

Safety valve TYPE SV03 / SV04 / SV05 / SV06



Description:

Safety valves are used to protect a closed system, pressure tanks etc. against overpressure.

Features:

- suitable for neutral and non-neutral, not adhesive **liquid media**.
- with lifting mechanism
- Optional with bellows
- TUV-type test approval letter L
- EC type examination Letter L
- Safety valves are set and sealed at the factory

Connection:

1/2", 3/4", 1", 1 1/4", 1 1/2", 2"

Temperature:

-60°C to +400°C – depending on design

Set pressure:

0,5 bar – 70,0 bar– depending on design

Materials:

Component

Body
Internal parts
Spring
bellows

Type SV03

Gunmetal CC499K
brass CW617N
Stainless steel 1.4310
-

Type SV04

Gunmetal CC499K
brass CW617N
Stainless steel 1.4310
Bronze CW452K

Type SV05

Stainless steel 1.4404 / 1.4408
Stainless steel 1.4404
Stainless steel 1.4310
-

Type SV06

Stainless steel 1.4404 / 1.4408
Stainless steel 1.4404
Stainless steel 1.4310
Stainless steel 1.4571

Seal:

EPDM

Ethylene-Propylene-Diene

-40°C to +170°C

to 25 bar Set pressure

FKM

Fluorocarbon

-20°C to +200°C

to 25 bar Set pressure

NBR

Nitril-Butadiene

-30°C to +130°C

to 25 bar Set pressure

PTFE

Polytetrafluoroethylene

-60°C to +225°C

to 25 bar Set pressure

PTFE-Kohle

Polytetrafluoroethylene
carbon

-60°C to +225°C

+ 25 bar Set pressure

Metal

-60°C to +225°C

Stainless steel to +400°C

Approvals:

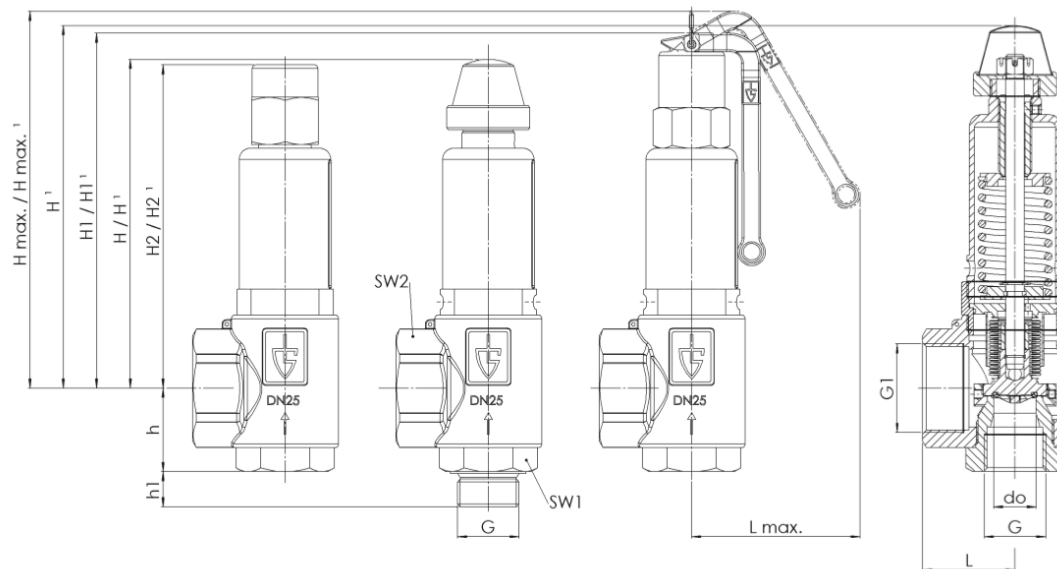
AD 2000 sheet A2

DIN ISO 4126-1

DGR 2014/68/EU

TRB 801 Nr.22 & 23

Dimensions:



Diameter DN	15	15 ²	20	25	32	32	32
Inlet G ¹	1/2"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Outlet G1 ¹	1"	1"	1 1/4"	1 1/2"	2"	2"	2"
L	40	40	43	50	61	61	61
L max	65	65	91	92	92		
H / H with bellows	77	131	138 / 150	178 / 193	241 / 263		
H1 / H1 with bellows	91	149	158 / 170	192 / 207	264 / 286		
H2 / H2 with bellows	77	131	139 / 151	175 / 190	241 / 263		
H max	103	164	173 / 185	207 / 223	277 / 299		
h	30	30	39	45	55	69	74
h1	15	15	16	18	20	23	25
SW1	30	30	36	46	55	55	70
SW2	40	40	50	58	70	70	70
do	15,8	15,8	18	23	30,3	30,3	30,3
Coefficient of flow $a_w / Kdr (F)$	0,30 ³	0,30 ³	0,54	0,54	0,54	0,54	0,54
Range of adjustment bar	0,5 ³ – 25,0	25,1 – 70,0 ⁴	0,5 – 70,0 ⁴	0,5 – 70,0 ⁴	0,5 – 70,0 ⁴	0,5 – 70,0 ⁴	0,5 – 70,0 ⁴
Weight kg	0,4	0,8	1,0	1,8	4,0	4,0	4,0

¹connection acc. to DIN EN ISO 228

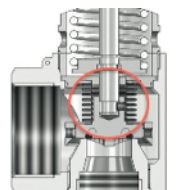
²set pressure >25,1 bar in Dimension DN15 are bigger

³version with bellows only available from 1 bar. Flow coefficients with bellows is 0,24

⁴gunmetal till set pressure 50,0 bar

Bellows:

Safety valve with bellows for neutral and non-neutral media and/or counter pressure up to 4 bar. Spring, moving parts and the environment are protected from being affected by the medium.



Installation and Assembly:

Spring-loaded safety valves are to be installed with the spring bonnet pointing vertically upward. To ensure a satisfactory operation of the safety valves they must be installed in such a way that the safety valve is not exposed to any impermissible static, dynamic or thermal loads. Appropriate protection devices must be applied if the medium that discharges upon actuation of the valve can lead to direct or indirect hazards to people or the environment. Always pay attention to possible fumes discharging from the relief bores in the spring bonnet.

Supply

Supply connection pieces for safety valves are to be kept as short as possible and are to be designed in such a way that there can be no pressure loss greater than max. 3% of the response pressure.

Removal of condensate discharge

In the event of possible condensate formation the pipes or the valves themselves (in flanged version) must be fitted at their lowest point with a continuously operating condensate discharge device. Hazard-free removal of the condensate or medium discharge must be ensured. The body, pipes and silencers must be protected against freezing.

Blowing-off pipe / backpressure

The blow-off pipe of the safety valves must be designed to ensure that the required mass flow can be discharged pressure-free during the blowing-off process. In safety valves with metal bellows a backpressure of up to max. 4 bar has no impact on the response pressure of the safety valve.

Operation:

The operating pressure of the plant is to be least 5% lower than the closing pressure of the safety valve. In this way, the valve can satisfactorily close again after blowing off. In the event of minor leaks, which may be caused by contamination between the sealing surfaces, the valve can be made to blow off through lifting, for cleaning purposes. If this does not remove the leak, the sealing surface is probably damaged and this can only be repaired at our factory or by authorized specialists. Depending on the version, lifting is either carried out by means of a knurled nut above the spring bonnet which is turned counterclockwise (afterwards the knurled nut has to be turned back to the stop) or by actuating the lifting lever on the upper part of the valve. For delivery purposes the lifting lever is blocked by means of strap which has to be removed for actuating the lifting device.

Lifting for maintenance purposes:

In the case of safety valves with a lifting device it is recommended, and in certain plant-specific cases even stipulated that the valves from time to time must be made to blow-off by lifting the seal off the seat, in order to assure the correct functioning of the safety valve. This is why they can be made to open at the latest as from an operating pressure of $\geq 85\%$ of the response pressure. The lifting device is not to be operated when in a pressure-free state. In steam generating equipment, testing the ease of movement of safety valves must be carried at least every 4 weeks in compliance with TRD 601. Safety valves are the ultimate safety device for the tank or system. They must be able to prevent impermissible overpressure even when all other upstream control and monitoring equipment fail. To ensure these functional characteristics safety valves require regular and recurring maintenance. The maintenance intervals are determined by the operator in dependence of the operating conditions.

Capacity table:

Blowing-off rates at 10% above set pressure

DN	15		20	25	32	DN	15		20	25	32
set pressure bar	water m ³ /h - without bellow -	water m ³ /h - with bellow -	water m ³ /h	water m ³ /h	water m ³ /h	set pressure bar	water m ³ /h - without bellow -	water m ³ /h - with bellow -	water m ³ /h	water m ³ /h	water m ³ /h
0,5	2,3	1,9*	5,4	8,8	15,4	21	14,4	11,5	33,6	54,9	95,3
1	3,1	2,5	7,3	12,0	20,8	22	14,7	11,8	34,4	56,2	97,5
1,5	3,8	3,1	9,0	14,7	25,5	23	15,1	12,1	35,2	57,5	99,7
2	4,4	3,6	10,4	16,9	29,4	24	15,4	12,3	35,9	58,7	101,9
2,5	5,0	4,0	11,6	18,9	32,9	25	15,7	12,6	36,7	59,9	104,0
3	5,4	4,4	12,7	20,8	36,0	26	16,0	12,8	37,4	61,1	106,0
3,5	5,9	4,7	13,7	22,4	38,9	27	16,3	13,1	38,1	62,3	108,0
4	6,3	5,0	14,7	24,0	41,6	28	16,6	13,3	38,8	63,4	110,0
4,5	6,7	5,3	15,6	25,4	44,1	29	16,9	13,5	39,5	64,5	112,0
5	7,0	5,6	16,4	26,8	46,5	30	17,2	13,8	40,2	65,6	113,9
5,5	7,4	5,9	17,2	28,1	48,8	32	17,8	14,2	41,5	67,8	117,6
6	7,7	6,2	18,0	29,3	50,9	34	18,3	14,7	42,8	69,9	121,2
6,5	8,0	6,4	18,7	30,5	53,0	36	18,8	15,1	44,0	71,9	124,8
7	8,3	6,6	19,4	31,7	55,0	38	19,4	15,5	45,2	73,9	128,2
7,5	8,6	6,9	20,1	32,8	56,9	40	19,9	15,9	46,4	75,8	131,5
8	8,9	7,1	20,8	33,9	58,8	42	20,4	16,3	47,6	77,6	134,8
8,5	9,2	7,3	21,4	34,9	60,6	44	20,8	16,7	48,7	79,5	137,9
9	9,4	7,5	22,0	35,9	62,4	46	21,3	17,0	49,8	81,3	141,0
9,5	9,7	7,7	22,6	36,9	64,1	48	21,8	17,4	50,8	83,0	144,1
10	9,9	7,9	23,2	37,9	65,8	50	22,2	17,8	51,9	84,7	147,0
11	10,4	8,3	24,3	39,7	69,0	52	22,7	18,1	52,9	86,4	149,9
12	10,9	8,7	25,4	41,5	72,0	54	23,1	18,5	53,9	88,0	152,8
13	11,3	9,1	26,5	43,2	75,0	56	23,5	18,8	54,9	89,7	155,6
14	11,8	9,4	27,5	44,8	77,8	58	23,9	19,1	55,9	91,2	158,4
15	12,2	9,7	28,4	46,4	80,5	60	24,3	19,5	56,8	92,8	161,1
16	12,6	10,1	29,4	47,9	83,2	62	24,7	19,8	57,8	94,3	163,7
17	13,0	10,4	30,3	49,4	85,7	64	25,1	20,1	58,7	95,8	166,3
18	13,3	10,7	31,1	50,8	88,2	66	25,5	20,4	59,6	97,3	168,9
19	13,7	11,0	32,0	52,2	90,6	68	25,9	20,7	60,5	98,8	171,5
20	14,0	11,2	32,8	53,6	93,0	70	26,3	21,0	61,4	100,2	174,0

only available in stainless steel

*) safety valve with bellow available starting 1,0 bar

available only in stainless steel

Article number:

Component	Type SV03	Type SV04	Type SV05	Type SV06
body	Gunmetal CC499K	Gunmetal CC499K	Stainless steel 1.4408	Stainless steel 1.4408
Internal parts	brass CW617N	brass CW617N	Stainless steel 1.4401	Stainless steel 1.4401
Bellows	No	Yes	No	yes

Type	lifting mechanism	Connection	Seal	Size
SV03*	0 – twist-type lifting	0 – female thread	01 – EPDM	03 – 1/2"
SV04	1 – Lever	1 – male thread	02 – FKM	04 – 3/4"
SV05*			03 – PTFE	05 – 1"
SV06			04 – NBR	06 – 1 1/4"
			05 – Metal**	07 – 1 1/2"
				08 – 2"

SV03110106:

SV03	1	1	01	06
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Article number. SV03110106
 Safety valve made of gunmetal
 Internal parts brass
 Bellows: No
 Lifting mechanism: Lever
 Connection: male thread
 Seal: EPDM
 Size: 1 1/4" Inch

*SV03 und SV05 on request

**Metal-seal on request and only available for stainless steel versions.

Image similar, subject change without notice.