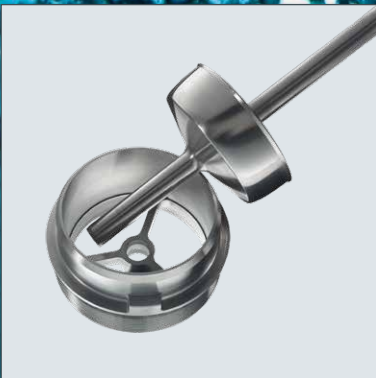
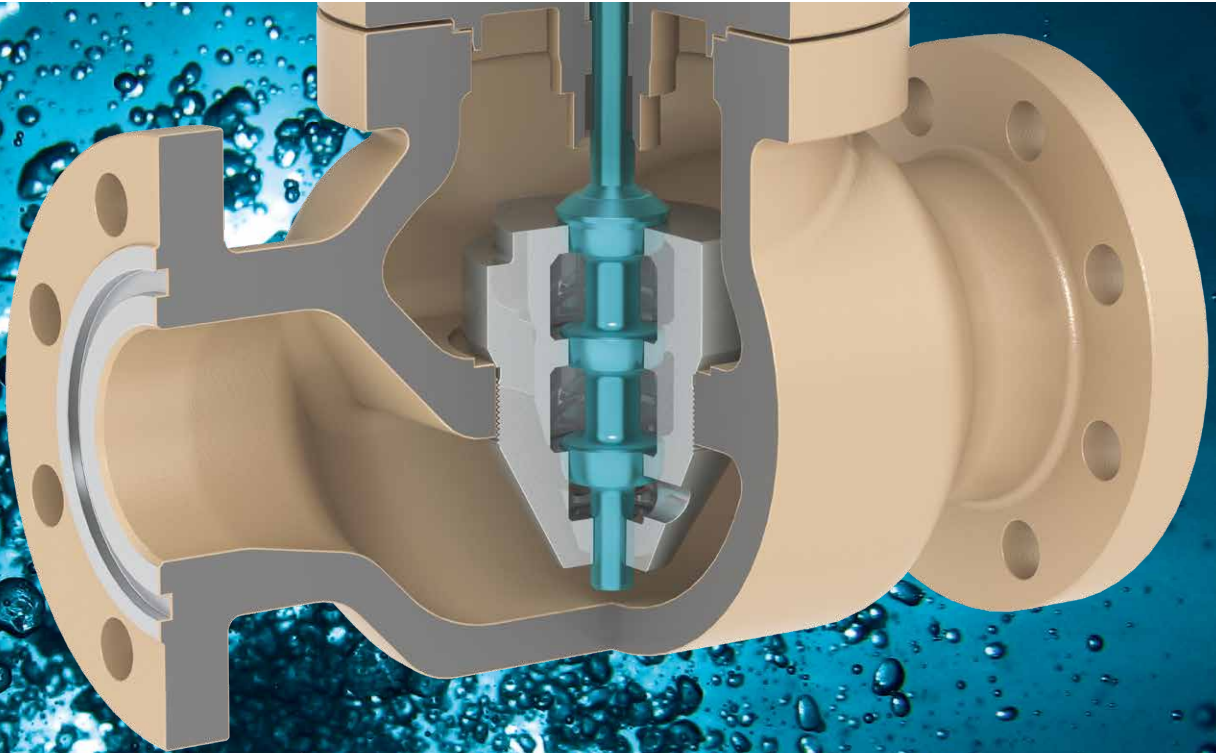


AC VALVE TRIMS

SAMSON



Anti-cavitation system

SMART IN FLOW CONTROL

FOR ALL APPLICATIONS



Money well invested

AC-trims improve the operational reliability of the valve used and the overall availability of the plant. The double guiding of the plug by the seat and body allow standard SAMSON globe and angle valves to be operated with little vibration. In part, low-cavitation operation can considerably reduce the sound pressure level in the valve and prevent mechanical vibration. As a result, erosion on the surfaces of the internal parts can be avoided, which considerably extends the valve's service life. The cost incurred throughout the entire product life cycle is reduced, not least because unscheduled plant shutdowns are avoided.

Available versions

	AC-1	AC-3	AC-5
			
Valve size	DN 50 to 300 NPS 2 to 12	DN 15 to 300 NPS ½ to 12	DN 25 to 200 NPS 1 to 8
Pressure rating	PN 16 to 160 Class 150 to 900	PN 40 to 400 Class 300 to 2500	PN 40 to 400 Class 300 to 2500
K _{vs} coefficients C _v coefficients	22 to 1000 26 to 1150	0.25 to 160 0.3 to 190	0.4 to 63 0.5 to 75
Possible materials	1.4006, 1.4301, 1.4404*	1.4006, 1.4301, 1.4112, 1.4404*	1.4006, 1.4301, 1.4112, 1.4404*

* Optional Stellite® facing

NO CAVITATION AT HIGH PRESSURE DROPS

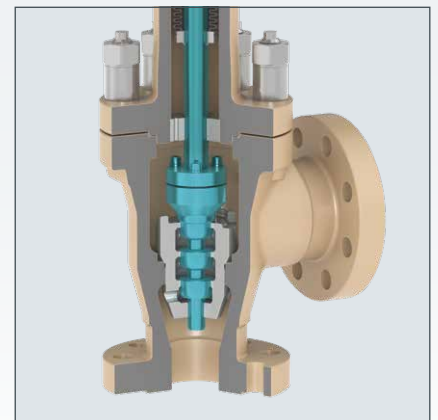
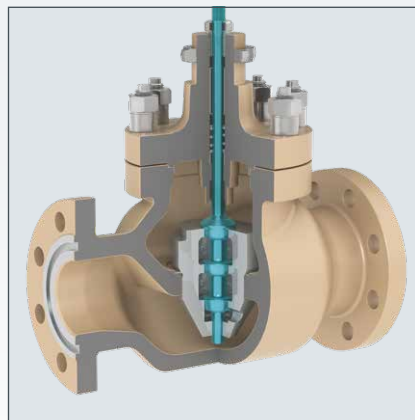
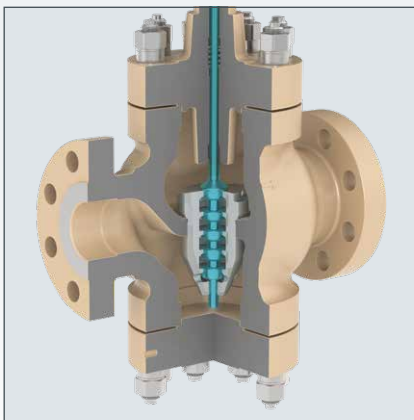


Preventing cavitation

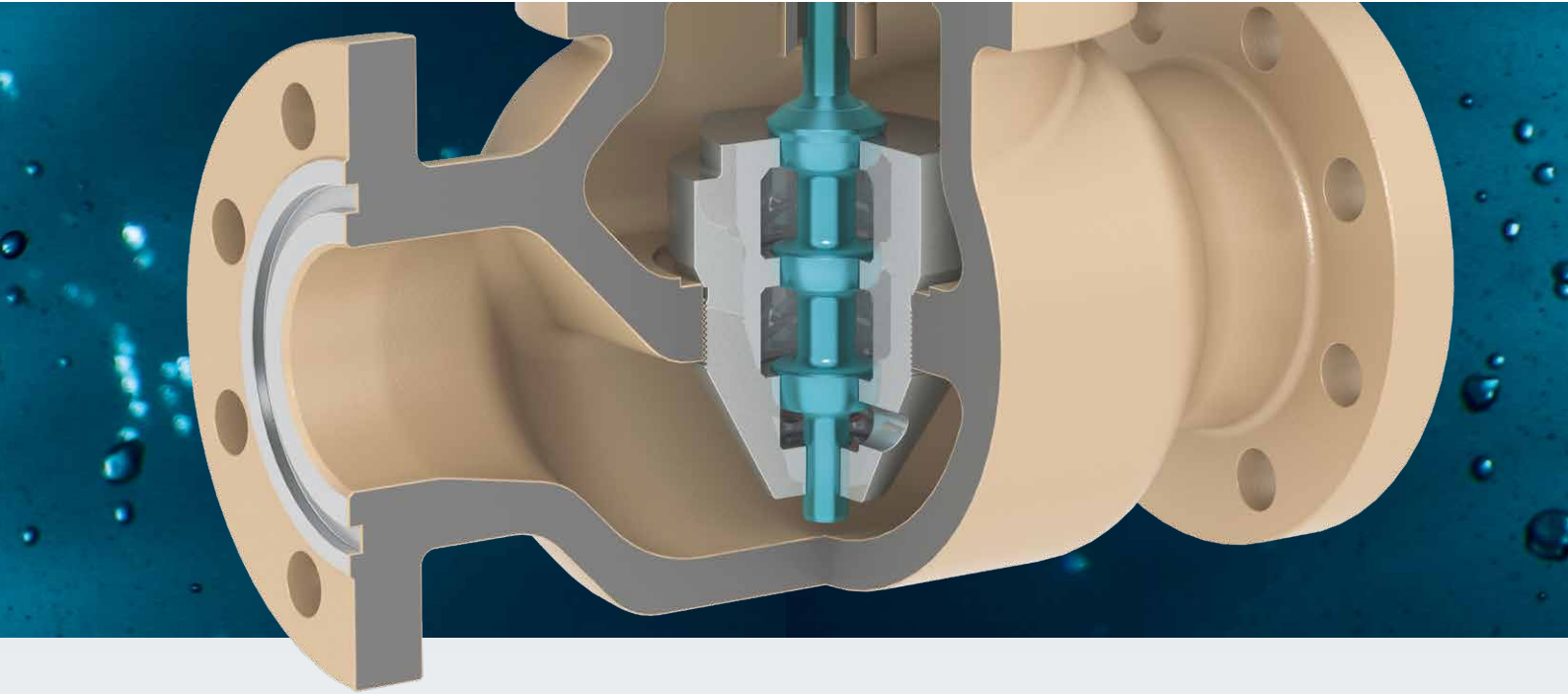
With the anti-cavitation system, SAMSON offers a seat-plug trim for globe and angle valves that effectively prevents cavitation and its effects, such as noise emissions and wear, even at high pressure drops.

Modular design

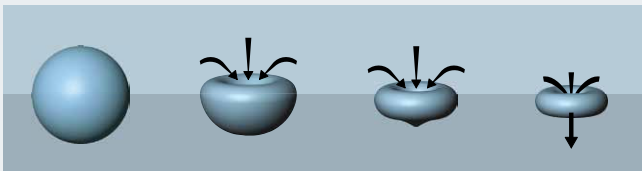
All versions of the anti-cavitation trim system known as "AC-trim" are included in the SAMSON modular valve design. Depending on the application, the trims can be retrofitted in standard globe and angle valves without any problems to increase the valves' availability.



BENEFITS THROUGH OPTIMIZED GEOMETRY



Preventing damage



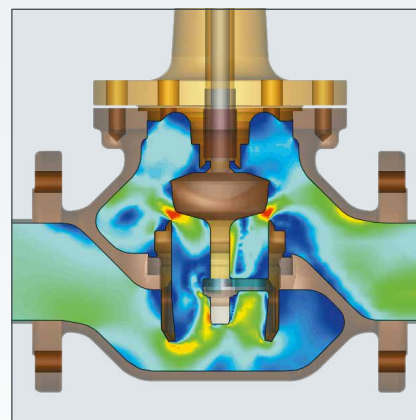
Bubble collapse during cavitation

Effects caused by cavitation (bubble formation) that affect the control valve and the control process:

- High noise levels
- Severe vibration in the plant sections affected
- Choked flow due to vapor formation
- Change in fluid properties
- Erosion of valve components
- Destruction of the control valve
- Standstill of the process

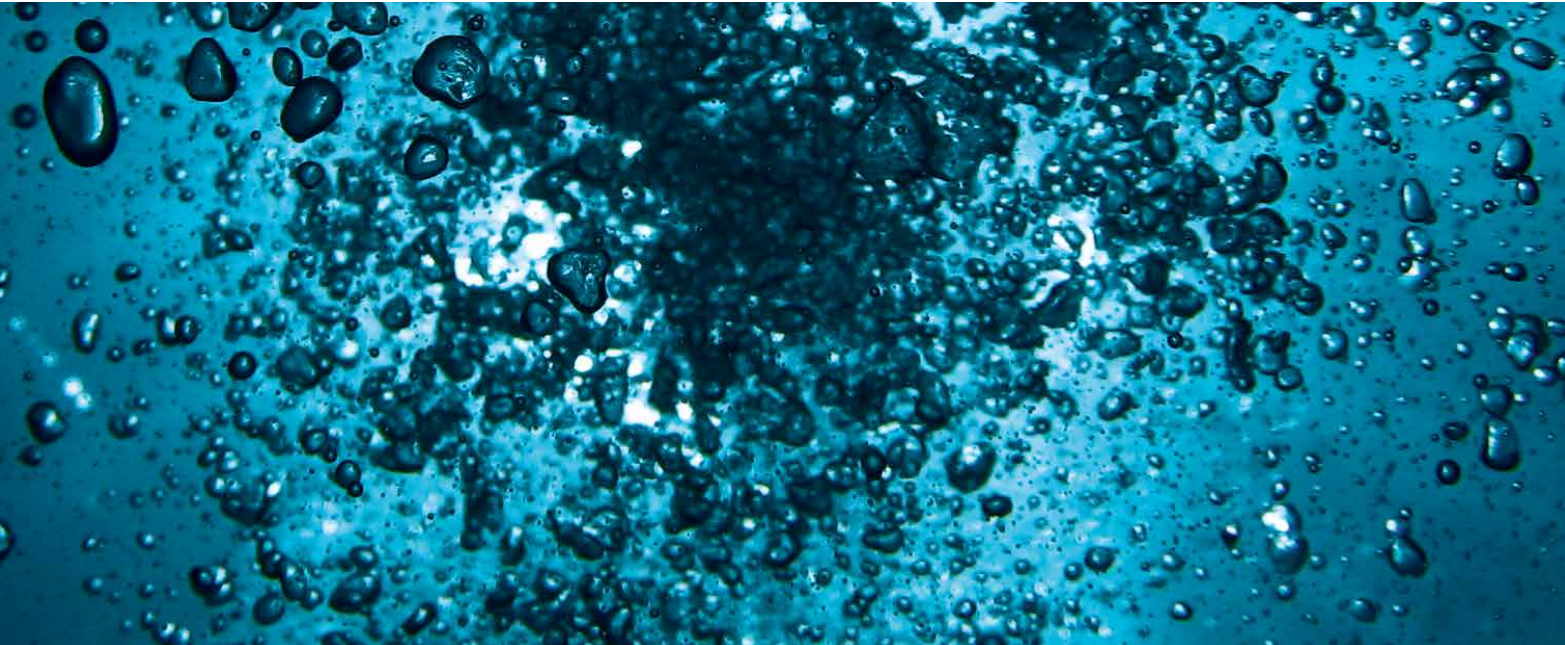
Computational fluid dynamics

The geometries of SAMSON AC-trims have been optimized using CFD (Computational Fluid Dynamics) to minimize their tendency to produce cavitation.



Flow velocity [m/s]

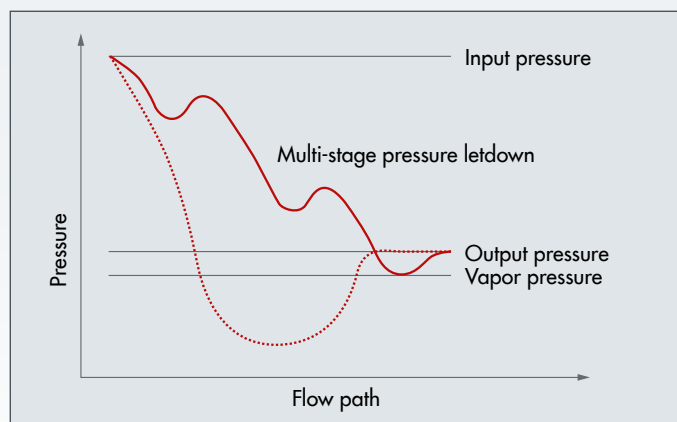
MULTI-STAGE PRESSURE LETDOWN



Reducing pressure

Thanks to the multi-stage pressure letdown in the AC-3 and AC-5 trims, cavitation is warded off almost always since the lowest pressure that occurs along the flow path is always kept above the vapor pressure. This allows pressure drops of up to 200 bar to be handled without any problems.

It is always better to prevent cavitation than to merely reduce its damaging effects, e.g. by using high-quality materials.



Pressure graph: — With AC-trim Without AC-trim

Applications

- Oil and gas:
Production water injection into wells
- Petrochemical industry:
Use in high-pressure separators (HHPS/CHPS)
Liquid level control in absorber towers
(rich amine letdown valve)
- Chemical and energy supply sector:
Control of boiler feedwater

SAMSON AT A GLANCE



STAFF

- Worldwide 4,500
- Europe 3,600
- Asia 600
- Americas 200
- Frankfurt am Main, Germany 1,900

INDUSTRIES AND APPLICATIONS

- Chemicals and petrochemicals
- Food and beverages
- Pharmaceuticals and biotechnology
- Oil and gas
- Liquefied Natural Gas (LNG)
- Marine equipment
- Power and energy
- Industrial gases
- Cryogenic applications
- District energy and building automation
- Metallurgy and mining
- Pulp and paper
- Water technology
- Other industries

PRODUCTS

- Valves
- Self-operated regulators
- Actuators
- Positioners and valve accessories
- Signal converters
- Controllers and automation systems
- Sensors and thermostats
- Digital solutions

SALES SITES

- More than 50 subsidiaries
in over 40 countries
- More than 200 representatives

PRODUCTION SITES

- SAMSON Germany, Frankfurt, established in 1916
Total plot and production area: 150,000 m²
- SAMSON France, Lyon, established in 1962
Total plot and production area: 23,400 m²
- SAMSON Turkey, Istanbul established in 1984
Total plot and production area: 11,100 m²
- SAMSON USA, Baytown, TX, established in 1992
Total plot and production area: 20,000 m²
- SAMSON China, Beijing, established in 1998
Total plot and production area: 47,000 m²
- SAMSON India, Pune district, established in 1999
Total plot and production area: 28,000 m²
- SAMSON Russia, Rostov-on-Don, established in 2015
Total plot and production area: 24,000 m²
- SAMSON AIR TORQUE, Bergamo, Italy
Total plot and production area: 27,000 m²
- SAMSON CERA SYSTEM, Hermsdorf, Germany
Total plot and production area: 14,700 m²
- SAMSON KT-ELEKTRONIK, Berlin, Germany
Total plot and production area: 1,100 m²
- SAMSON LEUSCH, Neuss, Germany
Total plot and production area: 18,400 m²
- SAMSON PFEIFFER, Kempen, Germany
Total plot and production area: 20,300 m²
- SAMSON RINGO, Zaragoza, Spain
Total plot and production area: 19,000 m²
- SAMSON SED, Bad Rappenau, Germany
Total plot and production area: 10,400 m²
- SAMSON STARLINE, Bergamo, Italy
Total plot and production area: 27,000 m²
- SAMSON VDH PRODUCTS, the Netherlands
Total plot and production area: 12,000 m²
- SAMSON VETEC, Speyer, Germany
Total plot and production area: 27,100 m²

SAMSON AKTIENGESELLSCHAFT

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