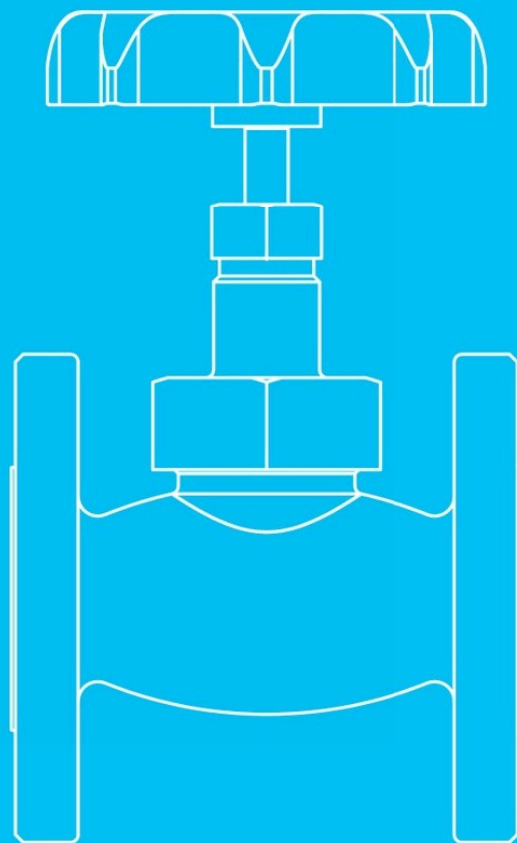


Manual Valve Drain Separator

2



Step 0 Type/Structure/Features

Please refer to this for structure and features of manual valve and separator.

Step 1 Selection

Details are on the product page.

Step 2 Sizing

Please use Drain Separator of same size with pipe.

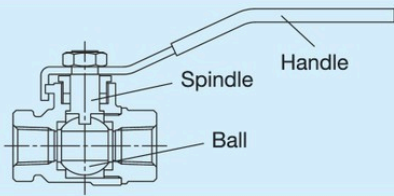
Step 3 Attention for usage

Please check some guidelines for optimal usage of Drain Separator such as installation.

Kinds and Structure of Manual Valve

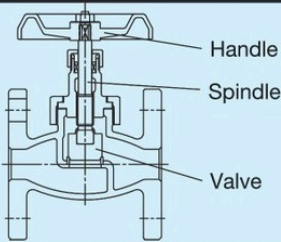
Manual Valve · Drain Separator

Ball Valve



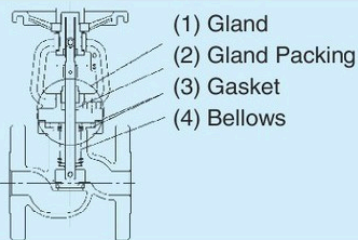
● The valve that control the fluid by turning the handle to roll the ball which connected to the spindle. Suitable to use under the condition of fully open or fully close by turning the handle 90 degree such as on-off movement.

Globe Valve



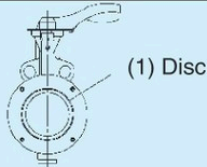
● The valve that control the fluid by moving the valve up and down by turning the handle. Suitable to use under the condition of flow control because it has excellent closing ability and can be used at intermediate opening.

Bellows Seal Valve



● The valve that meet the saving energy due to no leakage to the outside by double seal. (Bellows and Gland Packing). No need to replace or retighten gland packing. Hand wheel can be turned with small torque without interference from the spindle.

Butterfly Valve



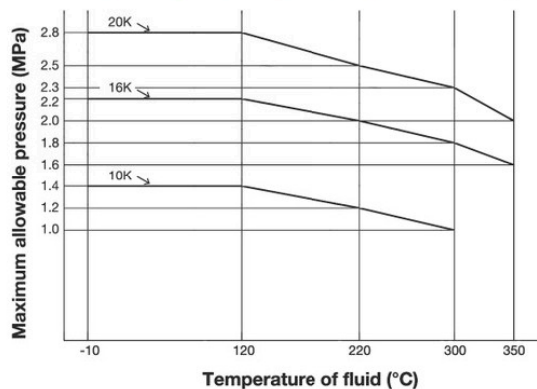
● The valve that isolates or control the fluid flow by rotating the disc, and it fully opens when the disc is rotated by a quarter turn. Suitable for many applications with its simple structure, for large diameters.

JIS B 2051 Pressure-temperature Standard (Metal Seat)






Unit: Mpa

Nominal Pressure	Maximum allowable pressure			
	Temperature of fluid			
	-10~120	220	300	350
10K	1.4	1.2	1.0	
16K	2.2	2.0	1.8	1.6
20K	2.8	2.5	2.3	2.0

The maximum allowable pressure at intermediate temperature shown in the table is determined by proportional interpolation.



Manual Valve ID-Charts

	Model	Type	Fluid	Material (Body)	Press. (MPa)	Max. Temp. (°C)	Connection	Nominal Size	Page
	BLV-1S	Ball valve	Steam, air, cold and hot water, oil	SCS14A	According to PT rating		JIS Rc	8~50A	2-5
	BLV-2SF	Ball valve	Steam, Air, cold and hot water, oil	SCS13A equivalent	According to PT rating		JIS 10K RF ASME 150 EN PN16	15~100A	2-6
	BFV-1S	Butterfly valve	Steam, Air, cold and hot water, oil	SCS	According to PT rating		Wafer (Connectable to JIS 10K, ASME 150, EN PN16)	50~300A	2-7
	GLV-10	Globe valve	Steam, Air, cold and hot water, oil	FCD450	1.4 MPa *1	220°C *1	JIS Rc	8~50A	2-8
	GLV-16	Globe valve	Steam, Air, cold and hot water, oil	FCD450	2.2 MPa *1	220°C *1	JIS Rc	15~50A	
	GLV-10F	Globe valve	Steam, air, cold and hot water, oil	FCD450	1.4 MPa *1	300°C *1	JIS10K FF	15~50A	2-9
	GLV-20F	Globe valve	Steam Air, cold and hot water, oil	FCD450	2.8 MPa *1	300°C *1	JIS20K RF	15~50A	
	BSV-2EN	Bellows seal valve	Steam, Air, cold and hot water, oil	FCD450	1.6MPa (PN16)*2 2.5MPa (PN25) *2	350°C *2	PN16 PN25	15~250A	2-10
	BSV-10F	Bellows seal valve	Steam, Air, cold and hot water, oil	FCD450	1.4 MPa *1	300°C *1	JIS10K FF	15~150A	2-12
	BSV-20F	Bellows seal valve	Steam, Air, cold and hot water, oil	FCD450	2.8 MPa *1	350°C *1	JIS20K RF	15~150A	
	BLV-1	Ball valve	Steam, air, cold and hot water, oil	Bronze	Saturated Steam: 1.0MPa Normal temperature (Below 40°C) of water, oil, air: 4.12MPa		ASME 150LB ASME 300LB EN PN25/40	15~25A	2-13
	GLV-1	Globe valve	Steam, air, cold and hot water, oil	Bronze	1.0MPa	185°C	JIS Rc	15~50A	

*1 The relation between pressure and temperature depend on P.2-3 JIS B 2051, pressure-temperature standard.

*2 Please refer to P.2-11 for PT-rating.

BLV-1S

Manual Valve · Drain Separator

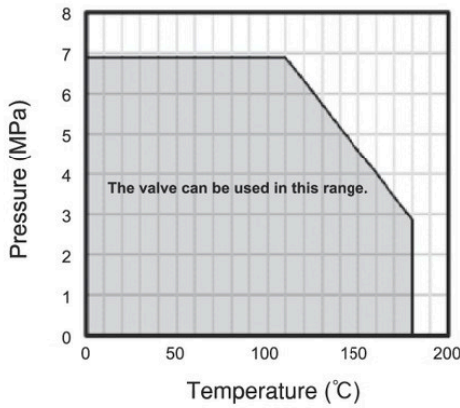
BLV-1S is a stainless steel ball valve with screwed connection, suitable for wide range of applications.



Specifications

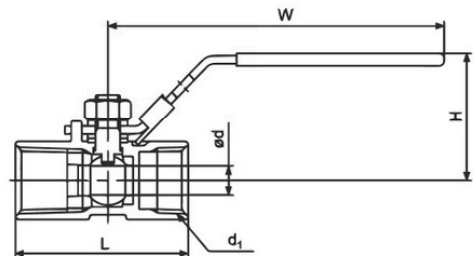
Application	Steam, Air, Cold and hot water, Oil, Other non dangerous fluid	
Maximum pressure	According to the Pressure and Temperature Rating	
Material	Body	Stainless steel (SCS14A)
	Ball	Stainless steel (SCS14A)
	Stem	Stainless steel
Connection	JIS Rc screwed NPT screwed	

Pressure and Temperature Rating



Dimensions (mm) and Weight (kg)

Nominal size	d	d1	L	H	W	Weight
8A	5	Rc, NPT 1/4	39	28.5	65	0.1
10A	7	Rc, NPT 3/8	44	31	88	0.1
15A	9.2	Rc, NPT 1/2	56.5	38	110	0.2
20A	12.5	Rc, NPT 3/4	59	40	110	0.2
25A	15	Rc, NPT 1	71	47	110	0.4
32A	20	Rc, NPT 1-1/4	78	52	110	0.5
40A	25	Rc, NPT 1-1/2	83	58.5	155	0.8
50A	32	Rc, NPT 2	99	64.5	155	1.3



BLV-2SF

■ Features

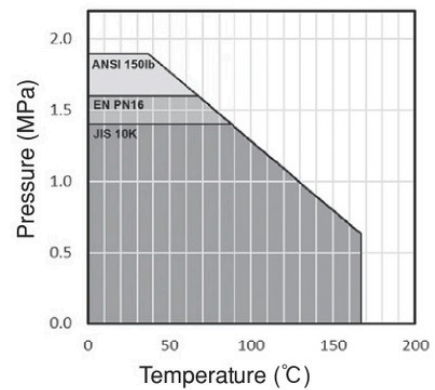
1. Body of BLV-2SF is made of stainless steel.
2. Full bore type ball valve.
3. Anti-static design prevents static electricity charging on the valve.
4. The collar on the lower end of the stem prevents the stem from popping out due to the internal pressure even if the gland is removed.



■ Specifications

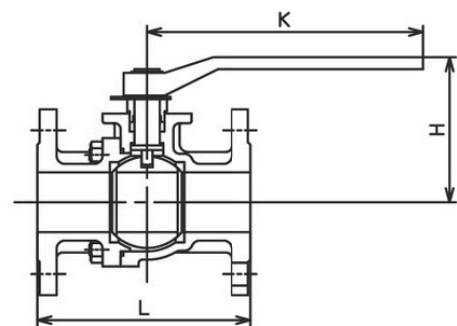
Model	BLV-2SF
Nominal size	15 - 100A
Application fluid	Steam, air, water, oil and other non-dangerous fluids
Connection	JIS 10K RF flanged ASME Class 150 flanged EN PN16 flanged
Maximum pressure Maximum temperature	According to the pressure-temperature rating
Valve material	Stainless steel
Seat material	PTFE

■ Pressure and Temperature Rating



■ Dimensions (mm) and Weight (kg)

Nominal size	L		H	K	Weight		
	JIS 10K ANSI 150lb	EN PN16			JIS 10K	ANSI 150lb	EN PN16
15A	108	130	73	145	1.9	1.6	2.1
20A	117	150	79	145	2.3	1.9	2.8
25A	127	160	91	165	3.8	2.8	4.3
32A	140	180.3	94	165	4.8	3.7	5.8
40A	165	200	113	230	6.5	5.9	7.5
50A	178	230	122	230	8.6	8.5	10.2
65A	190	290	144	230	12.7	12.6	15
80A	203	310	151	320	17.8	18.1	20.7
100A	229	350	165	320	24	28.2	28.5



BFV-1S

■ Features

1. BFV-1S is a high performance butterfly valve with stainless steel body.
2. Double-eccentric structure provides excellent sealing and long service life.

■ Specifications

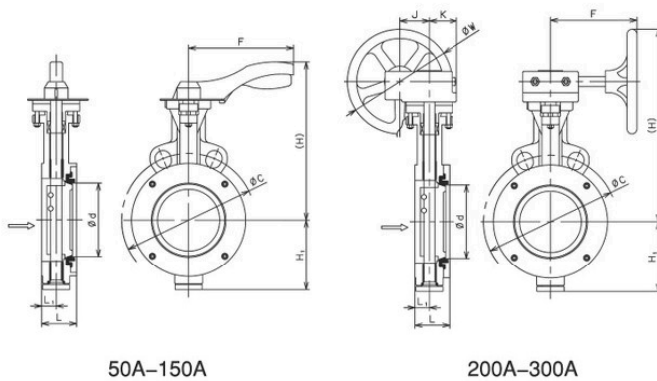
Model		BFV-1S
Nominal size		50-150A (lever operated), 200-300A (gear operated)
Application fluid		Steam, air, water, oil and other non-dangerous fluids
Maximum pressure		According to the pressure-temperature rating
Maximum temperature		
Material	Body	Stainless steel
	Disc	Stainless steel
	Seat	PTFE
Connection		Wafer (connectable to JIS10K, ASME Class 150 and EN PN16 flanges)



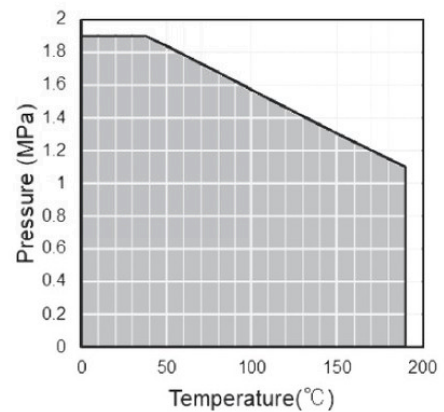
■ Dimensions (mm) and Weight (kg)

Nominal size	d	L	L1	H	H1	F	C			Weight (kg)
							JIS 10K	EN PN16	ANSI 150	
50A	50	43	18	212	72	210	120	125	120.5	3.5
65A	59	49	22	227	80	210	140	145	139.5	4.5
80A	72	49	22	237	87	210	150	160	152.5	5
100A	96	54	23	252	102	210	175	180	190.5	7
125A	120	56	24	273	120	250	210	210	216	9
150A	142	56	24	295	132	250	240	240	241.5	12

Nominal size	d	L	L1	H	H1	F	J	K	W	C			Weight (kg)
										JIS 10K	EN PN16	ANSI 150	
200A	190	64	27	306	167	210	53	57	260	290	295	298.5	24
250A	238	71	32	370	205	210	66	77	300	355	355	362	40
300A	282	81	36	407	245	210	66	77	300	400	410	432	55



■ Pressure Temperature Rating



Use the valve within this range.

GLV-10

10K 16K 20K Bronze **Ductile**

Specifications

Application	Steam, Air, Cold and hot water, oil, other non-dangerous fluids	
Maximum pressure	1.4 MPa *1	
Maximum temperature	220°C *1	
Material	Body	Ductile cast iron
	Bonnet	Ductile cast iron
	Disc	SUS410 equivalent
Connection	JIS Rc	

*1 The relation between pressure and temperature depend on P.2-3 JIS B 2051, pressure-temperature standard.

· Valve is closed at the time of shipment from the factory.

Dimensions (mm) and Weights(kg)

Nominal Size	d	D	L	H	I	Weights (kg)
8A	Rc 1/4	63	65	100	6	0.5
10A	Rc 3/8	63	65	100	6	0.5
15A	Rc 1/2	63	65	100	6	0.5
20A	Rc 3/4	70	80	110	7	0.7
25A	Rc 1	80	90	126	8	1.0
32A	Rc 1 1/4	100	105	148	10	1.7
40A	Rc 1 1/2	100	120	160	11	2.3
50A	Rc 2	125	140	192	15	3.6

GLV-16

10K **16K** 20K Bronze **Ductile**

Wetted parts of GLV-16 are made of ductile cast iron.
Widely applicable for steam, air, water or oil application.

Specifications

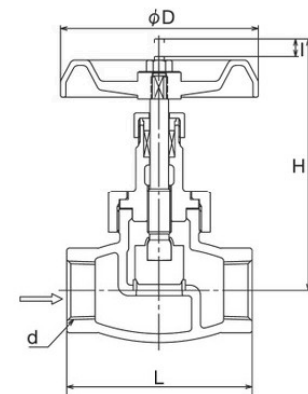
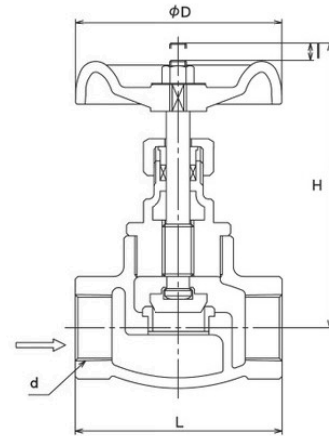
Application	Steam, Air, Cold and hot water, Oil, Other non dangerous fluids	
Maximum pressure	2.2 MPa *1	
Maximum temperature	220°C *1	
Material	Body	Ductile cast iron
	Bonnet	Ductile cast iron
	Disc	Stainless steel
Connection	JIS Rc screwed	

* The relation between pressure and temperature depend on P.2-3 JIS B 2051, pressure-temperature standard.

* Valve is closed at the time of shipment from the factory.

Dimensions (mm) and Weights (kg)

Nominal size	d	L	H	D	Weight
15A	Rc 1/2	75	126	83	0.9
20A	Rc 3/4	90	135	105	1.1
25A	Rc 1	105	150	112	1.7
32A	Rc 1-1/4	120	162	132	2.7
40A	Rc1-1/2	135	183	132	3.8
50A	Rc 2	160	186	132	5.6



GLV-10F, 20F

Manual Valve · Drain Separator

- 10K 16K 20K Bronze Ductile

■ Specification

Model	GLV-10F	GLV-20F
Application	Steam, Air, cold and hot water, oil, other non-dangerous fluid	
Nominal Size	15A-50A	
Maximum pressure	1.4 MPa *1	2.8 MPa *1
Maximum temperature	300°C *1	300°C *1
Material	Body	Ductile cast iron
	Bonnet	Ductile cast iron
	Valve	SUS403 SUS304+Stellite
Connection	JIS 10KFF	JIS 20KRF

* The relation between pressure and temperature depend on P.2-3 JIS B 2051, pressure-temperature standard.

* Valve is closed at the time of shipment from the factory.

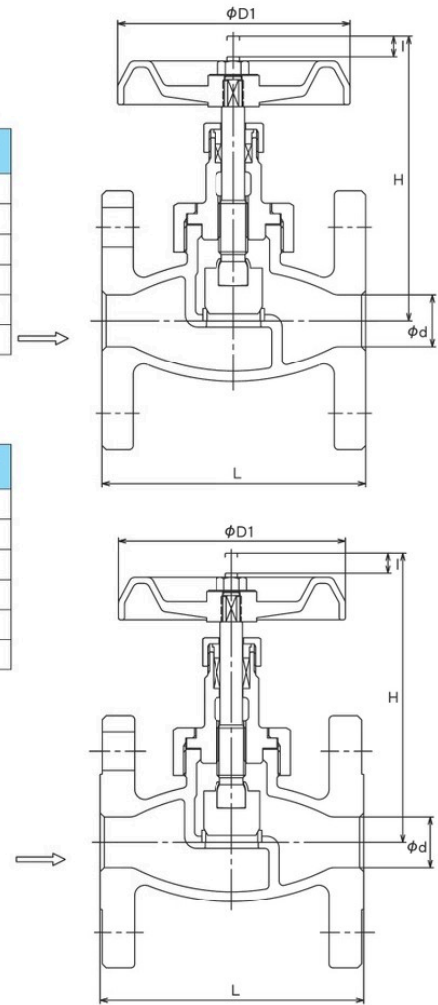
■ Dimensions (mm) and Weights (kg)

· GLV-10F

Nominal Size	d	D1	L	H	I	Weights (kg)
15A	15	83	108	126	6	2.1
20A	20	105	117	135	7	2.6
25A	25	112	127	150	8	4.1
32A	32	132	140	162	9	5.6
40A	40	132	165	183	11	6.8
50A	50	132	203	186	13	9.1

· GLV-20F

Nominal Size	d	D1	L	H	I	Weights (kg)
15A	15	83	110	126	6	2.2
20A	20	105	120	135	7	2.8
25A	25	112	130	150	8	4.2
32A	32	132	160	162	9	5.8
40A	40	132	180	183	11	6.9
50A	50	180	230	186	13	9.8



BSV-2EN

■ Features

1. Non-rising handwheel: Free from foreign substance trouble because most threaded surface is covered.
2. No leakage by two-stage sealing of double bellows and gland packing.
3. Gland packing does not need retightening nor applying pressure on spindle, thus handwheel can be turned with small torque without interference from the spindle.
4. Maintenance-free: No need to replace or retighten gland packing.



■ Specifications

Model		BSV-2EN	
Application		Steam, Air, Cold and hot water, Oil, Other non-dangerous fluids	
Nominal size		15A-200A *1	
Max. pressure		1.6 MPa *2	2.5 MPa *2
Max. temperature		350°C *2	
Material	Body	Ductile Cast Iron *3	
	Bonnet	Ductile Cast Iron	
	Valve	Stainless steel	
	Valve seat	Stainless steel	
	Bellows	Stainless steel (SUS316Ti)	
Connection		EN 1092-2 PN16	EN 1092-2 PN25

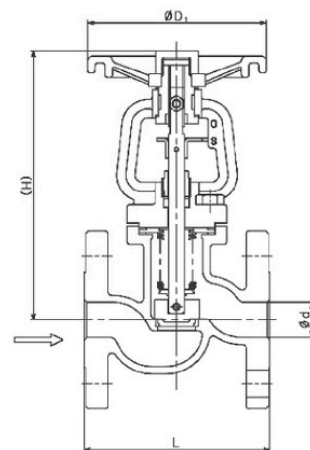
*1 If 250A is needed, please contact us.

*2 According to PT rating.

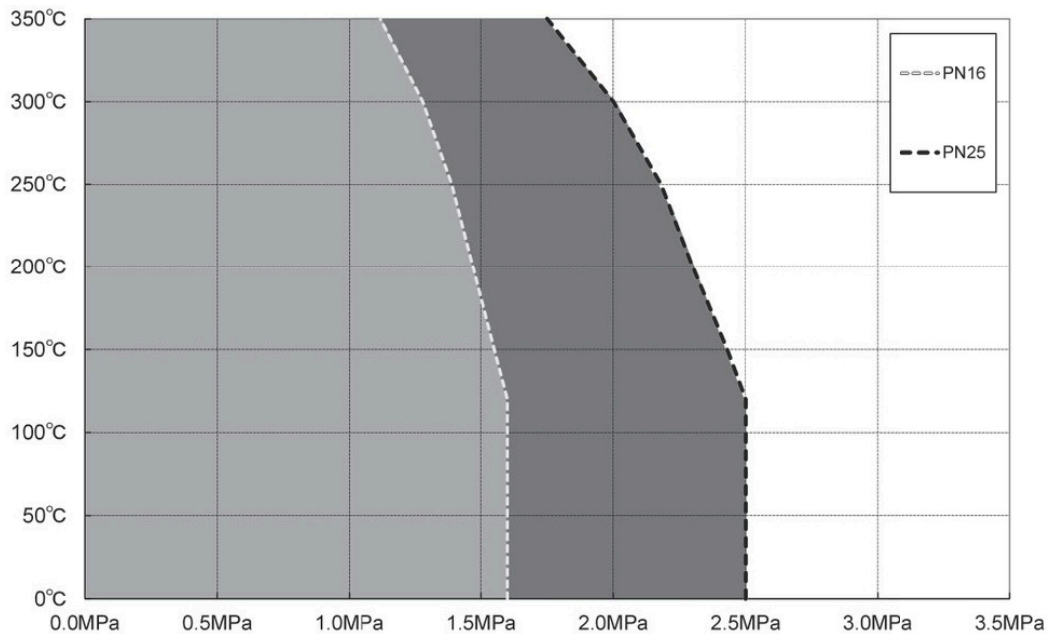
■ Dimensions (mm) and Weights (kg)

Nominal size	L	H	Weight
15A	130 (130)	184 (184)	3.2 (4.0)
20A	150 (150)	184 (184)	3.9 (4.5)
25A	160 (160)	188.5 (188.5)	4.6 (5.5)
32A	180 (180)	193 (193)	6.5 (8.0)
40A	200 (200)	235.5 (235.5)	9.0 (11.5)
50A	230 (230)	235.5 (235.5)	11.0 (14.0)
65A	290 (290)	252.5 (252.5)	15.8 (18.0)
80A	310 (310)	272.5 (272.5)	20.5 (22.0)
100A	350 (350)	348 (348)	35.0 (35.0)
125A	400	358.5	49
150A	480	440.5	70
200A	600	570.5	122

- Face-to-face dimension: EN 558-1 series1.
- The number in parenthesis are for PN25.



■ Pressure and Temperature Rating



- This chart shows PT rating of PN16 and PN25 for ductile cast iron flanges according to EN 1092-2.
- BSV-2EN PN16 flanged can be used in lightly highlighted area. BSV-2EN PN25 flanged can be used in both light and dark highlighted areas.
- If detailed values of maximum fluid temperature and maximum pressure are needed, please see the following table:

Acc to EN 1092-2		Temperature [°C]					
Material	PN	-10 up to 120	150	200	250	300	350
Ductile cast iron	16	1.60 MPa	1.55 MPa	1.47 MPa	1.39 MPa	1.28 MPa	1.12 MPa
	25	2.50 MPa	2.43 MPa	2.30 MPa	2.18 MPa	1.25 MPa	1.75 MPa

BSV-10F,20F

10K 16K 20K Bronze Ductile

Specifications

Model		BSV-10F	BSV-20F
Application		Steam, Air, cold and hot water, oil, other non-dangerous fluid	
Maximum pressure		1.4 MPa *1	2.8 MPa *1
Maximum temperature		300°C *1	350°C *1
Material	Body	Ductile cast iron	
	Bonnet	Ductile cast iron	
	valve	Stainless steel	
	Bellows	Stainless steel (SUS316Ti)	
Connection		JIS 10KFF	JIS 20KRF

* The relation between pressure and temperature depend on P.2-3 JIS B 2051, pressure-temperature standard.

* Valve is closed at the time of shipment from the factory.



2

Manual Valve · Drain Separator

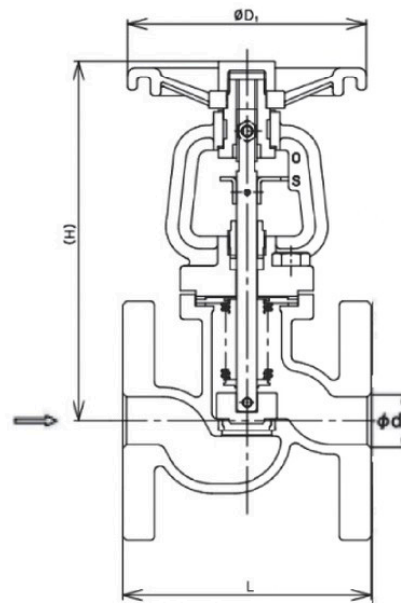
Dimensions (mm) and Weights (kg)

· BSV-10F

Nominal Size	d	H	D1	L	Weights (kg)
15A	15	184	125	108	3.5
20A	20	184	125	117	4.0
25A	25	188.5	125	127	5.5
32A	32	193	125	140	6.5
40A	40	235.5	180	165	9.5
50A	50	235.5	180	203	11.5
65A	65	252.5	200	216	15.0
80A	80	272.5	200	241	18.5
100A	100	348	250	292	30.0
125A	125	358.5	300	356	48
150A	150	440.5	400	406	67
200A	200	570.5	450	495	115

· BSV-20F

Nominal Size	d	H	D1	L	Weights (kg)
15A	15	184	125	110	4.0
20A	20	184	125	120	4.5
25A	25	188.5	125	130	5.5
32A	32	193	125	160	7.5
40A	40	235.5	180	180	10.5
50A	50	235.5	180	230	12.5
65A	65	252.5	200	292	17.5
80A	80	272.5	200	318	22.0
100A	100	348	250	356	36.5
125A	125	380	300	400	51.0
150A	150	427	400	444	68.0



2

BLV-1

10K

16K

20K

Bronze

Ductile

Body of BLV-1 is made of bronze and ball is made of chrome-plated or stainless steel.

Widely applicable for steam, air, water or oil application

Specifications

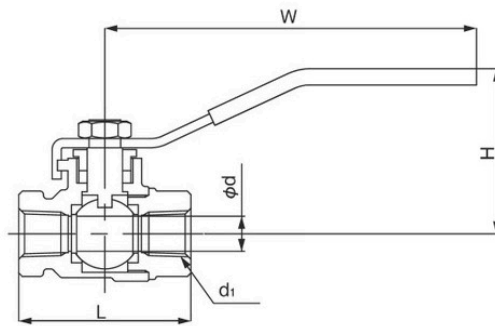
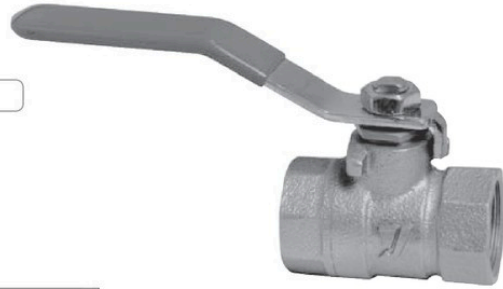
Application	Steam, Air, Cold and hot water, Oil, Other non dangerous fluid	
Maximum pressure	Saturated steam: 1.0 MPa Water, oil, air or other non-dangerous fluid at 40°C or lower: 4.12 MPa	
Material	Body	Bronze
	Ball	Cr plated brass or stainless steel
	Stem	Brass
Connection	JIS Rc screwed	

* Valve (ball) is closed at the time of shipment from factory.

* There is no restriction on flow direction.

Dimensions (mm) and Weight (kg)

Nominal size	d ₁	d	L	H	W	Weight
8A	Rc 1/4	10	49	47	106	0.2
10A	Rc 3/8	10	49	47	106	0.2
15A	Rc 1/2	12.7	53	47	106	0.3
20A	Rc 3/4	15	56	52	106	0.3
25A	Rc 1	20	68	55	106	0.5
32A	Rc 1-1/4	25	86	66	136	0.8
40A	Rc 1-1/2	31.8	96	72	136	1.2
50A	Rc 2	38	108	77	136	1.8



GLV-1

10K

16K

20K

Bronze

Ductile

Wetted parts of GLV-1 are made of bronze or dezincification resistant brass. Widely applicable for steam, air, water or oil application.

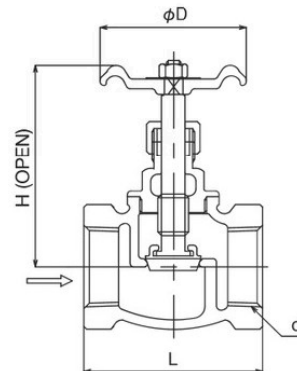
Specifications

Application	Steam, Air, Cold and hot water, Oil, Other non dangerous fluids	
Maximum pressure	1.0 MPa	
Maximum temperature	185°C	
Material	Body	Bronze
	Bonnet	Brass or bronze
	Disc	Brass or bronze
Connection	JIS Rc screwed	

* Valve is closed at the time of shipment from factory.

Dimensions (mm) and Weight (kg)

Nominal size	d	L	H	D	Weight
15A	Rc 1/2	50	76	54	0.3
20A	Rc 3/4	57	86	61	0.4
25A	Rc 1	65	100	68	0.6
32A	Rc 1-1/4	75	123	77	0.9
40A	Rc1-1/2	85	135	77	1.1
50A	Rc 2	100	159	83	1.7



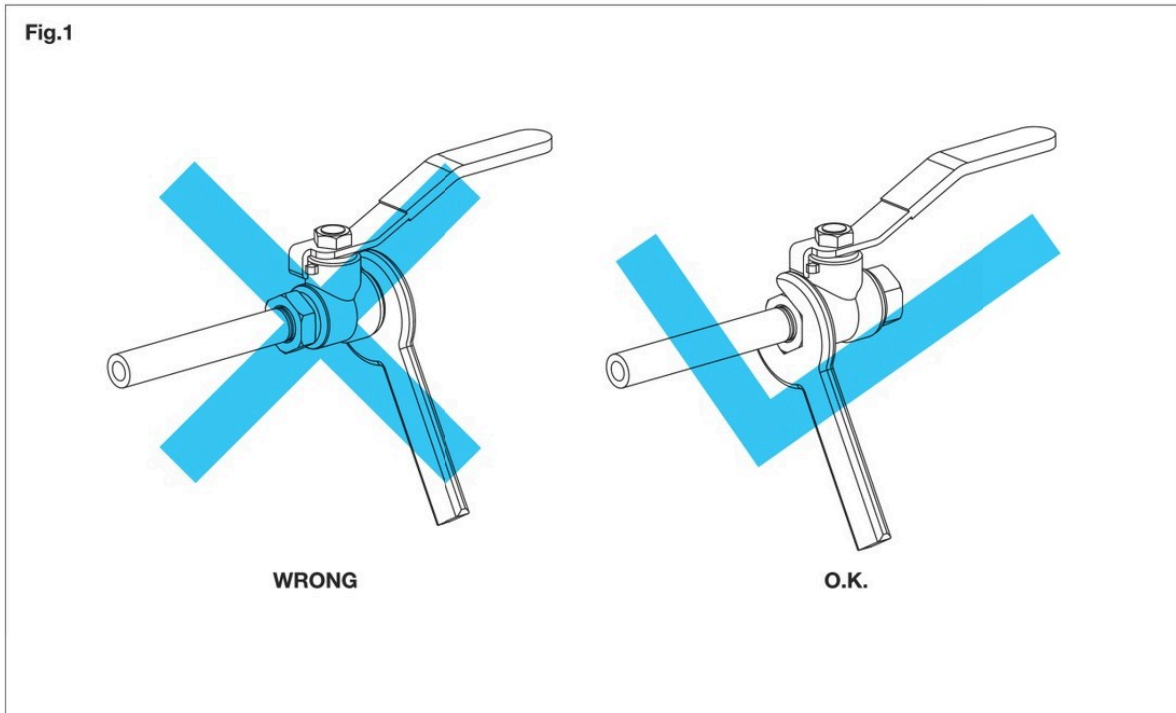
CAUTION Please refer to the manual attached to the product for procedures for installation and operation.

Manual valve

Precautions for installation

Manual valve

- Store the product indoors in a dust free, low humidity, dry and ventilated environment.
- Installation should be conducted by suitably trained personnel, wearing protective head, eye, hand and foot protection.
- To install the product, check the direction of the product so that the fluid flowing and the arrow marked on the product are in the same direction.
- Be careful that the threaded connection between the mating pipe and the internal threaded connections of the valves are in line to avoid piping stresses in the valves.
- During transportation or storage of the product leakage may occur from the gland nut due to decreasing of tightening pressure by stress relaxation of the packing. Be sure to retighten the gland nut before use.
- When connecting the product and the piping, apply seal agent (such as seal tape) to the screw part of the piping. Use seal agent appropriate for temperature, fluid, etc.
- In case that the product is expected to be frozen, be sure to conduct freezing prevention measures or water draining treatment (after use).
- While using a globe valve, there is a possibility the fluid may be contaminated with shavings of the gasket generated by the spindle's sliding actions. In the case the globe valve is used in a system that does not allow such contamination, eliminate the shavings by installing a strainer in the downstream of the globe valve.
- Ball valves can be used for "complete opening" and "complete closing". If it is used at intermediate opening, ball and ball seat may be damaged due to erosion.
- Be sure to open/close the valve by turning the handle only by hand without using a tool.
- When using the globe valve (GLV and BSV) with its valve fully open, turn the handle counterclockwise by 45 degrees from the fully open position to prevent the valve from being stuck.
- To connect the product to piping, use appropriate tool such as spanner with spanner apply part near the piping. In addition, do not make piping work with applying a pipe wrench to the product. If doing so, it leads to malfunction of the product. (see fig.1)



What is a Drain Separator ?

In a steam/air piping system, condensate (water) causes problems, such as rust and water hammer. It also decreases the dryness and heat quantity content of steam and thermal efficiency in a steam system.

The DS-1 and DS-2 are separators making use of centrifugal force and impact force to effectively separate condensate inside piping.

■ Problems related to existence of condensate in the piping system

Failure to properly handle condensate in steam piping and air/gas systems results in various problems.

Declined thermal efficiency

Condensate in a steam system reduces the effective heat quantity (latent heat) in addition to the dryness of steam. In some situations, condensate exposes an excessive load on a steam trap, making the discharge capacity insufficient. It also forms water film on the heating surface of the system, which prevents thermal conduction and reduces the system's efficiency. Additionally, the water directly carried over from a boiler (hot water before evaporation) contains a lot of impurities, and part of them form scale that blocks thermal conduction on the heating surface.

Formation of scale

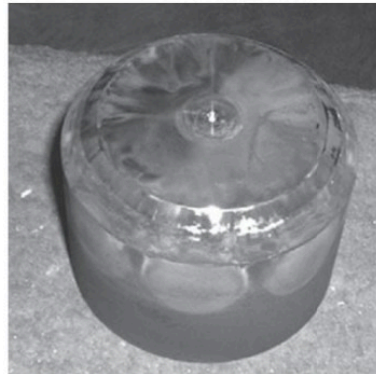
In general, carbon steel pipes for piping are widely used for steam piping. When drain or another liquid contacts them, rust forms. It is quite likely that pressure reducing valves and other control units will malfunction due to scale, including rust.

Condensate problems in air/gas systems

Piping or valve corrosion attributable to condensate causes a strainer or trap to clog, and cleaning by air blowing sometimes increases contamination against expectations.

Outbreak of water hammer

Water is higher than steam in density and slows its velocity inside piping because of its characteristics. However, condensate inside steam piping is carried by steam flowing at high velocity and may give a strong vibration or load to a valve or controlling unit when condensate strikes against it. This is called water hammer and causes damage to or wear (erosion) in units.



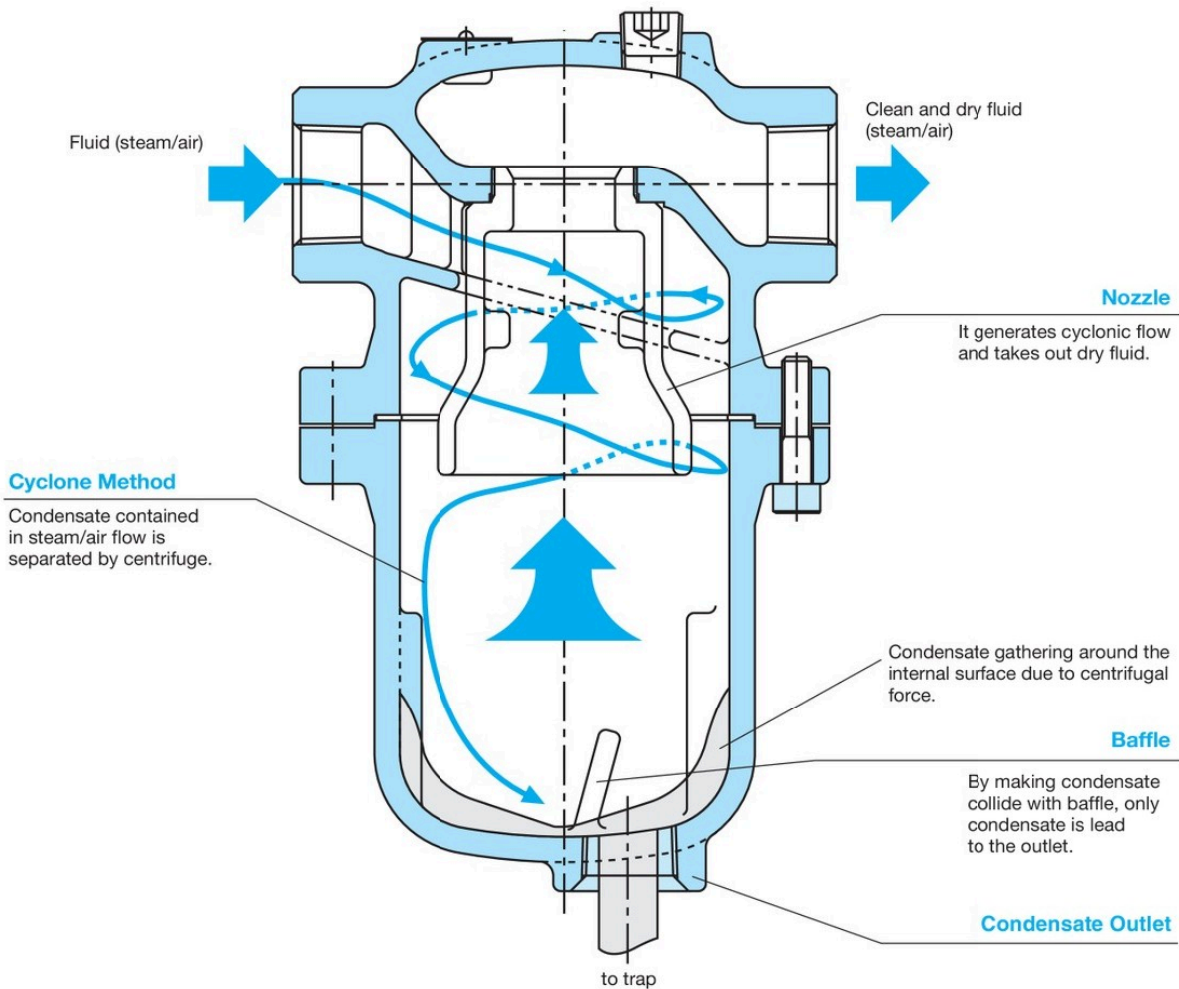
Erosion on main valve of pressure reducing valve

Structure and Principal of Drain Separator

Step
0

2

There is no moving part. The capacity does not change almost permanently, since the design itself has made this performance possible.



■ Operation

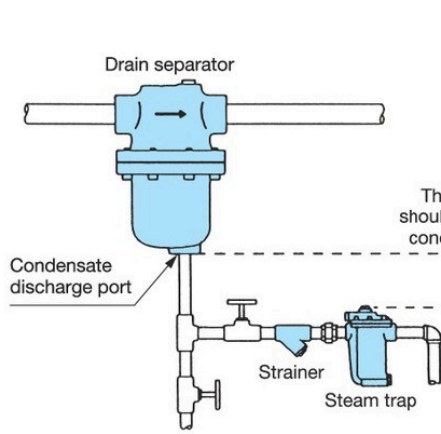
When steam or air flows into the drain separator, centrifugal force is generated by internal structure. Condensate circles along the internal surface of the body due to difference of specific gravity.



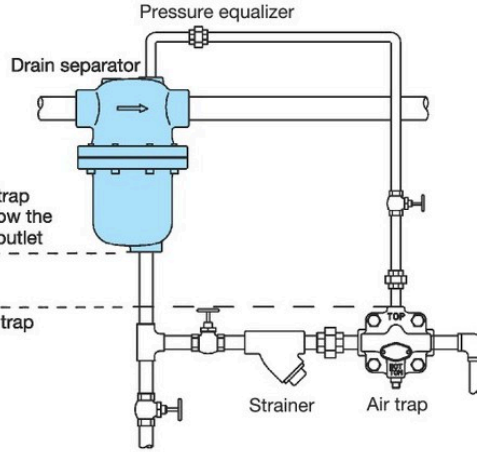
- Size of separator can be the same as piping size. Since sectional area of inside separator is larger than piping size, pressure loss is considered as zero.
- Since no moving parts are used inside, the drain separator is maintenance-free (except the deterioration of the gasket).

Guidelines for Drain Separator

<For steam>

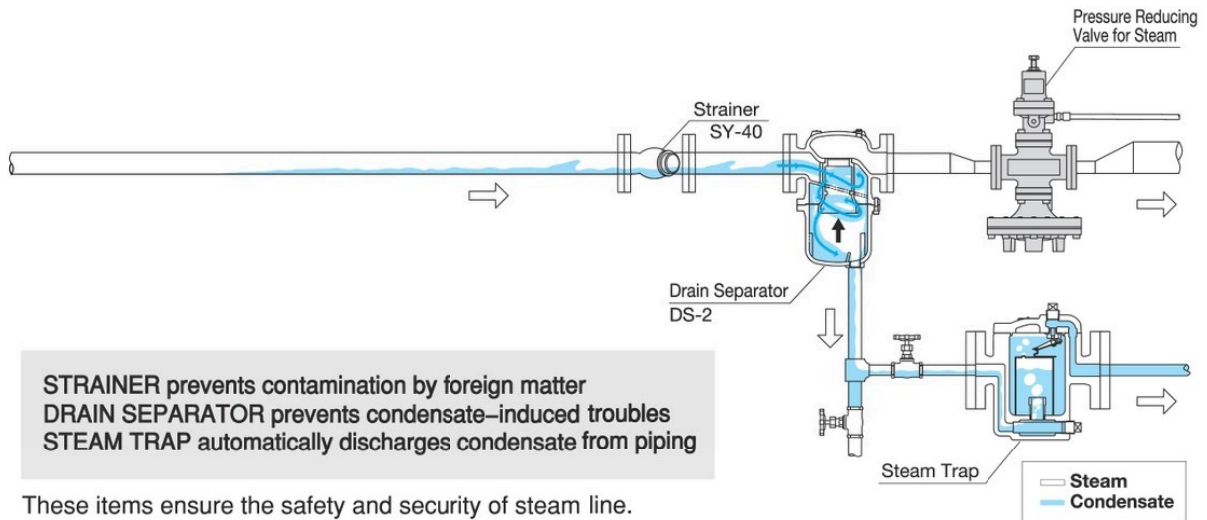


<For air>



- Connect the drain separator horizontally to piping with the condensate discharge port down.
- Install a trap under the condensate discharge port.
- Set the top of the trap lower than the condensate discharge port of the drain separator.

- Make sure to install strainer, drain separator, and steam trap in front of steam pressure reducing valve.
- Most of the problems for steam pressure reducing valve are from condensate problem or scale problem inside the pipe.



STRAINER prevents contamination by foreign matter
 DRAIN SEPARATOR prevents condensate-induced troubles
 STEAM TRAP automatically discharges condensate from piping

These items ensure the safety and security of steam line.

DS-1,2

Condensate (drain) in steam or air piping causes a decline in thermal efficiency, water hammer, corrosion of devices, valves, pipes, and many other problems.

The DS-1 and DS-2 drain separators are capable of efficiently separating condensate from steam or air with the aid of centrifugal force generated from the configuration of the passage. In normal condition, use a separator of the same size as piping for both steam and compressed air systems.



DS-1

DS-2

■Features

1. High efficient drain separation due to cyclone type.
2. Extremely low pressure loss.
3. Trouble-free by no moving parts.

■Specifications

Model	DS-1	DS-2	
Size	15A-50A	15A-100A	150A *1
Application	Steam, Air		
Maximum pressure	2.0MPa *2 (Less than 1.0 MPa for air)		1.8 MPa *2 (Less than 1.0 MPa for air)
Maximum temperature	220°C		
Material	Body	Ductile cast iron	
	Nozzle	Cast iron	
	Receiver	Ductile cast iron	
Connection	JIS Rc screwed	JIS 10K/20K FF flanged	JIS 10KFF·JIS 20K RF

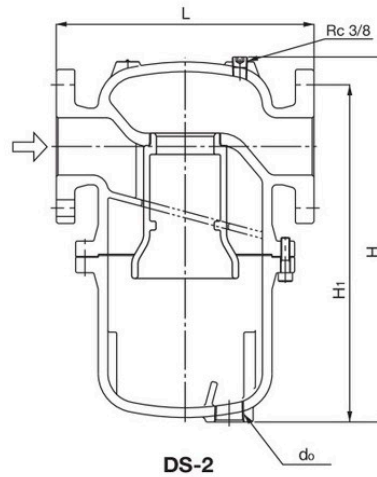
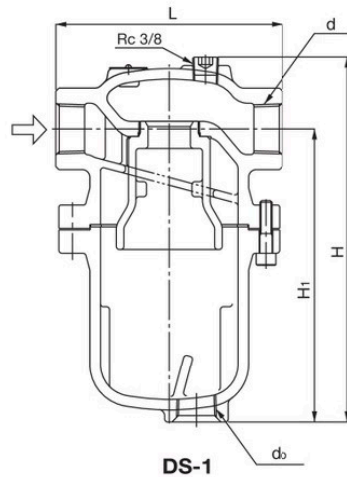
*1 150A require class 2 pressure vessel approval for use in Japan.

*2 JIS10KFF and JIS10KRF is up to 1.0MPa.

■Dimensions (mm) and Weights (kg)

Model	Nominal size	d	L	H	H ₁	d ₀	Weight
DS-1	15A	Rc 1/2	150	243	193	Rc 3/4	7.1
	20A	Rc 3/4	150	243	193	Rc 3/4	7.1
	25A	Rc 1	150	243	193	Rc 3/4	7.3
	32A	Rc 1-1/4	190	282	213	Rc 1	12.5
	40A	Rc 1-1/2	190	282	213	Rc 1	12.5
	50A	Rc 2	219	342	260	Rc 1	20.5
DS-2	15A	-	174 (178)	243	193	Rc 3/4	8.5 (8.7)
	20A	-	204 (208)	243	193	Rc 3/4	9.6 (9.8)
	25A	-	204 (208)	243	193	Rc 3/4	10.1 (10.5)
	32A	-	222 (226)	282	213	Rc 1	15.6 (16.0)
	40A	-	242 (246)	282	213	Rc 1	16.3 (16.7)
	50A	-	246 (250)	342	260	Rc 1	24.7 (24.9)
	65A	-	288 (292)	418	314	Rc 1	40.0 (40)
	80A	-	335 (343)	484	361	Rc 1-1/4	54.0 (56.0)
	100A	-	390 (402)	594	445	Rc 1-1/4	96.0 (100.0)
	150A	-	556 (568)	880	603	Rc 2	280 (290)

· The above values in parentheses are the dimensions and weights of JIS 20K flanged.



■Selecting a Nominal Size

Keep the instruction described below in mind to enable the drain separator to operate most effectively and meet working conditions to the fullest extent possible.

- Selecting a drain separator nominal size
Select the same nominal size as that of piping (nominal size of piping = nominal size of drain separator). Using a drain separator of a smaller nominal size may increase pressure loss, resulting in failure to keep the specified pressure at the inlet of the equipment.

■Guidelines for Drain Separator

1. Check the following direction of the fluid and the inlet and outlet directions of the drain separator in advance, and properly install it.
2. When connecting it to piping, securely support the product and the piping with a lifting device.
3. When installing the product, secure the space of the dimension H₃ shown below, which is required for maintenance and inspections.
*When using DS-1, 2 for steam application, it is recommended to replace the gasket every 1 to 2 years.

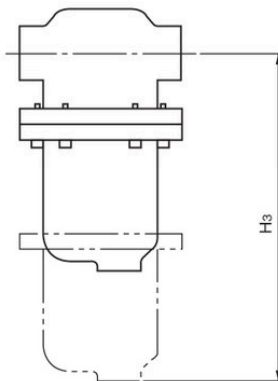


Table 1: Working flow velocity

Application	Flow velocity
Steam	30 m/sec or less
Air	15 m/sec or less

- * Keep the fluid below the specified flow velocity.
- * A higher flow velocity may cause condensate separation to fail.

Table 2: Maintenance required dimension

Model	Nominal size	H ₃
DS-1 DS-2	15A	210
	20A	210
	25A	210
	32A	240
	40A	240
DS-2	50A	290
	65A	350
	80A	410
	100A	550
	150A	1000



MEMO

Dotted lines for writing a memo.