

Forklift Control Valve

Control Valves for Forklift - The earliest mechanized control systems were being utilized more than two thousand years ago. In Alexandria Egypt, the ancient Ktesibios water clock constructed in the 3rd century is considered to be the first feedback control machine on record. This clock kept time by way of regulating the water level in a vessel and the water flow from the vessel. A popular design, this successful machine was being made in a similar manner in Baghdad when the Mongols captured the city in 1258 A.D.

Through history, different automatic equipments have been utilized so as to accomplish specific tasks or to simply entertain. A common European design in the 17th and 18th centuries was the automata. This particular tool was an example of "open-loop" control, featuring dancing figures that will repeat the same task repeatedly.

Feedback or likewise known as "closed-loop" automatic control machines comprise the temperature regulator seen on a furnace. This was 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.

The Maxwell electromagnetic field equations, discovered by J.C. Maxwell wrote a paper in the year 1868 "On Governors," which was able to describing the exhibited by the fly ball governor. In order to explain the control system, he used differential equations. This paper demonstrated the importance and helpfulness of mathematical methods and models in relation to comprehending complicated phenomena. It even signaled the beginning of mathematical control and systems theory. Previous elements of control theory had appeared earlier but not as dramatically and as convincingly 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 accurately control considerably more dynamic systems than the original fly ball governor. These updated methods comprise different developments in optimal control in the 1950s and 1960s, followed by advancement in robust, stochastic, optimal and adaptive control techniques during the 1970s and the 1980s.

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

Originally, control engineering was performed as just a part of mechanical engineering. Control theories were originally studied with electrical engineering in view of the fact that electrical circuits could simply be 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. To be able to implement electrical control systems, the proper technology was unavailable at that moment, the designers were left with less efficient systems and the choice of slow responding mechanical systems. The governor is a very efficient mechanical controller that is still normally utilized by several hydro plants. In the long run, process control systems became available before modern power electronics. These process controls systems were often utilized in industrial applications and were devised by mechanical engineers utilizing pneumatic and hydraulic control devices, a lot of which are still being utilized today.