

JOKWANG

PRODUCTS

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ISO9001 Certificate from KSA



Certificate of KS Mark



Certificate of Korea Gas Safety Corp.



Stamp for ASME Sec. VIII



Certificate of NBBI Safety Valve Capacity



Type Approval from DNV



Type Approval from LR



Type Approval from BV



Type Approval from KR



JOKWANG I.L.I. CO., LTD

INTRODUCTION

ENDLESS INNOVATION FOR THE BEST PRODUCT

*Qualified and licensed
manufacturer*

of

*Korea standard
Shipping societies*

Nuclear power plant

Thermal power plant

Liquid petroleum gas

High pressure gas safety corp.

Industrial safety & security corp.

Commerce & Industry Ministry

ISO 9001 from KSA

Since established in 1968, we have concentrated our effort to develop and produce only the best valve for the past 30 years. Whenever we happen to meet an obstacle and a barrier, we have tried to do our best to solve the problem. Through solving the problem, our technology and know-how have been accumulated. We think that keeping up to develop our technology and to produce a new product is our duty for customer's request and changing in company's circumstances.

After we analysis the product with the spirit of challenge and pioneer, we develop our product which can compete the world best product. We give our word to our customer that we will be the best valve manufacturing company in the world through satisfying our customer's request and increasing our company's competitiveness.

We always thank for customer's thoughtful consideration and support, and look forward to your continuous encouragement and support.



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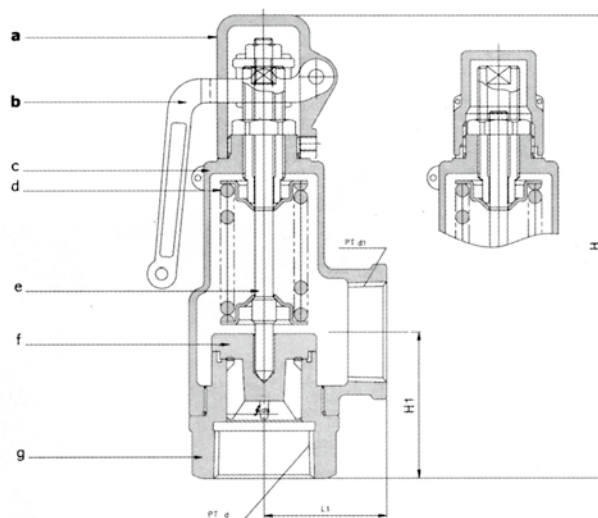
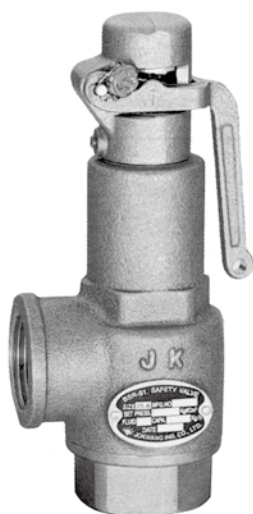
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SAFETY VALVE

Model
JSV-LT12

Lift Type Safety Valve

Screwed
Spring loaded



As angle type spring loaded lift safety valve for steam, air and water, JSV-LT12 is suitable for small and medium capacity applications such as small boiler or pressure vessel, and tracing equipment.

- Quickly popping reaction and correct re-seating
- Easy adjustment of set pressure and blow-down pressure

SPECIFICATIONS

Working pressure ranges : 0.35~1, 1.1~2, 2.1~4, 4.1~7, 7.1~11kgf/cm²
{0.035~0.1, 0.11~0.2, 0.21~0.4, 0.41~0.7, 0.71~1.1MPa}

Working temperature : Max. 220°C (Without lever: Max. 120°C)

Connection Inlet : female screwed
Outlet : female screwed

Hydraulic pressure test : 15kgf/cm²{1.5MPa}

Cap types available

- With lever : for periodical check in mainly steam and/or air service
- Without lever : when air-tight is required for liquid

MATERIALS

No	Part	Material
a	Cap	Forged Brass
b	Lever	Bronze
c	Bonnet	Bronze
d	Spring	Oil Tempered Alloy Steel
e	Stem	Stainless Steel
f	Disc	Forged Brass
g	Body	Forged Brass

DIMENSIONS

(mm)

Size	Inlet dia.	Seat opening dia.	Effective area (mm ²)	Lift	End to end		Height	End connection		Wt
mm(inch)	di	ds(D)	$\pi D \ell$	ℓ	L ₁	H ₁	H	PTd	PTd ₁	Kgs
15(1/2")	20	21	62.83	1.0	35	45	142	1/2"	3/4"	0.8
20(3/4")	20	21	62.83	1.0	35	45	144	3/4"	3/4"	1.0
25(1")	25	26	133.52	1.7	41	49	155	1"	1"	1.3
32(1 1/4")	32	33	221.17	2.2	45	58	173	1 1/4"	1 1/4"	2.0
40(1 1/2")	40	41	289.03	2.3	55	64	198	1 1/2"	1 1/2"	3.0
50(2")	50	51	393.70	2.5	70	74	220	2"	2"	5.7

Dimensions in millimetre approximately. The lift type safety valve is designed to have the control mechanism of flow capacity. The lifts (ℓ) of lift type safety valve are 1/40 to 1/15 of the seat opening diameter.

DISCHARGE CAPACITIES

for Model JSV-LT12

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

Symbols for fluid

- I. Air (kg/h at 20°C with 10% accumulation)
- II. Saturated steam(kg/h with 3% accumulation)
- III. Water (m³/h at G=1 with 15% accumulation)

Set pressure (kgf/cm²) (MPa)	Size(mm)	15A, 20A			25 A			32 A			40A			50A		
	Effective area(mm²)	62.83			133.52			221.17			289.03			392.70		
	Fluid	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
0.1{0.01}		51.7	36.3	0.45	109.8	77.1	0.96	181.9	127.8	1.60	237.8	167.0	2.09	323.1	226.9	2.83
0.2{0.02}		56.6	39.1	0.64	120.4	83.0	1.36	199.4	137.6	2.26	260.6	179.8	2.95	354.1	244.3	4.01
0.3{0.03}		61.6	41.9	0.79	131.0	89.0	1.67	216.9	147.4	2.76	283.5	192.7	3.61	385.2	261.8	4.91
0.4{0.04}		66.6	44.6	0.91	141.5	94.9	1.93	234.5	157.3	3.19	306.4	205.5	4.17	416.3	279.3	5.67
0.5{0.05}		71.6	47.4	1.01	152.1	100.9	2.15	252.0	167.1	3.57	329.3	218.4	4.66	447.4	296.7	6.34
0.6{0.06}		76.5	50.2	1.11	162.7	106.8	2.36	269.5	176.9	3.91	352.2	231.2	5.11	478.5	314.2	6.94
0.7{0.07}		81.5	53.0	1.20	173.2	112.7	2.55	287.0	186.8	4.22	375.1	244.1	5.52	509.6	331.6	7.50
0.8{0.08}		86.5	55.8	1.28	183.8	118.7	2.72	304.5	196.6	4.51	398.0	256.9	5.90	540.7	349.1	8.01
0.9{0.09}		91.5	58.6	1.36	194.4	124.6	2.89	322.0	206.4	4.79	420.8	269.8	6.26	571.8	366.5	8.50
1.0{0.1}		96.4	61.4	1.43	205.0	130.5	3.05	339.5	216.2	5.05	443.7	282.6	6.59	602.9	384.0	8.96
2 {0.2}		146.2	85.4	2.03	310.7	181.6	4.31	514.7	300.8	7.14	672.6	393.1	9.33	913.8	534.1	12.67
3 {0.3}		195.9	114.2	2.48	416.4	242.7	5.28	689.8	402.1	8.74	901.4	525.4	11.42	1224.8	713.9	15.52
4 {0.4}		245.7	143.0	2.87	522.1	303.8	6.09	864.9	503.3	10.09	1130.3	657.8	13.19	1535.7	893.7	17.92
5 {0.5}		295.4	171.7	3.21	627.8	365.0	6.81	1040.0	604.6	11.28	1359.1	790.1	14.74	1846.7	1073.5	20.03
6 {0.6}		345.2	200.5	3.51	733.6	426.1	7.46	1215.1	705.9	12.36	1588.0	922.4	16.15	2157.6	1253.3	21.95
7 {0.7}		394.9	229.3	3.79	839.3	487.2	8.06	1390.3	807.1	13.35	1816.8	1054.8	17.45	2468.5	1433.1	23.70
8 {0.8}		444.7	258.0	4.05	945.0	548.4	8.62	1565.4	908.4	14.27	2045.7	1187.1	18.65	2779.5	1612.9	25.34
9 {0.9}		494.4	286.8	4.30	1050.7	609.5	9.14	1740.5	1009.7	15.14	2274.5	1319.4	19.78	3090.4	1792.7	26.88
10 {1.0}		544.2	315.6	4.53	1156.4	670.6	9.63	1915.6	1110.9	15.96	2503.4	1451.8	20.85	3401.4	1972.5	28.33

CAUTION AT SIZING

As the relieving capacity of lift type valve is lower than full bore type valve, ensure to select valve size with maximum relieving capacity.

In the application at the secondary side of pressure reducing valve for its failure protection, select a valve to blow out 10% of maximum flow through pressure reducing valve unless otherwise specified.

See the table for the valve set pressure, in the case that the set pressure values while using for the failure protection of pressure reducing valve are recommendable but not absolute.

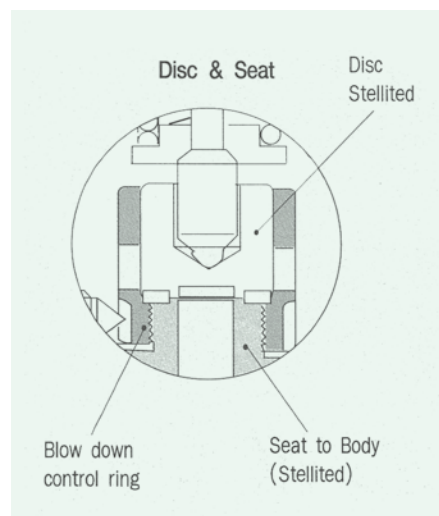
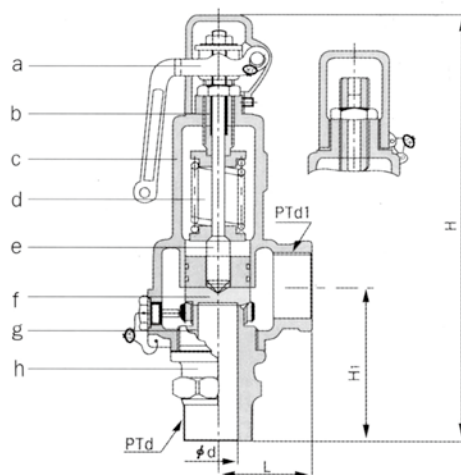
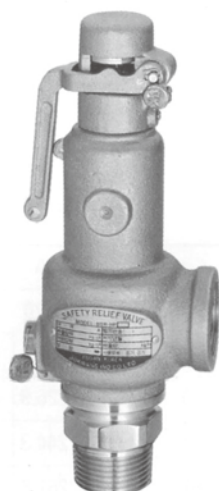
Set pressure of reducing valve (kgf/cm²)(MPa)	Set pressure of safety valve (kgf/cm²)(MPa)
1{0.1} and under	+0.5{+0.05} and over
1{0.1} to 4{0.4}	+0.8{+0.08} and over
4{0.4} to 6{0.6}	+1.0{+0.1} and over
6{0.6} to 8{0.8}	+1.2{+0.12} and over

SAFETY VALVE

Model JSV-HT41
JSV-HT43, HT42

Lift Type Safety Valve

Screwed
Spring loaded



MATERIALS (Standard)

No	Part name	JSV-HT41	JSV-HT43	JSV-HT42
a	Cap*	Bronze		Stainless steel
b	Adjusting screw	Brass		Stainless steel
c	Bonnet	Bronze		Stainless steel, cast
d	Spring	Oil Tempered Alloy steel		
e	Stem	Stainless steel		Stainless steel
f	Disc	Stainless steel (stellite)		
g	Blow down ring	Stainless steel		Stainless steel
h	Body	Stainless steel (Seat : stellite)		

- Seat is integrated with body and its material is the same as body.
- Asterisk marked(★) cap & bonnet can be made of stainless steel for Model JSV-HT41.
- Model JSV-HT43 & HT42 are approved by High Pressure Gas Safety Corporation.

SPECIFICATIONS

JSV-HT41 for steam, air and liquids with set pressure range 0.5~1, 1~5, 5~15, 15~30kgf/cm²{0.05~0.1, 0.1~0.5, 0.5~1.5, 1.5~3.0(MPa)} at working temperature Max. 220°C.

JSV-HT43 for gas and liquid (Noncorrosive), set pressure range 0.5~1, 1~5, 5~15, 15~30kgf/cm²{0.05~0.1, 0.1~0.5, 0.5~1.5, 1.5~3.0(MPa)} at working temperature -5~150°C.

JSV-HT42 for gas and liquids (Corrosive), set pressure range 0.5~1, 1~5, 5~15, 15~30kgf/cm²{0.05~0.1, 0.1~0.5, 0.5~1.5, 1.5~3.0(MPa)} at working temperature -45~250°C.

Connection : inlet/outlet : male/female screwed PT.

At ordering, please specify the set pressure

DIMENSIONS

(mm)

Size	Inlet dia.	Seat opening dia.	Effective area (mm ²)	Lift	End to end		Height	End connection		Weight(kg)		
mm (inch)	di	ds(D)	$\pi D \ell$	ℓ	L ₁	H ₁	H	PTd	PTd ₁	JSV-HT41	JSV-HT43	JSV-HT42
15(1/2")	13	14	32.67	0.8	42	62	193	1/2"	3/4"	1.4	1.4	1.4
20(3/4")	13	14	32.67	0.8	42	64	193	3/4"	3/4"	1.5	1.5	1.6
25(1")	18	19	67.86	1.2	44	70	211	1"	1"	1.9	1.9	2.0
40(1 1/2")	25	26	172.79	2.2	57	88	269	1 1/2"	1 1/2"	3.3	3.3	3.5
50(2")	32	33	452.39	4.5	65	108	304	2"	2"	5.8	5.8	6.0

DISCHARGE CAPACITIES

for Model JSV-HT41, HT42 & HT43

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

Symbols for fluid

- I. Air (kg/h at 20°C with 10% accumulation)
- II. Steam (kg/h at saturated with 3% accumulation)
- III. Water (m³/h at G=1 with 15% accumulation)

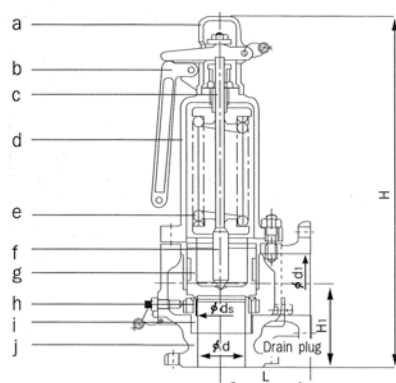
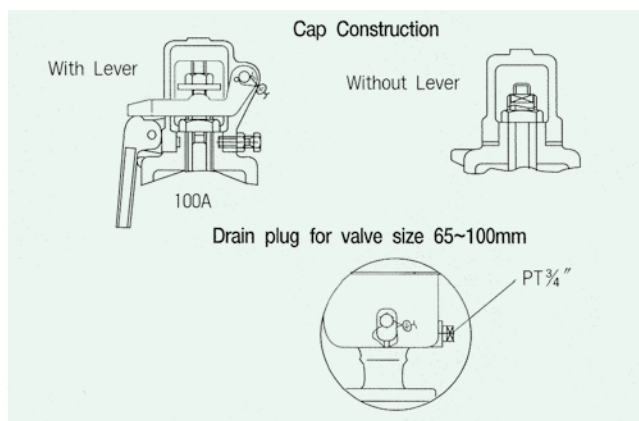
Set pressure (kgf/cm²) (MPa)	Size(mm)	15A, 20A			25A			40A			50A		
	Effective area(mm²)	32.67			67.86			172.79			452.39		
	Fluid	I	II	III	I	II	III	I	II	III	I	II	III
0.5{0.05}		31.8	21.0	0.64	66.0	43.8	1.34	168.1	111.5	3.41	440.3	292.0	8.92
0.6{0.06}		34.0	22.3	0.71	70.6	46.3	1.47	179.8	118.0	3.73	470.9	309.1	9.77
0.7{0.07}		36.2	23.5	0.76	75.2	48.9	1.58	191.5	124.6	4.03	501.5	326.3	10.55
0.8{0.08}		38.4	24.8	0.81	79.8	51.5	1.69	203.2	131.2	4.31	532.1	343.5	11.28
0.9{0.09}		40.6	26.0	0.86	84.4	54.1	1.80	214.9	137.7	4.57	562.7	360.7	11.97
1.0{0.1}		42.8	27.2	0.91	88.9	56.6	1.89	226.6	144.3	4.82	593.3	377.9	12.61
2.0{0.2}		64.9	37.9	1.29	134.8	78.8	2.68	343.4	200.7	6.81	899.2	525.6	17.84
3.0{0.3}		87.0	50.7	1.58	180.7	105.3	3.28	460.3	268.3	8.35	1205.2	702.5	21.85
4.0{0.4}		109.1	63.5	1.82	226.6	131.9	3.78	577.1	335.9	9.64	1511.1	879.4	25.23
5.0{0.5}		131.2	76.3	2.04	272.5	158.4	4.23	694.0	403.4	10.77	1817.1	1056.4	28.21
6.0{0.6}		153.3	89.0	2.23	318.4	185.0	4.64	810.9	471.0	11.80	2123.1	1233.3	30.90
7.0{0.7}		175.4	101.8	2.41	364.3	211.5	5.01	927.7	538.6	12.75	2429.0	1410.2	33.38
8.0{0.8}		197.5	114.6	2.58	410.2	238.0	5.35	1044.6	606.2	13.63	2735.0	1587.1	35.68
9.0{0.9}		219.6	127.4	2.73	456.1	264.6	5.68	1161.5	673.7	14.45	3041.0	1764.1	37.84
10.0{1.0}		241.7	140.1	2.88	502.0	291.1	5.98	1278.3	741.3	15.24	3346.9	1941.0	39.89
11.0{1.1}		263.8	152.9	3.02	547.9	317.6	6.28	1395.2	808.9	15.98	3652.9	2117.9	41.84
12.0{1.2}		285.9	165.7	3.16	593.8	344.2	6.55	1512.0	876.5	16.69	3958.9	2294.8	43.70
13.0{1.3}		308.0	178.5	3.28	639.7	370.7	6.82	1628.9	944.0	17.37	4264.8	2471.8	45.48
14.0{1.4}		330.1	191.3	3.41	685.6	397.3	7.08	1745.8	1011.6	18.03	4570.8	2648.7	47.20
15.0{1.5}		352.2	204.0	3.53	731.5	423.8	7.33	1862.6	1079.2	18.66	4876.8	2825.6	48.86
16.0{1.6}		374.3	216.8	3.64	777.4	450.3	7.57	1979.5	1146.8	19.27	5182.7	3002.5	50.46
17.0{1.7}		396.4	229.6	3.76	823.3	476.9	7.80	2096.4	1214.4	19.87	5488.7	3179.5	52.01
18.0{1.8}		418.5	242.4	3.87	869.2	503.4	8.03	2213.2	1281.9	20.44	5794.7	3356.4	53.52
19.0{1.9}		440.6	255.1	3.97	915.1	530.0	8.25	2330.1	1349.5	21.00	6100.6	3533.3	54.99
20.0{2.0}		462.7	267.9	4.07	961.0	556.5	8.46	2446.9	1417.1	21.55	6406.6	3710.2	56.42
21.0{2.1}		484.8	280.7	4.18	1006.8	583.0	8.67	2563.8	1484.7	22.08	6712.6	3887.2	57.81
22.0{2.2}		506.9	293.5	4.27	1052.7	609.6	8.88	2680.7	1552.2	22.60	7018.5	4064.1	59.17
23.0{2.3}		528.9	306.3	4.37	1098.6	636.1	9.07	2797.5	1619.8	23.11	7324.5	4241.0	60.50
24.0{2.4}		551.0	319.0	4.46	1144.5	662.7	9.27	2914.4	1687.4	23.60	7630.5	4417.9	61.80
25.0{2.5}		573.1	331.8	4.56	1190.4	689.2	9.46	3031.2	1755.0	24.09	7936.4	4594.9	63.07
26.0{2.6}		595.2	344.6	4.65	1236.3	715.7	9.65	3148.1	1822.5	24.57	8242.4	4771.8	64.32
27.0{2.7}		617.3	357.4	4.73	1282.2	742.3	9.83	3265.0	1890.1	25.04	8548.4	4948.7	65.55
28.0{2.8}		639.4	370.1	4.82	1328.1	768.8	10.01	3381.8	1957.7	25.50	8854.3	5125.7	66.75
29.0{2.9}		661.5	382.9	4.91	1374.0	795.3	10.19	3498.7	2025.3	25.95	9160.3	5302.6	67.93
30.0{3.0}		683.6	395.7	4.99	1419.9	821.9	10.36	3615.6	2092.8	26.39	9466.3	5479.5	69.09

SAFETY VALVE

Model
JSV-HF11

Lift Type Safety Valve

Spring loaded



MATERIALS

No	Part	Standard materials
a	Cap	Ductile iron
b	Lever	Ductile iron
c	Adjusting screw	Brass
d	Bonnet	Cast iron
e	Spring	Oil Tempered Alloy Steel or Spring Steel
f	Stem	Stainless steel
g	Disc	Stainless steel
h	Blow down ring	Bronze
i	Seat	Stainless steel
j	Body	Cast iron

These type safety valves are mainly used for medium capacity boiler, various pressure vessels and tracing machinery, and also pump.

SPECIFICATIONS

Applicable set pressure ranges : 0.35~1, 1~10kgf/cm²(0.035~0.1, 0.1~1.0MPa)

Maximum operating temperature : 220°C

Hydrostatic test pressure : 1.5 times the setting pressure

Stainless steel disc and seat available upon request.

DIMENSIONS

(mm)

Size (ND) Inlet × Outlet (di) (do)	Seat opening dia. ds(D)	Effective area (mm ²) πDℓ	Lift ℓ	End to end		Height H	Weight (kg)	End connection	
				L ₁	L ₂			Inlet	Outlet
20 × 25 (¾" × 1")	21	98.96	1.5	80	75	280	6.3	JIS B 2210 10K RF Flanged	JIS B 2210 10K FF Flanged
25 × 40 (1" × 1½")	26	163.36	2	90	85	320	9.5		
32 × 40 (1¼" × 1½")	33	228.08	2.2	102	90	330	11.5		
40 × 50 (1½" × 2")	41	386.42	3	115	100	385	14		
50 × 65 (2" × 2½")	51	640.88	4	122	112	440	18		
65 × 80 (2½" × 3")	66	1,036.72	5	140	125	520	34.5		
80 × 100 (3" × 4")	81	1,526.81	6	165	145	595	45.5		
100 × 125 (4" × 5")	105	2,221.10	7	175	167	690	64		

- Weights and length "L₁ & L₂" are based on our standard flanged products and they may be slightly different according to details requested.
- Size means nominal inside diameter of inlet and outlet.

DISCHARGE CAPACITIES

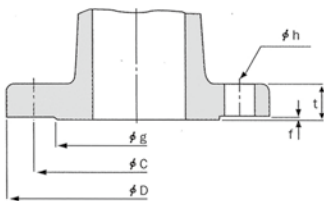
for Model JSV-HF11

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

- I. Saturated steam(kg/h with 3% accumulation)
- II. Air (kg/h at 20°C with 10% accumulation)
- III. Water (m³/h at G=1 with 15% accumulation)

Size (mm)	Effective area DI(mm)	Fluid	Set Pressure (kgf/cm ²) {MPa}											
			0.5 {0.05}	0.7 {0.07}	1.0 {0.1}	2.0 {0.2}	3.0 {0.3}	4.0 {0.4}	5.0 {0.5}	6.0 {0.6}	7.0 {0.7}	8.0 {0.8}	9.0 {0.9}	10.0 {1.0}
20	98.96	I	63	71	82	114	153	192	231	269	308	347	385	424
		II	96	109	129	196	263	330	397	464	531	598	665	732
		III	1.95	2.31	2.76	3.90	4.78	5.52	6.17	6.76	7.30	7.81	8.28	8.73
25	163.36	I	105	117	136	189	253	317	381	445	509	573	637	700
		II	159	181	214	324	435	545	656	766	877	987	1,098	1,208
		III	3.22	3.81	4.56	6.44	7.89	9.11	10.19	11.16	12.05	12.88	13.67	14.41
32	228.08	I	147	164	190	265	354	443	532	621	711	800	889	978
		II	221	252	299	453	607	761	916	1,070	1,224	1,378	1,533	1,687
		III	4.50	5.32	6.36	8.99	11.02	12.72	14.22	15.58	16.83	17.99	19.08	20.11
40	386.42	I	249	278	322	448	600	751	902	1,053	1,204	1,355	1,506	1,657
		II	376	428	506	768	1,029	1,290	1,552	1,813	2,074	2,336	2,597	2,858
		III	7.62	9.02	10.78	15.24	18.66	21.55	24.09	26.39	28.51	30.48	32.33	34.07
50	640.88	I	401	462	535	744	995	1,245	1,496	1,747	1,997	2,248	2,499	2,749
		II	602	710	840	1,273	1,707	2,140	2,574	3,007	3,441	3,874	4,308	4,741
		III	11.99	14.95	17.87	25.27	30.95	35.74	39.96	43.77	47.28	50.55	53.61	56.51
65	1,036.72	I	669	747	866	1,204	1,610	2,015	2,420	2,826	3,231	3,637	4,042	4,448
		II	1,009	1,149	1,359	2,060	2,761	3,463	4,164	4,865	5,566	6,267	6,969	7,670
		III	20.44	24.19	28.91	40.88	50.07	57.82	64.64	70.81	76.49	81.77	86.73	91.42
80	1,526.81	I	985	1,101	1,275	1,773	2,371	2,968	3,565	4,162	4,759	5,356	5,953	6,550
		II	1,486	1,692	2,002	3,035	4,067	5,100	6,132	7,165	8,198	9,230	10,263	11,296
		III	30.11	35.62	42.58	60.21	73.74	85.15	95.20	104.29	112.64	120.42	127.73	134.63
100	2,221.10	I	1,433	1,602	1,855	2,580	3,449	4,317	5,186	6,055	6,923	7,792	8,661	9,529
		II	2,161	2,462	2,912	4,415	5,917	7,419	8,921	10,423	11,926	13,428	14,930	16,432
		III	43.80	51.82	61.94	87.59	107.28	123.87	138.49	151.71	163.87	175.18	185.81	195.86

REFERENCE DATA



Flange dimensions
of lift type safety valve by KS B 6216(inlet) × KS B 1511(outlet)
equal to JIS B 8210(inlet) × JIS B 2210 (outlet)

Inlet flange (KS B 6216) (LIFT TYPE)-1988 (mm)

Press (kgf/cm ²) {MPa}	Size	Flange				Bolt hole			Bolt Size
		D	t	f	g	c	No	h	
10 {1.0}	20	100	18	1	56	75	4	15	M12
	25	125	18	1	67	90	4	19	M16
	32	135	20	2	76	100	4	19	M16
	40	140	20	2	81	105	4	19	M16
	50	155	20	2	96	120	4	19	M16
	65	175	22	2	116	140	4	19	M16
	80	195	22	2	136	160	4	19	M16
	100	230	24	2	171	195	4	19	M16

D - outside dia. flange, t - thickness, f - depth, g - O.D.
of raised face, C - pitch circle dia, h - hole dia.

Outlet flange (KS B 1511) (mm)

Press (kgf/cm ²) {MPa}	Size	Flange				Bolt hole			Bolt Size
		D	t		f	g	C	No	h
10 {1.0}	15	95	12	16	1	51	70	4	15
	20	100	14	18	1	56	75	4	15
	25	125	14	18	1	67	90	4	19
	32	135	16	20	2	76	100	4	19
	40	140	16	20	2	81	105	4	19
	50	155	16	20	2	96	120	4	19
	65	175	18	22	2	116	140	4	19
	80	185	18	22	2	126	150	4	19
	100	210	18	24	2	151	175	4	19
	125	250	20	24	2	182	210	4	23

SAFETY VALVE

Model
JSV-FF11, FF21, FF22

Full Bore Safety Valve

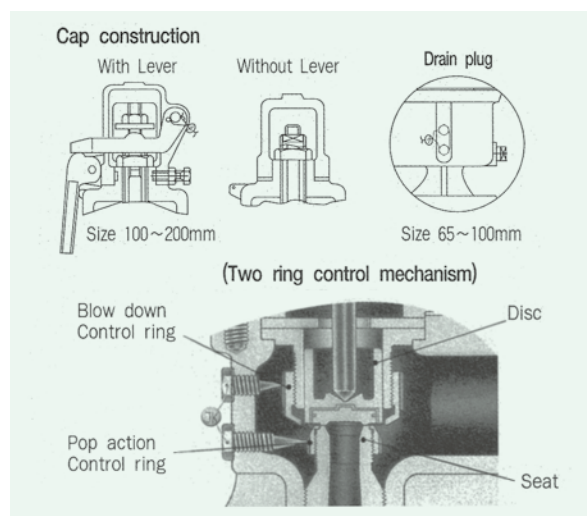
Two ring control
mechanism Spring loaded



Cast iron body
JSV-FF11



Cast steel body
JSV-FF21, FF22



MATERIALS (Standard)

No	Part	JSV-FF11	JSV-FF21	JSV-FF23
a	Cap	Ductile iron		
b	Lever	Ductile iron		
c	Adjusting screw	Brass	Stainless steel	
d	Bonnet	Cast iron	Cast steel	
e	Spring	Oil Tempered Alloy Steel or Spring Steel		
f	Stem	Stainless steel		
g	Disc	Stainless steel	Stainless steel	
h	Seat	Stainless steel	Stainless steel	
i	Body	Cast iron	Cast steel	
j	Blow down ring	Bronze	Stainless steel	
k	Popping ring	Bronze	Stainless steel	

•Stainless steel body is available upon request

Two ring control, for positive adjustment of both blowdown & pop action to insure consistently dependable performance for widest ranges of pressure, temperature and service condition.

Blowdown control ring : Guide ring accurately adjusts to the required blowdown by changing the reactive force of the various flowing media. Blowdown adjustment is independent of pop action, valve lift or capacity.

Pop action control ring : Adjustable nozzle ring assures sharp, controlled pop action-prevents long, worn-out commences to blow off or simmer before popping.

MATERIALS (Standard)

Models		JSV-FF11		JSV-FF21		JSV-FF22
Type		Without lever	With lever	Without lever	With lever	Without lever
Applicable fluid		Liquids	Steam, Air	Liquids	Steam, Air	Gas
Set pressure range		0.35~1.0, 1.0~3.0, 3.0~6.0, 6.0~11.0kgf/cm ² {0.035~0.1, 0.1~0.3, 0.3~0.6, 0.6~1.1MPa}		0.35~1.0, 1.0~3.0, 3.0~6.0, 6.0~12.0, 12.0~22.0kgf/cm ² {0.035~0.1, 0.1~0.3, 0.3~0.6, 0.6~1.2, 1.2~2.2MPa}		
Applicable temperature		Max. 220℃		Max. 250℃		-5~250℃
Connection		Inlet:JIS B 2210 10K RF Flanged Outlet:JIS B 2210 10K FF Flanged		Inlet:JIS B 2210 20K RF Flanged Outlet:JIS B 2210 10K FF Flanged		
Materials	Body	Cast iron		Cast steel		
	Disc & Seat	Stainless steel		Stainless steel(stellited)		
Nozzle type		Semi nozzle		Full nozzle		
Hydrostatic test pressure		1.5 times the setting pressure				

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

•For safety valves in service of 30kgf/cm²{3.0MPa} and over pressure, please inquiry our factory for details.

JSV-FF41 for steam, air and liquids in service of 30kgf/cm²{3.0MPa} (size 20~100mm)

JSV-FF31 series for gas in service of 30kgf/cm²{3.0MPa} (size 20~100mm), JSV-FF22/FF31 series are approved by High Pressure Gas Safety Corporation.

DIMENSIONS

Model JSV-FF11

(mm)

Size (ND) Inlet × Throat × Outlet (di) × dia × (do)	Seat opening dia. ds	Throat dia. dt	Throat area A (mm ²)	Lift ℓ	End to end		Height H	Weight (kg)	End connection	
					L ₁	L ₂			Inlet	Outlet
20 × 15 × 40 (¾" × 1½")	17.5	15	176.71	3.75	100	90	295	11.4	JIS B 2210 10K RF Flanged	JIS B 2210 10K FF Flanged
25 × 19 × 50 (1" × 2")	22	19	283.52	4.75	100	97	338	12		
32 × 24 × 65 (1¼" × 2½")	29	24	452.39	5	118	110	408	17		
40 × 30 × 65 (1½" × 2½")	35	30	706.86	7.5	118	110	408	17		
50 × 38 × 80 (2" × 3")	44	38	1,134.11	9.5	128	120	469	21		
65 × 49 × 100 (2½" × 4")	57	49	1,885.74	12.25	145	140	563	34		
80 × 61 × 125 (3" × 5")	71	61	2,922.47	15.25	165	158	611	48		
100 × 76 × 150 (4" × 6")	88	76	4,536.47	19	195	185	720	77		

Model JSV-FF21/JSV-FF22

(mm)

Size (ND) Inlet × Throat × Outlet (di) × dia × (do)	Seat opening dia. ds	Throat dia. dt	Throat area A (mm ²)	Lift ℓ	End to end		Height H	Weight (kg)	End connection	
					L ₁	L ₂			Inlet	Outlet
15 × 11.5 × 25 (½" × 1")	14.5	11.5	103.86	3	96	88	289	6.5	JIS B 2210 20K RF Flanged	JIS B 2210 10K FF Flanged
20 × 15 × 40 (¾" × 1½")	17.5	15	176.71	3.75	100	100	299	10		
25 × 19 × 50 (1" × 2")	22	19	283.52	4.75	100	104	338	14		
32 × 24 × 65 (1¼" × 2½")	29	24	452.39	5	115	119	406	21		
40 × 30 × 65 (1½" × 2½")	35	30	706.86	7.5	115	119	406	23		
50 × 38 × 80 (2" × 3")	44	38	1,134.11	9.5	128	130	476	28		
65 × 49 × 100 (2½" × 4")	57	49	1,885.74	12.25	144	150	565	37.5		
80 × 61 × 125 (3" × 5")	71	61	2,922.47	15.25	162	168	622	55		
100 × 76 × 150 (4" × 6")	88	76	4,536.47	19	190	203	731	94		
125 × 95 × 200 (5" × 8")	110	95	7,088.23	24	220	232	907	140		
150 × 110 × 200 (6" × 8")	127	110	9,503.34	27.5	225	230	953	165		
200 × 150 × 200 (8" × 10")	170	150	17,671.50	37.5	285	280	1,121	317		

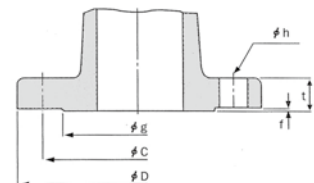
- Size means nominal inside diameter of inlet (di) and outlet (do)
- Weights are based on our standard flanged products and they may be slightly different according to specifications required.

KS B 6216 is equal to JIS B 8210

Inlet flange (KS B 6216) (FULL BORE TYPE)-1988

(mm)

Press (kgf/cm ²) (MPa)	Size	Flange				Bolt hole			Bolt size
		D	t	f	g	c	No	h	
10 {1.0}	15	95	16	1	51	70	4	15	M12
	20	125	22	1	67	90	4	19	M16
	25	130	22	1	70	95	4	19	M16
	32	140	24	2	81	105	4	19	M16
	40	155	24	2	96	120	8	19	M16
	50	165	26	2	105	130	8	19	M16
	65	200	28	2	130	160	8	23	M20
	80	210	30	2	140	170	8	23	M20
	100	245	32	2	175	205	8	23	M20
	125	280	34	2	205	235	12	25	M22
20 {2.0}	15	95	16	1	51	70	4	15	M12
	20	130	22	1	70	95	4	19	M16
	25	135	22	1	75	100	4	19	M16
	32	160	24	2	90	120	4	23	M20
	40	165	24	2	105	130	8	19	M16
	50	185	26	2	115	145	8	23	M20
	65	210	30	2	140	170	8	23	M20
	80	230	32	2	150	185	8	25	M22
	100	265	36	2	185	220	8	25	M22
	125	290	38	2	210	245	12	25	M22
200	150	350	42	2	260	300	12	27	M24
	200	410	46	2	310	350	12	33	M30

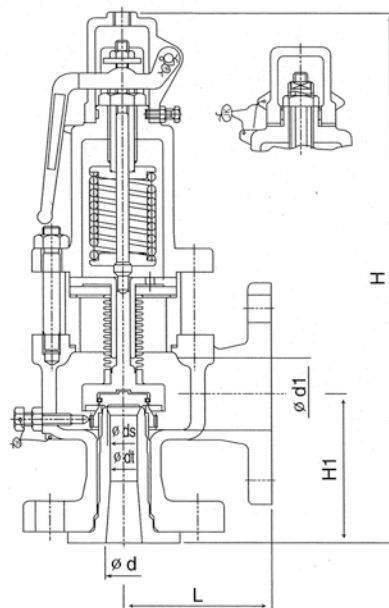
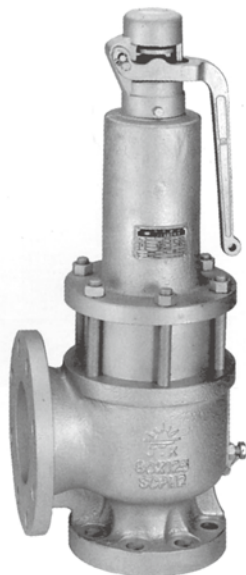


KS B 1511 is equal to JIS B 2210

Outlet flange (KS B 1511)

(mm)

Press (kgf/cm ²) (MPa)	Size	Flange				Bolt hole			Bolt Size
		D	t			C	No	h	
10 {1.0}	15	95	12	16		70	4	15	M12
	20	100	14	18		75	4	15	M12
	25	125	14	18		90	4	19	M16
	32	135	16	20		100	4	19	M16
	40	140	16	20		105	4	19	M16
	50	155	16	20		120	4	19	M16
	65	175	18	22		140	4	19	M16
	80	185	18	22		150	8	19	M16
	100	210	18	24		175	8	19	M16
	125	250	20	24		210	8	23	M20
	150	280	22	26		240	8	23	M20
	200	330	22	26		290	12	23	M20
	250	400	24	30		355	12	25	M22



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.

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

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.

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 A	15	20	25	32	40	50	65	80	100	125	150	200
		103.86	176.71	283.52	452.39	706.86	1,134.11	1,885.74	2,922.47	4,536.47	7,088.23	9,503.34	17,671.50
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 A	15	20	25	32	40	50	65	80	100	125	150	200
		103.86	176.71	283.52	452.39	706.86	1,134.11	1,885.74	2,922.47	4,536.47	7,088.23	9,503.34	17,671.50
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 A	15	20	25	32	40	50	65	80	100	125	150	200
		103.86	176.71	283.52	452.39	706.86	1,134.11	1,885.74	2,922.47	4,536.47	7,088.23	9,503.34	17,671.50
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

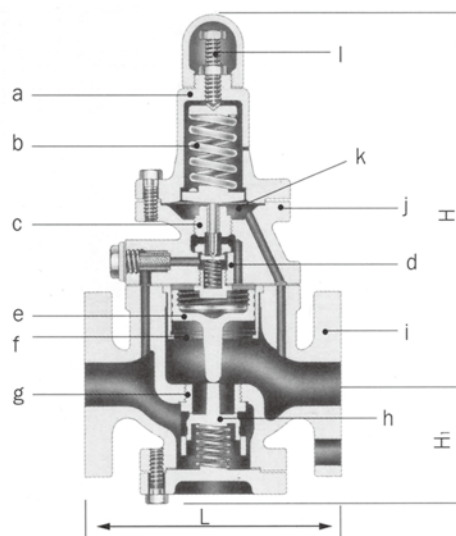
Symbols : S= Size(mm), P = Set pressure (kgf/cm²), A = Effective area(mm²)

PRESSURE REDUCING VALVE

Model
JRV-SF11, SF21

Pilot Piston Type

for Steam



MATERIALS (Standard)

No	Part	Model	JRV-SF11	JRV-SF21
a	Spring case		Cast iron	Cast steel
b	Spring		Carbon steel	
c	Pilot valve	Seat	Stainless steel	
d		Disc	Stainless steel	
e	Piston		Bronze	Cast iron
f	Cylinder		Bronze	Stainless steel
g	Main valve	Seat	Stainless steel	
h		Disc	Stainless steel	
i	Body		Cast iron	Cast steel
j	Top cover		Cast iron	Cast steel
k	Diaphragm		Stainless steel	
i	Adjusting screw		Brass	

Secondary pressure sensing

JRV-SF11 : internal type

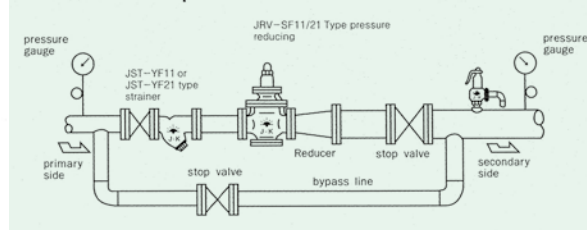
JRV-SF21 : internal type

SPECIFICATIONS

No	Kind	JRV-SF11	JRV-SF21
1	Inlet pressure	Max. 10kgf/cm ² {1.0MPa}	Max. 20kgf/cm ² {2.0MPa}
2	Outlet pressure	0.35~1, 1~8kgf/cm ² {0.035~0.1, 0.1~0.8MPa}	0.35~16kgf/cm ² {0.035~1.6MPa}
3	Max reducing ratio	10 : 1	10 : 1
4	Working temp.	Max. 220°C	Max. 250°C
5	Working fluid	Steam	Steam
6	Connection	JIS 10K FF Flanged	JIS 20K RF Flanged

- Secondary pressure must be less than 80% of primary pressure
- Minimum pressure differential across the disc : 0.7kgf/cm²{0.07MPa}
- Leakage allowance : Less than 0.05% of rated flow
- Hydrostatic test pressure : JRV-SF11/15kgf/cm²{1.5MPa},
JRV-SF21/30kgf/cm²{3.0MPa}
- ANSI, DIN flanges are available upon request.

Installation example



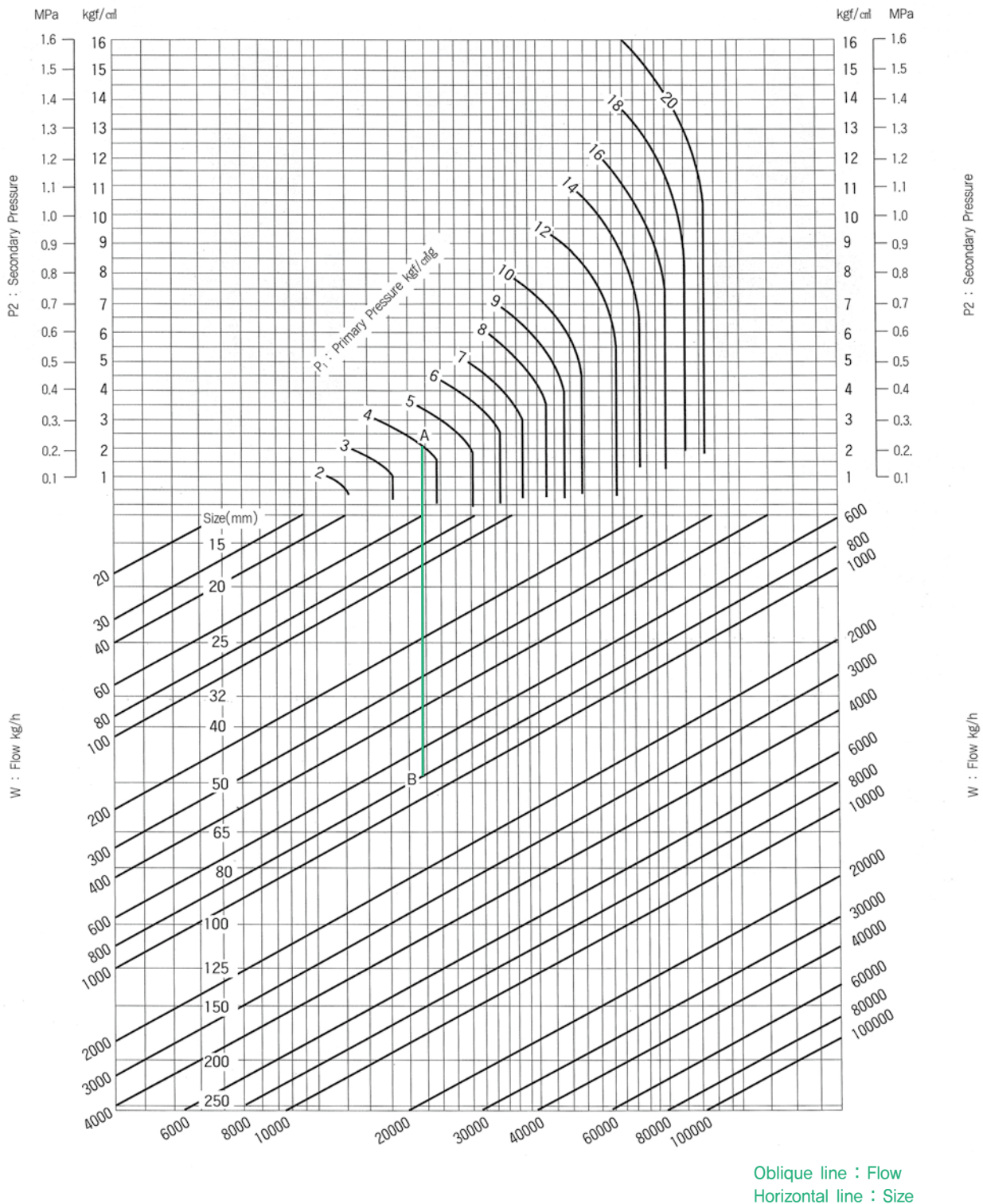
DIMENSIONS

(mm)

Model	JRV-SF11					JRV-SF21				
Size mm(inch)	L	H ₁	H	Cv	Wt(kg)	L	H ₁	H	Cv	Wt(kg)
15(½")	165	75	270	1	11.4	200	83	292	1	14
20(¾")	165	75	270	2.5	12	200	83	292	2.5	15
25(1")	170	75	270	4	13.5	200	83	292	4	15.5
32(1¼")	185	85	275	6.5	15.2	225	108	307	6.5	20.4
40(1½")	200	85	275	9	17.5	230	108	301	9	30.5
50(2")	220	92	283	16	21	250	113	325	16	31
65(2½")	250	110	310	25	30	280	123	366	25	41
80(3")	290	130	350	36	45	310	137	445	36	59
100(4")	340	150	370	64	64.5	320	140	445	64	61
125(5")	390	180	500	100	104	350	148	459	100	70
150(6")	420	195	535	144	126	395	181	466	144	101
200(8")	550	250	615	256	155	560	250	620	256	155

- Weights and length "L" are based on our standard flanged products and they may be slightly different according to details requested.

Valve size selecting chart for JRV-SF11/21 pressure reducing valve (for steam service)



How to use the chart

Where,

Primary pressure : 4kgf/cm²{0.4MPa}

Secondary pressure : 2kgf/cm²{0.2MPa}

Flow (Saturated steam) : 800kg/h

Obtain a cross point "A" on the vertical line of primary pressure 4kgf/cm²{0.4MPa} with horizontal line of secondary pressure 2kgf/cm²{0.2MPa}.

Obtain a cross point "B" on the vertical line down from the point "A" with the oblique line of flow 800kg/h. As the point "B" is between size 40 and 50mm, select safer size 50mm.

PRESSURE REDUCING VALVE

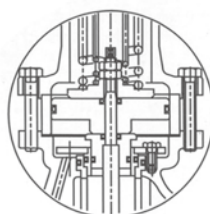
Model
JRV-SF14, JRV-SF12

Direct Acting Type

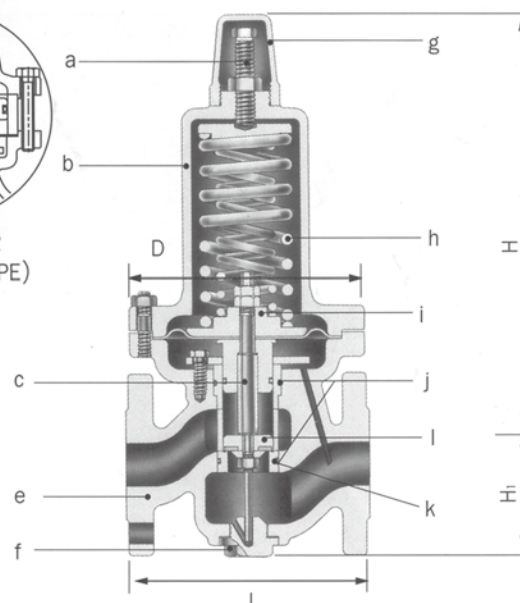
for Air
water and liquids



JRV-SF14



JRV-SF12
(PISTON TYPE)



MATERIALS (Standard)

No	Part	Standard materials
a	Adjusting screw	Brass
b	Bonnet	Cast iron
c	Diaphragm	Synthetic rubber
d	Stem	Stainless steel
e	Body	Cast iron
f	Plug	Bronze
g	Cap	Cast iron
h	Spring	Spring steel
i	Stem guide	Bronze
j	O-Ring	Synthetic rubber
k	Seat	Bronze
l	Disc	Bronze tipped with rubber

SPECIFICATIONS

1.	Inlet pressure	Max. 10kgf/cm ² {1.0MPa}
2.	Outlet pressure	0.5~4, 4~7kgf/cm ² {0.05~0.4, 0.4~0.7MPa}
3.	Max. reducing ratio	10 : 1
4.	Working fluid	Air, Water, Liquid
5.	Connection*	Flanged JIS 10kgf/cm ² {1.0MPa}

- Minimum pressure differential across the disc : 0.5kgf/cm²
- Minimum adjustable flow : 2~5l/min (water, oil & lubricant)
5~10N m³/h (air)
- Working temperature : 5~60°C (water & air), 5~80°C (oil & lubricant)
- Maximum viscosity : under 800 cSt (oil & lubricant)
- Hydrostatic test pressure : 20kgf/cm²{2.0MPa}

* Flange details

- Flanged JIS 10kgf/cm²{1.0MPa} (standard)
Flat face flange (size 20~25mm)
Raised face flange (size 32~100mm)
- ANSI, DIN flanges are available upon request.

DIMENSIONS

(mm)

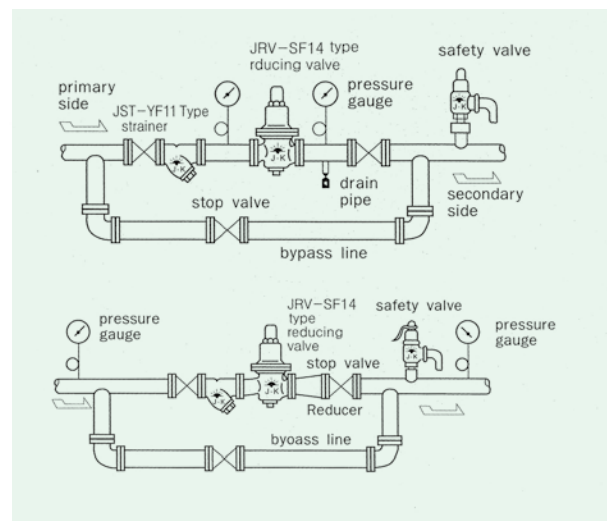
Model	20	25	32	40	50	65	80	100	125	150
Size mm(inch)	(¾")	(1")	(1¼")	(1½")	(2")	(2½")	(3")	(4")	(5")	(6")
L	160	160	180	180	190	230	250	300	370	400
H1	62	62	70	70	75	100	100	125	150	160
H	255	266	335	335	345	405	420	475	585	615
D	142	142	174	174	174	218	218	250	340	340
Cv Value	2	3.5	5.5	8	14	22	32	48	75	108
Wt(kg)	9.2	10.5	17.0	17.5	20	32.5	35	62	110	125.5

- Weights and length "L" are based on our standard flanged products and they may be slightly different according to details requested.

A direct operated pressure reducing valve for water and air services with features of the minimum differential pressure and of the best performance from a small flow to large flow.

In the industrial field, JRV-SF14 can be used for the pressure regulation of fuel oil, lubricant and air.

Installation Example



PRIMARY PRESSURE REGULATING VALVE

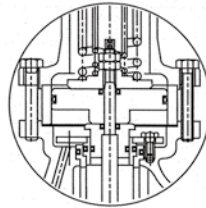
Model

JRV-FF11, FF12

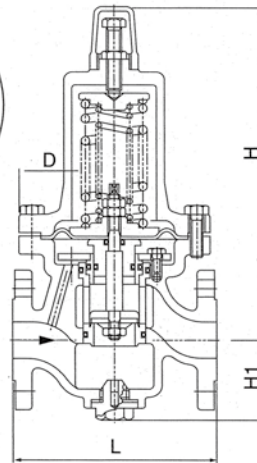
Diaphragm Type Regulating Valve



JRV-FF11



JRV-FF12
(PISTON TYPE)



MATERIALS (Standard)

No	Part Name	Model	JRV-FF11
a	Body		Cast iron
b	Bonnet		Cast iron
c	Disc		Synthetic rubber
d	Seat		Cast bronze
e	Stem		Stainless steel
f	Stem Guide		Cast bronze
g	Diaphragm		Synthetic rubber
h	Spring		Carbon steel
i	O-Ring		Synthetic rubber
j	Adjust Screw		Brass
k	Cap		Cast iron
i	Plug		Cast bronze

SPECIFICATIONS

Working pressure	: Max 10kgf/cm ² {1.0MPa}
Adjusting range	: 0.5~4.0, 4.0~7.0kgf/cm ² {0.005~0.4, 0.4~0.7MPa}
Working temperature	: Max 80°C
Working fluid	: A, NG, NL, W
Connection	: 10K RF Flanged
	• Liquid type viscosity of fluid : Under 800cSt
	• Hydrostatic test pressure : 15kgf/cm ² {1.5MPa}
	• Fluid symbol
	A : Air
	NG : Noncorrosive Gas
	NL : Noncorrosive Liquid
	W : Water

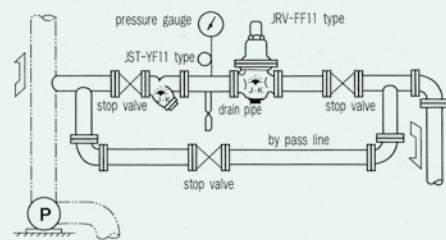
JRV-FF11 is the self operated pressure regulating valve for discharging the over pressure to maintain a regular pressure at the pipe arrangement so it is a kind of relief valve. It is used for air regulating equipment.

FEATURES

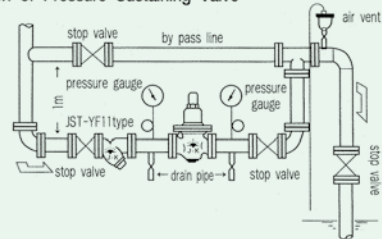
- JRV-FF11 is small so it is easy to handle and its structure is very simple.
- It is a relief valve at the pump. There is no noise and vibration.
- Its piston balance structure type can maintain a regular discharge pressure.
- The valve is designed to enable inside inspection by disassembling the valve from upper one side.

Installation Example

For Installation of Primary Pressure Regulating Valve



For Installation of Pressure Sustaining Valve



DIMENSION

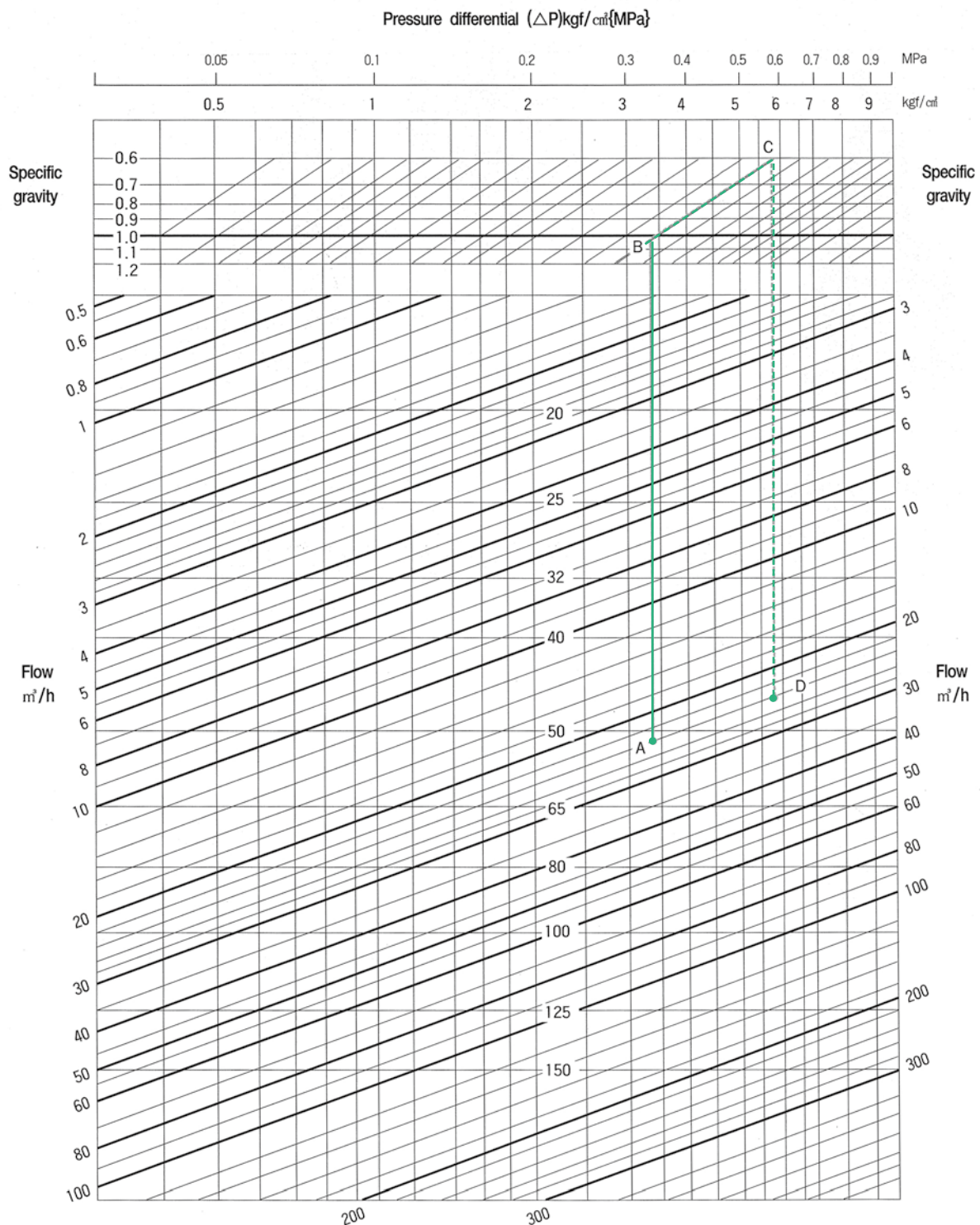
Part	Size mm(inch)	20 (¾")	25 (1")	32 (1¼")	40 (1½")	50 (2")	65 (2½")	80 (3")	100 (4")	125 (5")	150 (6")
L		160	160	180	180	190	230	250	300	370	400
H ₁		62	62	70	70	75	100	100	125	150	160
H		255	266	335	335	345	405	420	475	585	615
D		142	142	174	174	174	218	218	250	340	340
Cv Value		2	3.5	5.5	8	14	22	32	48	75	108
Wt(kg)		9.2	10.5	17.0	17.5	20	32.5	35	62	110	125.5

• Weights and length "L" are based on our standard flanged products and they may be slightly different according to details requested.

Specifications mentioned above may be changed without the notice for the improvement

JOKWANG ILLI CO., LTD.

Valve size selecting chart for JRV-SF14, JRV-FF11 (for water)



How to use the chart

Where,

Primary pressure : 5.5 kgf/cm² (0.55 MPa)

Secondary pressure : 2 kgf/cm² (0.2 MPa)

Pressure differential : 3.5 kgf/cm² (0.35 MPa)

Specific gravity : 1 (water)

Flow : 24 m³/h

Obtain a cross point "A" by tracing down vertically from the pressure differential of 3.5 kgf/cm² (0.35 MPa) on the top up to the line of Flow 24 m³/h. As the point "A" is between size 50 and 65mm, select safer size 65mm.

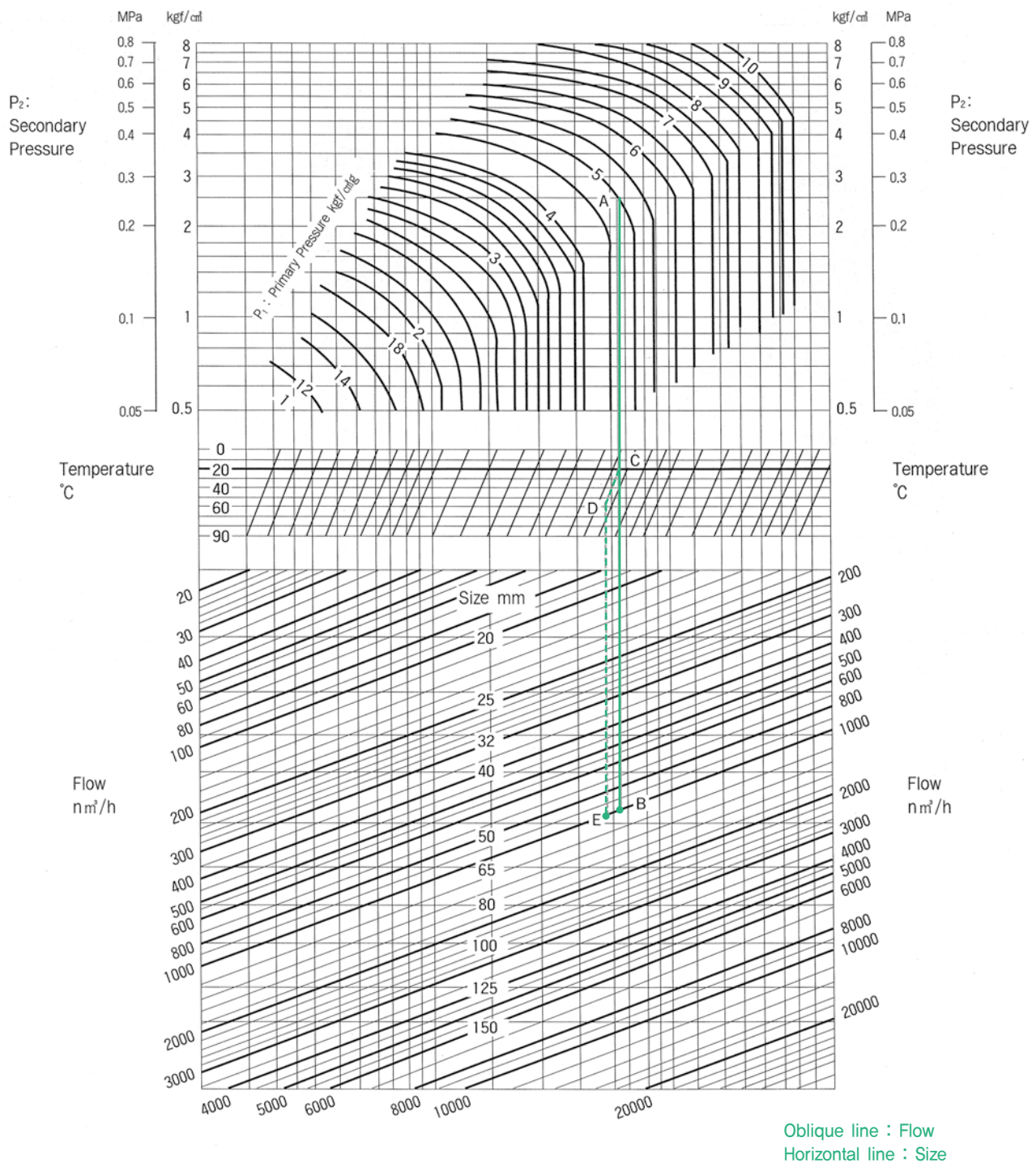
Where,

Same conditions except

Specific gravity : 0.6

Obtain a cross point "B" by tracing down vertically from the pressure differential of 3.5 kgf/cm² (0.35 MPa) up to the line of specific gravity 1.0 and move in parallel with the slant line up to the cross point "C" on the line of the specific gravity 0.6. Trace down vertically to the point "D" on the cross line of Flow 24 m³/h. As the point "D" is between size 40 and 50mm, select safer size 50mm.

Valve size selecting chart for JRV-SF14, JRV-FF11(for air)



How to use the chart

Where,

Primary pressure : 5kgf/cm²{0.5MPa}
Secondary pressure : 2.5kgf/cm²{0.25MPa}
Flow (Air) S.G.=1 : 1000N m³/h
Fluid temperature : 20°C

Obtain a cross point "A" on the vertical line down from primary pressure 5kgf/cm²{0.5MPa} with horizontal line of secondary pressure 2.5kgf/cm²{0.25MPa}. Obtain a cross point "B" on the vertical line down from the point "A" with the oblique line of Flow 1000N m³/h. As this point "B" is between size 40 and 50mm, select safer size 50mm.

Where,

Same conditions except
Fluid temperature : 60°C

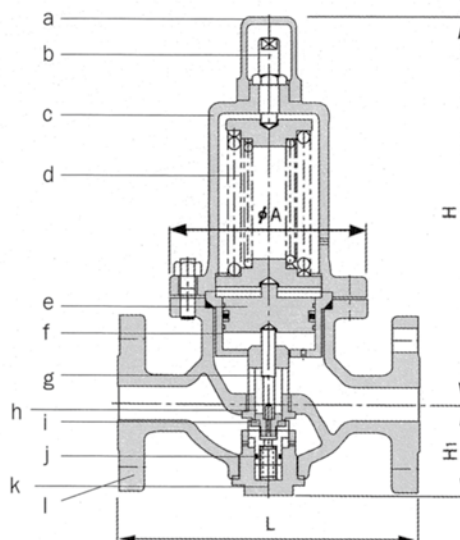
Obtain a cross point "C" on the vertical line down from the cross point "A" with the horizontal line of temperature 20°C. Obtain a point "D" by moving to the parallel line of temperature 60°C from the point "C". Obtain a cross point "E" on the oblique line of Flow 1000N m³/h. As the point "E" is between size 40 and 50mm, select safer size 50mm.

PRESSURE REDUCING VALVE

Model
JRV-SF31

Direct Acting Type(Piston)

for air and gas



MATERIALS (Standard)

No	Part	Materials (standard)
a	Cap	Cast iron
b	Adjusting screw	Brass
c	Bonnet	Cast steel
d	Spring (double)	Spring steel
e	Piston	Brass or Bronze
f	Cylinder	Stainless steel
g	Stem	Stainless steel
h	Seat	Stainless steel
i	Disc	S.Steel tipped with FPM
j	Recovery spring	Stainless steel
k	Plug	Brass
i	Body	Cast steel

This model is a direct operated pressure reducing valve suitable for application at the high pressured air and gas service line up to 30kgf/cm²(0.3MPa) & requiring the stable flow from small one to large capacity.

The pressure balanced disc constantly and stably regulates the secondary pressure, regardless of the primary pressure variation.

SPECIFICATIONS

No	Kind	Standard
1	Inlet pressure	Max. 30kgf/cm ² (0.3MPa)
2	Outlet pressure	0.35~5, 5~15kgf/cm ² (0.035~0.5, 0.5~1.5 MPa)
3	Max reducing ratio	10 : 1
4	Working temp.	Max. 80°C
5	Working fluid	Air, gas
6	Connection*	Flanged 16K, 20K, 30K

- Minimum pressure differential across the disc :
0.5kgf/cm²(0.05MPa)
- Hydrostatic test pressure : 1.5 times the flange pressure rating

DIMENSIONS

(mm)

Size	Connection	End to end	Height		Dia.	Cv value	Weight
mm(inch)	Flange rating	L	H ₁	H	φ A		kg(approx.)
15(½")	16, 20K	214	67	284	148	1	15.0
	30K	220					
20(¾")	16, 20K	218	67	284	148	2.5	15.5
	30K	220					
25(1")	16, 20K	218	67	284	148	4	16.0
	30K	226					
32(1¼")	16, 20K	260	85	328	166	6.3	25.5
	30K	268					
40(1½")	16, 20K	260	85	328	166	8	25.5
	30K	268					

- Our standard products conform to KS flange, ANSI & DIN flange are available upon request.

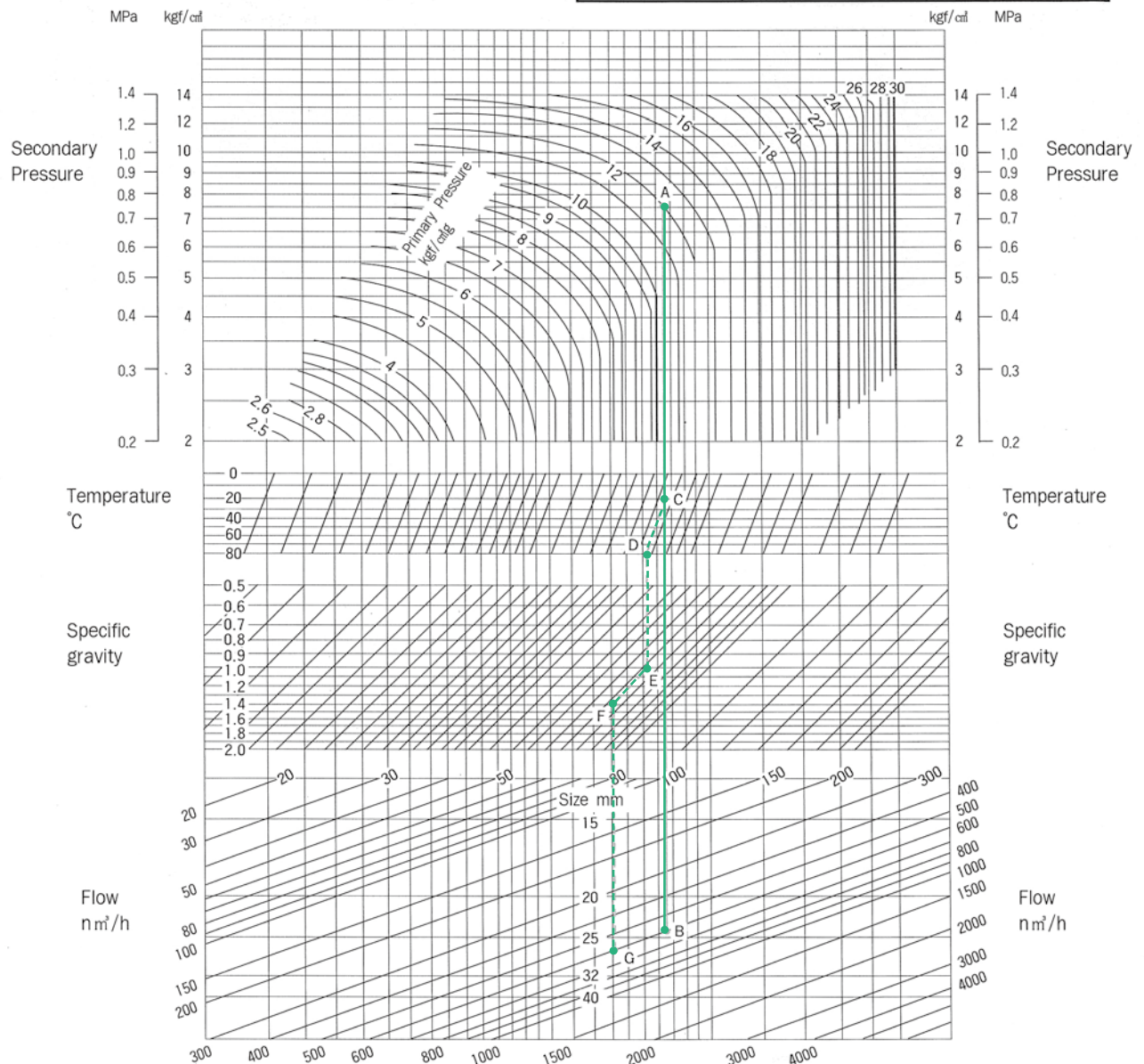
Valve size selecting chart for JRV-SF31 (for air)

This valve size selecting chart is based on air (20°C). For gas other than air, convert them into air prior to using this chart. To convert gas to air:

Gas flow × Conversion factor = Air converted flow

Conversion factor (temp.: 5-60°C)

Fluid name	Gas constant R (kg.m/kg°C)	Conversion factor
Dry air	29.27	1.000
Nitrogen gas	30.26	0.984
Metane gas	52.89	0.744
City gas	44.63	0.810



Oblique line : Flow
Horizontal line : Size

How to use the chart

Where,
 Primary pressure : 12kgf/cm²{1.2MPa}
 Secondary pressure : 7.5kgf/cm²{0.75MPa}
 Air temperature : 20°C
 Specific gravity (air) : 1
 Flow : 600Nm³/h

Obtain a cross point "A" on the vertical line down from primary pressure 12kgf/cm²{1.2MPa} with horizontal line of secondary pressure 7.5kgf/cm²{0.75MPa}. Obtain a cross point "B" on the vertical line down from the point "A" with the oblique line of Flow 600Nm³/h. As this point "B" is between size 20 and 25mm, select safer size 25mm.

Where,

Same conditions except

Fluid temperature : 80°C
 Specific gravity : 1.4

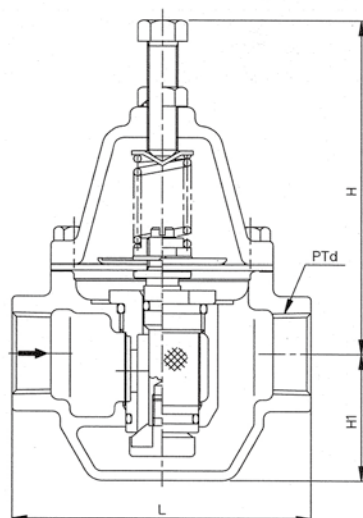
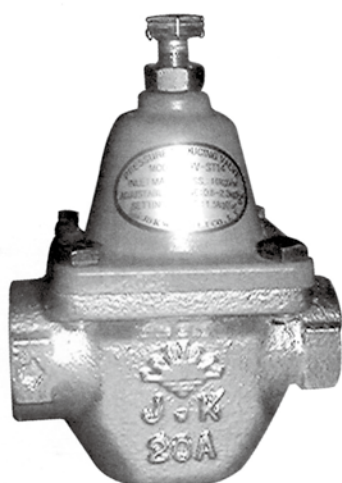
Obtain a cross point "C" on the vertical line down from the cross point "A" with the horizontal line of temperature 20°C. Obtain a point "D" by moving to the parallel line of temperature 80°C from the point "C". Obtain a cross point "E" on the line of specific gravity. Obtain a point "F" by moving to parallel line of specific gravity 1.4 from the point "E". Obtain a cross point "G" on the vertical line down from the point "F" with the oblique line of flow 600Nm³/h. As the point "G" is between size 25 and 32mm, select safer size 32mm.

PRESSURE REDUCING VALVE

Model
JRV-ST14

Direct Acting Type

For City Water



REDUCING VALVE

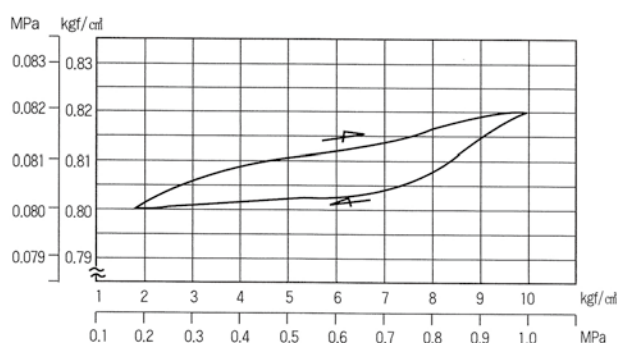
JRV-ST14

JRV-ST14 can ensure the basic performance and low price.

It is a pressure reducing valve to be used for the water supply system in the building or households generally.

- Its connection is free.
It can operate correctly in either a horizontal or a vertical position.
- It can be cleaned very easily by removing the plug owing to the inbuilt strainer (about 40 mesh).
- No corrosion because the product is made of brass.

Flow Characteristic Curve



When Primary pressure is 1.8kgf/cm² (0.18MPa), the secondary pressure is settled as 0.8kgf/cm² (0.08MPa).

As the primary pressure is changed from 1.8kg to 10kg and from 10kg to 1.8kg, this chart indicate the secondary pressure changed.

SPECIFICATIONS

Type : JRV-ST14

Applicable Fluid : Water

Nominal Diameter : 15A (PT ½") 20A (PT ¾")

Primary Pressure : 10kgf/cm² (1.0MPa)

Adjustable Secondary Pressure Range : 0.8~2.5kgf/cm² (0.08~0.25MPa)
2.0~4.0kgf/cm² (0.2~0.4MPa)

Minimum Pressure Differential Across the Disc : 0.3kgf/cm² (0.03MPa)

Maximum Reducing Rate : 10:1

The beginning Adjustable Capacity : 0.5ℓ/min

Rated Capacity : 15A (27ℓ/min)

20A (34ℓ/min)

Hydrostatic test pressure : 15.0kgf/cm² (1.5MPa)

Material : Body : Bronze, Disc & Diaphragm : Synthetic rubber

- The rated flow shall be on the differential pressure of 1kgf/cm² between inlet and outlet.

DIMENSION

JRV-ST14

(mm)

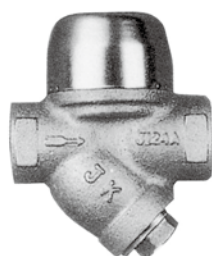
Size	PT d	L	H1	H	W.T(kg)
15A	½"	78	33	87	
20A	¾"	78	33	87	

STEAM TRAP

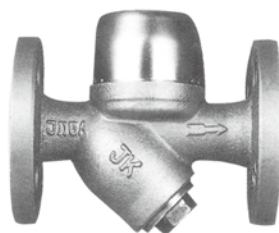
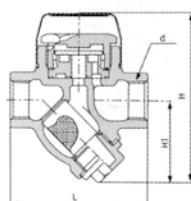
Model
JTR-DT22, DF21

Thermodynamic Type

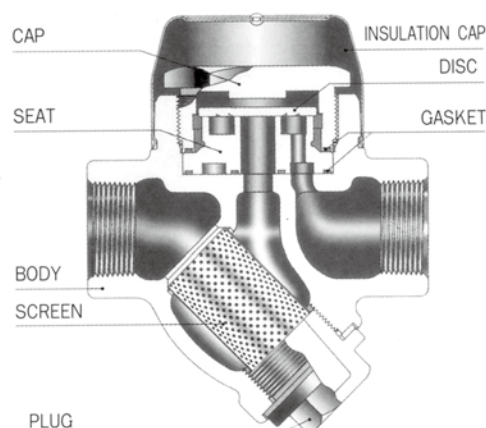
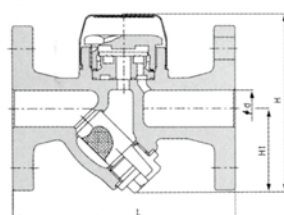
With
air insulation chamber



JTR-DT22



JTR-DF21



Constructions are slightly different according to sizes

Insulation chamber(air warm)is adopted to lessen the affect of atmosphere and to improve the most suitable working conditions.

The maintenance and repair of disc and seat are easy owing to its material of high-hardness-heat-treated stainless steel and its replaceable seat.

SPECIFICATIONS

Working pressure : Max. 16kgf/cm²{1.6MPa}
Min. 0.35kgf/cm²{0.035MPa}

Working temperature : Max. 220°C

Hydrostatic test pressure : 24kgf/cm²{2.4MPa}

Insulation system : Air warm

Connection : JTR-DT22:PT screwed

JTR-DF21: Flanged

One-touch cap(Round, head) for size 15~25mm

Bolted cap (square head) for size 32~50mm

DIMENSIONS

(mm)

Model	Size	Dia	End to end	Height		Weight	Conn- ection
	mm(inch)	d	L	H ₁	H	(kg)	
JTR-DT22	15(1/2")	PT 1/2"	90	56	112	1.3	PT Screwed
	20(3/4")	PT 3/4"	95	58	117	1.4	
	25(1")	PT 1"	100	58	121	1.6	
	32(1 1/4")	PT 1 1/4"	175	103	185	5.8	
	40(1 1/2")	PT 1 1/2"	180	112	206	7.2	
	50(2")	PT 2"	195	130	233	10	
JTR-DF21	15(1/2")	15	136	53	113	2.5	KS 10K FF Flanged
	20(3/4")	20	140	56	118	3.0	
	25(1")	25	150	58	124	4.0	
	32(1 1/4")	32	245	103	195	9.2	
	40(1 1/2")	40	260	112	206	11	
	50(2")	50	265	130	233	14	

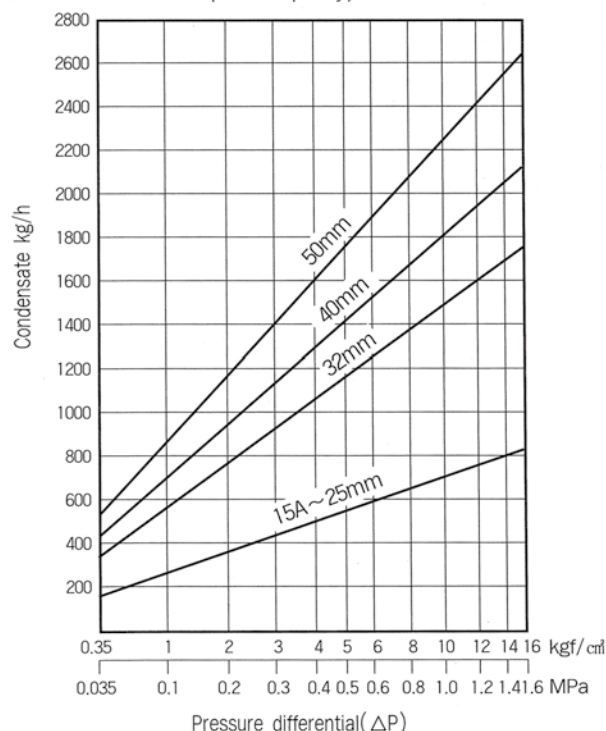
Weights herein are based on our standard products and they may be slightly different according to specifications requested.

MATERIALS (Standard)

No	Part	Material
a	Cap	Stainless steel or Forged brass
b	Body	Ductile iron or Cast iron
c	Screen	Stainless steel
d	Insulation cap	Rolled steel or Cast iron
e	Disc	Stainless steel
f	Seat	Stainless steel
g	Gasket	Teflon
h	Strainer cap	Forged brass or Cast iron

- Ductile iron body for 15~25mm
- Ductile iron body for 32~50mm

CAPACITY CHART on the continuous discharge
(Select the steam trap with the capacity at
least 3 times the required capacity)

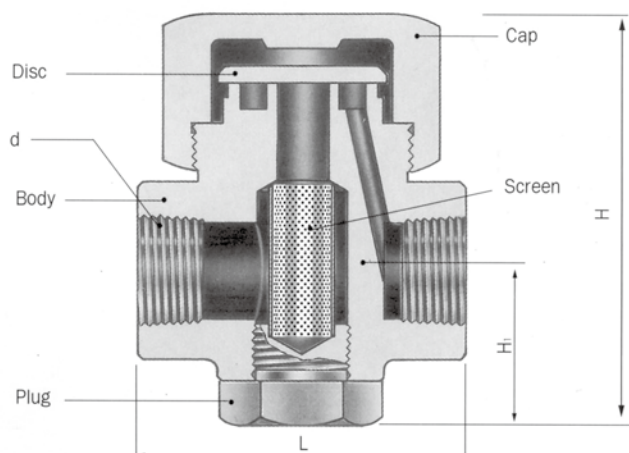


STEAM TRAP

Model
JTR-DT31

Thermodynamic Type

for tracing line
compact body

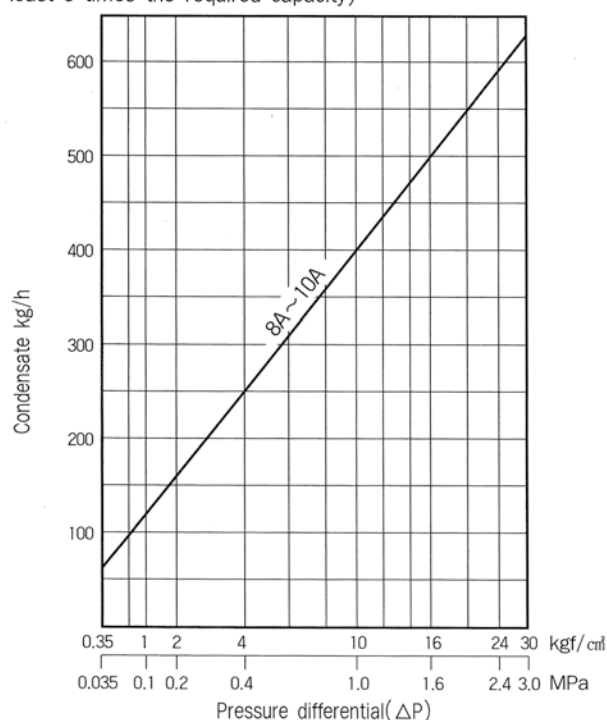


JTR-DT31[JKD-30S] is a thermodynamic type steam trap with compact and miniaturized body suitable for the steam tracing line along with the main line and the steam jacketed line. Construction is simple to maintain easily. The inner strainer prevents the foreign materials from coming into the steam trap and ensures the good operations of steam trap. The seat and disc are high-hardness-heat treated to ensure its durability.

SPECIFICATIONS

Working pressure : Max. 30kgf/cm²(3.0MPa)
Min. 0.35kgf/cm²(0.035MPa)
Working temperature : Max. 400°C
Connection : PT screwed
Hydrostatic test pressure : 45kgf/cm²(4.5MPa)

CAPACITY CHART on the continuous discharge
(Select the steam trap with the capacity at least 3 times the required capacity)



MATERIALS

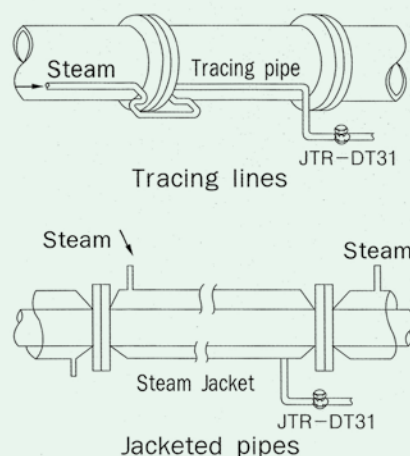
No	Part name	Standard
a	Disc	Stainless steel
b	Body	Stainless steel
c	Plug	Stainless steel
d	Cap	Stainless steel
e	Screen	Stainless steel

DIMENSIONS

(mm)

Part	Size mm(inch)	8(1/4")	10(3/8")
d		PT 1/4"	PT 3/8"
L		50	50
H _i		24	24
H		63	63
Wt.(kg)		0.4	0.4
Connection		Screwed PT	

Installation example

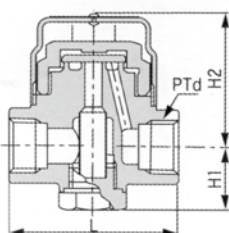
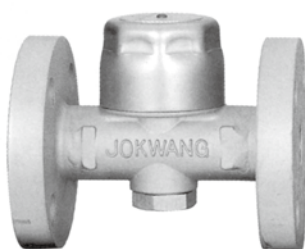


STEAM TRAP

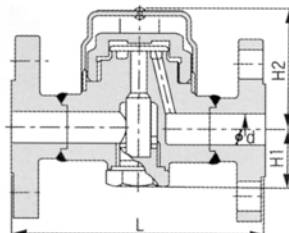
Model
JTR-DT41, DF41

Thermodynamic Type

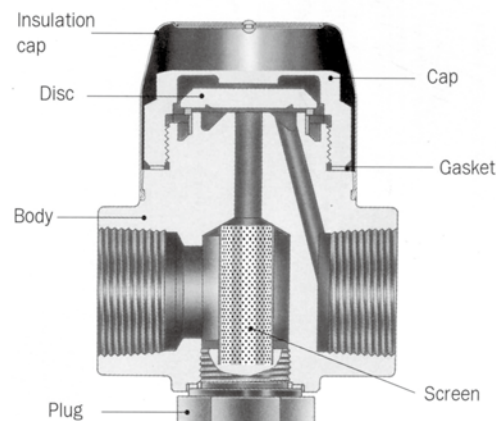
With
air insulation chamber



JTR-DT41



JTR-DF41



JTR-DT41[JKD-41S] steam trap is designed for high temperature-pressure steam, and for integral body with the seat.

- Small and compact design
- Easy maintenance and replacement
- Internal strainer built-in
- Insulation cap adopted

SPECIFICATIONS

Working pressure : Max. 42kgf/cm²(4.2MPa)

Working temperature : Max. 400°C

Connection JTR-DT41 : JIS PT Screwed

Socket welding

JTR-DF41 : JIS flange

ANSI flange available on order

Hydrostatic test pressure : 63kgf/cm²(6.3MPa)

DIMENSIONS

JTR-DT41

(mm)

Size	L	H ₁	H ₂	PTd	Wt.
15(½")	80.0	30.0	64.0	PT ½"	1.1kg
20(¾")	80.0	30.0	64.0	PT ¾"	1.1kg
25(1")	90.0	35.0	69.0	PT 1"	1.3kg

JTR-DF41

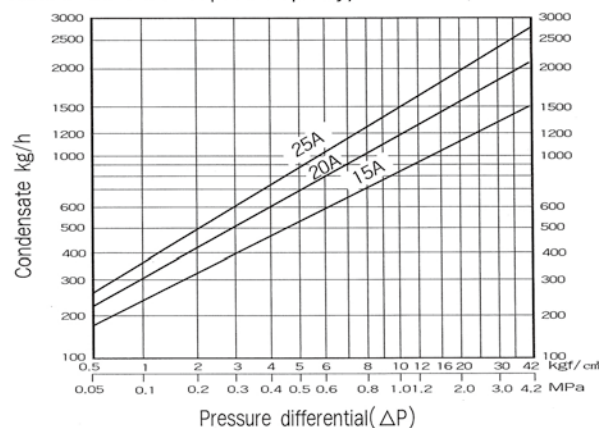
(mm)

Size	L		H ₁	H ₂	Wt.
	10K, 20K	30K			
15(½")	120	140	30.0	64.0	2.8kg
20(¾")	130	140	30.0	64.0	3.0kg
25(1")	135	150	35.0	69.0	4.4kg

MATERIALS

No	Part	Material
a	Body	Stainless Steel
b	Inner Cap	Stainless Steel
c	Disc	Stainless Steel
d	Insulation cap	Mild Steel
e	Screen	Stainless Steel
f	Plug	Stainless Steel
h	Flange	Forged Steel

CAPACITY CHART on the continuous discharge
(Select the steam trap with the capacity at least 3 times the required capacity)



CAPACITY CHART

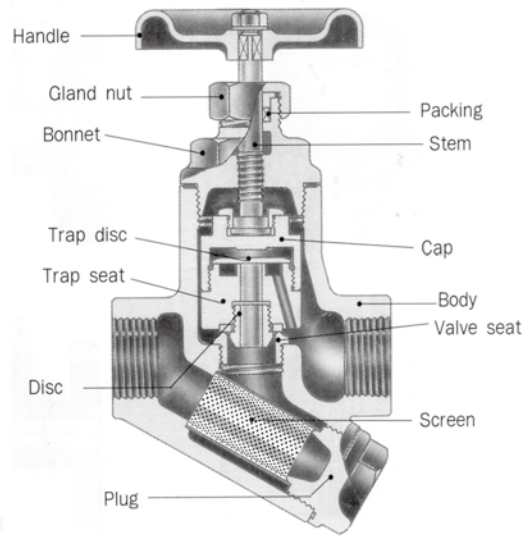
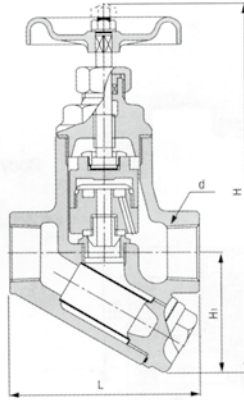
At sizing, ensure to select the steam trap size to drain condensate loads 3 times the expected safety factor.
In case of any back pressure at the trap outlet side, choose the trap size by the pressure differential between inlet and outlet pressure.

STEAM TRAP

Model
JTR-DT23

Thermodynamic Type

With a built-in
by-pass valve



A built-in-by-pass valve allows to easily blow-off larger flow at initial operating and/or admissible flow into trap while opening the valve by handle. This type is useful to steam mains, especially suitable for laundry machines, and dyeing machines.

DIMENSIONS

(mm)

Size	Dia.	End to end	Height		Weight	Connection
mm(inch)	PTd	L	H ₁	H ₂	(kg)	
15(½")	½"	100	58	140	2.0	PT
20(¾")	¾"	110	58	140	2.1	Screwed
25(1")	1"	110	61	140	2.3	

SPECIFICATIONS

Working pressure : Max, 16kgf/cm²(1.6MPa)
Min, 0.35kgf/cm²(0.035MPa)

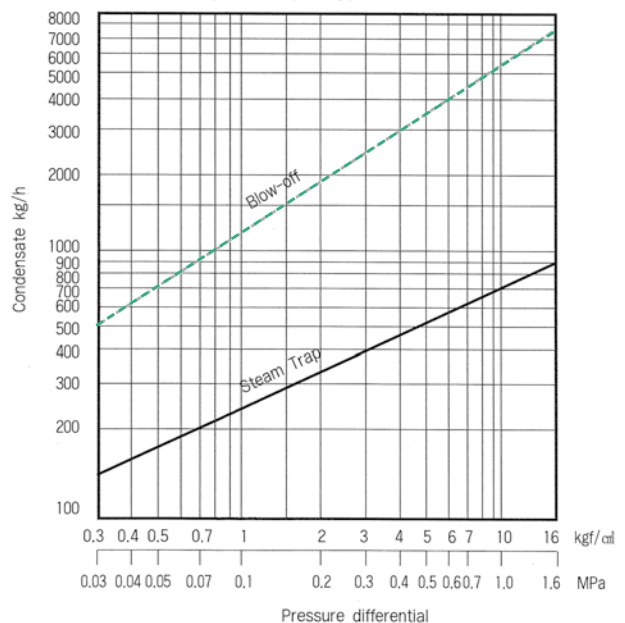
Working temperature : Max, 220°C

Hydrostatic test pressure : 24kgf/cm²(2.4MPa)

MATERIALS

No	Part name		Material
a	Handle		Cast iron
b	Gland nut		Brass
c	Bonnet		Cast iron
d	Trap	Disc	Stainless steel
e	Part	Seat	Stainless steel
f	Valve	Disc	Stainless steel
g	Part	Seat	Stainless steel
h	Packing		Teflon
i	Stem		Brass
j	Cap		Forged brass
k	Body		Cast iron
l	Screen		Stainless steel
m	Plug		Forged Brass

CAPACITY CHART on the continuous discharge
(Select the steam trap with the capacity at
least 3 times the required capacity)



----- By-pass valve blow-off capacity through seat and valve
(g & F) while opened by handle
—— Capacity by steam trap while closed by handle (a)

STEAM TRAP

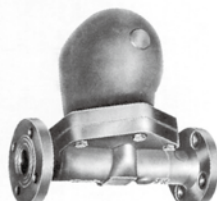
Ball Float Type

Model
JTR-FT12, FF12

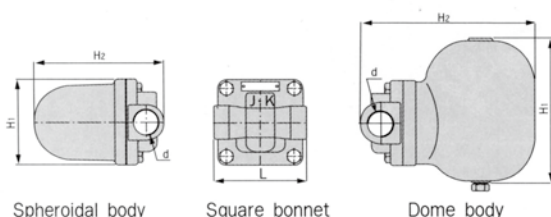
With Air vent



JTR-FT12



JTR-FF12



Spheroidal body

Square bonnet

Dome body

For application to larger capacity than thermodynamic trap such as heat exchanger, dryer, chemical plant, and various steam systems. Excellent durability of stainless steel disc, seat, and ball float. Inbuilt air vent assembly to eliminate air-binding.

All parts are installed at the bonnet, and the integral bonnet would be helpful for easy maintenance.

SPECIFICATIONS

Working pressure ranges : 4.5kgf/cm²{0.45MPa}

At working temperature : 10kgf/cm²{1.0MPa}

Within max. 220°C : 14kgf/cm²{1.4MPa}

Hydrostatic test pressure : 1.5times the pressure rating

- At ordering please specify pressure rating as a suffix with model.

Example: Model JTR-FT12, 4.5kgf/cm²

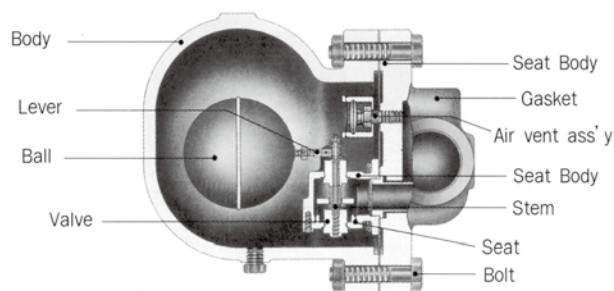
MATERIALS (Standard)

No	Part	Material
a	Body	Cast iron
b	Lever	C.Stainless Steel
c	Ball float	Stainless Steel
d	Valve	Stainless Steel
e	Seat body	C.Stainless Steel
f	Gasket	Non Asbestos
g	Bonnet	Cast iron
h	Air vent ass'y	Stainless Steel
i	Stem	Stainless Steel
j	Seat	C.Stainless Steel
k	Bolt	Carbon steel

Cast steel body steam traps are also available on request.

Differences on construction and appearance

Part	Size (mm)					
	15	20	25	32	40	50
Body	Spheroidal			Dome		
Bonnet	Square			Hexagonal		
Seat	Single			Double		
Drain plug	PT 3/8"			PT 3/8"		



DIMENSIONS

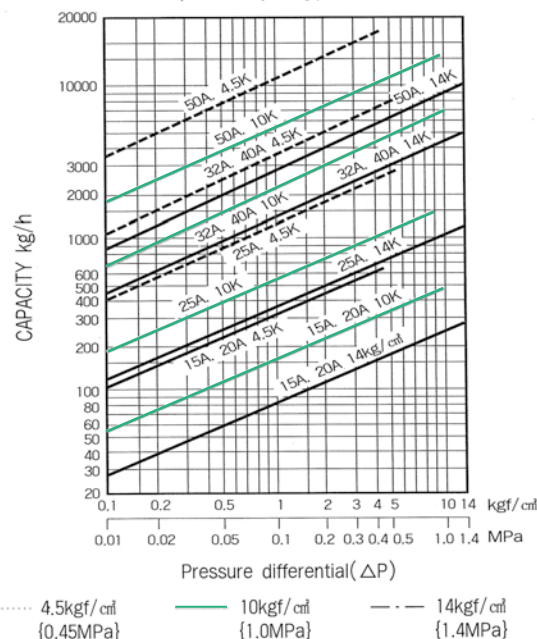
(mm)

Model	Size	Dia	End to end	Height		Weight	Conn- ection
	mm(inch)	d	L	H ₁	H ₂	(kg)	
JTR-FT12	15(1/2")	PT 1/2"	120	110	170	4.4	PT Screwed
	20(3/4")	3/4"	120	110	170	4.4	
	25(1")	1"	120	195	220	7.4	
	32(1 1/4")	1 1/4"	270	240	295	18.0	
	40(1 1/2")	1 1/2"	270	240	295	18.5	
	50(2")	2"	300	260	310	26.5	
JTR-FF12	15(1/2")	15	200	110	170	6.2	JIS 10K FF Flanged
	20(3/4")	20	200	110	170	6.4	
	25(1")	25	215	195	220	10.6	
	32(1 1/4")	32	320	240	295	21.5	
	40(1 1/2")	40	320	240	295	22.0	
	50(2")	50	360	260	310	34.5	

- Weights and the length "L" are based on our standard products and they may be subject to changes by details requested.
- ANSI, DIN flanges are also available on request.

CAPACITY CHART

on the continuous discharge
(Select the steam trap with the capacity at
least 3 times the required capacity)



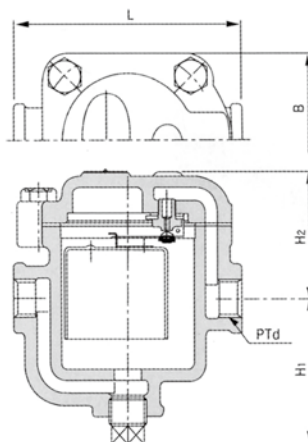
STEAM TRAP

Model
JTR-BT21

Inverted Bucket Type Shockless self return valve



JTR-BT21



JTR-BT21 steam trap is designed for high steam pressure, combined with SSR system.

SSR(shockless self return) mechanism is maintainable to keep away shock while valve closing and centering, and to allow steady draining, valve self-closing independently from the bucket coming up.

- Small and compact design
- Easy maintenance and replacement

Working pressure ranges : 0.35~4, 4~8kgf/cm²
{0.035~0.4, 0.4~0.8MPa}
8~12, 12~16kgf/cm²
{0.8~1.2, 1.2~1.6MPa}

Working temperature : Max. 220°C

Connection : JIS PT Screwed

Hydrostatic test pressure : 1.5 times the pressure rating

- At ordering, specify pressure range as a suffix with model to allow maximum discharge rate.
(ex. JTR-BT21/4.5 : pressure range 0.35~4.5kgf/cm²{0.035~0.45MPa})

DIMENSIONS

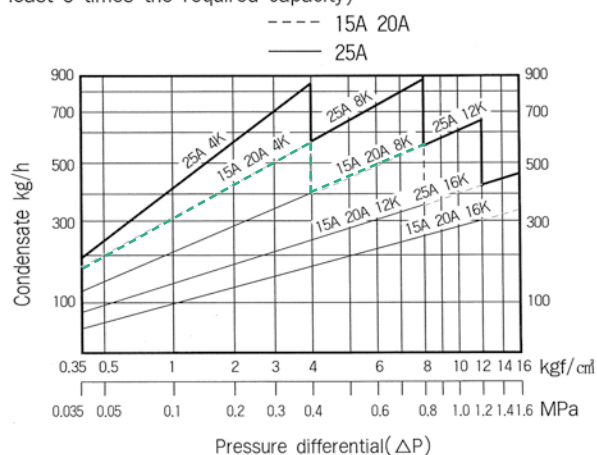
(mm)

Size	L	H ₁	H ₂	B	PTd	Wt.
15(½")	127.0	80.0	71.0	94.0	PT ½"	3.1kg
20(¾")	132.0	82.0	71.0	94.0	PT ¾"	3.2kg
25(1")	137.0	101.0	74.0	94.0	PT 1"	3.5kg

MATERIALS

No	Part	Material
a	Body	Ductile iron
b	Bonnet	Ductile iron
c	Bucket	Stainless Steel
d	Seat	Stainless Steel
e	Disc(valve)	Stainless Steel
f	Plug	Malleable iron
h	Bolt	Carbon steel

CAPACITY CHART on the continuous discharge
(Select the steam trap with the capacity at least 3 times the required capacity)



CAUTIONS AT SIZING

At sizing, ensure to select the steam trap size to drain condensate loads 3 times the expected safety factor.

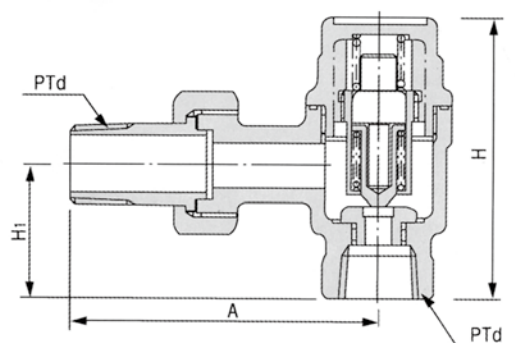
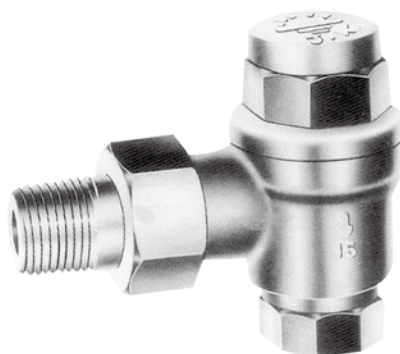
In case of any back pressure at the steam trap outlet side, choose the trap size by the pressure differential between inlet and outlet pressure.

STEAM TRAP

Radiator Trap

Model
JTR-WT11

Thermo wax type



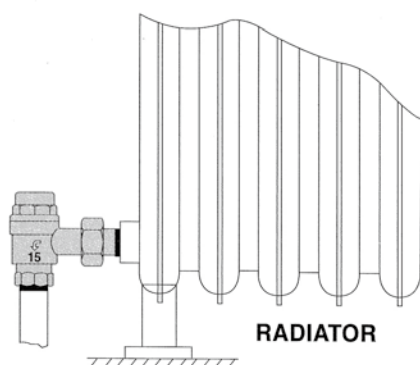
JTR-WT11 type is the thermo wax type radiator trap used for the space heating radiator, operating at the pressure 3kgf/cm²{0.3MPa} or lower.

- Free from freezing trouble because of its construction not to allow staying of drain.
- Quick discharge of drain and air at the initial entry of steam.
- No steam leakage because the disc open and close at 100°C or lower.

CAUTIONS AT SIZING

- At sizing, ensure to select the steam trap size to drain condensate loads 3 times the expected safety factor.
- In case of any back pressure at the steam trap outlet side, choose the trap size by the pressure differential between inlet and outlet pressure.

INSTALLATION EXAMPLE



SPECIFICATIONS

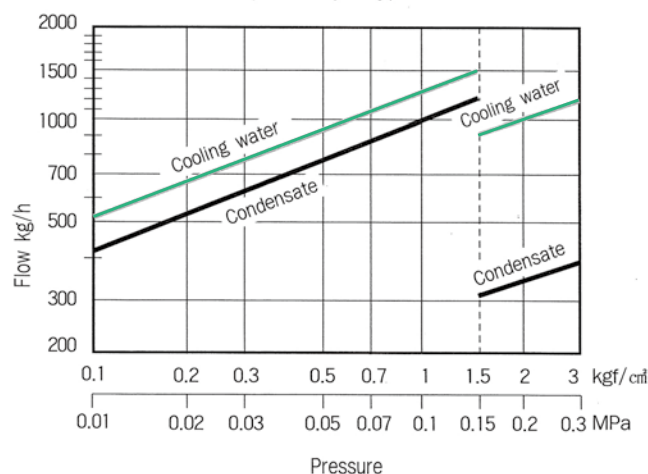
Working pressure ranges : 0.1~1.5, 1.5~3kgf/cm²
{0.01~0.15, 0.15~0.3MPa}
Working temperature : Max. 150°C
Connection : JIS PT Screwed
Hydrostatic test pressure : 1.5times the pressure rating
Materials : Body-Forged brass
Trim-Stainless Steel

DIMENSIONS

(mm)

Size	A	H1	H	PTd	Wt.
15(½")	80	35	73.5	PT 1½"	0.5kg
20(¾")	87	41	79.5	PT ¾"	0.6kg

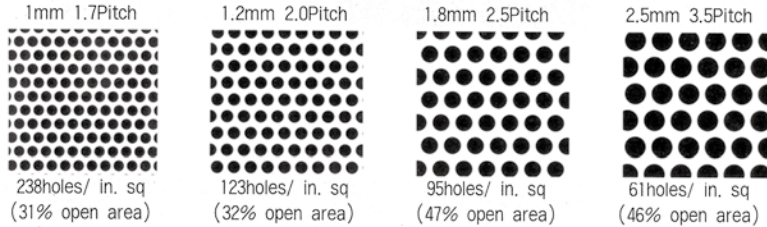
CAPACITY CHART on the continuous discharge
(Select the steam trap with the capacity at least 3 times the required capacity)



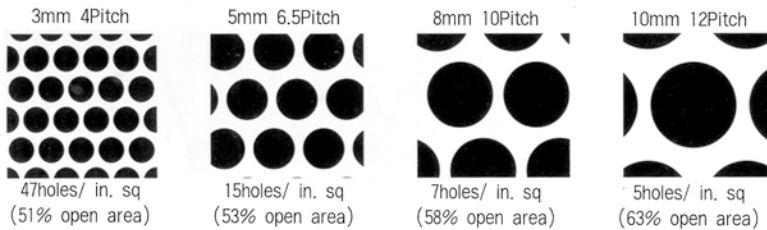
FILTERING METALS

Standard material for screen is 304 stainless steel plate perforated in 60 degree staggered arrangement, resisting corrosion and high temperature and being ideal for a wide of filtering and screening in industrial plants.

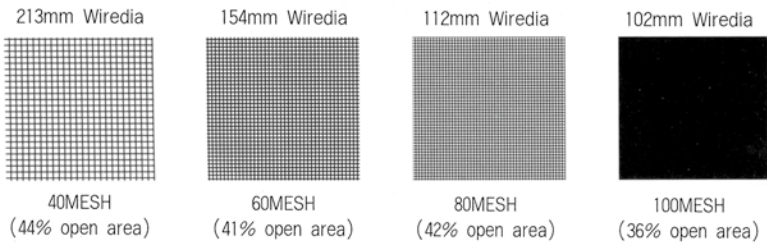
Perforated screen (stainless steel)
staggered For screen only



For mesh screen to be furnished with mesh required



Mesh (stainless steel)



Dimension of perforated screen
For screen only

Size	Part	t	φ D	P	R(%)
15~25		0.25	0.8	1.5	25.88
32~50		0.3	1.0	1.7	31.48
65~100		0.5	1.2	2.0	32.76
125~150		0.6	1.5	2.2	42.30
200		0.8	1.8	2.5	47.17
250~350		1.0	2.5	3.5	46.43

For screen with mesh inside

Size	Part	t	φ D	P	R(%)
15~50		0.5	3.0	4.0	51.19
65~100		0.7	5.0	6.5	53.85
125~200		1.0	8.0	10.0	58.24
250~350		1.5	10.0	12.0	63.19

For mesh to be coated screen

Mesh	P	S.W.G	Wire dia.	R(%)
40	40	35	0.2134	44.1
60	60	38	0.1524	41.2
80	80	41	0.1118	42.0
100	100	42	0.1016	36.0

$$R = \frac{\sqrt{3} \times \pi}{6} \times \left(\frac{D}{P}\right)^2 \times 100 = \frac{91 \times D^2}{P^2} (\%)$$

R=Open area ratio(%)

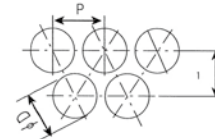
P: Pitch (Width)

P_i: Pitch (depth)

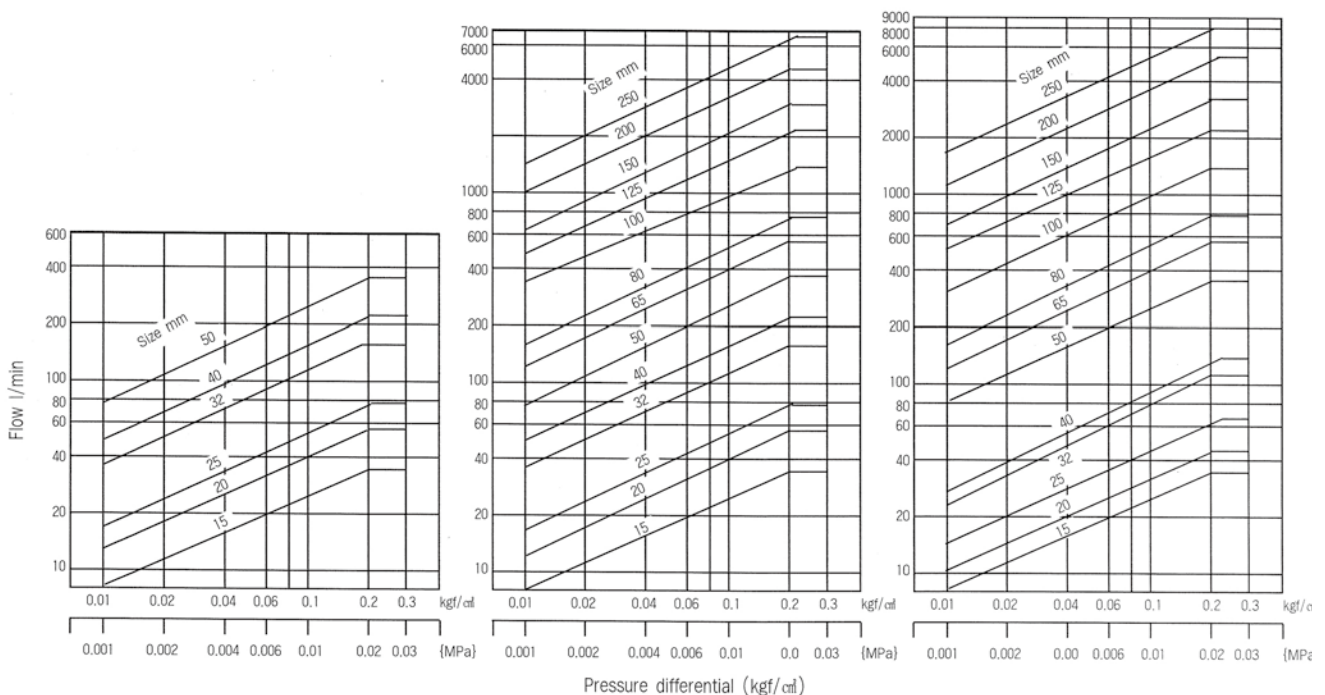
D: Diameter of hole

T: Thickness

The letters show in dimension(mm)



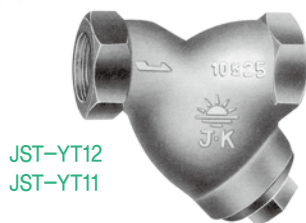
FRICTION LOSS CURVE OF WATER HEAD



STRAINER

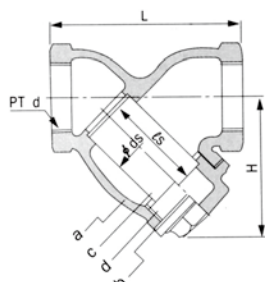
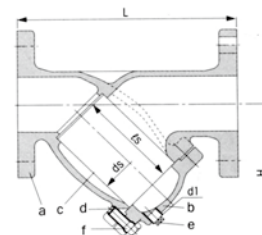
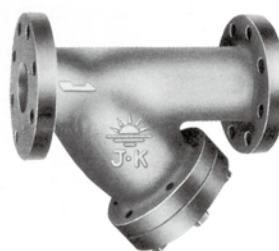
Model JST-YT12, YT11
JST-YF11, YF21

Y-Type Strainer



JST-YT12
JST-YT11

JST-YF11
JST-YF21



Cap difference

JST-YF11: 15~50mm

JST-YF21: 15~40mm

MATERIALS & SPECIFICATION

No	Part	Model	JST-YT12	JST-YT11	JST-YF11	JST-YF21
a	Body		Bronze	Cast iron	Cast iron	Cast steel
b	Cap		Forged brass	Cast iron	Cast iron	Cast steel
c	Screen		Stainless steel (for reference see filtering metal)			
d	Gasket		Non Asbestos			
e	Plug		Malleable iron			
f	Bolt		Steel			
Connection			PT Screwed		10K FF flange	20K RF flange
Working pressure			Max. 10kgf/cm ² {1.0MPa}			
Working temperature			Max. 200°C			
Working fluid			Air, steam, water and/or noncorrosive media			

DIMENSIONS

Model JST-YT12, JST-YT11 screwed

(mm)

Model	Size mm(inch)	15(½")	20(¾")	25(1")	32(1¼")	40(1½")	50(2")
	Part						
JKB	d	PT ½"	PT ¾"	PT 1"	PT 1¼"	PT 1½"	PT 2"
	l	80	80	94	114	140	152
	h	60	60	75	85	95	105
	ds	23	23	28	38	46	51
	ls	34.3	34.3	49	63	66	75.5
	Wt(kg)	0.5	0.6	1.4	1.4	2.1	2.8
FST-S	d	PT ½"	PT ¾"	PT 1¼"	PT 1¼"	PT 1½"	PT 2"
	l	80	94	114	140	152	174
	h	60	75	85	95	105	115
	ds	23	28	38	46	51	59
	ls	34.3	49	63	66	75.5	87.5
	Wt(kg)	0.6	0.9	1.4	2.1	2.8	4.2

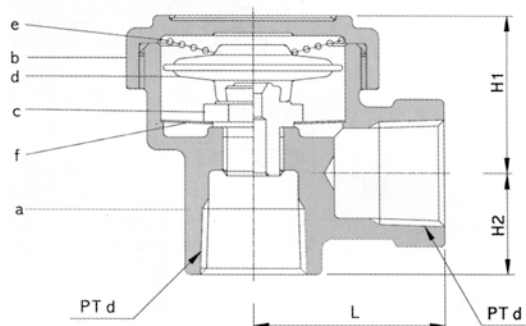
Note:

- ANSI, DIN flanged for JST-YF21.

AIR VENT Capsule Type

Model
JAV-CT11

for steam



Model JAV-CT11 is a self operating air vent to be used for eliminating air or non-condensable gas contained in steam, solving the air binding to ensure constant heat transferability and to prevent corrosion at the inside surface of pipe. As a bimetal operated air vent, the operating feature depends upon the temperature differential between steam and air. The valve closes at the steam temperature and opens when air or gas flows into the air vent.

DIMENSIONS

(mm)

Part	Size mm(inch)	15 (½")	20 (¾")
d		PT ½"	PT ¾"
L		40	42.5
H1		40.5	44.5
H2		22	20.5

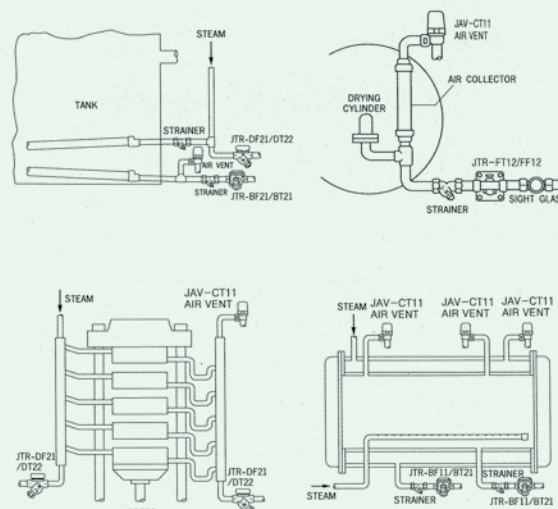
SPECIFICATIONS

Applicable fluid : Steam
 Working pressure : Max. 14kgf/cm²(1.4MPa)
 Working temperature : Max. 220°C
 Connection : PT Screwed
 Hydrostatic test pressure : 1.5 times working pressure

MATERIALS

No	Part name	Standard
a	Body	Bronze
b	Cap	Bronze
c	Seat	Stainless Steel
d	Capsule Ass' v	Stainless Steel
e	Spring	Stainless Steel
f	Screen	Stainless Steel

Installation example with related periphery

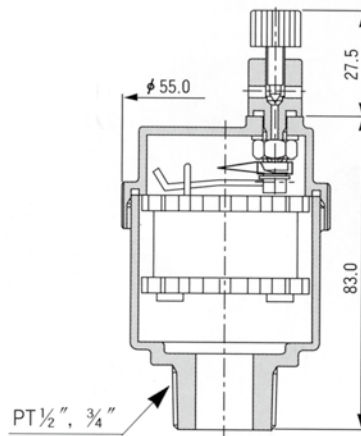


AIR VENT

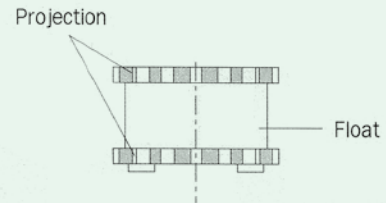
Model
JAV-FT11

Float Type by Bubble Crush Method

for water



BBC Method



Bubble crushing method of the special float in an air vent changes a large bubble to small bubbles, and reduces and disperses rising pressure.

Application of BBC(Bubble Crush) method has made it possible to have no chattering and water-hammer. The valve disc and seat are easily removable with cover : even if soiled with scale and dust, they can be easily removed.

Small in size and maximum working pressure is graded up to 10kgf/cm²{1.0MPa}

Big air venting capacity in this class. Provided with manual operating device.

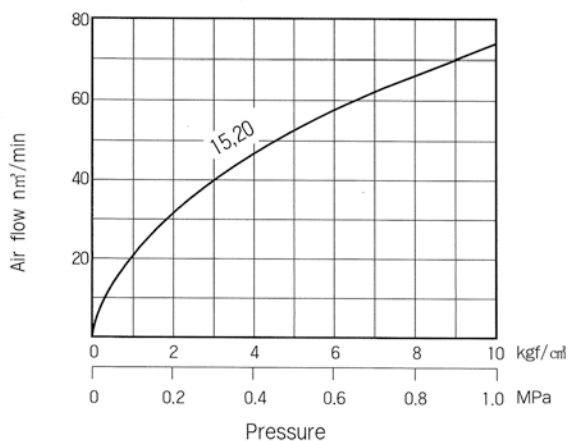
SPECIFICATIONS

Applicable fluid	: Water
Pressure	: Max, 10kgf/cm ² {1.0MPa}
Temperature	: Max, 100°C
Size	: 15 & 20mm (1/2" & 3/4")
Weight	: 0.35kg
Connection	: PT Screwed
Hydraulic pressure test	: 15kgf/cm ² {1.5MPa}

MATERIALS

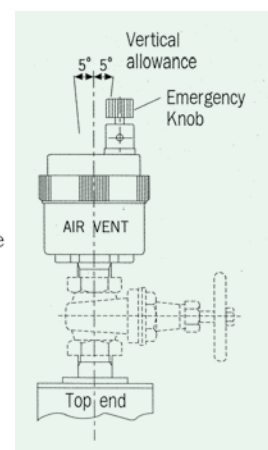
No	Part	Standard
a	Cock	Brass
b	Seat	Brass
c	Valve	Silicon rubber
d	Valve holder	Brass
e	Float(Bubble crushing)	Polyethylene
f	Bonnet	Forged brass
g	Linking spring	Stainless Steel
h	Lever	Stainless Steel
i	Body	Forged brass

FLOW CHARACTERISTIC CURVE



INSTALLATION AND USE

1. Install the valve vertically with allowance within 5° from the vertical axis.
2. Prior to installation, remove foreign matters remaining in piping and equipment.
3. Install a stop valve at the inlet to stop flow during maintenance inspection.
4. In case of leakage, turn the knob to stop leakage.
5. In case of any possibility of freezing, cover the valve body with heat insulation material.



AIR VENT

Model
JAV-FF11

Angle Type

for water

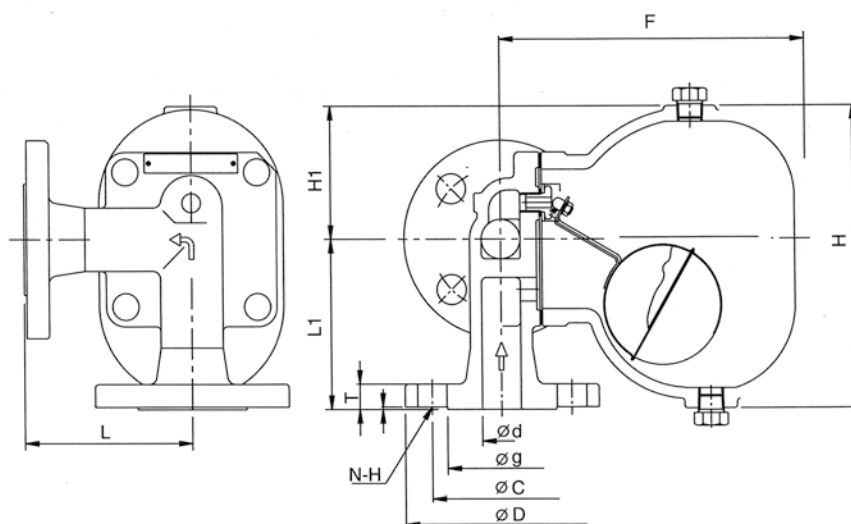


SPECIFICATIONS

1. Design Pressure : 22Kg/cm²
2. Design Temperature : 220°C
3. Working Pressure : Max.16Kg/cm²
4. Connection : Angle Type Flange 15A-25A
5. Hydrostatic Test Pressure : 44.0Kg/cm²
6. Fluid : Water, Oil ... Etc.

MATERIALS

NO.	PART NAME	Standard
1	Body	SC 480
2	Bonnet	SC 480
3	Seat	SUS 304
4	Ball Float	SUS 304
5	Lever	SUS 304
6	Disc	SUS 304
7	Lever Bracket	SUS 304
8	Nut	SUS 304
9	Drain Plug	SS 400
10	Vent Plug	SS 400
11	Pin	SUS 304
12	Seat Gasket	NON-ASBESTOS
13	Gasket	NON-ASBESTOS
14	Bolt	SNB7
15	Name Plate	BRASS
16	Rivet	SUS 304



DIMENSIONS

UNIT : mm

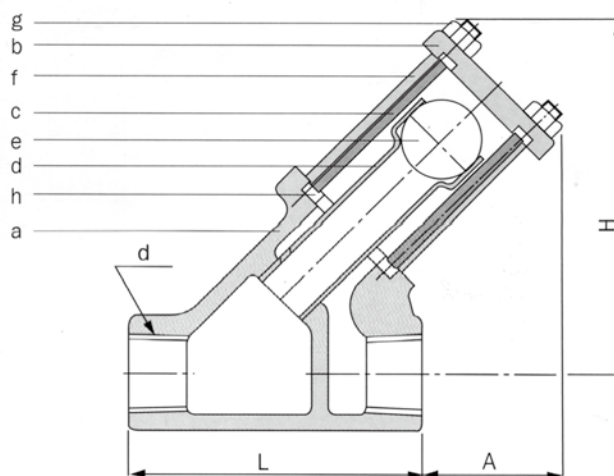
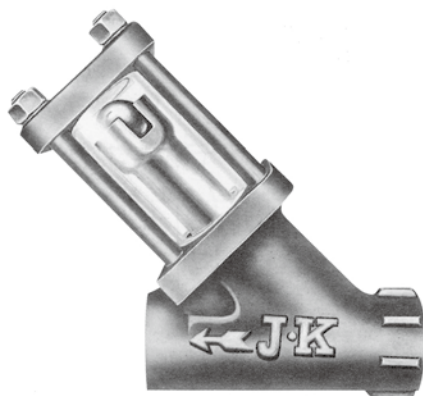
SIZE	d	L, L1	F	H1	H	PRESSURE (FLANGE)	FLANGE JIS B 2210					
							D	C	g	T	f	N-H
15A	15	105	197	84	191	10K FF, 16K FF	95	70	-	12	-	4-15
25A	25	105	197	84	191	10K FF, 16K FF	125	90	-	14	-	4-19

FLOW SIGHT

Model
JSC-BT11

Sight Check

for condensate



Model JSC-BT11[JKS-CK] sight check is a device to be used for visually checking the conditions and leakage of steam trap whether in normal blow or not, being installed after the steam trap individually. When the fresh steam flows into a condensate receiving tank, it is sure that a steam trap allows steam leak. It is, however, difficult to find out and countermeasure the troubled unless any checking device is installed. In the case, JSC-BT11[JKS-CK] gives an opportunity to affirm the working attitude of the steam trap and the overall situation of steam system.

In case of being oxygen or dioxide carbon components contained in steam, care should be taken of a precautionary measure for no deposit accumulated at the inside of glass, reviewing the feed water system to the boiler.

Constructionally JSC-BT11[JKS-CK] is used even as a check valve, especially outlet flow being lifted upward higher than inlet flow.

Caution

At installing the sight check, be sure to keep the distance at least 1m long after the steam trap to protect the glass of sight check from the impact when steam trap blows off abruptly.

SPECIFICATIONS

Working Pressure : Max. 10kgf/cm²(1.0MPa)
Working Temperature : Max. 220°C
Applicable fluid : Condensate
Connection : PT Screwed

DIMENSIONS

(mm)

Part	Size mm(inch)	15 (½")	20 (¾")	25 (1")
d		PT ½"	PT ¾"	PT 1"
L		80	80	80
A		39	36	36
H		95	95	100
Wt(kg)		0.7	0.9	1.3

MATERIALS

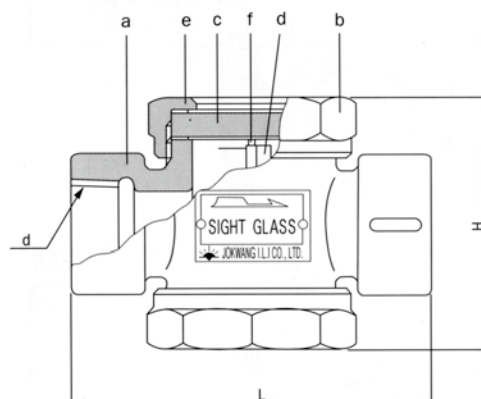
No	Part name	Standard
a	Body	Bronze
b	Cover	Bronze
c	Sight tube	Glass, heat treated
d	Discharge tube	Copper
e	Ball	Stainless steel
f	Stud bolt	Carbon steel
g	Nut	Carbon steel
h	Gasket	Synthetic rubber

FLOW SIGHT

Model JDG-NT11, NT12, FT11,
FT12, BT11, BT12

Double Sight Glass

for steam,
water and liquid



Model JDG-NT11/NT12 is device to be used visually to check the flow condition at the both sides through the transparent inside. The oscilating amount of the flapper responding to fulx is to depend upon the flow condition enough to check easily.

JDG-FT11/FT12 type is manufactured, and its flapper can prevent a back flow.

JDG-BT11/BT12 type is manufactured, it can check the flow condition by the flowing of ball.

SPECIFICATIONS

Working Pressure : Max. 10kgf/cm²(1.0MPa)
Working Temperature : Max. 220°C
Applicable fluid : Condensate, water and liquid
Connection : PT Screwed

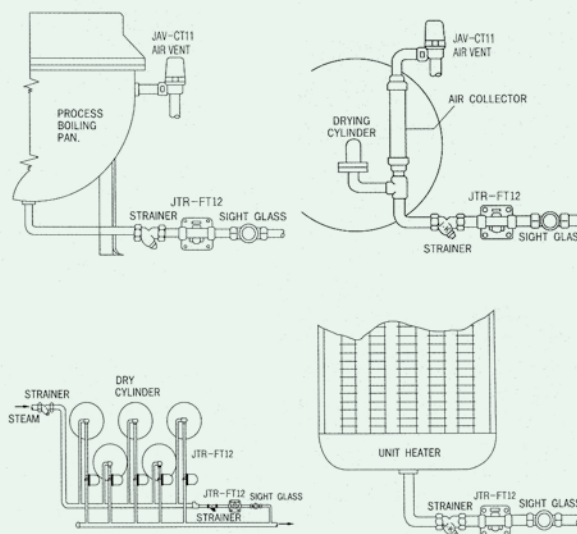
MATERIALS

No	Part name	JDG-NT12/FT12/BT12	JDG-NT11/FT11/BT11
		15A~25A	32A~50A
a	Body	Ductile iron	Cast iron
b	Cap	Ductile iron	Cast iron
c	Glass	Heat treated	
d	Flapper/Ball	Stainless steel / Synthetic resins	
e	Gasket	Non-asbestos	
f	Pin	Stainless steel	

DIMENSIONS

Size mm(inch)		(mm)					
Part		15 (1/2")	20 (3/4")	25 (1")	32 (1 1/4")	40 (1 1/2")	50 (2")
d	PT 1/2"	PT 3/4"	PT 1"	PT 1 1/4"	PT 1 1/2"	PT 2"	
L		95	95	100	155	155	161
H		82	82	82	106	106	123
Wt.(kg)		1.6	1.7	1.8	2.8	2.8	3.6
Connection		PT Screwed					

Installation example with related periphery

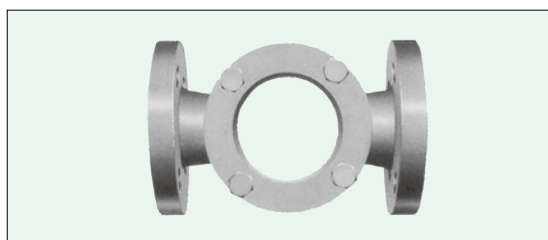


FLOW SIGHT

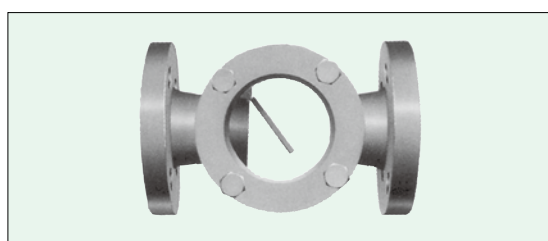
Model **JDG-NF11,
FF11, BF11**

Double Sight Glass

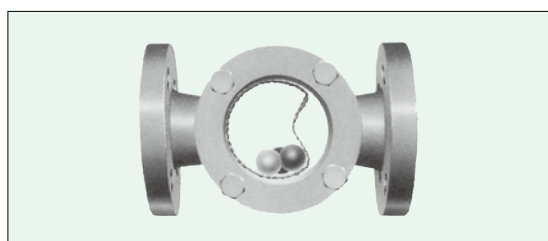
for steam,
water and liquid



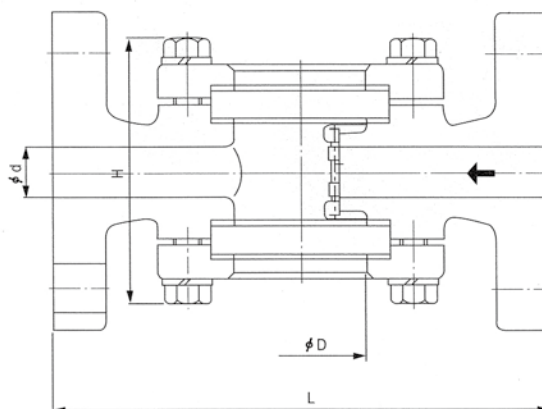
JDG-NF11



JDG-FF11(Flapper Type)



JDG-BF11(Ball Type)



JDG-NF11 is the device to be used to check the flow condition visually at the both sides through the transparent inside. The oscilating amount of the flapper flapper responding to fulx is to depend upon the flow condition enough to check easily.

JDG-FF11 type is manufactured, and its flapper can prevent a back flow.

JDG-BF11 type is manufactured, it can check the flow condition by the flowing of ball.

MATERIALS

BODY : CAST IRON
FLAPPER : STAINLESS STEEL
BALL : SYNTHETIC RESINS
GLASS : HEAT TREATMENT

SPECIFICATIONS

1. WORKING PRESSURE : 10kgf/cm²{1.0MPa}
2. DESIGN TEMP : 150°C
3. CONNECTION : FLANGED

DIMENSIONS

(mm)

Size mm(inch)	15(½")	20(¾")	25(1")	32(1¼")	40(1½")	50(2")	65(2½")	80(3")	100(4")
Part									
d	15	20	25	32	40	50	65	80	100
L	150	150	170	200	200	220	270	270	320
H	85	85	90	110	110	130	175	175	210
D	40	40	50	65	65	80	120	120	155
Connection	KS B 1511 10K FF FLANGED								

GLOBE VALVE

Model **JGL-FT11,
FF11, FF21**

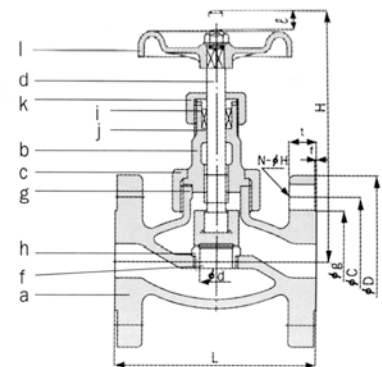
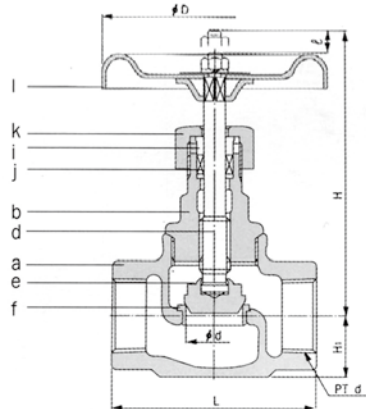
Malleable Iron Valve

for steam,
water, oil and gas

JGL-FT11



JGL-FF11
JGL-FF21



J.K Ductile Iron valve, composing the body, the bonnet, the bonnet nut and the gland nut, have superior properties than those of bronze and cast iron. The tensile strength is extremely stable for temperature changes. Those advantages are:

- Stable tensile strength against temperature changes (-30~250°C)
- Better corrosion resistance than iron and steel
- Strength and toughness equivalent to cast steel or forged steel
- Economy equivalent to iron

Excellent properties ensure J.K Malleable Iron Valve for wide applications not only for common fluids such as air, water, oil, steam but gases and similar hazardous fluids where cast iron is prohibited.

MATERIALS (Standard)

No	Part	JGL-FT11	JGL-FF11	JGL-FF21
a	Body	Ductile iron		
b	Bonnet	Ductile iron		
c	Bonnet nut	-	Ductile iron	
d	Stem	Stainless steel		
e	Disc	Stainless steel		
f	Seat	Stainless steel		
g	Gasket	PTFE		
h	Disc holder	-	Stainless steel	
i	Packing gland	Stainless steel		
j	Packing	PTFE	Non-asbestos	
k	Gland nut	Ductile iron		
i	Hand wheel	Cast iron		

SPECIFICATIONS

Model		JGL-FF11	JGL-FF11	JGL-FF21
Kind				
Design pressure		10kgf/cm ² {1.0MPa}		20kgf/cm ² {2.0MPa}
Design temperature		220°C		250°C
Working fluid		Steam, water, oil, air and gas		
Connection		PT screwed	JIS 10K FF	JIS 20K RF
Hydrostatic test pressure		15kgf/cm ² {1.5MPa}		30kgf/cm ² {3.0MPa}
Leak test		6kgf/cm ² {0.6MPa}		12kgf/cm ² {1.2MPa}
Construction	Disc	Conical type	Plate type : 15~50mm Conical type : 65~100mm	Plate type
	Bonnet	Screwed type	Union bonnet : 15~50mm Yoke bonnet : 65~100mm	

DIMENSIONS

(mm)

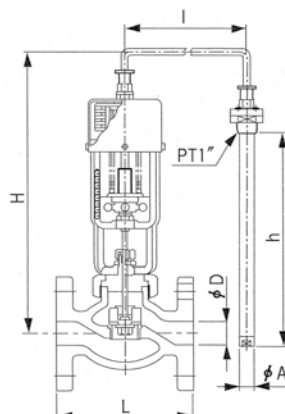
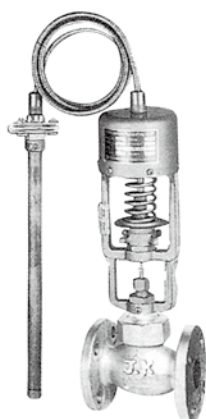
Model size part mm(inch)	JGL-FT11							JGL-FF11, JGL-FF21						
	φ d	L	H	ℓ	H _i	φ D	Wt. (kg)	φ d	L		H	ℓ	φ D	Wt.(kg)
									FF11	FF21			FF11	FF21
15(½")	15	65	85	6	18	62	0.5	15	108	112	135	9	78	2.8
20(¾")	20	80	105	8	22	78	0.7	20	117	120	145	13	88	3.2
25(1")	25	90	125	10	27	88	1.2	25	127	130	167	15	100	4.8
32(1¼")	32	105	140	13	33	100	1.8	32	140	160	180	20	110	5.8
40(1½")	40	120	155	16	37	110	2.3	40	165	180	195	22	130	8.2
50(2")	50	140	180	20	46	130	3.5	50	203	230	225	25	130	11
														11.5

• The weight and length "L" are based on our standard flanged products, and they may be subject to change to flange details upon request.

TEMPERATURE REGULATING VALVE

Model
JTC-DF11

Direct Acting Type

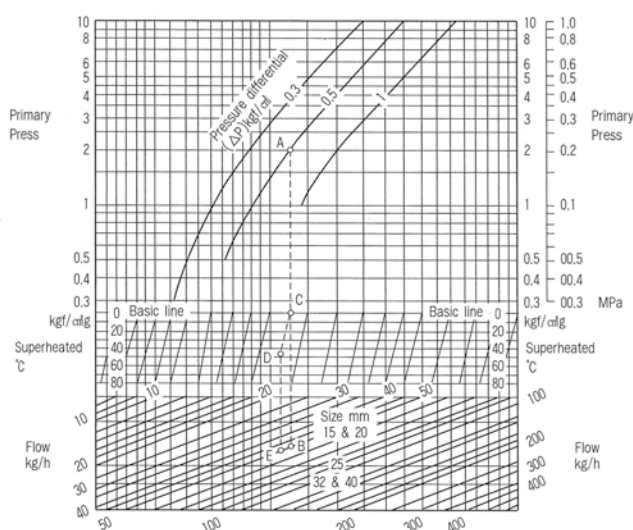


ADJUSTABLE TEMPERATURE RANGE

Adjustable temperature ranges	Withstanding temperature
40 ~ 60°C	70°C
60 ~ 80°C	90°C
80 ~ 100°C	110°C

This type is a small capacity temperature regulating valve with flange connection. This valve with single seat has the minimum leakage allowance, and is suitable for using a hot water tank, heat exchanger, etc.

SIZE SELECTION CHART (For STEAM)



HOW TO USE THE CHART

Where,

Inlet Pressure : 2kgf/cm² {0.2MPa}

Fluid : Saturated Steam

Flow : 50kg/h

Outlet Pressure : 1.5kgf/cm²{0.15MPa}

Obtain a cross point "A" on the horizontal line of Inlet pressure 2kgf/cm² {0.2MPa} and the oblique line of Pressure differential 0.5kgf/cm² {0.05MPa}. Obtain a cross point "B" By tracing down from "A" on the line of Flow 50kg/h. As "B" is between Size 15, 20 and 25mm, select safer size 25mm.

SPECIFICATIONS

MODEL		JTC-DF11			
Type		Direct Acting Type			
Size(mm)		15A 20A 25A 32A 40A			
Applicable Fluid		Steam			
Connections		Flanged (10K FF)			
Materials	Body	Ductile iron			
	Trim	Stainless & Ptfе Steel			
	Thermo Bulb	Copper Tube			
Applicable Pressure for Thermo Bulb		10kgf/cm ² {1.0Mpa}			
Length of Capillary Tube		2m (Up to 5m is Available Upon Request)			
Pressure Limit at Inlet		15A~20A 5K	25A 4K	32A 3K	40A 2K

JTC-DF11

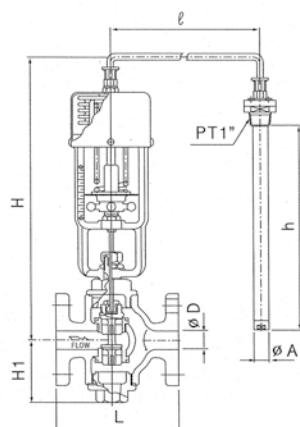
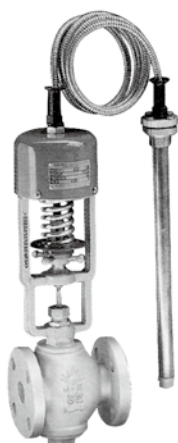
(mm)

SIZE	D	L	H	I	h	A	C
15A	15	108	405	2000	400	25.4	1.0
20A	20	117	410	2000	400	25.4	1.5
25A	25	127	415	2000	400	25.4	3
32A	32	140	423	2000	400	25.4	4
40A	40	165	435	2000	400	25.4	6

TEMPERATURE REGULATING VALVE

Model
JTC-DF12

Direct Acting Type



JTC-DF12 is for general use direct-operated and self operated temperature regulating valve.

JTC-DF12 is for heating purpose applications such as hot water tank, heat exchanger, heavy oil, heating vessel, etc.

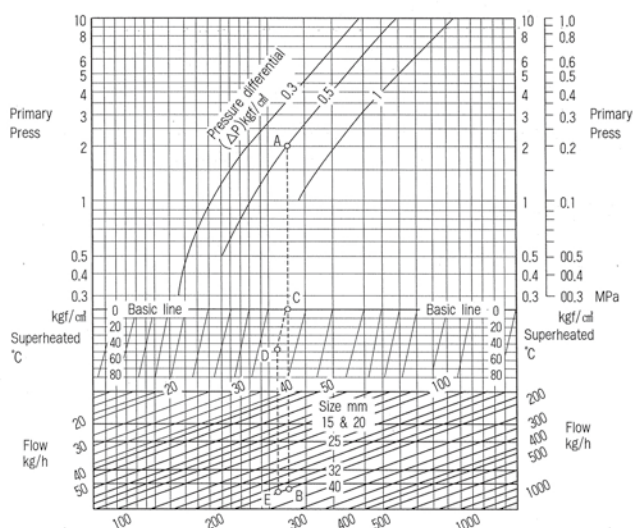
*FEATURES

1. Being direct-operated type, the construction of this valve is simple to ensure easy handling and steady operating.
2. Temperature adjusting ranges are divided by 20°C degree, so temperature deviation is very small.
3. Installation is very easy because this valve doesn't need assistant power such as electric power.

■ ADJUSTABLE TEMPERATURE RANGE

Adjustable temperature range	Withstanding temperature
40 ~ 60°C	70°C
60 ~ 80°C	90°C
80 ~ 100°C	110°C

■ SIZE SELECTION CHART (For STEAM)



HOW TO USE THE CHART

Where,

Inlet Pressure : 2kgf/cm² {0.2MPa}
 Fluid : Saturated Steam
 Flow : 200kg/h
 Outlet Pressure : 1.5kgf/cm² {0.15MPa}

In case of steam temperature at 180°C, and the rest being same as above, obtain superheated degree as follows.

$$\left(\begin{array}{c} \text{Superheated} \\ \text{steam temp.} \end{array} \right) - \left(\begin{array}{c} \text{Saturated} \\ \text{steam temp.} \end{array} \right) = \left(\begin{array}{c} \text{Superheated} \\ \text{degree.} \end{array} \right)$$

$$180^{\circ}\text{C} - 132.9^{\circ}\text{C} = 47.1^{\circ}\text{C}$$

■ SPECIFICATIONS

MODEL	JTC-DF12
Type	Direct-Operated
Size(mm)	15A~40A
Applicable Fluid	Steam
Connections	Flanged (10K FF)
Materials	Body: Ductile Iron Trim: Stainless Steel Thermo Bulb: Copper Tube
Applicable Pressure for the Thermo Bulb	10kgf/cm ² {1.0MPa}
Length of Capillary Tube	2m (Upto 5m is available upon request)
Pressure Limit at Inlet	Under Max 10K

■ DIMENSIONS

(mm)

SIZE	φ	L	H ₁	H	ℓ	h	φ A	Flang
15A	15	126	68	405	2000	400	25.4	KS B 1511 10K FF (JIS B 2210 10K FF)
20A	20	130	68	405	2000	400	25.4	
25A	25	140	68	405	2000	400	25.4	
32A	32	150	87	405	2000	400	25.4	
40A	40	150	87	405	2000	400	25.4	

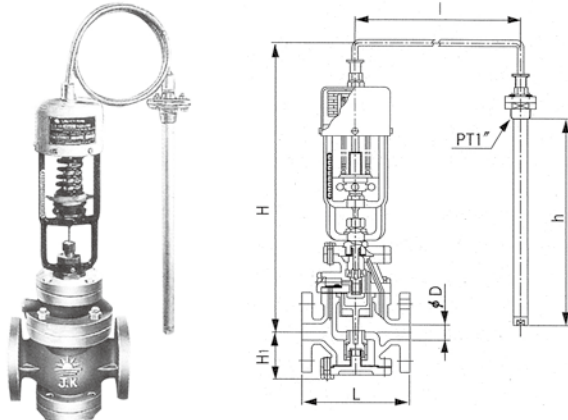
Obtain a cross point "A" on the horizontal line of Inlet pressure 2kgf/cm² {0.2MPa} and the oblique line of Pressure differential 0.5kgf/cm² {0.05MPa}. Obtain a cross point "B" by tracing down from "A" on the line of Flow 200kg/h. As "B" is between Size 40 and 50mm, select safer size 50mm. Obtain a cross point "C" on the Basic line by tracing down from "A" then move to the point "D" by correcting the position with Superheated degree 47.1°C line. Obtain a cross point "E" by tracing down from "D" on the Flow 200kg/h. As "E" is between Size 40 and 50mm, select safer size 50mm.

TEMPERATURE REGULATING VALVE

Model

JTC-PF11

Pilot Acting Type

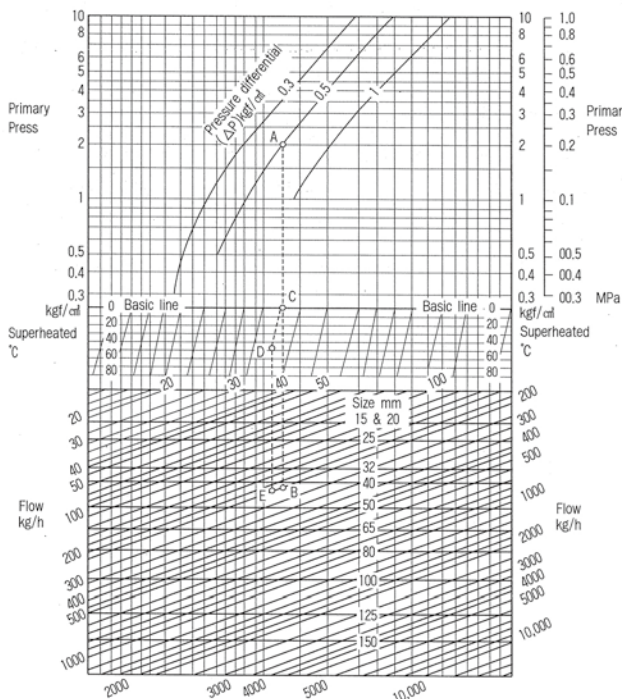


This type is a large capacity temperature regulating valve with flange connection. Its pilot acting allows a large capacity. This type is suitable for using a hot water tank, heat exchanger, and it is also suitable for controlling temperature at the large vessel.

ADJUSTABLE TEMPERATURE RANGE

Adjustable temperature range	Withstanding temperature
40 ~ 60°C	70°C
60 ~ 80°C	90°C
80 ~ 100°C	110°C

SIZE SELECTION CHART (For STEAM)



HOW TO USE THE CHART

Where,

Inlet Pressure : 2kgf/cm² {0.2MPa}
 Fluid : Saturated Steam
 Flow : 200kg/h
 Outlet Pressure : 1.5kgf/cm² {0.15MPa}

In case of steam temperature at 180°C, and the rest being same as above, obtain superheated degree as follows.

$$\left(\begin{array}{c} \text{Superheated} \\ \text{steam temp.} \end{array} \right) - \left(\begin{array}{c} \text{Saturated} \\ \text{steam temp.} \end{array} \right) = \left(\begin{array}{c} \text{Superheated} \\ \text{degree.} \end{array} \right)$$

$$180^{\circ}\text{C} - 132.9^{\circ}\text{C} = 47.1^{\circ}\text{C}$$

SPECIFICATIONS

MODEL		JTC-PF11
Type		Pilot Acting Type
Size(mm)		15A~200A
Applicable Fluid		Steam
Connections		Flanged (10K FF)
Materials	Body	Cast Iron
	Trim	Stainless Steel
	Thermo Bulb	Copper Tube
Applicable Pressure for Thermo Bulb		10kgf/cm ² {1.0MPa}
Length of Capillary Tube		2m (Upto 5m is available upon request)

DIMENSIONS

(mm)

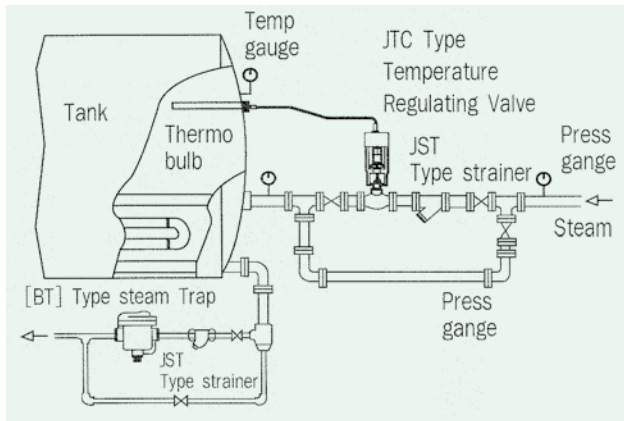
SIZE	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A
D	15	20	25	32	40	50	65	80	100	125	150	200
L	165	165	170	185	200	220	250	290	340	390	420	550
H	486	486	486	492	495	500	515	545	550	640	665	745
H1	75	75	79	85	85	92	110	130	150	180	195	250
I	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
h	400	400	400	400	400	400	400	400	400	400	400	400
Cv	1	2.5	4	6.5	9	16	25	36	64	100	144	256
Flang	KS B 1511 10K FF (JIS B 2210 10K FF)											

Obtain a cross point "A" on the horizontal line of Inlet pressure 2kgf/cm² {0.2MPa} and the oblique line of Pressure differential 0.5kgf/cm² {0.05MPa}. Obtain a cross point "B" by tracing down from "A" on the line of Flow 200kg/h. As "B" is between Size 40 and 50mm, select safer size 50mm. Obtain a cross point "C" on the Basic line by tracing down from "A" then move to the point "D" by correcting the position with Superheated degree 47.1°C line. Obtain a cross point "E" by tracing down from "D" on the Flow 200kg/h. As "E" is between Size 40 and 50mm, select safer size 50mm.

TEMPERATURE REGULATING VALVE

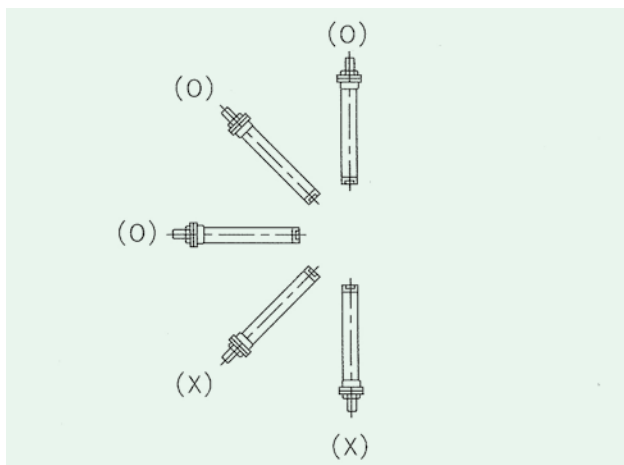
Model
JTC TYPE

Reference Data



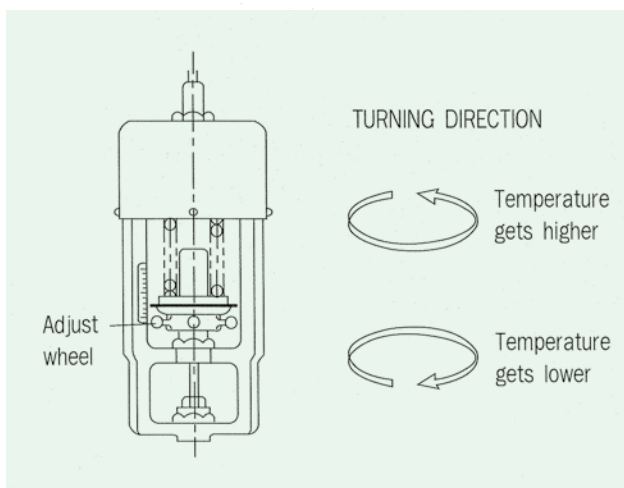
■ INSTALLATION DIAGRAM

1. The valve should be installed vertically at the horizontal pipe arrangement.
2. The direction of arrow should be accorded with the direction of fluid.
3. Before installing the temperature regulating valve, the scale should be eliminated at the pipe arrangement.
4. The strainer should be installed for preventing the scale at the inlet part.
5. The bypass pipe arrangement should be installed for eliminating the scale, checking and repairing the valve.



■ INSTALLATION ON THERMO BULB

1. More than 3/4 of the bulb should be put into the heated fluid.
2. Temperature gauge should be installed near and same height of the thermo bulb.
3. The sensor should be installed at the heated tank where is an average temperature.
4. Capillary tube should not be bent at the sharp angle.
5. There is no problem to install the sensor vertically and inclinationally. But the end of sensor should be towarded the bottom.



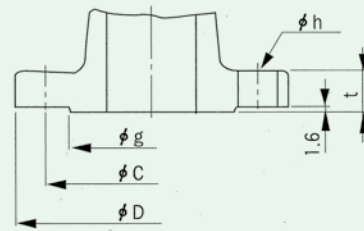
■ THE WAY OF ADJUSTING

The temperature regulating valve isn't adjusted to the set temperature at the factory. After installation the valve, the set temperature can be changed as required at the job site. The set temperature can be changed within the adjustable temperature range. After starting operation, watching the valve operating normally and the set temperature be settled as required temperature. When the temperature be settled, turning the handle to the clockwise, the valve is operating at the high temperature degree. And turning the handle to the anti-clockwise, the valve is operating at the low temperature degree.

BASIC DIMENSIONS OF PIPE FLANGES

reference data

J.K Standard flanged products comply with KS B1511 pipe flange equal to JIS B2210 basic dimensions of pipe flanges and the sizes shown in the first column "Nominal diameter" are extracted from for our products size.



Basic dimensions of 10kgf/cm² pipe flanges (mm)

Nominal dia.	Outside dia. of steel pipe applicable to	Outside dia. of flange (D)	Detailed Dimensions of Flange					Bolt holes			Nominal size of bolt
			t			Dia-meter (g)	Pitch circle dia. (c)	No.	Dia-meter (h)		
			Steel or malleable cast iron	Cast iron	f						
15	21.7	95	12	16	1	51	70	4	15	M12	
20	27.2	100	14	18	1	56	75	4	15	M12	
25	34.0	125	14	18	1	67	90	4	19	M16	
32	42.7	135	16	20	2	76	100	4	19	M16	
40	48.6	140	16	20	2	81	105	4	19	M16	
50	60.5	155	16	20	2	96	120	4	19	M16	
65	76.3	175	18	22	2	116	140	4	19	M16	
80	89.1	185	18	22	2	126	150	8	19	M16	
100	114.3	210	18	24	2	151	175	8	19	M16	
125	139.8	250	20	24	2	182	210	8	23	M20	
150	165.2	280	22	26	2	212	240	8	23	M20	
200	216.3	330	22	26	2	262	290	12	23	M20	

Basic dimensions of 20kgf/cm² pipe flanges (mm)

Nominal dia.	Outside dia. of steel pipe applicable to	Outside dia. of flange (D)	Detailed Dimensions of Flange			Bolt holes			Nominal size of bolt
			t	f	Dia-meter (g)	Pitch circle dia. (C)	No.	Dia-meter (h)	
15	21.7	95	14	1	51	70	4	15	M12
20	27.2	100	16	1	56	75	4	15	M12
25	34.0	125	16	1	67	90	4	19	M16
32	42.7	135	18	2	76	100	4	19	M16
40	48.6	140	18	2	81	105	4	19	M16
50	60.5	155	18	2	96	120	8	19	M16
65	76.3	175	20	2	116	140	8	19	M16
80	89.1	200	22	2	132	160	8	23	M20
100	114.3	225	24	2	160	185	8	23	M20
125	139.8	270	26	2	195	225	8	25	M22
150	165.2	305	28	2	230	260	12	25	M22
200	216.3	350	30	2	275	305	12	25	M22
250	267.4	430	34	2	345	380	12	27	M24

Basic dimensions of 30kgf/cm² pipe flanges (mm)

Nominal dia.	Outside dia. of steel pipe applicable to	Outside dia. of flange (D)	Detailed Dimensions of Flange			Bolt holes			Nominal size of bolt
			t	f	Dia-meter (g)	Pitch circle dia. (C)	No.	Dia-meter (h)	
15	21.7	115	18	1	55	80	4	19	M16
20	27.2	120	18	1	60	85	4	19	M16
25	34.0	130	20	1	70	95	4	19	M16
32	42.7	140	22	2	80	105	4	19	M16
40	48.6	160	22	2	90	120	4	23	M20
50	60.5	165	22	2	105	130	8	19	M16
65	76.3	200	26	2	130	160	8	23	M20
80	89.1	210	28	2	140	170	8	23	M20
100	114.3	240	32	2	160	195	8	25	M22
125	139.8	275	36	2	195	230	8	25	M22
150	165.2	325	38	2	235	275	12	27	M24
200	216.3	370	42	2	280	320	12	27	M24

Basic dimensions of 40kgf/cm² pipe flanges (mm)

Nominal dia.	Outside dia. of steel pipe applicable to	Outside dia. of flange (D)	Detailed Dimensions of Flange			Bolt holes			Nominal size of bolt
			t	f	Dia-meter (g)	Pitch circle dia. (C)	No.	Dia-meter (h)	
15	21.7	115	20	1	55	80	4	19	M16
20	27.2	120	20	1	60	85	4	19	M16
25	34.0	130	22	1	70	95	4	19	M16
32	42.7	140	24	2	80	105	4	19	M16
40	48.6	160	24	2	90	120	4	23	M20
50	60.5	165	25	2	105	130	8	19	M16

STEEL PIPE FLANGES ANSI 16.5(1977)

reference data

ANSI CLASS 150

inch(mm)

Nominal dia.	Detailed Dimensions of Flange				Bolt holes			Bolt size
	in	mm	D	t	g	Circle dia. C	No.	
1/2	15	3.50(89)	0.44(11.2)	1.38(35)	2.38(60.5)	4	0.62(16)	M14
3/4	20	3.88(98)	0.50(14.3)	1.69(43)	2.75(70.0)	4	0.62(16)	M14
1	25	4.25(108)	0.56(14.3)	2.00(51)	3.12(79.5)	4	0.62(16)	M14
1 1/4	32	4.62(117)	0.62(15.9)	2.50(64)	3.50(89.0)	4	0.62(16)	M14
1 1/2	40	5.00(127)	0.69(17.5)	2.88(73)	3.88(98.5)	4	0.62(16)	M14
2	50	6.00(152)	0.75(19.1)	3.62(92)	84.75(120.5)	4	0.75(19)	M16
2 1/2	65	7.00(178)	0.88(22.3)	4.12(105)	5.50(139.5)	4	0.75(19)	M16
3	80	7.50(191)	0.94(23.9)	5.00(127)	6.00(152.5)	4	0.75(19)	M16
4	100	9.00(229)	0.94(23.9)	6.19(157)	7.50(190.5)	8	0.75(19)	M16
5	125	10.00(254)	0.94(23.9)	7.31(186)	8.50(216.0)	8	0.88(22)	M20
6	150	11.00(279)	1.00(25.4)	8.50(216)	9.50(241.5)	8	0.88(22)	M20
8	200	13.50(343)	1.12(28.6)	10.62(270)	11.75(298.5)	8	0.88(22)	M20
10	250	16.00(406)	1.19(30.2)	12.75(324)	14.25(362.0)	12	1.00(25)	M22
12	300	19.00(483)	1.25(31.8)	15.00(381)	17.00(432.0)	12	1.00(25)	M22
14	350	21.00(533)	1.38(35.0)	16.25(413)	18.75(476.0)	12	1.12(29)	M27
16	400	23.50(597)	1.44(36.6)	18.50(470)	21.25(539.5)	16	1.12(29)	M27

ANSI CLASS 300

inch(mm)

Nominal dia.	Detailed Dimensions of Flange				Bolt holes			Bolt size
	in	mm	D	t	g	Circle dia. C	No.	
1/2	15	3.75(95)	0.56(14.3)	1.38(35)	2.62(66.5)	4	0.62(16)	M14
3/4	20	4.62(117)	0.62(15.9)	1.69(43)	3.25(82.5)	4	0.75(19)	M16
1	25	4.88(124)	0.69(17.5)	2.00(51)	3.50(89.0)	4	0.75(19)	M16
1 1/4	32	5.25(133)	0.75(19.1)	2.50(64)	3.88(98.5)	4	0.75(19)	M16
1 1/2	40	6.12(156)	0.81(20.7)	2.88(73)	4.50(114.5)	4	0.88(22)	M20
2	50	6.50(165)	0.88(22.3)	3.62(92)	5.00(127.0)	8	0.75(19)	M16
2 1/2	65	7.50(191)	1.00(25.4)	4.12(105)	5.88(149.0)	8	0.88(22)	M20
3	80	8.25(210)	1.12(28.6)	5.00(127)	6.02(168.5)	8	0.88(22)	M20
4	100	10.00(254)	1.25(31.8)	6.19(157)	7.88(200.0)	8	0.88(22)	M20
5	125	11.00(279)	1.38(35.0)	7.31(186)	9.25(235.0)	8	0.88(22)	M20
6	150	12.50(318)	1.44(36.6)	8.50(216)	10.62(270.2)	12	0.88(22)	M20
8	200	15.00(381)	1.62(41.3)	10.62(270)	13.00(330.0)	12	1.00(25)	M22
10	250	17.50(445)	1.88(47.7)	12.75(324)	15.25(387.5)	16	1.12(29)	M27
12	300	20.50(521)	2.00(50.8)	15.00(381)	17.75(451.0)	16	1.25(32)	M30
14	350	23.00(584)	2.12(54.0)	16.25(413)	20.25(514.5)	20	1.25(32)	M30
16	400	25.50(648)	2.25(57.2)	18.50(470)	22.50(571.5)	20	1.38(35)	M33

CONVERSION TABLE

reference data

LENGTH

cm	m	km	in	ft
1	0.01	0.01	0.3937	0.0328
100	1	0.001	39.371	3.2809
100,000	1,000	1	39,371	3,280.9
2.54	0.02540	0.0254	1	0.08333
30.48	0.3048	0.3048	12	1
30.30	0.30303	0.3030	11.9303	0.9942

VOLUME

dm ³ or l	m ³ or kl	ft ³	(U.K.) gal	(U.S.A.) gal
1	0.001	0.03532	0.220	0.2642
1,000	1	35.317	219.95	264.19
28.315	0.2832	1	6.2279	7.4806
4.5456	0.04547	0.1606	1	1.2011
3.7852	0.03785	0.1337	0.8325	1
180.39	0.18039	6.3707	39.676	47.656
27.826	0.02783	0.9827	6.1203	7.3514

VISCOSITY

Poise = g/cm · s (CGS)	centipoise, cP	kg/m · s	kg/m · h	lb/ft · s
1	100	0.1	360	0.0672
0.01	1	0.001	3.6	0.000672
10	1,000	1	3,600	0.672
0.00278	0.278	0.0278	1	0.000187
14.88	1,488	1.488	5,356.8	1

FLOW

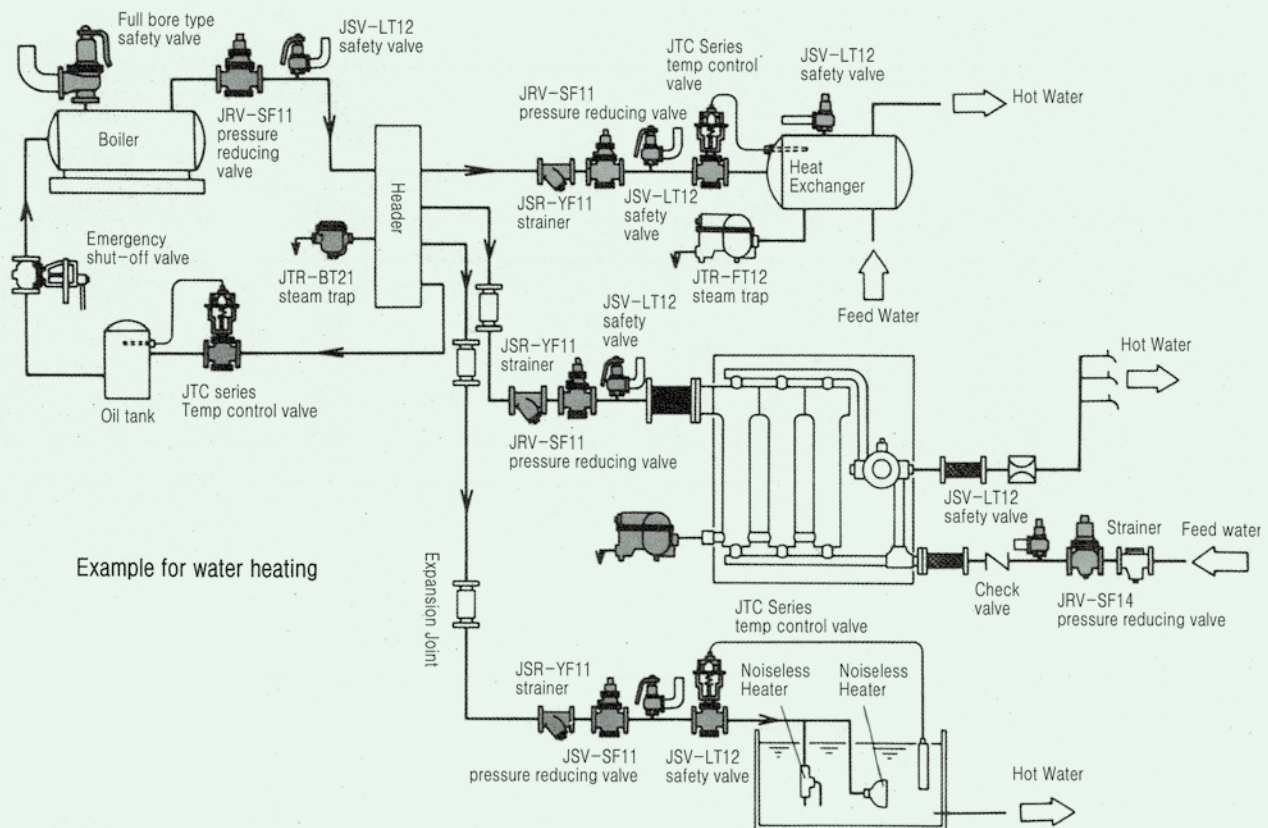
l/s	m ³ /h	m ³ /s	(U.K.) gal/min	(U.S.A.) gal/min	ft ³ /h	ft ³ /s
1	3.6	0.001	13.197	15.8514	127.14	0.03532
0.2778	1	0.02778	3.6658	4.4032	35.317	0.009801
1,000	6,600	1	13,197	15,851	127,150	35.3165
0.075775	0.27279	0.075775	1	1.2011	9.6342	0.02676
0.06309	0.2271	0.06304	0.8325	1	8.0208	0.02228
0.07865	0.02832	0.07865	0.1038	0.1247	1	0.02778
28.3153	101.935	0.02832	373.672	448.833	3,600	1

PRESSURE

kPa	bar or mgdyne/cm ²	kgf/cm ²	lb/in ²	atm	mHg	inHg	mH ₂ O (mAq)	inH ₂ O (mAq)
1	0.01	0.010197	0.14504	0.009869	0.007501	0.29530	0.10197	4.01463
100	1	1.0197	14.50	0.9869	0.7500	29.55	10.21	401.8
98.0665	0.9807	1	14.223	0.9678	0.7355	28.96	10.01	394.0
6.8948	0.06895	0.07031	1	20.06804	0.05161	2.0355	0.7037	27.70
101.325	1.0133	1.0333	14.70	1	0.760	29.92	10.34	407.2
133.322	1.3333	1.3596	19.34	1.316	1	39.37	13.61	535.67
3.3864	0.03386	0.03453	0.4912	0.3342	0.02540	1	0.3456	13.61
9.8067	0.09798	0.09991	1.421	0.0967	0.07349	2.893	1	39.37
0.24909	0.002489	0.002538	0.03609	0.002456	0.001867	0.07349	0.0254	1

STEAM TABLE

Pressure (a b s)		Temperature		Pressure (a b s)		Temperature		Pressure (a b s)		Temperature		Pressure (a b s)		Temperature	
(kgf/cm ²)	(lb/in ²)	(°C)	(°F)	(kgf/cm ²)	(lb/in ²)	(°C)	(°F)	(kgf/cm ²)	(lb/in ²)	(°C)	(°F)	(kgf/cm ²)	(lb/in ²)	(°C)	(°F)
0.02	0.28	17.2	62.9	1.60	22.8	112.7	234.9	11.00	156.4	183.2	367.8	27	383.9	227.0	440.6
0.04	0.57	28.6	83.5	1.80	25.6	116.3	241.3	11.50	163.5	185.2	365.4	28	398.2	229.0	442.2
0.06	0.85	35.8	96.4	2.00	28.4	119.6	247.3	12.00	170.6	187.1	368.8	29	412.4	230.9	447.6
0.08	1.14	41.2	106.2	2.50	35.6	126.8	260.2	12.5	177.8	188.9	372.0	30	426.6	232.8	451.0
0.10	1.42	45.5	113.9	3.00	42.7	132.9	271.2	13.00	184.9	190.7	375.3	32	455.0	236.4	457.5
0.15	2.13	53.6	128.5	3.50	49.8	138.2	280.8	13.50	192.0	192.4	378.3	34	483.5	239.8	463.6
0.20	2.84	59.7	139.5	4.00	56.9	142.9	289.2	14.00	199.1	194.1	381.4	36	511.9	243.0	469.4
0.25	3.56	64.6	148.3	4.50	64.0	147.2	297.0	14.50	206.2	195.8	384.4	38	540.4	246.2	475.2
0.30	4.27	68.7	155.7	5.00	71.1	151.2	304.0	15	213.3	197.4	387.3	40	566.8	249.2	480.6
0.35	4.98	72.3	162.1	5.50	78.2	154.7	310.5	16	227.4	200.4	392.7	42	597.2	252.1	485.8
0.40	5.69	75.4	167.7	6.00	85.3	158.1	316.6	17	241.7	20.34	398.1	44	625.7	254.9	490.8
0.45	6.40	78.3	172.9	6.50	92.4	161.2	322.2	18	256.0	206.2	403.2	46	654.1	257.6	495.7
0.50	7.11	80.9	177.6	7.00	99.5	164.2	327.6	19	270.2	208.8	407.8	48	682.6	260.2	510.4
0.60	8.53	85.5	185.9	7.50	106.7	167.0	332.6	20	284.4	211.4	412.5	50	711.0	262.7	504.9
0.70	9.95	89.5	193.1	8.00	113.8	169.6	337.3	21	298.6	213.9	417.0	55	782.1	268.7	515.7
0.80	11.4	93.0	199.4	8.50	120.9	172.1	341.8	22	312.8	216.2	421.2	60	853.2	274.3	525.7
0.90	12.8	96.2	205.2	9.00	128.0	174.5	346.1	23	327.1	218.5	425.3	65	924.3	279.35	535.1
1.00	14.2	99.1	210.4	9.50	135.1	176.8	350.2	24	341.3	220.8	429.4	70	995.4	284.5	544.1
1.20	17.1	104.3	219.7	10.00	142.2	179.0	354.2	25	355.5	222.9	433.2	75	1066.5	289.2	552.6
1.40	19.9	108.7	227.7	10.50	149.3	181.2	358.2	26	369.7	225.0	437.0	80	1137.6	293.6	560.5



- Caution at installation
- Surely flush away foreign matters such as welding slags, dirt and etc. inside piping.
- Additionally install a by-pass line between pressure reducing valve, temp. con. valve, steam trap, at worst a strainer and pressure gage.
- Insure to install a valve to follow to down stream.
- For more information about each model refer to the installations of general notes on page 52

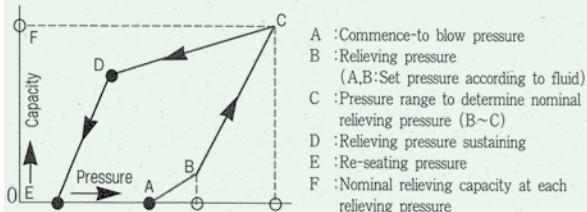
OPERATING TYPE

name	model	type	remarks
safety & relief valve	JSV-LT12	lift type	KGS approved
	JSV-HT41, JSV-HT43, HT42		
	JSV-HF11		
	JSV-FF11	full bore	bellows type available
	JSV-FF21		
pressure reducing valve	JRV-SF11	pilot piston	
	JRV-SF21		
	JRV-SF14	direct diaphragm	
	JRV-SF31	direct piston	
steam trap	JTR-DT23	thermodynamic	flange end with suffix 2 & F
	JTR-DT31		
	JTR-DT41, DF41		
	JTR-FT12, FF12	ball float	
	JTR-BF11	inverted bucket	
	JTR-BT21		
	JTR-WT11		
	air vent	JAV-CT11	
JAV-FT11		PE float	
flow sight	JSC-BT11	s. steel ball	
	JDG-FT11, FT12, BT11, BT12, FT11, FT12	flapper, ball	
globe valve	JGL-FT11, FF11, FF21	conical, plate	flange end with suffix GF
strainer	JST-YT12, JST-YT11, JST-YF11, JST-YF21	v-pattern	

SAFETY VALVE

Performance required

The character of performance required by KS B 6216 is as following symbols : Class S is safety valve requiring the blowout pressure and its principle usage is for steam, Class G is safety valve requiring the commence-to-blow pressure and applicable fluid is for gas.



Blow down pressure

The blow-down pressure of valve shall be as follows :

A) Valve class S shall be as below. However only when specified so as to use for the piping once-through boiler, reheater, etc. by the user side and appended with the mark of special specification, the blow-down pressure of class S with the blowout pressure exceeding 4kgf/cm² may be not more than 10% of the blowout pressure. B) The valve class G shall be as below:

Blow down pressure

unit: kgf/cm²

	Blowout pressure	Blow-down pressure
Class S	4 max.	0.3 max.
	over 4	7%(4%)max. of blowout pressure
	Set pressure	Blow-down pressure
Class G	2 max.	0.3 max.
	over 2	Not more than 15% of set pressure

*The figures in () can be used in accordance with the agreement between the parties concerned.

*The figures specified in class G is for the valve in which the soft seat is not used on the valve.

Adjustment

A) Set pressure

The valve are adjusted to relieve at the desired relieving pressure before leaving our works, the set pressure being stamped on the name plate. Should any alteration in set pressure be necessary, the adjusting screw on the top of the valve should be turned to the right direction (clockwise) to increase the pressure, or the left direction (anti-clockwise) to decrease the pressure.

B) Blow down pressure

If it is necessary for the valve to re-seat at a different pressure from the pressure set at our works, the blow-down pressure being stamped on the name plate, the procedure should be followed:

B.1) One ring valve

After loosening the set screw, turn the ring to the right(clockwise) to re-seat at higher pressure that set (during this procedure increasing gap between the valve skirt and the blow-down ring, blow-down amount less); for the valve to re-seat at lower pressure, the reverse procedure should be necessary.

B.2) Two ring valve

After loosening the upper set screw (lower one : set screw for pop action adjusting ring/never try to adjust unless otherwise required), turn the ring to the right(clockwise) to re-seat at lower pressure than set (during this procedure blow-down amount more); for the valve to re-seat at higher pressure, the reverse procedure is necessary.

Maintenance

Before shipment the valves have been carefully set and or water tested to ensure that seating surfaces are perfect. Care should be taken of requirements below to maintain them at the best condition.

A) Save the valves from external impacts and keep seating surfaces clean and never expose them to be affected from foreign matters even before or after installation. B) Regular performance will be necessary to lift the lever manually at about 75% or more pressure of the set pressure for preventing the spring from failure of the restoring force. C) It is recommended to lift the lever manually because when the pressure of equipment is near to the set pressure, the clamping force between the seating surfaces is very weak, so it may be cause of sticking foreign matters between seating surfaces resulting in damaged. D) When any leak is occurred by foreign matters, flush away them by lever, but when by the seating surfaces damaged, re-lapping should be necessary. E) When hydraulic pressure test on the system is required, try to remove the valve from the system. If removal, however, is impossible, be sure to secure using the test gag on the top of the valve.

PRESSURE REDUCING VALVE

Adjustment of secondary pressure

As the secondary pressure of the pressure reducing valves is not adjusted at our works, fluid does not flow as it is. The adjustment, therefore, should be made at the job site. 1) To flush away foreign matters in piping, open stop valve on the bypass line after ensuring to close stop valves on the both side of pressure reducing valve, primary and secondary(enough time need to leave nothing in the piping). 2) Remove the cap and check that the adjusting screw is free after fully closing the stop valves on the bypass line. 3) Gradually open the stop valve on the primary side, the stop valve on the secondary side leaving slightly open to let a little flow. 4) Turn the adjusting screw to the right to let the fluid pass through the valve and open gradually the stop valve at the secondary side more. 5) Turn the adjusting screw slowly to the right until the desired pressure is obtained while watching the pressure gauge on the secondary side(right turn(clockwise)-secondary pressure increase, left turn(anti-clockwise)-secondary pressure decrease). 6) After pressure adjustment secure the adjusting screw with lock nut and cap.

Recommendation of safety valve on the secondary side

A safety valve may be installed as emergency device on the secondary side of a pressure reducing valve. The discharge capacity is about 10% of the max. capacity of the pressure reducing valve unless otherwise specified.

The recommendation of set pressure on safety valve as follows:

unit: kgf/cm²

Set pressure of pressure reducing valve	Set pressure of safety valve
1 or less	+ 0.5 or more
More than 1 and less than 4	+ 0.8 or more
4 or more and less than 6	+ 1.0 or more
6 or more and 8 or less	+ 1.2 or more
8 or more	+ 1.5 or more

Installation

Install pressure reducing valve vertically on the horizontal piping providing orderly stop valve, strainer, PRV, stop valve, a relief valve and pressure gauge at the both side of pressure reducing valve. Use a globe valve for the stop valve. Gate valve for this purpose causes leakage to make disassembling pressure reducing valve for maintenance difficult. The strainers recommended is J.K products with adequate mesh upon fluids (80 mesh for steam or air, 40 mesh for liquids). Generally model BSR-S is used as a relief valve, another valve, however especially for steam, air and gas service requiring full capacity, is required in consideration of security. In case of steam or gas service, the volume of fluid expands after passing through the pressure reducing valve. Therefore, use a larger size piping at the secondary side by using a reducer to connect the valve. Firmly secure and support the pipings not to have pipe weight and thermal stress directly to the valve. Since most of claims on the valve at initial installation are caused by foreign matters such as welding slags, etc. in the pipe, be sure to flush away them through the by-pass line.

STEAM TRAP

Suitable conditions of steam trap as reliable

To satisfy various working conditions, steam trap have to meet some requirements as follows : A) separation of steam and water and no leakage of steam, B) no air binding and steam locking, C) endurance against vibration and water hammer, D) easy maintenance and inspection on construction and E) durability of working parts.

Sizing

At the sizing, take into consideration of safety factor to select the size to have 2 or 3 times as much as or more capacity than required. The ratio between the max. discharge capacity of steam trap and condensate load expected to flow out is safety factor. The factors may be affected by A) operating characteristic of the steam trap, B) accuracy of estimated condensate load and C) pressure condition at the inlet and outlet side of steam trap.

In case of any back pressure at the outlet side of the steam trap, select the size with the pressure differential between inlet and outlet pressure referring each capacity chart.

Installation & Maintenance

Horizontal installation with parallel bypass line is recommended and it may save some advantages of A) blow off larger condensate and air together at the initial work, B) flushing away foreign matters at new pipe system, trap in order to work free from external hindrance and C) easy maintenance without stop of system. Install the steam trap at the slide side so that condensate may flow into the trap easily, with considering any back pressure lessened. When vertical installation is inevitable or any back pressure is expected, install a check valve at the outlet side of the trap. To optical check of the trap increases the effect. When the trap is not in use for a long time or has possibility to get freed in the winter time, drain the remainings through the drain plug. Foreign matters will be caused in defect of the trap because of most of claims by them. A strainer before the steam trap is recommended in case of the steam trap not built-in strainer.

PRODUCTS GUIDE

■ SAFETY & SAFETY RELIEF VALVE

JSV-LT12	LOW LIFT TYPE
JSV-HT41	HIGH LIFT TYPE
JSV-HF11	HIGH LIFT TYPE
JSV-FF21	FULL BORE TYPE
JSV-FF41	FULL BORE TYPE
JSV-BF31	BALANCED BELLOWS TYPE

■ PRIMARY PRESSURE REGULATING VALVE

JRV-FF11/FF12	FOR LIQUID
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■ TEMPERATURE REGULATING VALVE

JTC-DF11	FLANGED
JTC-DF12	FLANGED
JTC-PF11	FLANGED
JTC-DF13	FLANGED

■ AIR VENT

JAV-CT11	FOR STEAM
JAV-FT11	FOR WATER
JAV-FF11	FOR OIL

■ AIR TRAP

JAT-FT11	SCREWED
JAT-FF11	FLANGED

■ STRAINER

JST-YT12	SCREWED
JST-YT11	SCREWED
JST-YF11	FLANGED
JST-YF21	FLANGED

■ PRESSURE REDUCING VALVE

JRV-SF11	FOR STEAM
JRV-SF21	FOR STEAM
JRV-ST11	FOR STEAM
JRV-SF14/SF12	FOR WATER, AIR & LIQUIDS
JRV-SF31	FOR AIR & GAS
JRV-ST14	FOR CITY WATER

■ STEAM TRAP

JTR-DT22, DF21	THERMODYNAMIC TYPE
JTR-DT31	THERMODYNAMIC TYPE
JTR-DT41/DF41	THERMODYNAMIC TYPE
JTR-DS70/DF70	THERMODYNAMIC TYPE
JTR-DT23	THERMODYNAMIC TYPE
JTR-WT11	THERMOSTATIC (WAX)
JTR-FT12/FF12	BALL FLOAT TYPE
JTR-BF11/BT21	INVERTED BUCKET TYPE

■ GLOBE VALVE

JGL-FT11	SCREWED
JGL-FF11	FLANGED
JGL-FF21	FLANGED

■ FLOW SIGHT

JSC-BT11	SIGHT CHECK
JDG-FT11/FT12/FF11	SIGHT GLASS



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