

Control Valves for Forklift

Forklift Control Valve - Automatic control systems were primarily created more than two thousand years ago. The ancient water clock of Ktesibios in Alexandria Egypt dating to the 3rd century B.C. is thought to be the first feedback control device on record. This particular 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 tool was being made in the same manner in Baghdad when the Mongols captured the city in 1258 A.D.

Throughout history, different automatic machines have been utilized to be able to simply entertain or to accomplish specific tasks. A popular European style throughout the 17th and 18th centuries was the automata. This particular device was an example of "open-loop" control, consisting dancing figures that would repeat the same job over and over.

Feedback or otherwise known as "closed-loop" automatic control devices 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 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 the year 1868 "On Governors," that was able to clarify the instabilities exhibited by the fly ball governor. He used differential equations to be able to describe the control system. This paper exhibited the importance and helpfulness of mathematical models and methods in relation to comprehending complicated phenomena. It likewise signaled the start of mathematical control and systems theory. Previous elements of control theory had appeared before by not as convincingly and as dramatically as in Maxwell's study.

New developments in mathematical techniques and new control theories made it possible to more precisely control more dynamic systems compared to the original model fly ball governor. These updated techniques consist of 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 produce cleaner auto engines, cleaner and more efficient chemical methods and have helped make communication and space travel satellites possible.

Originally, control engineering was practiced as just a part of mechanical engineering. Control theories were at first studied with electrical engineering for the reason that electrical circuits could simply be described with control theory techniques. Today, control engineering has emerged as a unique discipline.

The very first controls had current outputs represented with a voltage control input. So as to implement electrical control systems, the right 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 efficient mechanical controller that is still often used by various hydro factories. In the long run, process control systems became accessible before modern power electronics. These process controls systems were usually used in industrial applications and were devised by mechanical engineers making use of pneumatic and hydraulic control equipments, a lot of which are still being used nowadays.