

## Control Valves for Forklift

Forklift Control Valve - The first mechanized control systems were being utilized more than two thousand years ago. In Alexandria, Egypt, the ancient Ktesibios water clock constructed in the third century is considered to be the first feedback control tool on record. This clock kept time by regulating the water level in a vessel and the water flow from the vessel. A common design, this successful machine was being made in the same manner in Baghdad when the Mongols captured the city in 1258 A.D.

Throughout history, a variety of automatic tools have been utilized in order to accomplish specific tasks or to simply entertain. A common European style throughout the 17th and 18th centuries was the automata. This piece of equipment was an example of "open-loop" control, comprising dancing figures which will repeat the same job again and again.

Closed loop or otherwise called feedback controlled equipments comprise the temperature regulator common on furnaces. This was developed in 1620 and accredited to Drebbel. Another example is the centrifugal fly ball governor developed in the year 1788 by James Watt and utilized for regulating steam engine speed.

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

Within the following 100 years control theory made huge strides. New developments in mathematical techniques made it feasible to more accurately control considerably more dynamic systems compared to the original fly ball governor. These updated techniques comprise different developments in optimal control during the 1950s and 1960s, followed by progress in stochastic, robust, adaptive and optimal control methods during the 1970s and the 1980s.

New applications and technology of control methodology has helped produce cleaner engines, with more efficient and cleaner processes helped make communication satellites and even traveling in space possible.

At first, control engineering was carried out as a part of mechanical engineering. Moreover, control theory was initially studied as part of electrical engineering for the reason 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. So as to implement electrical control systems, the right technology was unavailable at that time, the designers were left with less efficient systems and the choice of slow responding mechanical systems. The governor is a really efficient mechanical controller that is still often utilized by several hydro plants. Ultimately, process control systems became obtainable previous to modern power electronics. These process controls systems were normally utilized in industrial applications and were devised by mechanical engineers utilizing hydraulic and pneumatic control equipments, many of which are still being used today.