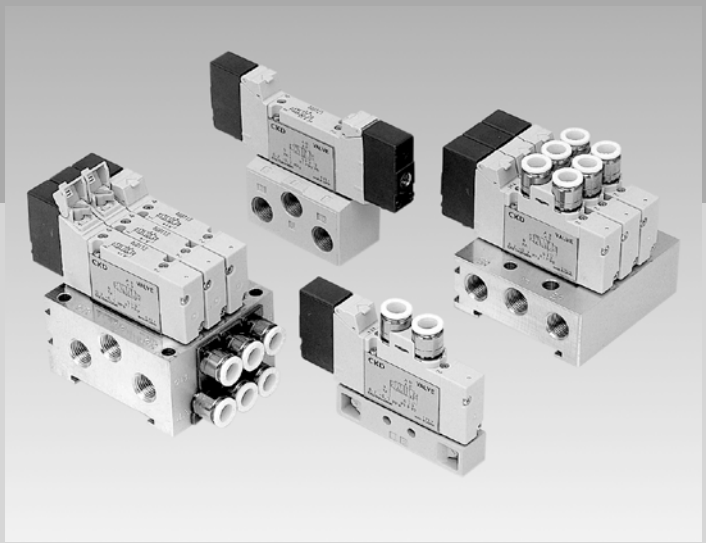
Discontinue

4GA, 4GB/M4GA, 4GB

3, 5 port pilot operated valve

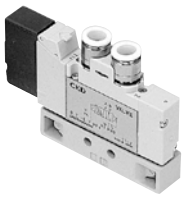
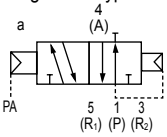
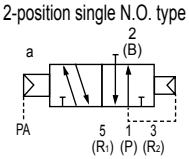
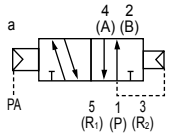
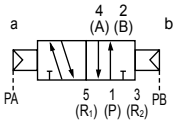
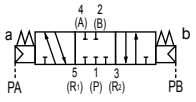
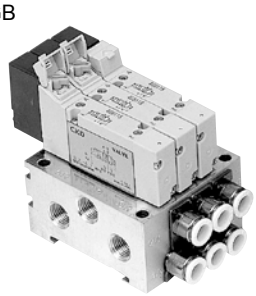
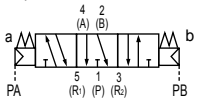
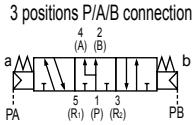
Master valve



CONTENTS

Discontinue

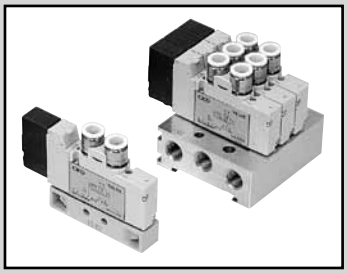
Master valve 4GA/4GB Series

Appearance				Model no.	Position Pilot port no. JIS symbol	Valve capacity: Flow characteristics C [dm³/(s·bar)]	Valve capacity: Applicable cylinder bore size (φ)
Discrete	4GA 	Body piping	3 port	3GA1	● 3 port valve 2-position single N.C. type 	0.70	20 to 40
				3GA2		2.7	40 to 80
				3GA3		3.9	63 to 100
	4GB 		5 port	4GA1	2-position single N.O. type 	0.66 to 0.70	20 to 40
				4GA2		2.4 to 2.7	40 to 80
				4GA3		3.2 to 4.0	63 to 100
		Base piping	5 port	4GB1	● 5 port valve 2-position single 	1.1 to 1.3	20 to 40
				4GB2		2.2 to 2.5	40 to 80
				4GB3		3.2 to 4.2	63 to 100
Manifold (metal base)	M4GA 	Body piping	Direct mount type	M4GA1	2-position double 	0.7 to 1.0	20 to 40
				M4GA2		1.7 to 2.5	40 to 80
				M4GA3		2.5 to 3.3	63 to 100
			DIN rail mount type (-D)	M4GA1	3-position all ports closed 	0.7 to 1.0	20 to 40
				M4GA2		1.7 to 2.5	40 to 80
				M4GA3		2.5 to 3.3	63 to 100
	M4GB 	Base piping	Direct mount type	M4GB1	3-position A/B/R connection 	0.68 to 1.0	20 to 40
				M4GB2		1.7 to 2.4	40 to 80
				M4GB3		2.6 to 3.3	63 to 100
			DIN rail mount type (-D)	M4GB1	3 positions P/A/B connection 	0.68 to 1.0	20 to 40
				M4GB2		1.7 to 2.4	40 to 80
				M4GB3		2.6 to 3.3	63 to 100

Note 1: Effective cross-sectional area S and sonic conductance C are converted as S ≒ 5.0 × C.

Switching position								Connection port of A/B port												Reference page
3 port								Push-in fitting				L type push-in fitting (facing upward)				Female thread				
Normally closed	Normally open	Single	Double	All ports closed	ABR connection	PAB connection	Mix	φ 4	φ 6	φ 8	φ 10	φ 4	φ 6	φ 8	φ 10	M5	Rc 1/8	Rc 1/4	Rc 3/8	
								C4	C6	C8	C10	CL4	CL6	CL8	CL10	M5	06	08	10	
●	●							●	●							●				410
●	●							●	●	●							●			
●	●								●	●	●							●		
		●	●	●	●	●		●	●							●				
		●	●	●	●	●		●	●	●							●			
		●	●	●	●	●			●	●	●							●		
		●	●	●	●	●											●			420
		●	●	●	●	●												●		
		●	●	●	●	●												●	●	
●	●	●	●	●	●	●	●	●	●							●				410
								●	●	●							●			
									●	●	●							●		
●	●	●	●	●	●	●	●	●	●							●				
								●	●	●							●			
									●	●	●							●		
		●	●	●	●	●	●	●	●			●	●			●				420
								●	●	●			●	●			●			
									●	●	●			●	●			●		
		●	●	●	●	●	●	●	●			●	●			●				
								●	●	●			●	●			●			
									●	●	●			●	●			●		

Discontinue



Master valve Discrete/manifold (metal base) Body piping

(M) 3GA1, 2, 3/(M) 4GA1, 2, 3 Series

● Applicable cylinder bore size: φ 20 to φ 100

Common specifications

Descriptions		
Valve type and operation		Pilot operated type soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	0.7
Min. working pressure Note 1	MPa	Refer to main pressure section in the table below
Proof pressure	MPa	1.05
Ambient temperature	°C	-5 to 55 (no freezing)
Fluid temperature	°C	5 to 55
Manual operating device		Non-locking/locking common type
Pilot exhaust method (at the time of manual operation)		Main valve/pilot valve common exhaust type
Lubrication	Note 2	Not required
Degree of protection	Note 3	Dust proof
Vibration resistance	m/s^2	50 or less
Shock resistance	m/s^2	300 or less
Atmosphere		Containing corrosive gas is not permissible

Note 1 When performing manual operation, the supply pressure to the P port as shown in the table below is required.
2-position 0.1 MPa and over
3-position 0.2 MPa and over
Note 2 Use the turbine oil Class 1 ISO VG32 if lubricated.
Excessive or intermittent lubrication results in unstable operation.
Note 3 Avoid water drops or oil, etc. during use.

Individual specifications

Body piping (discrete/manifold)

Number of ports	Model no. Discrete	Model no. Manifold	Solenoid position	Pilot port PA/PB	Main pressure	Pilot pressure MPa	Other specifications page Note
3 port	3GA1**1	M3GA1**1	2-position single N.C./N.O.	M5	0.2 to 0.7	(0.6 × main pressure + 0.06) to 0.7	
	3GA2**1	M3GA2**1					
	3GA3**1	M3GA3**1					
5 port	4GA111	M4GA111	2-position single	M5	0.2 to 0.7	(0.6 × main pressure + 0.06) to 0.7	Discrete: Page 10 Manifold base: Page 76
	4GA121	M4GA121	2-position double		0 to 0.7	0.2 to 0.7	
	4GA1$^{3}_{5}$1	M4GA1$^{3}_{5}$1	3-position				
	4GA211	M4GA211	2-position single	M5	0.2 to 0.7	(0.6 × main pressure + 0.06) to 0.7	
	4GA221	M4GA221	2-position double		0 to 0.7	0.2 to 0.7	
	4GA2$^{3}_{5}$1	M4GA2$^{3}_{5}$1	3-position				
	4GA311	M4GA311	2-position single	M5	0.2 to 0.7	(0.6 × main pressure + 0.06) to 0.7	
	4GA321	M4GA321	2-position double		0 to 0.7	0.2 to 0.7	
	4GA3$^{3}_{5}$1	M4GA3$^{3}_{5}$1	3-position				

Note: Other specifications are the same as those of 4G Series. Refer to pages for each specifications.

How to order

Discrete master valve

4GA2 1 1 - C4 - H

- B Solenoid position
- A Model no.
- D Option
- C Port size

Symbol	Descriptions		A Model no. 3GA1	3GA2	3GA3	4GA1	4GA2	4GA3
B Solenoid position								
1	2-position single					●	●	●
2	2-position double					●	●	●
3	3-position all ports closed					●	●	●
4	3-position ABR connection					●	●	●
5	3-position PAB connection					●	●	●
1	2-position single normally closed	Note 1	●	●	●			
11	2-position single normally open	Note 1	●	●	●			
C Port size								
Port	A, B port		P, R1, R 2 port (1)=M5 (2)=Rc1/8 (3)=Rc1/4					
C4	φ 4 push-in fitting		(1)	(2)		(1)	(2)	
C6	φ 6 push-in fitting		(1)	(2)	(3)	(1)	(2)	(3)
C8	φ 8 push-in fitting			(2)	(3)		(2)	(3)
C10	φ 10 push-in fitting				(3)			(3)
M5	M5		(1)			(1)		
06	Rc1/8			(2)			(2)	
08	Rc1/4				(3)			(3)
D Option								
Blank	None		●	●	●	●	●	●
H	With check valve	Note 2	●	●	●	●	●	●
P	With mounting plate	Note 3	●	●	●	●	●	●
A	Ozone/cutting oil proof type		●	●	●	●	●	●
F	P/A/B port filter integrated		●	●	●	●	●	●

is not available.

Note on model no. selection

Note 1 For 3GA normally closed type, the piping connection is sealed with plug.
For 3GA normally open type, avoid sealing with plug to 5 (R_1) port. Not doing so could cause malfunctions.

Note 2 3-position all ports closed and PAB connection are not provided with check valve (H). Refer to page 439 for details on check valve.

Note 3 The product with option symbol P other than single cannot be normally mounted because of the pilot port direction.

Manifold

M 4GA2 1 1 - C4 - H D - 8

Discrete master valve for manifold (gasket, set screw, PR check valve attached)

4GA2 1 8 - C4 - H

- B Solenoid position
- A Model no.
- C Port size
- D Option
- E Mount type
- F Station no.

Symbol	Descriptions		A Model no. M3GA1	M3GA2	M3GA3	M4GA1	M4GA2	M4GA3
B Solenoid position								
1	2-position single					●	●	●
2	2-position double					●	●	●
3	3-position all ports closed					●	●	●
4	3-position ABR connection					●	●	●
5	3-position PAB connection					●	●	●
1	2-position single normally closed	Note 1	●	●	●			
11	2-position single normally open	Note 1	●	●	●			
8	Mix manifold (In case of multiple solenoid positions)		●	●	●	●	●	●
C Port size								
Port	A, B port		P, R1, R 2 port (2)=Rc1/8 (3)=Rc1/4 (4)=Rc3/8					
C4	φ 4 push-in fitting		(2)	(3)		(2)	(3)	
C6	φ 6 push-in fitting		(2)	(3)	(4)	(2)	(3)	(4)
C8	φ 8 push-in fitting			(3)	(4)		(3)	(4)
C10	φ 10 push-in fitting				(4)			(4)
CX	Push-in fitting mix	Note 2	(2)	(3)	(4)	(2)	(3)	(4)
M5	M5		(2)			(2)		
06	Rc1/8			(3)			(3)	
08	Rc1/4				(4)			(4)
D Option								
Blank	None		●	●	●	●	●	●
H	With check valve	Note 3	●	●	●	●	●	●
A	Ozone/coolant compatible type		●	●	●	●	●	●
F	A/B port filter integrated (P port: standard)		●	●	●	●	●	●
Z1	Air supply spacer	Note 4, 5	●	●	●	●	●	●
Z2	In-stop valve spacer	Note 4, 5		●	●		●	●
E Mount type								
Blank	Direct mount type		●	●	●	●	●	●
D	DIN rail mount type		●	●	●	●	●	●
F Station no.								
2	2 stations		●	●	●	●	●	●
to	to		●	●	●	●	●	●
20	Refer to page 76 for the max. station no. per model no.		●	●	●	●	●	●

is not available.

Note on model no. selection

Note1 Combination with the external pilot (K) is not available.
Dimensions are the same as the respective 2-position double.

Note 2 The push-in fitting cannot be mixed with the discrete valve's 4 (A) or 2 (B) port.

Note 3 3-position all ports closed and PAB connection are not provided with check valve (H).
Refer to page 439 for details on check valve.

Note 4 Specify the spacer mounting position and quantity in manifold specifications.The multiple stacks of spacers are not available.
Combination with the masking plate is not supported.
Refer to pages 154 to 156 for details.

Note 5 The master valve for manifold cannot be selected as a discrete valve.

Discontinue

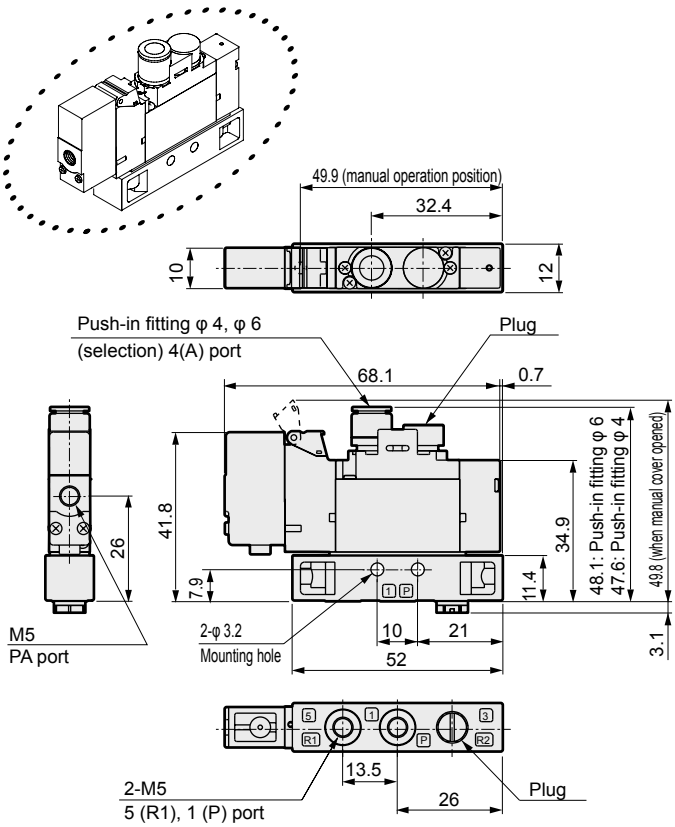
3GA Series

Discrete master valve; body piping

Dimensions CAD

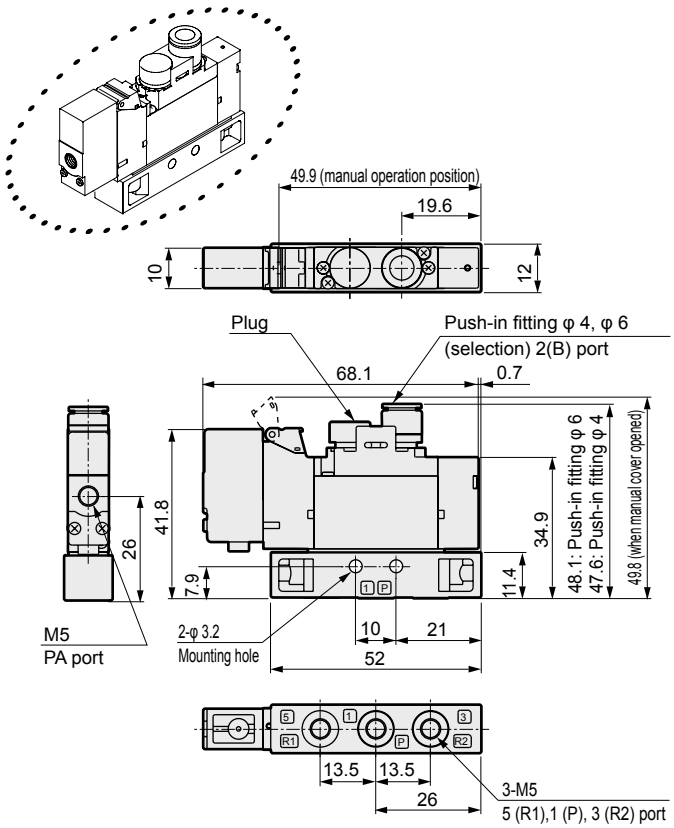
3GA111

● 2-position single N.C. type



3GA1111

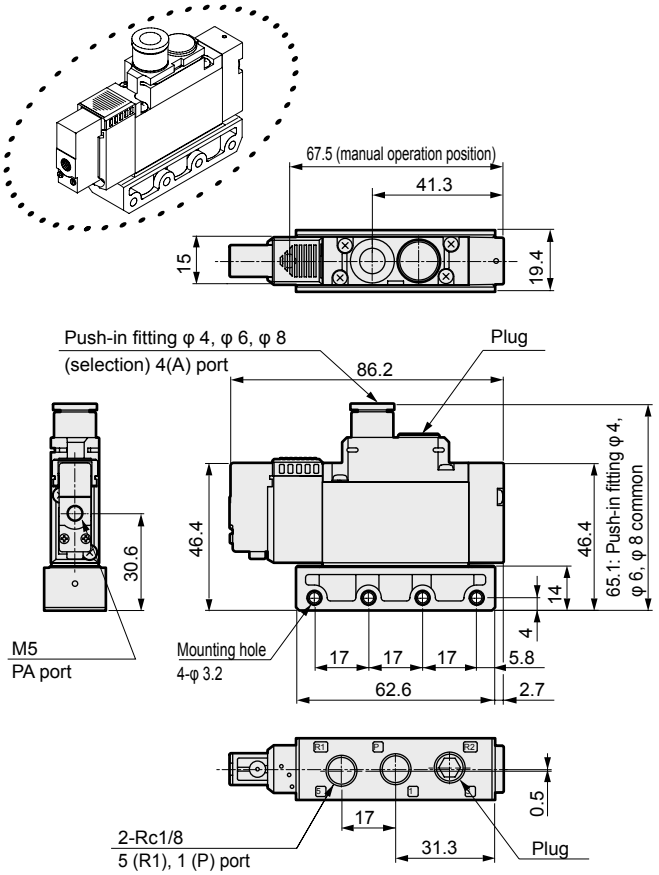
● 2-position single N.O. type



* The mounting plate (P) is the same as that of solenoid valve. Refer to pages 20 and 22 for dimensions.

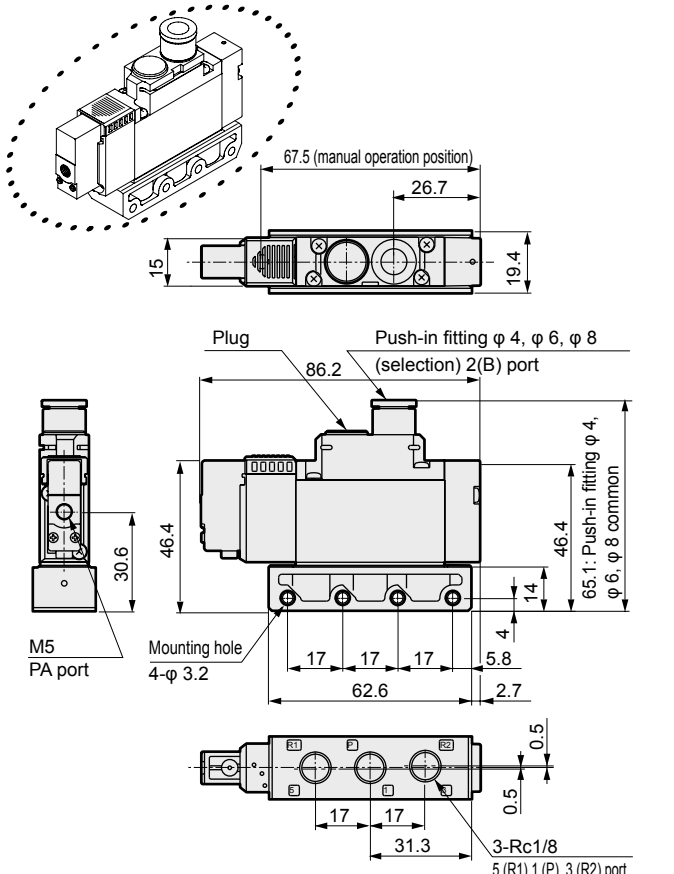
3GA211

● 2-position single N.C. type



3GA2111

● 2-position single N.O. type

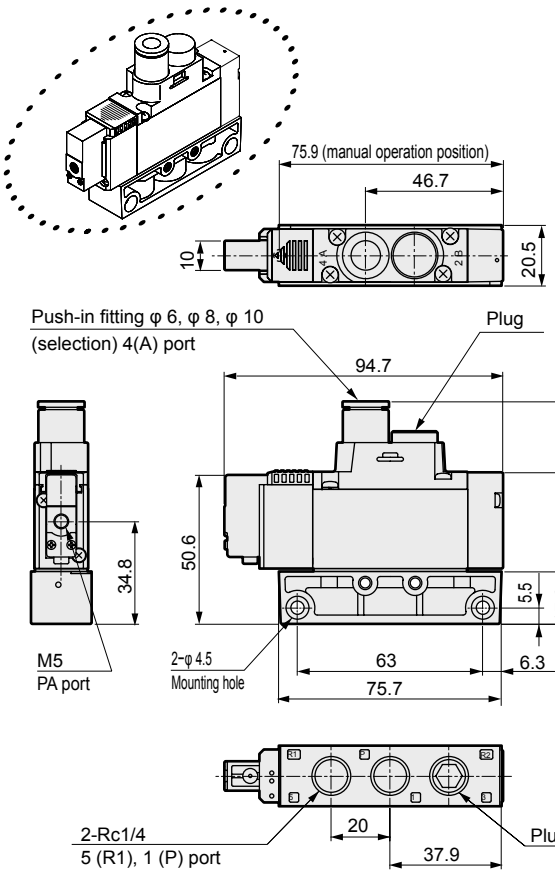


* The mounting plate (P) is the same as that of solenoid valve. Refer to pages 24 and 26 for dimensions.

Dimensions CAD

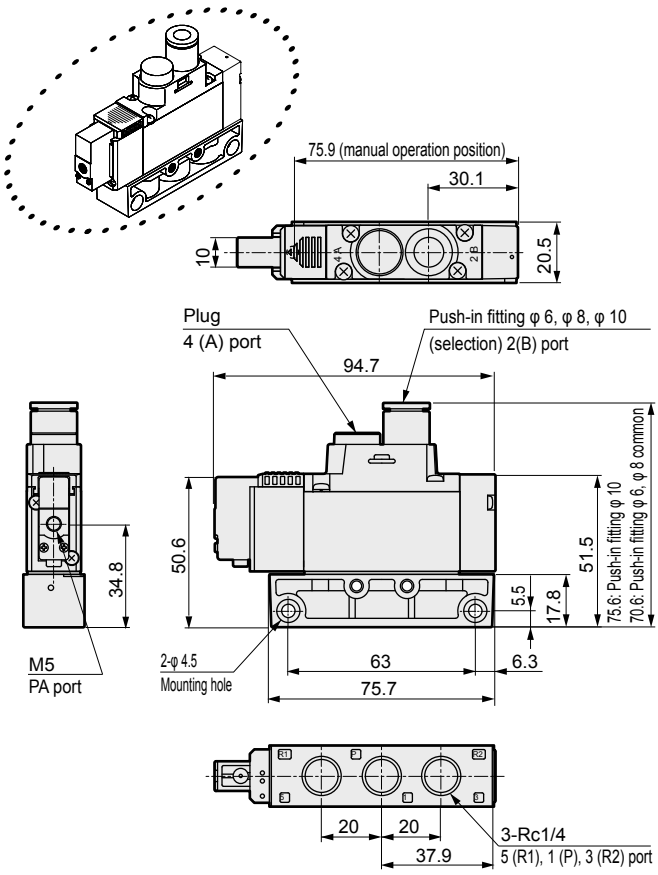
3GA311

● 2-position single N.C. type



3GA3111

● 2-position single N.O. type



* The mounting plate (P) is the same as that of solenoid valve. Refer to pages 28 and 30 for dimensions.

Discontinue

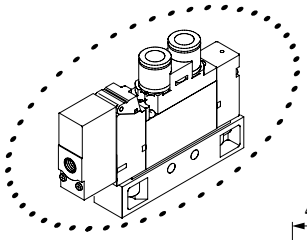
4GA Series

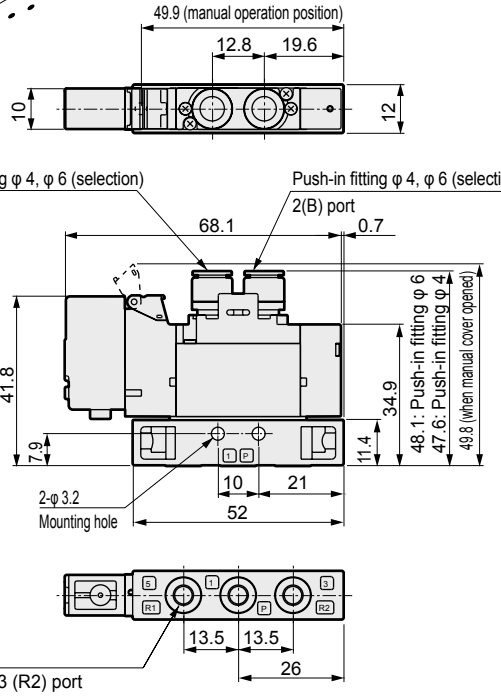
Discrete master valve; body piping

Dimensions CAD

4GA111

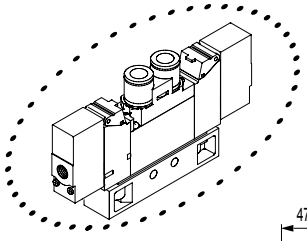
● 2-position single

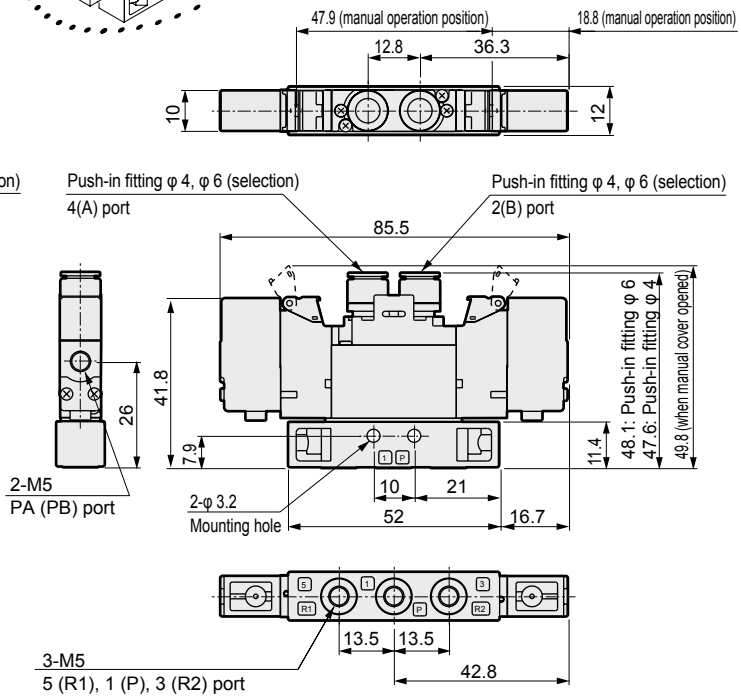




4GA121

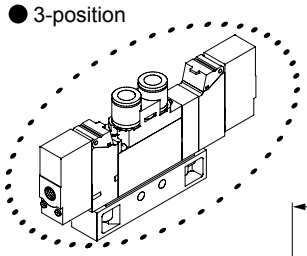
● 2-position double

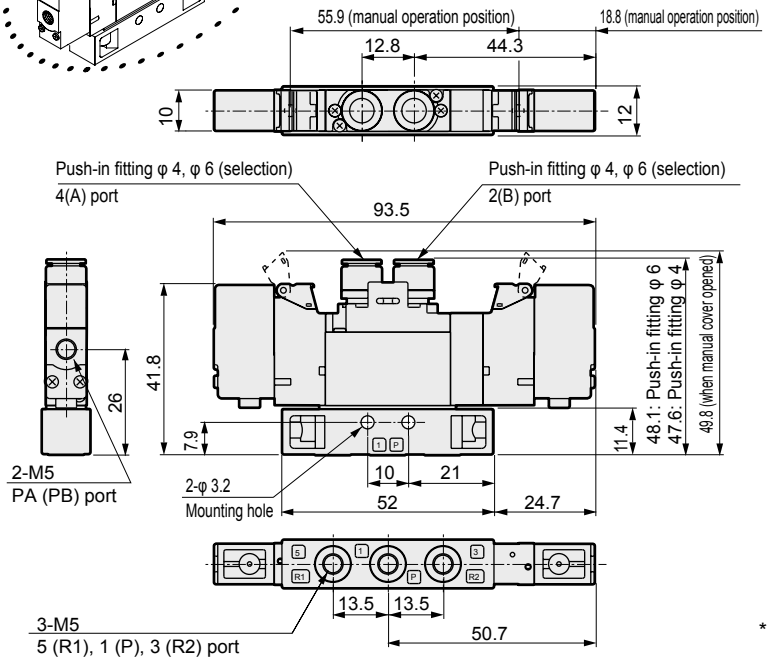




4GA1 3/4/5 1

● 3-position



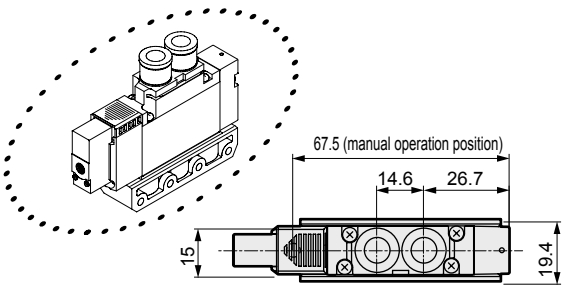


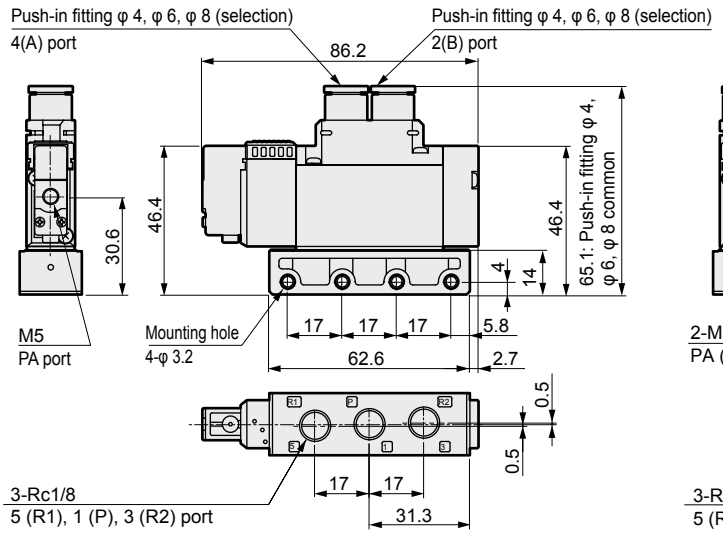
* The mounting plate (P) is the same as that of solenoid valve. Refer to pages 32, 34 and 36 for dimensions.

Dimensions

4GA211

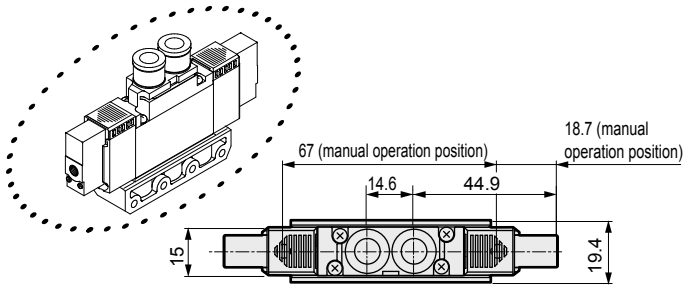
● 2-position single

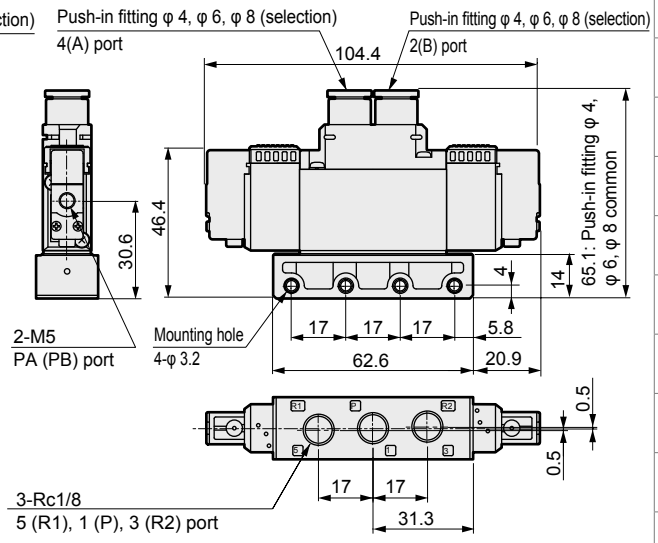




4GA221

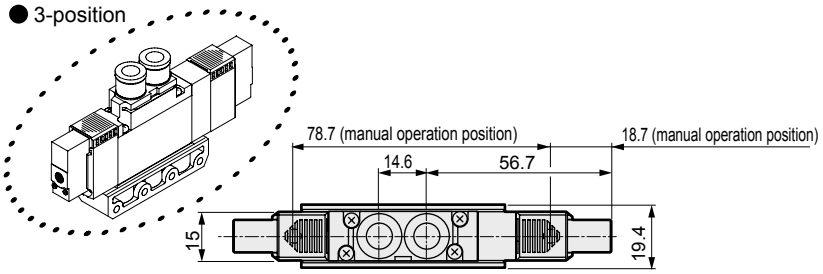
● 2-position double

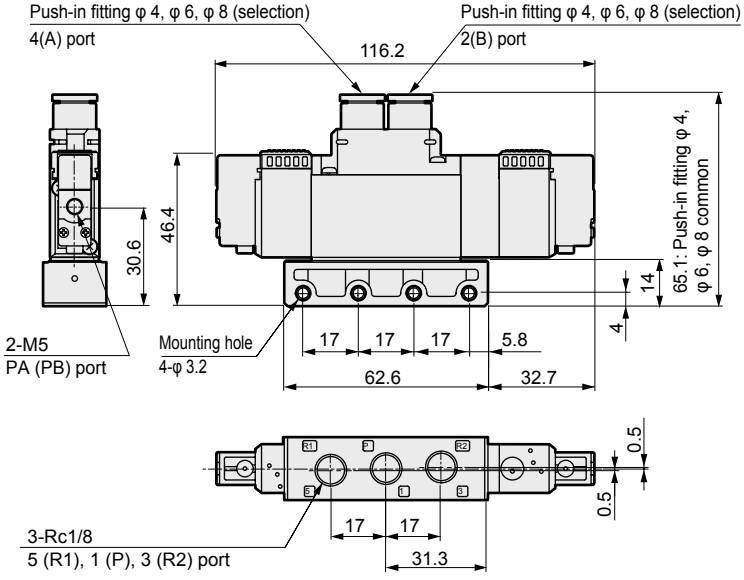




4GA2$^{3}_{4}_{5}$1

● 3-position





* The mounting plate (P) is the same as that of solenoid valve. Refer to pages 38, 40 and 42 for dimensions.

Discontinue

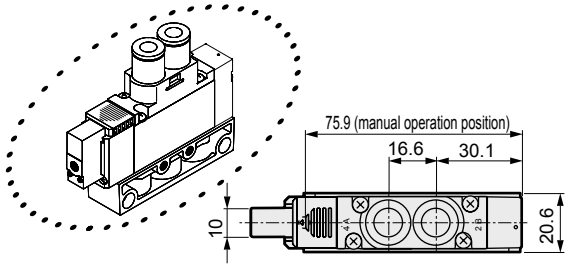
4GA Series

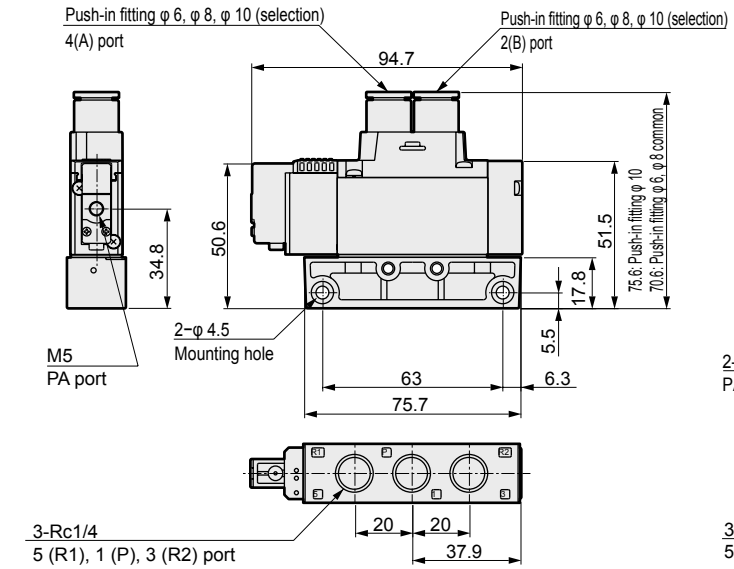
Discrete master valve; body piping

Dimensions CAD

4GA311

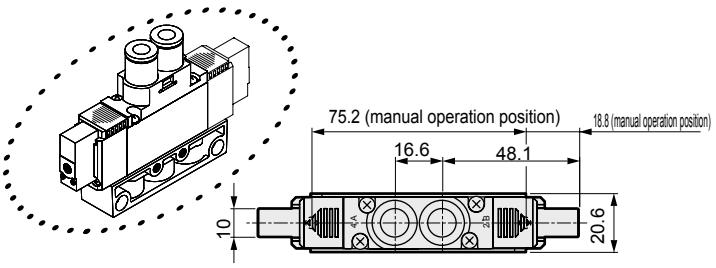
● 2-position single

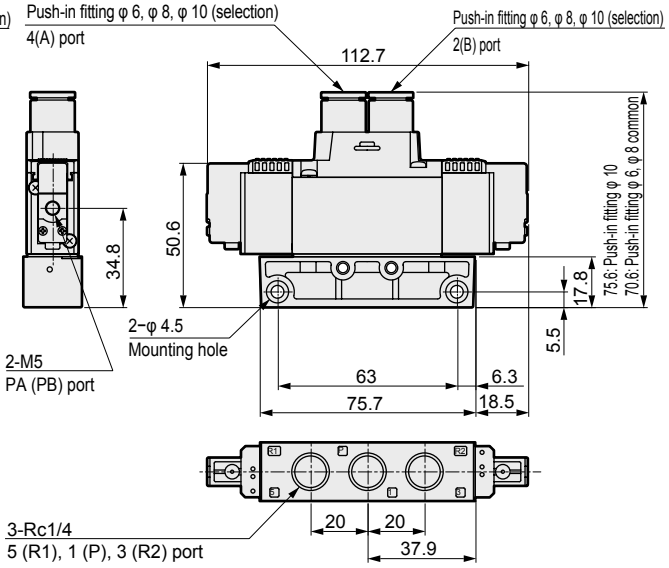




4GA321

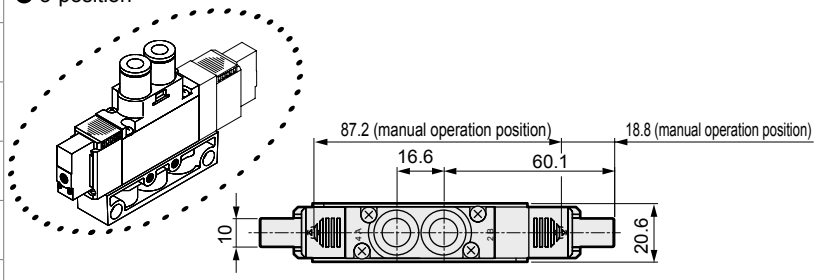
● 2-position double

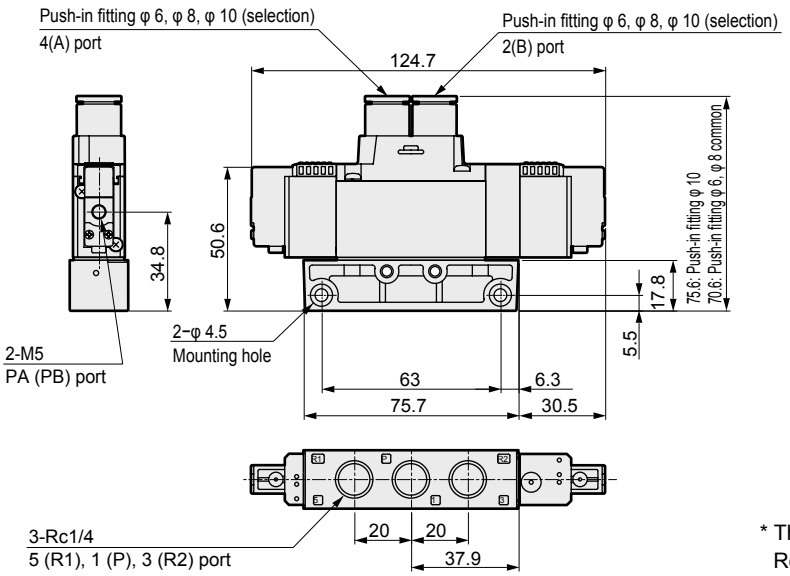




4GA3 $^{3}_{4}_{5}$ 1

● 3-position

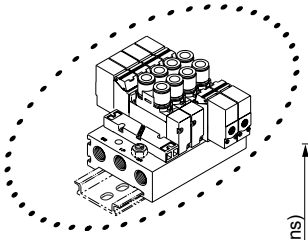




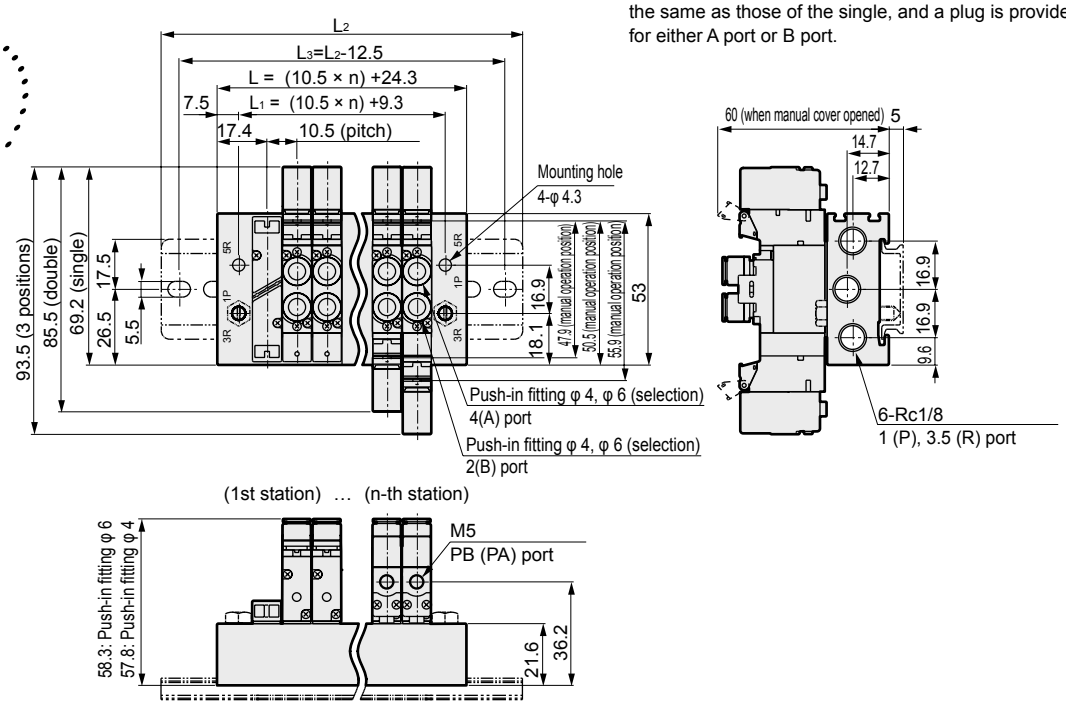
* The mounting plate (P) is the same as that of solenoid valve. Refer to pages 44, 46 and 48 for dimensions.

Dimensions CAD

M4GA1

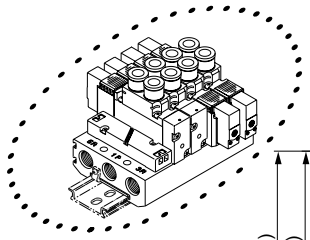


*The dimensions of 2-position single 3 port valve are the same as those of the single, and a plug is provided for either A port or B port.

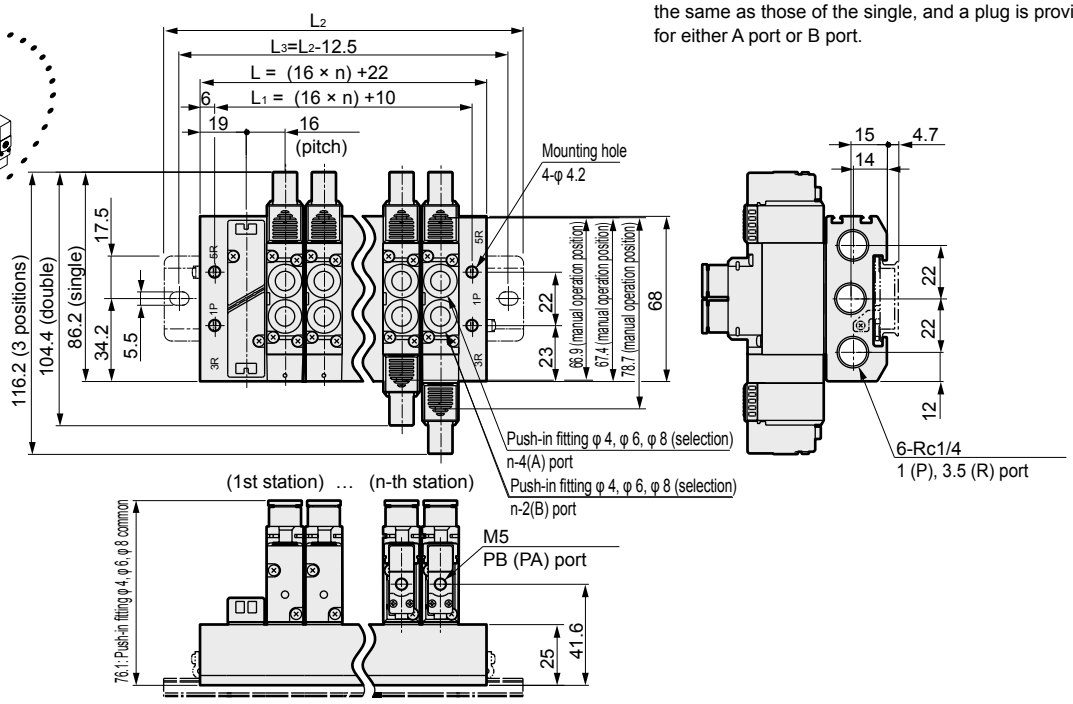


Station no.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	45.3	55.8	66.3	76.8	87.3	97.8	108.3	118.8	129.3	139.8	150.3	160.8	171.3	181.8	192.3	202.8	213.3	223.8	234.3
L_1	30.3	40.8	51.3	61.8	72.3	82.8	93.3	103.8	114.3	124.8	135.3	145.8	156.3	166.8	177.3	187.8	198.3	208.8	219.3
L_2	87.5	100.0	112.5	125.0	137.5	150.0	150.0	162.5	175.0	187.5	200.0	212.5	212.5	225.0	237.5				
L_3	75.0	87.5	100.0	112.5	125.0	137.5	137.5	150.0	162.5	175.0	187.5	200.0	200.0	212.5	225.0				

M4GA2



*The dimensions of 2-position single 3 port valve are the same as those of the single, and a plug is provided for either A port or B port.



Station no.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	54	70	86	102	118	134	150	166	182	198	214	230	246	262	278	294	310	326	342
L_1	42	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330
L_2	100.0	112.5	137.5	150.0	162.5	175.0	200.0	212.5	225.0	250.0	262.5	275.0	287.5	312.5	325.0				
L_3	87.5	100.0	125.0	137.5	150.0	162.5	187.5	200.0	212.5	237.5	250.0	262.5	275.0	300.0	312.5				

Discontinue

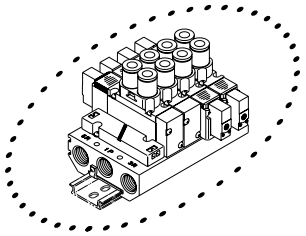
M4GA Series

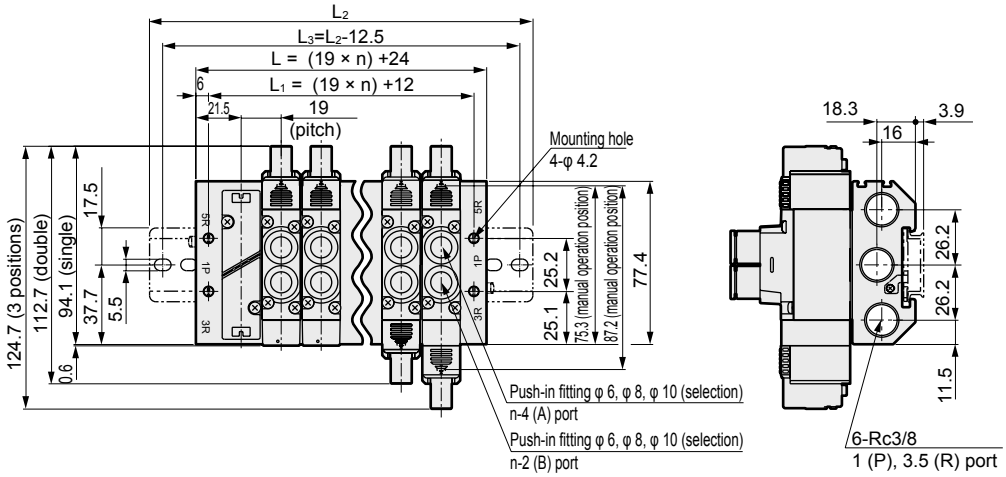
Master valve manifold; body piping

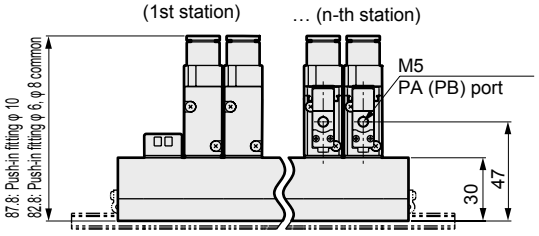
Dimensions CAD

M4GA3

*The dimensions of 2-position single 3 port valve are the same as those of the single, and a plug is provided for either A port or B port.





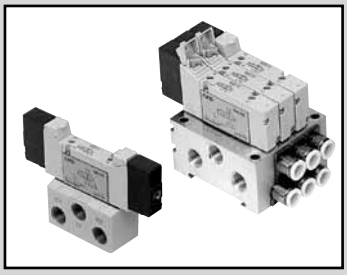


Station no.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	62	81	100	119	138	157	176	195	214	233	252	271	290	309	328	347	366	385	404
L_1	50	69	88	107	126	145	164	183	202	221	240	259	278	297	316	335	354	373	392
L_2	112.5	125.0	150.0	162.5	187.5	200.0	225.0	237.5	262.5	275.0	300.0	312.5	337.5	350.0	375.0				
L_3	100.0	112.5	137.5	150.0	175.0	189.5	212.5	225.0	250.0	262.5	287.5	300.0	325.0	337.5	362.5				

Discontinue

MEMO

Discontinue



Master valve Discrete/manifold (metal base) Base piping

(M) 4GB1/2/3 Series

● Applicable cylinder bore size: φ 20 to φ 100

RoHS CAD

Common specifications

Descriptions		
Valve type and operation		Pilot operated type soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	0.7
Min. working pressure Note 1	MPa	Refer to main pressure section in the table below
Proof pressure	MPa	1.05
Ambient temperature	°C	-5 to 55 (no freezing)
Fluid temperature	°C	5 to 55
Manual operating device		Non-locking/locking common type
Pilot exhaust method (at the time of manual operation)		Main valve/pilot valve common exhaust type
Lubrication	Note 2	Not required
Degree of protection	Note 3	Dust proof
Vibration resistance	m/s^2	50 or less
Shock resistance	m/s^2	300 or less
Atmosphere		Containing corrosive gas is not permissible

Note 1 When performing manual operation, the supply pressure to the P port as shown in the table below is required.
2-position 0.1 MPa and over
3-position 0.2 MPa and over
Note 2 Use the turbine oil Class 1 ISO VG32 if lubricated.
Excessive or intermittent lubrication results in unstable operation.
Note 3 Avoid water drops or oil, etc. during use.

Individual specifications

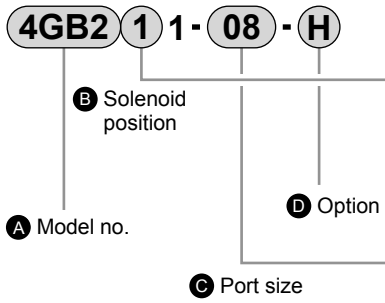
Base piping (discrete/manifold)

Number of ports	Model no. Discrete	Model no. Manifold	Solenoid position	Pilot port PA/PB	Main pressure	Pilot pressure MPa	Other specifications page Note
5 port	4GB111	M4GB111	2-position single	M5	0.2 to 0.7	(0.6 × main pressure + 0.06) to 0.7	Discrete: Page 50 Manifold: Page 92
	4GB121	M4GB121	2-position double		0 to 0.7	0.2 to 0.7	
	4GB1$\frac{3}{5}$1	M4GB1$\frac{3}{5}$1	3-position				
	4GB211	M4GB211	2-position single	M5	0.2 to 0.7	(0.6 × main pressure + 0.06) to 0.7	
	4GB221	M4GB221	2-position double		0 to 0.7	0.2 to 0.7	
	4GB2$\frac{3}{5}$1	M4GB2$\frac{3}{5}$1	3-position				
	4GB311	M4GB311	2-position single	M5	0.2 to 0.7	(0.6 × main pressure + 0.06) to 0.7	
	4GB321	M4GB321	2-position double		0 to 0.7	0.2 to 0.7	
	4GB3$\frac{3}{5}$1	M4GB3$\frac{3}{5}$1	3-position				

Note: Other specifications are the same as those of 4G Series. Refer to pages listing each specifications.

How to order

Discrete master valve



Symbol	Descriptions	A Model no. 4GB1	4GB2	4GB3
B Solenoid position				
1	2-position single	●	●	●
2	2-position double	●	●	●
3	3-position all ports closed	●	●	●
4	3-position ABR connection	●	●	●
5	3-position PAB connection	●	●	●

C Port size				
Port	A/B port	P/R1/R2 port (2)=Rc1/8 (3)=Rc1/4 (4)=Rc3/8		
06	Rc1/8	(2)		
08	Rc1/4		(3)	(3)
10	Rc3/8			(4)

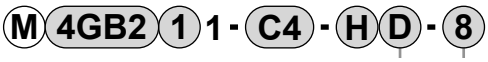
D Option				
Blank	None	●	●	●
H	With check valve Note 1	●	●	●
A	Ozone/cutting oil proof type	●	●	●
F	PAB port filter integrated	●	●	●

is not available.

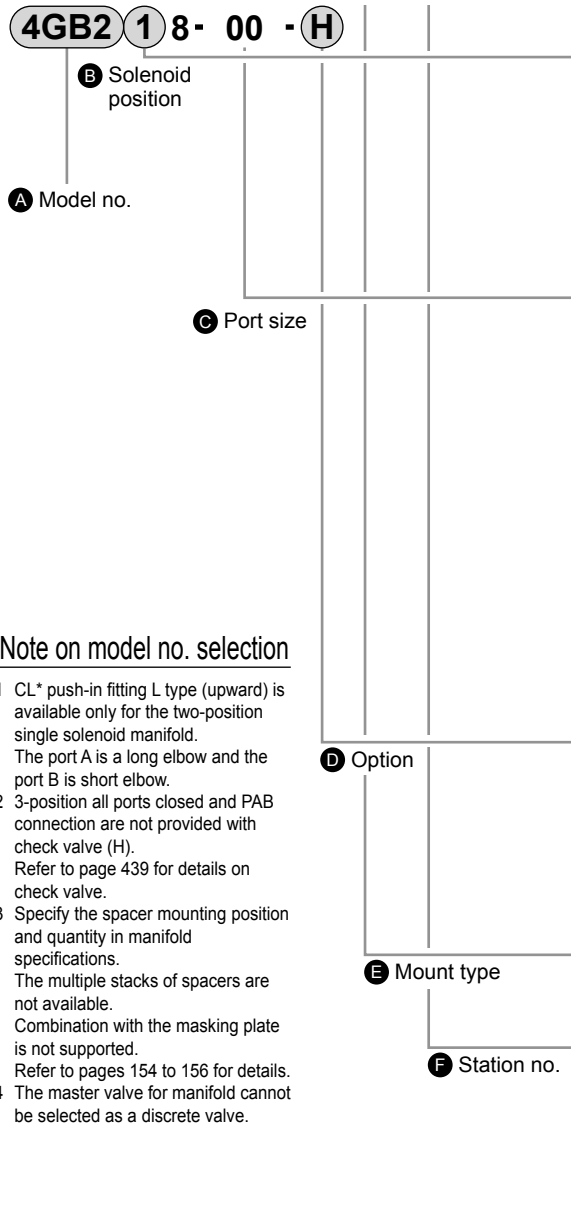
Note on model no. selection

Note 1 3-position all ports closed and PAB connection are not provided with check valve (H). Refer to page 439 for details on check valve.

Manifold



Discrete master valve for manifold (gasket, set screw, PR check valve attached)



Symbol	Descriptions	A Model no. M4GB1	M4GB2	M4GB3
B Solenoid position				
1	2-position single	●	●	●
2	2-position double	●	●	●
3	3-position all ports closed	●	●	●
4	3-position ABR connection	●	●	●
5	3-position PAB connection	●	●	●
8	Mix manifold (In case of multiple solenoid positions)	●	●	●

C Port size				
Port	A/B port	P/R1/R2 port (2)=Rc1/8 (3)=Rc1/4 (4)=Rc3/8		
C4	φ 4 push-in fitting	(2)	(3)	
C6	φ 6 push-in fitting	(2)	(3)	(4)
C8	φ 8 push-in fitting		(3)	(4)
C10	φ 10 push-in fitting			(4)
CL4	L type φ 4 push-in fitting (upward) Note 1	(2)		
CL6	L type φ 6 push-in fitting (upward) Note 1	(2)	(3)	
CL8	L type φ 8 push-in fitting (upward) Note 1		(3)	(4)
CL10	φ 10 push-in fitting			(4)
CX	Push-in fitting mix	(2)	(3)	(4)
M5	M5	(2)		
06	Rc1/8		(3)	
08	Rc1/4			(4)

D Option				
Blank	None	●	●	●
H	With check valve Note 2	●	●	●
A	Ozone/cutting oil proof type	●	●	●
F	A/B port filter integrated (P port: standard)	●	●	●
Z1	Air supply spacer Note 3, 4	●	●	●
Z2	In-stop valve spacer Note 3, 4		●	●

E Mount type				
Blank	Direct mount type	●	●	●
D	DIN rail mount type	●	●	●

F Station no.				
2	2 stations	●	●	●
to	to	●	●	●
20	Refer to page 92 for the max. station no. per model no..	●	●	●

is not available.

Note on model no. selection

Note 1 CL* push-in fitting L type (upward) is available only for the two-position single solenoid manifold.
The port A is a long elbow and the port B is short elbow.

Note 2 3-position all ports closed and PAB connection are not provided with check valve (H).
Refer to page 439 for details on check valve.

Note 3 Specify the spacer mounting position and quantity in manifold specifications.
The multiple stacks of spacers are not available.
Combination with the masking plate is not supported.
Refer to pages 154 to 156 for details.

Note 4 The master valve for manifold cannot be selected as a discrete valve.

Discontinue

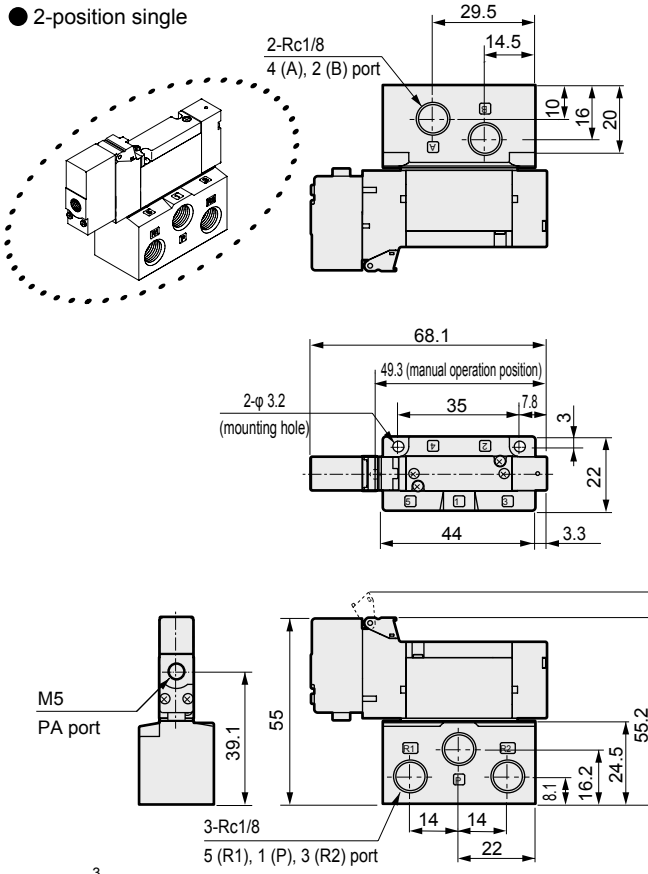
4GB Series

Discrete master valve; base piping

Dimensions CAD

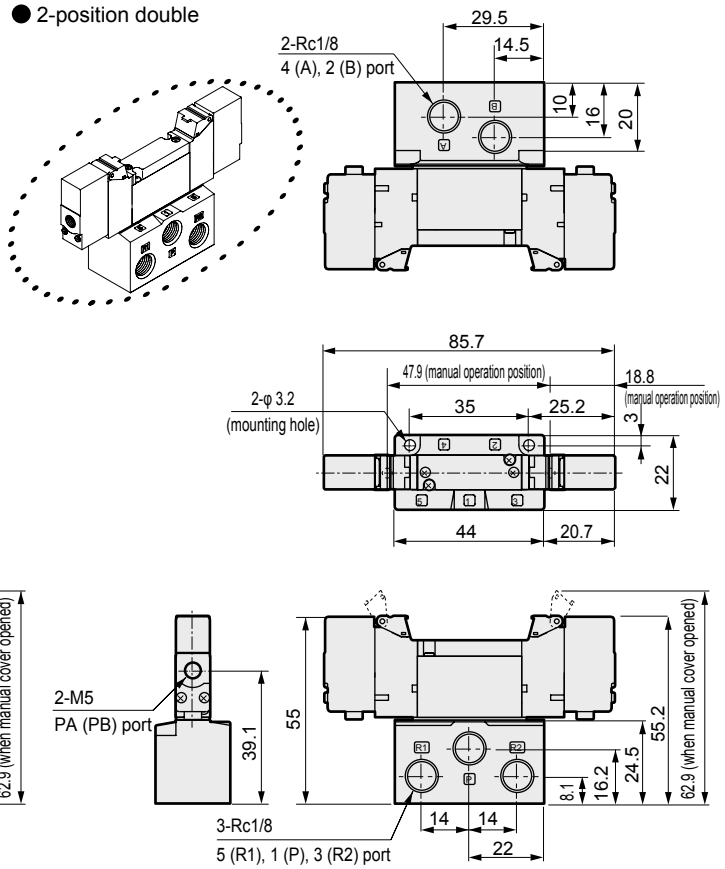
4GB111

● 2-position single



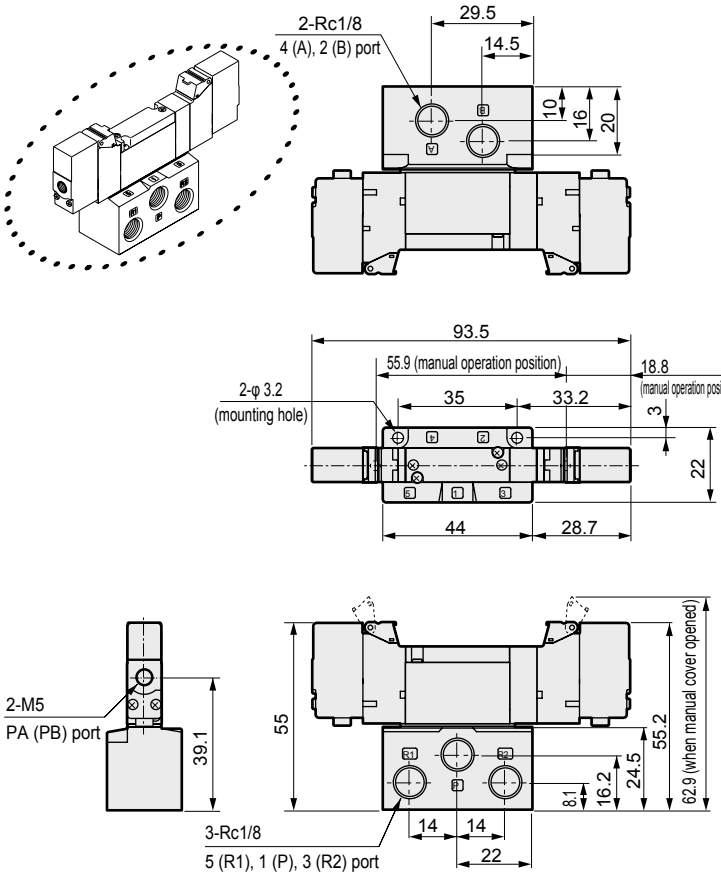
4GB121

● 2-position double



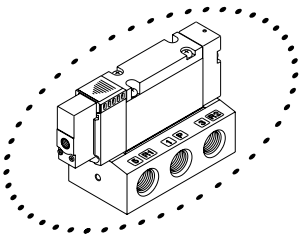
4GB1$^{3}_{4}_{5}$1

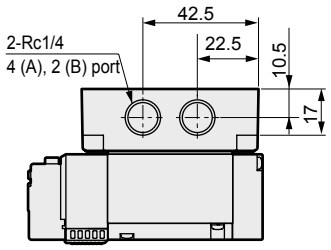
● 3-position

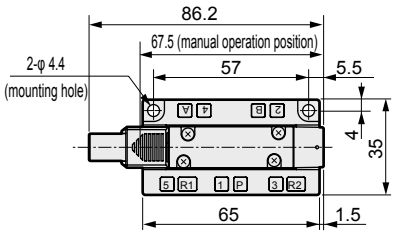


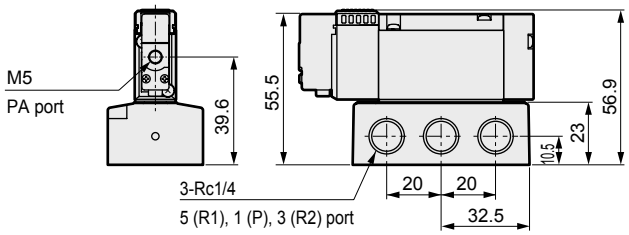
Dimensions CAD

4GB211
● 2-position single

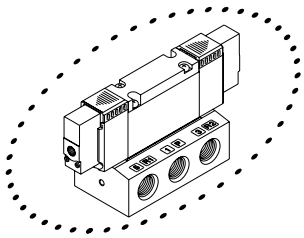


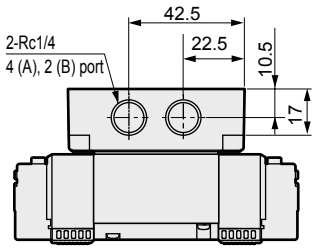


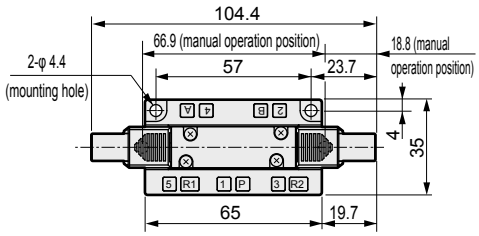


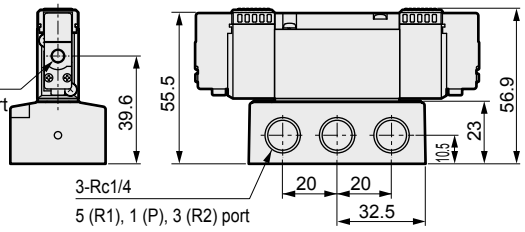


4GB221
● 2-position double

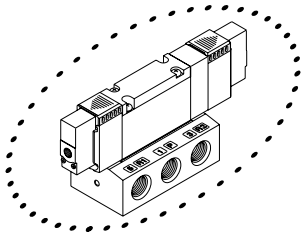


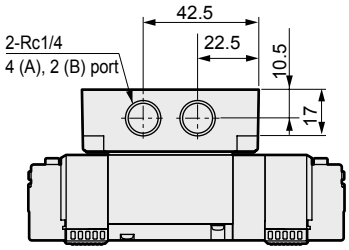


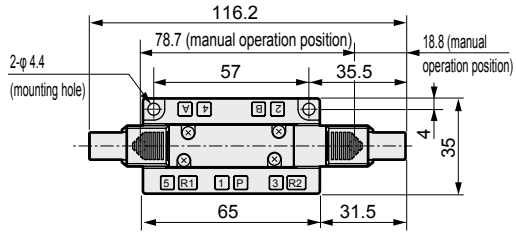


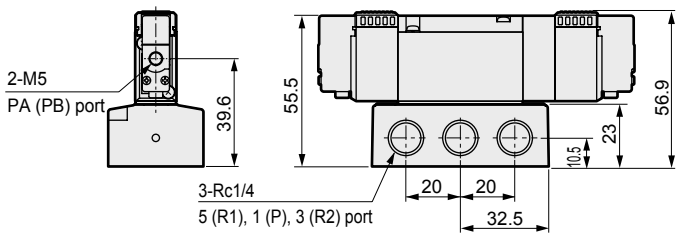


4GB2$^{3}_{4}_{5}$1
● 3-position









Discontinue

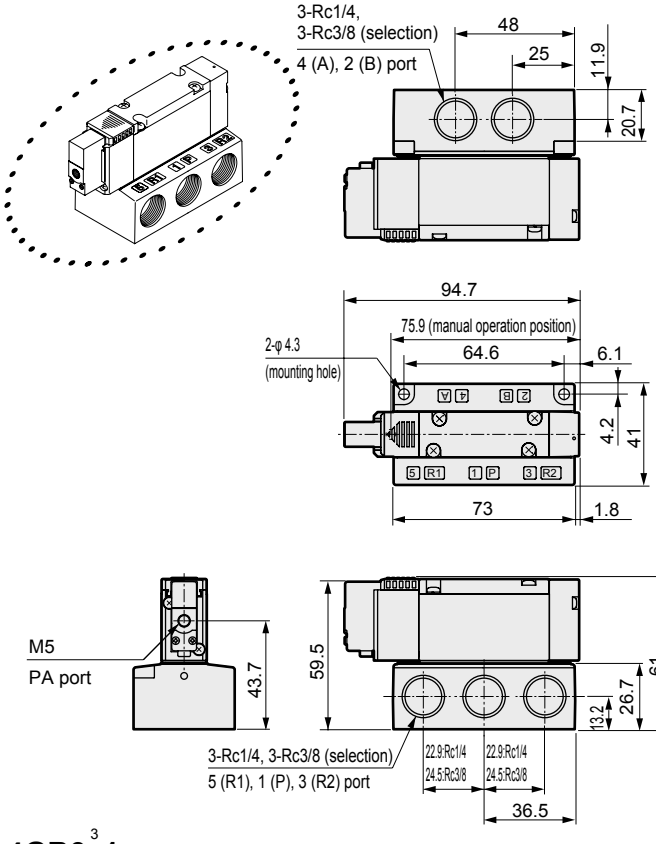
4GB Series

Discrete master valve; base piping

Dimensions CAD

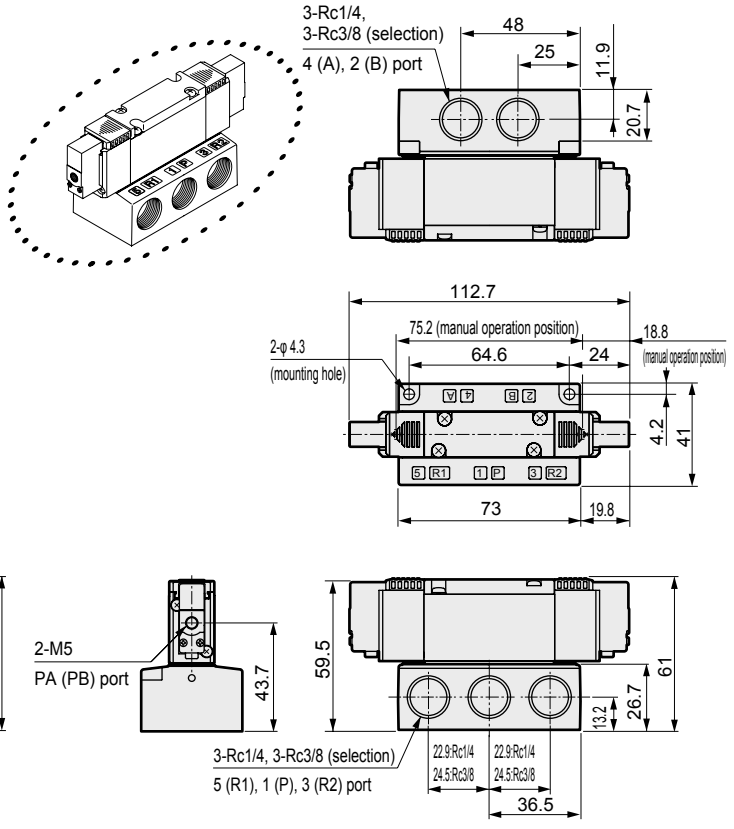
4GB311

● 2-position single



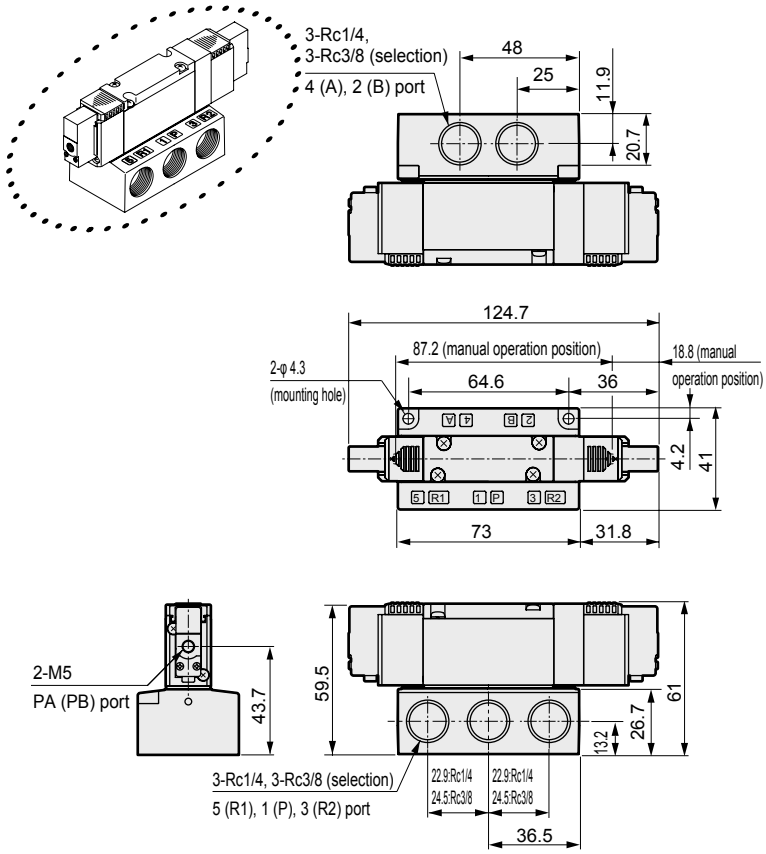
4GB321

● 2-position double



4GB3$^{3}_{4}_{5}$1

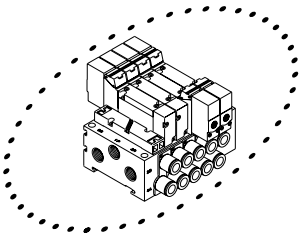
● 3-position

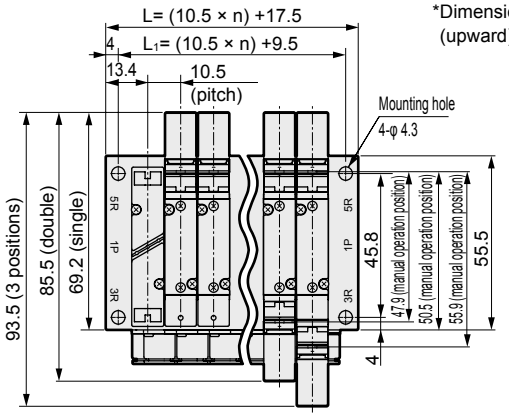


Dimensions CAD

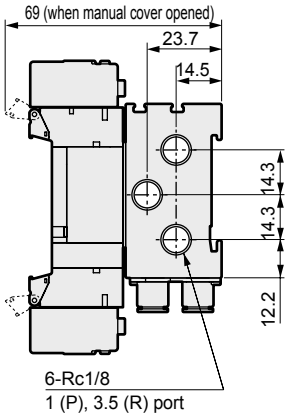
M4GB1

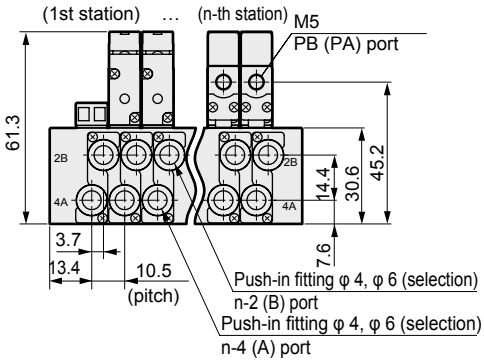
● Direct mounting





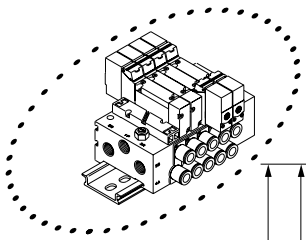
*Dimensions of the female thread type and L type push-in fitting (upward) are the same as those of 4G. Refer to each dimensions.

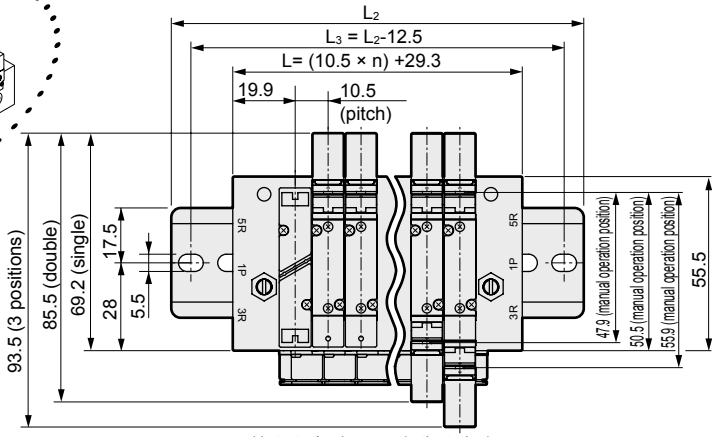


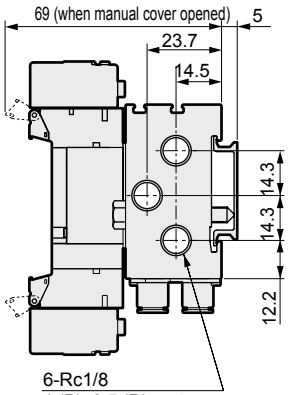


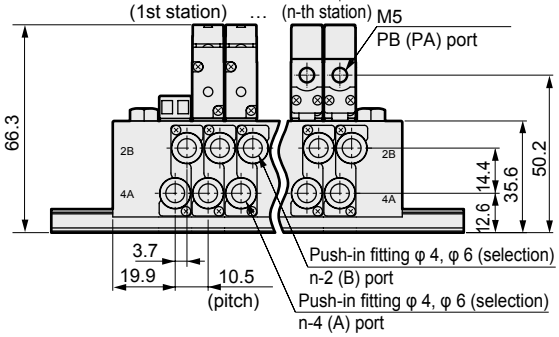
Station no.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	38.5	49	59.5	70	80.5	91	101.5	112	122.5	133	143.5	154	164.5	175	185.5	196	206.5	217	227.5
L_1	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5

● DIN rail mount (D)









Station no.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L	50.3	60.8	71.3	81.8	92.3	102.8	113.3	123.8	134.3	144.8	155.3	165.8	176.3	186.8	197.3
L_2	100.0	112.5	112.5	125.0	137.5	150.0	162.5	175.0	175.0	187.5	200.0	212.5	225.0	237.5	237.5
L_3	87.5	100.0	100.0	112.5	125.0	137.5	150.0	162.5	162.5	175.0	187.5	200.0	212.5	225.0	225.0

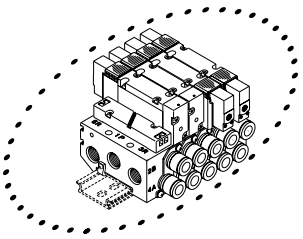
Discontinue

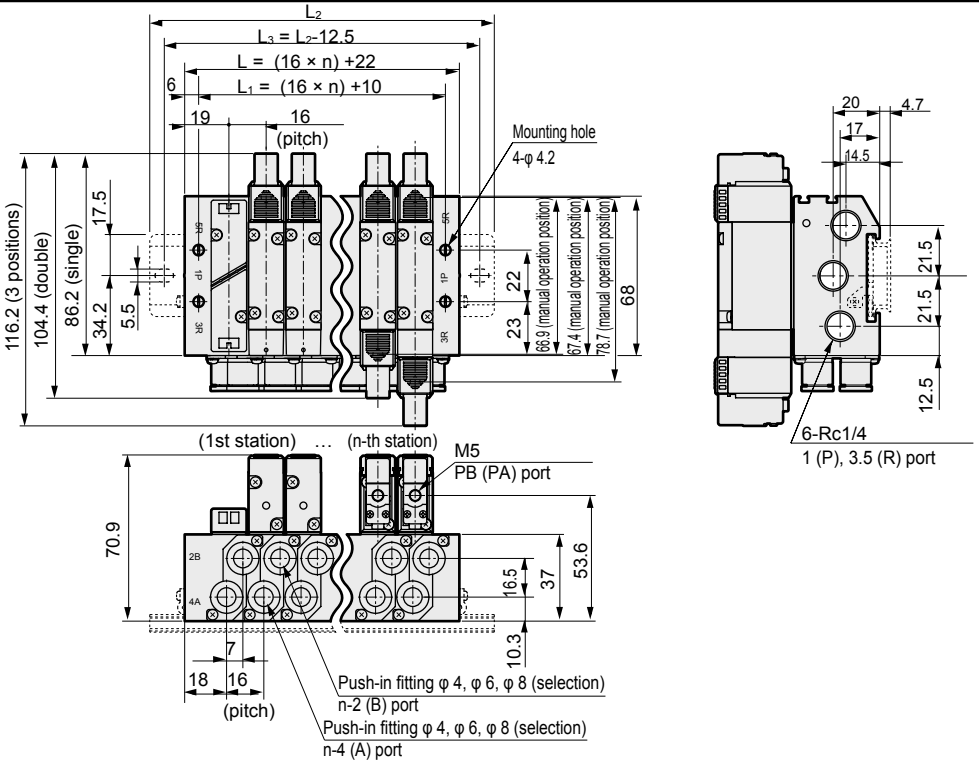
M4GB Series

Master valve manifold; base piping

Dimensions CAD

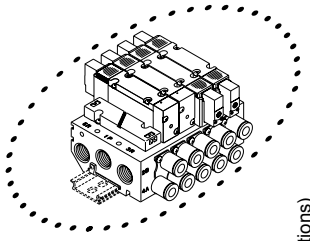
M4GB2

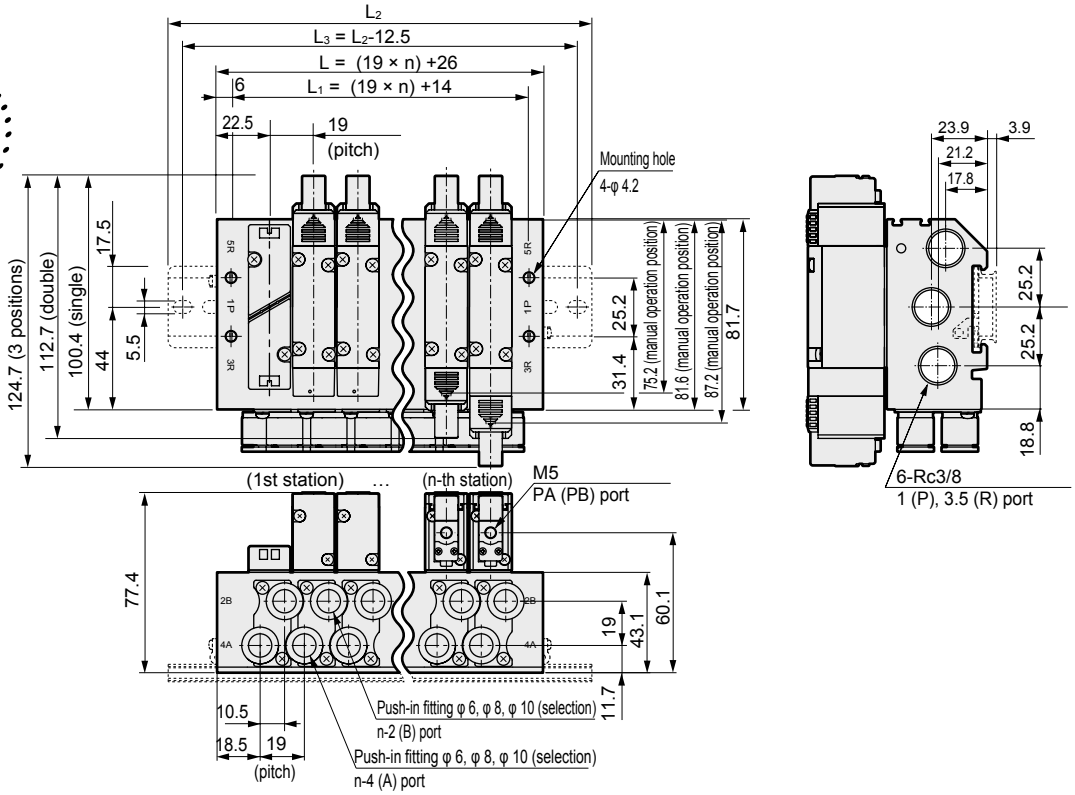




Station no.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	54	70	86	102	118	134	150	166	182	198	214	230	246	262	278	294	310	326	342
L_1	42	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330
L_2	100.0	112.5	137.5	150.0	162.5	175.0	200.0	212.5	225.0	250.0	262.5	275.0	287.5	312.5	325.0				
L_3	87.5	100.0	125.0	137.5	150.0	162.5	187.5	200.0	212.5	237.5	250.0	262.5	275.0	300.0	312.5				

M4GB3





Station no.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	64	83	102	121	140	159	178	197	216	235	254	273	292	311	330	349	368	387	406
L_1	52	71	90	109	128	147	166	185	204	223	242	261	280	299	318	337	356	375	394
L_2	112.5	125.0	150.0	162.5	187.5	200.0	225.0	237.5	262.5	275.0	300.0	325.0	337.5	362.5	375.0				
L_3	100.0	112.5	137.5	150.0	175.0	187.5	212.5	225.0	250.0	262.5	287.5	312.5	325.0	350.0	362.5				

How to prepare M4G Series manifold specifications

● Manifold model no. (Example of description)

Caution for fitting mix CX

A/B ports can be selected freely by indicating "CX" in the port side

Selectable cartridge fitting

4G1	C4,C6, × (plug)
4G2	C4,C6,C8, × (plug)
4G3	C6,C8,C10, × (plug)

How to use base piping type M4GB*11 as a 3 port valve

By attaching a plug cartridge on one side of the A/B port, it can be used as an N.O./N.C. type.
Fill in "X" in the fitting CX column.

Switching method	Plug attachment port
N.C. (normally closed)	B
N.O. (normally open)	A

For female specifications, fill in the required quantity of plug in the "Screw plug" column at the end of the column.
Within 1 set of the manifold, the female screw and the cartridge fitting cannot be used in combination.

Elbow type specifications

● Available only for single solenoid manifold.
The long elbow is provided for A port and the short elbow for B port.

M 4 G (A/B) 1 8 1- CX - 9

Type of solenoid valve | Solenoid position | Port size | Station no.

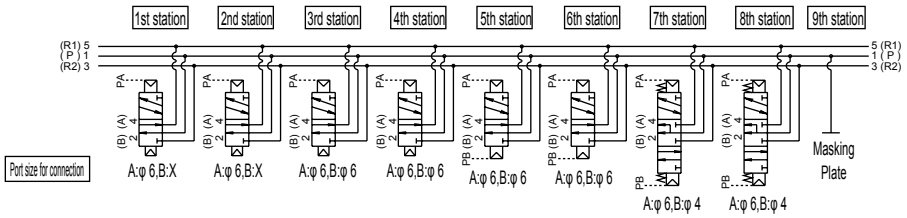
Solenoid valve model no.	Fitting CX A	Fitting CX B	Installation position 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Quantity
4GB118-CX	C6	X	○	○																							2
4GB118-C6					○	○																					2
4GB128-C6							○	○																			2
4GB158-CX	C6	C4							○	○																	2
4G 18-																											
3GA1 8-																											
3GA1 8-																											
4G1-MP											○																1

Indicate "X" for a plug

Indicate "CX" when changing the fitting combination.

Mounting rail	L_2=	Accessories	Blanking plug	Blanking plug	Screw plug	Silencer	Silencer
			GWP4-B	GWP6-B	4G1-M5P	SLW-6S	SLW-6A
			Push-in fitting tube remover (standard attachment) Attachment not required ✓ ☑				

References circuit diagram For manifold configuration as shown above (base porting) (simplified circuit diagram)



* The manifold station nos. shuld be set in order from left with the piping port facing forward.

Preparing the manifold specifications

● There are manifold specifications for each model no., so please fill in the corresponding specification.

M4G(A/B)1 ..... 428 page
M4G(A/B)2 ..... 429 page
M4G(A/B)3 ..... 430 page

Note 1: Select the silencer mounting after confirming the dimensions.
Note 2: For DIN rail mounting type of M4GA2, select SLW-8S. When using SLW-8A, the interference will occur.

Discontinue

Master valve

M4G$^{A}_{B}$1 manifold specifications

Date of issue / /

Your company name

Contact

Order no.

● Contact ● Quantity set(s) ● Request date /

Slip no.	Order no.

● Manifold model no.

M ☐ G$^{A}_{B}$1 ☐ 1- ☐ - ☐ ☐ - ☐

Type of solenoid valve / Solenoid position / Port size / Other options / Mount type / Station no.

Solenoid valve model no.	FittingCX A	FittingCX B	Valve installation position 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Quantity
4G ☐ 1 ☐ 8- ☐																											
4G ☐ 1 ☐ 8- ☐																											
4G ☐ 1 ☐ 8- ☐																											
4G ☐ 1 ☐ 8- ☐																											
4G ☐ 1 ☐ 8- ☐																											
3GA1 ☐ 8- ☐																											
3GA1 ☐ 8- ☐																											
Masking plate 4G1-MP- ☐																											
Air supply spacer 4G1-P- ☐																											
Air supply spacer 4G1-P- ☐																											

Mounting rail	L_2= ☐	Accessories	Blanking plug	Blanking plug	Screw plug	Silencer	Silencer
			GWP4-B ☐	GWP6-B ☐	4G1-M5P ☐	SLW-6S ☐	SLW-6A ☐
			Push-in fitting tube remover (standard attachment) □ Not required (check)				

Discontinue

Master valve

M4G$^{A}_{B}$2 manifold specifications

Date of issue / /

Your company name

Contact

Order no.

● Contact ● Quantity set(s) ● Request date /

Slip no.	Order no.

● Manifold model no.

M □ G$^{A}_{B}$2 □ 1- □ - □ □ - □

Type of solenoid valve / Solenoid position / Port size / Other options / Mount type / Station no.

Solenoid valve model no.	FittingCX A	FittingCX B	Valve installation position 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Quantity
4G □ 2 □ 8- □																											
4G □ 2 □ 8- □																											
4G □ 2 □ 8- □																											
4G □ 2 □ 8- □																											
4G □ 2 □ 8- □																											
3GA2 □ 8- □																											
3GA2 □ 8- □																											
Masking plate 4G2-MP- □																											
Air supply spacer 4G2-P- □																											
Air supply spacer 4G2-P- □																											
In-stop valve spacer 4G2-IS																											

Mounting rail	L_2= □	Accessories	Blanking plug						Screw plug		Silencer			
			GWP4-B	□	GWP6-B	□	GWP8-B	□	4G2-06P	□	SLW-8S	□	SLW-8A	□

Discontinue

Master valve

M4G$^{A}_{B}$3 manifold specifications

Date of issue / /

Your company name

Contact

Order no.

● Contact ● Quantity set(s) ● Request date /

Slip no.	Order no.

● Manifold model no.

M [ ] **G$^{A}_{B}$3** [ ] **1-** [ ] **-** [ ] [ ] **-** [ ]

Type of solenoid valve / Solenoid position / Port size / Other options / Mount type / Station no.

Solenoid valve model no.	FittingCX A	FittingCX B	Valve installation position 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Quantity
4G [ ] 3 [ ] 8- [ ]																											
4G [ ] 3 [ ] 8- [ ]																											
4G [ ] 3 [ ] 8- [ ]																											
4G [ ] 3 [ ] 8- [ ]																											
4G [ ] 3 [ ] 8- [ ]																											
3GA3 [ ] 8- [ ]																											
3GA3 [ ] 8- [ ]																											
Masking plate 4G3-MP- [ ]																											
Air supply spacer 4G3-P- [ ]																											
Air supply spacer 4G3-P- [ ]																											
In-stop valve spacer 4G3-IS																											

Mounting rail	L_2= [ ]	Accessories	Blanking plug						Screw plug		Silencer			
			GWP6-B	[ ]	GWP8-B	[ ]	GWP10-B	[ ]	4G3-08P	[ ]	SLW-10A	[ ]	SLW-10L	[ ]

Discontinue

MEMO

(1) The cylinder average speed is obtained from the combination of 4G Series and piping system. It is expressed by the cylinder's piston speed obtained by dividing the stroke by the time the piston rod moved after starting, when the cylinder rod is installed facing upward. When the load factor is 50%, the average speed should be approximately the cylinder's piston speed multiplied by 0.5.
(2) The cylinder's average speed described in Pneumatic system device selection guide is that when one cylinder is operated alone.
(3) The effective cross-sectional area of the solenoid valve used for the calculation below is the 2-position value.
(4) This selection guide is for reference. With the CKD sizing program, confirm conditions to be actually used.
(5) Effective cross-sectional area S and sonic conductance C are converted as S ≒ 5.0 × C.

Standard system table 4G (metal base)

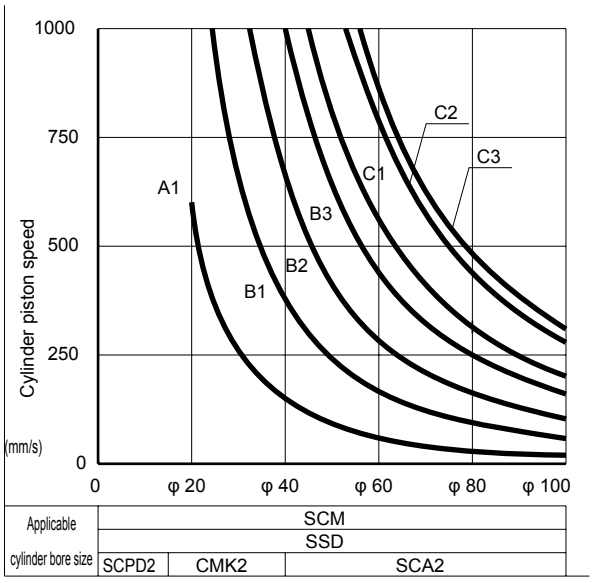
* Refer to page 434 for MN4G (block manifold).

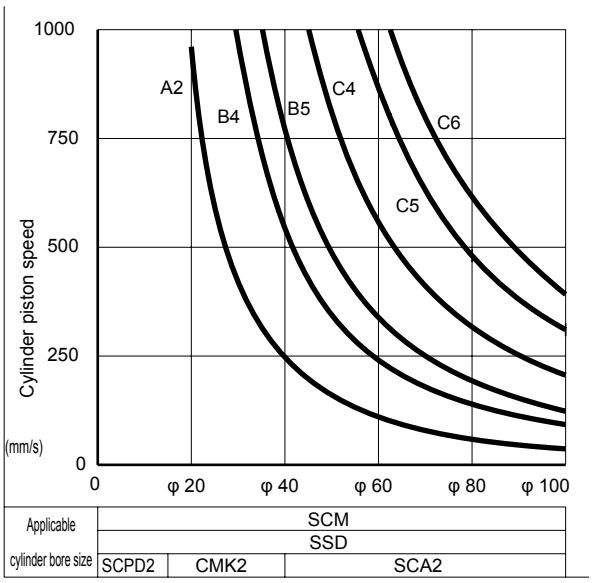
<Discrete>

Series	Body piping type					
	Model no.	System No.	Speed controller	Silencer	Piping	Composite effective sectional area (mm^2) pipe length 1 m
4G1	4GA110-C4	A1	SC3W-M5-4	SLM-M5	φ 4 × φ 2.5	1.0
	4GA110-C6	B1	SC1-6	SLM-M5	φ 6 × φ 4	2.5
4G2	4GA210-C6	B2	SC1-6	SLW-6S	φ 6 × φ 4	4.3
	4GA210-C8	B3	SC1-8	SLW-6S	φ 8 × φ 5.7	6.5
4G3	4GA310-C8	C1	SC1-8	SLW-8S	φ 8 × φ 5.7	8.3
	4GA310-C10	C2	SC1-10	SLW-8S	φ 10 × φ 7.2	11.6
	4GA310-C10	C3	SC1-15	SLW-8S	φ 10 × φ 7.2	12.7

Series	Base piping type					
	Model no.	System No.	Speed controller	Silencer	Piping	Composite effective sectional area (mm^2) pipe length 1 m
4G1	4GB110-06	A2	SC3W-6-4	SLW-6S	φ 4 × φ 2.5	1.6
	4GB110-06	B4	SC1-6	SLW-6S	φ 6 × φ 4	3.6
4G2	4GB210-08	B5	SC1-8	SLW-8S	φ 6 × φ 4	5.0
	4GB210-08	C4	SC1-10	SLW-8S	φ 8 × φ 5.7	8.3
4G3	4GB310-10	C5	SC1-10	SLW-10L	φ 10 × φ 7.2	12.6
	4GB310-10	C6	SC1-15	SLW-10L	φ 12 × φ 8.9	15.9

* The system no. is indicated in the following graph.

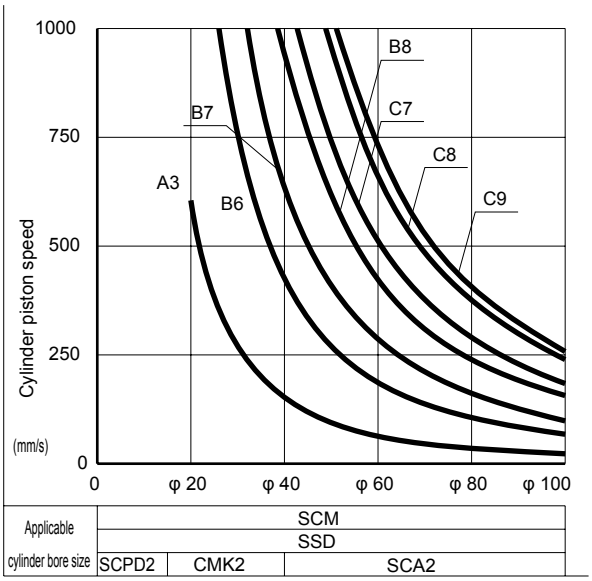


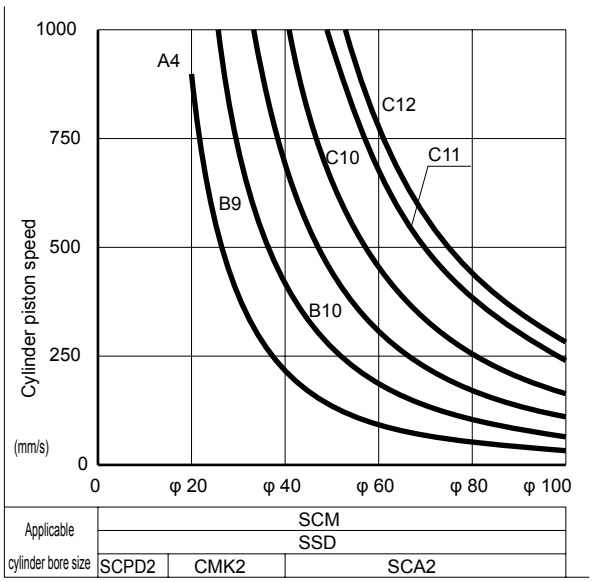


<Manifold> (Check valve integrated)

Series	Body piping type					
	Model no.	System No.	Speed controller	Silencer	Piping	Composite effective sectional area (mm²) pipe length 1 m
4G1	M4GA110-C4	A3	SC3W-M5-4	SLW-6S	φ 4 × φ 2.5	1.0
	M4GA110-C6	B6	SC1-6	SLW-6S	φ 6 × φ 4	2.8
4G2	M4GA210-C6	B7	SC1-6	SLW-8S	φ 6 × φ 4	4.2
	M4GA210-C8	B8	SC1-8	SLW-8S	φ 8 × φ 5.7	6.2
4G3	M4GA310-C8	C7	SC1-8	SLW-10L	φ 8 × φ 5.7	7.5
	M4GA310-C10	C8	SC1-10	SLW-10L	φ 10 × φ 7.2	9.8
	M4GA310-C10	C9	SC1-15	SLW-10L	φ 10 × φ 7.2	10.5
Series	Base piping type					
	Model no.	System No.	Speed controller	Silencer	Piping	Composite effective sectional area (mm²) pipe length 1 m
4G1	M4GB110-C4	A4	SC3W-6-4	SLW-6S	φ 4 × φ 2.5	1.5
	M4GB110-C6	B9	SC1-6	SLW-6S	φ 6 × φ 4	2.8
4G2	M4GB210-C6	B10	SC1-8	SLW-8S	φ 6 × φ 4	4.6
	M4GB210-C8	C10	SC1-10	SLW-8S	φ 8 × φ 5.7	6.7
4G3	M4GB310-C10	C11	SC1-10	SLW-10L	φ 10 × φ 7.2	10.0
	M4GB310-C10	C12	SC1-15	SLW-10L	φ 12 × φ 8.9	11.5

* The system no. is indicated in the following graph.





Standard system table **MN4G (Block manifold)** (check valve integrated)

1. Common exhaust

Series	Solenoid valve port size	System No.	Speed controller	Cylinder piping pipe length 1 m	Common exhaust piping	Composite effective sectional area (mm²)
MN4G1	C4	A1	SC3W-M5-4	φ 4 × φ 2.5	φ 6 × φ 4 × 3 m	1.0
	C4	A2	SC3W-6-4	φ 4 × φ 2.5	φ 6 × φ 4 × 3 m	1.4
	C6	B1	SC1-6	φ 6 × φ 4	φ 8 × φ 5.7 × 3 m	2.7
MN4G2	C6	B2	SC1-6	φ 6 × φ 4	φ 8 × φ 5.7 × 3 m	3.8
	C8	B3	SC1-8	φ 8 × φ 5.7	φ 10 × φ 7.2 × 3 m	5.9

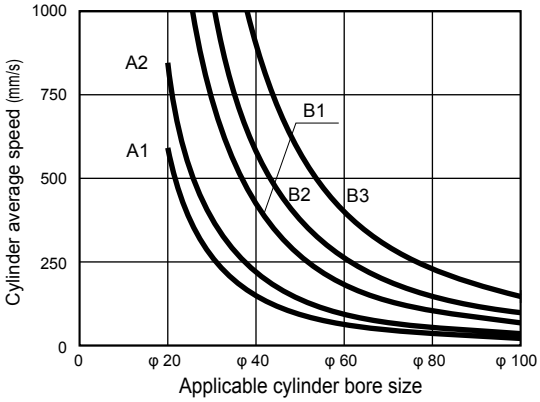
2. Atmospheric release exhaust (integrated exhaust muffler)

Series	Solenoid valve port size	System No.	Speed controller	Cylinder piping pipe length 1 m	End block	Composite effective sectional area (mm²)
MN4G1	C4	A3	SC3W-M5-4	φ 4 × φ 2.5	N4G1-EX	1.0
	C4	A4	SC3W-6-4	φ 4 × φ 2.5		1.5
	C6	B4	SC1-6	φ 6 × φ 4		2.9
MN4G2	C6	B5	SC1-6	φ 6 × φ 4	N4G2-EX	4.2
	C8	B6	SC1-8	φ 8 × φ 5.7		5.9

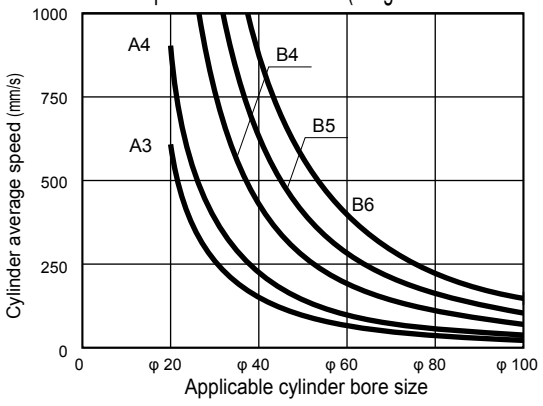
3. Exhaust with silencer

Series	Model no.	System No.	Speed controller	Cylinder piping pipe length 1 m	Silencer	Composite effective sectional area (mm²)
MN4G1	C4	A5	SC3W-M5-4	φ 4 × φ 2.5	SLW-H6	1.0
	C4	A6	SC3W-6-4	φ 4 × φ 2.5	SLW-H6 SLW-H8	1.5
	C6	B7	SC1-6	φ 6 × φ 4		2.7
MN4G2	C6	B8	SC1-6	φ 6 × φ 4	SLW-H8 SLW-H10	3.8
	C8	B9	SC1-8	φ 8 × φ 5.7		6.0

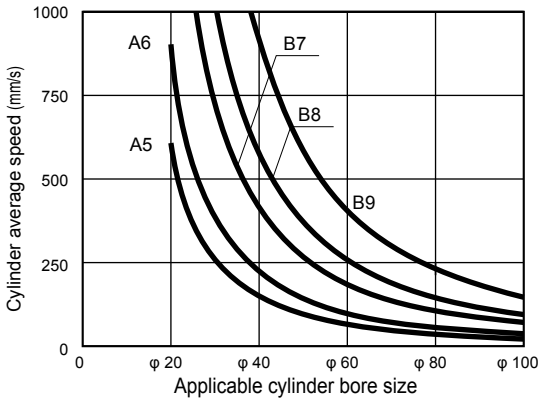
1. Common exhaust



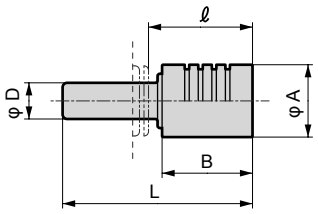
2. Atmospheric release exhaust (integrated exhaust muffler)



3. Exhaust with silencer



● Silencer



Model no.	D	L	A	B	ℓ
SLW-H6	φ 6	41	16	20	23.5
SLW-H8	φ 8	42	16	20	23
SLW-H10	φ 10	53	20	27	31.5

Device selection guide is used to select the optimum model at a glance.

● Fluid control components selection

Assume that the cylinder bore size to be used is fixed, and that the cylinder speed, relatively high or low speed, is pre-determined as conditions. By using the table shown below as a reference, select the theoretical reference speed of the cylinder.

Degree of cylinder speed	Theoretical reference speed (mm/s)
Low speed	250
Medium speed	500
High speed	750
Ultra high speed	1,000

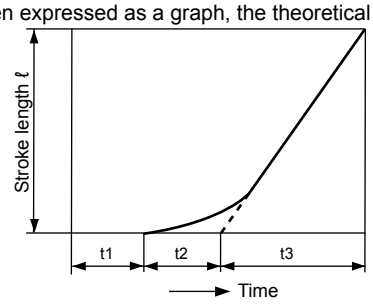
By using the table in the device selection guide-1 (pages 436 and 437), select the equivalent bore size of cylinder tube and the appropriate standard system no. corresponding to theoretical reference speed.

● Theoretical reference speed: Indicating the degree of cylinder speed, it is expressed as the following formula. (This value nearly coincides with speed of no load. When load is applied, speed drops considerably.)

$$vo = 1920 \times \frac{S}{A} = 2445 \times \frac{S}{D^2} \quad \text{(1)}$$

vo : Theoretical reference speed (mm/s)
A : Cylinder sectional area (cm^2)
S : Composite effective sectional area of circuit (exhaust air side) (mm^2)
D : Cylinder bore size (cm)

When expressed as a graph, the theoretical reference speed is a speed in the range where the cylinder moves at a constant velocity, and



$$vo = \frac{\ell}{t3} \text{ (mm/s)}$$

t1 : Time until movement starts
t2 : Time of primary delay
t3 : Operating time with constant velocity
ℓ : Stroke length

● Note: t1 and t2 differ depending on load.
At the time of no load, it can be almost neglected.

● Required flow rate is the instantaneous flow rate for operating a cylinder with velocity vo, and expressed with following formula. The value on the table is when P = 0.5 MPa. The required flow rate is a necessary value to select clean air system components.

$$Q = \frac{Avo\ (P + 0.101) \times 60}{0.101 \times 10^4} \quad \text{(2)}$$

Q : Required flow rate (ℓ/min) (ANR)
P : Supply pressure (MPa)

● Required effective sectional area: Composite effective cross sectional area for the exhaust circuit required for moving the cylinder at speed vo. (Composite effective sectional area of solenoid valve, speed controller, silencer or piping) Effective cross-sectional area S and sonic conductance C are converted as S ≒ 5.0 × C.

● Proper standard system: The best combination of solenoid valve, speed controller, silencer and bore size for operating a cylinder with velocity vo. The combination in the table is for a pipe length of 1 m.

Shown as followings depending on the practical unit.

Choked flow when $\frac{P_2 + 0.1}{P_1 + 0.1} \leqq b$

$$Q = 600 \times C\ (P_1 + 0.1) \sqrt{\frac{293}{273 + t}} \quad \text{..... (1)}$$

Subsonic flow when $\frac{P_2 + 0.1}{P_1 + 0.1} > b$

$$Q = 600 \times C\ (P_1 + 0.1) \sqrt{1 - \left(\frac{\frac{P_2 + 0.1}{P_1 + 0.1} - b}{1 - b} \right)^2} \sqrt{\frac{293}{273 + t}} \quad \text{..... (2)}$$

When calculating with effective cross-sectional area S, substitute value C obtained with C = S/5 in the above formula.
For subsonic flow, substitute b = 0.5 in formula (2).

Q : Air flow rate [dm^3/min (ANR)], SI unit dm^3 (cubic decimeter) can also be expressed with ℓ (liter). 1 dm^3 = 1 ℓ
C : Sonic conductance [dm^3/ (s·bar)]
b : Critical pressure ratio (−)
P_1 : Upstream pressure (MPa)
P_2 : Downstream pressure (MPa)
t : Temperature (°C)

Discontinue

4G A B 1 to 3/MN4G A B Series

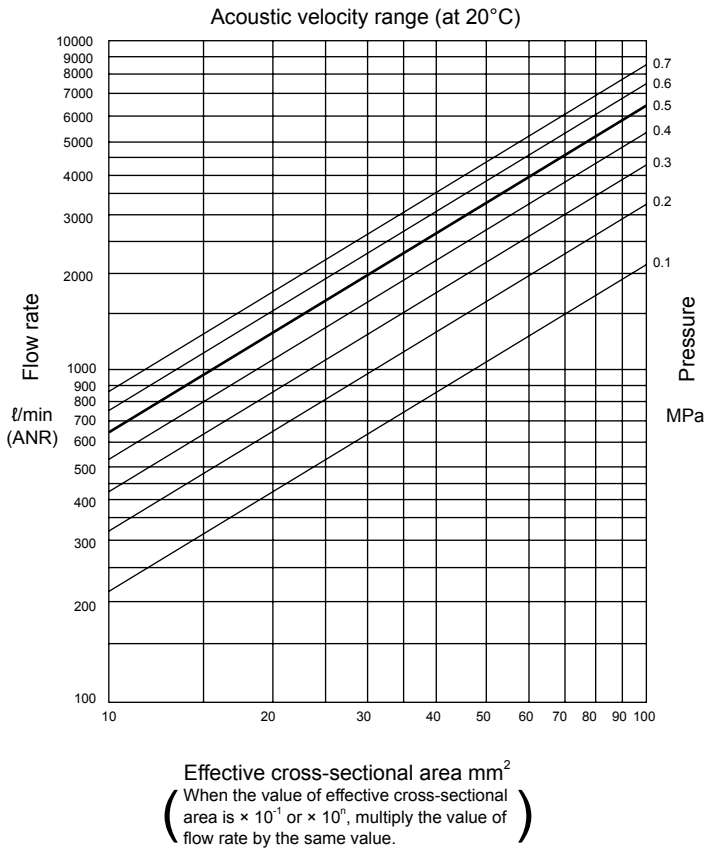
Technical data ❸ Pneumatic system selection guide

4G Series <Device selection guide-1>

Cylinder bore size (mm)	Theoretical reference speed (mm/S)	Required flow rate (ℓ min) (ANR)	Required effective sectional area (mm^2)	Appropriate standard system no.			
				Discrete		Manifold	
				Body piping	Base piping	Body piping	Base piping
φ 6	(500)	-	(0.1)	A 1	A 2	A 3	A 4
φ 10	(500)	-	(0.2)	A 1	A 2	A 3	A 4
φ 16	(500)	-	(0.5)	A 1	A 2	A 3	A 4
φ 20	250	29	0.5	A 1	A 2	A 3	A 4
	400	46	1.6	B 1	A 2	B 6	A 4
φ 25	250	44	0.8	B 1	A 2	A 3	A 4
	400	70	1.9	B 1	B 4	B 6	B 9
φ 30	250	64	1.1	B 1	A 2	B 6	A 4
	400	100	2.8	B 1	B 4	B 6	B 9
φ 32	250	73	1.3	B 1	A 2	B 6	A 4
	400	120	3.1	B 1	B 4	B 6	B 9
φ 40	250	110	2.0	B 1	B 4	B 6	B 9
	400	180	4.9	B 2	B 4	B 7	B 9
φ 40	250	110	1.7	B 1	B 4	B 6	B 9
	500	230	3.3	B 2	B 4	B 7	B10
	750	340	5.0	B 3	B 5	B 8	C10
	1000	450	6.6	C 1	C 4	C 7	C10
φ 50	250	180	2.6	B 2	B 4	B 7	B10
	500	350	5.2	B 3	C 4	B 8	C10
	750	530	7.7	C 1	C 5	C 7	C11
	1000	710	10.4	C 2	C 5	C 8	C12
φ 63	250	280	4.1	B 3	B 5	B 8	B10
	500	560	8.2	C 2	C 4	C 8	C11
	750	840	12.3	C 3	C 5	C 9	C12
	1000	1,100	16.4	-	C 6	-	-
φ 75	250	400	5.8	C 1	C 4	C 7	C10
	500	800	11.6	C 3	C 5	C 9	C11
	750	1,200	17.4	-	-	-	-
	1000	1,600	23.2	-	-	-	-
φ 80	250	450	6.6	C 1	C 4	C 7	C10
	500	910	13.2	C 3	C 6	-	C12
	750	1,400	19.8	-	-	-	-
	1000	1,800	25.4	-	-	-	-
φ 100	250	710	10.3	C 2	C 5	C 8	C11
	500	1,400	20.6	-	-	-	-
	750	2,100	30.9	-	-	-	-
	1,000	2,800	41.2	-	-	-	-

* Refer to pages 432 and 433 for system no.

<Effective cross-sectional area>



<Clean air system device>

Clean air system device

Part name	Model no.	Port size	Max. flow rate (ℓ/min, atmospheric pressure conversion value)
F.R.L kit	C1000-6-W	Rc1/8	450
	C1000-8-W	Rc1/4	630
	C3000-8-W	Rc1/4	1280
	C3000-10-W	Rc3/8	1750
	C4000-8-W	Rc1/4	1430
	C4000-10-W	Rc3/8	2400
	C4000-15-W	Rc1/2	3000
F.R. unit	W1000-6-W	Rc1/8	830
	W1000-8-W	Rc1/4	1150
	W3000-8-W	Rc1/4	2150
	W3000-10-W	Rc3/8	2430
	W4000-8-W	Rc1/4	2500
	W4000-10-W	Rc3/8	4350
	W4000-15-W	Rc1/2	4750
Air filter (F)	F1000-6-W	Rc1/8	460
	F1000-8-W	Rc1/4	610
	F3000-8-W	Rc1/4	1230
	F3000-10-W	Rc3/8	1500
	F4000-8-W	Rc1/4	1320
	F4000-10-W	Rc3/8	2140
	F4000-15-W	Rc1/2	3000
Regulator (R)	R1000-6-W	Rc1/8	770
	R1000-8-W	Rc1/4	1350
	R3000-8-W	Rc1/4	2000
	R3000-10-W	Rc3/8	2600
	R4000-8-W	Rc1/4	2500
	R4000-10-W	Rc3/8	4400
	R4000-15-W	Rc1/2	5000
Lubricator (L)	L1000-6-W	Rc1/8	550
	L1000-8-W	Rc1/4	700
	L3000-8-W	Rc1/4	1100
	L3000-10-W	Rc3/8	2250
	L4000-8-W	Rc1/4	1000
	L4000-10-W	Rc3/8	1700
	L4000-15-W	Rc1/2	2700

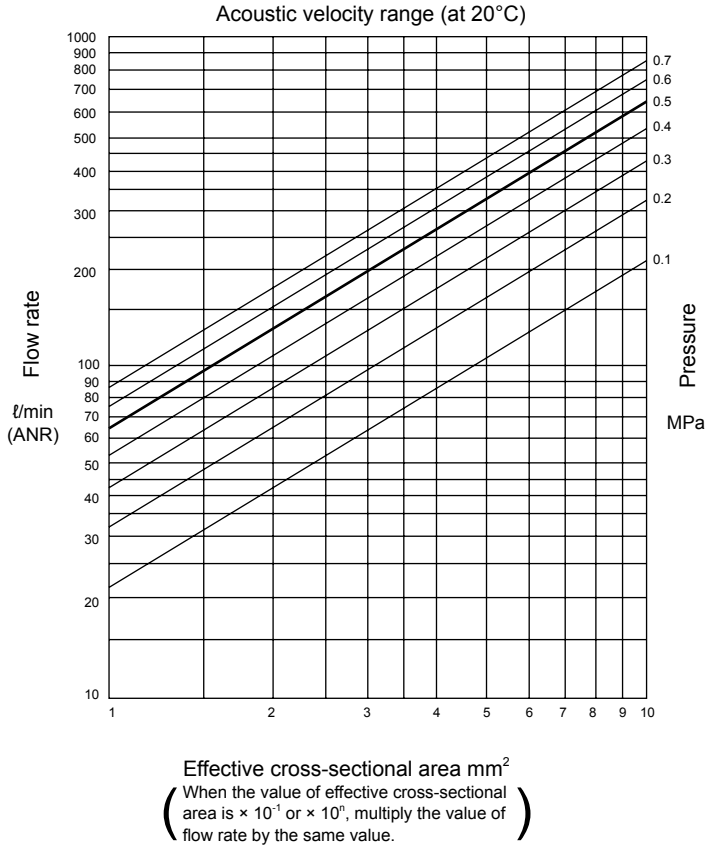
* Note) Max. flow rate: For FRL, FR and R, flow rate at 0.7 MPa primary pressure, 0.5 MPa set pressure, 0.1 MPa pressure drop. For air filter, flow rate at 0.7 MPa primary pressure, 0.02 MPa pressure drop. For lubricator, flow rate at 0.5 MPa primary pressure, 0.03 MPa pressure drop.

MN4G Series <Device selection guide-1>

Cylinder bore size (mm)	Theoretical reference speed (mm/S)	Required flow rate (ℓ min) (ANR)	Required effective sectional area (mm^2)	Appropriate standard system no.		
				1. Common exhaust	2. Atmospheric release exhaust	3. Exhaust with silencer
φ 6	(500)	-	(0.1)	A 1	A 3	A 5
φ 10	(500)	-	(0.2)	A 1	A 3	A 5
φ 16	(500)	-	(0.5)	A 1	A 3	A 5
φ 20	250	29	0.5	A 1	A 3	A 5
	400	46	1.6	B 1	B 4	B 7
φ 25	250	44	0.8	A 2	A 4	A 6
	400	70	1.9	B 1	B 4	B 7
φ 30	250	64	1.1	A 2	A 4	A 6
	400	100	2.8	B 1	B 4	B 7
φ 32	250	73	1.3	A 2	A 4	A 6
	400	120	3.1	B 2	B 4	B 8
φ 40	250	110	2.0	B 1	B 4	B 7
	400	180	4.9	B 3	B 6	B 9
φ 40	250	110	1.7	B 1	B 4	B 7
	500	230	3.3	B 2	B 5	B 8
	750	340	5.0	B 3	B 6	B 9
	1000	450	6.6	-	-	-
φ 50	250	180	2.6	B 1	B 1	B 7
	500	350	5.2	B 3	B 6	B 9
	750	530	7.7	-	-	-
	1000	710	10.4	-	-	-
φ 63	250	280	4.1	B 2	B 5	B 8
	500	560	8.2	-	-	-
	750	840	12.3	-	-	-
	1000	1,100	16.4	-	-	-
φ 80	250	450	6.6	-	B 6	-
	500	910	13.2	-	-	-
	750	1,400	19.8	-	-	-
	1000	1,800	25.4	-	-	-

* Refer to page 434 for system no.

<Effective cross-sectional area>



<Clean air system device>

Clean air system device

Part name	Model no.	Port size	Max. flow rate (ℓ/min, atmospheric pressure conversion value)
F.R.L kit	C1000-6-W	Rc1/8	450
	C1000-8-W	Rc1/4	630
	C3000-8-W	Rc1/4	1280
	C3000-10-W	Rc3/8	1750
	C4000-8-W	Rc1/4	1430
	C4000-10-W	Rc3/8	2400
	C4000-15-W	Rc1/2	3000
F.R. unit	W1000-6-W	Rc1/8	830
	W1000-8-W	Rc1/4	1150
	W3000-8-W	Rc1/4	2150
	W3000-10-W	Rc3/8	2430
	W4000-8-W	Rc1/4	2500
	W4000-10-W	Rc3/8	4350
	W4000-15-W	Rc1/2	4750
Air filter (F)	F1000-6-W	Rc1/8	460
	F1000-8-W	Rc1/4	610
	F3000-8-W	Rc1/4	1230
	F3000-10-W	Rc3/8	1500
	F4000-8-W	Rc1/4	1320
	F4000-10-W	Rc3/8	2140
	F4000-15-W	Rc1/2	3000
Regulator (R)	R1000-6-W	Rc1/8	770
	R1000-8-W	Rc1/4	1350
	R3000-8-W	Rc1/4	2000
	R3000-10-W	Rc3/8	2600
	R4000-8-W	Rc1/4	2500
	R4000-10-W	Rc3/8	4400
	R4000-15-W	Rc1/2	5000
Lubricator (L)	L1000-6-W	Rc1/8	550
	L1000-8-W	Rc1/4	700
	L3000-8-W	Rc1/4	1100
	L3000-10-W	Rc3/8	2250
	L4000-8-W	Rc1/4	1000
	L4000-10-W	Rc3/8	1700
	L4000-15-W	Rc1/2	2700

* Note) Max. flow rate: For FRL, FR and R, flow rate at 0.7 MPa primary pressure, 0.5 MPa set pressure, 0.1 MPa pressure drop. For air filter, flow rate at 0.7 MPa primary pressure, 0.02 MPa pressure drop. For lubricator, flow rate at 0.5 MPa primary pressure, 0.03 MPa pressure drop.

Safety Precautions

Always read this section before use.
Refer to Intro 63 for general precautions for using valves.

3, 5 port pilot operated valve 4G A/B /MN4G A/B Series

Design & selection

1. Surge suppressor

CAUTION

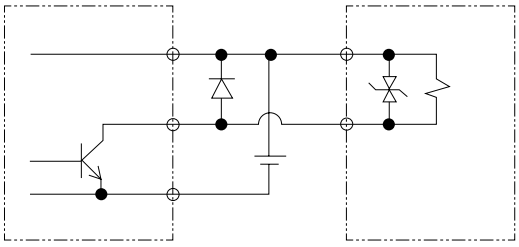
■ "The surge suppressor enclosed with the solenoid valve is used to protect the output contact driving the solenoid valve. The protective effect for other peripheral components cannot be expected; unprotected components can be subject to damage or malfunction caused by surge. In contrast, surge can also be absorbed by other components, which may result in a burn-out or other damage. Note the following points."

- The surge suppressor regulates the solenoid valve surge voltage that can reach a few hundred volts to a lower voltage level that the output contact can tolerate. Depending on the output circuit that is being used, this may be insufficient, resulting in damage or malfunction. Before use, check the surge voltage limiting level of your solenoid valve, and the output component's proof pressure and circuit composition or return delay time, in order to determine whether or not to use the component. If necessary, implement a separate anti-surge protection. 4G Series solenoid valve with surge suppressor can also suppress inverse voltage surge that occurs when the product is turned OFF to the level shown in the table below.

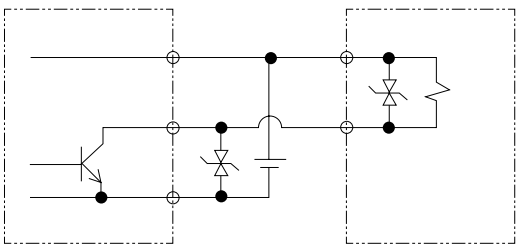
Voltage specification	Inverse voltage value when power turned OFF
12 VDC	Approx. 27 V
24 VDC	Approx. 47 V

- If the output unit is NPN type, always connect a contact protection circuit in order to avoid the risk of surge voltage equivalent to the sum of the voltage shown in the table above and the power supply voltage being applied to the output transistor.

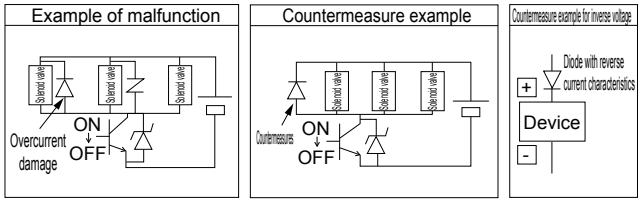
<Output transistor protection circuit: Installation example 1>



<Output transistor protection circuit: Installation example 2>



- If another device or solenoid valve is connected in parallel to the solenoid valve, the inverse voltage surge generated when the solenoid valve is OFF would be applied to those devices. Even in the case of a solenoid valve for 24 VDC with surge suppressor, surge voltage may reach several tens of volts for some models, and this inverse voltage may cause damage to or malfunction in the other parallel-connected components. Avoid parallel connection with components that are vulnerable to inverse voltage (example LED indicator lights). Furthermore, in the case of operating multiple solenoid valves in parallel, surge from another solenoid valve may flow into the surge suppressor of a solenoid valve with surge suppressor, and with certain current value, cause that surge suppressor to burn out. Even in a parallel operation of multiple solenoid valves with surge suppressors, surge current can concentrate in the surge suppressor with the lowest limiting voltage and burn it out. Due to variations in surge suppressor limiting voltages that also exist among solenoid valves of the same model no., in the worst case the surge suppressor may burn out. Avoid parallel operation of multiple solenoid valves.



- The surge suppressor incorporated in the solenoid valve may often be short-circuited if it is damaged by an overvoltage or overcurrent from the other solenoid valves. For that reason, large current flows when the output is turned ON after the damage is incurred. In the worst case, this may result in damage/fire in the output circuit and/or solenoid valve. Do not continue energizing in a state of malfunction. Additionally, to prevent large currents from continuing to flow, connect an overcurrent protection circuit to the power supply and drive circuit, or use a power supply with overcurrent protection.

2. 100 VAC specifications

CAUTION

■ 100 VAC specification type (excluding 4G4) has a built-in all wave rectifying circuit.
If SSR is used to turn the solenoid valve ON and OFF, depending on the type of SSR, a return failure may occur to the solenoid valve.
Be careful when selecting SSRs. (It is recommended for a user to consult with a relay or sequencer manufacturer.)

3. When using the product in combination with low sliding cylinders

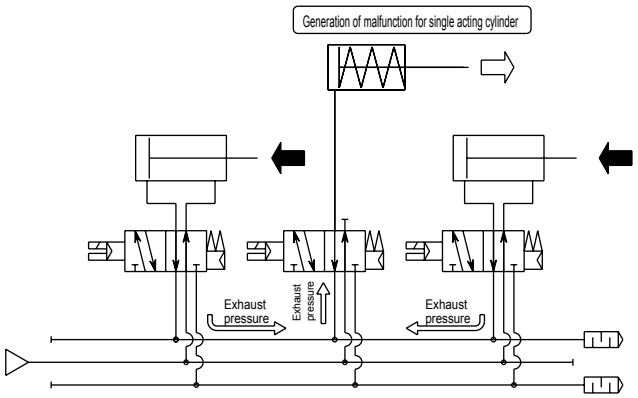
■ Malfunctions could occur because of the exhaust pressure. Contact CKD.

4. Check valve

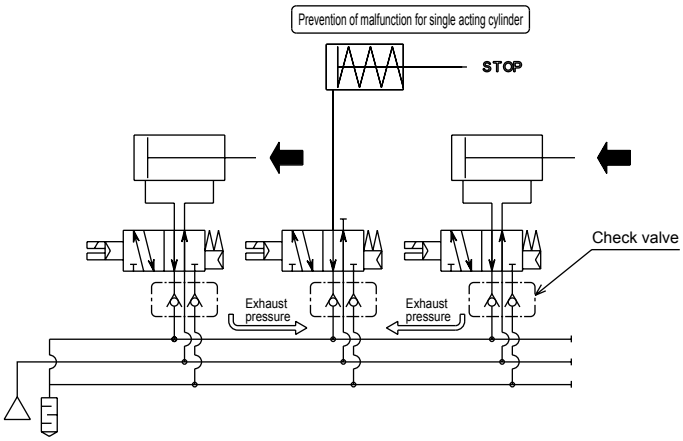
CAUTION: Check valve is a check valve. Note that when operating the cylinder rod directly without pressurized, the check valve opens and the cylinder rod does not move.

Generally, the double acting cylinder connected at the manifold to single acting cylinders or ABR connection valves may malfunction when it is adversely affected by the exhaust pressure coming around due to the operation of other cylinders. For the manifold of 4G Series, the "check valve" integrated for preventing this malfunction can be selected except for all ports closed valve and PAB connection valve. When using components that are affected by a small amount of leakage or pressure of low sliding cylinders, it may not function properly.

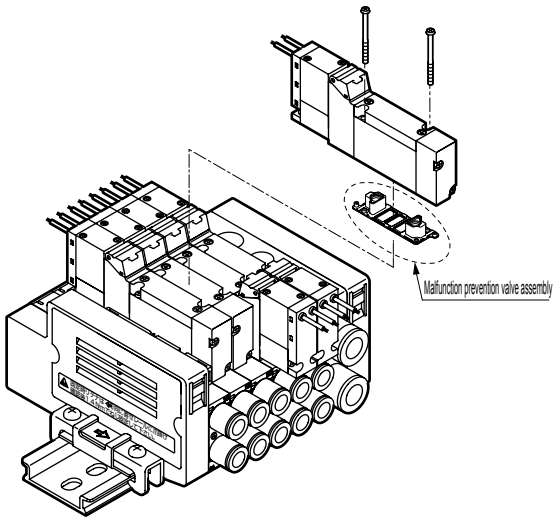
Example of pneumatic pressure system that may malfunction



4G Series pneumatic pressure system



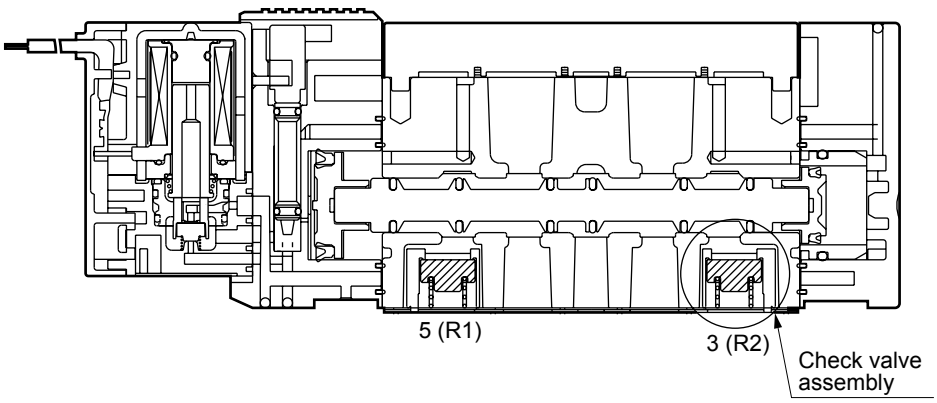
Internal structure



Standard specifications of malfunction prevention valve

Model no.		Flow path switching	Option (H) selection
4G	MN4G		
3GA*19	3GA*10	2-position singleNC	Selected
3GA*119	3GA*110	2-position singleNO	Selected
3G $^{A}_{B}$*669	3G $^{A}_{B}$*660	Dual 3 port valve integrated type NC/NC	Selected
4G $^{A}_{B}$*19	4G $^{A}_{B}$*10	2-position single	Selected
4G $^{A}_{B}$*29	4G $^{A}_{B}$*20	2-position double	Selected
4G $^{A}_{B}$*39	4G $^{A}_{B}$*30	3-position all ports closed	None
4G $^{A}_{B}$*49	4G $^{A}_{B}$*40	3-position ABR connection	Selected
4G $^{A}_{B}$*59	4G $^{A}_{B}$*50	3-position PAB connection	None

Note: Because 3 position all ports closed type and PAB connection type are not adversely affected by the exhaust pressure coming around from other cylinders at the neutral position, installation of the malfunction prevention valve is not required.



This figure is for 4GB219

Installation & adjustment

1. External pilot (K) piping port

⚠CAUTION

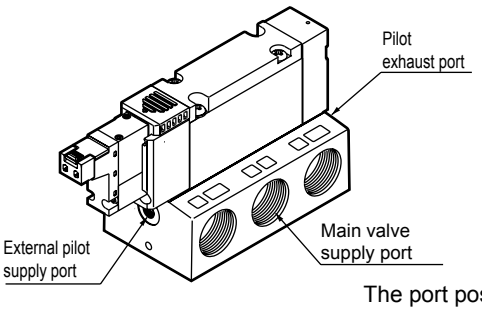
■ Metal base 4G A B Series

● The external pilot type (K) has a separate pilot air exhaust. M5 screw ports are used to supply and exhaust the pilot air, so check that the piping connection position is correct. Malfunctions could occur if the piping is incorrect.

Port indication

Applications		Indication (ISO standards)
Pilot air	Supply port	12/14
	Exhaust port	82/84

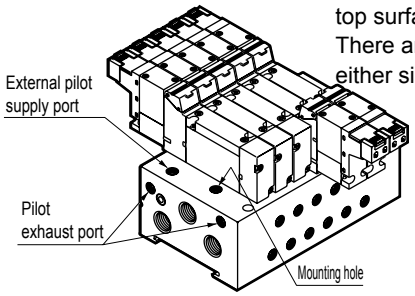
Discrete base piping type



The port position of external pilot air supply port is at the left side when the valve air supply port is at front side.

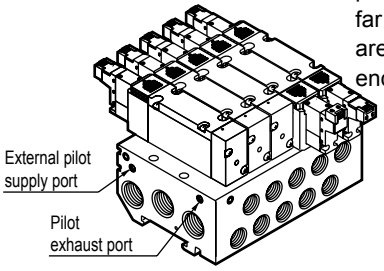
Manifold

M4G1



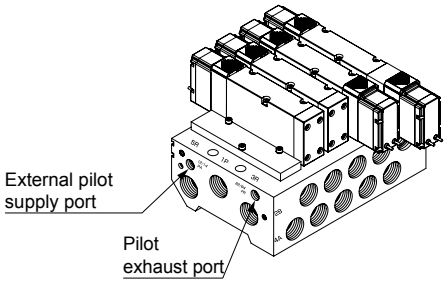
The port position of external pilot air supply port is on the top surface of the manifold. There are 2 positions on the either side.

M4G2/3



The port position of external pilot air supply port is at the far side from A/B port. There are 2 positions on the either end surface.

M4G4



The port position of external pilot supply port is at the far side from A/B port. There are 2 positions on the either end surface.

■ Block manifold MN4G A B Series

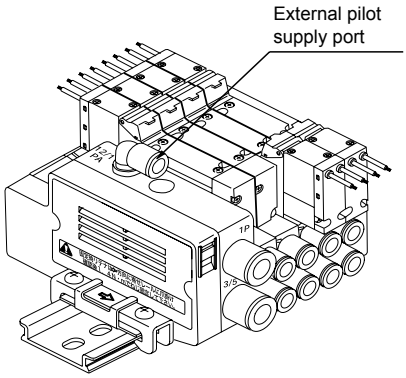
● The external pilot (K) type has a separate pilot air supply. φ 6 push-in fitting is used to supply the pilot air, so be careful that the piping connection position is correct. Malfunctions could occur if the piping is incorrect.

Port indication

Applications		Indication (ISO standards)
Pilot air	Supply port	12/14

* The A/B ports and the R port cannot be pressurized.

MN4G1



The external pilot supply port is the φ 6 push-in fitting on the top of the supply/exhaust block.

■ Note supply pressure for the type with dual 3 port valve.

● The valving element of the type with dual 3 port valve is operated with the main (P port) supply pressure.

(1) Check that the main pressure (P port) is not higher than the pilot pressure (PA port).

(2) Check that the main pressure (P port) does not drop below 0.2 MPa.

Installation & adjustment

2. How to install discrete direct piping (A)

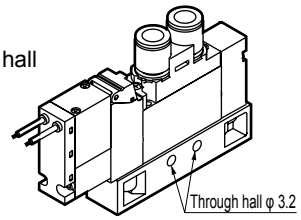
⚠CAUTION

■ When directly installing the manifold

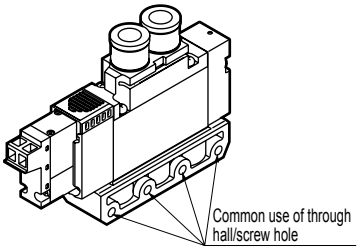
● The discrete direct piping type 4GA Series can be installed using (a) penetrating hole or (b) screw hole. When using the screw holes, be careful about the tightening torque.

Screw hole Tightening torque 0.7 to 1.2 N·m

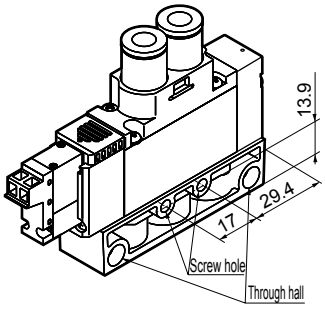
4GA1 Series
(a) 2 positions for through hall



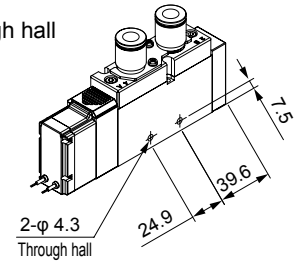
4GA2 Series
(a) Through hall
(b) 4 positions for common use of screw hole



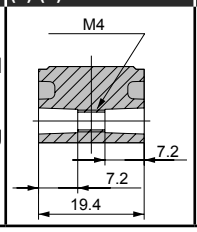
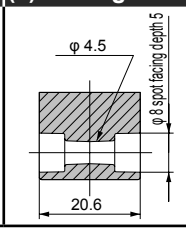
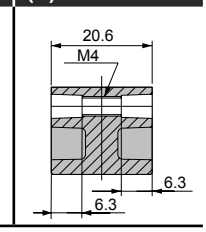
4GA3 Series
(a) Through hall
(b) 2 positions each for exclusive use of screw



4GA4 Series
(a) 2 positions for through hall



Mounting hole shape

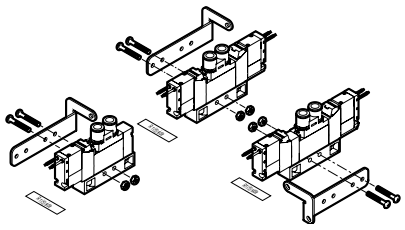
	4GA2	4GA3	
	(a) (b) Common use	(a) Through hall	(b) Screw hole
Sectional view of mounting hole			

■ When installing the manifold with mounting plate (P)

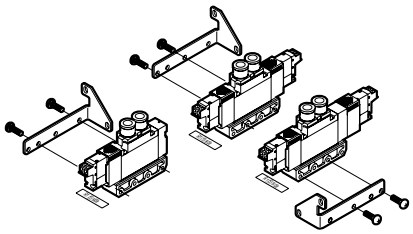
● Installation method of the mounting plate (P) for discrete direct piping type differs depending on the position of single, double and 3-position. Be careful for the mounting position and direction since damage could be occurred if incorrectly installed.

■ How to mount mounting plate (P)

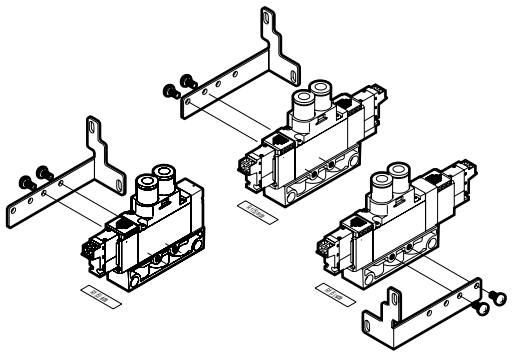
4GA1 Series



4GA2 Series



4GA3 Series



Mounting (P) kit

	Kit model no.	Set parts
4GA1	4G1-MOUNT-PLATE-KIT	Mounting plate, 2 set screws, 2 nuts
4GA2	4G2-MOUNT-PLATE-KIT	Mounting plate, 2 set screws
4GA3	4G3-MOUNT-PLATE-KIT	Mounting plate, 2 set screws

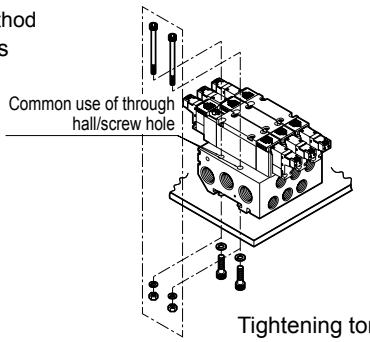
3. How to install manifold (Metal base 4G A B Series)

⚠CAUTION

■ When directly installing the manifold

- For installation of M4G2/3 Series, there are 2 methods of tightening the manifold with bolts after passing them through the upper side of the manifold base or after inserting them from the back side. When using the female screw as shown in the right figure, check the thread depth, select the mounting bolt that can screw in for 10 threads and over, and be careful for the tightening torque. The screw could be damaged if incorrectly installed.

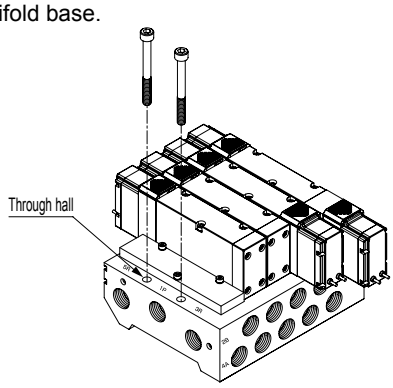
Installation method
M4G2/3 Series



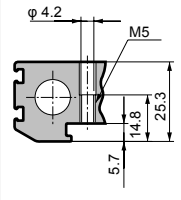
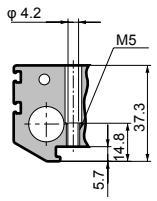
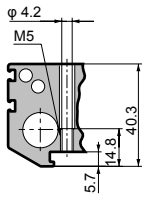
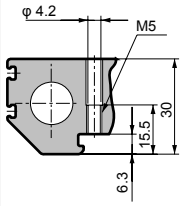
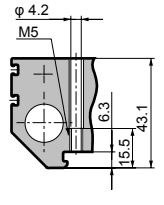
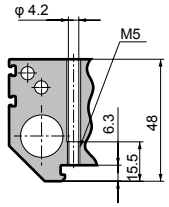
Tightening torque
1 to 1.5 N·m

M 4 G 4 Series

- For installation of M4G A B 4 Series, tighten the manifold with bolts after passing them through the upper side of the manifold base.



Mounting hole shape (sectional view)

	Standard manifold (internal pilot)		External pilot
	M4GA (body piping)	M4GB (base piping)	M4G-K
M4G2			
M4G3			

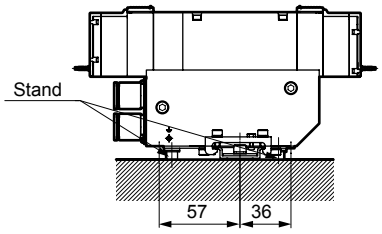
■ When installing the manifold with DIN rail

M 4 G 1, 2, 3

- The manifold of direct mounting specification can be changed to that of DIN rail mounting specification for its use. Be careful that the manifold could drop off or be damaged if incorrectly installed. If the manifold weighs more than 1 kg, or when using in an environment with vibration or impact, fix the DIN rail onto the surface at 50 to 100 mm intervals, and confirm that there is no problem with installation before starting operation. Use the individual specifications to calculate the weight.
(CAUTION: Only for M4GB1 (page 100), its dedicated base is provided with either of direct mount type or DIN rail mount type. For mounting type, the direct mounting type cannot be changed to the DIN rail mounting type, but the direct mounting type can be directly mounted.)
The upper limit of station no. for DIN rail mounting is 16.

M 4 G 4

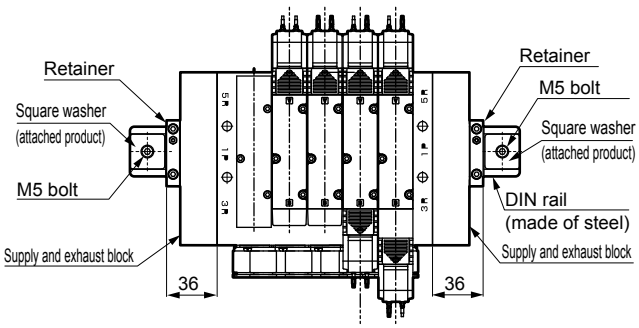
- For DIN rail mounting type, stands are attached to either end of the supply and exhaust block in order to suppress vibration or impact. Allow enough range of a flat surface (width 57 + 36 mm) as shown in the figure below so that the stands can be seated on the mounting surface of the DIN rail.



(Required range of a flat surface)

Fix the DIN rail onto the mounting surface at 75 to 100 mm intervals with M5 bolts using attached square washers, and confirm that there is no problem with installation before starting operation. Install the valve at the place where the retainer or the supply and exhaust block interferes M5 bolts. For the DIN rail, a product made of steel is used to ensure the strength. When separately preparing the rail, use the DIN rail made of steel.

Retainer tightening torque: 2.5 to 3.0 N·m



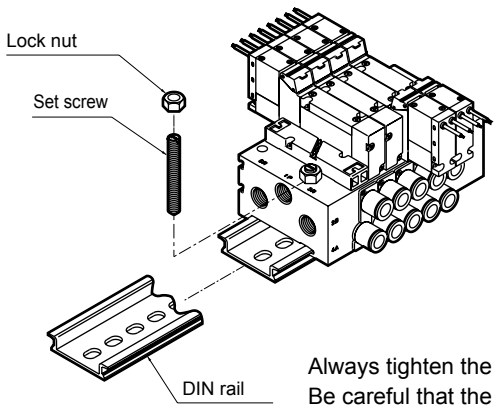
Be careful that the manifold could drop off or be damaged if incorrectly installed. The upper limit of station no. for DIN rail mounting is 5.

Installation & adjustment

■ How to mount DIN rail

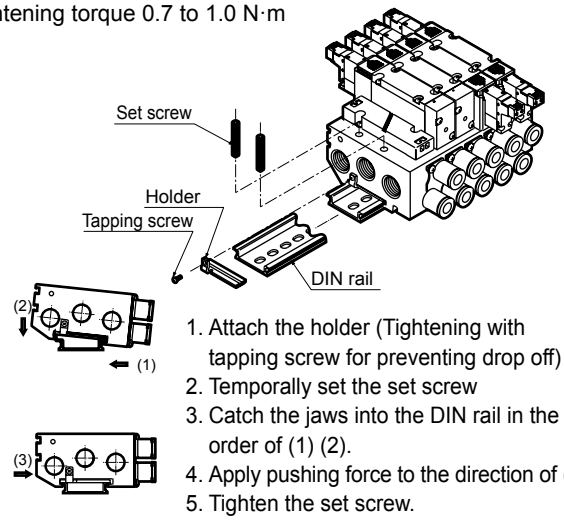
● Only for M4GB1, its dedicated base is provided with either of direct mount type or DIN rail mount type. For mounting type, the direct mounting type cannot be changed to the DIN rail mounting type, but the direct mounting type can be directly mounted.

Tightening torque 0.3 to 0.5 N·m



Always tighten the lock nut. Be careful that the DIN rail may deform if an excessive tightening torque is applied.

M4G2 Series
M4G3 Series
Tightening torque 0.7 to 1.0 N·m



1. Attach the holder (Tightening with tapping screw for preventing drop off)
2. Temporally set the set screw
3. Catch the jaws into the DIN rail in the order of (1) (2).
4. Apply pushing force to the direction of (3).
5. Tighten the set screw.

DIN rail kit

	Model no.	Descriptions
M4G1	4GA1-BAA Length - Option D	DIN rail, 2 set screws, 2 lock nuts
	4GB1-BAA Length - Option D	
M4G2	4GA2-BAA Length - Option D	DIN rail/holder, 2 tapping screws, 4 set screws
	4GB2-BAA Length - Option D	
M4G3	4GA3-BAA Length - Option D	
	4GB3-BAA Length - Option D	

If the DIN rail is not required, specify the length with "0".
When using the kit for a manifold base for external pilot, specify the Option with "K".

For setting the DIN rail length, refer to dimensions and DIN rail length quick reference table (page 373) for the manifold in use.

4. How to install manifold (Block manifold)

⚠CAUTION

■ Mounting orientation

● The Block manifold is mounted on a DIN rail. If the manifold's total weight exceeds 1 kg, or when using the MEVT in an environment with vibration or impact, fix the DIN rails on the mounting surface at pitch of 50 to 100 mm. Check that there are no problems with installation. Although there is no restriction in mounting direction and orientation, attention should be paid to loose set screws caused by resonance due to vibration that may cause drop of manifold during operation.

● How to mount and remove manifold

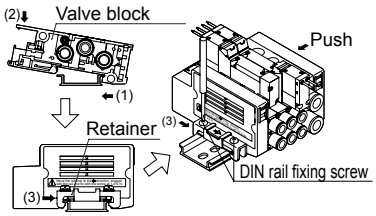
Removal

Loosen the four DIN rail fixing screws (two each on left/right).

Installation

1. Catch the jaws into the DIN rail in the order of (1) (2).
2. Press the retainer in the direction of (3).
3. While holding down so that there is no gap between blocks, tighten DIN rail set screws (recommended tightening torque 1.2 to 1.6 N·m).

* If retainer jaw are not securely set, air could leak or the product could drop. Check that these jaws are secure.



5. Lead wire connection

⚠CAUTION

■ Lead wire standards differ depending on the type of electrical connections. Connect wires according to each lead wire to be used.

4G1 to 3

Electrical connection symbol	Descriptions	Conductor size	Conductor sectional area	Outer diameter of insulator	Outer diameter of covering
Blank	Grommet lead wire	AWG#26	0.13 equiv.	1.3	-
E*	E type connector (with lead wire)	AWG#26	0.13 equiv.	1.3	-
E*J	EJ type connector	AWG#25	0.16 equiv.	1.14	3.7

4G4

Electrical connection symbol	Descriptions	Conductor size	Conductor sectional area	Outer diameter of insulator	Outer diameter of covering
Blank	Grommet lead wire	AWG#20	0.52 equiv.	1.8	-
E*	E type connector (with lead wire)	AWG#26	0.13 equiv.	1.3	-
E*J	EJ type connector	AWG#25	0.2 equiv.	1.14	3.7

When installing the manifold and making electrical connections, check that tension by lead wires is not applied to the solenoid valve coil.

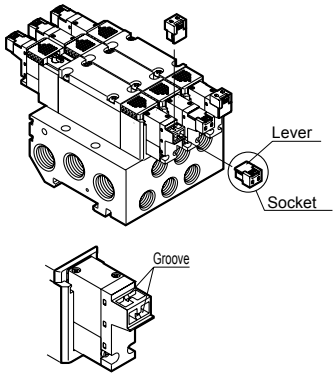
6. How to use E type connector

⚠ CAUTION

■ E type connector has top and side connecting portions to which sockets can be connected either from the top or side directions. The socket assembly is connected from the side direction at shipment. Select the connection direction based on the installation environment.

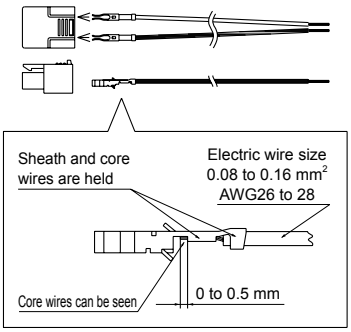
■ How to mount and remove socket

- When mounting the socket, hold the lever and socket with fingers and insert straight into the square window on the connector body. Align the lever jaw with the groove on the connector body and lock it. When mounting from the top, position the socket so that the lever faces the front. When mounting from the side, position the socket so that the lever is in an upward direction.
- When pulling out the socket, press down the lever to release its jaw from the groove, then pull straight out.



■ How to connect lead wire

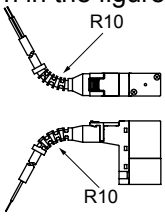
- Strip about 3 mm of the lead wire end. Align the end of core wires, insert them into the contact terminal, and crimp with a crimp tool. When crimping, check that both the sheath and core wires are held, and 0 to 0.5 mm of the core wire end is visible.
- After crimping, position the contact terminal as shown below, and insert into the square window on the socket. The terminal locks when it is inserted to the end. After inserting, pull the terminal lightly to check that it is locked.



7. How to use E*J type connector

⚠ CAUTION

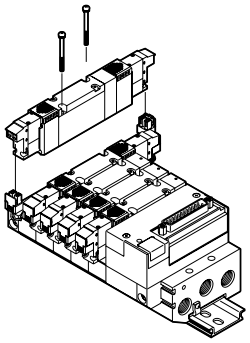
■ Use the lead wire with limitation of bending dimension as shown in the figure below.



8. How to use A type connector

⚠ CAUTION

■ A type connector is a connector for exclusive use of reduced wiring manifold mounting, which can be connected from the bottom direction. When mounting or removing the socket, similar attention as how to use E type connector is required.



9. DIN terminal box

⚠ WARNING

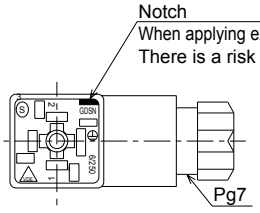
■ As there is a risk of electric shock when assembling or disassembling the terminal box, perform the assembly and/or disassembly after turning off the power supply.

⚠ CAUTION

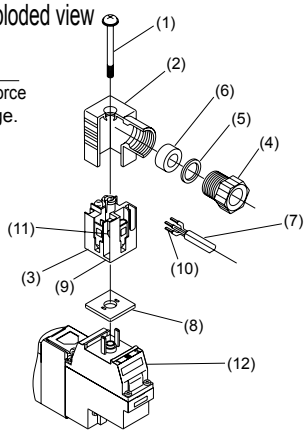
■ Disassembly

- Loosen screw (1) and pull cover (2) in the direction of screw (1) to remove the connector from coil assembly (12).
- Pull out screw (1) from cover (2).
- Notch (9) (next to the GDSN mark) can be found at the bottom of terminal block (3). Insert a compact flathead screwdriver in the gap between housing (2) and terminal block (3) and pry to remove terminal block (3) from cover (2) (Refer to Fig. 1). Remove the terminal block without applying excessive force. There is a risk of damage.
- Remove cable gland (4) and take out washer (5) and rubber packing (6).

Fig. 1



Exploded view



Installation & adjustment

■ Wiring

● Wiring preparation

· The applicable dimensions for cable (7) are the VCTF2 (3) core (φ 3.5 to 7.0) defined in JIS C3306.
· The length of the cable lead wire sheath pealing is 10 mm.
· Both twisted wires and solid wires can be used for wiring.
· When using a twisted wire, avoid connecting a pre-soldered wire.
· When using crimp sleeve (10) at the end of the twisted wire, select H0.5/6 (0.3 to 0.5 mm^2) or H0.75/6 (0.75 mm^2) made by Weidmüeller Japan, or an equivalent product. Crimp sleeves are not included.

● Wiring

· Pass cable (7) through cable gland (4), washer (5), and rubber packing (6) in this order, and insert it into cover (2).
· Connect it to terminals 1 and 2. There is no polarity.
· The recommended tightening torque is 0.2 to 0.25 N·m.

■ Assembly

● Set the wired terminal block (3) on cover (2). (Push in until it clicks.)

* Terminal block can be set in four different directions (Fig. 2).

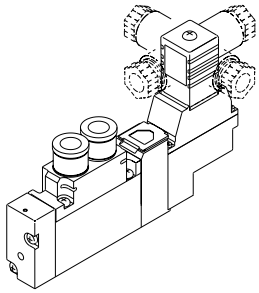
● Insert rubber packing (6) and washer (5) in this order into the cable through-hole in cover (2), and securely tighten cable gland (4).

Remarks: The recommended tightening torque for the cable gland is 1.0 to 1.5 N·m.
Pull the cable to check that it does not disconnect.

● Place gasket (8) between the bottom part of terminal block (3) and the plug of coil assembly (12), insert the connector, insert screw (1) from over cover (2) and tighten it.

Remarks: The recommended tightening torque for screws is 0.2 to 0.25 N·m.

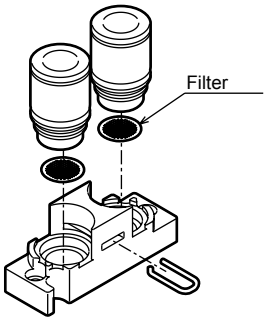
Fig. 2



10. Port filter

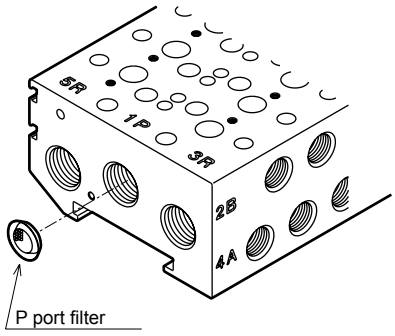
⚠ CAUTION

■ The port filter prevents the entry of foreign matter, and prevents problems from occurring in the valve. This does not improve the quality of the compressed air, so read Warnings and Precautions inIntro 61 to 68, then mount, install, and adjust the filter accordingly.
Do not remove or force the port filter.
The filter could deform and result in problems. If contaminants and foreign matters are found on the filter surface, blow them lightly, or remove them by tweezers, etc.



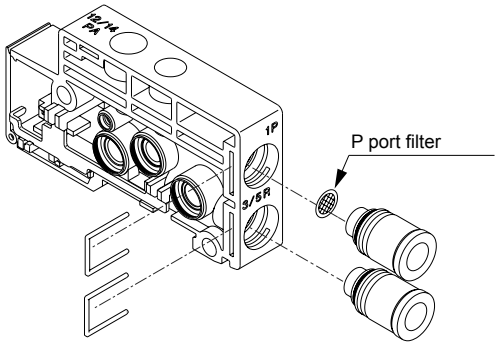
A, B port filter option example of combination

M4G Series



P port filter (standard) example of combination

MN4G Series



P port filter (standard) example of combination

During use & maintenance

1. Common

⚠CAUTION

■ Continuous energizing over a long period of time may deteriorate the performance of the solenoid valve. Furthermore, pay attention to the following use methods as well as continuous energizing.

- When the energized time exceeds non-energized time in intermittent energizing
- When one energizing session exceeds 30 minutes in intermittent energizing

Consider heat dissipation when installing the product.
Contact CKD when energizing this device continuously.

2. Manual operating device

⚠WARNING

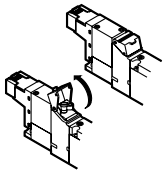
■ The 4G Series is a pilot operated solenoid valve. If air is not supplied to P port, the main valve does not switch even if the manual override is operated.

■ Manual override protective cover is provided as standard. Since the manual override protective cover is closed when shipped out of the factory, the manual override is protected and cannot be seen when delivered. Open the protective cover and manually operate the device.
Note that the protection cover does not close unless the locking manual operating device is unlocked.

■ Manual override is used for both non-locking and locking. The lock is applied by pressing down and turning manual override. For locking, be sure to press down and turn. If turned without being pressed down, it could damage the manual override device or air could leak.

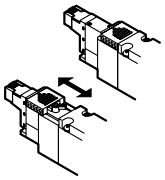
■ Opening and closing the manual protective cover
Do not apply excessive force to the manual protection cover when opening and closing the cover. Excessive external force could cause failures. (Below 5 N)

4G1 Series



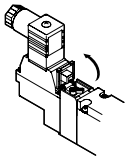
Rotation type

4G2 to 4 Series



Slide type

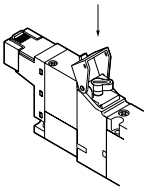
4G2/3 Series DIN terminal box



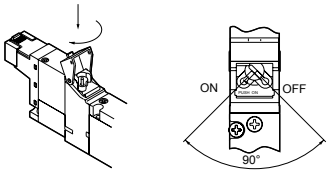
Rotation type

■ How to operate manual override

● Push & non-locking operation
Push straight in the direction of the arrow until it stops.
Manual override is unlocked when released.



● Push & locking operation
Push manual override and turn 90° in the direction of the arrow.
Manual override is not unlocked even when released.



■ When conducting manual operations, make sure that there are no people near the moving cylinder.

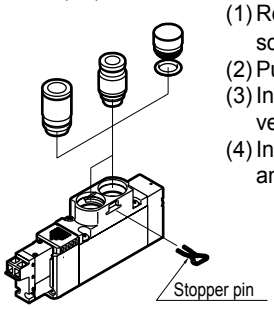
3. How to replace cartridge fitting

⚠CAUTION

■ Check procedures before changing the push-in fitting size. If installed not correctly, or if the tightening of the set screw is insufficient, leakage could be occurred.

■ Direct piping (A) type

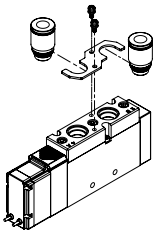
4 G 1, 2, 3



(1) Remove the stopper pin with a screwdriver.
(2) Pull the joint out.
(3) Insert the joint for replacement vertically until it reaches the back.
(4) Insert the stopper pin. Pull on the fitting and confirm that it is installed correctly.

	Size	Tightening torque (N·m)
4G1	M1.7	0.18 to 0.22
4G2	M2.5	0.25 to 0.30
4G3	M3	0.6 to 0.7

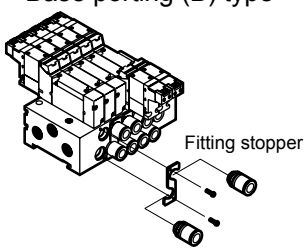
4 G 4

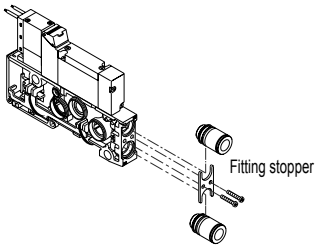


(1) Remove the set screw.
(2) Pull out the stopper plate with the joint.
(3) Align the groove of the replacement fitting with the stopper plate and assemble them temporarily.
(4) Assemble the stopper plate with the joint, and tighten the set screw.
Pull on the joint and confirm that it is installed correctly.

	Size	Tightening torque (N·m)
4G4	M3	0.7

■ Base porting (B) type





(1) Remove the set screw.
(2) Pull out the stopper plate with the joint.
(3) Align the groove of the replacement fitting with the stopper plate and assemble them temporarily.
(4) Assemble the stopper plate with the fitting, and tighten the set screw. Pull on the fitting and confirm that it is installed correctly.

Cartridge type push-in fitting model no.

Model no.	Parts name	Model no.
4G1	φ 1.8 Straight type	4G1-JOINT-C18
	φ 1.8 barbed type	4G1-JOINT-CF
	φ 1.8 L type	4G1-JOINT-CL18, CLL18
	φ 4 Straight type	4G1-JOINT-C4
	φ 6 Straight type	4G1-JOINT-C6
	φ 4 L type	4G1-JOINT-CL4, CLL4
	φ 6 L type	4G1-JOINT-CL6, CLL6
	Plug cartridge	4G1-JOINT-CPG
4G2	φ 4 Straight type	4G2-JOINT-C4
	φ 6 Straight type	4G2-JOINT-C6
	φ 8 Straight type	4G2-JOINT-C8
	φ 6 L type	4G2-JOINT-CL6, CLL6
	φ 8 L type	4G2-JOINT-CL8, CLL8
	Plug cartridge	4G2-JOINT-CPG
4G3	φ 6 Straight type	4G3-JOINT-C6
	φ 8 Straightl type	4G3-JOINT-C8
	φ 10 Straight type	4G3-JOINT-C10
	φ 8 L type	4G3-JOINT-CL8, CLL8
	φ 10 L type	4G3-JOINT-CL10, CLL10
	Plug cartridge	4G3-JOINT-CPG
4G4	φ 8 Straight type	4G4-JOINT-C8
	φ 10 Straight type	4G4-JOINT-C10
	φ 12 Straight type	4G4-JOINT-C12

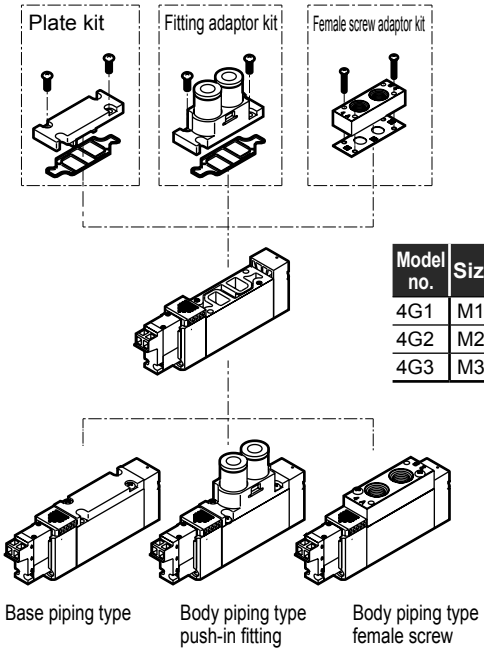
During use & maintenance

4. How to change piping connection specification

⚠ CAUTION

4 G 1, 2, 3

■ When replacing the plate or fitting adaptor attached to the body to change the type between the body piping specification and the base piping specification, or to change the type between the push-in fitting specification and the female specification for the body piping type, pay attention to the tightening torque because air could leak if the tightening of the set screw is insufficient at the time of replacement.



Model no.	Size	Tightening torque (N·m)
4G1	M1.7	0.18 to 0.22
4G2	M2.5	0.25 to 0.30
4G3	M3	0.6 to 0.7

Plate kit

Model no.	Kit model no.	Set parts
4GB1	4G1-PLATE-KIT	Plate, gasket, 2 set screws
4GB2	4G2-PLATE-KIT	Plate, gasket, 2 set screws
4GB3	4G3-PLATE-KIT	Plate, gasket, 2 set screws

Fitting adaptor kit

Model no.	Parts name		Kit model no.	Set parts
4GA1	φ 4 fitting adaptor kit	For N.C.	4G1-JNT-ADAPTOR-KIT-C4NC- Option	Fitting adaptor
		For N.O.	4G1-JNT-ADAPTOR-KIT-C4NO- Option	2 push-in fittings (N.C., N.O.: 1)
			4G1-JNT-ADAPTOR-KIT-C4- Option	(N.C., N.O.: plug cartridge 1)
	φ 6 fitting adaptor kit	For N.C.	4G1-JNT-ADAPTOR-KIT-C6NC- Option	Gasket
		For N.O.	4G1-JNT-ADAPTOR-KIT-C6NO- Option	Stopper pin
			4G1-JNT-ADAPTOR-KIT-C6- Option	2 set screws
4GA2	φ 6 fitting adaptor kit	For N.C.	4G2-JNT-ADAPTOR-KIT-C6NC- Option	Fitting adaptor
		For N.O.	4G2-JNT-ADAPTOR-KIT-C6NO- Option	2 push-in fittings (N.C., N.O.: 1) (N.C.,
			4G2-JNT-ADAPTOR-KIT-C6- Option	N.O.: 1 plug cartridge)
	φ 8 fitting adaptor kit	For N.C.	4G2-JNT-ADAPTOR-KIT-C8NC- Option	Gasket
		For N.O.	4G2-JNT-ADAPTOR-KIT-C8NO- Option	Stopper pin
			4G2-JNT-ADAPTOR-KIT-C8- Option	2 set screws
4GA3	φ 8 fitting adaptor kit	For N.C.	4G3-JNT-ADAPTOR-KIT-C8NC- Option	Fitting adaptor
		For N.O.	4G3-JNT-ADAPTOR-KIT-C8NO- Option	2 push-in fittings (N.C., N.O.: 1) (N.C.,
			4G3-JNT-ADAPTOR-KIT-C8- Option	N.O.: 1 plug cartridge)
	φ 10 fitting adaptor kit	For N.C.	4G3-JNT-ADAPTOR-KIT-C10NC- Option	Gasket
		For N.O.	4G3-JNT-ADAPTOR-KIT-C10NO- Option	Stopper pin
			4G3-JNT-ADAPTOR-KIT-C10- Option	2 set screws

When using the A/B port filter integrated type, specify the Option with "F".

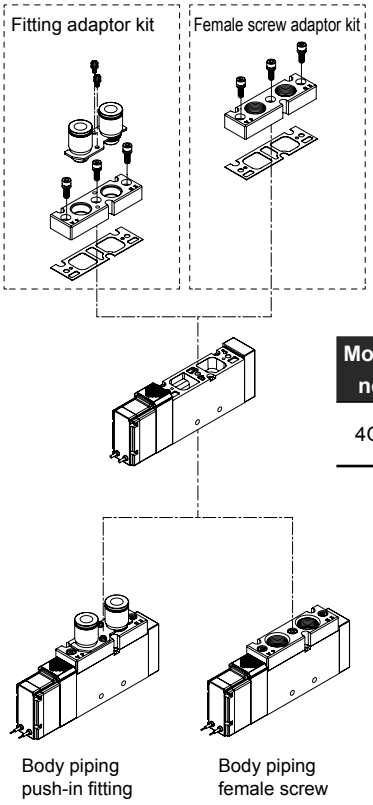
Female screw adaptor kit

Model no.	Kit model no.	Set parts
4GA1	4G1 - FML - ADAPTOR - KIT - Port size - Option	Female screw adaptor, gasket, 2 set screws
4GA2	4G2 - FML - ADAPTOR - KIT - Port size - Option	Female screw adaptor, gasket, 2 set screws
4GA3	4G3 - FML - ADAPTOR - KIT - Port size - Option	Female screw adaptor, gasket, 2 set screws, 2 body set screws

When using the A/B port filter integrated type, specify the Option with "F".

4 G 4

■ When replacing the fitting adaptor attached to the body of the body piping type to change the type between the push-in fitting specification and the female specification, pay attention to the tightening torque because air could leak if the tightening of the set screw is insufficient at the time of replacement.



Model no.	Size	Tightening torque (N·m)
4G4	M3	0.7
	M4	2.6

Fitting adaptor kit

Model no.	Parts name	Kit model no.	Set parts
4GA4	φ 8 fitting adaptor kit	4GA4-JNT-ADAPTOR-KIT-C8- Option	Fitting adaptor 2 push-in fittings Fitting stopper plate Gasket 2 set screws 3 adaptor set screws
	φ 10 fitting adaptor kit	4GA4-JNT-ADAPTOR-KIT-C10- Option	
	φ 12 fitting adaptor kit	4GA4-JNT-ADAPTOR-KIT-C12- Option	

When using the A/B port filter integrated type, specify the Option with "F".

Female screw adaptor kit

Model no.	Kit model no.	Set parts
4G4	4GA4 - FML - ADAPTOR - KIT - Port size - Option	Female screw adaptor, gasket, 3 adaptor set screws

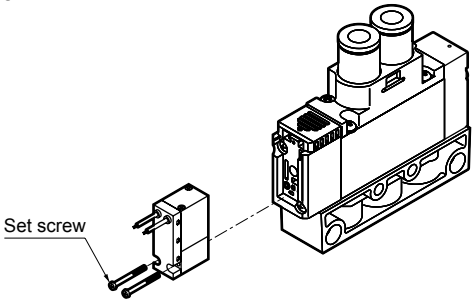
When using the A/B port filter integrated type, specify the Option with "F".

5. How to replace coil

⚠ WARNING

■ Grommet lead wire, E type and EJ type connector coil assemblies

Replace the coil by removing the set screws shown below. Loosening other screws could cause operation failures. When installing, check that the gasket is installed on the coil side and tightening torque is proper.
Improper installation could result in air leakage or operation failures.



■ DIN terminal box coil assembly

Replace the coil assembly by removing the set screws shown below. Loosening other screws could cause operation failures. When installing, check that the gasket is installed on the coil assembly side and tightening torque is proper. Improper installation could result in air leakage or operation failures.
The coil assembly of grommet lead wire, E-connector specification and DIN terminal box specification cannot be replaced.