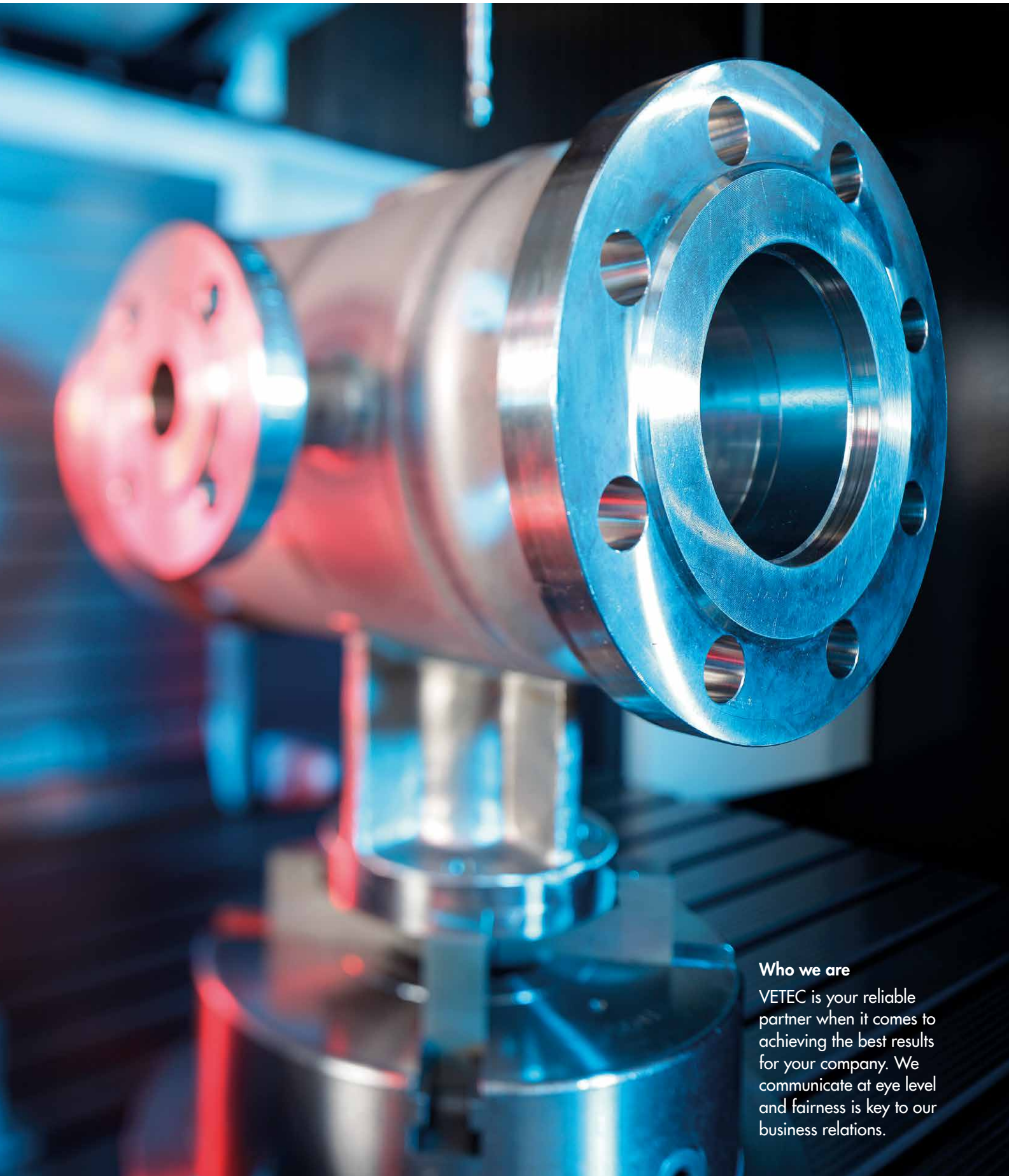




## **SAMSON VETEC**

Rotary Plug Valves & Actuators





**Who we are**  
VETEC is your reliable partner when it comes to achieving the best results for your company. We communicate at eye level and fairness is key to our business relations.

**Tradition and perfection for safe, durable control valves**  
At VETEC, our expertise is founded on tradition and experience. We have accumulated in-depth know-how over many years and in combination with our worldwide service and sales network, we are your ideal partner.

**VETEC stands for German engineering** and control valves tailor-made for your specific application. The result are first-rate valves that meet strictest requirements.

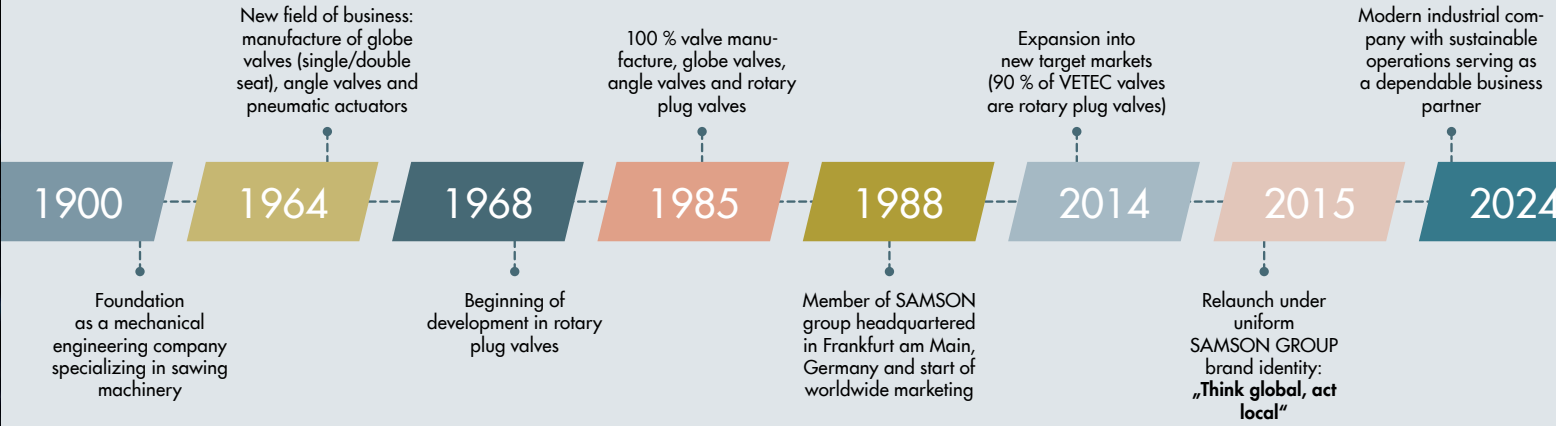
**First-rate quality**  
The prime quality our products and brand are known for is based on the hard work of our highly skilled staff: every day, they do their best to satisfy your needs. Every control valve that leaves our plant is manufactured to meet the specific requirements of your process and to **function reliably** over many years.

Rotary plug valves by VETEC feature **high flow capacities** and an **excellent control accuracy** at an enormous resolution. Typically, their **K<sub>vs</sub>** and **C<sub>v</sub>** coefficients are two to three times **higher than those of comparable valves**. Their rangeability of 200:1 also exceeds that of conventional control valves and similar products.

**Focus on customers and process requirements**  
Often, the easiest aspects are the most difficult to implement. At VETEC, our focus is on what our customers need for their process. Our innovations are not made for the sake of innovation; our innovations are the result of extensive cooperation and in-depth communication with our customers.

Our goal is to make VETEC products rugged tools for the safe handling of different industrial processes.

**Sustainability**  
As a modern industrial company, VETEC stands for **durable, sustainable values**. We use our **technical expertise** to achieve the highest level of safety, **reliability and durability** with our control valves. They are built to **meet highest expectations** and withstand **extreme ambient conditions**, such as temperature fluctuations, vibrations or offshore service. Every control valve that we make is the result of decade-long experience, continuous development and compliance with the strictest quality standards





Special design features (optional)

- Low-emissions packing according to TA Luft
- and ISO 15848 (equivalent to bellows seal)
- Free of dead spaces
- Comprehensive sealing of all bearing bushings
- Stuffing box
- Extension for high and cryogenic temperatures
- Heating jacket
- Protective sleeves of ceramics and carbide metal
- Flushing connections
- Low-noise and anti-cavitation components

Properties

- Particularly high flow capacity, free passage
- Rugged, compact design
- Rangeability up to 200:1
- Blow-out-proof shaft
- Durability and maximum resistance to wear
- Excellent control behavior thanks to double-eccentric design
- Customized configurations
- Ideal to control the flow of gases, steam, liquids and solids
- Can be used to handle corrosive, sticky, highly viscous and dirt-carrying media

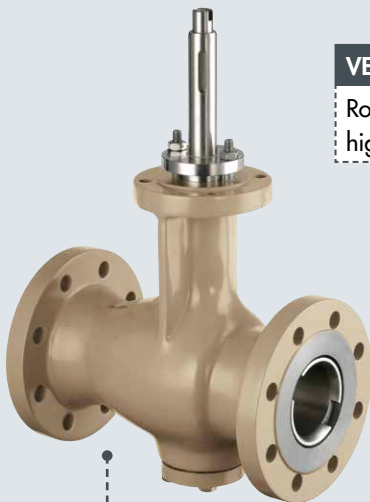


VETEC Typ 82.7  
Rotary plug valve,  
short design (wafer type)

VETEC Typ 82.7-01  
2017 version:  
upgraded design



VETEC Typ 73.7  
Rotary plug valve, short design,  
high-pressure version



VETEC Typ 72.3  
Rotary plug valve,  
long design



VETEC Typ 73.3  
Rotary plug valve,  
high-pressure, long design

Design features

- Rugged, compact design
- Variable number of springs
- Optimized spring ranges
- NAMUR interface for Types R, AT, BR 31a
- Modular design: Optionally with manual gear, handwheel, mechanical travel stops or accessories
- Interface acc. to DIN EN ISO 5211
- Optionally with quick-closing function



VETEC Typ R  
Pneumatic rotary rolling dia-  
phragm actuator



Air Torque Version A  
Pneumatic double-piston  
rotary actuator, single or  
double acting

Properties

- Precise control, particularly using diaphragm actuators
- High positioning force (torques)
- Fast stroking speed
- Can be used for temperatures from -40 to +80 °C/-40 to +176°F
- Suitable for use in explosive atmospheres



VETEC Typ MD  
Pneumatic rotary diaphragm  
actuator



Pfeiffer Typ BR 31a  
Pneumatic double-piston  
rotary actuator, single or  
double acting



VETEC Typ MZ  
Pneumatic rotary diaphragm  
actuator

# Possible Fields of Application

The wide variety of versions makes VETEC's **rotary plug valves** suitable for many applications. The Types 82.7, 82.7-01, 72.3, 73.7 and 73.3 Valves can be used in **throttling or on/off service** in many fields of the process industry.

■ **Chemicals and Petrochemicals**

- ▶ Acrylic acid
- ▶ Ethylene oxide
- ▶ Butadiene
- ▶ Fluorine
- ▶ Bitumen
- ▶ Molten plastic
- ▶ Media containing solids
- ▶ Ammonia

■ **Industrial Gases**

- ▶ Gaseous oxygen
- ▶ Phosgene
- ▶ Chlorine
- ▶ Cryogenic gases

■ **Water and Wastewater**

- ▶ Water treatment
- ▶ Desalination
- ▶ Process cooling systems
- ▶ Steam

■ **Metallurgy and Mining**

- ▶ Ore extraction
- ▶ (abrasive and corrosive slurries)

■ **Oil and Gas (midstream and downstream)**

- ▶ Sour gas
- ▶ LNG
- ▶ Distribution and supply processes
- ▶ Media containing solids
- ▶ Crude oil, naphtha, HCO

■ **Special Fields of Application**

- ▶ Control valves with fail-safe action
  - DVGW certification
  - Fire safe certification

■ **Building Automation**

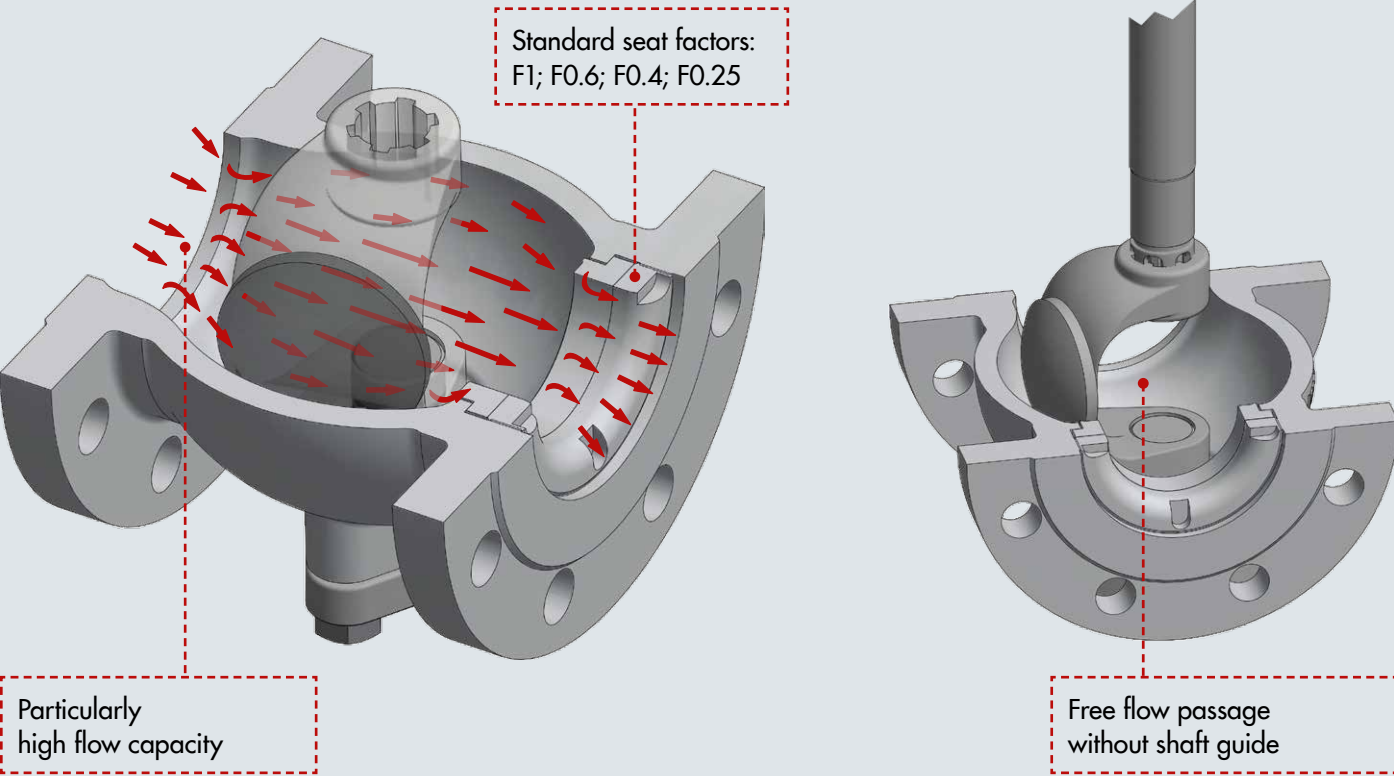
- ▶ District heating
- ▶ District cooling

■ **Pulp and Paper**

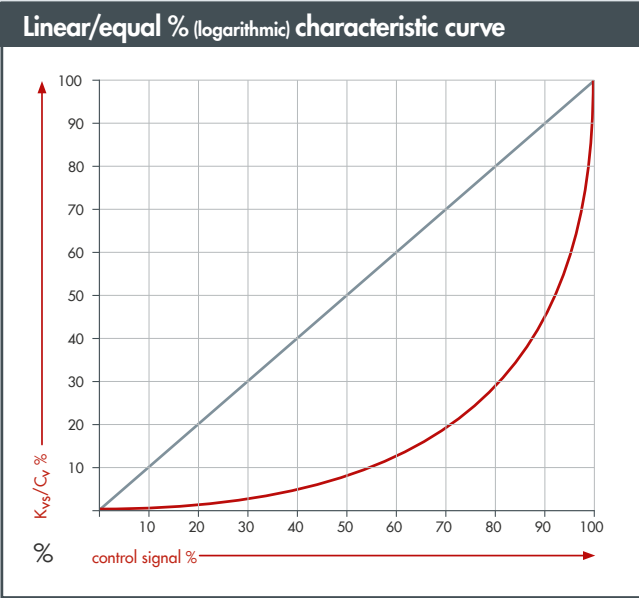
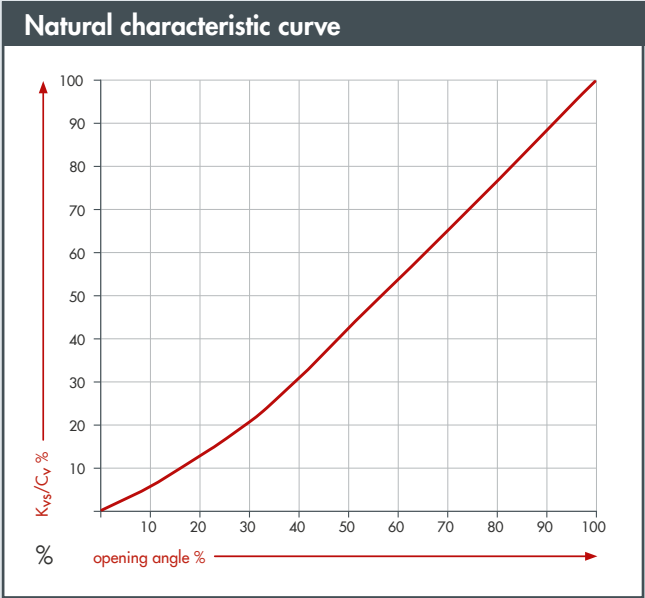
- ▶ Fibrous media

# Flow Characteristics

The process medium can flow through the valves without being deflected. VETEC valves come without shaft guide in the plug, which enables them to achieve a **free passage with very high  $K_{vs}/C_v$  coefficients**. Reduced seat trims allow the valves to be perfectly tailored to the process requirements.



The natural design characteristic can be modified to achieve a linear or equal percentage (logarithmic) characteristic using a positioner.

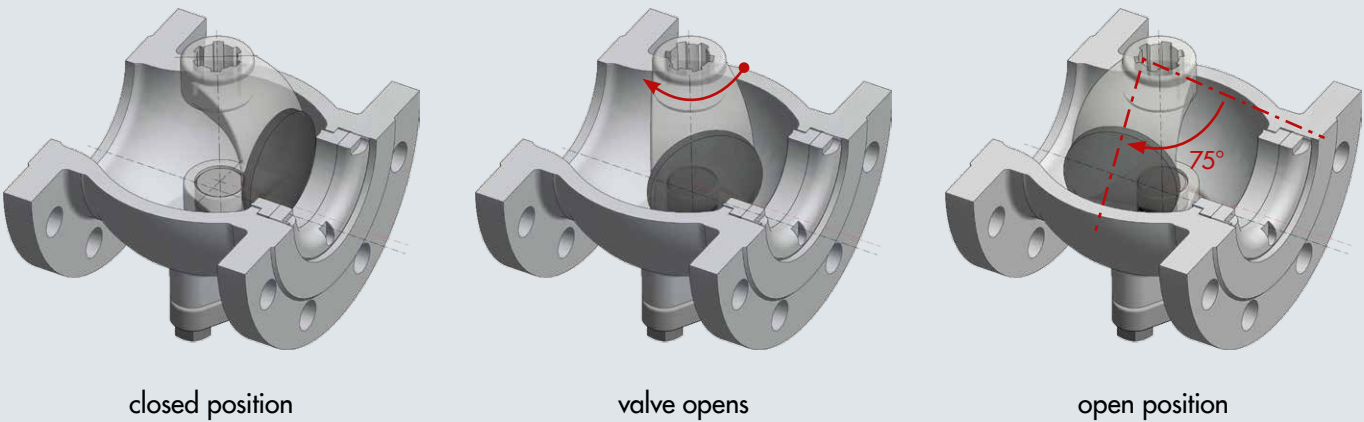
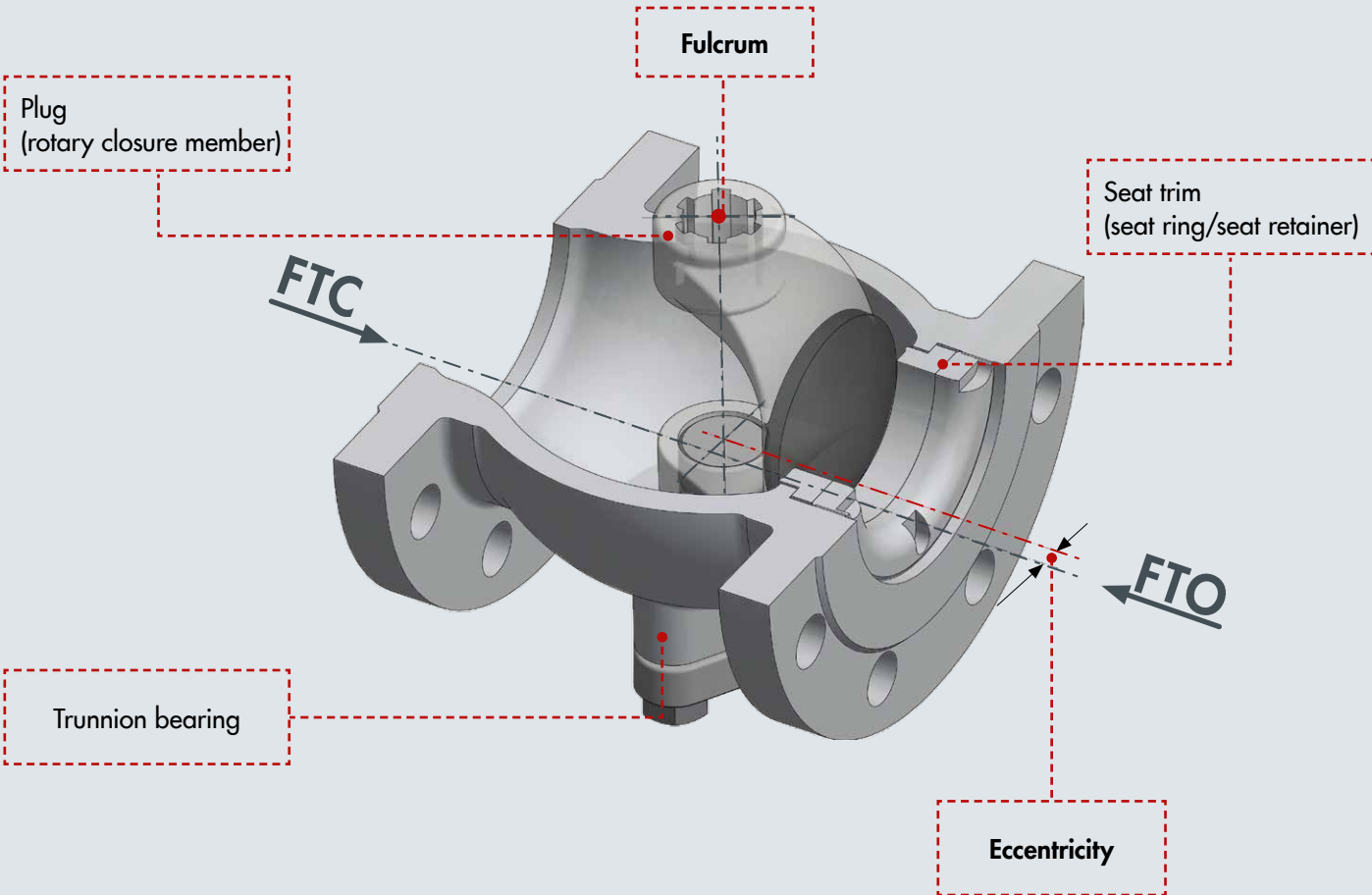


# Principle of Operation

The plug is lifted off the seat by the slightest rotary motion. There is no transition from static to dynamic friction between the seat and plug. The valves are not susceptible to vibration thanks to their rugged double guide bushing.

Both directions of flow are possible:

- ▶ FTO = flow-to-open (medium opens)
- ▶ FTC = flow-to-close (medium closes)

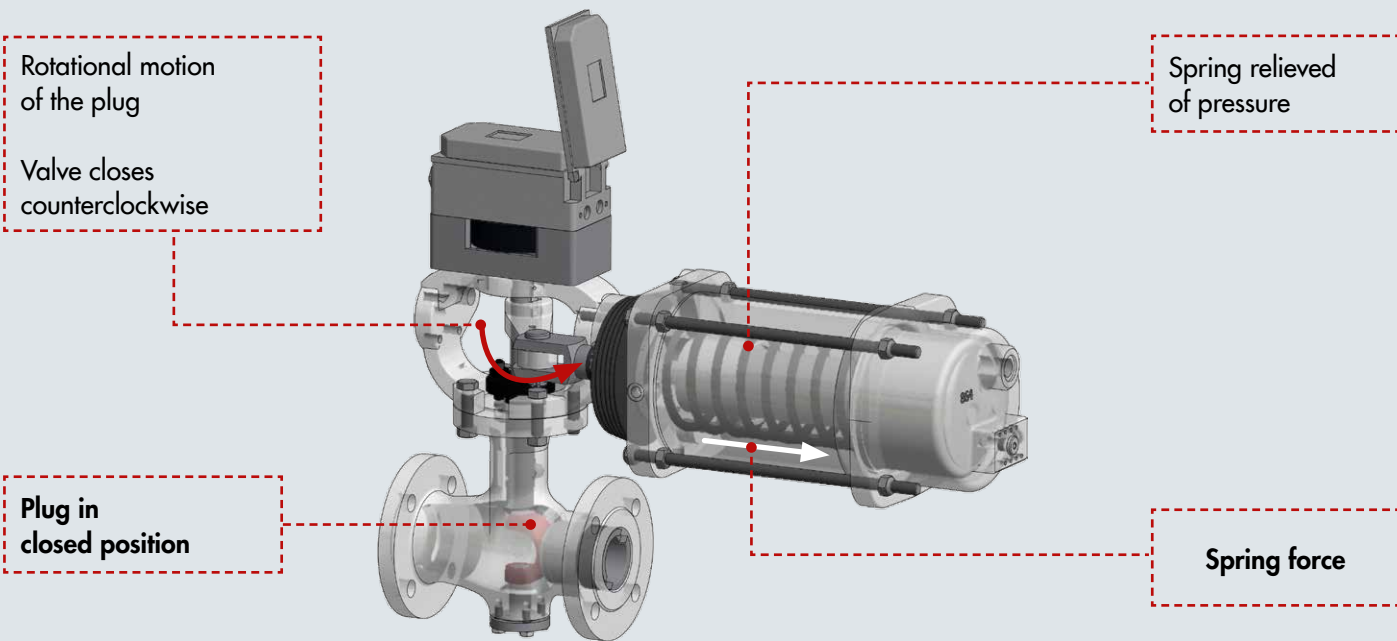


# Fail-Safe Action

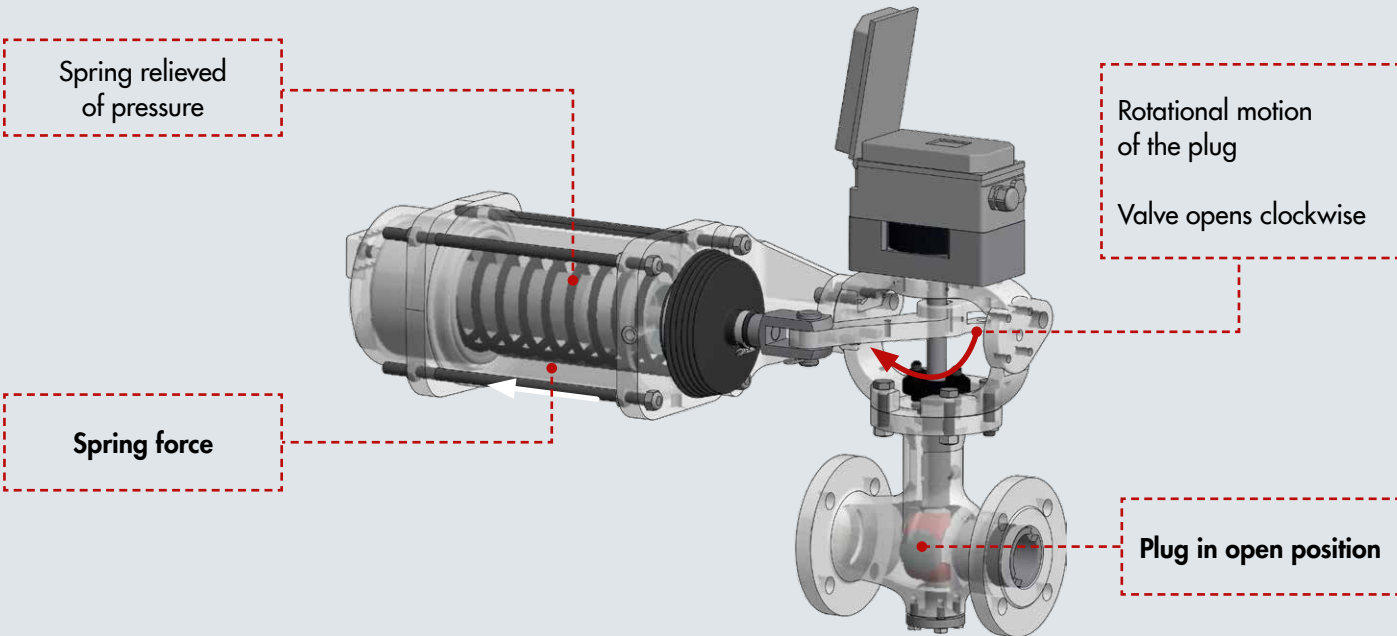
Used in combination with single-acting Type R, AT, M, BR 31a and other actuators, the valve has two fail-safe positions that become effective when the supply air fails:

- ▶ FC = fail-close: the valve is closed when the supply air fails
- ▶ FO = fail-open: the valve is opened when the supply air fails

## FC Fail-close action: spring to close



## FO Fail-open action: spring to open





# Technical Data of Valves



1 Typ 82.7 & 82.7-01 version 2017 short design (wafer type)



	DIN	ANSI
Valve size	DN 25 to 300	NPS 1 to 12
Pressure rating	PN 10 to 40	CL 150, 300
Face-to-face dimensions DIN EN 558, table 2	Series 36	

3 Typ 73.7 short design high-pressure version



	DIN	ANSI
Valve size	DN 25 to 600	NPS 1 to 24
Pressure rating	PN 63 to 160	CL 600, 900
Face-to-face dimensions DIN EN 558, table 2	DN 25, Series 2 DN 40 bis 600, Series 15	NPS 1, CL 600, Series 39 NPS 1, CL 900, Series 54 NPS 1½ bis 24, Series 15

2 Typ 72.3 long design



	DIN	ANSI
Valve size	DN 25 to 600	NPS 1 to 24
Pressure rating	PN 10 to 40	CL 150, 300
Face-to-face dimensions DIN EN 558, table 2	DN 25 to 250, Series 1 DN 300 to 600, Series 15	NPS 1 to 10, CL 150, Series 37 NPS 1 to 10, CL 300, Series 38 NPS 12 - 24, Series 15

4 Typ 73.3 long design high-pressure version



	DIN	ANSI*
Valve size	DN 25 to 250	—
Pressure rating	PN 63 to 160	—
Face-to-face dimensions DIN EN 558, table 2	DN 25 to 250, Series 2	

\* on request



# Technical Data of Non-VETEC Actuators



## 1 AIR TORQUE version A

### SAMSON AIR TORQUE



Function	Pneumatic rotary actuator
Type	Double-piston design (closes counterclockwise)
Single acting	SC, SO
Double acting	DL
Sizes	60 to 10,000

## 2 PFEIFFER Type BR 31a

### SAMSON PFEIFFER



Function	Pneumatic rotary actuator
Type	Double-piston design (closes counterclockwise)
Single acting	SRP
Double acting	DAP
Sizes	60 to 10,000

# Technical Data of SAMSON VETEC Actuators

## 1 Type R



Function	Single-acting pneumatic rotary actuator
Type	Rolling diaphragm
Standard	R110, R150, R200, R250
With reinforced springs	R110v, R150v, R200v, R250v, R250vv

## 2 Type MD



Function	Single-acting pneumatic rotary actuator
Type	Diaphragm
Standard	MD450, MD700
With reinforced springs	MD450v, MD700v

## 3 Type MZ



Function	Single-acting pneumatic rotary actuator
Type	Diaphragm
Standard	MZ450, MZ700
With reinforced springs	MZ450v, MZ700v

Version	DIN	ANSI
Flange version <sup>1</sup>	DIN EN 1092-1	ASME B16.5
Valve seat	Metal or soft seal	
Opening angle	75 °	
Closing direction	Counterclockwise	
Direction of flow	Both directions: flow-to-close (FTC)/flow-to-open (FTO)	
Fail-safe action	Fail-close (FC)/fail-open (FO)	
Rangeability	Up to 200:1	
Characteristic	Natural characteristic (linear or equal percentage using positioner)	
Leakage rate	IEC 60534-1	ANSI/FCI 70-2
	Metal seal: Class IV, soft seal: Class VI	
Temperature range <sup>2</sup>	-196 to +500 °C/-321 to +932 °F	
Actuator	Pneumatic, electric, hydraulic, manual gear	
Version according to	Directive 2014/68/EU, AD 2000 sheets	

<sup>1</sup> Other versions on request

<sup>2</sup> Different designs

Materials

VETEC manufactures rotary plug valves of almost all metals. In addition to the standard materials, such as cast steel and cast stainless steel, we offer versions made of steels and stainless steels for low- and high-temperature service as well as of exotic alloys.

DIN-EN (WN)	ASME equivalent	Description	Temperature range [°C/°F]
1.0619	A216 WCC (-29 to +400 °C/-20,2 to +752 °F)	Cast steel	-10 to +400 °C/-14 to +752 °F
1.4408	A351 CF8M	Cast stainless steel	-196 to +500 °C/-320,8 to +932 °F

Special materials

- Duplex

■ Superduplex

■ Monel®

■ Hastelloy®
- Titanium

■ Zirconium

■ Bronze alloys

■ Others on request

Valve Type		82.7 / 82.7-02		72.3			73.7			73.3	
Pressure Rating		PN 10 to 40	CL 150 CL 300	PN 10 to 40	CL 150 RF	CL 300 RF	PN 63 to 160	CL 600 RF	CL 900 RF	PN 63 to 160	CL 600 CL 900
DN	NPS	Face-to-face dimensions [mm]									
25	1	102	102	160	184	197	230	210	254	230	—
40	1½	114	114	200	222	235	240	240	240	260	—
50	2	124	124	230	254	267	250	250	250	300	—
80	3	165	165	310	298	317	280	280	280	380	—
100	4	194	194	350	352	368	300	300	300	430	—
150	6	229	229	480	451	473	350	350	350	550	—
200	8	243	243	600	543	568	400	400	400	650	—
250	10	297	297	730	673	708	450	450	450	775	—
300	12	338	338	500	500	500	500	500	500	—	—
400	16	—	—	600	600	600	600	600	600	—	—
500	20	—	—	700	700	700	700	700	700	—	—
600	24	—	—	800	800	800	800	800	800	—	—

On request RTJ Flange version, change in face-to-face dimensions

Valve Type		82.7 / 82.7-02		72.3			73.7			73.3	
Pressure Rating		PN 10 to 40	CL 150 CL 300	PN 10 to 40	CL 150 RF	CL 300 RF	PN 63 to 160	CL 600 RF	CL 900 RF	PN 63 to 160	CL 600 CL 900
DN	NPS	Tables									
25	1	36	36	1	37	38	2	39	54	2	—
40	1½	36	36	1	37	38	15	15	15	2	—
50	2	36	36	1	37	38	15	15	15	2	—
80	3	36	36	1	37	38	15	15	15	2	—
100	4	36	36	1	37	38	15	15	15	2	—
150	6	36	36	1	37	38	15	15	15	2	—
200	8	36	36	1	37	38	15	15	15	2	—
250	10	36	36	1	37	38	15	15	15	2	—
300	12	36	36	15	15	15	15	15	15	—	—
400	16	—	—	15	15	15	15	15	15	—	—
500	20	—	—	15	15	15	15	15	15	—	—
600	24	—	—	15	15	15	15	15	15	—	—



K<sub>VS</sub>/C<sub>V</sub>-Value: Valve Type **82.7, 82.7-02**

1a Metal seat — flow to close (FTC)										
DN [mm]		25	40	50	80	100	150	200	250	300
NPS [inch]		1	1½	2	3	4	6	8	10	12
Seat Factors										
100 %	K <sub>VS</sub> /C <sub>V</sub>	16/18	36/42	70/81	210/243	340/393	660/763	810/936	1300/1503	2100/2428
	Seat Ø [mm]	18	26	36	60	76	105	135	170	210
60 %	K <sub>VS</sub> /C <sub>V</sub>	12/14	22/25	43/50	135/156	200/231	320/370	410/474	820/948	900/1040
	Seat Ø [mm]	16	21.5	29.5	50	60	86	106	146	163
40 %	K <sub>VS</sub> /C <sub>V</sub>	10/12	16/18	31/36	95/110	120/139	185/214	250/289	540/624	570/659
	Seat Ø [mm]	14	18.5	25.5	44	53	73	88	126	133
25 %	K <sub>VS</sub> /C <sub>V</sub>	4/4,6	12/14	19/22	56/65	90/104	125/145	160/185	320/370	410/474
	Seat Ø [mm]	10	16	21	37	45	62	73	102	116

Other seat factors on request.

2a Metal seat — flow to open (FTO)										
DN [mm]		25	40	50	80	100	150	200	250	300
NPS [inch]		1	1½	2	3	4	6	8	10	12
Seat Factors										
100 %	K <sub>VS</sub> /C <sub>V</sub>	16/18	36/42	70/81	220/254	360/416	720/832	1100/1272	1950/2254	2700/3121
	Seat Ø [mm]	18	26	36	60	76	105	135	170	210
60 %	K <sub>VS</sub> /C <sub>V</sub>	12/14	22/25	43/50	145/168	210/243	430/497	630/728	1230/1422	1500/1734
	Seat Ø [mm]	16	21.5	29.5	50	60	86	106	146	163
40 %	K <sub>VS</sub> /C <sub>V</sub>	10/12	16/18	31/36	105/121	150/173	275/318	390/451	850/983	900/1040
	Seat Ø [mm]	14	18.5	25.5	44	53	73	88	126	133
25 %	K <sub>VS</sub> /C <sub>V</sub>	4/4,6	12/14	19/22	70/81	100/116	185/214	245/283	500/578	640/740
	Seat Ø [mm]	10	16	21	37	45	62	73	102	116

Other seat factors on request.

3a Soft seat — flow to close (FTC)										
DN [mm]		25	40	50	80	100	150	200	250	300
NPS [inch]		1	1½	2	3	4	6	8	10	12
Seat Factors										
100 %	K <sub>VS</sub> /C <sub>V</sub>	12/14	36/42	68/79	180/208	290/335	535/618	730/844	1220/1410	2000/2312
	Seat Ø [mm]	16	26	35	54	70	98	128	158	204
60 %	K <sub>VS</sub> /C <sub>V</sub>	11/13	22/25	43/50	135/156	200/231	320/370	410/474	820/948	900/1040
	Seat Ø [mm]	15	21.5	29.5	50	60	86	106	146	163
40 %	K <sub>VS</sub> /C <sub>V</sub>	10/12	16/18	31/36	105/121	120/139	185/214	250/289	540/624	570/659
	Seat Ø [mm]	14	18.5	25.5	46	53	73	88	126	133
25 %	K <sub>VS</sub> /C <sub>V</sub>	4/4,6	12/14	19/22	56/65	90/104	125/145	160/185	320/370	410/474
	Seat Ø [mm]	10	16	21	37	45	62	73	102	116

Other seat factors on request.

FTC = Flow-to-close (medium closes)

FTO = Flow-to-open (medium opens)

K<sub>VS</sub>/C<sub>V</sub>-Value: Valve Type **72.3, 73.7, 73.3**

1b Metal seat — flow to close (FTC)													
DN [mm]		25	40	50	80	100	150	200	250	300	400	500	600
NPS [inch]		1	1½	2	3	4	6	8	10	12	16	20	24
Seat Factors													
100 %	K <sub>VS</sub> /C <sub>V</sub>	Valve size 25 to 300/NPS 1 to 12 according table 1a									3400/3931	4800/5549	7680/8879
	Seat Ø [mm]										290	350	420
60 %	K <sub>VS</sub> /C <sub>V</sub>										1800/2081	2700/3121	4030/4659
	Seat Ø [mm]										225	271	330
40 %	K <sub>VS</sub> /C <sub>V</sub>										1120/1295	1600/1850	2530/2925
	Seat Ø [mm]										184	221	275
25 %	K <sub>VS</sub> /C <sub>V</sub>										860/994	870/1006	1410/1630
	Seat Ø [mm]										160	175	225

Other seat factors on request. Valve Type 73.3 only to DN 250.

2b Metal seat — flow to open (FTO)													
DN [mm]		25	40	50	80	100	150	200	250	300	400	500	600
NPS [inch]		1	1½	2	3	4	6	8	10	12	16	20	24
Seat Factors													
100 %	K <sub>VS</sub> /C <sub>V</sub>	Valve size 25 to 300/NPS 1 to 12 according table 2a									4700/5434	6700/7746	9700/11214
	Seat Ø [mm]										290	350	420
60 %	K <sub>VS</sub> /C <sub>V</sub>										2700/3121	3800/4393	5800/6705
	Seat Ø [mm]										225	271	330
40 %	K <sub>VS</sub> /C <sub>V</sub>										1600/1850	2300/2659	3900/4509
	Seat Ø [mm]										184	221	275
25 %	K <sub>VS</sub> /C <sub>V</sub>										1100/1272	1250/1445	2400/2775
	Seat Ø [mm]										160	175	225

Other seat factors on request. Valve Type 73.3 only to DN 250.

3b Soft seat — flow to close (FTC)													
DN [mm]		25	40	50	80	100	150	200	250	300	400	500	600
NPS [inch]		1	1½	2	3	4	6	8	10	12	16	20	24
Seat Factors													
100 %	K <sub>VS</sub> /C <sub>V</sub>	Valve size 25 to 300/NPS 1 to 12 according table 3a									2700/3121	4800/5549	7680/8879
	Seat Ø [mm]										270	350	420
60 %	K <sub>VS</sub> /C <sub>V</sub>										1800/2081	2700/3121	4030/4659
	Seat Ø [mm]										225	271	330
40 %	K <sub>VS</sub> /C <sub>V</sub>										1120/1295	1600/1850	2530/2925
	Seat Ø [mm]										184	221	275
25 %	K <sub>VS</sub> /C <sub>V</sub>										860/994	870/1006	1410/1630
	Seat Ø [mm]										160	175	225

Other seat factors on request. Valve Type 73.3 only to DN 250.

FTC = Flow-to-close (medium closes)

FTO = Flow-to-open (medium opens)

# Max. Permissible Differential Pressures (Δp)

## Guide values

Valves Type **82.7, 82.7-02, 72.3** with **R-Actuator**

1 Differential pressures — FC/FTO and FO/FTC

R-Actuator		Face-to-Face Dimensions								
		R110	R110v	R150	R150v	R200	R200v	R250	R250v	R250vv
Spring Ranges		0.4-1.2	1.16-2.76	0.4-1.2	0.92-2.76	0.4-1.2	1,25-2.65	0.4-1.2	1.3-2.4	1.7-3.3
DN	NPS	Differential pressures Δp [bar]								
25	1	40								
40	1½	16	40	40						
50	2	8	40	40	40					
80	3		14	14	38	30	40	40		
100	4		6	6	20	16	40	28		
150	6				8	6	28	10	40	40
200	8				4	3	14	6	25	30
250	10						6	3	12	16
300	12						4		6	8

Values for standard packing and low-emissions TA-Luft packing. Values do not apply to double stuffing box.  
Higher differential pressures on request.

2 Differential pressures — FC/FTC and FO/FTO at supply pressure 4 [barg]

R-Actuator		Face-to-Face Dimensions								
		R110	R110v	R150	R150v	R200	R200v	R250	R250v	R250vv
Spring Ranges		0.4-1.2	1.16-2.76	0.4-1.2	0.92-2.76	0.4-1.2	1,25-2.65	0.4-1.2	1.3-2.4	1.7-3.3
DN	NPS	Differential pressures Δp [bar]								
25	1	40	40							
40	1½	40	40							
50	2	40	30							
80	3		15	40	40					
100	4		6	36	26					
150	6			16	12	36	30	40	30	18
200	8			8	6	18	14	30	24	10
250	10					10	8	16	10	6
300	12							8	6	3

Values for standard packing and low-emissions TA-Luft packing. Values do not apply to double stuffing box.  
Higher differential pressures on request.

FC = Fail-close (spring-to-close)      FTC = Flow-to-close (medium closes)  
FO = Fail-open (spring-to-open)      FTO = Flow-to-open (medium opens)

Valves Type **73.7, 73.3** with **R-Actuator**

1 Differential pressures — FC/FTO and FO/FTC

R-Actuator		Face-to-Face Dimensions								
		R110	R110v	R150	R150v	R200	R200v	R250	R250v	R250vv
Spring Ranges		0.4-1.2	1.16-2.76	0.4-1.2	0.92-2.76	0.4-1.2	1,25-2.65	0.4-1.2	1.3-2.4	1.7-3.3
DN	NPS	Differential pressures Δp [bar]								
25	1	32	75							
40	1½	16	75	75	75					
50	2	6	40	36	75					
80	3		12	12	36	30	75	56	75	
100	4		4	5	18	14	50	26	75	
150	6				8	6	26	10	40	55
200	8				3		12	5	20	28
250	10						5	3	10	14
300	12						4		6	8

Values for standard packing and low-emissions TA-Luft packing. Values do not apply to double stuffing box.  
Higher differential pressures on request.

2 Differential pressures — FC/FTC und FO/FTO at supply pressure 4 [barg]

R-Actuator		Face-to-Face Dimensions								
		R110	R110v	R150	R150v	R200	R200v	R250	R250v	R250vv
Spring Ranges		0.4-1.2	1.16-2.76	0.4-1.2	0.92-2.76	0.4-1.2	1,25-2.65	0.4-1.2	1.3-2.4	1.7-3.3
DN	NPS	Differential pressures Δp [bar]								
25	1		75							
40	1½	75	75							
50	2	75	40							
80	3		14	75	40					
100	4		6	60	24	75	55			
150	6				10	55	25	75	40	20
200	8				5	18	14	50	26	10
250	10						8	25	16	6
300	12							12	8	3

Values for standard packing and low-emissions TA-Luft packing. Values do not apply to double stuffing box.  
Higher differential pressures on request.

FC = Fail-close (spring-to-close)      FTC = Flow-to-close (medium closes)  
FO = Fail-open (spring-to-open)      FTO = Flow-to-open (medium opens)



# Max. Permissible Differential Pressures (Δp)

## Guide values

Valves Type **82.7, 82.7-02, 72.3** with **Double-Piston**-Actuator Single-Acting

1 Differential pressures — FC/FTO and FO/FTC		Face-to-Face Dimensions													
AT-Actuator 4 Springs		60	100	150	220	300	450	600	900	1200	2000	3000	4000	5000	10000
DN	NPS	Differential pressures Δp [bar]													
25	1	10	40												
40	1½		16	30	40										
50	2		6	12	30	40									
80	3			3	8	12	24	38							
100	4				4	6	12	18	26	40					
150	6						4	8	12	18	30	40			
200	8							4	6	8	16	26	36	40	
250	10									4	8	14	20	24	40
300	12										4	8	12	14	28
400	16												4	6	10
500	20													3	6

Values for standard packing and low-emissions TA-Luft packing. Values do not apply to double stuffing box.  
Higher differential pressures on request.

2 Differential pressures — FC/FTC and FO/FTO at supply pressure 4 [barg]		Face-to-Face Dimensions													
AT-Actuator 4 springs		60	100	150	220	300	450	600	900	1200	2000	3000	4000	5000	10000
DN	NPS	Differential pressures Δp [bar]													
25	1	16	40												
40	1½		16	37	40										
50	2		7	18	34	40									
80	3			5	11	17	30	40							
100	4				5	8	15	21	27	40					
150	6					3	7	10	13	20	36	40			
200	8						3	5	7	11	19	26	37	40	
250	10								3	6	11	14	21	31	40
300	12									3	6	9	13	19	32
400	16												4	6	10
500	20													3	6

Values for standard packing and low-emissions TA-Luft packing. Values do not apply to double stuffing box.  
Higher differential pressures on request.

FC = Fail-close (spring-to-close)      FTC = Flow-to-close (medium closes)  
FO = Fail-open (spring-to-open)      FTO = Flow-to-open (medium opens)

Valves Type **73.7, 73.3** with **Double-Piston**-Actuator Single-Acting

1 Differential pressures — FC/FTO and FO/FTC		Face-to-Face Dimensions													
A-Actuator 4 Springs		60	100	150	220	300	450	600	900	1200	2000	3000	4000	5000	10000
DN	NPS	Differential pressures Δp [bar]													
25	1	4	35	64	75										
40	1½		15	30	60	75									
50	2		6	12	28	40	75								
80	3			3	8	12	24	38	52	75					
100	4				4	6	12	18	25	40	70	75			
150	6						4	8	12	18	30	40	70	75	
200	8							4	6	8	16	25	36	40	75
250	10									4	8	14	20	24	40
300	12										4	8	11	15	28
400	16												4	6	10
500	20													3	6

Values for standard packing and low-emissions TA-Luft packing. Values do not apply to double stuffing box.  
Higher differential pressures on request.

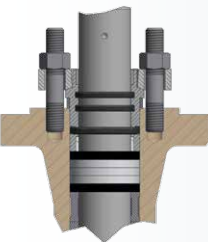
2 Differential pressures — FC/FTC and FO/FTO at supply pressure 4 [barg]		Face-to-Face Dimensions													
A-Actuator 4 Springs		60	100	150	220	300	450	600	900	1200	2000	3000	4000	5000	10000
DN	NPS	Differential pressures Δp [bar]													
25	1	6	30	75											
40	1½		15	33	65	75									
50	2		6	14	30	42	75								
80	3			4	10	15	28	38	50	75					
100	4				3	6	12	18	25	40	70	75			
150	6						5	8	10	18	32	45	65	75	
200	8							4	6	8	16	25	35	50	75
250	10									4	8	12	19	26	45
300	12										5	6	11	15	28
400	16												4	6	10
500	20													3	6

Values for standard packing and low-emissions TA-Luft packing. Values do not apply to double stuffing box.  
Higher differential pressures on request.

FC = Fail-close (spring-to-close)      FTC = Flow-to-close (medium closes)  
FO = Fail-open (spring-to-open)      FTO = Flow-to-open (medium opens)

# Design Versions

## 1 Stuffing box TA-Luft/ISO 15848




Equivalent to bellows seal.

## 2 Double stuffing box TA-Luft/ISO 15848



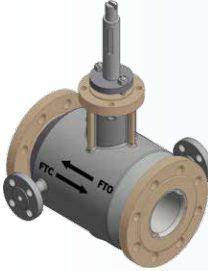
Two independent low-emissions TA Luft packings.  
Equivalent to bellows seal For toxic, contaminant media.  
Optionally with test connection.

## 3 Bushing seals



Bushing seals for special applications.  
Special version with O-rings on the trunnion bearing and shaft.

## 4 Heating jacket




For process media that remain liquid only above a certain temperature.  
A heat transfer medium guarantees the required temperature.

## 5 Type IT1 temperature extension



For low and high temperatures.

## 6 Type IT2 temperature extension




For cryogenic gases.

## 7 Cleaning connections



For sticky and contaminated process media, media containing solids.

## 8 Ceramic and carbide metal pockets




For abrasive, erosive and corrosive media.

# Low-Noise Components

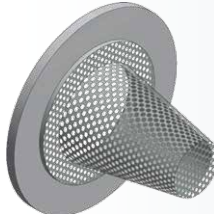
VETEC low-noise components are effective, reliable and cost-effective solutions to minimize noise emissions, cavitation and erosion. The components can be adapted to the operating conditions that exist in the plant and function in both directions of flow. Existing valves can be retrofitted with low-noise components by VETEC

## 1 SM 1.0 / SM 1.5



Gases and vapors.  
Low-noise component built into the valve seat.  
 $\Delta p$  max. 40 bar

## 2 SM 2.0 / 2.5




**For low differential pressures.**  
Gases and vapors.  
 $\Delta p$  max. 10 bar

## 3 SM 2.0 / 2.5



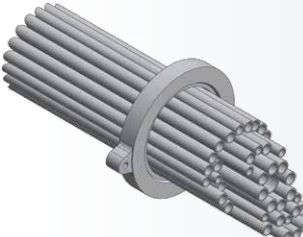
**For high differential pressures.**  
Gases and vapors.  
 $\Delta p$  max. 63 bar

## 4 SM 3.0 / SM 3.5



Gases and vapors.  
 $\Delta p$  max. 5 bar

## 5 SM 8.0 (Rohrbündel)



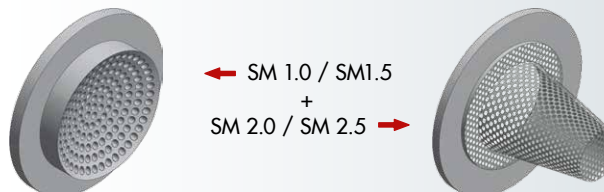
Liquid media.  
 $\Delta p$  max. 40 bar

## 6 SM 8.1 (Stufenhut)



Liquid media.  
 $\Delta p$  max. 40 bar

## 7 SM 4.0 / 4.5



Gas- and steam media.  
 $\Delta p$  max. 10 bar

## 8 SM 9.1



Liquid media.  
 $\Delta p$  max. 40 bar

## 9 SM 9.2



Liquid media.  
 $\Delta p$  max. 40 bar



# Sample Configurations

VETEC rotary plug valves can be combined with pneumatic, electric and hydraulic rotary actuators as well as different valve accessories, such as positioners, solenoid valves, limit switches and other equipment according to IEC 60534-6 or NAMUR Recommendation.



- Accessories:
- ▶ Handwheel
  - ▶ SAMSON positioners



- Accessories:
- ▶ Handwheel
  - ▶ SAMSON positioners



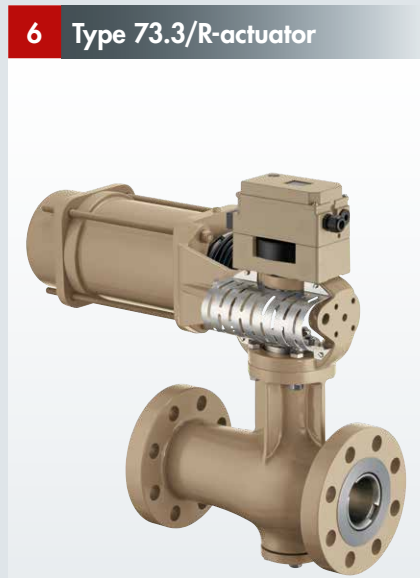
- Accessories:
- ▶ Handwheel
  - ▶ SAMSON positioners



- Accessories:
- ▶ Handwheel
  - ▶ SAMSON positioners



- Accessories:
- ▶ Handwheel
  - ▶ SAMSON positioners
  - ▶ Further accessories



- Accessories:
- ▶ SAMSON positioners

# Mounting Positions & Types of Attachment

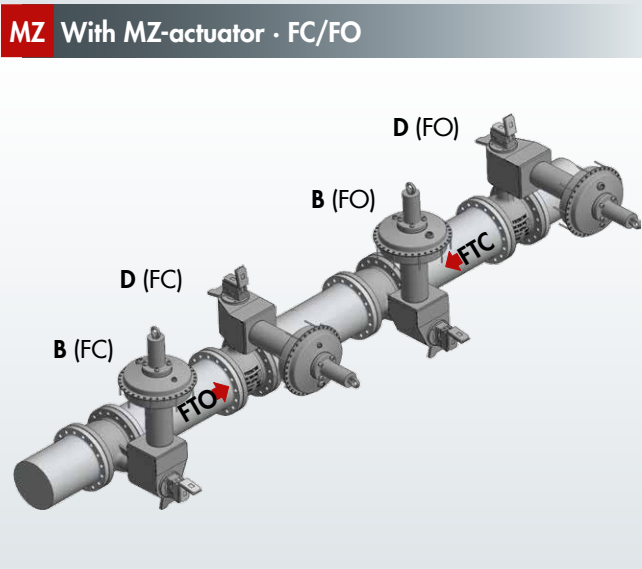
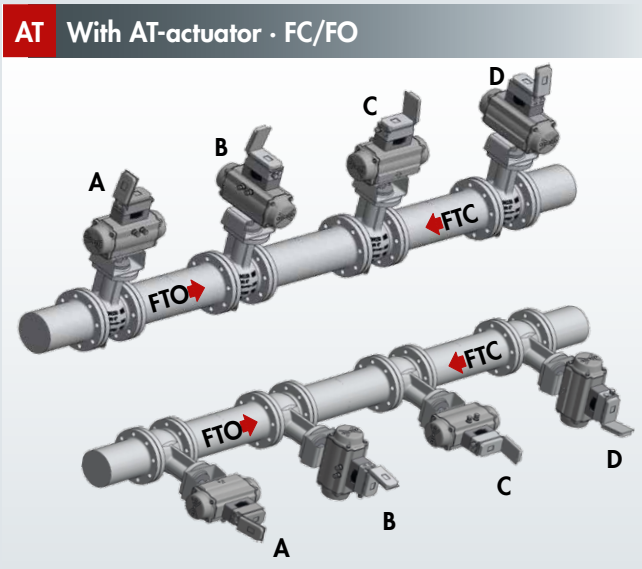
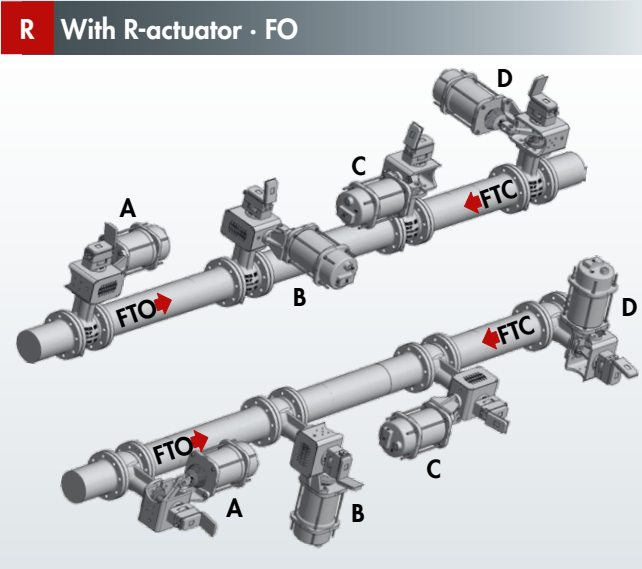
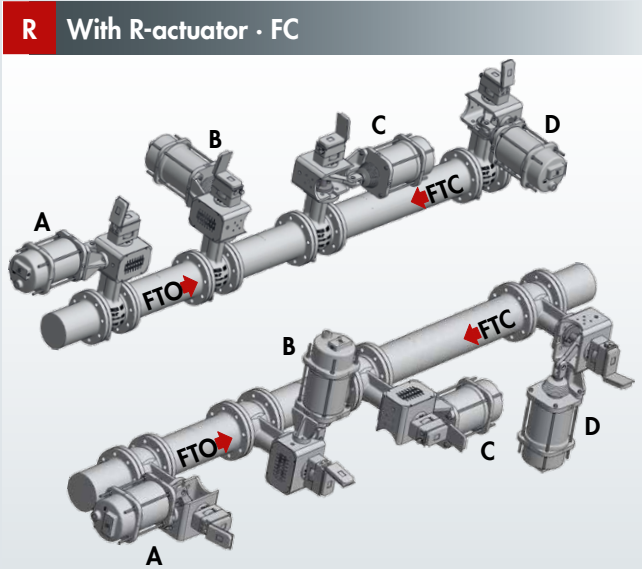
## Mounting positions for control valves

- Control valves that include types R, AT or BR 31a actuators can be mounted in any desired position.
- For control valves with types MD and MZ actuators, we recommend installation in horizontal pipelines.

## Types of actuator attachment

- Types R, AT and BR 31a actuators are suitable for valve attachment in compliance with type A, B, C or D.
- Types MD and MZ actuators are suitable for valve attachment in compliance with type B or D.
- Further types of attachment on request!

## Sample installations for control valves






# Certificates & Manufacturer's Declarations


# Benefit from Our Experience and Expertise!

CE




Declaration of conformity according to Annex IV of  
– Directive 2014/68/EU  
– MD 2006/42/EG

ATEX/Directive 2014/34/EU




Equipment and protective systems intended for use in potentially explosive atmospheres

TA-Luft/DIN EN ISO 15848-1



Industrial valves: Measurement, test and qualification procedures for fugitive emissions

SIL (IEC 61508/IEC 61511)




Safety integrity levels for functional safety

EAC




Conformity assessment for Eurasian Economic Union  
TR CU 010/2011  
TR CU 032/2011

EAC Ex




Conformity assessment for Eurasian Economic Union  
TR CU 012/2011

DVGW / GAR (EC) 2016/426 / EN161



Typetested design according to DIN EN 16678 with safety function for gas and water service

BAM



Non-metal materials for oxygen service

DIN EN ISO 10497/API 607



Type-tested design (fire safety)

NACE Standard

NACE International According to MR0103/MR0175

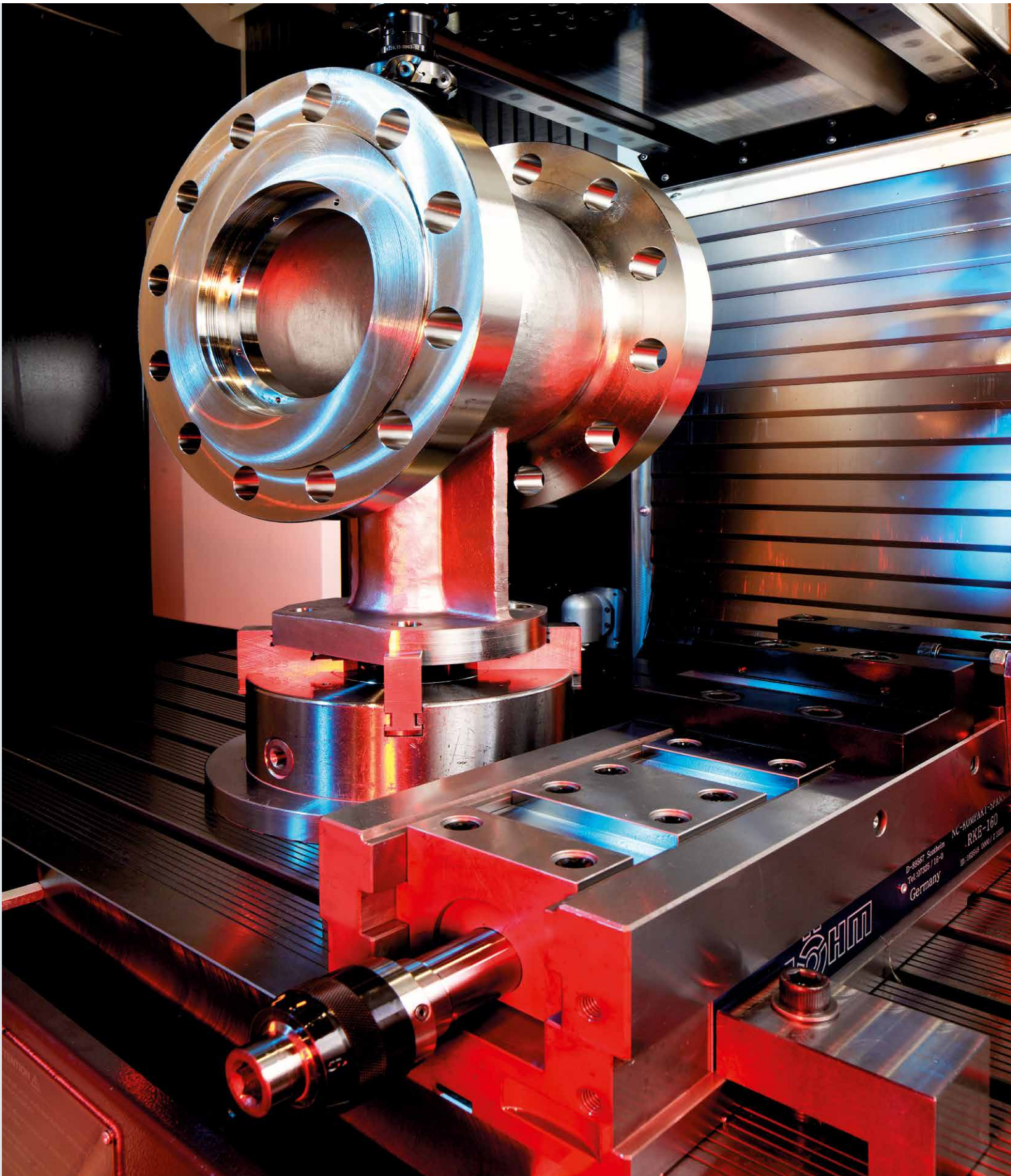
FDA / FMPPA



Non-metallic materials for food industry

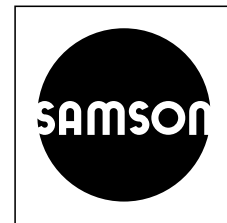


TÜVRheinland®  
**CERT**  
ISO 9001





# SAMSON AT A GLANCE



## STAFF

- Worldwide 4,500
- Europe 3,600
- Asia 700
- Americas 200
- Frankfurt am Main, Germany 1,800

## 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 60 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 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>

VETEC Ventiltechnik GmbH

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E-mail: sales-vetec-de@samsongroup.com  
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**SMART IN FLOW CONTROL**