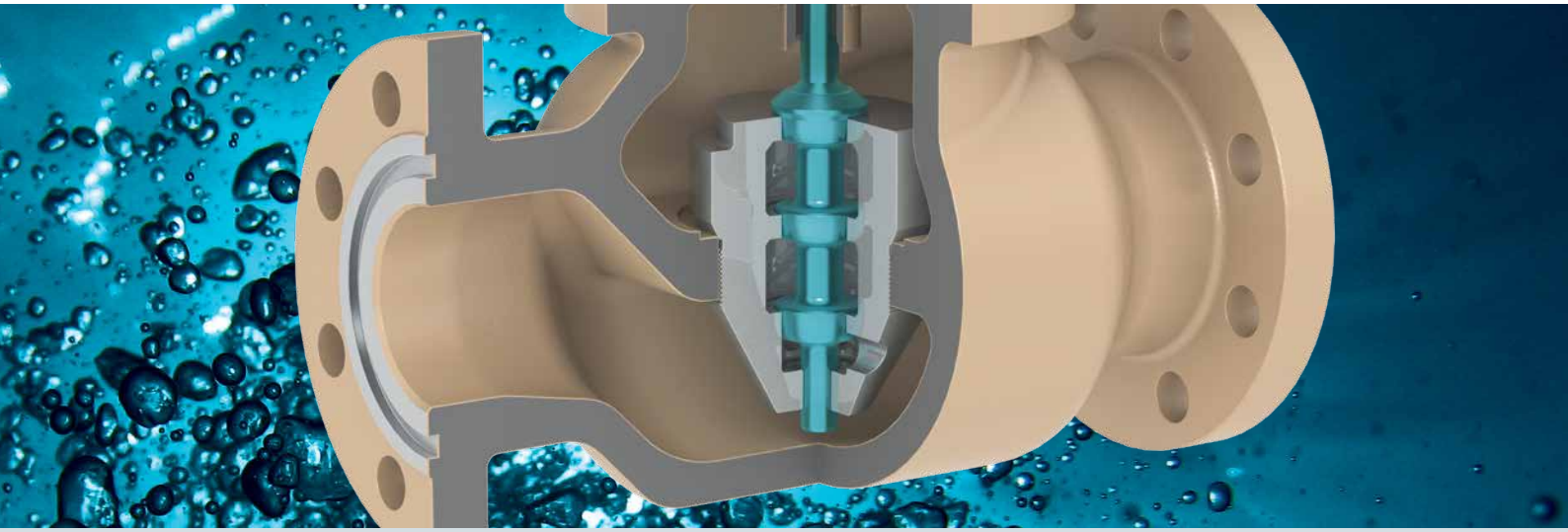


AC VALVE TRIMS

Anti-cavitation system

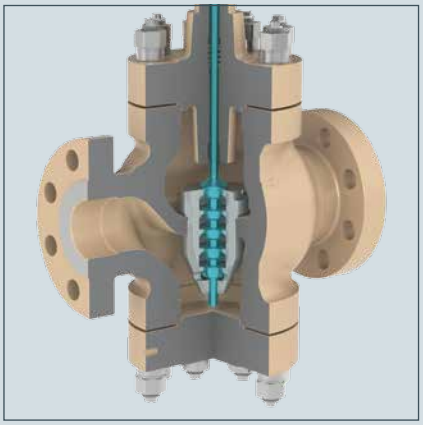
NO CAVITATION AT HIGH PRESSURE DROPS

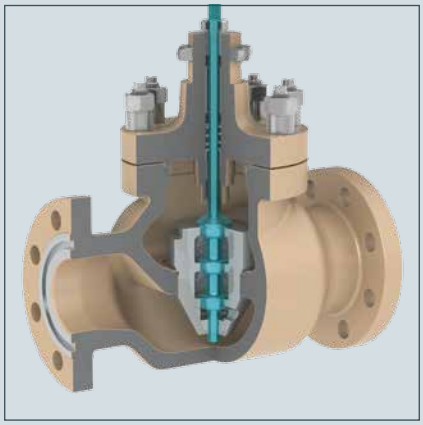
Preventing cavitation

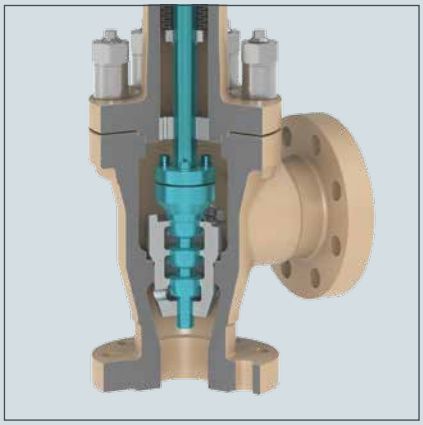
With the anti-cavitation system, SAMSON offers a seat-plug trim for globe and angle valves that effectively prevents cavitation and its effects, such as noise emissions and wear, even at high pressure drops.

Modular design

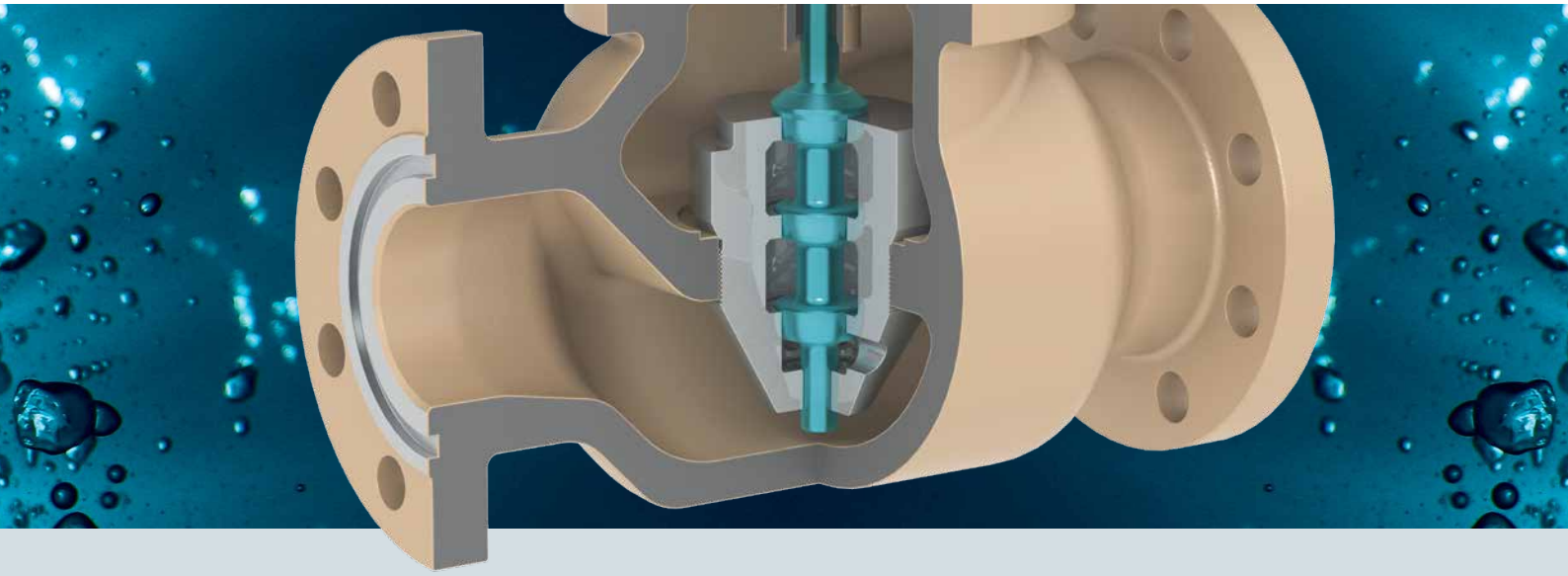
All versions of the anti-cavitation trim system known as "AC-trim" are included in the SAMSON modular valve design. Depending on the application, the trims can be retrofitted in standard globe and angle valves without any problems to increase the valves' availability.



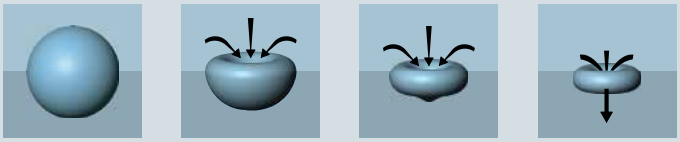




BENEFITS THROUGH OPTIMIZED GEOMETRY



Preventing damage



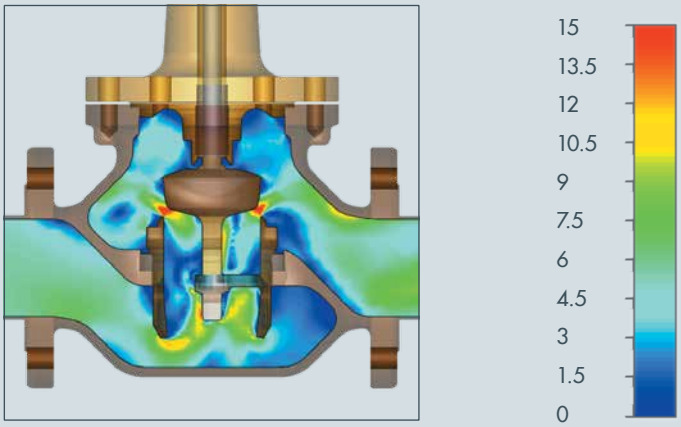
Bubble collapse during cavitation

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.

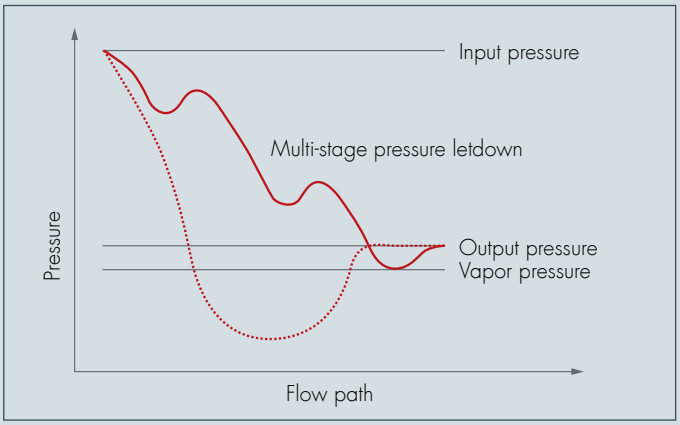


Flow velocity [m/s]

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.



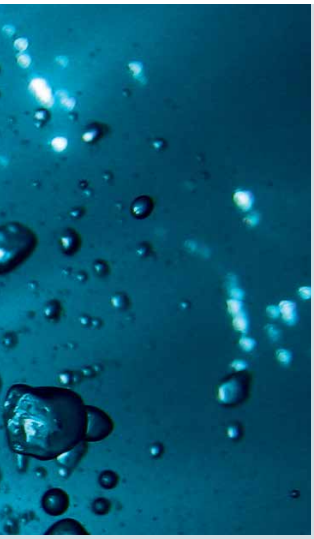
Pressure graph: — With AC-trim ····· Without AC-trim

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

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

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-2 	AC-3 	AC-5 
Valve size	DN 50 to 300 NPS 2 to 12	DN 80 to 250 NPS 3 to 10	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 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	16 to 320 20 to 375	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, 1.4404 *	1.4006, 1.4301, 1.4112, 1.4404 *	1.4006, 1.4301, 1.4112, 1.4404 *

* Optional Stellite® facing

SAMSON AT A GLANCE

STAFF

- Worldwide 4,300
- Europe 3,300
- Asia 500
- Americas 200
- Frankfurt am Main, Germany 1,800

MARKETS

- Chemicals and petrochemicals
- Power and energy
- District heating and cooling, building automation
- General industry
- Industrial gases
- Food and beverages
- Metallurgy and mining
- Oil and gas
- Pharmaceuticals and biotechnology
- Marine equipment
- Water and wastewater
- Pulp and paper

PRODUCTS

- Valves
- Self-operated regulators
- Actuators
- 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 1916
  Total plot and production area: 150,000 m²
- SAMSON France, Lyon, established 1962
  Total plot and production area: 23,400 m²
- SAMSON Turkey, Istanbul established 1984
  Total plot and production area: 11,053 m²
- SAMSON USA, Baytown, TX, established 1992
  Total plot and production area: 9,200 m²
- SAMSON China, Beijing, established 1998
  Total plot and production area: 10,138 m²
- SAMSON India, Pune district, established 1999
  Total plot and production area: 18,000 m²
- SAMSON Russia, Rostov-on-Don, established 2015
  Total plot and production area: 5,000 m²
- SAMSON AIR TORQUE, Bergamo, Italy
  Total plot and production area: 27,684 m²
- SAMSON CERA SYSTEM, Hermsdorf, Germany
  Total plot and production area: 14,700 m²
- SAMSON KT-ELEKTRONIK, Berlin, Germany
  Total plot and production area: 1,060 m²
- SAMSON LEUSCH, Neuss, Germany
  Total plot and production area: 18,400 m²
- SAMSON PFEIFFER, Kempen, Germany
  Total plot and production area: 35,400 m²
- SAMSON RINGO, Zaragoza, Spain
  Total plot and production area: 18,270 m²
- SAMSON SED, Bad Rappenau, Germany
  Total plot and production area: 10,370 m²
- SAMSON STARLINE, Bergamo, Italy
  Total plot and production area: 26,409 m²
- SAMSON VDH PRODUCTS, the Netherlands
- SAMSON VETEC, Speyer, Germany
  Total plot and production area: 27,090 m²

SAMSON AKTIENGESELLSCHAFT
Weismuellerstrasse 3 · 60314 Frankfurt am Main, Germany
Phone: +49 69 4009-0 · Fax: +49 69 4009-1507
E-mail: samson@samson.de · Internet: www.samson.de

2019-04 · WA263 EN