

Forklift Control Valve

Forklift Control Valves - The first mechanized control systems were being used over two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock built in the 3rd century is thought to be the very first feedback control machine on record. This particular clock kept time by means of regulating the water level within a vessel and the water flow from the vessel. A common style, this successful device was being made in the same fashion in Baghdad when the Mongols captured the city in 1258 A.D.

All through history, a variety of automatic equipments have been used to accomplish specific tasks or to simply entertain. A popular European style in the seventeenth and eighteenth centuries was the automata. This tool was an example of "open-loop" control, comprising dancing figures which would repeat the same task again and again.

Closed loop or also called feedback controlled machines include the temperature regulator common on furnaces. This was actually developed in the year 1620 and accredited to Drebbel. One more example is the centrifugal fly ball governor developed in 1788 by James Watt and utilized for regulating steam engine speed.

J.C. Maxwell, who discovered the Maxwell electromagnetic field equations, wrote a paper in 1868 "On Governors," which could explain the instabilities exhibited by the fly ball governor. He utilized differential equations to be able to explain the control system. This paper demonstrated the usefulness and importance of mathematical methods and models in relation to understanding complex phenomena. It also signaled the start 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.

Within the next 100 years control theory made huge strides. New developments in mathematical techniques made it possible to more accurately control significantly more dynamic systems as opposed to the original fly ball governor. These updated methods consist of different developments in optimal control in the 1950s and 1960s, followed by progress in stochastic, robust, optimal and adaptive control techniques 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.

Initially, control engineering was performed as just a part of mechanical engineering. Control theories were firstly studied with electrical engineering because electrical circuits could simply be described with control theory methods. Now, control engineering has emerged as a unique practice.

The first control partnerships had a current output which was represented with a voltage control input. Since the right technology in order 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 really effective mechanical controller which is still usually used by some hydro plants. In the long run, process control systems became accessible before modern power electronics. These process controls systems were often utilized in industrial applications and were devised by mechanical engineers making use of pneumatic and hydraulic control devices, a lot of which are still being used at present.