

Control Valve for Forklift

Forklift Control Valve - The earliest automatic control systems were being utilized over two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock constructed in the third century is believed to be the first feedback control equipment on record. This clock kept time by means of regulating the water level inside a vessel and the water flow from the vessel. A common design, this successful device was being made in a similar way in Baghdad when the Mongols captured the city in 1258 A.D.

Throughout history, different automatic equipments have been used to be able to simply entertain or to accomplish specific tasks. A common European style in the seventeenth and eighteenth centuries was the automata. This particular machine was an example of "open-loop" control, consisting dancing figures which would repeat the same task repeatedly.

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

The Maxwell electromagnetic field equations, discovered by J.C. Maxwell wrote a paper in the year 1868 "On Governors," that was able to describing the exhibited by the fly ball governor. In order to explain the control system, he used differential equations. 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 earlier by not as convincingly and as dramatically as in Maxwell's study.

In the next 100 years control theory made huge strides. New developments in mathematical techniques made it possible to more precisely control significantly more dynamic systems than the first fly ball governor. These updated methods comprise different developments in optimal control during the 1950s and 1960s, followed by advancement in robust, stochastic, adaptive and optimal control techniques in the 1970s and the 1980s.

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

In the beginning, control engineering was performed as a part of mechanical engineering. In addition, 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. At present, control engineering has emerged as a unique discipline.

The first control partnerships had a current output which was represented with a voltage control input. As the right technology in order to implement electrical control systems was unavailable then, designers left with the choice of slow responding mechanical systems and less efficient systems. The governor is a very efficient mechanical controller that is still normally utilized by various hydro plants. Ultimately, process control systems became obtainable before modern power electronics. These process controls systems were usually utilized in industrial applications and were devised by mechanical engineers making use of hydraulic and pneumatic control devices, many of which are still being utilized at present.