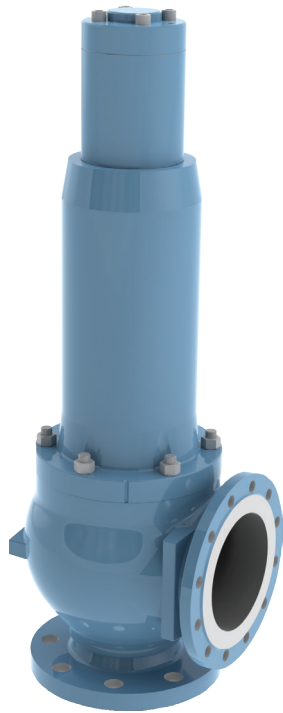




SEMPPELL SAFETY VALVE
MODEL SERIES S, DIN

Direct spring-operated safety relief valve with DIN flanges, ASME flanges or welding end connections



FEATURES

Design

- Single trim design for steam, gases and liquids
- Rigid light weight body construction
- Two piece spindle
- Low friction thermo elastic guide
- Self-aligning spring assembly
- Low friction, spring compression
- Cap design ensures safe and reliable assembly of valve lifting levers
- Locking for hydrostatic test without additional parts, cap top doubles up as gagging device
- Gagged status indicator

Functional

- Pop action
- Mechanical lift stop ensures functional stability
- High allowable back pressure
- Available with actuator for use as pneumatic operated safety valve

GENERAL APPLICATION

The Sempell Model Series S pressure relief valve provides overpressure protection from very basic to the most demanding applications.

It is type-tested for use with steam, gases and liquids (German TÜV, American NB and Chinese SELO).

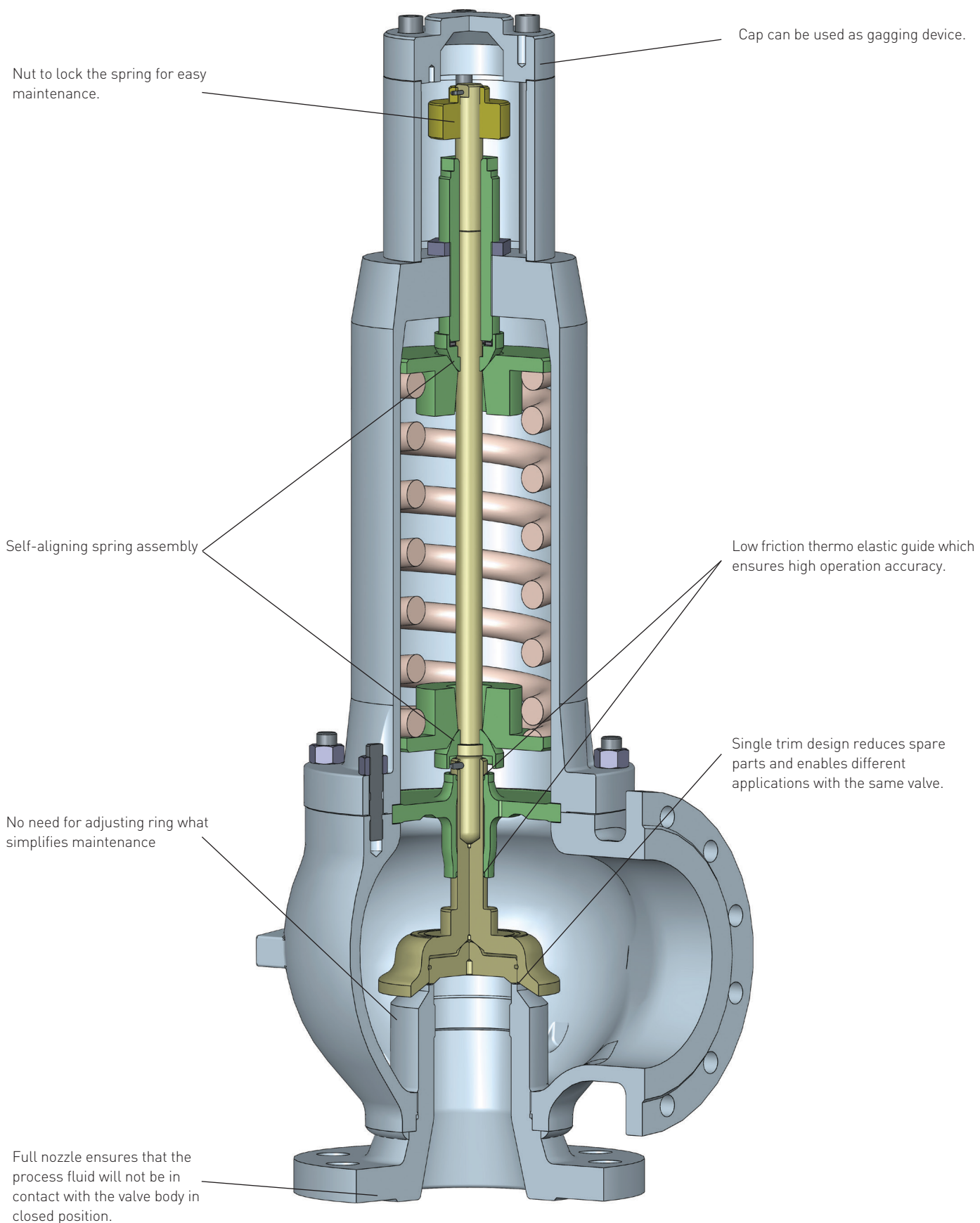
The Series S is available in balanced bellows and open bonnet type.

TECHNICAL DATA

Size inlet:	DN 25 - DN 200 NPS 1 - NPS 8
Pressure rating:	PN 10 - PN 500 class 150 - class 2500
Temperature range:	-200°C to +700°C -300°F to +1300°F
Set pressure:	0.2 bar - 500 bar
Orifice diameter:	14 mm - 160 mm
Body materials:	1.0619/SA216 WCB 1.7357/SA217 WC6 1.6220/SA352 LCC 1.4408/SA351 CF8M 1.4552/SA351 CF8C Other materials available on request
Accessories:	Cooling spacer, balanced piston, lifting lever, test gag, position indicator, reinforced bellows, adjusting ring, soft seat, pneumatic actuator Other accessories on request

SEMPELL SAFETY VALVE

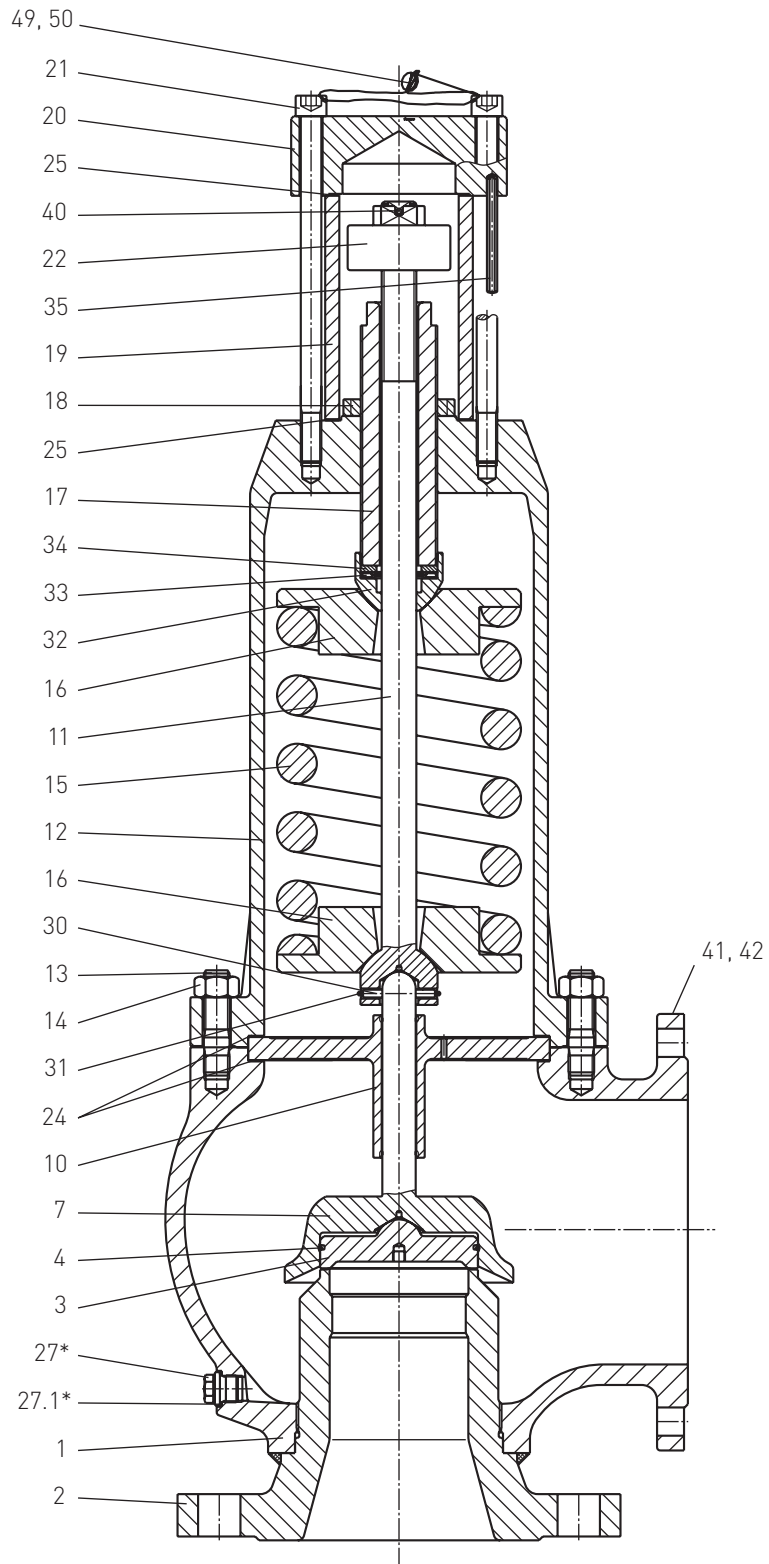
MODEL SERIES S



SEPELL SAFETY VALVE

MODEL SERIES S

CONSTRUCTION SC, SCR - Design with closed bonnet



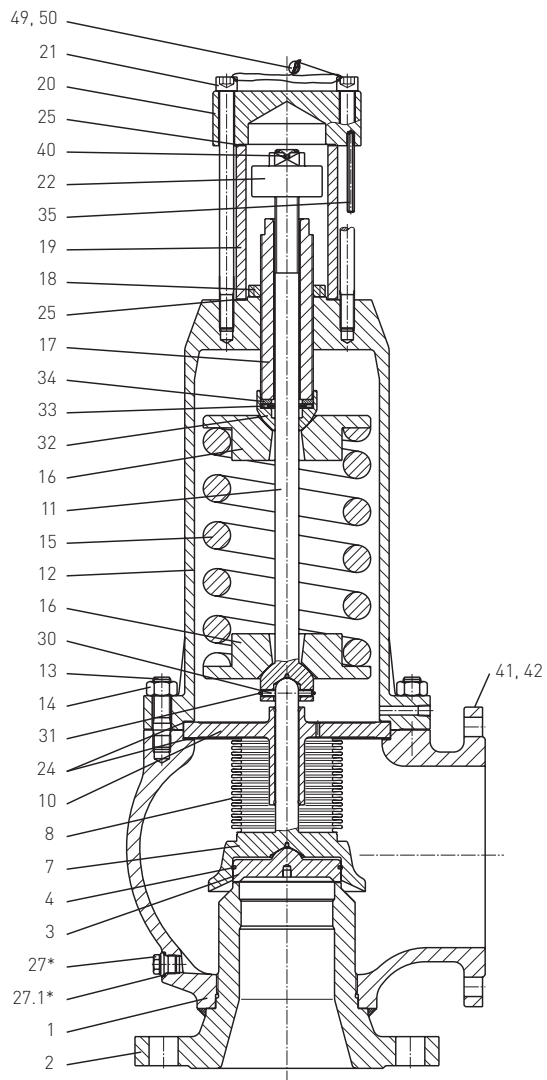
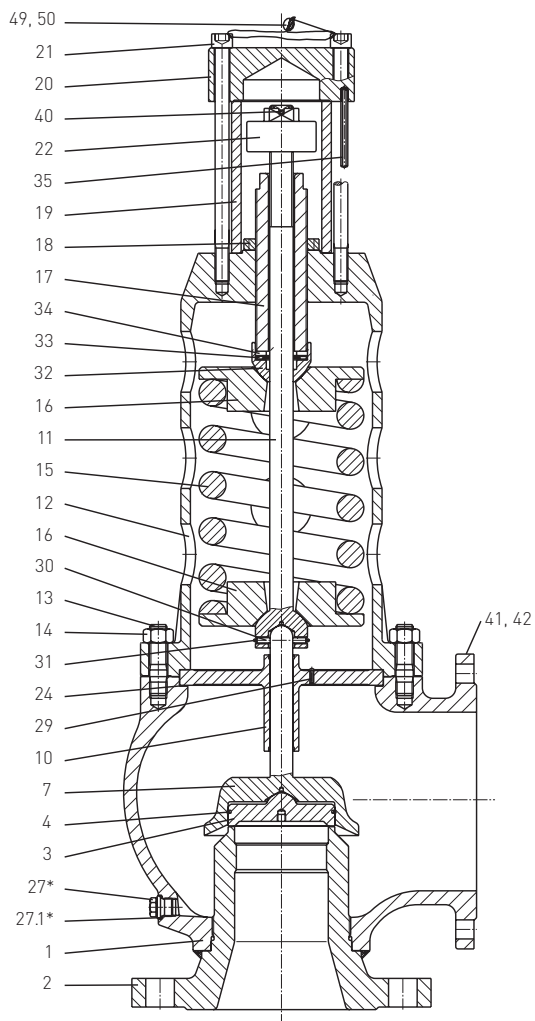
* Accessory 170

SEPELL SAFETY VALVE

MODEL SERIES S

CONSTRUCTION SO, SOR - Design with open bonnet

CONSTRUCTION SB, SBR - Design with bellows



Recommended protection of the spring against high temperatures
 T > 350°C (D-H) and T > 400°C (J-T) • SN144
 T > 400°C (D-H) and T > 450°C (J-T) • SN144 + 110

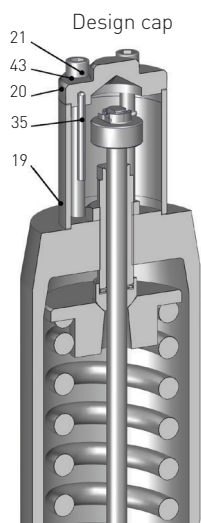
* Accessory 170

* Accessory 170

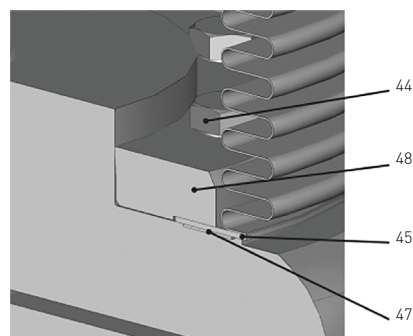
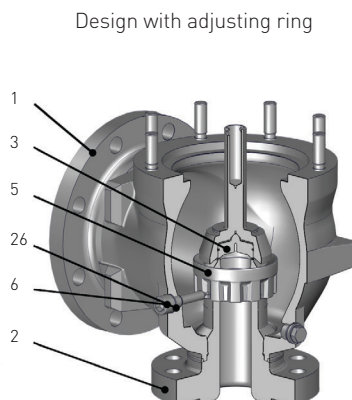
SEMPELL SAFETY VALVE

MODEL SERIES S

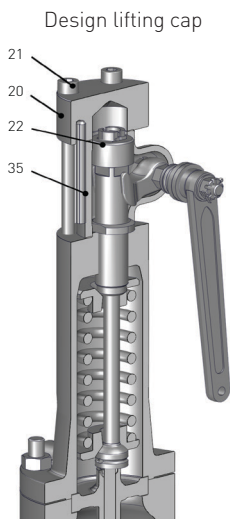
DESIGN DETAILS



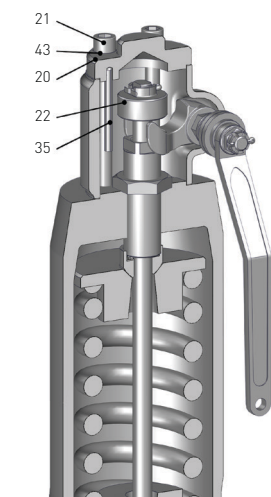
L-T and above 160H, 063J, 040K



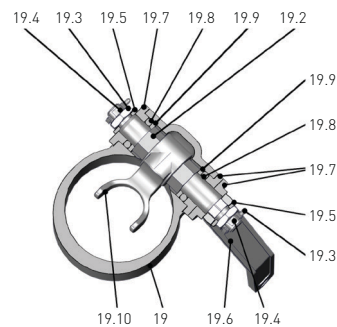
Bellows insert P-T



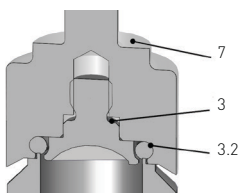
D-G and up to 159H, 063J, 039K



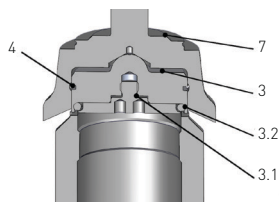
L-T and above 160H, 063J, 040K



Seat Design 1 - 4



D-J



K-T

O-RING MATERIALS AND TEMPERATURE RANGE

Part	Name	Material	Abbreviation	Temperature range	
3.2	O-ring	Ethylene propylene	EPDM	-40 to +145°C	-40 to +293°F
3.2	O-ring	Nitrile	NBR	-40 to +130°C	-40 to +266°F
3.2	O-ring	Fluorocarbon *	FKM	-15 to +150°C	+ 5 to +302°F
3.2	O-ring	Perfluoro rubber	FFKM	-15 to +250°C	+ 5 to +482°F

* air: up to 200°C / 392°F

water, steam: up to 100°C / 212°F

SEPELL SAFETY VALVE

MODEL SERIES S

MATERIALS 1

		Application									
		Standard			Heat resistant			Cold resistant			
		Type: SO	SC	SB	Type: SO	SC	SB	Type: SC	SB		
		Material code									
		05	06		02		04				
Part		Name		Temperature range							
				-10 to +400°C +14 to +752°F		+400 to +500°C +752 to +932°F		-10 to -50°C +14 to -58°F		-50 to -195°C -58 to -319°F	
1	Body upper part	1.0619			1.7357			1.1138		1.4408	
2	Inlet nozzle	1.0460 ^[1,2]			1.7335 ^[1,2]			1.4541 ^[1]		1.4541 ^[1]	
3 *	Disc	1.4122			1.4122			1.4404		1.4404	
3.1	Disc lower part	1.4404						1.4404			
3.2	O-ring	See special list						See special list			
4	Retaining ring	Inconel			Inconel			Inconel		Inconel	
5	Adjusting ring	1.4408			1.4408			1.4408		1.4408	
6	Set screw	Austenite			Austenite			Austenite		Austenite	
7 *	Disc holder	1.4021 ^[1,3]			1.4021 ^[1,3]			1.4541 ^[1]		1.4541 ^[1]	
8 *	Bellows	1.4571 ^[3]			1.4571 ^[3]			1.4571 ^[3]		1.4571 ^[3]	
10	Guide	Alloy steel			Alloy steel			1.4408		1.4408	
11	Spindle	1.4021			1.4021			1.4021		1.4301	
12	Bonnet	1.0619			1.7357			1.1138		1.4408	
13	Bonnet stud	8.8 ^[4]			1.7709 ^[4]			A2		A2	
14	Bonnet nut	8 ^[4]			1.7258 ^[4]			A2		A2	
15	Spring	Alloy steel ^[4,5]			Alloy steel ^[4,5]			Alloy steel ^[4,5]		Alloy steel ^[4,5]	
16	Spring washer	1.0460			1.0460			1.0460		1.4301	
17	Adjusting screw	1.4021			1.4021			1.4021		1.4021	
18	Adjusting screw nut	Austenite			Austenite			Austenite		Austenite	
19, 19.1	Cap	1.0619			1.0619			1.0619		1.4408	
19.2	Lifting shaft	1.0501			1.0501			1.0501		1.4301	
19.3	Split pin	Austenite			Austenite			Austenite		Austenite	
19.4	Crown nut	Austenite			Austenite			Austenite		Austenite	
19.5	Washer	Steel			Steel			Steel		Austenite	
19.6	Lever	1.0050 ^[1]			1.0050 ^[1]			1.0050 ^[1]		1.0050 ^[1]	
19.7	Bearing ring	1.0501			1.0501			1.0501		1.4301	
19.8	O-ring	EPDM			EPDM			EPDM		EPDM	
19.9	Washer	1.0501			1.0501			1.0501		1.4301	
19.10	Fork	1.4308			1.4308			1.4308		1.4308	
19.11	Distance pipe	1.0501			1.0501			1.0501		1.4301	

NOTES

* Spare parts. For type SB SKB D-N: bellows assembly (consisting of disk holder and bellows) only completely replaceable.

1. Or equivalent casting materials
2. Seat hardfaced with 1.4115
3. Or 1.4541
4. Corrosion protected
5. Spring steel
6. Ball-bearing steel

SEPELL SAFETY VALVE

MODEL SERIES S

MATERIALS 1 (continued)

Part	Name	Application								
		Standard		Heat resistant			Cold resistant			
		Type: SO	SC SB	Type: SO	SC SB	Type: SC	SB	Type: SC	SB	
		Material code								
		05		06			02		04	
		-10 to +400°C +14 to +752°F		+400 to +500°C +752 to +932°F			-10 to -50°C +14 to -58°F		-50 to -195°C -58 to -319°F	
20	Cap top	1.0460		1.0460			1.0460		1.4301	
21	Cap bolt	8.8 ^[4]		8.8 ^[4]			8.8 ^[4]		8.8 ^[4]	
22	Spindle nut	1.4301 ^[1]		1.4301 ^[1]			1.4301 ^[1]		1.4301 ^[1]	
24 *	Gasket	Graphite		Graphite			Graphite		Graphite	
25 *	Gasket	Aramid		Aramid			Aramid		Aramid	
26 *	Gasket	A2		A2			A2		A2	
27	Screwed sealing plug	5.8		5.8			5.8		5.8	
27.1	Gasket	WE		WE			WE		A2	
30	Pin	Austenite		Austenite			Austenite		Austenite	
31	Retaining ring	Inconel		Inconel			Inconel		Inconel	
32	Pressure plate	1.4021		1.4021			1.4021		1.4021	
33	Bearing	Alloy steel ^[6]		Alloy steel ^[6]			Alloy steel ^[6]		Alloy steel ^[6]	
34	Bearing ring	1.4021		1.4021			1.4021		1.4021	
35	Signal pin	Austenite		Austenite			Austenite		Austenite	
36	Intermediate flange D-J	1.0460		1.0460			1.0460		1.4301	
	Intermediate flange K-T	1.4122		1.4122			1.4122		1.4301	
37	Retaining ring	Inconel		Inconel			Inconel		Inconel	
38	Slide ring D-J	Graphite		Graphite			Graphite		Graphite	
	Slide ring K-T	1.4086 VCR		1.4086 VCR			1.4086 VCR		1.4086 VCR	
39	Piston	1.4021		1.4021			1.4021		1.4021	
40	Split pin	Austenite		Austenite			Austenite		Austenite	
41	Name plate	1.4301		1.4301			1.4301		1.4301	
42	Grooved pin	1.4305		1.4305			1.4305		1.4305	
43	Gasket	WE		WE			WE		A2	
44	Hexagonal screw	8.8 ^[4]		A2			8.8 ^[4]		A2	
47	Gasket	Graphite		Graphite			Graphite		Graphite	
48	Holding ring P-T	1.4541		1.4541			1.4541		1.4541	
49	Seal	Lead		Lead			Lead		Lead	
50	Wire	Stainless steel		Stainless steel			Stainless steel		Stainless steel	

NOTES

* Spare parts. For type SB SKB D-N: bellows assembly (consisting of disk holder and bellows) only completely replaceable.

1. Or equivalent casting materials
2. Seat hardfaced with 1.4115
3. Or 1.4541
4. Corrosion protected
5. Spring steel
6. Ball-bearing steel

SEPELL SAFETY VALVE

MODEL SERIES S

MATERIALS 2

		Application: Corrosion resistant					
		Inlet nozzle + disc		Internals	Parts in contact with medium		All parts
		Type: SC	SB	Type: SC	Type: SC	Type: SB	Type: SC SB
		Material code					
		11	12	13	14	15	
		Temperature range					
Part	Name	-50 to +400°C -50 to -752°F	-50 to +400°C -50 to -752°F	-50 to +400°C -58 to -752°F	-50 to +400°C -58 to -752°F	-50 to +400°C -58 to -752°F	
1	Body upper part	1.0619	1.0619	1.4408	1.4408	1.4408	
2	Inlet nozzle	1.4541 ^[1]	1.4541 ^[1]	1.4541 ^[1]	1.4541 ^[1]	1.4541 ^[1]	
3 *	Disc	1.4404	1.4404	1.4404	1.4404	1.4404	
3.1	Disc lower part	1.4404	1.4404	1.4404	1.4404	1.4404	
3.2	O-ring	See special list	See special list	See special list	See special list	See special list	
4	Retaining ring	Inconel	Inconel	Inconel	Inconel	Inconel	
5	Adjusting ring	1.4408	1.4408	1.4408	1.4408	1.4408	
6	Set screw	Austenite	Austenite	Austenite	Austenite	Austenite	
7 *	Disc holder	1.4021 ^[1,3]	1.4021 ^[1,3]	1.4541 ^[1]	1.4541 ^[1]	1.4541 ^[1]	
8 *	Bellows	1.4571 ^[3]			1.4571 ^[3]	1.4571 ^[3]	
10	Guide	Alloy steel	Alloy steel	1.4408	Alloy steel	1.4408	
11	Spindle	1.4021	1.4301	1.4301	1.4021	1.4301	
12	Bonnet	1.0619	1.0619	1.4408	1.0619	1.4408	
13	Bonnet stud	8.8 ^[4]	8.8 ^[4]	8.8 ^[4]	8.8 ^[4]	A2	
14	Bonnet nut	8 ^[4]	8 ^[4]	8 ^[4]	9 ^[4]	A2	
15	Spring	Alloy steel ^[4,5]	Alloy steel ^[4,5]	Alloy steel ^[4,5]	Alloy steel ^[4,5]	1.4310/AISI 302	
16	Spring washer	1.0460	1.4301	1.4301	1.0460	1.4301	
17	Adjusting screw	1.4021	1.4021	1.4021	1.4021	1.4404	
18	Adjusting screw nut	Austenite	Austenite	Austenite	Austenite	Austenite	
19, 19.1	Cap	1.0619	1.0619	1.4408	1.0619	1.4408	
19.2	Lifting shaft	1.0501	1.0501	1.4301	1.0501	1.4301	
19.3	Split pin	Austenite	Austenite	Austenite	Austenite	Austenite	
19.4	Crown nut	Austenite	Austenite	Austenite	Austenite	Austenite	
19.5	Washer	Steel	Steel	Austenite	Steel	Austenite	
19.6	Lever	1.0050 ^[1]	1.0050 ^[1]	1.0050 ^[1]	1.0050 ^[1]	1.0050 ^[1]	
19.7	Bearing ring	1.0501	1.0501	1.4301	1.0501	1.4301	
19.8	O-ring	EPDM	EPDM	EPDM	EPDM	EPDM	
19.9	Washer	1.0501	1.0501	1.4301	1.0501	1.4301	
19.10	Fork	1.4308	1.4308	1.4308	1.4308	1.4308	
19.11	Distance pipe	1.0501	1.0501	1.4301	1.0501	1.4301	

NOTES

* Spare parts. For type SB SKB D-N: bellows assembly (consisting of disk holder and bellows) only completely replaceable.

1. Or equivalent casting materials
2. Seat hardfaced with 1.4115
3. Or 1.4541
4. Corrosion protected
5. Spring steel
6. Ball-bearing steel

SEMPELL SAFETY VALVE

MODEL SERIES S

MATERIALS 2 (CONTINUED)

		Application: Corrosion resistant					
		Inlet nozzle + disc		Internals	Parts in contact with medium		All parts
		Type: SC	SB	Type: SC	Type: SC	Type: SB	Type: SC SB
		Material code					
		11	12	13	14	15	
Part		Temperature range		Temperature range		Temperature range	
		-50 to +400°C	-50 to +400°C	-50 to +400°C	-50 to +400°C	-50 to +400°C	-50 to +400°C
		-50 to -752°F	-50 to -752°F	-58 to -752°F	-58 to -752°F	-58 to -752°F	-58 to -752°F
20	Cap top	1.0460	1.0460	1.4301	1.0460	1.4301	
21	Cap bolt	8.8 ^[4]	8.8 ^[4]	8.8 ^[4]	8.8 ^[4]	8.8 ^[4]	A2
22	Spindle nut	1.4301 ^[1]	1.4301 ^[1]	1.4301 ^[1]	1.4301 ^[1]	1.4301 ^[1]	1.4301 ^[1]
24 *	Gasket	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite
25 *	Gasket	Aramid	Aramid	Aramid	Aramid	Aramid	Aramid
26 *	Gasket	A2	A2	A2	A2	A2	A2
27	Screwed sealing plug	5.8	5.8	A2	A2	A2	A2
27.1	Gasket	WE	WE	WE	A2	A2	A2
30	Pin	Austenite	Austenite	Austenite	Austenite	Austenite	Austenite
31	Retaining ring	Inconel	Inconel	Inconel	Inconel	Inconel	Inconel
32	Pressure plate	1.4021	1.4021	1.4021	1.4021	1.4021	1.4404
33	Bearing	Alloy steel ^[6]	Alloy steel ^[6]	Alloy steel ^[6]	Alloy steel ^[6]	Alloy steel ^[6]	Alloy steel ^[6]
34	Bearing ring	1.4021	1.4021	1.4021	1.4021	1.4021	1.4404
35	Signal pin	Austenite	Austenite	Austenite	Austenite	Austenite	Austenite
36	Intermediate flange D-J	1.0460			1.0460		1.4301
	Intermediate flange K-T	1.4122			1.4122		1.4301
37	Retaining ring	Inconel			Inconel		Inconel
38	Slide ring D-J	Graphite			Graphite		Graphite
	Slide ring K-T	1.4086 VCR			1.4086 VCR		1.4086 VCR
39	Piston	1.4021			1.4021		1.4404
40	Split pin	Austenite	Austenite	Austenite	Austenite	Austenite	Austenite
41	Name plate	1.4301	1.4301	1.4301	1.4301	1.4301	1.4301
42	Grooved pin	1.4305	1.4305	1.4305	1.4305	1.4305	1.4305
43	Gasket	WE	WE	A2	WE	A2	A2
44	Hexagonal screw	8.8 ^[4]			8.8 ^[4]		A2
47	Gasket	Graphite			Graphite		Graphite
48	Holding ring P-T	1.4541			1.4541		1.4541
49	Seal	Lead	Lead	Lead	Lead		
50	Wire	Stainless steel	Stainless steel	Stainless steel	Stainless steel		

NOTES

* Spare parts. For type SB SKB D-N: bellows assembly (consisting of disk holder and bellows) only completely replaceable.

1. Or equivalent casting materials
2. Seat hardfaced with 1.4115
3. Or 1.4541
4. Corrosion protected
5. Spring steel
6. Ball-bearing steel

SEPELL SAFETY VALVE

MODEL SERIES S

MATERIALS 3

		Application: Sour gas			Application: Offshore		
		Part. press. <3.5 mbar		Part. press. <3.5 mbar			
		Type: SC	SB	Type: SC	Type: SC	Type: SB	Type: SB
		Material code					
		20	21	22	41	42	
		Temperature range					
		-50 to +400°C	-50 to +400°C	-50 to +400°C			
		-58 to -752°F	-58 to -752°F	-58 to -752°F			
Part	Name						
1	Body upper part	1.0619	1.0619	1.0619	1.4462	1.4462	
2	Inlet nozzle	1.4541 ^[1]	1.4541 ^[1]	1.4541 ^[1]	1.4462	1.4462	
3 *	Disc	1.4404	1.4404	1.4404	1.4462	1.4462	
3.1	Body lower part	1.4404	1.4404	1.4404	1.4462	1.4462	
3.2	O-ring	See special list	See special list	See special list	See special list	See special list	
4	Retaining ring	Inconel	Inconel	Inconel	Inconel	Inconel	
5	Adjusting ring	1.4408	1.4408	1.4408	1.4462	1.4462	
6	Set screw	Austenite	Austenite	Austenite	Austenite	Austenite	
7 *	Disc holder	1.4021 ^{[1][3]}	1.4541 ^[1]	1.4541 ^[1]	1.4462	1.4462	
8 *	Bellows	1.4571 ^[3]	2.4856		2.4856	2.4856	
10	Guide	Alloy steel	Alloy steel	1.4408	1.4408	1.4408	
11	Spindle	1.4021	1.4021	1.4301	1.4021	1.4021	
12	Bonnet	1.0619	1.0619	1.0619	1.0619	1.4408	
13	Bonnet stud	8.8 ^[4]	1.7709 ^[4]	1.7709 ^[4]	8.8 ^[4]	A2	
14	Bonnet nut	8 ^[4]	1.7258 ^[4]	1.7258 ^[4]	8 ^[4]	A2	
15	Spring	Alloy steel ^[4,5]	Alloy steel ^[4,5]	Inconel	Alloy steel ^[4,5]	Alloy steel ^[4,5]	
16	Spring washer	1.0460	1.0460	1.4301	1.0460	1.0460	
17	Adjusting screw	1.4021	1.4021	1.4404	1.4021	1.4021	
18	Adjusting screw nut	Austenite	Austenite	Austenite	Austenite	Austenite	
19, 19.1	Cap	1.0619	1.0619	1.4308	1.0619	1.4408	
19.2	Lifting shaft	1.0501	1.0501	1.4301	1.0501	1.4301	
19.3	Split pin	Austenite	Austenite	Austenite	Austenite	Austenite	
19.4	Crown nut	Austenite	Austenite	Austenite	Austenite	Austenite	
19.5	Washer	Steel	Steel	Austenite	Steel	Austenite	
19.6	Lever	1.0050 ^[1]	1.0050 ^[1]	1.0050 ^[1]	1.0050 ^[1]	1.0050 ^[1]	
19.7	Bearing ring	1.0501	1.0501	1.4301	1.0501	1.4301	
19.8	O-ring	EPDM	EPDM	EPDM	EPDM	EPDM	
19.9	Washer	1.0501	1.0501	1.4301	1.0501	1.4301	
19.10	Fork	1.4308	1.4308	1.4308	1.4308	1.4308	
19.11	Distance pipe	1.0501	1.0501	1.4301	1.0501	1.4301	

NOTES

* Spare parts. For type SB SKB D-N: bellows assembly (consisting of disk holder and bellows) only completely replaceable.

1. Or equivalent casting materials
2. Seat hardfaced with 1.4115
3. Or 1.4541
4. Corrosion protected
5. Spring steel
6. Ball-bearing steel

SEPELL SAFETY VALVE

MODEL SERIES S

MATERIALS 3 (CONTINUED)

		Application: Sour gas			Application: Offshore		
		Part. press. <3.5 mbar		Part. press. <3.5 mbar		Type: SB	Type: SB
		Type: SC	SB	Type: SC	Type: SC		
		Material code					
		20	21	22	41	42	
		Temperature range					
		-50 to +400°C	-50 to +400°C	-50 to +400°C			
		-58 to -752°F	-58 to -752°F	-58 to -752°F			
Part	Name						
20	Cap top	1.0460	1.0460	1.4301	1.0460	1.4301	
21	Cap bolt	8.8 ^[4]	8.8 ^[4]	8.8 ^[4]	8.8 ^[4]	8.8 ^[4]	
22	Spindle nut	1.4301 ^[1]	1.4301 ^[1]	1.4301 ^[1]	1.4301 ^[1]	1.4301 ^[1]	
24 *	Gasket	Graphite	Graphite	Graphite	Graphite	Graphite	
25 *	Gasket	Aramid	Aramid	Aramid	Aramid	Aramid	
26 *	Gasket	A2	A2	A2	A2	A2	
27	Screwed sealing plug	5.8	5.8	A2	A2	A2	
27.1	Gasket	WE	WE	A2	A2	A2	
30	Pin	Austenite	Austenite	Austenite	Austenite	Austenite	
31	Retaining ring	Inconel	Inconel	Inconel	Inconel	Inconel	
32	Pressure plate	1.4021	1.4021	1.4404	1.4021	1.4021	
33	Bearing	Alloy steel ^[6]	Alloy steel ^[6]	Steel / PTFE	Alloy steel ^[6]	Alloy steel ^[6]	
34	Bearing ring	1.4021	1.4021	1.4404	1.4021	1.4021	
35	Signal pin	Austenite	Austenite	Austenite	Austenite	Austenite	
36	Intermediate flange D-J	1.0460	1.0460		1.0460	1.4301	
	Intermediate flange K-T	1.4122	1.4122		1.4122	1.4301	
37	Retaining ring	Inconel	Inconel		Inconel	Inconel	
38	Slide ring D-J	Graphite	Graphite		Graphite	Graphite	
	Slide ring K-T	1.4086 VCR	1.4086 VCR		1.4086 VCR	1.4086 VCR	
39	Piston	1.4021	1.4021		1.4021	1.4021	
40	Split pin	Austenite	Austenite	Austenite	Austenite	Austenite	
41	Name plate	1.4301	1.4301	1.4301	1.4301	1.4301	
42	Grooved pin	1.4305	1.4305	1.4305	1.4305	1.4305	
43	Gasket	WE	WE	A2	WE	A2	
44	Hexagonal screw	8.8 ^[4]	8.8 ^[4]		8.8 ^[4]	8.8 ^[4]	
47	Gasket	Graphite	Graphite		Graphite	Graphite	
48	Holding ring P-T	1.4541	1.4541		1.4541	1.4541	
49	Seal	Lead	Lead	Lead	Lead		
50	Wire	Stainless steel	Stainless steel	Stainless steel	Stainless steel		

NOTES

* Spare parts. For type SB SKB D-N: bellows assembly (consisting of disk holder and bellows) only completely replaceable.

1. Or equivalent casting materials
2. Seat hardfaced with 1.4115
3. Or 1.4541
4. Corrosion protected
5. Spring steel
6. Ball-bearing steel

SEMPELL SAFETY VALVE

MODEL SERIES S

MATERIALS 4

Part		Application: Monel / Hastelloy					
		Inlet nozzle + disc		Internals		Parts in contact with medium	
		Type: SC	SB	Type: SC	Type: SB	Type: SC	Type: SB
		Material code					
		51 / 61	52 / 62	53 / 63	54 / 64	55 / 65	
1	Body upper part	1.0619	1.0619	1.0619	2.4360 / 2.4610	2.4360 / 2.4610	
2	Inlet nozzle	2.4360 / 2.4610	2.4360 / 2.4610	2.4360 / 2.4610	2.4360 / 2.4610	2.4360 / 2.4610	
3 *	Disc	2.4360 / 2.4610	2.4360 / 2.4610	2.4360 / 2.4610	2.4360 / 2.4610	2.4360 / 2.4610	
3.1	Body lower part	2.4360 / 2.4610	2.4360 / 2.4610	2.4360 / 2.4610	2.4360 / 2.4610	2.4360 / 2.4610	
3.2	O-ring	See special list	See special list	See special list	See special list	See special list	
4	Retaining ring	Inconel	Inconel	Inconel	Inconel	Inconel	
5	Adjusting ring	1.4408	2.4360 / 2.4610	2.4360 / 2.4610	2.4360 / 2.4610	2.4360 / 2.4610	
6	Set screw	Austenite	2.4360 / 2.4610	2.4360 / 2.4610	2.4360 / 2.4610	2.4360 / 2.4610	
7 *	Disc holder	1.4021 ^[1,3]	2.4360 / 2.4610	2.4360 / 2.4610	2.4360 / 2.4610	2.4360 / 2.4610	
8 *	Bellows	1.4571 ^[3]		2.4360 / 2.4610		2.4360 / 2.4610	
10	Guide	Alloy steel	2.4360 / 2.4610	Alloy steel	2.4360 / 2.4610	Alloy steel	
11	Spindle	1.4021	2.4360 / 2.4610	1.4021	2.4360 / 2.4610	1.4021	
12	Bonnet	1.0619	1.0619	1.0619	2.4360 / 2.4610	1.0619	
13	Bonnet stud	8.8 ^[4]	8.8 ^[4]	8.8 ^[4]	8.8 ^[4]	8.8 ^[4]	
14	Bonnet nut	8 ^[4]	8 ^[4]	8 ^[4]	8 ^[4]	8 ^[4]	
15	Spring	Alloy steel ^[4,5]	Alloy steel ^[4,5]	Alloy steel ^[4,5]	Alloy steel ^[4,5]	Alloy steel ^[4,5]	
16	Spring washer	1.0460	2.4360 / 2.4610	1.0460	2.4360 / 2.4610	1.0460	
17	Adjusting screw	1.4021	2.4360 / 2.4610	1.4021	2.4360 / 2.4610	1.4021	
18	Adjusting screw nut	Austenite	2.4360 / 2.4610	Austenite	2.4360 / 2.4610		
19, 19.1	Cap	1.0619	1.0619	1.0619	2.4360 / 2.4610	1.0619	
19.2	Lifting shaft	1.0501	1.0501	1.0501	2.4360 / 2.4610	1.0501	
19.3	Split pin	Austenite	Austenite	Austenite	2.4360 / 2.4610	Austenite	
19.4	Crown nut	Austenite	Austenite	Austenite	2.4360 / 2.4610	Austenite	
19.5	Washer	Steel	Steel	Steel	2.4360 / 2.4610	Steel	
19.6	Lever	1.0050 ^[1]	1.0050 ^[1]	1.0050 ^[1]	2.4360 / 2.4610	1.0050 ^[1]	
19.7	Bearing ring	1.0501	1.0501	1.0501	2.4360 / 2.4610	1.0501	
19.8	O-ring	EPDM	EPDM	EPDM	EPDM	EPDM	
19.9	Washer	1.0501	1.0501	1.0501	2.4360 / 2.4610	1.0501	
19.10	Fork	1.4308	1.4308	1.4308	2.4360 / 2.4610	1.4308	
19.11	Distance pipe	1.0501	1.0501	1.0501	2.4360 / 2.4610	1.0501	

NOTES

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1. Or equivalent casting materials
2. Seat hardfaced with 1.4115
3. Or 1.4541
4. Corrosion protected
5. Spring steel
6. Ball-bearing steel

SEPELL SAFETY VALVE

MODEL SERIES S

MATERIALS 4 (continued)

Part		Application: Monel / Hastelloy					
		Inlet nozzle + disc		Internals		Parts in contact with medium	
		Type: SC	SB	Type: SC	Type: SB	Type: SC	Type: SB
		Material code					
		51 / 61	52 / 62	53 / 63	54 / 64	55 / 65	
20	Cap top	1.0460	1.0460	1.0460	2.4360 / 2.4610	1.0460	
21	Cap bolt	8.8 ^[4]	8.8 ^[4]	8.8 ^[4]	8.8 ^[4]	8.8 ^[4]	
22	Spindle nut	1.4301 ^[1]	1.4301 ^[1]	1.4301 ^[1]	1.4301 ^[1]	1.4301 ^[1]	
24 *	Gasket	Graphite	Graphite	Graphite	Graphite	Graphite	
25 *	Gasket	Aramid	Aramid	Aramid	Aramid	Aramid	
26 *	Gasket	A2	A2	A2	A2	A2	
27	Screwed sealing plug	5.8	5.8	5.8	A2	A2	
27.1	Gasket	WE	WE	WE	A2	A2	
30	Pin	Austenite	Austenite	Austenite	Austenite	Austenite	
31	Retaining ring	Inconel	Inconel	Inconel	Inconel	Inconel	
32	Pressure plate	1.4021	1.4021	1.4021	2.4360 / 2.4610	1.4021	
33	Bearing	Alloy steel ^[6]	Alloy steel ^[6]	Alloy steel ^[6]	Alloy steel ^[6]	Alloy steel ^[6]	
34	Bearing ring	1.4021	1.4021	1.4021	2.4360 / 2.4610	1.4021	
35	Signal pin	Austenite	Austenite	Austenite	Austenite	Austenite	
36	Intermediate flange D-J	1.0460		1.0460		1.0460	
	Intermediate flange K-T	1.4122		1.4122		1.4122	
37	Retaining ring	Inconel		Inconel		Inconel	
38	Slide ring D-J	Graphite		Graphite		Graphite	
	Slide ring K-T	1.4086 VCR		1.4086 VCR		1.4086 VCR	
39	Piston	1.4021		1.4021		1.4021	
40	Split pin	Austenite	Austenite	Austenite	Austenite	Austenite	
41	Name plate	1.4301	1.4301	1.4301	1.4301	1.4301	
42	Grooved pin	1.4305	1.4305	1.4305	1.4305	1.4305	
43	Gasket	WE	WE	WE	A2	WE	
44	Hexagonal screw	8.8 ^[4]		8.8 ^[4]		8.8 ^[4]	
47	Gasket	Graphite		Graphite		Graphite	
48	Holding ring P-T	1.4541		1.4541		1.4541	
49	Seal	Lead	Lead	Lead	Lead		
50	Wire	Stainless steel	Stainless steel	Stainless steel	Stainless steel		

NOTES

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2. Seat hardfaced with 1.4115
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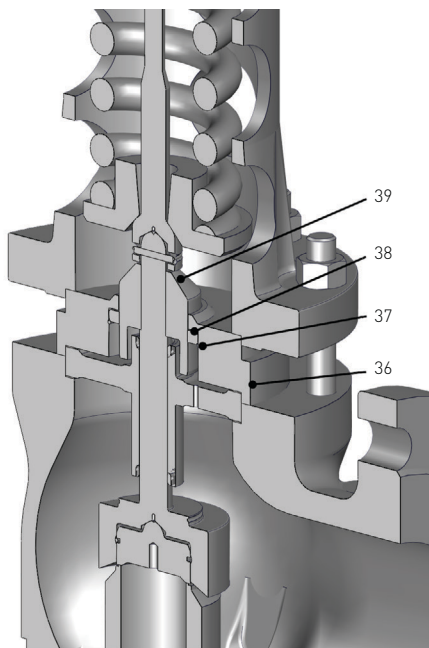
SEMPELL SAFETY VALVE

MODEL SERIES S

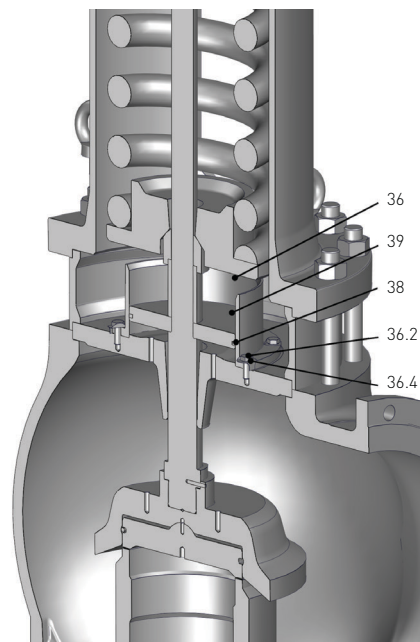
DIMENSION Y

SKB	mm	inch
D-F	14	0.55
G-J	24	0.95
K-L	20	0.80
M-N	-	-
P-R	25	1.00
T	40	1.60

ACCESSORY SN 144
balanced piston
only SO, SB



D-J and below 159K, 039L

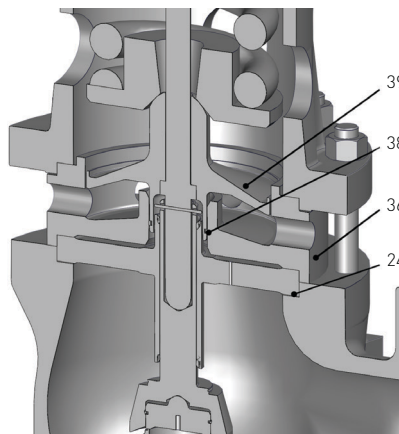


M-N and above 160K, 040L

DIMENSION Z

SKB	mm	inch
D-F	30	1.18
G-J	35	1.38
K-N	50	1.97
P-T	60	2.36

ACCESSORY SN 144+110
balanced piston + cooling spacer
only SO



SEPELL SAFETY VALVE

MODEL SERIES S

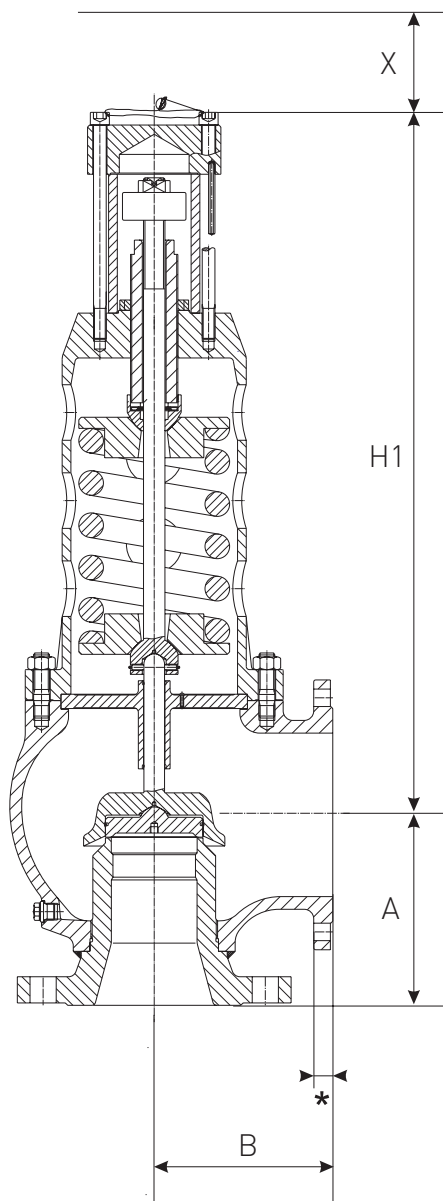
DIMENSIONS AND PRESSURES

OVERHEAD DIMENSION X

SKB	mm	inch
D-J	300	12
K-R	700	28
T	900	36

* Flange thickness acc. to PN 40 for DN 80, PN 10-16

DIMENSIONAL DRAWING



PRESSURE ATTENUATION FACTORS FOR THE BELLOWS

Factor at temp. °C	1.4571	2.4856 Inc. 625	2.4610 Hastelloy C4	2.4360 Monel
20	1.00	1.26	1.33	0.90
100	0.85	1.24	1.24	0.86
150	0.81	1.21	1.18	0.84
200	0.77	1.14	1.12	0.82
250	0.73	1.10	1.08	0.78
300	0.69	1.07	1.06	0.75
350	0.66	1.05	1.04	0.73
400	0.64	1.03	1.02	0.71
450	0.63	1.01		
500	0.62	1.00		
500	0.62	0.98		

SEMPELL SAFETY VALVE

MODEL SERIES S

DIMENSIONS AND PRESSURES

SKB	Set pressure p _o (bar)		Inlet		Outlet		Center to face A at PN							Center to face B at PN				Weight ca. (kg)		Type Coding*							
	min	max	DN	DN	DN	DN	10	16	25	40	63	100	160	250	320	400	SE	...	10	16	25	40	63	H1	max	FG	PN
D	0.2	102	25	40/50			110	110	110	110	125	125	125				150	150	100	100	100	100	325	15	1	160	-1
ø14	33.0	414	25	50			110	110	110	110	125	125	125	150	150	150	150	150	140	140	140	140	395	24	2	63-100	+1
E	0.2	102	25	40/50			110	110	110	110	125	125	125				150	150	100	100	100	100	325	15	1	160	-1
ø14	33.0	414	25	50			110	110	110	110	125	125	125	150	150	150	150	150	140	140	140	140	395	24	2	63-100	+1
F	0.2	41	25	40/50			110	110	110	110	125	125	125				150	150	100	100	100	100	325	16	1	160	-1
ø17.5	102	40	40	50			115	115	115	115	130	130	130				150	150	100	100	100	100	325	18	1	160	-1
G	30.0	345	40	50			110	110	110	110	130	130	130	160	160	160	160	160	140	140	140	140	395	40	2	63-100	+1
ø22.5	0.2	20	25	50			115	115	115	115	155	155	155	175	175	175	175	175	160	160	160	160	340	15	1	40	-1
H	0.2	20	40/50	65			130	130	130	130	130	130	130	160	160	160	160	160	140	140	140	140	430	39	2	10-25	+1
ø28	2.4	102	40/50	80			145	145	145	145	155	155	155				165	165	140	140	140	140	430	29	2	10-25	+1
J	0.2	56	50/65	80			135	135	135	135	155	155	155				165	165	120	120	120	120	340	23	1	40-63	-1
ø36	34.0	186	50/65	80			145	145	145	145	155	155	155	175	175	175	175	175	140	140	140	140	540	60	3	40	+1
K	0.2	20	50/65	80			160	160	160	160	160	160	160				200	200	140	140	140	140	435	42	2	25-40	-1
ø43	102	100	100	100/125			160	160	160	160	170	170	170				200	200	145	145	145	145	435	44	2	25-40	-1
L	29.5	153	80	100			160	160	160	160	170	170	170	190	190	190	190	190	160	160	160	160	540	80	3	10-16	+1
ø53	3.1	103	80	100			170	170	170	170	170	170	170				220	220	190	190	190	190	685	105	4	160	-1
M	0.2	76	100	150			180	180	180	180	200	200	200				240	240	190	190	190	190	685	116	4	40-100	+1
ø60	0.2	69	100	150			180	180	180	180	200	200	200				240	240	190	190	190	190	685	130	4	40	+1
N	0.2	69	100	150			200	200	200	200	220	220	220				250	250	225	225	225	225	905	200	5	10-25	+1
ø66	0.2	69	100	150			240	240	240	240	240	240	240				290	290	225	225	225	225	965	240	5	40	+1
P	0.2	42	150	200			240	240	240	240	260	260	260				290	290	270	270	270	270	965	260	5	10-25	+1
ø79	0.2	42	150	200			240	240	240	240	260	260	260				290	290	225	225	225	225	965	240	5	40	+1
ø104	0.2	10	150	200			240	240	240	240	240	240	240				290	290	270	270	270	270	990	260	5	10-25	+1
ø125	0.2	21	150	250			240	240	240	240	260	260	260				290	290	270	270	270	270	1085	400	6	10-25	+1
ø160	0.2	21	200	300			280	280	280	280	280	280	280				340	340	300	300	300	300	1085	420	6	10-25	+1

*Type coding for PN example

PN160 = "160"

For Key = -1

-> PN160 = "159"

For Key = +1

-> PN63 = "64"

Min. set pressure for valves with bellows:

SKB

D-F

G

H

J

K-T

2.9 barg

2.7 barg

2.5 barg

2.4 barg

1.7 barg

All listed pressures are valid for material code 05 and T = -10 to +20°C at inlet.

For other temperatures and material codes, observe the decrease of admissible

inlet and outlet pressures acc. to flange specification

The seat and bellows faces are not balanced at SKB D and E

SE = Welding end at inlet

To identify the pressure range, the nominal pressure designation may vary in the

type coding.

SEPELL SAFETY VALVE

MODEL SERIES S

SELECTION GUIDE

Example	S	O	025	E	-	25	50	-	05	0	2	0	(000)
Valve type													
S Series S													
Design													
O Open bonnet, without adjusting ring (SR)													
C Closed bonnet, without SR													
B Bellows and vented bonnet, without SR													
OR Open bonnet, with adjusting ring (SR)													
CR Closed bonnet, with SR													
BR Bellows and vented bonnet, with SR													
Valve code													
010, 011 PN 10 159, 160 PN 160													
016, 017 PN 16 250 PN 250													
024, 025, 026 PN 25 320 PN 320													
039, 040, 041 PN 40 400 PN 400													
062, 063, 064 PN 63 (SE) Welding end													
100, 101 PN 100													
Seat size SKB													
D - T see table Dimensions and pressures													
Inlet nominal size													
25 DN 25 50 DN 50 80 DN 80 150 DN 150													
40 DN 40 65 DN 65 100 DN 100 200 DN 200													
Outlet nominal size													
40 DN 40 65 DN 65 100 DN 100 200 DN 200 300 DN 300													
50 DN 50 80 DN 80 150 DN 150 250 DN 250													
Material code													
See tables Materials 1 to 4													
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													
0 Code B1 acc. EN 1092-1													
1 Lens sealing: > PN 63: Form L acc. DIN 2696													
4 Code E acc. EN 1092-1 (male face)													
5 Female face R13 (F)													
8 Code C acc. EN 1092-1 (spring)													
9 Code D acc. EN 1092-1 (groove)													
Accessories													
104 Blocking Screw													
110 Cooling lantern													
122 Disc for steam													
144 Balanced piston													
150 Reduced lift													
170 Drain plug													
174 Free of oil and grease													

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