Safety Relief Valve

안 전 밸 브

양정식 안전밸브
Lift Type Safety Relief Valve

전량식 안전밸브
Full Lift Type Safety Relief Valve

가스검인품 안전밸브
Safety Relief Valve Approved by KGS

*** 양정식 안전밸브(Lift Type Safety Relief Valve)**

안전밸브의 리프트가 밸브시트 입구 지름의 1/40 이상 1/4 미만으로 밸브 몸체가 열렸을 때 유로 면적 중에서 밸브 시트 유로 면적이 최소가 되는 안전밸브

*** 전량식 안전밸브(Full Lift Type Safety Relief Valve)**

밸브시트 유로면적이 밸브 몸체와 밸브 시트가 닿는 면에서 하부에서의 노출의 목부 면적보다 충분히 큰 리프트를 얻을 수 있는 안전밸브

Safety Relief Valve

안전밸브는

밸브 입구쪽의 압력이 설정압력(Set Pressure)에 도달하면 자동적으로 스프링이 작동하면서 유체가 분출되고 일정압력 이하가 되면 정상상태로 복원되는 밸브로서, 배관, 압력용기 등의 설비가 폭발되는 위험을 방지하는 자동밸브입니다.

안전밸브의 종류

1. 안전밸브(Safety Valve)

주로 증기 또는 가스의 발생장치에 안전 확보를 위하여 사용하고 유체의 압력이 기준치를 넘었을 때 순간적으로 자동 작동하는 기능을 가진 밸브

2. 릴리프(Relief Valve)

주로 액체에 사용하고 액체의 압력이 기준치에 도달하면 그 압력의 상승에 따라서 자동적으로 열리는 기능을 가진 밸브

3. 안전릴리프밸브(Safety Relief Valve)

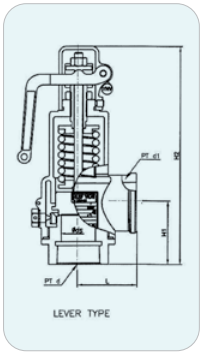
주로 배관계통에 설치하며 용도에 따라 기체 또는 액체에서도 사용할 수 있는 밸브

LSV-1S | 양정식 안전밸브(Lift Type Safety Relief Valve)

- 구조가 간단하고 성능이 우수합니다.
- 디스크 및 시트는 정밀가공으로 변형이나 누수가 거의 없습니다.
- 소형 보일러, 각종 압력용기, 계장기기 등의 Safety Relief Valve로 사용
- 산업안전보건공단(KOSHA) 인증품
- 누설기준은 API STD 527을 따릅니다.

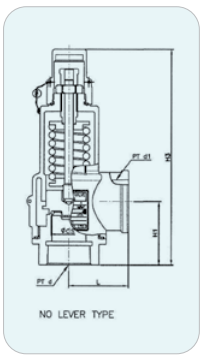
▶ 사 양 (Specifications)

Type	Working Fluid	Setting Pressure (Mpag)	Design Temperature (℃)	Materials		Connection
				Bonnet	Trim	
Plain Lever	Steam, Air	0.05~1.0	220	Cast Bronze	Forged Brass	Female PT Screwed
None	Water, Oil					



▶ 치 수 (Dimensions)

Size \ Part	dt	ds	L	H1	H2	H		Connection	
						Plain Lever	None	Inlet	Outlet
15A × 20A	14.0	21.0	33.5	40.0	149.0	142.0	1.0	Female PT Screwed	Female PT Screwed
20A × 20A	19.0	21.0	33.5	40.0	149.0	142.0	1.0		
25A × 25A	24.0	26.0	43.0	46.0	164.0	157.0	1.7		
32A × 32A	31.0	33.0	45.0	48.0	177.0	170.0	2.2		
40A × 40A	39.0	41.0	50.0	54.0	196.0	189.0	2.3		
50A × 50A	49.0	51.0	62.0	62.0	213.0	206.0	2.5		



HSV-3S/4S | 양정식 안전밸브(Lift Type Safety Relief Valve)

- 압력별 스프링을 구분하여 작동이 확실하고 기능이 우수합니다.
- 디스크 및 시트 재질이 스테인레스강으로 부식이나 누수가 거의 없습니다.
- 고압 압력용기 계장기기 등의 Safety Relief Valve로 사용
- 산업안전보건공단(KOSHA) 인증품
- 누설기준은 API STD 527을 따릅니다.

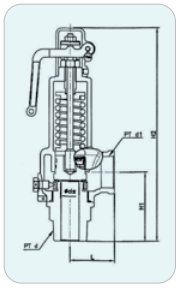
▶ 사 양 (Specifications)(HSV-3S)

Type	Working Fluid	Setting Pressure (Mpag)	Design Temperature (℃)	Materials			Connection	
				Body	Bonnet	Trim	Inlet	Outlet
Plain Lever	Steam, Air	0.05~3.0	220	Stainless Steel	Cast Bronze	Stainless Steel	Male PT Screwed	Female PT Screwed
None	Water, Oil							

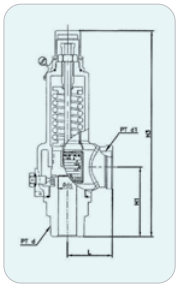
▶ 사 양 (Specifications)(HSV-4S)

Type	Working Fluid	Setting Pressure (Mpag)	Design Temperature (℃)	Materials			Connection	
				Body	Bonnet	Trim	Inlet	Outlet
Plain Lever	Steam, Air	0.05~3.0	220	Stainless Steel	Stainless Steel	Stainless Steel	Male PT Screwed	Female PT Screwed
None	Water, Oil							


HSV-3S(L)




HSV-3S(N)

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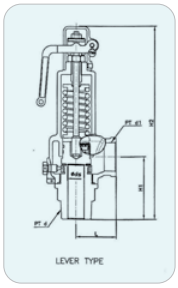
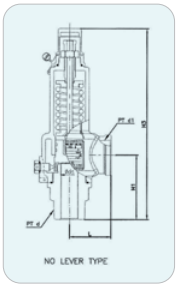



HSV-4S(N)



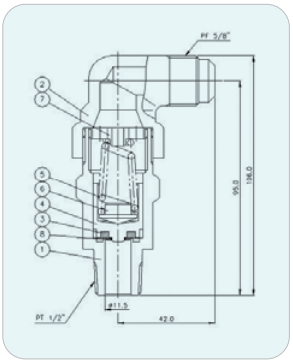
▶ 치 수 (Dimensions)

Size \ Part	dt	ds	L	H1	H2	H		Connection	
						Plain Lever	None	Inlet	Outlet
15A × 20A	14.0	14.0	42.0	60.0	192.0	184.0	1.0	Male PT Screwed	Female PT Screwed
20A × 20A	19.0	14.0	42.0	63.0	195.0	187.0	1.0		
20A × 25A	19.0	19.0	44.0	69.0	211.0	204.0	1.7		
25A × 25A	24.0	19.0	44.0	69.0	211.0	204.0	1.7		
32A × 32A (3S ONLY)	31.0	24.0	45.0	71.0	200.0	192.0	2.0		
32A × 40A (4S ONLY)	31.0	26.0	50.0	79.0	221.0	213.0	2.2		
40A × 40A	39.0	26.0	50.0	79.0	221.0	213.0	2.2		
50A × 50A	49.0	33.0	62.0	93.0	244.0	236.0	4.5		

※주문에 따라 입 .출구 NPT Screwed 규격으로도 제작할 수 있습니다.

HSV-3S1 | 양정식 안전밸브(Lift Type Safety Relief Valve)

- 압력별 스프링을 구분하여 작동이 확실하고 기능이 우수합니다.
- 디스크 및 시트 재질이 황동 + PTFE 로 부식이나 누수가 거의 없습니다.
- 고압 냉매 가스용의 Safety Relief Valve로 사용 합니다.
- 한국가스안전공사(KGS) 검인 가능합니다.
- 누설기준은 API STD 527을 따릅니다.



▶ 사 양 (Specifications)

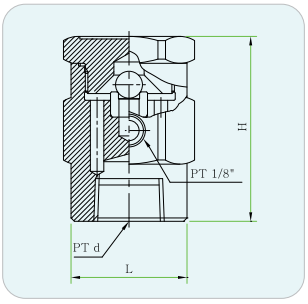
Type	Working Fluid	Setting Pressure (Mpag)	Design Temperature (℃)	Materials			Connection	
				Body	Bonnet	Trim	Inlet	Outlet
None	Gas	0.05~3.3	100	Forged Brass	Forged Brass	Stainless Steel	Male PT 1/2"	Male PF 5/8"

▶ 치 수 (Dimensions)

Size \ Part	dt	ds	L	H1	H	Lift	Inlet	Outlet
15A	11.5	11.5	42	95	106	1.0	Male PT Screwed	Male PF Screwed

VSV-1S | 진공해소장치(Vacuum Breaker)

- 진공장치의 진공도를 떨어뜨리는 밸브입니다.
- 진공 급수 펌프 등에 진공도가 소정값 이상으로 되었을 때
  밸브가 자동적으로 열려 공기를 유입시켜 진공도를 낮춥니다.



▶ 사 양 (Specifications)

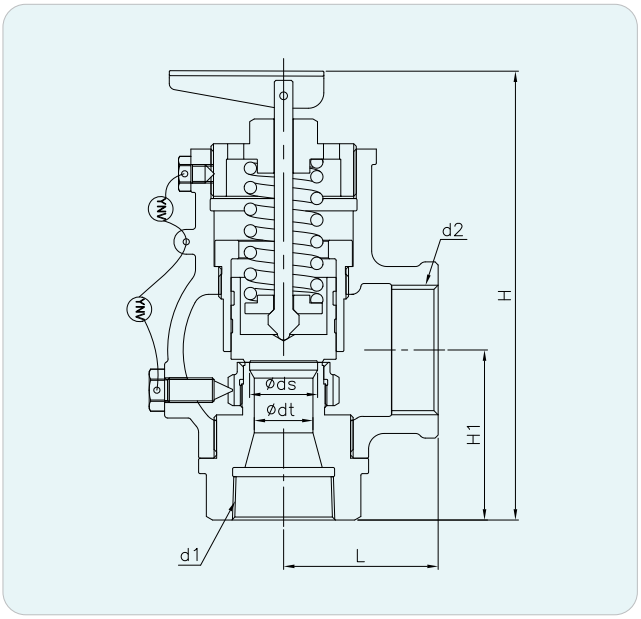
Fluid	Design Temperature (℃)	Materials		Connection
		Body	Trim	
Steam	220	Brass	Stainless Steel	Female PT Screwed

▶ 치 수 (Dimensions)

Size \ Part	L	H	Inlet
15A	35	55	Female PT Screwed
20A	35	55	

FSV-1S(L) | 나사전량식 안전밸브(Full Lift Type Safety Valve For Steam)

- 증기 보일러 시스템 전용에 사용하는 안전밸브입니다.
- KS B 6216 증기용 안전밸브 규격에 준하여 설계 제작된 제품입니다.
- 저양정식, 고양정식에 비해 분출량이 큰 것이 특징입니다.
- 임의로 압력조정을 할 수 없도록 봉인 구조로 되어 있습니다.
- 산업안전보건공단(KOSHA) 인증품
- 누설기준은 API STD 527을 따릅니다.



▶ 사 양 (Specifications)

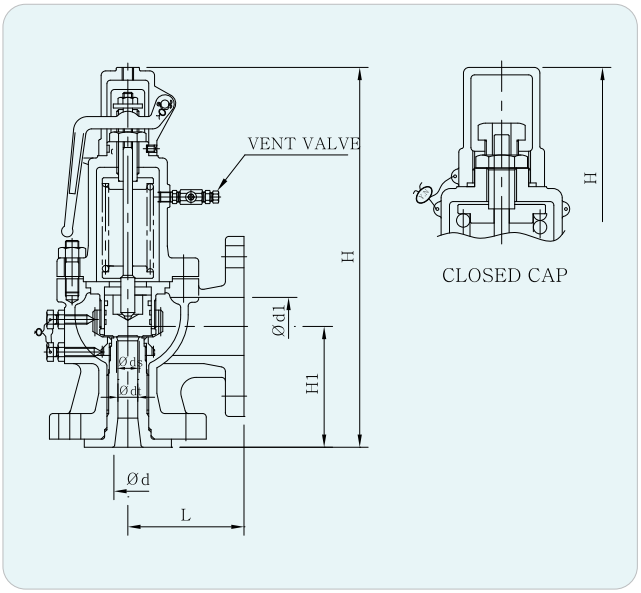
Model	FSV-1S(L)
Working Fluid	Steam
Setting Pressure	5~10 kgf/㎠g
Design Temperature (℃)	MAX. 220℃
Type	Full Bore Type
Connection	Female PT * Female PF Screwed
Materials	Body : Ductile Iron
	Trim : Stainless Steel

▶ 치 수 (Dimensions)

Size \ Part	Ød t	Ød s	L	H1	H	d1	d2	Lift
20A X 25A	15.0	18.0	45.0	50.0	127.0	PT 3/4"	PT 1"	3.5
25A X 32A	19.0	22.0	50.0	55.0	145.0	PT 1"	PT 1¼"	4.5
32A X 40A	24.0	29.0	55.0	62.0	160.0	PT 1¼"	PT 1½"	6.0
40A X 50A	30.0	35.0	65.0	70.0	180.0	PT 1½"	PT 2"	7.0

FSV-1F | 전량식 안전밸브(Full Lift Safety Relief Valve)

- 디스크와 시트는 스테인레스강에 스텔라이트 용접을 하여 충격이나 내마모성이 뛰어나며 성능이 매우 우수합니다.
- 대용량의 증기보일러, 각종 압력용기의 Safety 및 Safety Relief Valve로 사용
- 산업안전보건공단(KOSHA) 인증품
- 누설기준은 API STD 527을 따릅니다.



▶ 사 양 (Specifications)

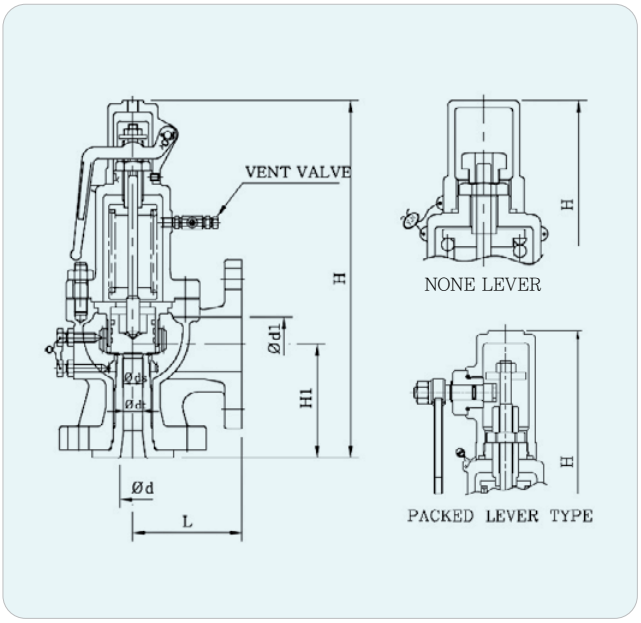
Type	Working Fluid	Setting Pressure (Mpag)	Design Temperature (℃)	Materials		Connection
				Body	Trim	
Plain Lever	Steam, Air	0.05~1.0	220	Ductile Iron	Stainless Steel	JIS Flanged
None / Packed Lever	Water, Oil					

▶ 치 수 (Dimensions)

Size / Part	dt	ds	L	H1	H	Lift	Inlet	Outlet
15A × 25A	11.5	14.5	95	85	282	3.0	JIS 10K RF Flanged	JIS 10K FF Flanged
20A × 25A	15	17.5	95	85	282	3.75		
25A × 40A	19	22	100	104	324	4.75		
32A × 65A	30	35	115	123	419	7.5		
40A × 65A	30	35	115	123	419	7.5		
50A × 80A	38	44	128	130	478	9.5		
65A × 100A	49	57	145	145	544	12.25		
80A × 125A	61	71	162	168	600	15.25		
100A × 150A	76	88	190	197	725	19.0		

※주문에 따라 입 · 출구플랜지 KS B6216 규격으로도 제작할 수 있습니다.

FSV-2F | 전량식 안전밸브(Full Lift Safety Relief Valve)



▶ 사 양 (Specifications)

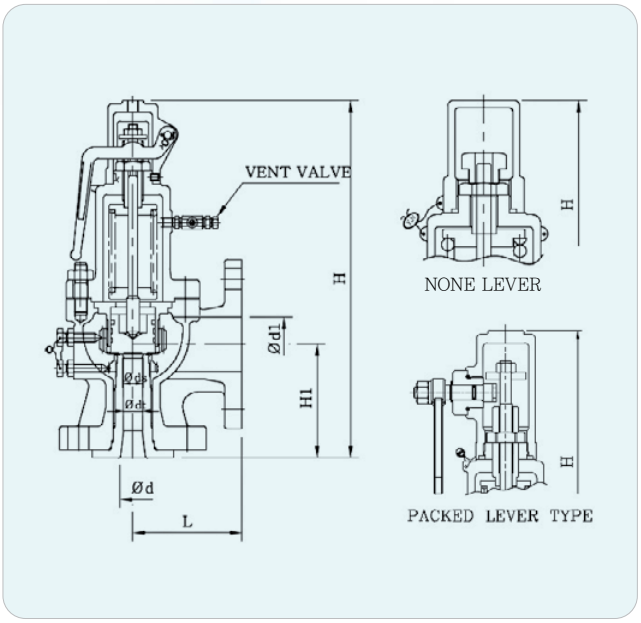
Type	Working Fluid	Setting Pressure (Mpag)	Design Temperature (℃)	Materials		Connection
				Body	Trim	
Plain Lever	Steam, Air	0.05~2.0	250	Cast Steel Stainless Steel	Stainless Steel	JIS Flanged
None / Packed Lever	Water, Oil					

▶ 치 수 (Dimensions)

Size / Part	dt	ds	L	H1	H	Lift	Inlet	Outlet
15A × 25A	11.5	14.5	95	85	282	3.0	JIS 10K, 20K RF Flanged	JIS 10K FF Flanged
20A × 25A	15	17.5	95	85	282	3.75		
25A × 40A	19	22	100	104	320	4.75		
32A × 65A	30	35	115	123	386	7.5		
40A × 65A	30	35	115	123	386	7.5		
50A × 80A	38	44	128	130	476	9.5		
65A × 100A	49	57	145	150	547	12.25		
80A× 100A	61	71	162	168	598	15.25		
80A × 125A	61	71	162	168	598	15.25		
100A × 150A	76	88	190	197	725	19.0		
125A × 200A	95	114	220	222	895	24.0		
150A × 200A	115	133	225	230	953	28.75		
200A × 250A	150	175	270	255	1121	37.5		
250A × 300A	200	230	360	300	1570	50.0		
300A × 400A	238	275	410	350	1585	60.0		

※주문에 따라 입 · 출구플랜지 KS B6216, ANSI, DIN 규격으로도 제작할 수 있습니다.(온도 235℃ 이상은 덮개 개방형으로 제작 – 산업안전관리공단 발췌)

FSV-3F | 전량식 안전밸브(Full Lift Safety Relief Valve)



▶ 사 양 (Specifications)

Type	Working Fluid	Setting Pressure (Mpag)	Design Temperature (℃)	Materials		Connection
				Body	Trim	
Plain Lever	Steam, Air	2.0~3.0	250	Cast Steel Stainless Steel	Stainless Steel	JIS Flanged
None / Packed Lever	Water, Oil					

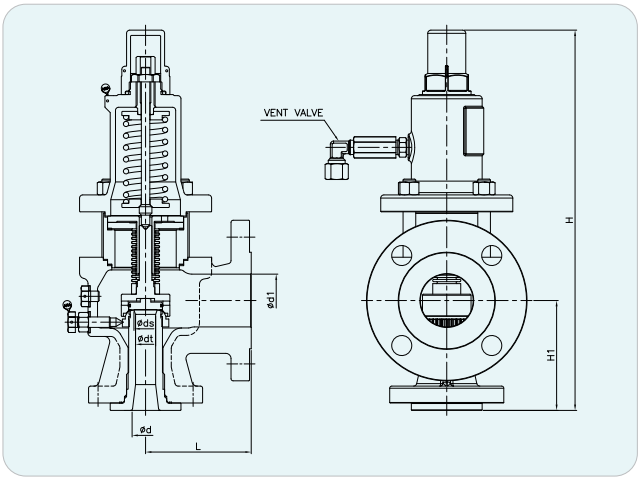
▶ 치 수 (Dimensions)

Size / Part	dt	ds	L	H1	H	Lift	Inlet	Outlet
15A × 25A	11.5	14.5	95	85	282	3.0	JIS 30K RF Flanged	JIS 10K FF Flanged
20A × 25A	15	17.5	95	85	282	3.75		
25A × 40A	19	22	100	105	320	4.75		
40A × 65A	30	35	115	123	386	7.5		
50A × 80A	38	44	128	130	476	9.5		
65A × 100A	49	57	145	150	547	12.25		
80A × 100A	61	71	162	168	598	15.25		
80A × 125A	61	71	162	168	598	15.25		
100A × 150A	76	88	190	197	725	19.0		

※적용압력이 3.0 Mpag 이상은 주문에 의해 제작되오니 문의 바랍니다.
※주문에 따라 입 · 출구플랜지 KS B6216, ANSI, DIN 규격으로도 제작할 수 있습니다.(온도 235℃ 이상은 덮개 개방형으로 제작 – 산업안전관리공단 발췌)

BFSV-2F | 벨로우즈타입 안전밸브(Balanced Bellows Type Safety Relief Valve)

- 주로 석유, GAS 및 화학 플랜트에 각종 계장기기, 배관등에 사용하는 안전밸브입니다.
- 출구측 배압에 의한 영향을 받는 장소 및 안전밸브 외부에 유체가 유출하는 것을 허용하지 않는 곳에 사용합니다.
- 유체의 부식성 또는 온도에 의해 스프링이 부식하거나 변형할 우려가 있는 장소에 사용 합니다.
- KS B 6216 가스용 안전밸브 규격에 준하여 설계 제작된 제품입니다.
- 내부 주요 재질이 스테인리스 재질로 되어있어 내식성이 우수합니다.
- 산업안전보건공단(KOSHA) 인증품입니다.
- 누설기준은 API STD 527을 따릅니다.



▶ 사 양 (Specifications)

Model	BFSV-2F
Working Fluid	Gas(유독성 및 부식성, 고온기체), Hot Oil(열매유)
Setting Pressure	0.2~2.0 Mpag
Design Temperature (℃)	MAX. 400℃
Type	Balanced Bellows Type
Connection	JIS Flanged
Materials	Body : Cast Steel, Stainless Steel
	Trim : Stainless Steel

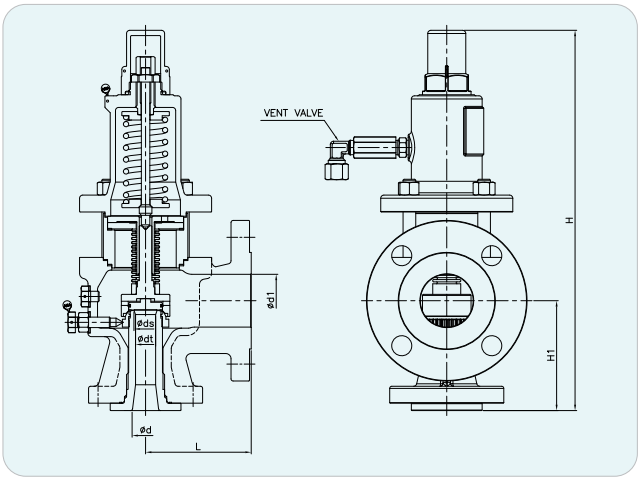
▶ 치 수 (Dimensions)

Size / Part	dt	ds	L	H1	H	Lift	Inlet	Outlet
20A X 25A	15.0	17.5	95.0	85.0	317.0	3.75	JIS 10K, 20K RF Flanged	JIS 10K FF Flanged
25A X 40A	19.0	22.0	100.0	104.0	360.0	4.75		
32A X 65A	30.0	35.0	115.0	123.0	452.0	7.5		
40A X 65A	30.0	35.0	115.0	123.0	452.0	7.5		
50A X 80A	38.0	44.0	128.0	130.0	514.0	9.5		
65A X 100A	49.0	57.0	145.0	145.0	594.0	12.25		
80A X 125A	61.0	71.0	162.0	168.0	642.0	15.25		
100A X 150A	76.0	88.0	190.0	197.0	800.0	19.0		
150A X 200A	115.0	133.0	225.0	230.0	1015.0	28.75		
200A X 250A	150.0	175.0	270.0	270.0	1164.0	37.5		

※주문에 따라 입 · 출구플랜지 KS B 6216, ANSI, DIN 규격으로도 제작할 수 있습니다.
※사이즈에 따라, 최소 세팅압력은 변경될 수 있습니다.

BFSV-3F | 벨로우즈타입 안전밸브(Balanced Bellows Type Safety Relief Valve)

- 주로 석유, GAS 및 화학 플랜트에 각종 계장기기, 배관등에 사용하는 안전밸브입니다.
- 출구측 배압에 의한 영향을 받는 장소 및 안전밸브 외부에 유체가 유출하는 것을 허용하지 않는 곳에 사용합니다.
- 유체의 부식성 또는 온도에 의해 스프링이 부식하거나 변형할 우려가 있는 장소에 사용 합니다.
- KS B 6216 가스용 안전밸브 규격에 준하여 설계 제작된 제품입니다.
- 내부 주요 재질이 스테인리스 재질로 되어있어 내식성이 우수합니다.
- 산업안전보건공단(KOSHA) 인증품입니다.
- 누설기준은 API STD 527을 따릅니다.



▶ 사 양 (Specifications)

Model	BFSV-3F
Working Fluid	Gas(유독성 및 부식성, 고온기체), Hot Oil(열매유)
Setting Pressure	2.0~3.0 Mpag
Design Temperature (℃)	MAX. 400℃
Type	Balanced Bellows Type
Connection	JIS Flanged , ANSI Flanged
Materials	Body : Cast Steel, Stainless Steel
	Trim : Stainless Steel

▶ 치 수 (Dimensions)

Size / Part	dt	ds	L	H1	H	Lift	Inlet	Outlet
20A X 25A	15.0	17.5	95.0	85.0	317.0	3.75	JIS 30K RF Flanged	JIS 10K FF Flanged
25A X 40A	19.0	22.0	100.0	104.0	360.0	4.75		
32A X 65A	30.0	35.0	115.0	123.0	452.0	7.5		
40A X 65A	30.0	35.0	115.0	123.0	452.0	7.5		
50A X 80A	38.0	44.0	128.0	130.0	514.	9.5		

※주문에 따라 입 · 출구플랜지 KS B6216, ANSI, DIN 규격으로도 제작할 수 있습니다.

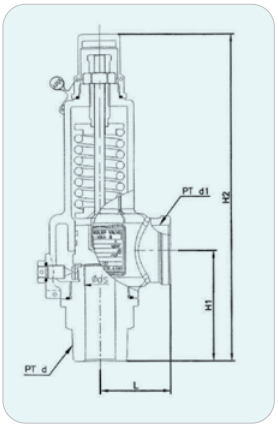
GSV-3S/4S/5S/7S/10S | 양정식 가스용 안전밸브(Lift Type Safety Relief Valve)

▶ 사 양 (Specifications)

Type	Working Fluid	Setting Pressure (MPa)	Design Temperature (℃)	Materials			Connection	
				Body	Bonnet	Trim	Inlet	Outlet
GSV-3S	Gas	0.2~3.0	-196~220	Stainless Steel	Cast Bronze	Stainless Steel	Male PT Screwed	Female PT Screwed
GSV-4S		0.2~3.0		Stainless Steel	Stainless Steel	Stainless Steel		
GSV-5S		3.0~5.0						
GSV-7S		5.0~7.0						
GSV-10S		7.0~10.0						

▶ 치 수 (Dimensions)

Size \ Part	dt	ds	L	H1	H	Lift	Connection	
							Inlet	Outlet
15A × 20A	13.0	14.0	42.0	60.0	184.0	1.5	Male PT Screwed	Female PT Screwed
20A × 20A	13.0	14.0	42.0	63.0	187.0	1.5		
20A × 25A	18.0	19.0	44.0	69.0	204.0	2.0		
25A × 25A	18.0	19.0	44.0	69.0	204.0	2.0		
32A × 32A (3S ONLY)	23.0	24.0	45.0	71.0	192.0	3.0		
32A × 40A (4S ONLY)	25.0	26.0	50.0	79.0	213.0	3.0		
40A × 40A	25.0	26.0	50.0	79.0	213.0	3.0		
50A × 50A	32.0	33.0	62.0	93.0	236.0	4.7		



※주문에 따라 입 · 출구 NPT Screwed 규격으로도 제작할 수 있습니다.

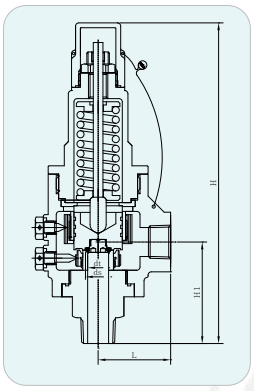
GFSV-5S/7S/10S | 전량식 가스용 안전밸브(Full Lift Type Safety Relief Valve)

▶ 사 양 (Specifications)

Type	Working Fluid	Setting Pressure (MPa)	Design Temperature (℃)	Materials			Connection	
				Body	Bonnet	Trim	Inlet	Outlet
GSV-5S	Gas	0.2~5.0	-196~220	Stainless Steel	Stainless Steel	Stainless Steel	Male PT Screwed	Female PT Screwed
GSV-7S		5.0~7.0		Stainless Steel	Stainless Steel	Stainless Steel		
GSV-10S		7.0~10.0		Stainless Steel	Stainless Steel	Stainless Steel		

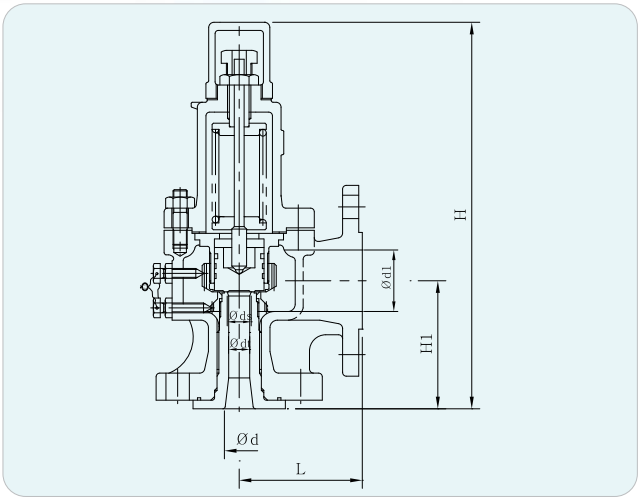
▶ 치 수 (Dimensions)

Size		ø dt	ø ds	L	H1	H		LIFT
5S	7S / 10S					5S	7S / 10S	
15A x 20A	15A x 20A	13.0	15.7	45.0	63.0	200.0	220.0	3.25
20A x 20A	20A x 20A	13.0	15.7	45.0	65.0	202.0	224.0	3.25
20A x 25A	–	18.0	20.0	49.0	71.0	233.0	–	4.5
25A x 25A		18.0	20.0	49.0	73.0	235.0		4.5
25A x 32A		18.0	20.0	49.0	73.0	235.0		4.5



※주문에 따라 입 · 출구 NPT Screwed 규격으로도 제작할 수 있습니다.

GSV-2F/3F | 전량식 가스용 안전밸브(Full Lift Type Safety Relief Valve)



▶ 사 양 (Specifications)

Type	Working Fluid	Setting Pressure (MPa)	Design Temperature (℃)	Materials		Connection
				Body	Trim	
GSV-2F	Gas	0.2~2.0	-196~250	Cast Steel Stainless Steel	Stainless Steel	JIS Flanged ANSI Flanged
GSV-3F		2.0~3.0				

▶ 치 수 (Dimensions)

Model	Size	dt	ds	L	H1	H	Lift	Inlet	Outlet
GSV-2F	15A × 25A	11.5	14.5	95	85	282	3.0	JIS 10K, 20K RF Flanged	JIS 10K FF Flanged
	20A × 25A	15	17.5	95	85	282	3.75		
	25A × 40A	19	22	100	104	320	4.75		
	32A × 65A	30	35	115	123	386	7.5		
	40A × 65A	30	35	115	123	386	7.5		
	50A × 80A	38	44	128	130	476	9.5		
	65A × 100A	49	57	145	150	547	12.25		
	80A × 125A	61	71	162	168	598	15.25		
	100A × 150A	76	88	190	197	725	19.0		
	125A × 200A	95	114	220	222	895	24.0		
	150A × 200A	115	133	225	230	953	28.75		
	200A × 250A	150	175	270	255	1121	37.5		
	250A × 300A	200	230	410	350	1720	50.0		
	300A × 400A	238	275	410	350	1585	60.0		
GSV-3F	15A × 25A	11.5	14.5	95	85	282	3.0	JIS 30K RF Flanged	JIS 10K FF Flanged
	20A × 25A	15	18	95	85	280	3.75		
	25A × 40A	19	22	100	104	320	4.75		
	40A × 65A	30	35	115	123	386	7.5		
	50A × 80A	38	44	128	130	476	9.5		
	65A × 100A	49	57	145	150	547	12.25		
	80A × 125A	61	71	162	168	598	15.25		
	100A × 150A	76	88	190	197	725	19.0		

※적용압력이 33kgf/㎠[3.3Mpa] 이상은 주문에 의해 제작되오니 문의 바랍니다.
※주문에 따라 입 · 출구플랜지 KS B6216, ANSI, DIN 규격으로도 제작할 수 있습니다.

BGSV-2F | 벨로우즈타입 안전밸브(Balanced Bellows Type Safety Relief Valve)

- 주로 석유, GAS 및 화학 플랜트에 각종 계장기기, 배관등에 사용하는 안전밸브입니다.
- 출구측 배압에 의한 영향을 받는 장소 및 안전밸브 외부에 유체가 유출하는 것을 허용하지 않는 곳에 사용합니다.
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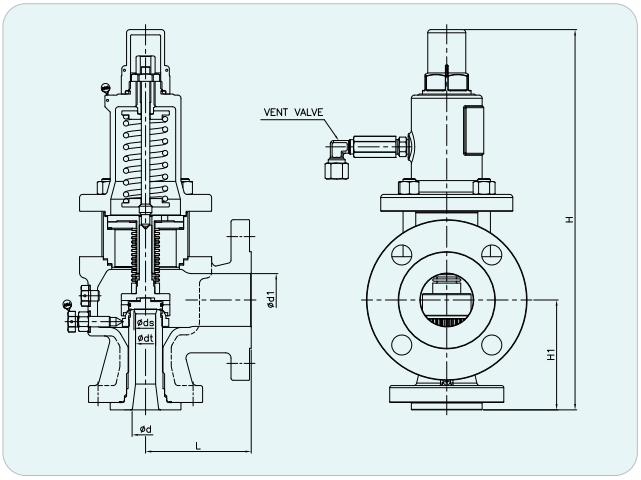
- KS B 6216 가스용 안전밸브 규격에 준하여 설계 제작된 제품입니다.
- 내부 주요 재질이 스테인리스 재질로 되어있어 내식성이 우수합니다.
- 한국가스안전공사(KGS) 검인품 입니다.



▶ 사 양 (Specifications)

Model	BGSV-2F
Working Fluid	Gas(유독성 및 부식성, 고온기체), Hot Oil(열매유)
Setting Pressure	0.2~2.0 Mpa
Design Temperature (℃)	MAX. 400℃
Type	Balanced Bellows Type
Connection	JIS Flanged , ANSI Flanged
Materials	Body : Cast Steel, Stainless Steel
	Trim : Stainless Steel

▶ 치 수 (Dimensions)

Size / Part	dt	ds	L	H1	H	Lift	Inlet	Outlet
20A X 25A	15.0	17.5	95.0	85.0	317.0	3.75	JIS 10K, 20K RF Flanged	JIS 10K FF Flanged
25A X 40A	19.0	22.0	100.0	104.0	360.0	4.75		
32A X 65A	30.0	35.0	115.0	123.0	452.0	7.5		
40A X 65A	30.0	35.0	115.0	123.0	452.0	7.5		
50A X 80A	38.0	44.0	128.0	130.0	514.0	9.5		
65A X 100A	49.0	57.0	145.0	145.0	594.0	12.25		
80A X 125A	61.0	71.0	162.0	168.0	642.0	15.25		
100A X 150A	76.0	88.0	190.0	197.0	800.0	19.0		
150A X 200A	115.0	133.0	225.0	230.0	1015.0	28.75		
200A X 250A	150.0	175.0	270.0	270.0	1164.0	37.5		

※주문에 따라 입 · 출구플랜지 KS B 6216, ANSI, DIN 규격으로도 제작할 수 있습니다.

BGSV-3F | 벨로우즈타입 안전밸브(Balanced Bellows Type Safety Relief Valve)

- 주로 석유, GAS 및 화학 플랜트에 각종 계장기기, 배관등에 사용하는 안전밸브입니다.
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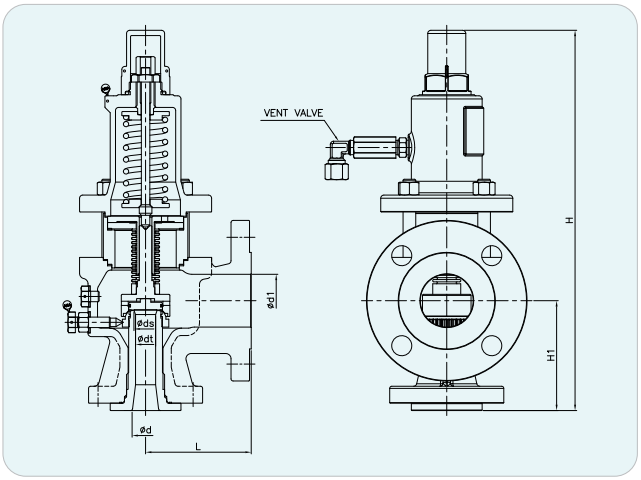
- 내부 주요 재질이 스테인리스 재질로 되어있어 내식성이 우수합니다.
- 한국가스안전공사(KGS) 검인품 입니다.



▶ 사 양 (Specifications)

Model	BGSV-3F
Working Fluid	Gas(유독성 및 부식성, 고온기체), Hot Oil(열매유)
Setting Pressure	2.0~3.0 Mpa
Design Temperature (℃)	MAX. 400℃
Type	Balanced Bellows Type
Connection	JIS Flanged , ANSI Flanged
Materials	Body : Cast Steel, Stainless Steel
	Trim : Stainless Steel

▶ 치 수 (Dimensions)

Size / Part	dt	ds	L	H1	H	Lift	Inlet	Outlet
20A X 25A	15.0	17.5	95.0	85.0	317.0	3.75	JIS 30K, RF Flanged	JIS 10K FF Flanged
25A X 40A	19.0	22.0	100.0	104.0	360.0	4.75		
32A X 65A	30.0	35.0	115.0	123.0	452.0	7.5		
40A X 65A	30.0	35.0	115.0	123.0	452.0	7.5		
50A X 80A	38.0	44.0	128.0	130.0	514.0	9.5		

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Safety Relief Valve

Lift Type Safety Relief Valve

Full Bore Type Safety Relief Valve

Safety Relief Valve Approved by KGS

* **Lift Type Safety Relief Valve**

  When the lift of the safety valve is opened more than 1/40 and less than 1/4 of inlet diameter of valve seat, flow path area of valve seat is the smallest among the flow path area

* **Full Bore Type Safety Relief Valve**

  Flow path area of valve seat gains larger lift than neck area of the exposure at the lower part on the valve body and seat

Safety Relief Valve

- Angle type spring loaded lift safety relief valve for steam, air, water, oil.
- Suitable for small and medium capacity.
- Quickly popping reaction and correct re-setting.
- Easy adjustment of set pressure and blow-down pressure.
- Since this valve is produced with compact design, this is easy to install by small size and light weight.
- The simple structure of this valve allows to operating accurately and maintaining easily.

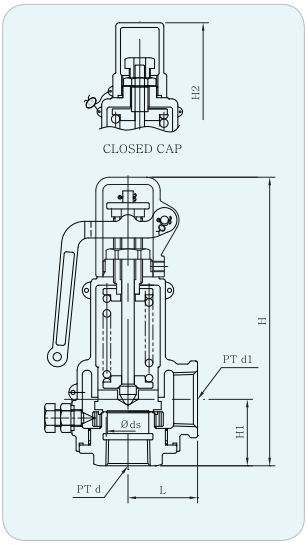
LSV-1S | Low Lift Type Safety Relief Valve

▶ Specifications

Type	Working Fluid	Setting Pressure (kgf/㎠)	Working Temperature (℃)	Materials		Connection
				Bonnet	Trim	
Lever	Steam, Air	0.5~11	220	Cast Bronze	Forged Brass	PT Screwed
No Lever	Water, Oil					

▶ Dimensions

Size / Part	d	ds	L	H1	H	Lift	Inlet	Outlet
15A × 20A	15	21	33.5	40	149	1.0	PT Screwed	PT Screwed
20A × 20A	20	21	33.5	40	149	1.0		
25A × 25A	25	26	43	46	164	1.7		
32A × 32A	32	33	45	48	177	2.2		
40A × 40A	40	41	50	54	196	2.3		
50A × 50A	50	51	62	62	213	2.5		



HSV-3S/4S | High Lift Type Safety Relief Valve

- By separating the spring by pressure, the operation is sure and the function is excellent.
- Disc and sheet material is stainless steel + PTFE, there is no corrosion or leakage.
- It is used as Safety Relief Valve for high pressure refrigerant gas.

HSV-3S

▶ Specifications(HSV-3S)

Type	Working Fluid	Setting Pressure (kgf/㎠)	Working Temperature (℃)	Materials			Connection
				Body	Bonnet	Trim	
Lever	Steam, Air	0.5~33	220	Stainless Steel	Cast Bronze	Stainless Steel	PT Screwed
No Lever	Water, Oil						

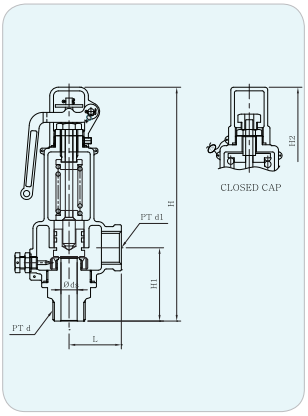
HSV-4S

▶ Specifications(HSV-4S)

Type	Working Fluid	Setting Pressure (kgf/㎠)	Working Temperature (℃)	Materials			Connection
				Body	Bonnet	Trim	
Lever	Steam, Air	0.5~33	220	Stainless Steel	Stainless Steel	Stainless Steel	PT Screwed
No Lever	Water, Oil						

▶ Dimensions

Size / Part	d	ds	L	H1	H	Lift	Inlet	Outlet
15A × 20A	15	14	42	60	192	1.0	PT Screwed	PT Screwed
20A × 20A	20	14	42	63	195	1.0		
25A × 25A	25	19	44	69	211	1.7		
32A × 32A	32	24	45	71	200	2.0		
40A × 40A	40	26	50	79	221	2.2		
50A × 50A	50	33	62	93	244	4.5		



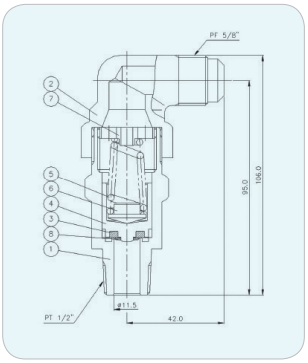
HSV-3S1 | High Lift Type Safety Relief Valve

▶ Specifications

Type	Working Fluid	Setting Pressure (kgf/㎠)	Working Temperature (℃)	Materials			Connection
				Body	Bonnet	Trim	
No Lever	Gas	0.5~33	100	Forged Brass	Forged Brass	Stainless Steel	PT Screwed

▶ Dimensions

Size / Part	d	ds	L	H1	H	Lift	Inlet	Outlet
15A	11.5	11.5	42	95	106	1.0	PT 1/2"	PF 5/8"



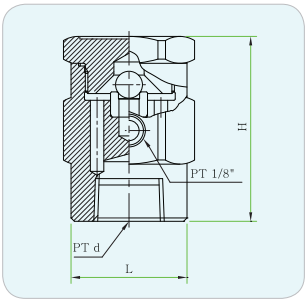
VSV-1S | Vacuum Breaker

▶ Specifications

Type	Setting Pressure (kgf/㎠)	Working Temperature (℃)	Materials		Connection
			Body	Trim	
Steam	–	220	Brass	Stainless Steel	PT Screwed

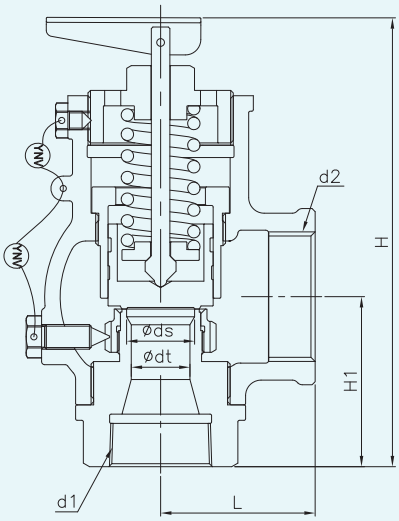
▶ Dimensions

Size / Part	d	L	H	Inlet
15A	PT 1/2"	35	55	PT Screwed
20A	PT 3/4"	35	55	



FSV-1S(L) | Full Bore Type Safety Valve For Steam

- It is used exclusively for steam boiler systems
- Larger discharge than low life type and high lift type
- It is sealed not to adjust pressure arbitrarily



▶ Specifications

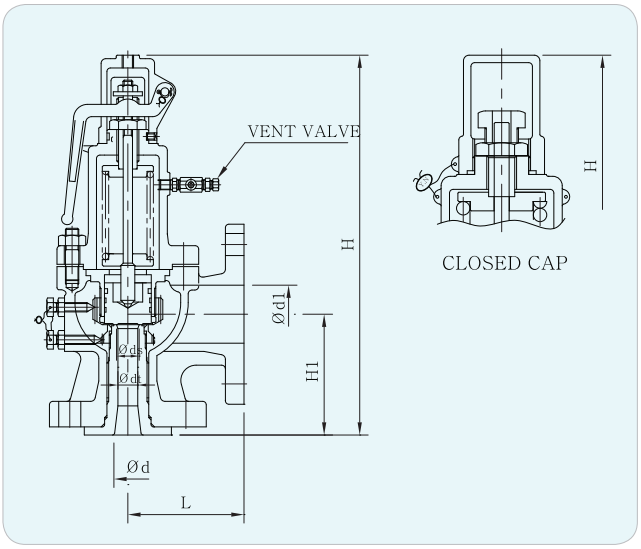
Model	FSV-1S(L)
Working Fluid	Steam
Setting Pressure	5~10 kgf/㎠g
Working Temperature (℃)	MAX. 220℃
Type	Full Bore Type
Connection	PT Screwed
Materials	Body : Ductile Iron
	Trim : Stainless Steel

▶ Dimensions

Size / Part	Ødt	Øds	L	H1	H	d1	d2	Lift
20A X 25A	15.0	18.0	45.0	50.0	127.0	PT 3/4"	PT 1"	3.5
25A X 32A	19.0	22.0	50.0	55.0	145.0	PT 1"	PT 1¼"	4.5
32A X 40A	24.0	29.0	55.0	62.0	160.0	PT 1¼"	PT 1½"	6.0
40A X 50A	30.0	35.0	65.0	70.0	180.0	PT 1½"	PT 2"	7.0

FSV-1F | Full Bore Safety Relief Valve

- This is generally used for large-size steam boiler, various pressure vessels and tracing equipment as safety valve and relief valve in pump.
- Suitable for large capacity.
- The main parts are made of the good materials in accurate.
- Lever type could execute the discharge inspection manually at over 75% of discharge pressure.
- ANSI, DIN Flanges are avaliable upon request.



▶ Specifications

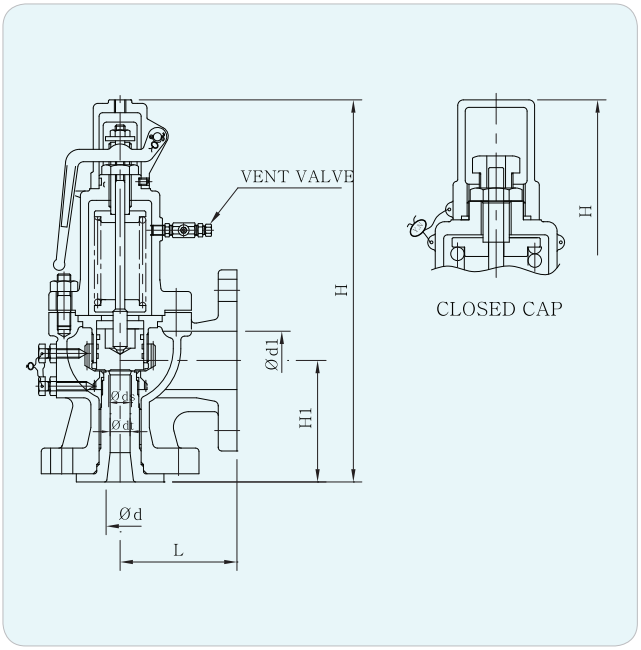
Type	Working Fluid	Setting Pressure (kgf/㎠)	Working Temperature (℃)	Materials		Connection
				Body	Trim	
Lever	Steam, Air	0.5~11	220	Ductile Iron	Stainless Steel	JIS Flanged
No Lever	Water, Oil					

▶ Dimensions

Size / Part	d	dt	ds	L	H1	H	Lift	Inlet	Outlet
15A × 25A	15	11.5	14.5	95	85	282	3.0	JIS 10K RF Flanged	JIS 10K FF Flanged
20A × 25A	20	15	17.5	95	85	282	3.8		
25A × 40A	25	19	22	100	104	324	4.8		
32A × 65A	32	30	35	115	123	419	7.5		
40A × 65A	40	30	35	115	123	419	7.5		
50A × 80A	50	38	44	128	130	478	9.5		
65A × 100A	65	49	57	145	145	544	12.3		
80A × 125A	80	61	71	162	168	600	15.2		
100A × 150A	100	76	88	190	197	725	19.0		
125A × 200A	125	95	114	220	222	900	24.0		
150A × 200A	150	115	133	225	230	961	28.7		

※ KS B6216 Flange is available upon request

FSV-2F | Full Bore Safety Relief Valve



▶ Specifications

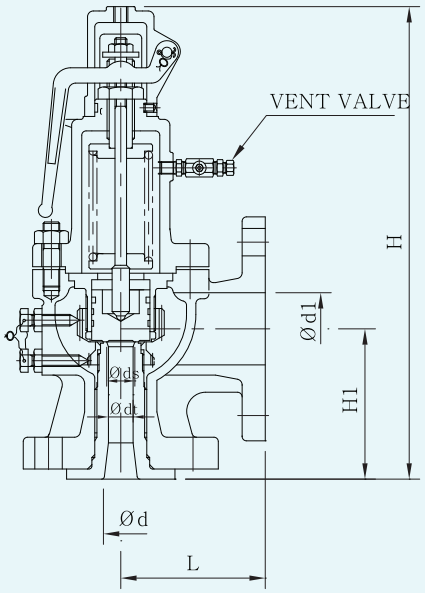
Type	Working Fluid	Setting Pressure (kgf/㎠)	Working Temperature (℃)	Materials		Connection
				Body	Trim	
Lever	Steam, Air	0.5~22	250	Cast Steel Stainless Steel	Stainless Steel	JIS Flanged ANSI Flanged
No Lever	Water, Oil					

▶ Dimensions

Size / Part	d	dt	ds	L	H1	H	Lift	Inlet	Outlet
15A × 25A	15	11.5	14.5	95	85	282	3.0	JIS 10K, 20K RF Flanged	JIS 10K FF Flanged
20A × 25A	20	15	17.5	95	85	282	3.8		
25A × 40A	25	19	22	100	104	320	4.8		
32A × 65A	32	30	35	115	123	386	7.5		
40A × 65A	40	30	35	115	123	386	7.5		
50A × 80A	50	38	44	128	130	476	9.5		
65A × 100A	65	49	57	145	150	547	12.3		
80A × 125A	80	61	71	162	168	598	15.2		
100A × 150A	100	76	88	190	197	725	19.0		
125A × 200A	125	95	114	220	222	895	24.0		
150A × 200A	150	115	133	225	230	953	28.7		
200A × 250A	200	150	175	270	255	1121	37.5		
250A × 300A	250	200	230	410	350	1720	50.0		

※ KS B6216, ANSI and DIN Flange are available upon request (more than 235℃, manufacturing open bonnet type –Korea Occupational Safety & Health Agency)

FSV-3F | Full Bore Safety Relief Valve



▶ Specifications

Type	Working Fluid	Setting Pressure (kgf/㎠)	Working Temperature (℃)	Materials		Connection
				Body	Trim	
Lever	Steam, Air	22~33	250	Cast Steel Stainless Steel	Stainless Steel	JIS Flanged ANSI Flanged
No Lever	Water, Oil					

▶ Dimensions

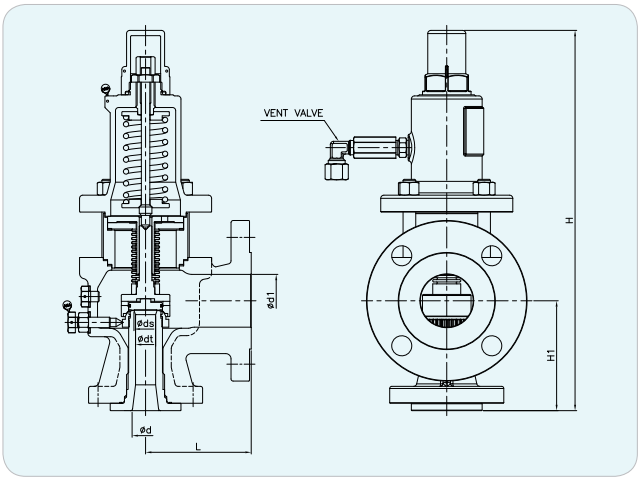
Size / Part	d	dt	ds	L	H1	H	Lift	Inlet	Outlet
15A × 25A	15	11.5	14.5	95	85	282	3.0	JIS 30K RF Flanged	JIS 10K FF Flanged
20A × 25A	20	15	17.5	95	85	282	3.8		
25A × 40A	25	19	22	100	105	320	4.8		
40A × 65A	40	30	35	115	123	386	7.5		
50A × 80A	50	38	44	128	130	476	9.5		
65A × 100A	65	49	57	145	150	547	12.3		
80A × 125A	80	61	71	162	168	598	15.2		
100A × 150A	100	76	88	190	197	725	19.0		

※ Applied pressure 33kgf/㎠[3.3Mpa] is available upon request

※ KS B6216, ANSI and DIN Flange are available upon request (more than 235℃, manufacturing open bonnet type –Korea Occupational Safety & Health Agency)

BFSV-2F | Balanced Bellows Type Safety Relief Valve

- This is generally used for various measuring machines and piping at petroleum, gas and chemical plants
- It is used in locations affected by back pressure of outlet and the fluid is not allowed external safety relief valve to flow
- It is used in locations where springs are to corrode or deform by the corrosion of the fluid or temperature
- Internal materials are STS316 which provides excellent erosion resistance



Specifications

Model	BFSV-2F
Working Fluid	Gas, Hot Oil
Setting Pressure	0.5~22kgf/㎠g
Working Temperature (℃)	MAX. 400℃
Type	Balanced Bellows Type
Connection	JIS Flanged , ANSI Flanged
Materials	Body : Cast Steel, Stainless Steel
	Trim : Stainless Steel
Cap Type	No Lever(STD.) or Lever

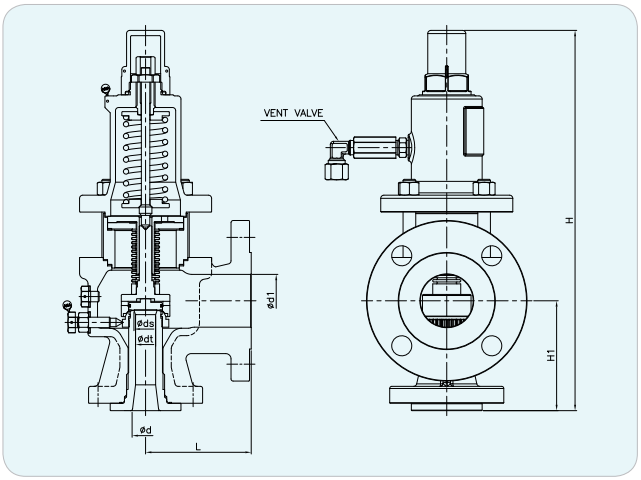
Dimensions

Size / Part	d	dt	ds	L	H1	H	Lift	Inlet	Outlet
15A X 25A	15.0	11.5	14.5	95.0	85.0	317.0	3.00	JIS 10K, 20K RF Flanged	JIS 10K FF Flanged
20A X 25A	20.0	15.0	17.5	95.0	85.0	317.0	3.75		
25A X 40A	25.0	19.0	22.0	100.0	104.0	360.0	4.75		
32A X 65A	32.0	30.0	35.0	115.0	123.0	452.0	7.5		
40A X 65A	40.0	30.0	35.0	115.0	123.0	452.0	7.5		
50A X 80A	50.0	38.0	44.0	128.0	130.0	514.0	9.5		
65A X 100A	65.0	49.0	57.0	145.0	145.0	594.0	12.25		
80A X 125A	80.0	61.0	71.0	162.0	168.0	642.0	15.25		
100A X 150A	100.0	76.0	88.0	190.0	197.0	800.0	19.0		
150A X 200A	150.0	115.0	133.0	225.0	230.0	1015.0	28.75		
200A X 250A	200.0	150.0	175.0	270.0	270.0	1164.0	37.5		

※ KS B6216, ANSI,and DIN Flange are available upon request (more than 400℃ is also available to manufacture)

BFSV-3F | Balanced Bellows Type Safety Relief Valve

- This is generally used for various measuring machines and piping at petroleum, gas and chemical plants
- It is used in locations affected by back pressure of outlet and the fluid is not allowed external safety relief valve to flow
- It is used in locations where springs are to corrode or deform by the corrosion of the fluid or temperature
- Internal materials are STS316 which provides excellent erosion resistance



▶ Specifications

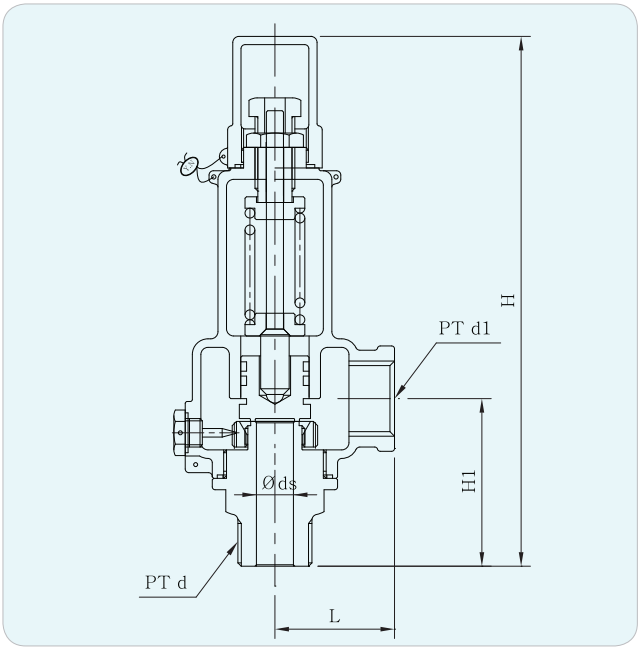
Model	BFSV-3F
Working Fluid	Gas, Hot Oil
Setting Pressure	22~33kgf/㎠g
Working Temperature (℃)	MAX. 400℃
Type	Balanced Bellows Type
Connection	JIS Flanged , ANSI Flanged
Materials	Body : Cast Steel, Stainless Steel
	Trim : Stainless Steel
Cap Type	No Lever(STD.) or Lever

▶ Dimensions

Size / Part	d	dt	ds	L	H1	H	Lift	Inlet	Outlet
15A X 25A	15.0	11.5	14.5	95.0	85.0	317.0	3.00	JIS 30K RF Flanged	JIS 10K FF Flanged
20A X 25A	20.0	15.0	17.5	95.0	85.0	317.0	3.80		
25A X 40A	25.0	19.0	22.0	100.0	104.0	360.0	4.80		
32A X 65A	32.0	30.0	35.0	115.0	123.0	452.0	7.50		
40A X 65A	40.0	30.0	35.0	115.0	123.0	452.0	7.50		
50A X 80A	50.0	38.0	44.0	128.0	130.0	514.	9.50		

※ KS B6216, ANSI and DIN Flange are available upon request (more than 400℃ is also available to manufacture)

GSV-3S/4S | High Lift Type Safety Relief Valve



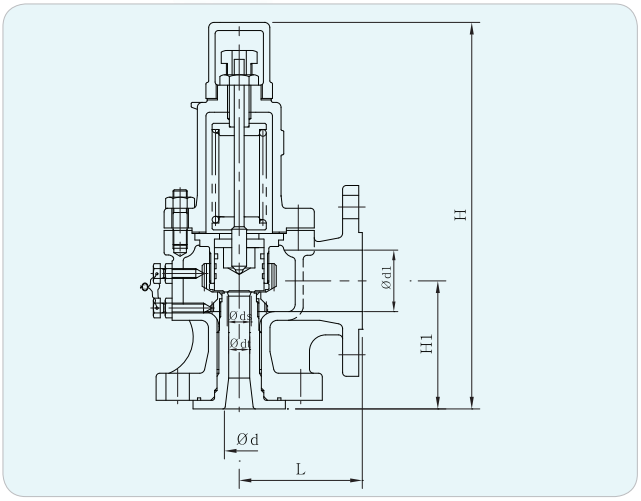
▶ Specifications

Type	Working Fluid	Setting Pressure (MPa)	Working Temperature (℃)	Materials			Connection
				Body	Bonnet	Trim	
GSV-3S	Gas	0.05~3.3	-196~220	Stainless Steel	Cast Bronze	Stainless Steel	PT Screwed
GSV-4S		0.05~8.0		Stainless Steel	Stainless Steel	Stainless Steel	

▶ Dimensions

Size / Part	d	ds	L	H1	H	Lift	Inlet	Outlet
15A × 20A	15	14	42	60	184	1.5	PT Screwed	PT Screwed
20A × 20A	20	14	42	63	187	1.5		
25A × 25A	25	19	44	69	204	2.0		
32A × 32A	32	24	45	71	192	3.0		
40A × 40A	40	27	50	79	213	3.0		
50A × 50A	50	33	62	93	236	4.7		

GSV-2F/3F | Full Bore Type Safety Relief Valve



▶ Specifications

Type	Working Fluid	Setting Pressure (MPa)	Working Temperature (℃)	Materials		Connection
				Body	Trim	
GSV-2F	Gas	0.05~2.2	-196~250	Cast Steel Stainless Steel	Stainless Steel	JIS Flanged ANSI Flanged
GSV-3F		2.2~5.0				

▶ Dimensions

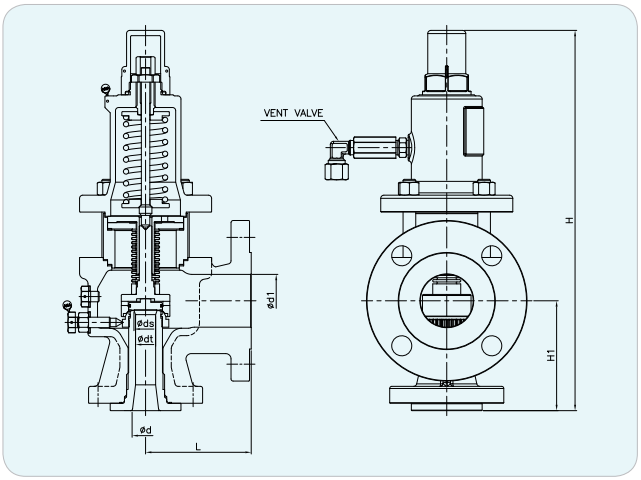
Model	Size	d	dt	ds	L	H1	H	Lift	Inlet	Outlet
GSV-2F	15A × 25A	15	11.5	14.5	95	85	282	3.0	JIS 10K, 20K RF Flanged	JIS 10K FF Flanged
	20A × 25A	20	15	17.5	95	85	282	3.8		
	25A × 40A	25	19	22	100	104	320	4.8		
	32A × 65A	32	30	35	115	123	386	7.5		
	40A × 65A	40	30	35	115	123	386	7.5		
	50A × 80A	50	38	44	128	130	476	9.5		
	65A × 100A	65	49	57	145	150	547	12.3		
	80A × 125A	80	61	71	162	168	598	15.2		
	100A × 150A	100	76	88	190	197	725	19.0		
	125A × 200A	125	95	114	220	222	895	24.0		
	150A × 200A	150	115	133	225	230	953	28.7		
	200A × 250A	200	150	175	270	255	1121	37.5		
	250A × 300A	250	200	230	410	350	1720	50.0		
GSV-3F	15A × 25A	15	11.5	14.5	95	85	282	3.0	JIS 30K RF Flanged	JIS 10K FF Flanged
	20A × 25A	20	15	18	95	85	280	3.8		
	25A × 40A	25	19	22	100	104	320	4.8		
	40A × 65A	40	30	35	115	123	386	7.5		
	50A × 80A	50	38	44	128	130	476	9.5		
	65A × 100A	65	49	57	145	150	547	12.3		
	80A × 125A	80	61	71	162	168	598	15.2		
	100A × 150A	100	76	88	190	197	725	19.0		

※ Applied pressure 33kgf/㎠[3.3Mpa] is available upon request

※ KS B6216, ANSI and DIN Flange are available upon request (more than 400℃ is also available to manufacture)

BGSV-2F | Balanced Bellows Type Safety Relief Valve

- This is generally used for various measuring machines and piping at petroleum, gas and chemical plants
- It is used in locations affected by back pressure of outlet and the fluid is not allowed external safety relief valve to flow
- It is used in locations where springs are to corrode or deform by the corrosion of the fluid or temperature
- Internal materials are STS316 which provides excellent erosion resistance



Specifications

Model	BGSV-2F
Working Fluid	Gas, Hot Oil
Setting Pressure	0.05~2.2MPa
Working Temperature (℃)	MAX. 400℃
Type	Balanced Bellows Type
Connection	JIS Flanged , ANSI Flanged
Materials	Body : Cast Steel, Stainless Steel
	Trim : Stainless Steel
Cap Type	No Lever(STD.) or Lever

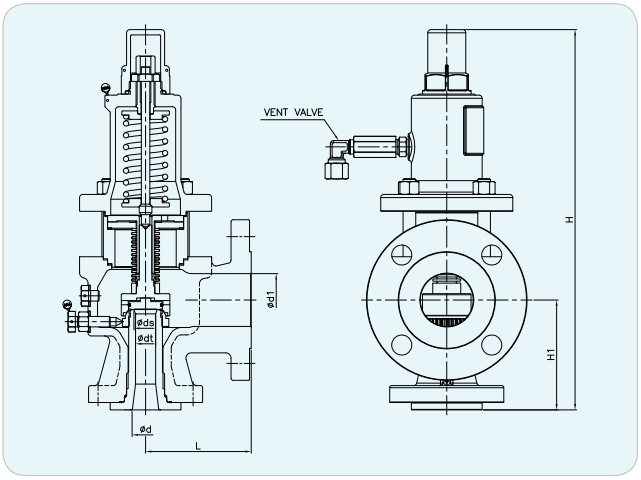
Dimensions

Size / Part	d	dt	ds	L	H1	H	Lift	Inlet	Outlet
15A X 25A	15.0	11.5	14.5	95.0	85.0	317.0	3.00	JIS 10K, 20K RF Flanged	JIS 10K FF Flanged
20A X 25A	20.0	15.0	17.5	95.0	85.0	317.0	3.75		
25A X 40A	25.0	19.0	22.0	100.0	104.0	360.0	4.75		
32A X 65A	32.0	30.0	35.0	115.0	123.0	452.0	7.5		
40A X 65A	40.0	30.0	35.0	115.0	123.0	452.0	7.5		
50A X 80A	50.0	38.0	44.0	128.0	130.0	514.0	9.5		
65A X 100A	65.0	49.0	57.0	145.0	145.0	594.0	12.25		
80A X 125A	80.0	61.0	71.0	162.0	168.0	642.0	15.25		
100A X 150A	100.0	76.0	88.0	190.0	197.0	800.0	19.0		
150A X 200A	150.0	115.0	133.0	225.0	230.0	1015.0	28.75		
200A X 250A	200.0	150.0	175.0	270.0	270.0	1164.0	37.5		

※ KS B6216, ANSI and DIN Flange are available upon request (more than 400℃ is also available to manufacture)

BGSV-3F | Balanced Bellows Type Safety Relief Valve

- This is generally used for various measuring machines and piping at petroleum, gas and chemical plants
- It is used in locations affected by back pressure of outlet and the fluid is not allowed external safety relief valve to flow
- It is used in locations where springs are to corrode or deform by the corrosion of the fluid or temperature
- Internal materials are STS316 which provides excellent erosion resistance



▶ Specifications

Model	BGSV-3F
Working Fluid	Gas, Hot Oil
Setting Pressure	2.2~3.3MPa
Working Temperature (℃)	MAX. 400℃
Type	Balanced Bellows Type
Connection	JIS Flanged , ANSI Flanged
Materials	Body : Cast Steel, Stainless Steel
	Trim : Stainless Steel
Cap Type	No Lever(STD.) or Lever

▶ Dimensions

Size / Part	d	dt	ds	L	H1	H	Lift	Inlet	Outlet
15A X 25A	15.0	11.5	14.5	95.0	85.0	317.0	3.00	JIS 30K, RF Flanged	JIS 10K FF Flanged
20A X 25A	20.0	15.0	17.5	95.0	85.0	317.0	3.75		
25A X 40A	25.0	19.0	22.0	100.0	104.0	360.0	4.75		
32A X 65A	32.0	30.0	35.0	115.0	123.0	452.0	7.50		
40A X 65A	40.0	30.0	35.0	115.0	123.0	452.0	7.50		
50A X 80A	50.0	38.0	44.0	128.0	130.0	514.0	9.50		

※ KS B6216, ANSI,DIN Flange are available upon request (more than 400℃ is also available to manufacture)

Engineering Data

■ KS B 6216, HPGCL

Code of application and specifications	Caculation	Symbol description
KS B 6216 For steam and gas Spring Safety relief valve	1. Gas $W = C' \cdot Kd \cdot A \cdot P_1 \cdot \sqrt{\frac{M}{ZT}} \times 0.9$ 2. Steam $W = 0.5145 \cdot A \cdot (P+1) \cdot K \cdot C \times 0.9$ Lift type : $A = \pi D\ell$ D = Diameter of valve seat ℓ = Lift Full bore type : $A = \frac{\pi}{4}\ dt_2$ dt = Diameter of neck P = Total Pressre when set pressure over than 1.0kgf/cm2 at required flow through the device, 1.03 times of set pressure. when set pressure is less than 1.0 1.0kgf/㎠, add add 0.2 kgf/cm2 to the set pressure • If Ps ≤ 1 $P = (P_S + 0.2) + 1.033$ • If Ps > 1 $P = (P_S + 1.03) + 1.033$	W = Required flow through the device (kg/h) C' = adiabatic constant of gas Kd = Effective coefficient of discharge A = Required effective discharge area of the device(㎟) P_1 = relieving pressure(kgf/㎠.a) = (1.1×Set pressure+1.033) P_2 = back pressure(kgf/㎠.a) M = Molecular weight of Gas Z = Compressibility factor T = Relieving temperature(° K) P = upstream relieving pressure(kgf/㎠) C = Ratio of specific heats
HPGCL High-pressure gas safety management	1. Gas $W = \frac{C \cdot Kd \cdot P \cdot Kb \cdot Kc \cdot A \cdot \sqrt{M}}{13160 \times \sqrt{Z \cdot T}}$ 2. Liquid $W = \frac{Kd \cdot Kw \cdot Kc \cdot Kv \cdot Kp \cdot A}{11.78} \times \sqrt{\frac{1.25P - Pb}{G}}$	W = Required flow through the device(lb/h) A = Required effective discharge area of the device(㎟) C = Ratio of specific heats Kd = Effective coefficient of discharge P = upstream relieving pressure(kPa.a) = (Set pressure + Over pressure)+101.3 Pb = M = Molecular weight of Gas T = Relieving temperature(° R) Z = Compressibility factor T = Relieving temperature(° K) Kb = capacity correction factor due to back pressure Kc = combination correction factor for installations with a rupture disk upstream of the pressure (Installation with a rupture disc 0.9 Installation with only safety relief valve 1.0) Kw = correction factor due to back pressure Kv = correction factor due to viscosity Kp = correction factor due to overpressure G = Specific gravity of liquid(water=1.0)

Engineering Data

■ ASME SEC. VIII, API RP 520

Code of application and specifications	Caculation	Symbol description
ASME SEC. Ⅷ	Steam $W = 51.5 \cdot A \cdot P \cdot K \times 0.9$ Gas $W = C \cdot Kd \cdot A \cdot P \cdot \sqrt{\frac{M}{ZT}}$ Liquid $W = 2407A\sqrt{(P-P_b)G}$	W = Required flow through the device(lb/h) A = Required effective discharge area of the device(in^2) P = (Setpressure×110)+atmospheric pressure(lb/in^2) : SEC Ⅷ Kd = Effective coefficient of discharge C = Ratio of specific heats M = Molecular weight T = Relieving temperature(° R) Z = Compressibility factor Pb = Constant back pressure(lb/in^2) G = Specific gravity of liquid(water=1.0)
API RP 520	Steam $W = 51.5 \cdot A \cdot P_1 \cdot Kd \cdot Kb \cdot Kc \cdot Kn \cdot Ksh$ Gas $W = \frac{C \cdot Kd \cdot A \cdot P_1 \cdot Kb \cdot Kc\sqrt{M}}{\sqrt{Z \cdot T}}$ Liquid $Q = \frac{38 \cdot A \cdot Kd \cdot Kp \cdot Kw \cdot Kv \cdot Kc\sqrt{1.25(P-P_b)}}{\sqrt{G}}$	W = Required flow through the device(lb/h) A = Required effective discharge area of the device(in^2) P_1 = relieving pressure = set pressure×1.10+atmospheric pressure(lbh/in^2g) KSH = superheat steam correction factor C = Ratio of specific heats Kd = Effective coefficient of discharge M = Molecular weight T = Relieving temperature(° R) Z = Compressibility factor Kb = capacity correction factor due to back pressure Q = Required flow through the device(gal/min) P = Set pressure(lbf/in^2g) Pb = Constant back pressure(lb/in^2) G = Specific gravity of liquid(water=1.0) Kn = correction factor for Napier equation (P≤1,500psia : 1 P>1,500psia and P≤3,200psia : Kn=0.1906P−1,000/0.2292P−1,061) Kp = correction factor due to overpressure Kw = correction factor due to back pressure Kv = correction factor due to viscosity Kc = combination correction factor for installations with a rupture disk upstream of the pressure (Installation with a rupture disc 0.9 Installation with only safety relief valve 1.0)