



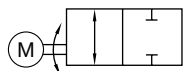
Motorized 2-port ball valve for steam with relay

MSB1D/MSB1DF Series

● Port size: Rc3/8 to Rc2



JIS symbol



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Item		MSB1D (standard bore)/MSB1DF (full bore)						
Working fluid		Steam, water						
Working pressure MPa		0 to 0.6 (refer to the working pressure in the individual specifications.)						
Proof pressure (water pressure) MPa		2.0 (≈290 psi, 20 bar)						
Ambient temperature °C		-10 (14°F) to 50 (122°F)						
Ambient humidity %		95 or less						
Mounting orientation		From vertical direction with the actuator on the top to horizontal direction. (Refer to page 784.)						
Pressurization direction		Arbitrary						
Degree of protection		IPX3 "rainproof" (standard and option T only)						
Electrical specifications		MSB1D-10	MSB1D-15	MSB1D-20	MSB1D-25	MSB1D-32	MSB1D-40	MSB1D-50
		MSB1DF-15		MSB1DF-20		MSB1DF-25	MSB1DF-32	MSB1DF-40
Rated voltage *1		100 VAC(50/60 Hz), 200 VAC(50/60 Hz)						
Apparent power	Operating	100 VAC	6.0/6.8(50/60 Hz)			14/16(50/60 Hz)		
		200 VAC	6.6/7.2(50/60 Hz)			14/16(50/60 Hz)		
	Starting	100 VAC	6.0/6.8(50/60 Hz)			14/16(50/60 Hz)		
		200 VAC	6.6/7.2(50/60 Hz)			14/16(50/60 Hz)		
Power consumption W		8			16			

MSB1D (standard bore) individual specifications 1 MPa ≈ 145.0 psi, 1 MPa = 10 bar, °F = 9/5°C + 32

Item		MSB1D-10 ^{*2}	MSB1D-15	MSB1D-20	MSB1D-25	MSB1D-32	MSB1D-40	MSB1D-50
Port size		Rc3/8	Rc1/2	Rc3/4	Rc1	Rc1 ¹ / ₄	Rc1 ¹ / ₂	Rc2
Orifice size mm		10	10	15	20	25	32	40
Cv		10	6	16	29	50	98	125
Working pressure MPa		0 (≈0 psi, 0 bar) to 0.6 (≈87 psi, 6 bar)						0 to 0.5
Fluid temperature °C		0 (32°F) to 164 (327.2°F) (no freezing)						0 to 158
Response time sec	50 Hz	10				13		
	60 Hz	8				11		
Frequency *3		1 time/min. or less						
Weight kg	Bronze body	1.3	1.3	1.5	1.6	2.6	3.1	3.9
	Stainless steel body	1.5	1.5	1.7	1.8	2.8	3.3	4.1

MSB1DF (full bore) individual specifications 1 MPa ≈ 145.0 psi, 1 MPa = 10 bar, °F = 9/5°C + 32

Item		MSB1DF-15	MSB1DF-20	MSB1DF-25	MSB1DF-32	MSB1DF-40
Port size		Rc1/2	Rc3/4	Rc1	Rc1 1/4	Rc1 1/2
Orifice size mm		15	20	25	32	40
Cv		23	51	66	114	176
Working pressure MPa		0 (≈0 psi, 0 bar) to 0.6 (≈87 psi, 6 bar)				0 to 0.5
Fluid temperature °C		0 (32°F) to 164 (327.2°F) (no freezing)				0 to 158
Response time sec	50 Hz	10		13		
	60 Hz	8		11		
Frequency *3		1 time/min. or less				
Weight kg		1.5	1.6	2.6	3.1	3.9

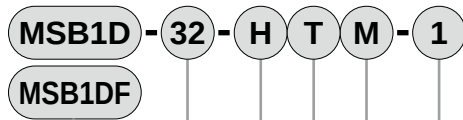
*1 : Use the product within ±10% of the rated voltage.

*2 : MSB1D-10 is a full bore.

*3 : Be sure to observe the specified frequency of use.

*4 : Consult with CKD for specifications not indicated above.

How to order



Model No.

A Port size

B Body/seat material

C Other options

*1

*2

D Manual override

*3

E Voltage

		Model No.			
Code	Description	MSB1D (Standard bore)	MSB1DF (Full bore)		
A Port size					
10	Rc3/8	*4	●		
15	Rc1/2		●		
20	Rc3/4		●		
25	Rc1		●		
32	Rc1 ¹ / ₄		●		
40	Rc1 ¹ / ₂		●		
50	Rc2				
B Body/seat material					
H	Body - bronze/seat - reinforced PTFE	●	●		
W	Stainless steel - reinforced PTFE	●			
C Other options					
	Description	Applications	Remarks		
Blank	5-conductor cable 0.5 mm ² (with output lead wire)	-	-	●	●
T	3-conductor cable 0.75 mm ² (without signal output)	When output lead wire is not required	3-conductor cabtyre cable used	●	●
B	Round terminal box (5 terminals)	When the lead wires are different in length	-	●	●
L	Round terminal box with lamp (Lit when open, 3 terminals)	Fully open confirmation by lamp	Lit only when fully open	●	●
R	Round terminal box with lamp (Lit when closed, 3 terminals)	Fully closed confirmation by lamp	Lit only when fully closed	●	●
D Manual override					
Blank	None			●	●
M	Manual override			●	●
E Voltage					
1	100 VAC(50/60 Hz)			●	●
2	200 VAC(50/60 Hz)			●	●

*1 : When selecting both without signal output (Item C T) and round terminal box (Item C B) as options, designate Item C as TB. A 3-terminal round terminal box will be provided.

*2 : Combination of Item C LR/TL/TR/BL/BR is not available.

*3 : When the manual override (Item D M) is selected, available port sizes are 32, 40 and 50 for MSB1D. For MSB1DF, available port sizes are 25, 32 and 40. Manual override is provided as standard with other port size.

*4 : When port size is 10, the valve is full bore but the model No. is MSB1D.

[Example of model No.]

MSB1D-32-HTM-2

Model: MSB1D (standard bore)

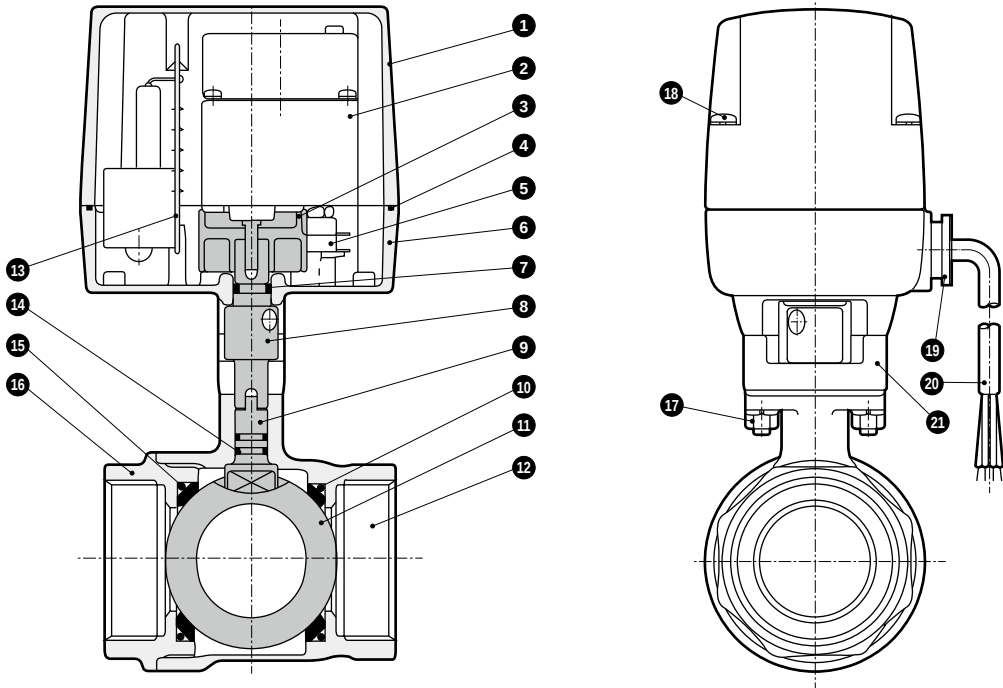
- A Port size : Rc1¹/₄
- B Body/seat material : Body - bronze/seat - reinforced PTFE
- C Other options : 3-conductor cable (without output lead wire)
- D Manual override : Selected
- E Voltage : 200 VAC (50/60 Hz)

EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/
AD
APK/
ADK
DryAir
EX-
XPLNprf
XPLNprf
HVB/
HVL
S B/
NAB
LAD/
NAD
Water-
Rela
NP/NAP/
NVP
SNP
CHB/G
MXB/G
Other valves
SWD/
MWD
DustColl
CVE/
CVSE
CCH/
CPE/D
LifeSci
Gas-
Combus
Auto-
Water
Outdoor
SpecFld
Custom
Ending

MSB1D/MSB1DF Series

Internal structure and parts list

● MSB1D/MSB1DF



No.	Part name	Material	No.	Part name	Material
1	Bonnet	ADC12 Aluminum die-casting	11	Valve ball	C3771(SUS304) Copper alloy *1 (stainless steel)
2	Geared motor	-	12	Body	CAC408/CAC407 (SCS13) Bronze casting (stainless steel casting)
3	Cam	PA Polyamide resin	13	P plate assembly	PF Phenolic resin
4	Gasket	NBR Nitrile rubber	14	O-ring	FKM Fluoro rubber
5	Micro switch	-	15	O-ring	FKM Fluoro rubber
6	Adaptor	ZDC2 Zinc alloy die-casting	16	Cap	CAC408/CAC407 (SCS13) Bronze casting (stainless steel casting)
7	O-ring	NBR Nitrile rubber	17	Hexagon nut	SWCH Carbon steel wire for cold rolling
8	Intermediate bush	SUS303 Stainless steel	18	Phillips pan head machine screw	SWCH Carbon steel wire for cold rolling
9	Shaft	SUS303(SUS304) Stainless steel (stainless steel)	19	Bushing	PF Phenolic resin
10	Ball seat	Reinforced PTFE	20	Cabletyre cable	0.5 mm ² , 5-conductor
			21	Yoke	PM-HH Phenolic resin

Materials shown in () are for stainless steel body.

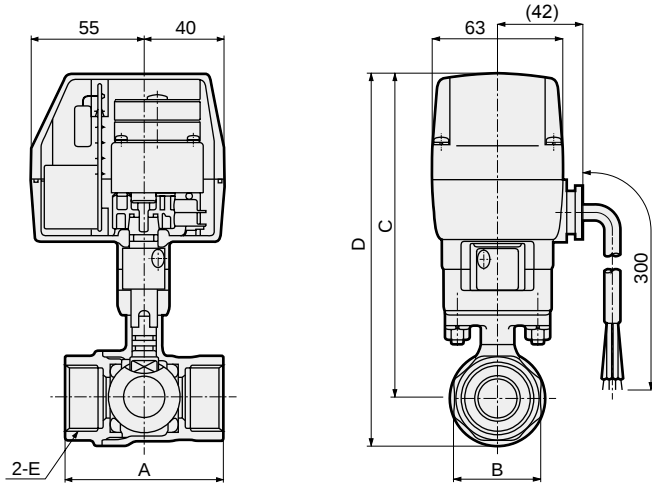
*1 : Valve ball is hard chrome plated copper alloy.

MSB1D/MSB1DF Series

Dimensions



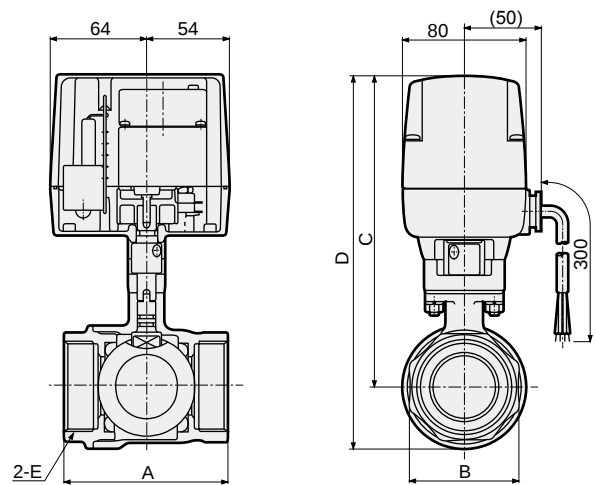
- MSB1D-10/15/20/25-*
- MSB1DF-15/20-H



Cable length 300 mm

Model No.	A	B	C	D	E
MSB1D-10-*	50(56)	24(28)	146.5	161.5(162.5)	Rc3/8
MSB1D-15-*	56	28	146.5	161.5(162.5)	Rc1/2
MSB1D-20-*	65	34	152.5	172(173)	Rc3/4
MSB1D-25-*	76	41	155.5	178.5(179.5)	Rc1
MSB1DF-15-H	65	28	152.5	172	Rc1/2
MSB1DF-20-H	71	34	155.5	178.5	Rc3/4

- MSB1D-32/40/50-*
- MSB1DF-25/32/40-H



Cable length 300 mm

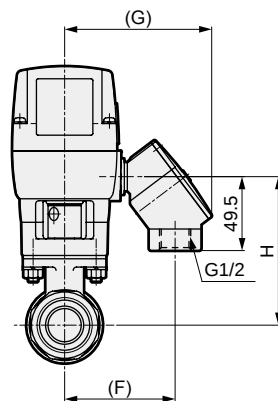
Model No.	A	B	C	D	E
MSB1D-32-*	84	50	188	215.5(217.5)	Rc1 1/4
MSB1D-40-*	94	57	194	227.5(229.5)	Rc1 1/2
MSB1D-50-*	108	70	203	242.5(243.5)	Rc2
MSB1DF-25-H	84	41	188	215.5	Rc1
MSB1DF-32-H	95	50	194	227.5	Rc1 1/4
MSB1DF-40-H	107	57	203	242.5	Rc1 1/2

*1 : Dimensions are the same even with manual override "M".

Optional dimensions



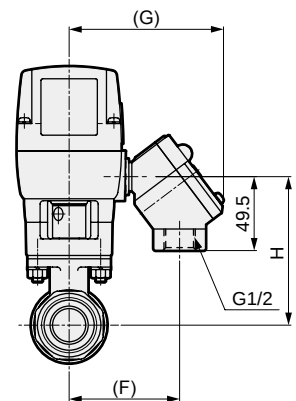
- With round terminal box
MSB1D-[bore size]-*B
MSB1DF-[bore size]-H|B



Bore size		F	G	H
MSB1D	MSB1DF			
10	-	74	98	80.5
15	-	74	98	80.5
20	15	74	98	86.5
25	20	74	98	89.5
32	25	82	106	99.5
40	32	82	106	105.5
50	40	82	106	114.5

*1 : Dimensions of the large bore size (32 to 50) are the same even with manual override "M".

- Round terminal box with lamp
MSB1D-[bore size]-*L R
MSB1DF-[bore size]-H L R



Bore size		F	G	H
MSB1D	MSB1DF			
10	-	74	102	80.5
15	-	74	102	80.5
20	15	74	102	86.5
25	20	74	102	89.5
32	25	82	110	99.5
40	32	82	110	105.5
50	40	82	110	114.5

*1 : Dimensions of the large bore size (32 to 50) are the same even with manual override "M".

EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/
AD
APK/
ADK
DryAir
EX-
XPLNprf
XPLNprf
HVB/
HVL
S B/
NAB
LAD/
NAD
Water-
Rela
NP/NAP/
NVP
SNP
CHB/G
MXB/G
Other valves
SWD/
MWD
DustColl
CVE/
CVSE
CCH/
CPE/D
LifeSci
Gas-
Combus
Auto-
Water
Outdoor
SpecFld
Custom
Ending