

How It Works

Pipeline safety

No matter the environment or application, valve integrity is key to pipeline safety. A wide range of valves, actuators, and valve accessories have been designed to keep pipeline processes and transfer points as safe as possible and reduce the likelihood of environmental exposure or leakage.

Valve failure in a pipeline can be costly in terms of valve or pipeline repair, lost profit caused by downtime, and potential legal repercussions for environmental contamination or damages.

Valves

Choosing the right valve for your application is the first step in achieving a safer pipeline operation. From valve type to advanced testing and certification requirements, every choice can impact performance. If a valve is not accurately matched for the process environment, productivity will suffer. Sometimes choosing the right valve requires working with an expert that can advise on application-specific requirements and potential design ideas for unique situations. Cameron valve, actuator, and market experts help operators from front-end engineering to decommission planning for accurate, cost-efficient valve selection.

Certain applications are straightforward and require reliable, daily-service valves, like the 370D4 trunnion-mounted ball valve, which is designed for small-bore pipelines and is part of the Cameron portfolio of WKM* valves. The CAMERON T30* fully welded ball valve can also be specially engineered for larger-bore pipelines and special applications. Ball valves are commonly installed at specified intervals as shutdown points in miles of pipeline for isolation and shutdown applications. These valves help ensure that in the case of scheduled maintenance or an emergency situation, the pipeline can be securely isolated. Cameron ball valves seal under extreme and unique applications, proving their high quality and integrity, and can be easily bundled together with a Cameron gearbox, actuator, or both, further increasing safety and reducing total cost of ownership.

In areas where critical isolation is needed, more specialized, engineered valves should be used to ensure that leakage does not occur. Depending on the application and type of service, a wide range of valve types and options are available to fit specific needs. In liquid service near waterways or municipalities, Cameron offers the WKM Pow-R-Seal* double expanding gate valve for critical isolation. In other situations, such as cryogenic service, our TBV* valves are specially designed for service at ultralow temperatures.

Actuators

Part of having a reliable valve system in a pipeline is having a reliable operator. Whether it's a manually operated valve with a gearbox or an automated valve with an actuator, the application and pipeline design need to be taken into consideration. Actuators offer a solution for ESD situations and provide remote control in environments that manual operation can be difficult or dangerous.

Actuators have the advantage of quick valve operation when responding to an electric signal sent from a remote location or automatic operation when detecting an abnormal pipeline condition. Manual gearboxes operate a valve more slowly and require direct human interaction at the valve, which can be impossible to access during an emergency situation. Cameron LEDEEN* actuators include pneumatic, hydraulic, direct-gas, and gas-over-oil actuators that have proved their reliability and safety in oil and gas applications around the world.

Accessories

As the global energy industry has grown, it has encountered unique and diverse challenges requiring specialized equipment. Devices that have the ability to lock an automated valve system from operation through mechanical means as well as devices that help compensate for environment changes (such as temperature compensators) can be critical to safe pipeline operation.

Cameron valve accessories include the DYNATORQUE D-Stop* partial-stroke test device, which allows for a valve to be partially stroked for testing purposes while in service, and the DYNATORQUE D-Lock* valve-locking device, which offers mechanical lockout capabilities so that a valve cannot cycle. A wide variety of easily mounted add-on products are available to the valve user, including temperature compensators, ground position indicators, damper drives, and declutch and manual overrides. These accessories can often be retrofitted for existing installations.

Measurement systems

Beyond controlling flow, detecting pipeline and process fluid conditions can help prevent major accidents or exposures to the environment. Metering technology, like ultrasonic meters, can help detect leakage in a pipeline before major failure occurs, saving time and money. The ultrasonic meter works to detect leaks by using ultrasonic sound waves that penetrate a process fluid and measure the amount of time it takes for the wave to return to a sensor. By monitoring variations in these measurements, Scanner* flow computers can analyze potential leaks upstream in the pipeline, alerting maintenance crews to investigate further.