

Forklift Control Valve

Control Valves for Forklift - The earliest automated control systems were being used over two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock built in the third century is considered to be the first feedback control device on record. This particular clock kept time by regulating the water level in a vessel and the water flow from the vessel. A common design, this successful tool was being made in a similar fashion in Baghdad when the Mongols captured the city in 1258 A.D.

A variety of automatic devices throughout history, have been used to be able to carry out specific tasks. A popular style used throughout the seventeenth and eighteenth centuries in Europe, was the automata. This particular device was an example of "open-loop" control, comprising dancing figures that will repeat the same job repeatedly.

Feedback or likewise known as "closed-loop" automatic control tools consist of the temperature regulator found on a furnace. This was actually developed in 1620 and accredited to Drebbel. Another example is the centrifugal fly ball governor developed during the year 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 1868 "On Governors," that can clarify the instabilities exhibited by the fly ball governor. He used differential equations to be able to describe the control system. This paper demonstrated the importance and helpfulness of mathematical methods and models in relation to understanding complex phenomena. It likewise signaled the start 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 analysis.

Within the following 100 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 original fly ball governor. These updated methods include different developments in optimal control during the 1950s and 1960s, followed by development in robust, stochastic, adaptive and optimal control methods 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.

Initially, control engineering was carried out as just a part of mechanical engineering. Control theories were initially studied with electrical engineering for the reason that electrical circuits could simply be explained with control theory techniques. Now, control engineering has emerged as a unique practice.

The first controls had current outputs represented with a voltage control input. In order 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 very effective mechanical controller that is still normally used by some hydro plants. Ultimately, process control systems became available before modern power electronics. These process controls systems were usually utilized in industrial applications and were devised by mechanical engineers using pneumatic and hydraulic control devices, lots of which are still being used at present.