

# SEVERE SERVICE VALVES FOR MARINE APPLICATIONS



**Zero Travel 1 trim, AC trims,  
valves with perforated plugs**

**SMART IN FLOW CONTROL**

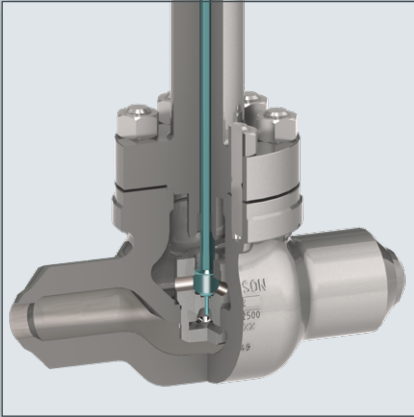
# SOME OF OUR REFERENCES



SAMSON – A name recognized worldwide as a synonym for high-quality work, entrepreneurial spirit, and innovative strength. Our field of expertise spans the entire range of instrumentation and controls. SAMSON supplies high-quality control valves for marine applications. The fields of application range from ballast water systems to highly complex applications for regasification skids on board ships and fuel gas supply systems. The table below contains a list of hull identification numbers in which SAMSON control valves are installed.

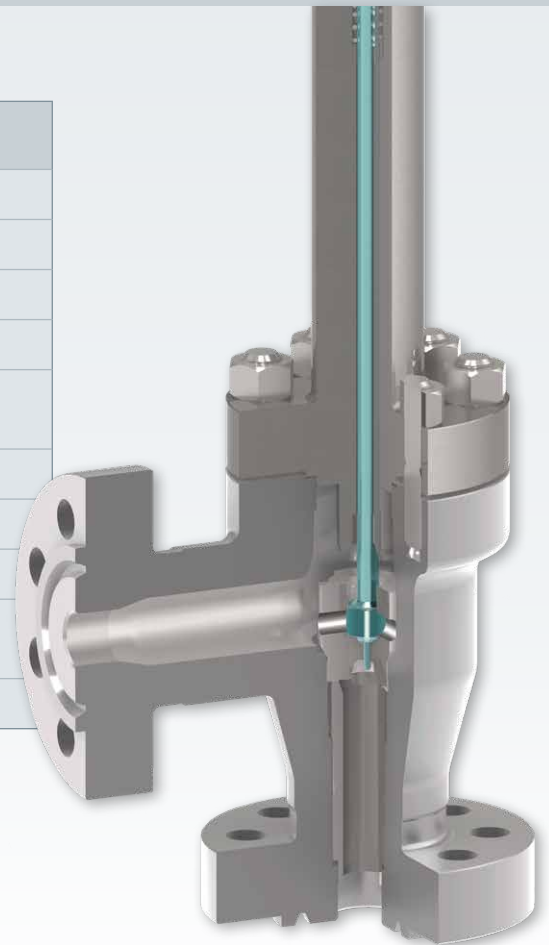
Shipyard	Hull identification number
SAMSUNG Heavy Industries	2023
Hyundai MIPO Dockyard, Korea	8166, 8167, H2449, H2450, H2451, H8159, H8160, H8161, H8184, H8185
Hudong-Zhonghua Shipbuilding	H1663A, H1664A
CSSC Jiangnan Shipyard	H2535, H2536, H2561, H2562, H2563, H2564, H2573
Hyundai Heavy Industries Co. Ltd	H2708, H2709, H2710
WISON Offshore & Marine Ltd	M12028
COSCO Shipyard Group Co., Ltd.	NE212, NE213
Sinopacific Offshore & Engineering Co. Ltd	S1015, S1016, S1017, S1018, S1019, S1020, S1024, S1025, S1026, S1027
STX Offshore & Shipbuilding Co. Ltd	S4031, S4032, S4080
Nantong COSCO KHI Ship Engineering	NE212, NE213
Dingheng (Jiangsu)	AD0015
Kawasaki Heavy Industries	KHI 22N1709
Imabari	H8177, H8188
Hanjin Heavy Industries	SN00268

# ZT-1 – ZERO TRAVEL 1 TRIM

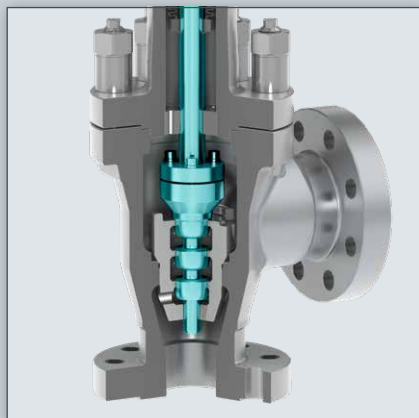


The Zero Travel 1 trim is intended for a single-stage letdown in the FTC (flow-to-close) direction of flow. It is suitable for liquids, two-phase flows, or gases. The benefit of the trim is that a single-stage letdown at differential pressures can be achieved under certain conditions. Typical applications include: Pressure letdown and critical steam applications.




Zero Travel 1 trim	
Suitable for	Type 3251 · Type 3256
Valve size	DN 50 to 80 · NPS 2 to 3
Pressure rating	PN 16 to 400 · Class 150 to 2500
$K_v$ coefficients · $C_v$ coefficients	0.16 to 1.3 · 0.2 to 1.5
Temperature range (depending on the valve bonnet)	-196 to +550 °C · -325 to +1022 °F
Direction of flow	FTC
Characteristic	Equal percentage · Linear
Materials (seat and plug)	Stellite® 6B
	1.4401/1.4404 with Stellite® facing 316/316L with Stellite® facing
	1.4006 with Stellite® facing · 410 T



# AC TRIMS

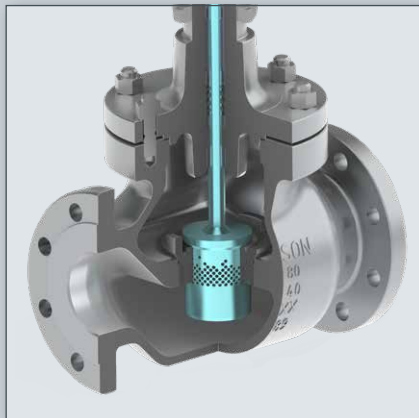


The main task of AC trims is to prevent cavitation. Additionally, they increase the operational reliability of the valve used and the overall availability of the plant. The double guiding of the plug by the seat and body allow standard SAMSON globe and angle valves to be operated with little vibration. Thanks to the modular design of the SAMSON valves, AC trims can easily be retro-fitted. 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.

AC Trims	AC-1	AC-3	AC-5
			
Suitable for	Series 240 and 250	Series 250	Series 250
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 <sub>v</sub> coefficients C <sub>v</sub> coefficients	22 to 1500 26 to 1150	0.25 to 160 0.3 to 190	0.4 to 63 0.5 to 75
Temperature range	-10 to +220 °C · 14 to 428 °F		
Direction of flow	FTO		
Characteristic	Equal percentage	Equal percentage · Linear	
Materials (seat and plug)	1.4006, 1.4301, 1.4404*	1.4006, 1.4301, 1.4112, .4404*	1.4006, 1.4301, 1.4112, .4404*

\* Optional Stellite® facing

# VALVES WITH PERFORATED PLUGS



The perforated plug is mainly used for valves in steam applications, particularly for operation in the wet steam region.

Additional fields of application include the control of two-phase medium flow, liquid media which vaporize on the outlet side (flashing valves) or emergency relief valves (blow-off valves) involving gas relief in which flow velocities lower than 0.3 Mach cannot be kept.



Perforated plug						
Suitable for		Type 3241	Type 3248	Type 3251	Type 3254	Type 3256
Valve size		DN 25 to 500 NPS 1 to 20				
Pressure rating		PN 16 to 400 Class 125 to 2500				
K <sub>v</sub> coefficients C <sub>v</sub> coefficients*	Linear characteristic:	4 to 1300 5 to 1500	4 to 1300 5 to 1500	4 to 3200 5 to 3700	63 to 3200 75 to 3700	4 to 1240 5 to 1440
	Equal percentage characteristic:	4 to 1000 5 to 1150	4 to 1000 5 to 1150	4 to 2500 5 to 2900	54 to 2500 62 to 2900	4 to 950 5 to 1100
Temperature range (depending on the valve bonnet)		-196 to +450 °C -325 to +842 °F	-273 to +220 °C -459 to +428 °C	-196 to +550 °C -325 to +1022 °F	-196 to +550 °C -325 to +1022 °F	-196 to +550 °C -325 to +1022 °F
Standard direction of flow		FTO	FTO	FTO	FTO	FTC
Characteristic		Equal percentage · Linear				
Materials (seat and plug)		Selection depending on application				

\* Values for standard direction of flow and versions without flow divider



# 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 m<sup>2</sup>
- SAMSON France, Lyon, established in 1962  
Total plot and production area: 23,400 m<sup>2</sup>
- SAMSON Turkey, Istanbul established in 1984  
Total plot and production area: 11,100 m<sup>2</sup>
- SAMSON USA, Baytown, TX, established in 1992  
Total plot and production area: 20,000 m<sup>2</sup>
- SAMSON China, Beijing, established in 1998  
Total plot and production area: 47,000 m<sup>2</sup>
- SAMSON India, Pune district, established in 1999  
Total plot and production area: 28,000 m<sup>2</sup>
- SAMSON Russia, Rostov-on-Don, established in 2015  
Total plot and production area: 24,000 m<sup>2</sup>
- SAMSON AIR TORQUE, Bergamo, Italy  
Total plot and production area: 27,000 m<sup>2</sup>
- SAMSON CERA SYSTEM, Hermsdorf, Germany  
Total plot and production area: 14,700 m<sup>2</sup>
- SAMSON KT-ELEKTRONIK, Berlin, Germany  
Total plot and production area: 1,100 m<sup>2</sup>
- SAMSON LEUSCH, Neuss, Germany  
Total plot and production area: 18,400 m<sup>2</sup>
- SAMSON PFEIFFER, Kempen, Germany  
Total plot and production area: 20,300 m<sup>2</sup>
- SAMSON RINGO, Zaragoza, Spain  
Total plot and production area: 19,000 m<sup>2</sup>
- SAMSON SED, Bad Rappenau, Germany  
Total plot and production area: 10,400 m<sup>2</sup>
- SAMSON STARLINE, Bergamo, Italy  
Total plot and production area: 27,000 m<sup>2</sup>
- SAMSON VDH PRODUCTS, the Netherlands  
Total plot and production area: 12,000 m<sup>2</sup>
- SAMSON VETEC, Speyer, Germany  
Total plot and production area: 27,100 m<sup>2</sup>

## SAMSON AKTIENGESELLSCHAFT

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