

Forklift Control Valves

Forklift Control Valve - The first automated control systems were being utilized more than two thousand years ago. In Alexandria, Egypt, the ancient Ktesibios water clock built in the 3rd century is thought to be the first feedback control machine on record. This particular clock kept time by regulating the water level inside a vessel and the water flow from the vessel. A popular story, this successful device was being made in the same way in Baghdad when the Mongols captured the city in 1258 A.D.

All through history, different automatic tools have been utilized in order to accomplish specific tasks or to simply entertain. A popular European design throughout the 17th and 18th centuries was the automata. This particular device was an example of "open-loop" control, featuring dancing figures that will repeat the same job again and again.

Feedback or otherwise known as "closed-loop" automatic control equipments include the temperature regulator seen on a furnace. This was actually 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 the speed of steam engines.

J.C. Maxwell, who discovered the Maxwell electromagnetic field equations, wrote a paper in the year 1868 "On Governors," which was able to describe the instabilities demonstrated by the fly ball governor. He utilized differential equations in order to describe the control system. This paper demonstrated the usefulness and importance of mathematical methods and models in relation to comprehending 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.

In the following one hundred years control theory made huge strides. New developments in mathematical techniques made it possible to more precisely control significantly more dynamic systems as opposed to the first fly ball governor. These updated techniques include different developments in optimal control in the 1950s and 1960s, followed by progress in robust, stochastic, adaptive and optimal control techniques in the 1970s and the 1980s.

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

Originally, control engineering was carried out as just a part of mechanical engineering. Control theories were originally studied with electrical engineering because electrical circuits could simply be described with control theory methods. Currently, control engineering has emerged as a unique discipline.

The very first controls had current outputs represented with a voltage control input. To implement electrical control systems, the correct technology was unavailable then, the designers were left with less efficient systems and the alternative of slow responding mechanical systems. The governor is a very effective mechanical controller that is still often used by several hydro factories. Ultimately, process control systems became offered before modern power electronics. These process control systems were usually utilized in industrial applications and were devised by mechanical engineers utilizing hydraulic and pneumatic control machines, a lot of which are still being used these days.