

SV47H Safety Valve

Description

SV47H Safety Valves are high-capacity valves with standard orifices from J to R. They have a modern design with two adjusting rings, allowing precise blowdown adjustment. Designed for use in boilers, organic fluid vaporisers and of pressure.

Available types

SV47H Safety Valves have flanged inlet connections in accordance with ASME B16.42 and a test lever. For orifices J, K, L and M there is the option of threaded outlet connections (NPT) in accordance with ANSI Standard B1.20.1 (See page. 04). The materials of construction are selected to meet the temperature and pressure characteristics of the process fluid.

Applications

Effective overpressure protection for boilers and generators, for steam systems downstream of pressure regulating stations, at the inlet of equipment such as heat exchangers and process vessels. Also for use in steam flash recovery tanks and in condensate return systems to protect accumulation vessels and equipment.

Construction Standard

SV47H Safety Valves are designed and built in accordance with the ASME Sections I and XIII and the materials of construction meet the requirements of these codes. Production tests are carried out in accordance with the requirements of items PG-73.5 and 3.6 of these codes.

Certificates

A certificate of conformity is supplied with each valve including valve set pressure and hydrostatic test. Material certification is provided in accordance with BS-EN 10204 3.1 for all primary pressure containing parts.

Installation and Maintenance

Consult the latest revision of the IM-D340-02 Installation and Maintenance Manual

Materials

See page 02 for more details.

Dimensions and weights

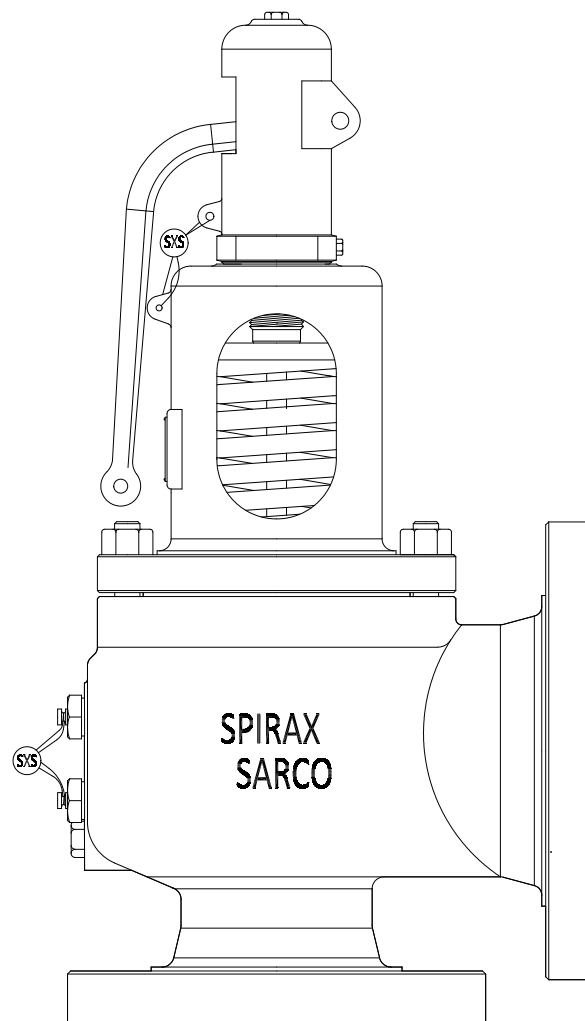
See page 03 for more details.

Capacity tables

See pages 04 and 05 for more details.

Correction Table for Superheated Steam

See page 05 for more details.



Operating Limits

Pressure

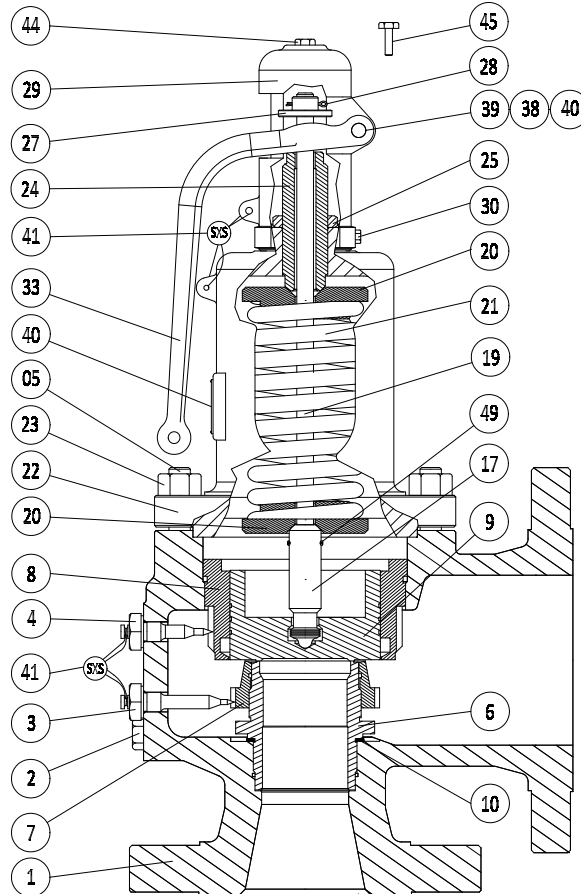
Set Pressure	Maximum	20.7 barg
	Minimum	1 barg
Maximum back pressure		2.1 barg
Hydrostatic test pressure	1.5x design pressure	

Temperature

Body material Specification

Cast Iron SA-395 Gr. 60-40-18	Minimum -29°C
	Maximum 343°C

Temperature limits based on ASME Standard B16.42

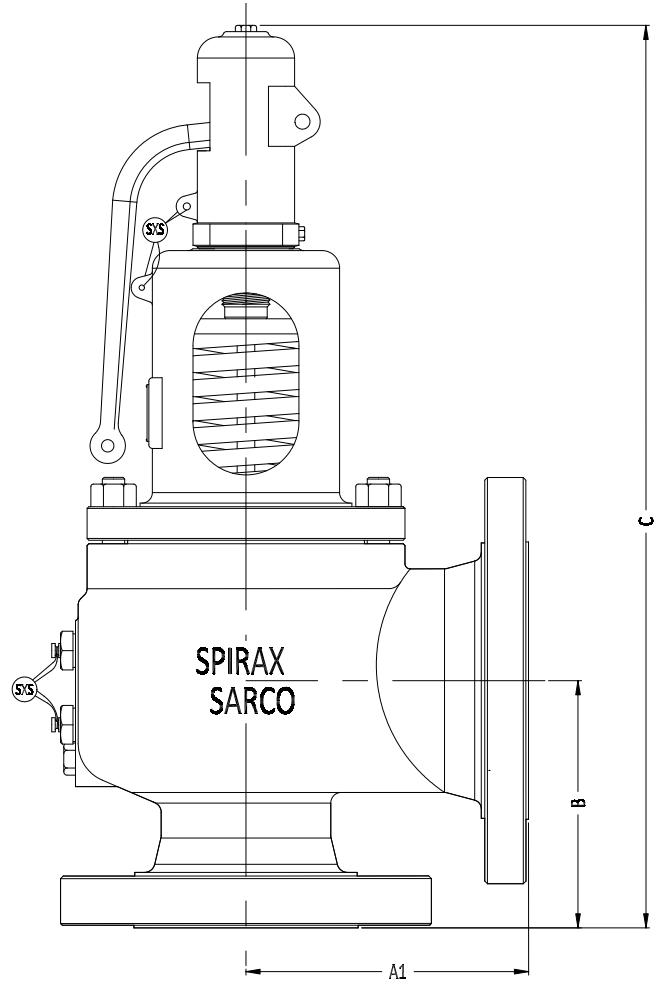
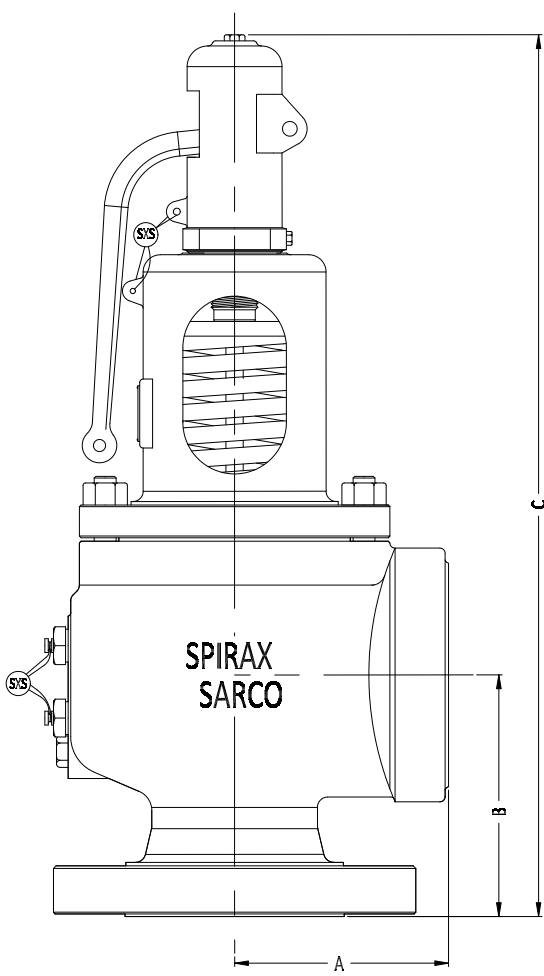


Materials

No.	Part	Material
1	Body	SA 395 Gr. 60-40-18
2	Drain Plug	Carbon Steel
3	Lock Screw - Lower	Stainless Steel
4	Lock Screw - Upper	Stainless Steel
5	Body Stud	SA 193 Gr. B7
10	Seat Gasket	Graphite
6	Seat	316 St. St.
7	Adjusting Ring -Lower	316 St. St.
8	Adjusting Ring - Upper	316 St. St.
9	Disc	Hardened St. St.
17	Stem Retainer	Hardened St. St.
49	Stem Pin	Carbon Steel
19	Stem	304 St. St.
20	Spring Washer	Carbon Steel
21	Spring	up to 232 °C 233 to 343 °C Carbon Steel High Temperature Alloy
22	Bonnet	SA 395 Gr. 60-40-18
23	Hex Nut (Body)	SA 194 Gr. 2H
24	Spring Adjusting Screw	304 St. St.
25	Adjusting Screw Locknut	304 St. St.
27	Stem Test Nut	Carbon Steel
28	Cotter Pin	Carbon Steel
29	Cap	Cast Iron
30	Cap Screw	Carbon Steel
33	Test Lever	Cast Iron
38	Pin washer	Carbon Steel
39	Lever Pin	Carbon Steel
40	Cotter Pin	Carbon Steel
44	Cap Plug	Carbon Steel
45	Test Gag	Carbon Steel
40	Nameplate	316 St. St.
41	Seal	Lead

**Other materials under request

Dimensions / Approximate weights in mm and kg.



Orifice	Size		Class	A	A1	B	C	Weight	
	Inlet	Outlet							
J	1½"	2½"	300#	89		108	413	17	
	2"							18	
K	2"	3"				NPT	102	117	466
	2½"			23					
L	3"	4"		150#			124	140	507
	3"					37			
M	3"					160	140	507	37
N	3"					165	143	607	50
P	4"	6"				184	172	670	85
Q	4"					210	172	727	94
R	6"	8"	238		235	889	161		
			254		276	1025	287		

Capacity Table - Steam - 3% Overpressure - Kg/h

Set pressure (barg)	Orifice Designation / Current Area (cm ²)							
	J	K	L	M	N	P	Q	R
	8.867	12.69	19.71	24.81	29.90	44.06	76.20	110.47
1.0	863	1,234	1,917	2,414	2,909	4,286	7,413	10,747
1.5	1,063	1,521	2,363	2,974	3,584	5,282	9,134	13,242
2.0	1,263	1,808	2,808	3,535	4,260	6,277	10,856	15,738
2.5	1,464	2,095	3,253	4,095	4,935	7,272	12,577	18,234
3.0	1,664	2,381	3,699	4,656	5,611	8,268	14,299	20,729
3.5	1,864	2,668	4,144	5,216	6,286	9,263	16,020	23,225
4.0	2,065	2,955	4,589	5,777	6,962	10,258	17,742	25,721
4.5	2,265	3,241	5,034	6,337	7,637	11,254	19,463	28,216
5.0	2,469	3,534	5,489	6,909	8,326	12,269	21,219	30,762
5.5	2,675	3,829	5,947	7,486	9,022	13,294	22,992	33,333
6.0	2,882	4,124	6,406	8,063	9,718	14,320	24,765	35,903
6.5	3,088	4,420	6,864	8,641	10,413	15,345	26,538	38,474
7.0	3,294	4,715	7,323	9,218	11,109	16,370	28,312	41,044
7.5	3,501	5,010	7,782	9,795	11,805	17,395	30,085	43,615
8.0	3,707	5,305	8,240	10,373	12,501	18,421	31,858	46,186
8.5	3,913	5,601	8,699	10,950	13,196	19,446	33,631	48,756
9.0	4,120	5,896	9,158	11,527	13,892	20,471	35,404	51,327
9.5	4,326	6,191	9,616	12,105	14,588	21,496	37,177	53,897
10	4,532	6,487	10,075	12,682	15,284	22,522	38,950	56,468
12	5,358	7,668	11,910	14,991	18,067	26,623	46,043	66,750
14	6,183	8,849	13,744	17,300	20,850	30,724	53,135	77,032
16	7,008	10,030	15,579	19,610	23,633	34,825	60,228	87,315
18	7,834	11,211	17,413	21,919	26,416	38,926	67,320	97,597
20	8,659	12,392	19,248	24,228	29,199	43,027	74,413	107,879
20.7	8,948	12,806	19,890	25,036	30,173	44,462	76,895	111,478

For sizing using current areas (ASME), the discharge coefficient K for steam is 0.859.
lb/h = Kg/h / 0.4536

Capacity Table - Steam - 10% Overpressure - Kg/h

Set pressure (barg)	Orifice Designation / Current Area (cm ²)							
	J	K	L	M	N	P	Q	R
	8.867	12.69	19.71	24.81	29.90	44.06	76.20	110.47
1.0	889	1,273	1,977	2,489	2,999	4,420	7,643	11,081
1.5	1,090	1,560	2,422	3,049	3,675	5,415	9,365	13,577
2.0	1,290	1,846	2,868	3,610	4,350	6,410	11,086	16,072
2.5	1,508	2,158	3,351	4,218	5,084	7,491	12,956	18,783
3.0	1,728	2,473	3,841	4,835	5,827	8,586	14,850	21,528
3.5	1,948	2,788	4,331	5,451	6,570	9,681	16,743	24,273
4.0	2,169	3,104	4,821	6,068	7,313	10,776	18,637	27,019
4.5	2,389	3,419	5,310	6,685	8,056	11,871	20,530	29,764
5.0	2,609	3,734	5,800	7,301	8,799	12,966	22,424	32,509
5.5	2,830	4,050	6,290	7,918	9,542	14,061	24,318	35,254
6.0	3,050	4,365	6,780	8,534	10,285	15,156	26,211	38,000
6.5	3,270	4,680	7,270	9,151	11,028	16,251	28,105	40,745
7.0	3,491	4,996	7,759	9,767	11,771	17,346	29,999	43,490
7.5	3,711	5,311	8,249	10,384	12,514	18,441	31,892	46,235
8.0	3,931	5,627	8,739	11,000	13,257	19,536	33,786	48,981
8.5	4,152	5,942	9,229	11,617	14,000	20,630	35,680	51,726
9.0	4,372	6,257	9,719	12,233	14,743	21,725	37,573	54,471
9.5	4,593	6,573	10,209	12,850	15,486	22,820	39,467	57,217
10	4,813	6,888	10,698	13,467	16,229	23,915	41,360	59,962
12	5,694	8,149	12,658	15,933	19,202	28,295	48,935	70,943
14	6,576	9,411	14,617	18,399	22,174	32,675	56,510	81,924
16	7,457	10,672	16,576	20,865	25,146	37,054	64,084	92,905
18	8,339	11,934	18,535	23,331	28,118	41,434	71,659	103,886
20	9,220	13,195	20,495	25,798	31,090	45,814	79,233	114,867
20.7	9,528	13,637	21,180	26,661	32,130	47,347	81,884	118,711

For sizing using current areas (ASME), the discharge coefficient K for steam is 0.859.
lb/h = Kg/h / 0.4536

