

OTHER GENERAL PURPOSE CONTROL SYSTEMS

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Read the precautions in the introduction carefully before stating use.

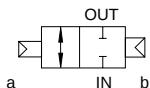
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2 port air operated ball valve Fan rotary valve

FRB/FRB2 SERIES

- Working fluid : Water, hot water, compressed air, oil
- Port size : Rc3/8, Rc1/2, Rc3/4, Rc1, Rc1¹/₄, Rc1¹/₂, Rc2, Rc2¹/₂

JIS symbol



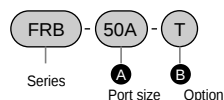
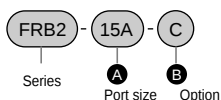
Oscillating motor incorporated, stable operation even for high viscosity fluids.

- Compact and light weight.
- High reliable air oscillating motor is used.
- Available in flammable atmosphere
- Manual override is equipped.
- Simple structure and low cost.

Specifications

Descriptions		FRB2-10A	FRB2-15A	FRB2-20A	FRB2-25A	FRB2-32A	FRB2-40A	FRB-50A	FRB-65A
Working fluid		Water, hot water, air, oil (500mm ² /s or less)							
Port size		Rc3/8	Rc1/2	Rc3/4	Rc1	Rc1 ¹ / ₄	Rc1 ¹ / ₂	Rc2	Rc2 ¹ / ₂
Orifice mm(Cv flow factor)		10(10)	10 (6)	15(16)	20(29)	25(40)	32(75)	40(75)	50(125)
Operating pressure range MPa	Water, oil	0 to 1						0 to 1.5	
	Compressed air	0 to 1						0 to 0.99	
	Hot water	0 to 1						0 to 0.4	
Withstanding pressure MPa		2.0						4.2	
Max. cycle rate cycle/min.		1 or less							
Fluid temperature °C		0 to 80 (no freezing)						5 to 40 (5 to 150 for hot water)	
Ambient temperature °C		-10 to 60						5 to 60	
Valve seat leak (1MPa water pres.) cm ³ /min		0							
Oscillating motor	Working fluid	Compressed air							
	Port size	Rc1/8						Rc1/4	
	Working pressure range MPa	0.4 to 0.7						0.3 to 0.7	
	Withstanding pressure MPa	1.05						1.0	
Installation attitude		Free							
Mass kg		0.8	0.8	1	1.1	1.4	1.9	5.7	8.0

How to order



Symbol	Descriptions
A	10A Rc3/8
	15A Rc1/2
	20A Rc3/4
	25A Rc1
	32A Rc1 ¹ / ₄
	40A Rc1 ¹ / ₂
B	Blank Standard
	C Stainless steel body

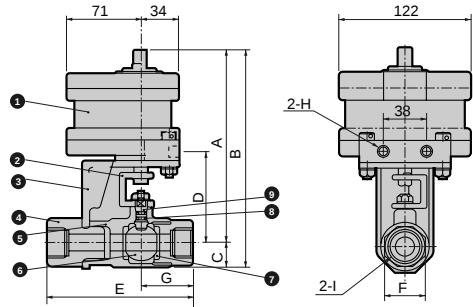
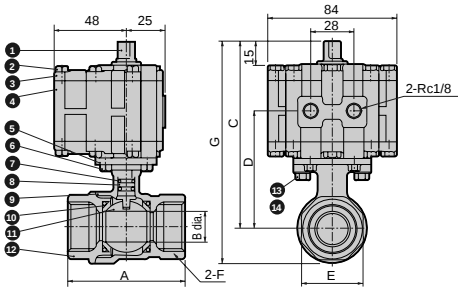
Symbol	Descriptions
A	50A Rc2
	65A Rc2 ¹ / ₂
B	Blank Standard
	T For hot water

• Stainless steel body isn't available for 10A.

Internal structure/main parts materials/dimensions

• FRB2-10A to 40A

• FRB-50/65A



Model	A	B	C	D	E	F	G
FRB2-10A	50	10	113	67.5	24	Rc3/8	128
FRB2-15A	56	10	113	67.5	28	Rc1/2	128
FRB2-20A	65	15	119	73.5	34	Rc3/4	138.5
FRB2-25A	76	20	122	76.5	41	Rc1	145.5
FRB2-32A	84	25	128	82.5	50	Rc1 1/4	155.5
FRB2-40A	94	32	134	88.5	57	Rc1 1/2	167.5

No.	Parts name	Material	No.	Parts name	Material
1	Drive shaft	S45C (Chromate treatment)	8	shaft	HC10
2	Hexagon head bolt	SWCH	9	Body	BC6
3	Cover	ADC12	10	Valve seat	PTFE
4	Cylinder	ADC12	11	Valve ball	C3771 (Chrome plated)
5	Frame	SS400 (Chromate treatment)	12	Cap	BC6
6	Hexagon head bolt	SWCH	13	Hexagon head bolt	SWCH
7	O ring *	NBR, FKM	14	Spring washer	SWRH

* Upper O ring is NBR, lower is FKM.

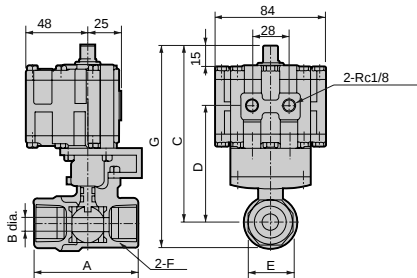
Model	A	B	C	D	E	F	G	H	I
FRB-50A	234	269	35	116	150.5	68	54.5	Rc1/4	Rc2
FRB-65A	256	303	47	138	174	86	63.5	Rc1/4	Rc2 1/2

Note) : A/B/D dimensions of T (for hot water) are 5mm longer.

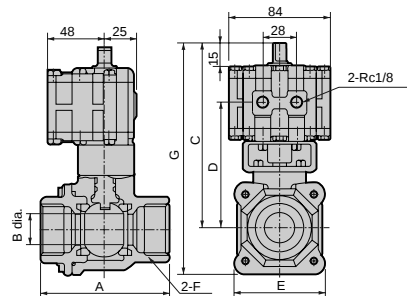
No.	Parts name	Material	No.	Parts name	Material
1	Oscillating motor (an rotary)	AC4B	8	O ring	FKM
2	Coupler	S35C (Chromate treatment)	9	Stem	C3604
3	Frame	SS400 (Chromate treatment)			
4	Body cap	C3604			
5	Body	C3771			
6	Ball	C3771 (Chrome plated)			
7	Ball seal	PTFE			

Optional dimensions

• Stainless steel body
FRB2-15A to 25A-C



• Stainless steel body
FRB2-32A/40A-C



Model	A	B	C	D	E	F	G
FRB2-15A-C	65	10	136	90.5	29	Rc1/2	152
FRB2-20A-C	80	15	140	94.5	35	Rc3/4	160
FRB2-25A-C	92	19	143	97.5	44	Rc1	167
FRB2-32A-C	110	25	176	130.5	74	Rc1 1/4	213
FRB2-40A-C	120	32	180	134.5	88	Rc1 1/2	224

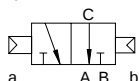
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3 port air operated ball valve Fan rotary valve

FRG/FRG2 SERIES

- Working fluid : Water, hot water, compressed air, oil
- Port size : Rc1/2, Rc3/4, Rc1, Rc1¹/₄, Rc1¹/₂, Rc2, Rc2¹/₂

JIS symbol



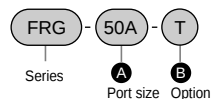
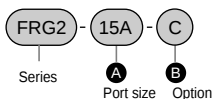
Oscillating motor incorporated, stable operation even for high viscosity fluids.

- Compact and light weight.
- High reliable air oscillating motor is used.
- Available in flammable atmosphere
- Manual override is equipped.
- Simple structure and low cost.

Specifications

Descriptions		FRG2-15A	FRG2-20A	FRG2-25A	FRG2-32A	FRG2-40A	FRG-50A	FRG-65A
Working fluid		Water, hot water, air, oil (500mm ² /s or less)						
Port size		Rc1/2	Rc3/4	Rc1	Rc1¼	Rc1½	Rc2	Rc2½
Orifice	mm (Cv flow factor)	9(3)	13(6)	18(11)	23(16)	30(28)	40(37)	50(62)
Operating pressure range	Water, oil	0 to 1					0 to 1.5	
	Compressed air	0 to 1					0 to 0.99	
	Hot water	0 to 1					0 to 0.4	
Withstanding pressure	MPa	2.0					4.2	
Max. cycle rate	cycle/min.	1 or less						
Fluid temperature	°C	0 to 80 (no freezing)					5 to 40 (5 to 150 for hot water)	
Ambient temperature	°C	-10 to 60					5 to 60	
Valve seat leak (1MPa water pres.)	cm ³ /min	0						
Oscillating motor	Working fluid	Compressed air						
	Port size	Rc1/8					Rc1/4	
	Working pressure range	0.4 to 0.7					0.3 to 0.7	
	Withstanding pressure	1.05					1.0	
Installation attitude		Free						
Pressure direction		Limited to Port C (COM) pressurized.						
Mass	kg	0.9	1.1	1.3	1.6	2.1	6.4	8.6

How to order



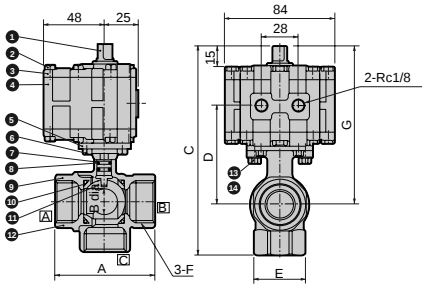
Symbol	Descriptions
A	15A Rc1/2
	20A Rc3/4
	25A Rc1
	32A Rc1 ¹ / ₄
	40A Rc1 ¹ / ₂
B	Blank Standard
	C Stainless steel body

Symbol	Descriptions
A	50A Rc2
	65A Rc2 ¹ / ₂
B	Blank Standard
	T For hot water

Internal structure/main parts materials/dimensions

- FRG2-15A to 40A

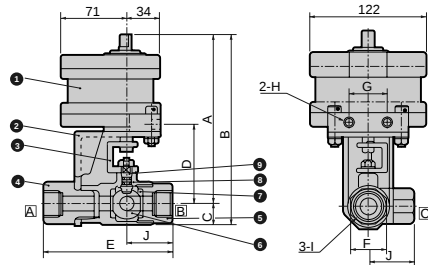
- FRG-50A/65A



Model	A	B	C	D	E	F	G
FRG2-15A	56	9	143	67.5	28	Rc1/2	113
FRG2-20A	65	13	155	73.5	34	Rc3/4	119
FRG2-25A	76	18	164	76.5	41	Rc1	122
FRG2-32A	84	23	175	82.5	50	Rc1 ¹ / ₄	128
FRG2-40A	94	30	187	88.5	57	Rc1 ¹ / ₂	134

No.	Parts name	Material	No.	Parts name	Material
1	Drive shaft	S45C (Chromate treatment)	8	Shaft	HC10
2	Hexagon head bolt	SWCH	9	Body	BC6
3	Cover	ADC12	10	Valve seat	PTFE
4	Cylinder	ADC12	11	Valve ball	C3771 (Chromite plated)
5	Frame	S5400 (Chromate treatment)	12	Cap	BC6
6	Hexagon head bolt	SWCH	13	Hexagon head bolt	SWCH
7	O ring *	NBR, FKM	14	Spring washer	SWRH

- Upper O ring is NBR, lower is FKM.



Model	A	B	C	D	E	F	G	H	I	J
FRG-50A	234	269	35	116	156.5	68	38	Rc1/4	Rc2	57.5
FRG-65A	256	303	47	138	185	86	38	Rc1/4	Rc2½	69

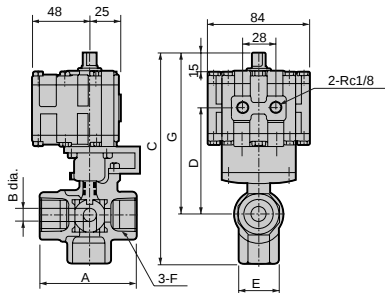
Note) : A/B/D dimensions of T (for hot water) are 5mm longer.

No.	Parts name	Material	No.	Parts name	Material
1	Oscillating motor (fan rotary)		8	O ring	FKM
2	Frame	S5400 (Chromate treatment)	9	Stem	C3604
3	Coupler	S38C (Chromate treatment)			
4	Body cap	C3771			
5	Body	C3771			
6	Ball	C3771 (Chrome plated)			
7	Ball seal	PTFE			

Optional dimensions

- Stainless steel body

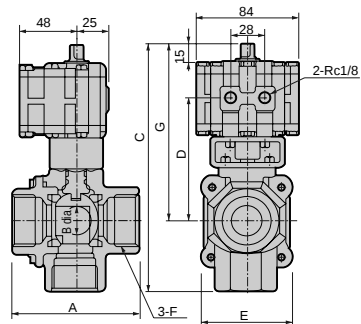
FRG2-15A to 25A-C



Model	A	B	C	D	E	F	G
FRG2-15A-C	65	9	171	90.5	29	Rc1/2	136
FRG2-20A-C	80	13	180	94.5	35	Rc3/4	140
FRG2-25A-C	92	18	191	97.5	44	Rc1	143
FRG2-32A-C	110	23	231	130.5	74	Rc1 ^{1/4}	176
FRG2-40A-C	120	30	240	134.5	88	Rc1 ^{1/2}	180

- Stainless steel body

FRG2-32A/40A-C



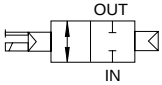
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2 port air operated ball valve Solenoid valve incorporated fan rotary valve

FRBV/FRB2V SERIES

- Working fluid : Water, hot water, compressed air, oil
- Port size : Rc3/8, Rc1/2, Rc3/4, Rc1, Rc1¹/₄, Rc1¹/₂, Rc2, Rc2¹/₂

JIS symbol



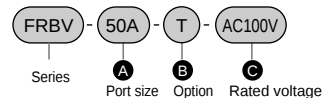
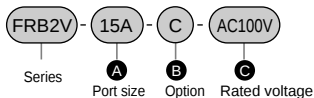
Oscillating motor with solenoid valve used and stable operation even for high viscosity fluid.

- Compact and light weight.
- Simple structure and low cost.
- High reliable air oscillating motor is used.
- Manual override is equipped.

Specifications

Descriptions		FRB2V-10A	FRB2V-15A	FRB2V-20A	FRB2V-25A	FRB2V-32A	FRB2V-40A	FRBV-50A	FRBV-65A
Working fluid		Water, hot water, air, oil (500mm ² /s or less)							
Port size		Rc3/8	Rc1/2	Rc3/4	Rc1	Rc1¼	Rc1½	Rc2	Rc2½
Orifice mm (Cv flow factor)		10(10)	10(6)	15(16)	20(29)	25(40)	32(75)	40(75)	50(125)
Operating pressure range MPa	Water, oil	0 to 1						0 to 1.5	
	Compressed air	0 to 1						0 to 0.99	
	Hot water	0 to 1						0 to 0.4	
Withstanding pressure MPa		2.0						4.2	
Max. cycle rate cycle/min.		1 or less							
Fluid temperature °C		0 to 80 (no freezing)						5 to 40 (5 to 150 for hot water)	
Ambient temperature °C		-10 to 60						5 to 60	
Valve seat leak (1MPa water pres.) cm ³ /min		0							
Oscillating motor	Working fluid	Compressed air							
	Port size	Rc1/8						Rp1/4	
	Working pressure range MPa	0.4 to 0.7						0.3 to 0.7	
	Withstanding pressure MPa	1.05						1.0	
Installation attitude		Free							
Mass kg		1	1	1.2	1.3	1.6	2.1	6.3	8.6
Electrical specifications									
Rated voltage		AC100V (50/60Hz)		AC200V (50/60Hz)		DC24V		AC100V (50/60Hz)	AC200V (50/60Hz) DC12/24V
Holding current mA		28/22		17/13		75		28/22	17/13 150/75
Inrush current mA		56/44		34/26		—		56/44	34/26 —
Power consumption W		1.8/1.4		2.1/1.6		1.8		1.8/1.4	2.1/1.6 1.8
Insulation class		Class B							

How to order

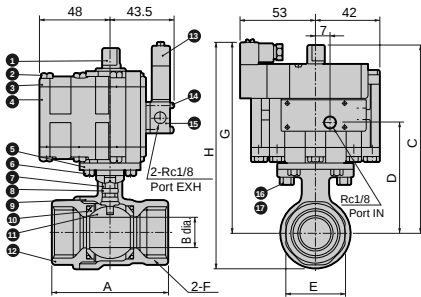


Symbol	Descriptions
A	10A Rc3/8
	15A Rc1/2
	20A Rc3/4
	25A Rc1
	32A Rc1 ¹ / ₄
	40A Rc1 ¹ / ₂
B	Blank Standard
	C Stainless steel body
C	AC100V AC100V (50/60Hz), AC110V (60Hz)
	AC200V AC200V (50/60Hz), AC220V (60Hz)
	DC24V DC24V

Symbol	Descriptions
A	50A Rc2
	65A Rc2 ¹ / ₂
B	Blank Standard
	T For hot water
C	AC100V AC100V (50/60Hz), AC110V (60Hz)
	AC200V AC200V (50/60Hz), AC220V (60Hz)
	DC12V DC12V
	DC24V DC24V

Internal structure/main parts materials/dimensions

- FRB2V-10A to 40A



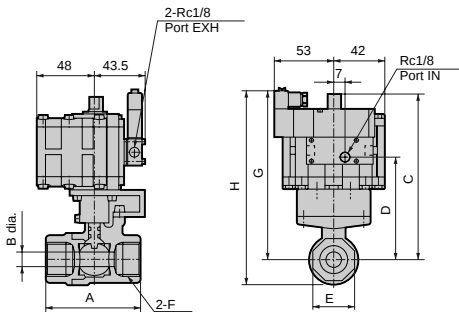
Model	A	B	C	D	E	F	G	H
FRB2V-10A	50	10	113	60.5	24	Rc3/8	119.5	134.5
FRB2V-15A	56	10	113	60.5	28	Rc1/2	119.5	134.5
FRB2V-20A	65	15	119	66.5	34	Rc3/4	125.5	145
FRB2V-25A	76	20	122	69.5	41	Rc1	128.5	152
FRB2V-32A	84	25	128	75.5	50	Rc1 1/4	134.5	162
FRB2V-40A	94	32	134	81.5	57	Rc1 1/2	140.5	174

No.	Parts name	Material	No.	Parts name	Material
1	Drive shaft	SSC (Chromate treatment)	10	Valve seat	PTFE
2	Hexagon head bolt	SWCH	11	Valve ball	Chrome plated
3	Cover	ADC12	12	Cap	BC6
4	Cylinder	ADC12	13	Solenoid valve	4KB119
5	Frame	SS400 (Chromate treatment)	14	Hexagon socket head cap screw	SCM435
6	Hexagon head bolt	SWCH	15	Sub-plate	A2017
7	O ring *	NBR, FKM	16	Hexagon head bolt	SWCH
8	Shaft	HC10	17	Spring washer	SWRH
9	Body	BC6			

- Upper O ring is NBR, lower is FKM.

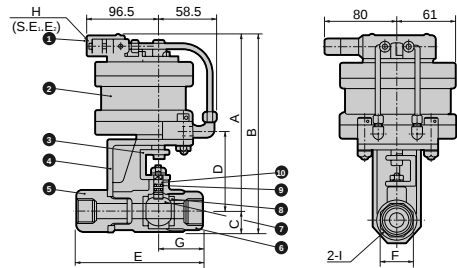
Optional dimensions

- Stainless steel body
FRB2V-15A to 25A-C



Model	A	B	C	D	E	F	G	H
FRB2V-15A-C	65	10	136	83.5	29	Rc1/2	142.5	158.5
FRB2V-20A-C	80	15	140	87.5	35	Rc3/4	146.5	166.5
FRB2V-25A-C	92	19	143	90.5	44	Rc1	149.5	173.5
FRB2V-32A-C	110	25	176	123.5	74	Rc1½	182.5	219.5
FRB2V-40A-C	120	32	180	127.5	88	Rc1½	186.5	230.5

- FRBV-50A/65A

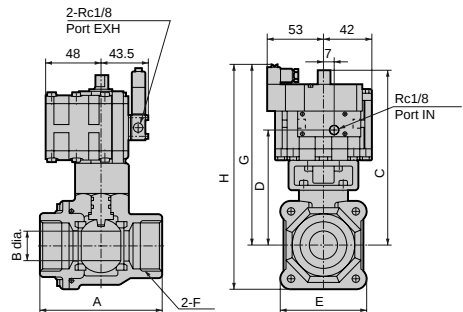


Model	A	B	C	D	E	F	G	H	I
FRBV-50A	237	272	35	116	150.5	68	54.5	*Rp1/4	Rc2
FRBV-65A	259	306	47	138	174	86	63.5	*Rp1/4	Rc2½

* shows Port S diameter of solenoid valve, and exhaust port E1, E 2 is Rp1/8.
Note) : A/B/D dimensions of T (for hot water) are 5mm longer.

No.	Parts name	Material	No.	Parts name	Material
1	Solenoid valve	4F110-08	10	Stem	C3604
2	Oscillating motor (fan rotary)	AC4B			
3	Coupler	S30C (Chromate treatment)			
4	Frame	SS400 (Chromate treatment)			
5	Body cap	C3604			
6	Body	C3771			
7	Ball	C3771 (Chrome plated)			
8	Ball seal	PTFE			
9	O ring	FKM			

- Stainless steel body
FRB2V-32A/40A-C



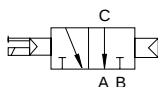
Discontinue

3 port air operated ball valve Fan rotary valve with solenoid valve

FRGV/FRG2V SERIES

- Working fluid : Water, hot water, compressed air, oil
- Port size : Rc1/2, Rc3/4, Rc1, Rc1¹/₄, Rc1¹/₂, Rc2, Rc2¹/₂

JIS symbol



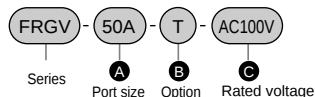
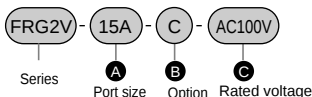
Oscillating motor with solenoid valve used and stable operation even for high viscosity fluid.

- Compact and light weight.
- High reliable air oscillating motor is used.
- Manual override is equipped.
- Simple structure and low cost.

Specifications

Descriptions		FRG2V-15A	FRG2V-20A	FRG2V-25A	FRG2V-32A	FRG2V-40A	FRGV-50A	frgv-65A	
Working fluid		Water, hot water, air, oil (500mm ² /s or less)							
Port size		Rc1/2	Rc3/4	Rc1	Rc1 ¹ / ₄	Rc1 ¹ / ₂	Rc2	Rc2 ¹ / ₂	
Orifice mm (Cv flow factor)		9(3)	13(6)	18(11)	23(16)	30(28)	40(37)	50(62)	
Operating pressure		Water, oil						0 to 1.5	
pressure range MPa		Compressed air						0 to 0.99	
		Hot water						0 to 0.4	
Withstanding pressure MPa		2.0						4.2	
Max. cycle rate cycle/min.		1 or less							
Fluid temperature °C		0 to 80 (no freezing)					5 to 40 (5 to 150 for hot water)		
Ambient temperature °C		-10 to 60					5 to 60		
Valve seat leak (1MPa water pres.) cm ³ /min		0							
Oscillating motor		Compressed air							
Working fluid		Compressed air							
Port size		Rc1/8					Rp1/4		
Working pressure range MPa		0.4 to 0.7					0.3 to 0.7		
Withstanding pressure MPa		1.05					1.0		
Installation attitude		Free							
Pressure direction		Limited to Port C (COM) pressurized.							
Mass kg		1.1	1.3	1.5	1.8	2.3	7	9.2	
Electrical specifications									
Rated voltage		AC100V (50/60Hz)		AC200V (50/60Hz)		DC24V	AC100V (50/60Hz)	AC200V (50/60Hz)	DC12/24V
Holding current mA		28/22		17/13		75	28/22	17/13	150/75
Inrush current mA		56/44		34/26		—	56/44	34/26	—
Power consumption W		1.8/1.4		2.1/1.6		1.8	1.8/1.4	2.1/1.6	1.8
Insulation class		Class B							

How to order

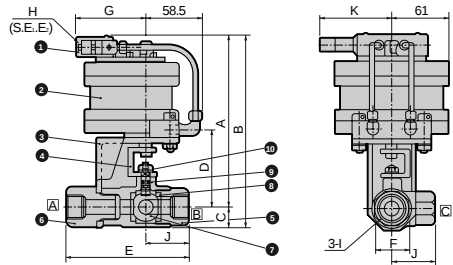
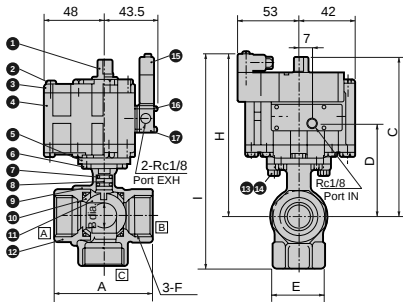


Symbol	Descriptions	
A	15A	Rc1/2
	20A	Rc3/4
	25A	Rc1
	32A	Rc1 ¹ / ₄
	40A	Rc1 ¹ / ₂
B	Blank	Standard
	C	Stainless steel body
C	AC100V	AC100V (50/60Hz), AC110V (60Hz)
	AC200V	AC200V (50/60Hz), AC220V (60Hz)
	DC24V	DC24V

Symbol	Descriptions	
A	50A	Rc2
	65A	Rc2 ¹ / ₂
B	Blank	Standard
	T	For hot water
C	AC100V	AC100V (50/60Hz), AC110V (60Hz)
	AC200V	AC200V (50/60Hz), AC220V (60Hz)
	DC12V	DC12V
D	DC24V	DC24V

Internal structure/main parts materials/dimensions
• FRG2V-15A to 40A

• FRGV-50A/65A



Model	A	B	C	D	E	F	G	H	I
FRG2V-15A	56	9	113	60.5	28	Rc1/2	28	119.5	149.5
FRG2V-20A	65	13	119	66.5	34	Rc3/4	34	125.5	161.5
FRG2V-25A	76	18	122	69.5	41	Rc1	40	128.5	170.5
FRG2V-32A	84	23	128	75.5	50	Rc1 1/4	45	134.5	181.5
FRG2V-40A	94	30	134	81.5	57	Rc1 1/2	51	140.5	193.5

No.	Parts name	Material	No.	Parts name	Material
1	Drive shaft	SS45C (Chromate treatment)	10	Valve seat	PTFE
2	Hexagon head bolt	SWCH	11	Valve ball	C3771 (Chrome plated)
3	Cover	ADC12	12	Cap	BC6
4	Cylinder	ADC12	13	Hexagon head bolt	SWCH
5	Frame	SS400 (Chromate treatment)	14	Spring washer	SWRH
6	Hexagon head bolt	SWCH	15	Solenoid valve	4KB119
7	O ring *	NBR, FKM	16	Hexagon socket head cap screw	SCM435
8	Shaft	HC10	17	Sub-plate	A2017
9	Body	BC6			

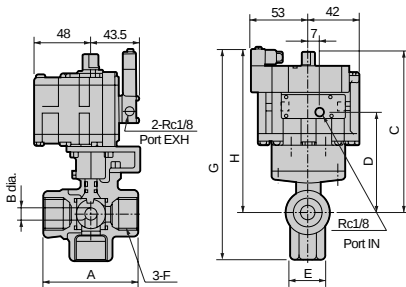
* Upper O ring is NBR, lower is FKM.

Model	A	B	C	D	E	F	G	H	I	J	K
FRGV-50A	237	272	35	116	156.5	68	96.5	*Rp1/4	Rc2	57.5	80
FRGV-65A	259	306	47	138	185	86	96.5	*Rp1/4	Rc2 1/2	69	80

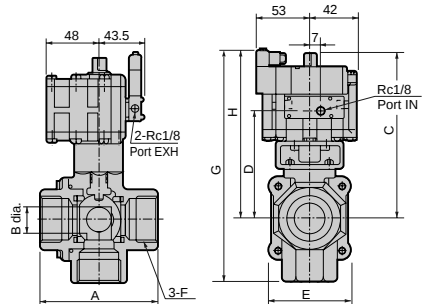
* shows Port S diameter of solenoid valve, and exhaust port E1, E 2 is Rp1/8.
Note) : A/B/D dimensions of T (for hot water) are 5mm longer.

No.	Parts name	Material	No.	Parts name	Material
1	Solenoid valve	4F110-08	6	Body cap	C3771
2	Oscillating motor (fan rotary)	AC4B	7	Ball	C3771 (Chrome plated)
3	Frame	SS400 (Chromate treatment)	8	Ball seal	PTFE
4	Coupler	SS3C (Chromate treatment)	9	O ring	FKM
5	Body	C3771	10	Stem	C3604

Optional dimensions
• Stainless steel body
FRG2V-15A to 25A-C



• Stainless steel body
FRG2V-32A/40A-C



Model	A	B	C	D	E	F	G	H
FRG2V-15A-C	65	9	136	83.5	29	Rc1/2	177.5	142.5
FRG2V-20A-C	80	13	140	87.5	35	Rc3/4	186.5	146.5
FRG2V-25A-C	92	18	143	90.5	44	Rc1	197.5	149.5
FRG2V-32A-C	110	23	176	123.5	74	Rc1 1/4	237.5	182.5
FRG2V-40A-C	120	30	180	127.5	88	Rc1 1/2	246.5	186.5

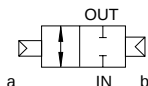
Discontinue

2 port air operated ball valve Stainless steel body fan rotary valve

FRB-F/FRB2-F SERIES

- Working fluid : Water, hot water, compressed air, oil, solvent, corrosive fluid
- Port size : Rc3/8, Rc1/2, Rc3/4, Rc1, Rc1¹/₄, Rc1¹/₂, Rc2

JIS symbol



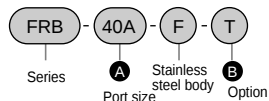
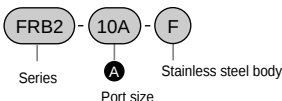
Stainless steel body, special plastic seal is used.

- Compact and light weight.
- Solvent and corrosive fluids are permissible.
- High reliable air oscillating motor is used.
- Available in flammable atmosphere
- Manual override is equipped.
- Simple structure and low cost.

Specifications

Descriptions	FRB2-10A-F	FRB2-15A-F	FRB2-20A-F	FRB2-25A-F	FRB2-32A-F	FRB-40A-F	FRB-50A-F
Working fluid	Water, hot water, compressed air, oil (500mm²/s or less), solvent, corrosive fluids						
Port size	Rc3/8	Rc1/2	Rc3/4	Rc1	Rc1¼	Rc1½	Rc2
Orifice mm (Cv flow factor)	10(6.5)	15(11)	20(25)	25(48)	32(84)	40(150)	50(280)
Operating pressure range MPa	Water, oil			0 to 1.4			
	Compressed air			0 to 0.99			
	Hot water			0 to 0.4			
Withstanding pressure MPa	2.0						
Max. cycle rate cycle/min.	1 or less						
Fluid temperature °C	5 to 40					5 to 40 (5 to 150 for hot water)	
Ambient temperature °C	5 to 60						
Valve seat leak (1MPa water pres.) cm³/min	0						
Working fluid	Compressed air						
Oscillating motor	Port size			Rc1/8		Rc1/4	
	Working pressure range MPa			0.4 to 0.7		0.3 to 0.7	
	Withstanding pressure MPa			1.05		1.0	
Installation attitude	Free						
Mass kg	1.4	1.5	1.8	2.6	3.5	6.8	8.2

How to order

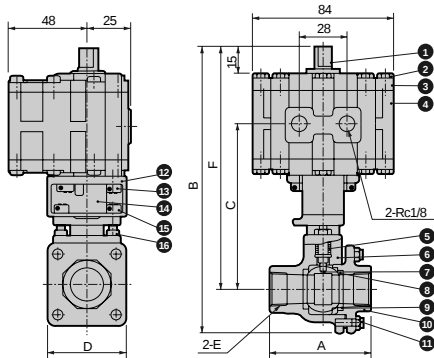


Symbol	Descriptions
A 10A	Rc3/8
15A	Rc1/2
20A	Rc3/4
25A	Rc1
32A	Rc1 ¹ / ₄

Symbol	Descriptions
A 40A	Rc1 ¹ / ₂
50A	Rc2
B Blank	Standard
T	For hot water

Internal structure/main parts materials/dimensions

• FRB2-10A to 32A-F



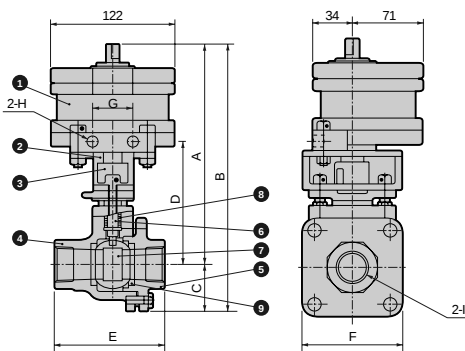
Model	A	B	C	D	E	F
FRB2-10A-F	60	189	118.5	50	Rc3/8	164
FRB2-15A-F	65	195	121.5	56	Rc1/2	167
FRB2-20A-F	80	200	124.5	60	Rc3/4	170
FRB2-25A-F	90	228	145.5	74	Rc1	191
FRB2-32A-F	110	240	149.5	90	Rc1 1/4	195

No.	Parts name	Material	No.	Parts name	Material
1	Drive shaft	S45C (Chromate treatment)	9	Valve ball	SUS304
2	Hexagon head bolt	SWCH	10	Cap	SCS13
3	Cover	ADC12	11	Cap bolt	SUS304
4	Cylinder	ADC12	12	Frame	SS400 (Chromate treatment)
5	Gland packing seal	PTFE	13	Hexagon socket head cap screw	SCM435
6	Body	SCS13	14	Coupler	S35C (Chromate treatment)
7	Stem	SUS304	15	Hexagon socket head cap screw	SCM435
8	Valve seat	PTFE	16	Hexagon nut	SGD400

• FRB-40A/50A-F

⚠ Precautions

- The abrasion of gland packing seal in the body may result in external leakage from the stem. In this case, retighten gland packing seal.



Model	A	B	C	D	E	F	G	H	I
FRB-40A-F	274	323	49	156	120	98	38	Rc1/4	Rc1 1/2
FRB-50A-F	280	334	54	162	140	108	38	Rc1/4	Rc2

(Note) : A/B/D dimensions of T (for hot water) are 5mm longer.

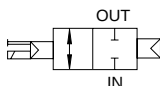
No.	Parts name	Material	No.	Parts name	Material
1	Oscillating motor (for rotary)	AC4B	6	Stem	SUS304
2	Frame	SS400 (Chromate treatment)	7	Ball	SCS13
3	Coupler	S35C (Chromate treatment)	8	Gland packing seal	PTFE
4	Body	SCS13	9	Ball seal	PTFE
5	Body cap	SCS13			

Discontinue

2 port air operated ball valve Stainless steel body fan rotary valve with solenoid valve FRBV-F/FRB2V-F SERIES

- Working fluid : Water, hot water, compressed air, solvent, corrosive fluid
- Port size : Rc3/8, Rc1/2, Rc3/4, Rc1, Rc1¹/₄, Rc1¹/₂, Rc2

JIS symbol



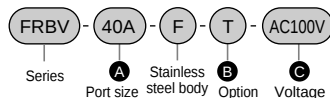
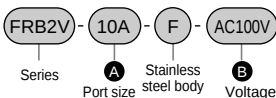
Stainless steel body, special plastic seal is used.

- Compact and light weight.
- Solvent and corrosive fluids are permissible.
- High reliable air oscillating motor is used.
- Manual override is equipped.
- Simple structure and low cost.

Specifications

Descriptions		FRB2V-10A-F	FRB2V-15A-F	FRB2V-20A-F	FRB2V-25A-F	FRB2V-32A-F	FRBV-40A-F	FRBV-50A-F
Working fluid		Water, hot water, compressed air, oil (500mm ² /s or less), solvent, corrosive fluid						
Port size		Rc3/8	Rc1/2	Rc3/4	Rc1	Rc1 ¹ / ₄	Rc1 ¹ / ₂	Rc2
Orifice mm (Cv flow factor)		10(6.5)	15(11)	20(25)	25(48)	32(84)	40(150)	50(280)
Operating pressure range MPa	Water, oil	0 to 1.4						
	Compressed air	0 to 0.99						
	Hot water	0 to 0.4						
Withstanding pressure MPa		2.0						
Max. cycle rate cycle/min.		1 or less						
Fluid temperature °C		5 to 40					5 to 40 (5 to 150 for hot water)	
Ambient temperature °C		5 to 60						
Valve seat leak (1MPa water pres.) cm ³ /min		0						
Oscillating motor	Working fluid	Compressed air						
	Port size	Rc1/8					Rp1/4	
	Working pressure range MPa	0.4 to 0.7					0.3 to 0.7	
	Withstanding pressure MPa	1.05					1.0	
Installation attitude		Free						
Mass kg		1.6	1.7	2	2.8	3.7	7.4	8.8
Electrical specifications								
Rated voltage		AC100V (50/60Hz)		AC200V (50/60Hz)		DC24V		AC100V (50/60Hz) AC200V (50/60Hz) DC12/24V
Holding current mA		28/22		17/13		75		28/22 17/13 150/75
Inrush current mA		56/44		34/26		—		56/44 34/26 —
Power consumption W		1.8/1.4		2.1/1.6		1.8		1.8/1.4 2.1/1.6 1.8
Insulation class		Class B						

How to order

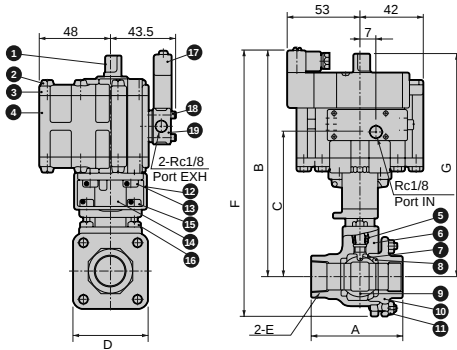


Symbol	Descriptions
A Port size	10A Rc3/8
	15A Rc1/2
	20A Rc3/4
	25A Rc1
	32A Rc1 ¹ / ₄
B Voltage	AC100V AC100V (50/60Hz), AC110V (60Hz)
	AC200V AC200V (50/60Hz), AC220V (60Hz)
	DC24V DC24V

Symbol	Descriptions
A	40A Rc1 ¹ / ₂
	50A Rc2
B	Blank Standard
	T For hot water
C Voltage	AC100V AC100V (50/60Hz), AC110V (60Hz)
	AC200V AC200V (50/60Hz), AC220V (60Hz)
	DC12V DC12V
	DC24V DC24V

Internal structure/main parts materials/dimensions

• FRB2V-10A to 32A-F



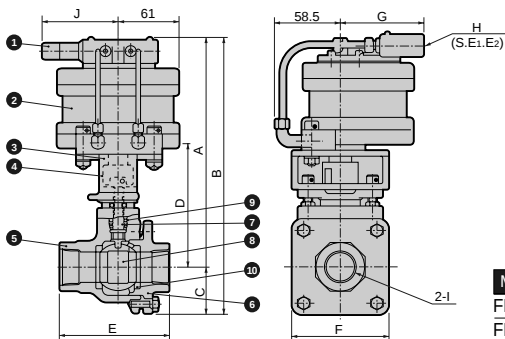
Model	A	B	C	D	E	F	G
FRB2V-10A-F	60	170.5	111.5	50	Rc3/8	195.5	164
FRB2V-15A-F	65	173.5	114.5	56	Rc1/2	201.5	167
FRB2V-20A-F	80	176.5	117.5	60	Rc3/4	206.5	170
FRB2V-25A-F	90	197.5	138.5	74	Rc1	234.5	191
FRB2V-32A-F	110	201.5	142.5	90	Rc1 1/4	246.5	195

No.	Parts name	Material	No.	Parts name	Material
1	Drive shaft	S45C (Chromate treatment)	11	Cap bolt	SUS304
2	Hexagon head bolt	SWCH	12	Frame	SS400 (Chromate treatment)
3	Cover	ADC12	13	Hexagon socket head cap screw	SCM435
4	Cylinder	ADC12	14	Coupler	S35C (Chromate treatment)
5	Gland packing seal	PTFE	15	Hexagon socket head cap screw	SCM435
6	Body	SCS13	16	Hexagon nut	SGD400
7	Stem	SUS304	17	Solenoid valve	4KB119
8	Valve seat	PTFE	18	Hexagon socket head cap screw	SCM435
9	Valve port	SUS304	19	Sub-plate	A2017
10	Cap	SCS13			

• FRBV-40A/50A-F

⚠ Precautions

- The abrasion of gland packing seal in the body may result in external leakage from the stem. In this case, retighten gland packing seal.



Model	A	B	C	D	E	F	G	H	I	J
FRBV-40A-F	277	326	49	156	120	98	96.5	*Rp1/4	Rc1 1/2	80
FRBV-50A-F	283	337	54	162	140	108	96.5	*Rp1/4	Rc2	80

* shows Port S diameter of solenoid valve, and exhaust port E1, E 2 is Rp1/8.

Note) : A/B/D dimensions of T (for hot water) are 5mm longer.

No.	Parts name	Material	No.	Parts name	Material
1	Solenoid valve	4F110-08	6	Body cap	SCS13
2	Oscillating motor (fan rotary)	AC4B	7	Stem	SUS304
3	Frame	SS400 (Chromate treatment)	8	Ball	SCS13
4	Coupler	S35C (Chromate treatment)	9	Gland packing seal	PTFE
5	Body	SCS13	10	Ball seal	PTFE