

Control Valve for Forklift

Forklift Control Valve - Automatic control systems were primarily developed more than two thousand years ago. The ancient water clock of Ktesibios in Alexandria Egypt dating to the third century B.C. is believed to be the first feedback control machine on record. This clock kept time by means 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 a similar fashion in Baghdad when the Mongols captured the city in 1258 A.D.

Various automatic equipment throughout history, have been used to be able to complete certain jobs. A popular desing used all through the seventeenth and eighteenth centuries in Europe, was the automata. This piece of equipment was an example of "open-loop" control, comprising dancing figures which would repeat the same task again and again.

Closed loop or feedback controlled equipments include the temperature regulator common on furnaces. This was developed during 1620 and accredited to Drebbel. Another example is the centrifugal fly ball governor developed during 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 1868 "On Governors," that was able to describe the instabilities demonstrated by the fly ball governor. He used differential equations so as to explain the control system. This paper demonstrated the usefulness and importance of mathematical models and methods in relation to understanding complicated phenomena. It likewise signaled the beginning of systems theory and mathematical control. Previous elements of control theory had appeared earlier by not as convincingly and as dramatically as in Maxwell's analysis.

Within the next one hundred years control theory made huge strides. New developments in mathematical methods made it possible to more accurately control considerably more dynamic systems compared to the original fly ball governor. These updated methods consist of various developments in optimal control in the 1950s and 1960s, followed by development in robust, stochastic, adaptive and optimal control methods during the 1970s and the 1980s.

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

Originally, control engineering was practiced as just a part of mechanical engineering. Control theories were at first studied with electrical engineering in view of the fact that electrical circuits could simply be described with control theory methods. Nowadays, control engineering has emerged as a unique practice.

The very first controls had current outputs represented with a voltage control input. In order to implement electrical control systems, the proper technology was unavailable at that time, the designers were left with less efficient systems and the alternative of slow responding mechanical systems. The governor is a really efficient mechanical controller which is still normally utilized by several hydro factories. In the long run, process control systems became offered before modern power electronics. These process controls systems were usually utilized in industrial applications and were devised by mechanical engineers making use of pneumatic and hydraulic control equipments, lots of which are still being utilized nowadays.