



SEMPPELL SAFETY RELIEF VALVE

MODEL MINIS

Reliable and economical overpressure protection for thermal relief and many more applications.



FEATURES

- Design with balanced bellows available
- Single trim design for steam, gas and liquids
- Fully flexible connections: Flanges and threads according to DIN, BS and ASME, welding ends
- Pop Action
- Mechanical lift ensures functional stability
- Highly customizable to meet most applications.
- Easy maintenance
- Soft seat options for superior seat tightness

GENERAL APPLICATION

The Sempell MiniS is the type-tested solution for overpressure protection on air, gas and liquids. (Type tests acc. German, American and Chinese codes)

It is an ideal product for thermal relief or other small capacity applications in refineries, chemical and petrochemical plants, power plant auxiliary systems and pulp and paper mills as well as solar thermal power systems. The MiniS is used in various applications due to its design features like closed spring bonnet (SMC type) and balanced bellows (SMB type).

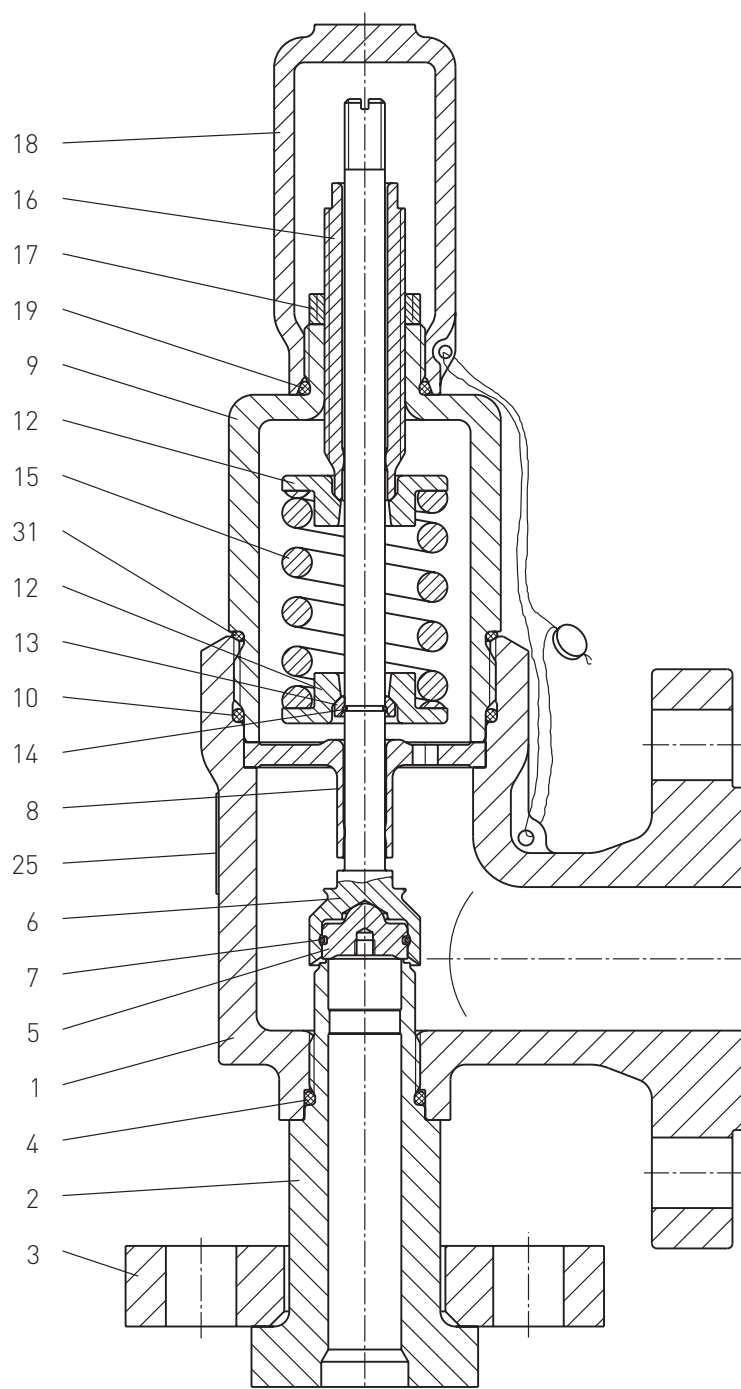
TECHNICAL DATA

Size Inlet:	DN 15 - 25 NPS 1/2" - NPS 1"
Pressure rating:	PN 10 - 40 Class 150 - 300
Temperature range:	-200°C - + 200°C -300°F - +300°F
Set pressure:	0.5 bar - 52 bar
Orifice Diameter:	14 mm
Design:	Flanges and threads according to DIN, BS and ASME
Body material:	1.0619 / A216 WCB 1.4408 / A351 CF8M
Accessories:	soft seat, lifting lever, test gag, reinforced bellows

SEPELL SAFETY RELIEF VALVE

SERIES S - TYPE MINI-S

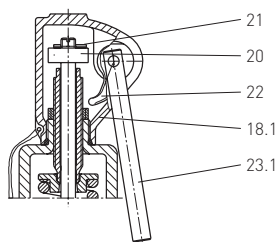
SECTIONAL DRAWING



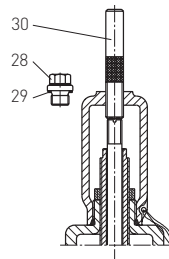
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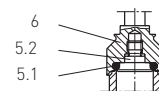
DESIGN LIFTING CAP



SN 104 BLOCKING SCREW

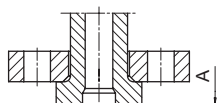


RESILIENT SEAT GASKET

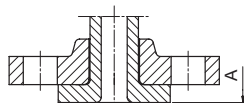


FLANGE DESIGNS

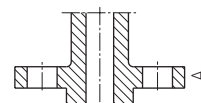
Form B1 acc. to EN 1092-1



Raised face acc. to ASME B 16.5



Fixed flanges



MATERIALS

Part	Name	Application: standard	Application: corrosion resistant
		Material code: 05	Material code: 13
1	Body upper part	1.0619 / SA 216 WCB	1.4408 / SA 351 CF8M
2	Inlet nozzle	1.4404 / SA 479 F316 L	1.4404 / SA 479 F316 L
3	Inlet flange	1.0460 / SA105	1.4541 / SA 182 F321
* 4	O-ring	EPDM	EPDM
* 5	Disc	1.4122 / SA 476 440 A	1.4404 / SA 479 F316 L
5.1	O-ring	EPDM	EPDM
5.2	Lower part	1.4401	1.4401
* 6 / 6.1	Disc holder	1.4021 / A 276 420 A	1.4541 / SA 182 F321
* 6.2	Bellows	1.4571 / 316 Ti	1.4571 / 316 Ti
7	Disc retainer	Inconel	Inconel
8	Guide	1.4308 / A 351 CF8 ¹⁾	1.4308 / A 351 CF8 ¹⁾
9	Bonnet	1.0619 / SA 216 WCB	1.4408 / SA 351 CF8M
* 10	O-ring	EPDM	EPDM
* 11	O-ring	EPDM	EPDM
12	Washer	1.4308 / A 351 CF8 ¹⁾	1.4308 / A 351 CF8 ¹⁾
13	Pressure plate	1.4021 / A 276 420 A	1.4404 / SA 479 F316 L
14	Retaining ring	1.4310 / AISI 302	1.4310 / AISI 302
15	Spring	1.4310 / AISI 302	1.4310 / AISI 302
16	Adjusting screw	1.4021 / A 276 420 A	1.4021 / A 276 420 A
17	Adjusting screw nut	1.4021 / A 276 420 A	1.4021 / A 276 420 A
18 / 18.1	Cap	1.4308 / A 351 CF8	1.4308 / A 351 CF8
* 19	O-ring	EPDM	EPDM
20	Lifting nut	1.4021 / A 276 420 A	1.4021 / A 276 420 A
21	Pin	Austenite	Austenite
22	Fork	1.4308 / A 351 CF8	1.4308 / A 351 CF8
23.1	Lever	1.4301 / A 182 F304	1.4301 / A 182 F304
23.2	Lifting shaft	1.4301 / A 182 F304	1.4301 / A 182 F304
23.3	Threaded bush	1.4301 / A 182 F304	1.4301 / A 182 F304
* 23.4	O-ring	EPDM	EPDM
* 24	O-ring	EPDM	EPDM
25	Nameplate	1.4301	1.4301
28	Locking screw	A2	A2
29	Gasket	A2	A2
* 30	Blocking screw	1.4301 / A 182 F304	1.4301 / A 182 F304
* 31	O-ring	EPDM	-

NOTES

1. or 1.4301 / A182 F304

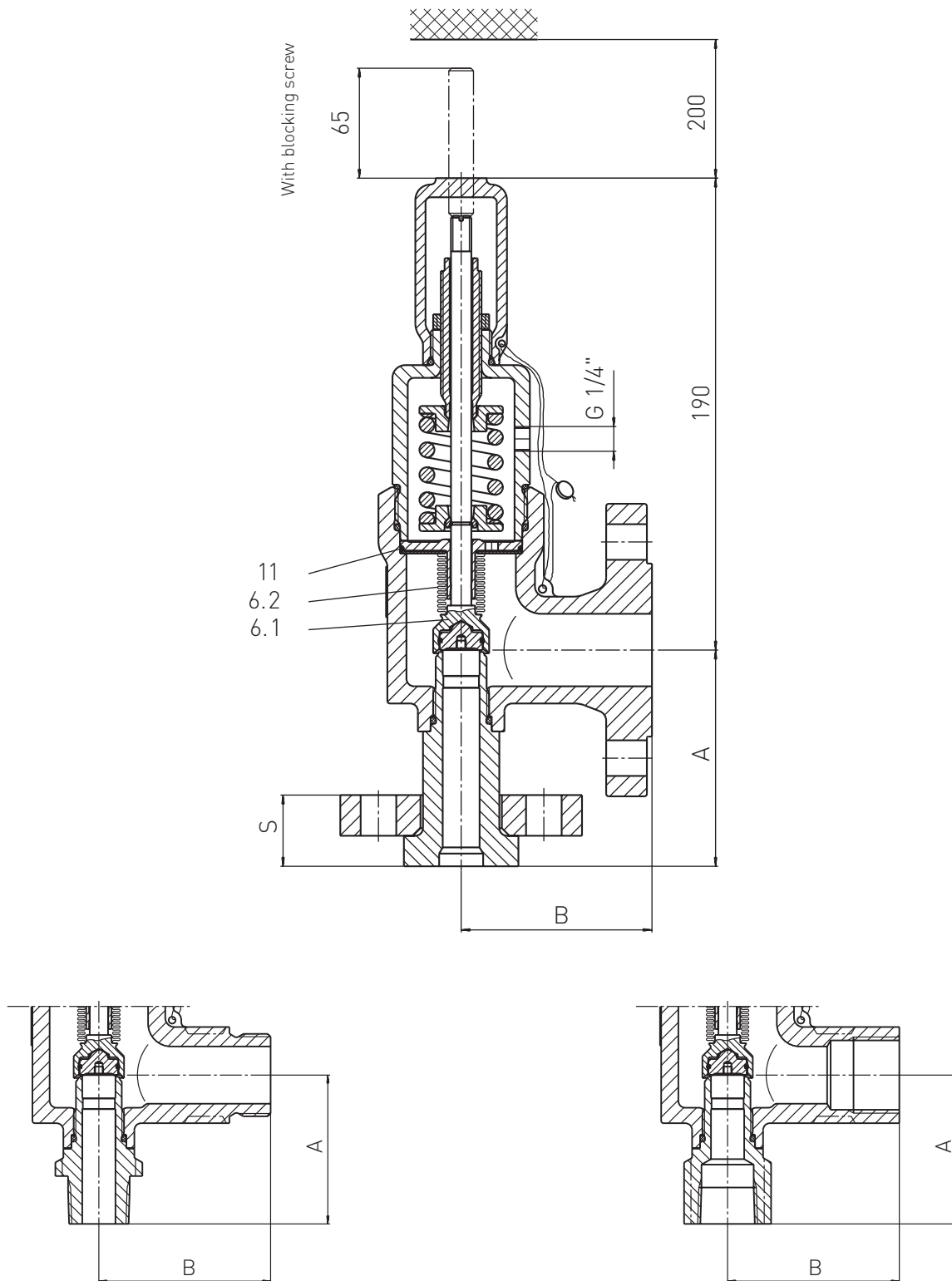
* Spare parts

For type SMB: bellows insert (consisting of disc holder and bellows) only completely replaceable

SEPELL SAFETY RELIEF VALVE

SERIES S - TYPE MINI-S

DIMENSION DRAWING



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SERIES S - TYPE MINI-S

PRESSURE ATTENUATION FACTORS BELLOWS

Temperature		Factor at	
°C	°F	1.4571 316Ti	2.4856 Inc. 625
20	68	1.00	1.26
100	212	0.85	1.24
150	302	0.81	1.21
200	392	0.77	1.14

DIMENSIONS AND PRESSURES

Orifice	Set pressure ^[1] po bar (psig)			INLET					OUTLET			S	Backpressure ^[2] pa bar (psig)		Weight kg (lbs) ca.
				DN/NPS	Class	Side length A at PN mm (inch)			DN	Side length B at PN mm (inch)			SMC	SMB	
						25/40 040	Cl. 150 01	Cl. 300 03		25/40	Cl. 150				
D1 Ø 14	0.5 (7.3)	2.8 (40.6)	40 (580)	15		85			25	75		28.0	20	16	4.5 (9.9)
						95						32.0	(290)	(232)	5.3 (11.7)
	0.5 (7.3)	2.8 (40.6)	51 (739.5)	1/2"	150 ^[4]	92 (3 5/8")	92 (3 5/8")	1"	90.6 (3 5/8")	19.7	25.5 (69.7)	16 (232)	4.0 (8.8)		
					300					22.7			4.5 (9.9)		
					150					22.7			4.3 (9.5)		
					300					25.7			4.8 (10.6)		
					150					24.2			4.6 (10.1)		
					300					27.5			5.1 (11.2)		

Orifice	Set pressure ^[1] po bar (psig)			INLET			OUTLET		S	Backpressure ^[2] pa bar (psig)		Weight kg (lbs) ca.
				DN	Side length A at PN mm (inch) thread		DN	Side length B at PN mm (inch) thread		SMC	SMB	
					00	E*		75 (2 15/16")				
D1 Ø 14	0.5 (7.3)	2.8 (40.6)	51 (739.5)	M30 x 2 ^[3] G 3/4" G1" R 3/4" R1" NPT 3/4" NPT 1"	65 (2 9/16")		M36 x 2 ^[3] G1" NPT 1"	75 (2 15/16")	25.5 (369.7)	16 (232)	2.6 (5.7)	
					I*							
					65 (2 9/16")							R1" G1" NPT 1"

NOTES

- po max for material code 05 and T= -10 to +20°C at inlet
- Back pressure pa max for T= -10 to +20°C. Functional back pressure limits see operational instruction MA.285.01. For other temperatures and material codes observe decrease of admissible inlet and outlet pressures acc. to flange specification.
- DIN 2353 for pipe screwing with cutting ring
inlet: pipe outer diameter 20 (series S)
outlet: pipe outer diameter 28 (series L)
- Fixed flange

R and Rc thread according to ISO 7/1
NPT thread according to ASME B 1.20.3
G thread according to ISO 228

E* external

I* internal

Note: Inlet and outlet can be combined as requested.

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SERIES S - TYPE MINI-S

SELECTION GUIDE FOR CODING SYSTEM

Example	SM	C	025	D1	-	15	25	-	05	0	0	0	(000)
Valve type													
SM Mini-S													
Design													
C Closed bonnet													
B Bellows and vented bonnet													
Valve code													
025 PN				25 DIN									
040 PN				40 DIN									
01 Class				150 ASME									
03 Class				300 ASME									
00 Thread													
Seat size Orifice													
D1 Ø 14													
Inlet nominal size													
Flange				Thread external					Thread internal				
15 DN 15				AM30 M30×2 DIN 12					IG½ G ½" ISO 228				
25 DN 25				AG¾ G ¾" ISO 228					IG¾ G ¾" ISO 228				
½" NPS ½"				AG1 G 1" ISO 228					IR½ Rc ½" ISO 7				
¾" NPS ¾"				AR¾ R ¾" ISO 7					IR¾ Rc ¾" ISO 7				
1" NPS 1"				AR1 R 1" ISO 7					IN½ NPT ½" ASME B1.20				
				AN¾ NPT ¾" ASME B1.20					IN¾ NPT ¾" ASME B1.20				
				AN1 NPT 1" ASME B1.20									
Outlet nominal size													
Flange				Thread external					Thread internal				
25 DN 25				AM36 M36×2 DIN 13					IG1 G 1" ISO 228				
1" NPS 1"				AG1 G 1" ISO 228					IR1 Rc 1" ISO 7				
				AN1 NPT 1" ASME B1.20					IN1 NPT 1" ASME B1.20				
Material code													
05 Standard													
13 Corrosion resistant													
Seat design													
0 Metallic			2 Resilient NBR				4 Resilient FFKM						
1 Resilient EPDM			3 Resilient FKM										
Cap design													
0 Cap without lifting			1 Cap with lifting										
Flange design at inlet													
EN 1092-1				ANSI B16.5									
0 Form B1				Raised face									
1				Ring joint									
4 Form E (male)				Small male									
5 Form F (female)				Small female									
8 Form C (spring)				Small tongue									
9 Form D (groove)				Small groove									
Accessories													
86.5 Fixed flange													
104 Blocking screw													
128 Reinforced bellows													
140 Bellows Inconel 625													
141 Reinforced bellows Inconel 625													

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