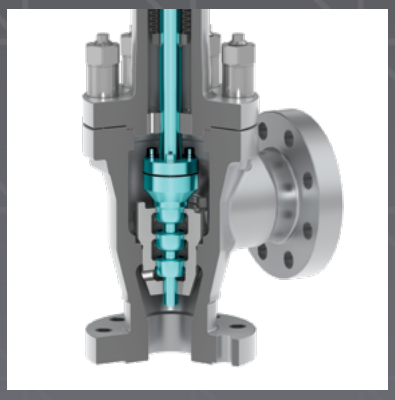
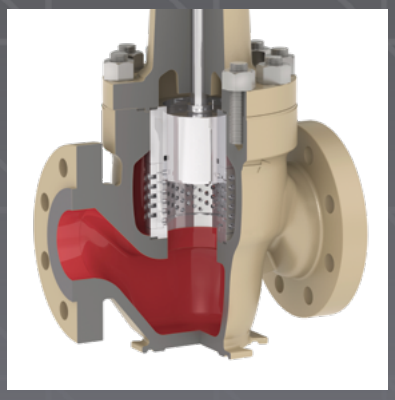
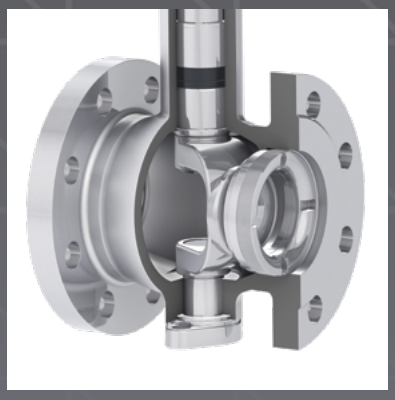
SOLUTIONS FOR THE **OIL AND GAS INDUSTRY**

Upstream – Midstream – Downstream





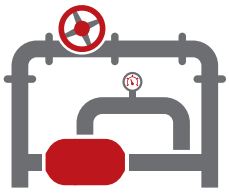


SMART IN FLOW CONTROL

THE PROCESS

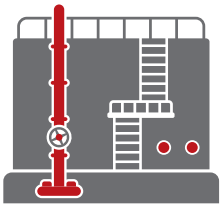
UPSTREAM

Known as the exploration and production sector, upstream includes the discovery and collection of underground and underwater natural gas and crude oil reserves. The extraction of these natural resources can be quite challenging due to the harsh environmental and process conditions, and also the growing increase in demand.



MIDSTREAM

The midstream sector is primarily focused on the transportation of oil and natural gas through LNG terminals, rail, pipelines, and other modes of transportation. It also includes the processing, distribution, and storage of these raw materials. Due to the extreme volatility of many of the compounds involved, safety and reliability of all components are of paramount importance. Our high-performance valves are specially designed to prevent hydrogen induced cracking in sour gas applications and reduce the emission of volatile organic compounds into the environment.



DOWNSTREAM

The downstream side of the petroleum industry refers to the refining of crude oil and raw natural gas to produce everyday products such as fuels, polymers, and plastics. Depending on where a refinery gets its feedstock, the composition of the oil can vary quite drastically. Each facility must be uniquely designed to optimize the products created based on the supply available and local requirements. In addition to plant optimization, increasing regulations imposed on refineries intended to improve air quality means that plants must continuously adapt to meet these strict requirements. This could mean retrofitting existing units of the plant or even integrating new units to meet regulatory and customer needs.

THE SAMSON ADVANTAGE

SAMSON products are specifically designed to overcome the challenging conditions prevalent in the oil and gas industry. Our products are engineered to meet the requirements of all pressure ratings, materials, and construction styles needed for any application. From carbon steels to exotic alloys, our valves are designed to withstand the harshest environmental and process conditions. Highly wear and corrosion resistant materials such as tungsten carbides and ceramics provide maximum service life where standard materials cannot meet the demands.

From the most hostile and remote parts of the world to the comfort of your own home, SAMSON understands the unique challenges that can arise from the extraction and processing of oil and gas. We have the products and experience to provide the right solution for any application. We're always working tirelessly to stay at the cutting edge of technology, allowing you to stay ahead of the curve.

UPSTREAM

CHOKE VALVES

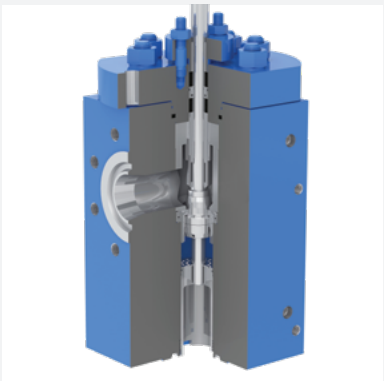
- Adjustable chokes for handling high-pressure drops, sour gas, multi-phase flows, and J-T conditions
- Certified according to API 6A with quality levels from PSL 1 to PSL 4 available
- For use up to working pressures of 15,000 psi and with multi-stage trim solutions

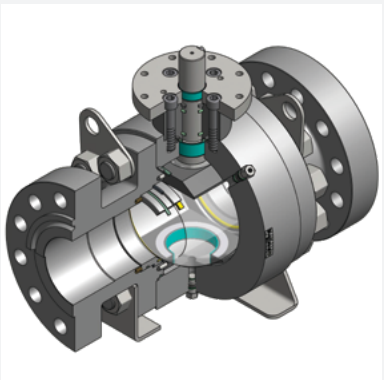
API BALL VALVES

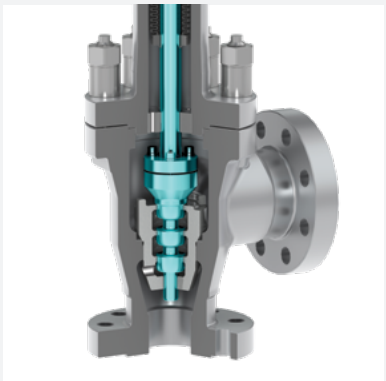
- Forged steel ball valves in carbon, stainless, duplex, and special alloys, designed in accordance with API 6A and 6D
- Soft and metal-seated solutions from cryogenic to high temperature services
- Manual and actuated (pneumatic, hydraulic, electric, gas-over-oil, HIPPS) solutions

CONTROL VALVES

- Dirt-insensitive trim designs for critical control applications with high pressure drops
- Wide range of anti-cavitation, noise reduction, and erosion resistant trims available
- Successfully used in oil and gas processing plants, EOR processes







MIDSTREAM

ACTUATED VALVES

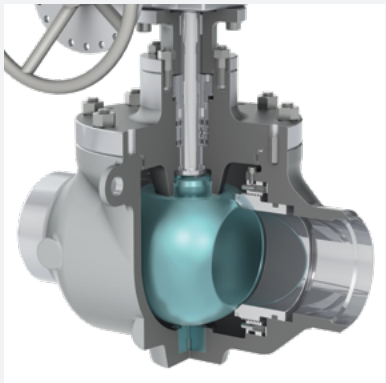
- Pneumatic, hydraulic, or gas-over-oil actuated valves providing reliable shut-off
- Fully welded valves up to NPS 60 for gas transmission lines
- Top-entry design available to facilitate simplified in-line valve maintenance

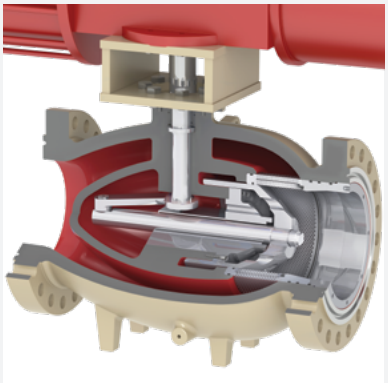
AXIAL FLOW VALVES

- Solutions for critical safety applications, such as anti-surge valves, HIPPS
- High-capacity valves with rotary-to-linear drive mechanism to reduce actuator size
- Fast response with minimal dead band compared to other commonly used designs

CONTROL VALVES

- Used in cold-box applications for natural gas liquefaction, LNG transport, regasification, etc.
- Top-entry design for easy maintenance
- Globe, butterfly, eccentric plug, and ball valve designs available for cryogenic service





DOWNSTREAM

ECCENTRIC PLUG VALVES

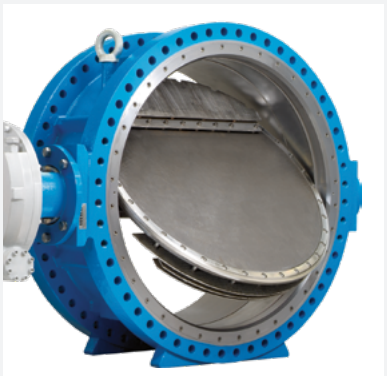
- Double-offset design eliminates friction, reduces torque, and ensures precise control
- Unobstructed flow path when open, less flow turbulence, high turndown ratio, and less wear on the internal parts
- Perfect solution for viscous flows and flows containing solid particles, such as slurries

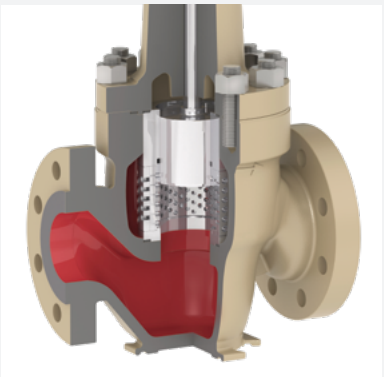
BUTTERFLY VALVES

- High-performance double and triple-offset designs achieve tight shut-off with soft or metal seals
- Used in fast-closing applications with low-noise trims to achieve high efficiency and stability
- Well suited for high-cycle and high-temperature applications

GLOBE CONTROL VALVES

- Wide variety of flow control valves in sizes from NPS ½ to NPS 32
- Severe service solutions for challenging flow conditions, such as two-phase flows, flashing, and cavitation
- Metal bellows for hazardous media to prevent fugitive emissions





OIL AND GAS PRODUCTS

VALVES

- Control and on/off valves used extensively in the most demanding conditions
- Suitable for extreme pressures and temperatures in severe service
- Designs include globe, ball, butterfly, and rotary plug valves

ACTUATORS

- Solutions for pneumatic, hydraulic, and gas-over-oil applications
- Designs include scotch yoke, rack-and-pinion, and linear actuators
- Available in a wide variety of materials suitable for use in demanding applications

SMART DEVICES

- Digital positioners for linear and rotary valves that work in extreme conditions
- Available for both HART® and FOUNDATION™ fieldbus communication
- Easy operation with state-of-the-art valve diagnostics

SAMSON
PFEIFFER · RINGO · SED · STARLINE · VETEC
AIR TORQUE · CERA SYSTEM · LEUSCH

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2017-12 I NA 107