



## SV60H Safety Valve

### Description

The SV60H is a range of full lift safety valves suitable for the protection of hot water generators. The construction is characterised by an EPDM bellows and elastomer seat seal to ensure leak free operation.

### Available types

Set pressure range	1 to 10 bar g (in 0.5 bar increments)
Body materials	SV604H Carbon steel SV607H SG iron
'O' ring seat seals in accordance with Vd TÜV-Merkblatt SV100/4	EPDM, Viton

### Applications

The SV60H is designed to protect hot water generators from overpressure in accordance with DIN 4751, Side 2, for temperatures up to 120 °C.

### Certification

A manufacturers' Typical Test Report is provided as standard for each valve which will include valve set and hydraulic test pressure.

Also available on request is material certification in accordance with EN 10204 3.1.

### Standards and approvals

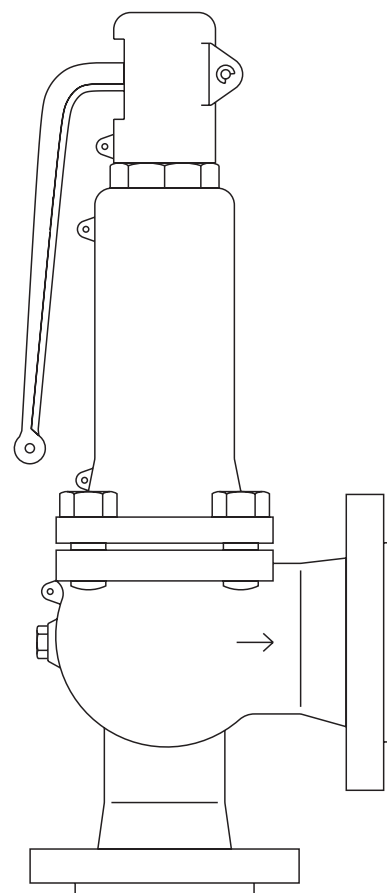
The SV60H carries the **CE** mark and complies with the requirements of the Pressure Equipment Directive (PED) and falls within Category 4 for Group 2 gases.

The SV60H is approved by the TÜV to TRD 421, TRD 721 and Vd TÜV Merkblatt SV100 and 100/4.

### Size and end connections

Inlet sizes DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN125 and DN150

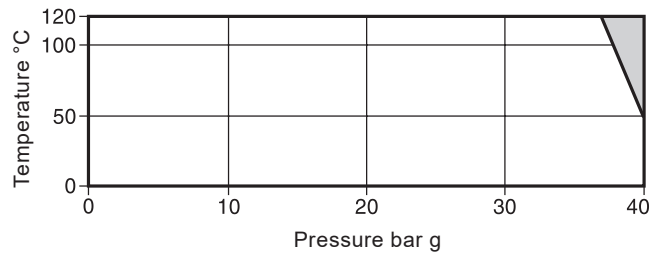
Valve type	Inlet connection	Outlet connection
SV607H	PN16 (DN65 to DN150 only)	PN16
	PN25	PN16
SV604H	PN40	PN16



## Pressure/temperature limits

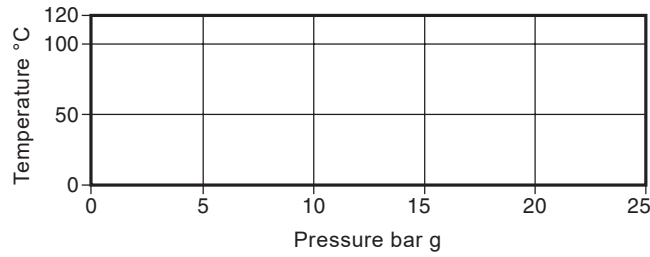
Please contact Spirax Sarco, when so required, for relevant details regarding the maximum allowable limits that the shell can withstand.

**SV604H PN40 inlet**

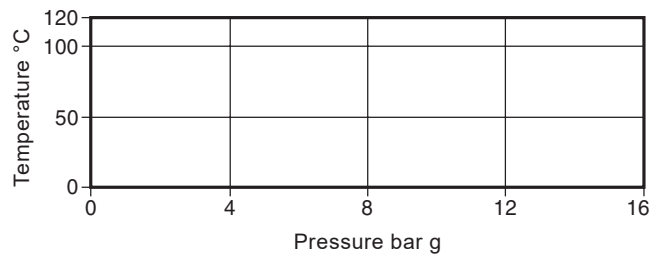


The product **must not** be used in this region.

**SV607H PN25 inlet**

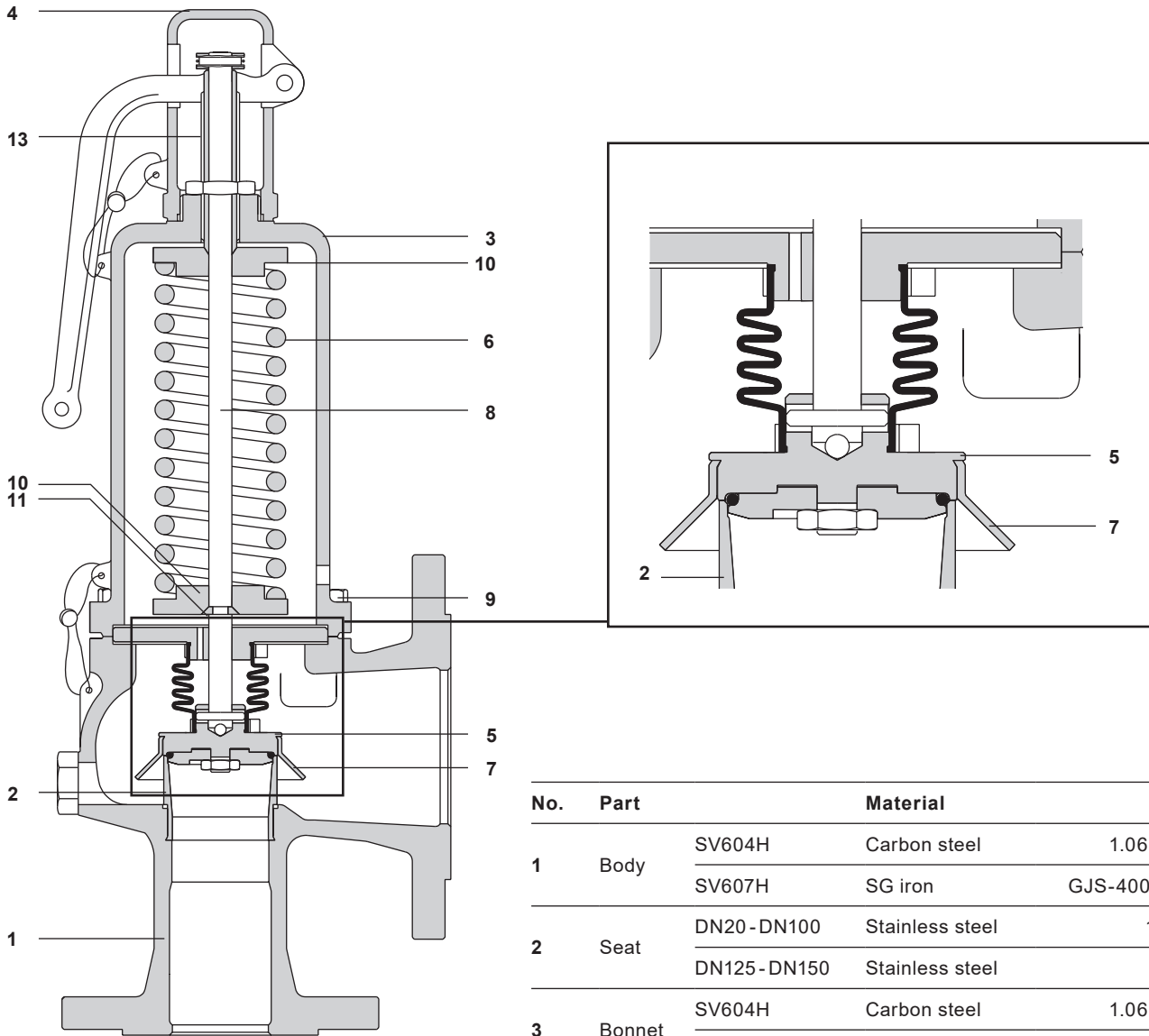


**SV607H PN16 inlet**



Body design conditions	<b>SV604H</b>	PN40	
	<b>SV607H</b>	PN16 or PN25	
Set pressure range	Maximum	10 bar g	
	Minimum	1 bar g	
Temperature	EPDM seat	Minimum	5 °C
		Maximum	120 °C
	Viton seat	Minimum	5 °C
		Maximum	120 °C
Performance data	Overpressure	10%	
	Blowdown limit	10% of set pressure	
	Derated coefficient of discharge values	0.5	
	Backpressure limit	Up to 10% of set pressure	
Designed for a maximum inlet cold hydraulic test pressure of:	PN40	60 bar g	
	PN25	38 bar g	
	PN16	24 bar g	

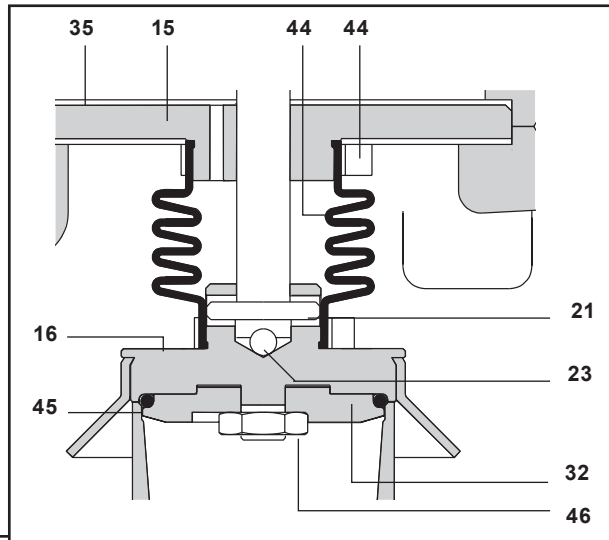
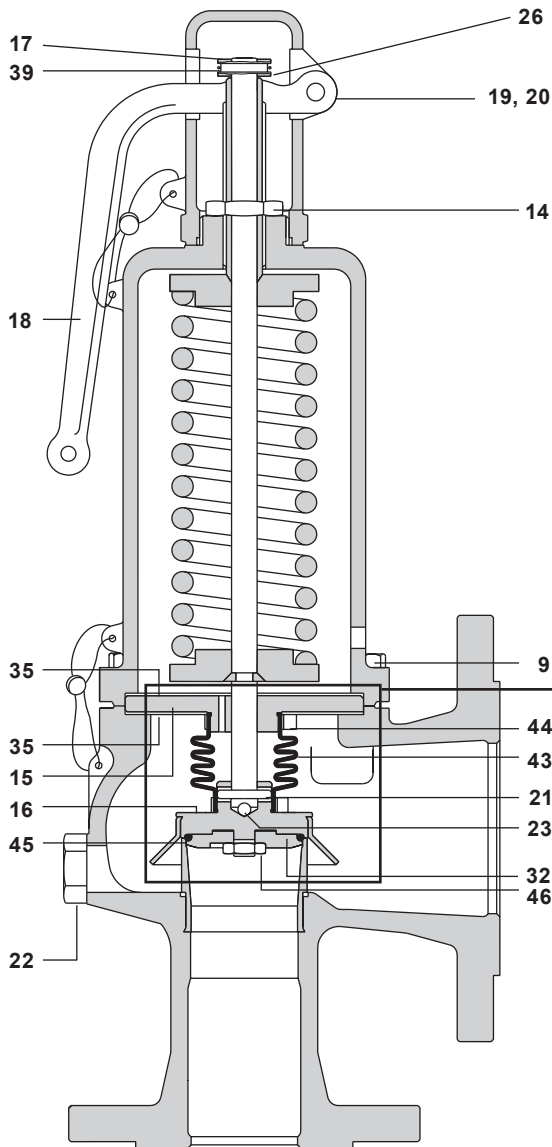
## Materials



No.	Part		Material	
1	Body	SV604H	Carbon steel	1.0619 + N
		SV607H	SG iron	GJS-400-18 LT
2	Seat	DN20 - DN100	Stainless steel	1.4057
		DN125 - DN150	Stainless steel	ANC2
3	Bonnet	SV604H	Carbon steel	1.0619 + N
		SV607H	SG iron	GJS-400-18 LT
4	Cap		SG iron	GJS-400-15
5	Disc	DN20 - DN125	Stainless steel	1.4021
		DN150	Stainless steel	CA15
6	Spring		Chrome-vanadium alloy steel	
7	Skirt	DN20 - DN100	Stainless steel	1.4301
		DN125 - DN150	Stainless steel	1.4308
8	Stem		Stainless steel	1.4021
9	Body bolts		Steel	CK35
10	Spring plate		Carbon steel	C45E
11	Collets		Steel	1.4021
13	Adjustment screw		Stainless steel	1.4021

Materials continued on the next page

**Materials (continued)**



No.	Part	Material
14	Lock-nut	Zinc plated carbon steel
15	Guide plate	SG iron GJS-400-15
17	Collar	Zinc plated carbon steel
18	Lever	SG iron GJS-400-15
19	Lever cross pin	Zinc plated carbon steel
20	Circlip	Spring steel
21	Disc pin	Spring steel
22	Body drain plug ½" BSP	Steel DIN 7343, A304
23	Stem ball	Stainless steel
26	Collar pin	Zinc plated carbon steel
32	'O' ring washer	Stainless steel 1.4021
35	Guide plate gasket (2 off)	Reinforced exfoliated graphite
39	Collar circlip	Spring steel
43	Bellows	EPDM
44	Hose clamp	Stainless steel
45	'O' ring	EPDM/Viton
46	Nut	Stainless steel

**Table 1 - SV60H flow capacities for hot water in kilowatts (kW) at or above 100 °C**  
(calculated in accordance with TRD 721)

Valve size DN	20/32	25/40	32/50	40/65	50/80	65/100	80/125	100/150	125/200	150/250
Orifice (mm)	17.0	23.8	30.6	38.0	50.1	59.0	73.0	91.0	105	125
Area (mm <sup>2</sup> )	230	445	740	1140	1979	2734	4185	6504	8659	12272

Set pressure (bar g)	Flow capacity for hot water kW									
1.0	122	236	327	504	875	1 172	1 795	3 050	4 061	5 756
1.5	149	288	437	673	1 168	1 569	2 402	3 733	4 970	7 044
2.0	176	341	531	818	1 421	1 883	2 882	4 416	5 879	8 333
2.5	204	394	580	894	1 552	2 143	3 281	5 099	6 789	9 621
3.0	229	443	653	1 005	1 745	2 411	3 691	5 737	7 637	10 824
3.5	256	496	730	1 125	1 953	2 698	4 131	6 419	8 546	12 112
4.0	282	545	803	1 237	2 147	2 966	4 541	7 057	9 395	13 315
4.5	307	594	875	1 349	2 341	3 234	4 951	7 694	10 244	14 518
5.0	333	643	948	1 460	2 535	3 502	5 361	8 332	11 092	15 720
5.5	358	693	1 020	1 572	2 729	3 770	5 771	8 969	11 941	16 923
6.0	382	738	1 088	1 676	2 909	4 019	6 152	9 561	12 729	18 040
6.5	414	802	1 181	1 819	3 158	4 363	6 679	10 380	13 820	19 586
7.0	431	833	1 228	1 891	3 283	4 536	6 943	10 790	14 365	20 359
7.5	456	882	1 300	2 003	3 477	4 804	7 353	11 428	15 214	21 562
8.0	480	928	1 368	2 107	3 657	5 052	7 734	12 019	16 002	22 679
8.5	500	967	1 425	2 195	3 810	5 263	8 056	12 520	16 669	23 624
9.0	529	1 023	1 507	2 322	4 031	5 569	8 525	13 249	17 638	24 998
9.5	556	1 076	1 585	2 442	4 239	5 856	8 964	13 932	18 548	26 287
10.0	574	1 111	1 637	2 522	4 378	6 048	9 257	14 387	19 154	27 146

**Table 2 - TRD 721 sizing**

The safety valve discharge capacity expressed as heat output  $p$  of the heat generator in kW is calculated according to the following formula:

$$P = A_o \cdot \alpha_w \cdot K$$

Valve size DN	20/32	25/40	32/50	40/65	50/80	65/100	80/125	100/150	125/200	150/250
Orifice (mm) $d_o$	17.0	23.8	30.6	38.0	50.1	59.0	73.0	91.0	105	125
Area (mm <sup>2</sup> ) $A_o$	230	445	740	1140	1979	2734	4185	6504	8659	12272

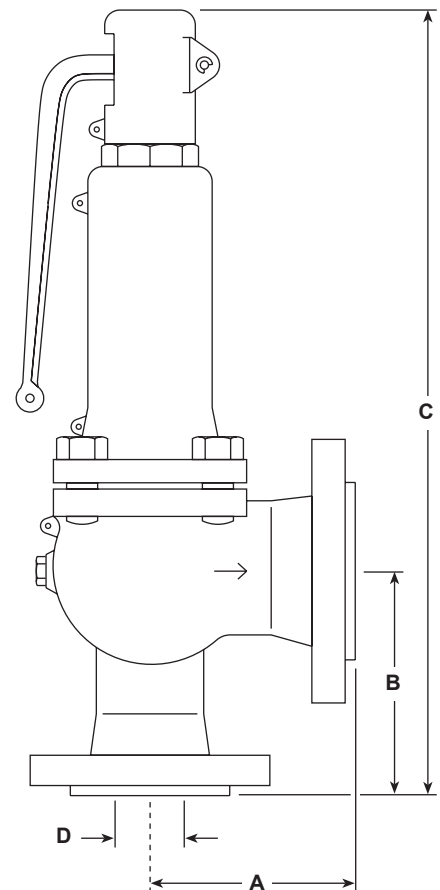
Set pressure bar g	$\alpha_w$ values									
1.0	0.79	0.79	0.66	0.66	0.66	0.64	0.64	0.70	0.70	0.70
1.5	0.79	0.79	0.72	0.72	0.72	0.70	0.70	0.70	0.70	0.70
2.0	0.79	0.79	0.74	0.74	0.74	0.71	0.71	0.70	0.70	0.70
2.5 to 10	0.79	0.79	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70

### Constant K depending on the set pressure (bar g)

Set pressure bar g	K
1.0	0.67
1.5	0.82
2.0	0.97
2.5	1.12
3.0	1.26
3.5	1.41
4.0	1.55
4.5	1.69
5.0	1.83
6.0	2.10
7.0	2.37
8.0	2.64
9.0	2.91
10.0	3.16

### Dimensions/weights (approximate) in mm and kg

Size Inlet - Outlet	Dimensions				Weight	
	A	B	C	Flow Ø D	SV604H	SV607H
DN20 - DN32	85	95	385	17.0	10.5	10.5
DN25 - DN40	100	105	435	23.8	12.5	11.5
DN32 - DN50	110	115	450	30.6	16.0	15.0
DN40 - DN65	115	140	520	38.0	18.0	18.0
DN50 - DN80	120	150	535	50.1	20.0	22.0
DN65 - DN100	140	170	710	59.0	40.0	38.0
DN80 - DN125	160	195	790	73.0	56.0	53.0
DN100 - DN150	180	220	835	91.0	77.0	75.0
DN125 - DN200	200	250	1042	105.0	120.0	115.0
DN150 - DN250	225	285	1165	125.0	190.0	180.0



## Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P317-01) supplied with the product.

**Installation note:** The safety valve should always be fitted with the centre line of the spring housing vertically above the valve.

## Sizing and selection

In accordance with TRD 721. See Tables 1 and 2, page 5.

### SV60H safety valve selection guide:

<b>Model type</b>	SV60	<b>SV60</b>
<b>Body material</b>	4H = Carbon steel	<b>4H</b>
	7H = SG iron	
<b>Configuration</b>	A = Closed bonnet / easing lever	<b>A</b>
<b>Seal material</b>	E = EPDM	<b>E</b>
	V = Viton	
<b>Size</b>	DN20 to DN150	<b>DN20</b>
<b>Inlet connection</b>	PN16 (DN65 to DN150 only)	<b>PN40</b>
	PN25, PN40	
<b>Selection example</b>	<b>SV60</b> - <b>4H</b> - <b>A</b> - <b>E</b> - <b>DN20</b> - <b>PN40</b>	

### How to order

**Example:** 1 off Spirax Sarco SV604HAE, DN20 flanged PN40 safety valve with a set pressure of 6 bar g.