Control Valve for Forklift

Control Valves for Forklift - The earliest automated control systems were being utilized more that two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock constructed in the third century is considered to be the very first feedback control device 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 equipment was being made in the same way in Baghdad when the Mongols captured the city in 1258 A.D.

Throughout history, various automatic machines have been used so as to simply entertain or to accomplish specific tasks. A common European style through the seventeenth and eighteenth centuries was the automata. This tool was an example of "open-loop" control, consisting dancing figures that will repeat the same task over and over.

Closed loop or feedback controlled tools consist of 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 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 was able to describe the instabilities demonstrated by the fly ball governor. He made use of differential equations in order to explain the control system. This paper exhibited the importance and helpfulness of mathematical models and methods in relation to understanding complex phenomena. It likewise signaled the beginning of systems theory and mathematical control. Previous elements of control theory had appeared before by not as dramatically and as convincingly as in Maxwell's study.

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

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

In the beginning, control engineering was carried out as a part of mechanical engineering. In addition, control theory was first studied as part of electrical engineering in view of the fact that electrical circuits could often be simply described with control theory techniques. Nowadays, control engineering has emerged as a unique discipline.

The very first controls had current outputs represented with a voltage control input. To be able to implement electrical control systems, the correct 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 effective mechanical controller that is still usually used by various hydro plants. Ultimately, process control systems became obtainable previous to modern power electronics. These process controls systems were often used in industrial applications and were devised by mechanical engineers using hydraulic and pneumatic control machines, many of which are still being utilized nowadays.