

Actuators and Actuated Valve Packages



Hydraulic Actuated High Pressure Turret Valve Package

met for the complete package – ranging from an actuated valve to a complete, engineered HIPPS package to a specific Safety Integrity Level (SIL).

From the outset, Frames assesses your safety requirements (process control, emergency or protection), function (fail open, fail close or stay put) as well as the valve designation and combines these with your installation requirements into an engineered package. Control panels or cabinets can be included to meet the various requirements for the actuated valve. SIL requirements, closed loop, fire-fuse and backup bottles could be part of those requirements. In addition, we can include requirements for partial stroking facilities for identifying the status of an actuated valve and predicting maintenance activities.

Product Definition

Valves are mechanical devices which block or control process flows such as liquids, gases, vapors and aerosols. Valves are either manually operated, self-acting or equipped with an actuator. An actuator is a mechanical, pneumatic, hydraulic or electrical device that initiates a mechanical motion in response to an input signal. The combination of the two defines an actuated valve, with a mechanical motion to open, close or regulate the stroke of a valve.

Product Description

The need for valve automation has increased with the demand for more efficient and safe plant operation while operational manpower is reduced. In order to ensure safe operations with efficient and sustainable equipment, automated valve systems require failsafe, durable and extremely reliable components.

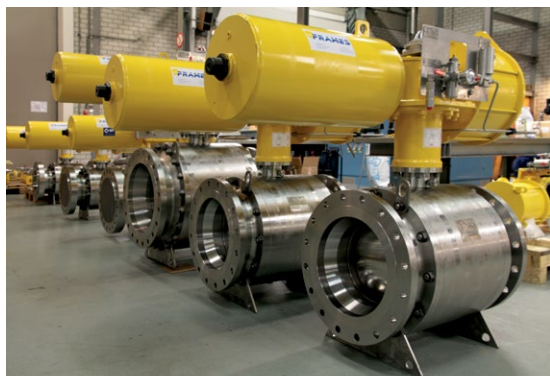
Frames provides products to serve all your valve automation needs. Because every user has different requirements and standards for the control of oil and gas flows, each solution imposes different requirements. Frames is committed to identifying the required technologies and building cost-effective products that meet your specific needs. As an independent company, we can source from a vast selection of suppliers. This ensures that client requirements are

Flexible range of automation solutions

We offer a wide range of actuator valve solutions that provide full system safety while minimizing operator involvement. Our range of specialist actuator systems can include:

- Line break detection systems – after detecting an unacceptable pressure drop, the line break detection system automatically switches the valve actuators to the emergency (closed) position.
- Gas-over-oil actuators – ideal for remote locations, gas-over-oil actuators use pipeline gas pressure to indirectly power the hydraulic actuator valve.
- Self-contained actuators – using a small power pack, a hydraulic spring return actuator provides a reliable and safe solution for remote locations.
- Fire-safe actuators – typically rated at 1093°C for 30 minutes, a fire-safe actuator and control cabinet delivers exceptional performance in emergency situations.
- Direct gas-operated actuators – primarily designed for sweet gas operations, a direct gas-operated actuator takes pipeline gas pressure, reduces it to less than 10 barg which is applied to operate a scotch yoke actuator.

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Pneumatic Actuated Valve Package

Frames provides full support for its clients, ranging from local valve suppliers to globally operating oil companies. Our extensive workshop is fully equipped with all necessary facilities to test and handle packages in accordance with international standards, including full certification and NDT testing. This applies to both newly manufactured units, as well as overhauled or enhanced equipment.

Process Description

Actuators and actuated valve packages for upstream and midstream applications in oil and gas operations are available in a wide variety of materials, sizes, ratings and types. Primary valve materials range from carbon steel to super alloys, which are applied from simple media such as potable water to dangerous chemicals such as acids.

Frames offers valve sizes from ½" up to 48" to DIN, ANSI or API standards with pressure classes up to 15.000 psi and process conditions ranging from cryogenic service from below -150°C up to 500°C.

Actuator materials used in our valve packages range from aluminum and carbon to stainless steel with torque values upwards of 750.000 Nm, with an electrical supply, pneumatic supply or hydraulic supply that delivers pressures upwards of 350 bar.

Frames Actuator Valve Packages can also include smart and fieldbus controls next to hard-wired controls and feedback loops.



Pneumatic Actuated Valves in a Process Line



Gas Driven Double Acting Actuators Complete with Controls

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Project Management

At Frames, we understand that success depends on sharp project management. As our client, we are driven to supporting your business, with our dedicated project team always on hand for one-on-one contact, providing you with the best possible service.

From concept through to design, production, testing and delivery, our project team will know your operating environment, and will use the latest technology to precisely meet your needs.

We are solution orientated, understand your industry and always use strict document control and professional planning to exercise tight process control and meet all delivery deadlines. Our global office network, international supply chain and partnerships with leading vendors mean we are always able to supply the best systems and meet all of the local requirements and regulations.

Technical Details

- Variety of actuator power supply options, including air, electric, hydraulic, direct gas or inert gas
- Full range of valves as part of the actuated package in all bores, classes and connections
- Extensive safety features, including fail-open, fail-close, stay-put, or running-to-safe position
- Complete control system, panel-mounted or within a cabinet
- Position monitoring for extreme positions to performance diagnostics with partial stroke facilities
- Integrated testing of the final assembly, site installation, commissioning and site acceptance testing

Added Value Frames

- Our total approach ensures the best, most cost effective solution
- We look beyond the actuated valve package at the overall process
- Solutions are optimized with associated packages
- Our experienced in-house engineers work with your business to optimize site safety
- Easy-to-maintain systems with minimized maintenance and optimized operational efficiencies for lower operational cost
- Worldwide field service and support to reduce operational downtime

References

- E17a-A platform – GDF Suez E&P Nederland B.V., the Netherlands
- Noord-Zuid Expansion, phase 2 – RMA Kehl GmbH & Co. KG, Germany / N.V. Nederlandse Gasunie, the Netherlands
- Q-16 Platform – Noton B.V., the Netherlands / TAQA Energy B.V., the Netherlands
- Clair Ridge Platform – BP Exploration Operating Company Ltd., United Kingdom
- Aseng FPSO – Single Buoy Moorings Inc., Monaco / Noble Energy Inc., USA

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Frames Family Tree

