



BALANCED BELLOWS TYPE SAFETY RELIEF VALVE

This valve generally used for pressure vessel and tracing equipment at the petroleum, gas and chemical plant. In case a back pressure varies, a balance bellows type safety valve is well known to be used for this purpose. In order to avoid possible variation in the set pressure due to varying back pressure after bellows failure, the use of this balancing piston type safety relief valve is suggested.

FEATURES

- Bellows of balance construction is adopted in this valve so a back pressure impact can be reduced.
- When handling toxic fluid, in particular, this vent hole should be provided with piping and led to a safety area.
- The larger capacity can be acquired with this valve than the low lift type and high lift type valves.
- Its main part is made of STS316 so its corrosion resistance is very good.

DIMENSIONS

(mm)

Size	d	d ₁	d ₂	d ₃	L	H ₁	H	Lift	Inlet	Outlet
20A×40A	20	40	17.5	15	100	100	337	3.75	JIS B 2210 20K RF Flanged	JIS B 2210 10K FF Flanged
25A×40A	25	40	22	19	100	104	380	4.75		
25A×50A	25	50	22	19	100	104	380	4.75		
40A×65A	40	65	35	30	117	119	473	7.5		
50A×80A	50	80	44	38	131	130	546	9.5		
65A×100A	65	100	57	49	146	150	638	12.25		
80A×125A	80	125	71	61	162	168	693	15.25		
100A×150A	100	150	88	76	190	203	819	19.0		

- Other flanges are available upon request (JIS B 8210, ANSI, DIN).
See the 8page for dimensions of JIS B 8210.

SPECIFICATIONS

- Type : Balance bellows
- Applicable Fluid : Gas
Liquid
- Applicable Pressure : 0.7~1.0(0.07~0.1MPa)
1.0~3.0(0.1~0.3MPa)
3.0~6.0(0.3~0.6MPa)
6.0~12.0(0.6~1.2MPa)
12.0~22.0(1.2~2.2MPa)
- Max Temperature : 400°C
- Materials : Body : Cast steel
Trim : Stainless steel
- Connection : Inlet-JIS B2210 20K RF Flanged(KS B 1511)
Outlet-JIS B2210 10K FF Flanged(KS B 1511)
- Hydrostatic test pressure : 1.5times the setting pressure

DISCHARGE CAPACITIES

for Model JSV-FF11/JSV-FF21/JSV-FF22 and JSV-BF31

Calculation of flow according to KS B 6216 for steam & air
to J.K standard for water

• Figures other than in the colored
shells are not subject to JSV-FF11

I. Saturated steam (kg/h with 3% accumulation)

P	S		15	20	25	32	40	50	65	80	100	125	150	200
	A													
1{0.1}	93	158	253	398	631	1,013	1,685	2,611	4,053	6,332	8,490	15,787		
2{0.2}	129	219	351	553	875	1,403	2,333	3,616	5,614	8,771	11,760	21,867		
3{0.3}	171	291	468	740	1,166	1,871	3,111	4,821	7,483	11,692	15,676	29,149		
4{0.4}	214	364	585	926	1,457	2,338	3,888	6,025	9,352	14,613	19,592	36,431		
5{0.5}	257	437	701	1,113	1,749	2,805	4,665	7,229	11,222	17,534	23,508	43,713		
6{0.6}	300	510	818	1,299	2,040	3,273	5,442	8,433	13,091	20,455	27,424	50,995		
7{0.7}	343	583	935	1,485	2,331	3,740	6,219	9,638	14,960	23,376	31,340	58,277		
8{0.8}	385	656	1,052	1,672	2,622	4,207	6,996	10,842	16,830	26,297	35,256	65,559		
9{0.9}	428	728	1,169	1,858	2,914	4,675	7,773	12,046	18,699	29,218	39,173	72,841		
10{1.0}	471	801	1,285	2,045	3,205	5,142	8,550	13,251	20,569	32,138	43,089	80,124		
11{1.1}	514	874	1,402	2,231	3,496	5,609	9,327	14,455	22,438	35,059	47,005	87,406		
12{1.2}	557	947	1,519	2,418	3,788	6,077	10,104	15,659	24,307	37,980	50,921	94,688		
13{1.3}	599	1,020	1,636	2,604	4,079	6,544	10,881	16,863	26,177	40,901	54,837	101,970		
14{1.4}	642	1,092	1,753	2,790	4,370	7,011	11,658	18,068	28,046	43,822	58,753	109,252		
15{1.5}	685	1,165	1,870	2,977	4,661	7,479	12,435	19,272	29,915	46,743	62,669	116,534		
16{1.6}	728	1,238	1,986	3,163	4,953	7,946	13,212	20,476	31,785	49,664	66,585	123,816		
17{1.7}	770	1,311	2,103	3,350	5,244	8,414	13,990	21,681	33,654	52,585	70,501	131,098		
18{1.8}	813	1,384	2,220	3,536	5,535	8,881	14,767	22,885	35,524	55,506	74,418	138,830		
19{1.9}	856	1,457	2,337	3,722	5,826	9,348	15,544	24,089	37,393	58,427	78,334	145,662		
20{2.0}	899	1,529	2,454	3,909	6,118	9,816	16,321	25,293	39,262	61,347	82,250	152,944		

Symbols : S= Size(mm), P = Set pressure (kgf/cm²), A = Effective area(mm²)

II. Air (kg/h at 20°C with 10% accumulation)

P	S		15	20	25	32	40	50	65	80	100	125	150	200
	A													
1{0.1}	144	244	392	625	977	1,567	2,606	4,038	6,269	9,795	13,132	24,419		
2{0.2}	218	370	594	947	1,480	2,375	3,950	6,121	9,501	14,846	19,904	37,012		
3{0.3}	292	496	796	1,269	1,984	3,184	5,293	8,204	12,734	19,897	26,677	49,605		
4{0.4}	366	622	998	1,592	2,488	3,992	6,637	10,286	15,967	24,949	33,449	62,199		
5{0.5}	440	748	1,200	1,914	2,992	4,800	7,981	12,369	19,200	30,000	40,221	74,792		
6{0.6}	514	874	1,402	2,237	3,495	5,608	9,325	14,451	22,433	35,051	46,994	87,385		
7{0.7}	588	1,000	1,604	2,559	3,999	6,416	10,669	16,534	25,665	40,102	53,766	99,978		
8{0.8}	662	1,126	1,806	2,881	4,503	7,225	12,013	18,617	28,898	45,154	60,538	112,571		
9{0.9}	736	1,252	2,008	3,204	5,007	8,033	13,356	20,699	32,131	50,205	67,311	125,164		
10{1.0}	810	1,378	2,210	3,526	5,510	8,841	14,700	22,782	35,364	55,256	74,083	137,757		
11{1.1}	884	1,503	2,412	3,848	6,014	9,649	16,044	24,865	38,597	60,307	80,855	150,351		
12{1.2}	958	1,629	2,614	4,171	6,518	10,457	17,388	26,947	41,829	65,358	87,627	162,944		
13{1.3}	1,032	1,755	2,816	4,493	7,021	11,265	18,732	29,030	45,062	70,410	94,400	175,537		
14{1.4}	1,106	1,881	3,018	4,816	7,525	12,074	20,075	31,112	48,295	75,461	101,172	188,130		
15{1.5}	1,180	2,007	3,220	5,138	8,029	12,882	21,419	33,195	51,528	80,512	107,944	200,723		
16{1.6}	1,254	2,133	3,422	5,460	8,533	13,690	22,763	35,278	54,761	85,563	114,717	213,316		
17{1.7}	1,328	2,259	3,624	5,783	9,036	14,498	24,107	37,360	57,993	90,615	121,489	225,909		
18{1.8}	1,402	2,385	3,827	6,105	9,540	15,306	25,451	39,443	61,226	95,666	128,261	238,502		
19{1.9}	1,476	2,511	4,029	6,427	10,044	16,115	26,795	41,526	64,459	100,717	135,034	251,096		
20{2.0}	1,550	2,637	4,231	6,750	10,548	16,923	28,138	43,608	67,692	105,768	141,806	263,689		

Symbols : S= Size(mm), P = Set pressure (kgf/cm²), A = Effective area(mm²)

III. Water (m³/h at G=1 with 15% accumulation)

P	S		15	20	25	32	40	50	65	80	100	125	150	200
	A													
1{0.1}	3.13	5.35	8.61	13.7	21.48	34.50	57.34	88.89	137.99	215.62	289.08	537.55		
2{0.2}	4.43	7.57	12.17	19.4	30.37	48.79	81.09	125.71	195.14	304.93	408.82	760.21		
3{0.3}	5.43	9.27	14.91	23.8	37.20	59.75	99.32	153.96	239.00	373.46	500.70	931.07		
4{0.4}	6.27	10.71	17.22	27.5	42.95	68.99	114.68	177.77	275.97	431.23	578.16	1,075.10		
5{0.5}	7.01	11.97	19.25	30.7	48.02	77.14	128.22	198.76	308.54	482.13	646.41	1,202.00		
6{0.6}	7.67	13.11	21.09	33.7	52.61	84.50	140.46	217.73	337.99	528.15	708.10	1,316.73		
7{0.7}	8.29	14.17	22.78	36.4	56.82	91.27	151.71	235.17	365.07	570.47	764.84	1,422.23		
8{0.8}	8.86	15.14	24.35	38.9	60.74	97.57	162.19	251.42	390.28	609.86	817.65	1,520.43		
9{0.9}	9.40	16.06	25.83	41.2	64.43	103.49	172.03	266.66	413.96	646.85	867.24	1,612.66		
10{1.0}	9.91	16.93	27.22	43.5	67.91	109.09	181.33	281.09	436.35	681.84	914.16	1,699.89		
11{1.1}	10.39	17.76	28.55	45.6	71.23	114.41	190.18	294.81	457.64	715.12	958.77	1,782.86		
12{1.2}	10.85	18.55	29.82	47.6	74.40	119.50	198.64	307.91	477.99	746.92	1,001.41	1,862.13		
13{1.3}	11.30	19.30	31.04	49.6	77.43	124.38	206.75	320.49	497.51	777.42	1,042.30	1,938.17		
14{1.4}	11.72	20.03	32.21	51.4	80.36	129.07	214.55	332.59	516.29	806.76	1,081.64	2,011.33		
15{1.5}	12.14	20.74	33.34	53.3	83.18	133.60	222.08	344.26	534.41	835.08	1,119.61	2,081.93		
16{1.6}	12.53	21.42	34.44	55.0	85.91	137.99	229.37	355.55	551.94	862.47	1,156.33	2,150.21		
17{1.7}	12.92	22.07	35.50	56.7	88.55	142.23	236.43	366.49	568.93	889.01	1,191.91	2,216.38		
18{1.8}	13.29	22.71	36.52	58.3	91.12	146.36	243.28	377.12	585.42	914.79	1,226.47	2,280.64		
19{1.9}	13.66	23.34	37.53	59.9	93.61	150.37	249.95	387.45	601.46	939.85	1,260.08	2,343.13		
20{2.0}	14.01	23.94	38.50	61.5	96.05	154.27	256.44	397.52	617.09	964.27	1,292.81	2,404.00		

Symbols : S= Size(mm), P = Set pressure (kgf/cm²), A = Effective area(mm²)