automatic 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 machine on record. This clock kept time by means of regulating the water level within a vessel and the water flow from the vessel. A common design, this successful tool was being made in the same way in Baghdad when the Mongols captured the city in 1258 A.D.

Different automatic machines through history, have been used in order to complete specific jobs. A popular desing utilized all through the 17th and 18th centuries in Europe, was the automata. This particular machine was an example of "open-loop" control, comprising dancing figures that will repeat the same job over and over.

Feedback or "closed-loop" automatic control equipments consist of the temperature regulator seen on a furnace. This was developed in 1620 and attributed to Drebbel. One more example is the centrifugal fly ball governor developed in the year 1788 by James Watt and used for regulating the speed of steam engines.

J.C. Maxwell, who discovered the Maxwell electromagnetic field equations, wrote a paper in the year 1868 "On Governors," that could explain 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 models and methods in relation to comprehending complicated phenomena. It likewise 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 analysis.

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

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

At first, control engineering was carried out as just a part of mechanical engineering. Control theories were originally studied with electrical engineering since electrical circuits could simply be explained with control theory methods. Today, control engineering has emerged as a unique discipline.

The first control relationships had a current output which was represented with a voltage control input. Because the correct technology to be able to implement electrical control systems was unavailable at that time, designers left with the option of slow responding mechanical systems and less efficient systems. The governor is a very effective mechanical controller that is still often used by several hydro factories. In the long run, process control systems became available previous to 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, lots of which are still being utilized these days.