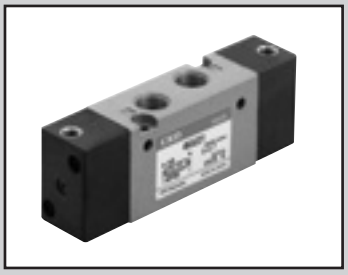


Master valve; body piping
Pilot operated 3, 5-port pneumatic valve

3KA1/4KA1/2/3/4 Series

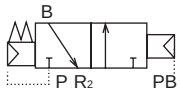
● Cylinder bore size: ø20 to ø160

RoHS

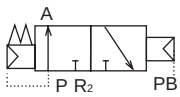
JIS symbol

● 3-port valve

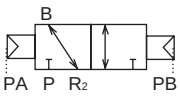
2-position NC single



2-position NO single

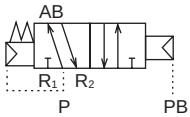


2-position double

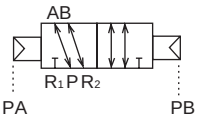


● 5-port valve

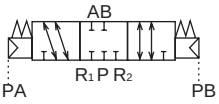
2-position single



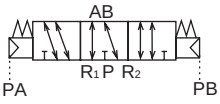
2-position double



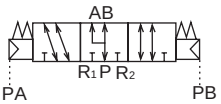
3-position all ports closed



3-position A/B/R connection



3-position P/A/B connection



Common specifications

Item		Description
Valve and operation		Pilot operated soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	0.70 (≈100 psi, 7 bar)
Min. working pressure	MPa	Refer to section on working pressure in table below
Proof pressure	MPa	1.05 (≈150 psi, 10.5 bar)
Ambient temperature	°C	-5 (23°F) to 50 (122°F) (no freezing)
Fluid temperature	°C	5 (41°F) to 50 (122°F)
Lubrication		Not required
Vibration resistance	m/s^2	50 or less
Shock resistance	m/s^2	300 or less
Atmosphere		Cannot be used in corrosive gas environment.

Individual specifications: body piping (discrete valve/manifold)

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Position Number of solenoids							Model No.		Specifications					
									*1 Port size					
2-position NC single	2-position NO single	2-position single	2-position double	3-position all ports closed	3-position A/B/R connection	3-position P/A/B connection	Series model No.		Air supply port: P	Cylinder port A/B	Exhaust Port R1, R2	Pilot port PA/PB *2	Working pressure MPa	Pilot pressure MPa
●							3KA1	3KA111	M5	M5	M5	M5	0.15 to 0.7	(0.6 x working pressure + 0.06) to 0.7
●								M3KA111	Rc,NPT,G 1/8		Rc,NPT,G 1/8			
	●							3KA1111	M5		M5			
	●							M3KA1111	Rc,NPT,G 1/8		Rc,NPT,G 1/8			
			●					3KA121	M5		M5		0 to 0.7	0.15 to 0.7
			●					M3KA121	Rc,NPT,G 1/8		Rc,NPT,G 1/8			
		●					4KA1	4KA111	M5	M5	M5	M5	0.15 to 0.7	(0.6 x working pressure + 0.06) to 0.7
		●						M4KA111	Rc,NPT,G 1/8		Rc,NPT,G 1/8			
			●					4KA121	M5		M5		0 to 0.7	0.15 to 0.7
			●					M4KA121	Rc,NPT,G 1/8		Rc,NPT,G 1/8			
				●				4KA131	M5		M5			0.2 to 0.7
				●				M4KA131	Rc,NPT,G 1/8		Rc,NPT,G 1/8			
					●			4KA141	M5		M5			
					●			M4KA141	Rc,NPT,G 1/8		Rc,NPT,G 1/8			
						●		4KA151	M5		M5			
						●		M4KA151	Rc,NPT,G 1/8		Rc,NPT,G 1/8			
		●					4KA2	4KA211	Rc,NPT,G 1/8	Rc 1/8 NPT 1/8 G 1/8	Rc,NPT,G 1/8	M5	0.15 to 0.7	(0.6 x working pressure + 0.06) to 0.7
		●						M4KA211	Rc,NPT,G 1/4		Rc,NPT,G 1/4			
			●					4KA221	Rc,NPT,G 1/8		Rc,NPT,G 1/8		0 to 0.7	0.2 to 0.7
			●					M4KA221	Rc,NPT,G 1/4		Rc,NPT,G 1/4			
				●				4KA231	Rc,NPT,G 1/8		Rc,NPT,G 1/8			
				●				M4KA231	Rc,NPT,G 1/4		Rc,NPT,G 1/4			
					●			4KA241	Rc,NPT,G 1/8		Rc,NPT,G 1/8			
					●			M4KA241	Rc,NPT,G 1/4		Rc,NPT,G 1/4			
						●		4KA251	Rc,NPT,G 1/8		Rc,NPT,G 1/8			
						●		M4KA251	Rc,NPT,G 1/4		Rc,NPT,G 1/4			
		●					4KA3	4KA311	Rc,NPT,G 1/4	Rc 1/4 NPT 1/4 G 1/4	Rc,NPT,G 1/4	M5	0.15 to 0.7	(0.6 x working pressure + 0.06) to 0.7
		●						M4KA311	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
			●					4KA321	Rc,NPT,G 1/4		Rc,NPT,G 1/4		0 to 0.7	0.2 to 0.7
			●					M4KA321	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
				●				4KA331	Rc,NPT,G 1/4		Rc,NPT,G 1/4			
				●				M4KA331	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
					●			4KA341	Rc,NPT,G 1/4		Rc,NPT,G 1/4			
					●			M4KA341	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
						●		4KA351	Rc,NPT,G 1/4		Rc,NPT,G 1/4			
						●		M4KA351	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
		●					4KA4	4KA411	Rc,NPT,G 3/8	Rc 3/8 NPT 3/8 G 3/8	Rc,NPT,G 3/8	M5	0.15 to 0.7	(0.6 x working pressure + 0.06) to 0.7
		●						M4KA411	Rc,NPT,G 1/2		Rc,NPT,G 1/2			
			●					4KA421	Rc,NPT,G 3/8		Rc,NPT,G 3/8		0 to 0.7	0.2 to 0.7
			●					M4KA421	Rc,NPT,G 1/2		Rc,NPT,G 1/2			
				●				4KA431	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
				●				M4KA431	Rc,NPT,G 1/2		Rc,NPT,G 1/2			
					●			4KA441	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
					●			M4KA441	Rc,NPT,G 1/2		Rc,NPT,G 1/2			
						●		4KA451	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
						●		M4KA451	Rc,NPT,G 1/2		Rc,NPT,G 1/2			

*1: There are options available with the port size other than those in the above table. Refer to the model No. display on page 1352.
*2: M5N, M5G available for manifold types.

Flow characteristics

Series	Model No.	Port size	C[dm³/(s·bar)]	b
3KA1	3KA111	M5	0.65	0.37
	M3KA111		0.69	0.29
	3KA1111		0.65	0.37
	M3KA1111		0.69	0.29
	3KA121		0.65	0.37
	M3KA121		0.69	0.29
4KA1	4KA111	M5	0.65	0.37
	M4KA111		0.69	0.29
	4KA121		0.65	0.37
	M4KA121		0.69	0.29
	4KA131		0.60	0.32
	M4KA131		0.69	0.29
	4KA141		0.68	0.39
	M4KA141		0.97	0.31
	4KA151		0.61	0.36
	M4KA151		0.73	0.30
4KA2	4KA211	Rc1/8	2.6	0.43
	M4KA211		2.6	0.25
	4KA221		2.6	0.43
	M4KA221		2.6	0.25
	4KA231		2.3	0.43
	M4KA231		2.4	0.32
	4KA241		2.9	0.34
	M4KA241		3.0	0.16
	4KA251		2.3	0.42
	M4KA251		2.4	0.31
4KA3	4KA311	Rc1/4	5.6	0.49
	M4KA311		5.6	0.39
	4KA321		5.6	0.49
	M4KA321		5.6	0.39
	4KA331		4.1	0.60
	M4KA331		4.1	0.51
	4KA341		4.1	0.62
	M4KA341		5.9	0.37
	4KA351		4.2	0.68
	M4KA351		4.1	0.56
4KA4	4KA411	Rc3/8	9.8	0.49
	M4KA411		9.7	0.29
	4KA421		9.8	0.49
	M4KA421		9.7	0.29
	4KA431		8.2	0.54
	M4KA431		8.3	0.40
	4KA441		11	0.50
	M4KA441		11	0.30
	4KA451		8.4	0.54
	M4KA451		8.7	0.46

*1: Effective cross-sectional area “S” and sonic conductance “C” are converted as S ≈ 5.0 x C.

3KA1/4KA1 to 4 Series

Master valve; body piping

How to order

● Single master valve

4KA2 1 1 - 06 -

● Single master valve for manifold (gasket, mounting screws attached)

4KA2 1 8 - 06

● Manifold

Operating classification master valve

M 4KA2 1 1 - 06 - - 2

Ⓑ Solenoid position

Ⓐ Model No. Ⓒ Port size Ⓓ Other options Ⓔ Station No.

Code	Description	Ⓐ Model No. 3KA1	4KA1	4KA2	4KA3	4KA4
Ⓑ Solenoid position						
1	2-position NC single	●				
11	2-position NO single	●				
1	2-position single		●	●	●	●
2	2-position double	●	●	●	●	●
3	3-position all ports closed		●	●	●	●
4	3-position A/B/R connection		●	●	●	●
5	3-position P/A/B connection		●	●	●	●
8	2/3 position mix manifold (*1)		●	●	●	●
Ⓒ Port size						
Port	P/A/B port (Discrete valve)	R1/R2 port (discrete valve) (1)=M5 (2)=Rc1/8 (3)=Rc1/4 (4)=Rc3/8				
	A/B port (Manifold)	P/R1/R2 port (manifold) (1)=Rc1/8 (2)=Rc1/4 (3)=Rc3/8 (4)=Rc1/2				
M5	M5	(1)	(1)			
06	Rc1/8			(2)		
08	Rc1/4				(3)	
10	Rc3/8					(4)
GS4	ø4 Push-in fitting	(1)	(1)			
GS6	ø6 Push-in fitting	(1)	(1)	(2)		
GS8	ø8 Push-in fitting			(2)	(3)	
GS10	ø10 Push-in fitting				(3)	(4)
GS12	ø12 Push-in fitting					(4)
Port	P/A/B port (Discrete valve)	R1/R2 port (discrete valve) (1)=M5 (5)=NPT1/8 (6)=NPT1/4 (7)=NPT3/8				
	A/B port (Manifold)	P/R1/R2 port (manifold) (1)=NPT1/8 (5)=NPT1/4 (6)=NPT3/8 (7)=NPT1/2				
M5N	M5	(1)	(1)			
06N	NPT1/8			(5)		
08N	NPT1/4				(6)	
10N	NPT3/8					(7)
Port	P/A/B port (Discrete valve)	R1/R2 port (discrete valve) (1)=M5 (8)=G1/8 (9)=G1/4 (11) =G3/8				
	A/B port (Manifold)	P/R1/R2 port (manifold) (1)=G1/8 (8) =G1/4 (9)=G3/8 (10)=G1/2				
M5G	M5	(1)	(1)			
06G	G1/8			(8)		
08G	G1/4				(9)	
10G	G3/8					(10)
Ⓓ Other options						
Blank	None	●	●	●	●	●
P	Mounting plate (Dedicated for 2-position single of single master valve)	●	●	●	●	●
Ⓔ Station No.						
2 to 15	2 stations to 15 stations				●	●
2 to 20	2 stations to 20 stations	●	●	●		

[Example of model No.]

4KA311-08-P

Ⓐ Model: 4KA3
Ⓑ Solenoid position : 2-position single
Ⓒ Port size : Rc1/4
Ⓓ Other options : Mounting plate

⚠ Precautions for model No. selection

*1: 8 is appropriate for the manifold assembly.
Read the following for how to list the combination.
*2: With regard to the printed model No., although the model No. when placing an order is "4KA□□8", the model No. listed on the product name plate will be "4KA□□1".

[Mix manifold]

● How to list combination descriptions
When selecting a combination manifold (write 8 from Ⓑ), list the code (refer to table 1) for required functions and the arrangement No. (numbering up to specified station No. with left side as 1) in the field for remarks below the normal model No. display as shown in the example.

[Table 1]

Code	Function
S1	2-position single
S2	2-position double
S3	3-position all ports closed
S4	3-position A/B/R connection
S5	2-position P/A/B connection
MP	Masking plate

1	2	3	4	5	6	7
(S1) 2-position single	(S2) 2-position double	(S3) 3-position all ports closed	(S3) 3-position all ports closed	(S2) 2-position double	(S1) 2-position single	(S4) 3-position A/B/R connection

S1	S2	S3	S4	S5	MP
2	2	2	1	0	0

Example

The model No. when a combination manifold (7 stations) of an arrangement such as that on the left is configured with 4KA3 and A/B port: Rc1/8, upwards piping

M4KA381-06-7- 2 2 2 1 0 0

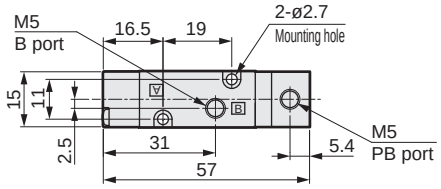
S1=1, 6 S2=2, 5 S3=3, 4 S4=7
Code Position

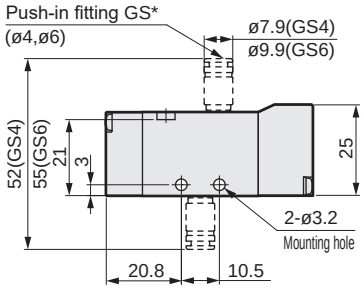
Dimensions

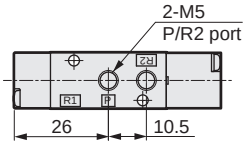
3-port valve

3KA111

● 2-position single NC

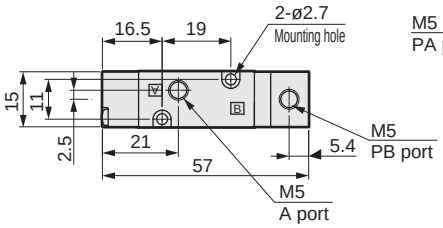


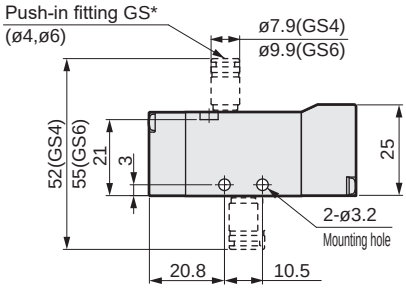


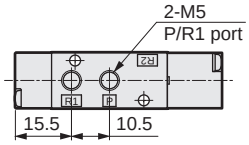


3KA1111

● 2-position single NO

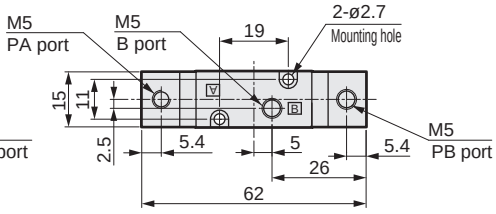


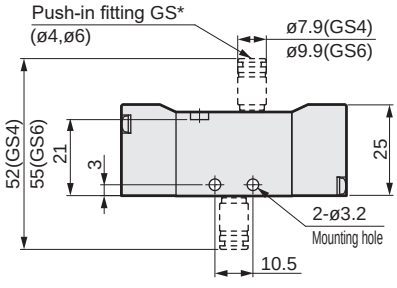


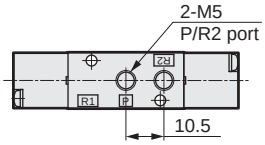


3KA121

● 2-position double



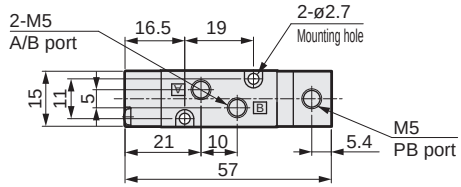


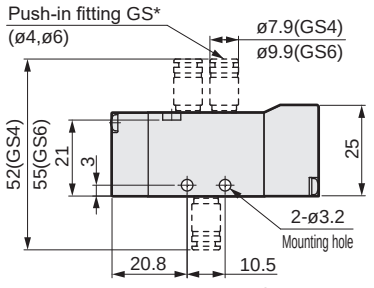


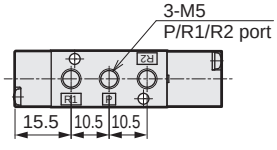
5-port valve

4KA111

● 2-position single

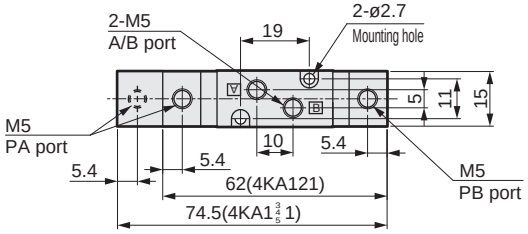


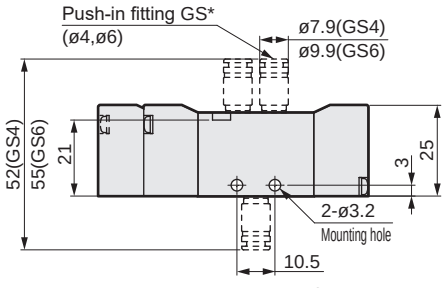


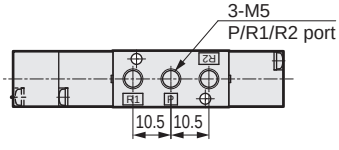


4KA1 2 3 4 5 1

● 2-position double/3 position





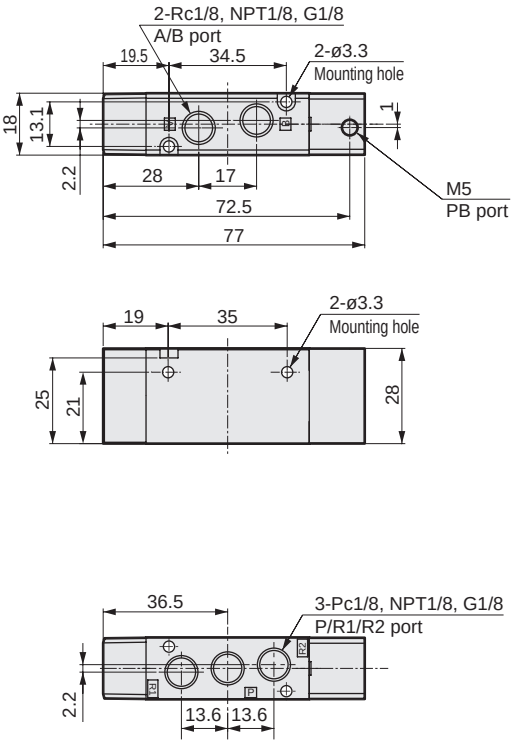


* Refer to pages 1272 and 1274 for type with mounting plate (P).

Dimensions

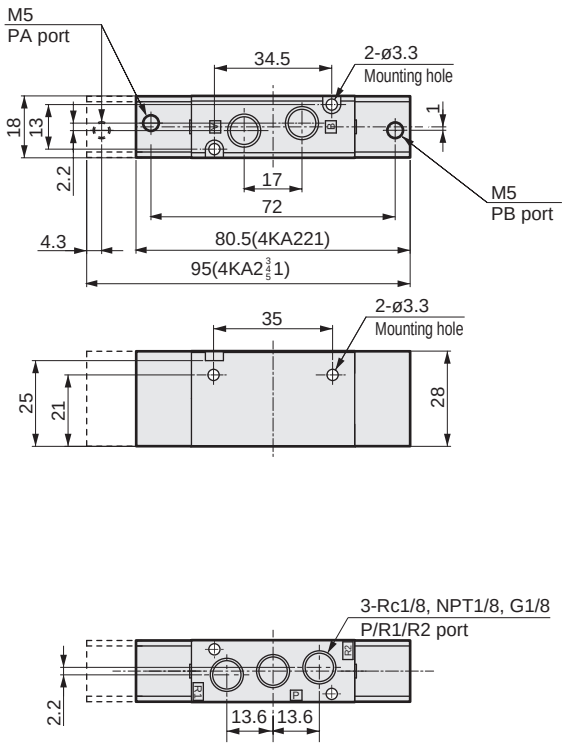
4KA211

● 2-position single



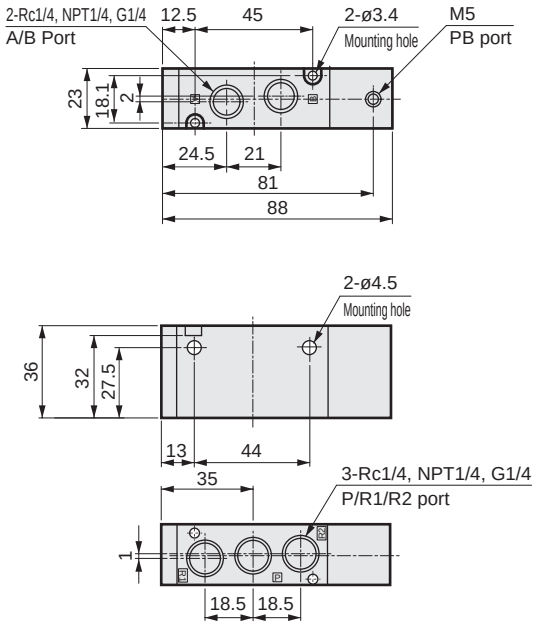
4KA2 2 3 4 5 1

● 2-position double/3 position



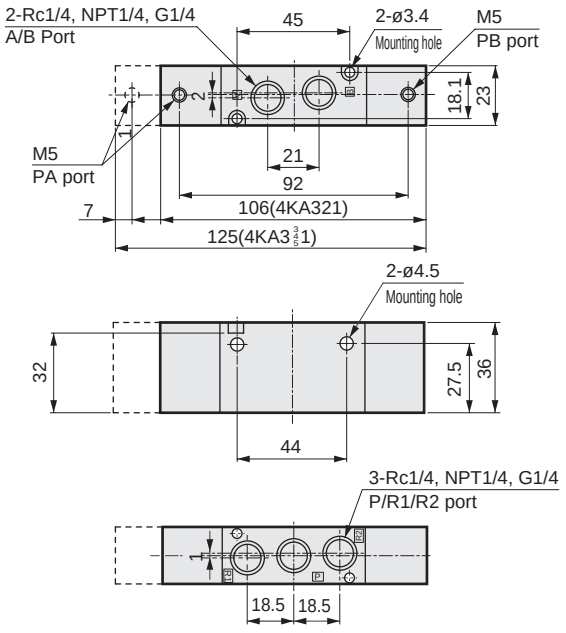
4KA311

● 2-position single



4KA3 2 3 4 5 1

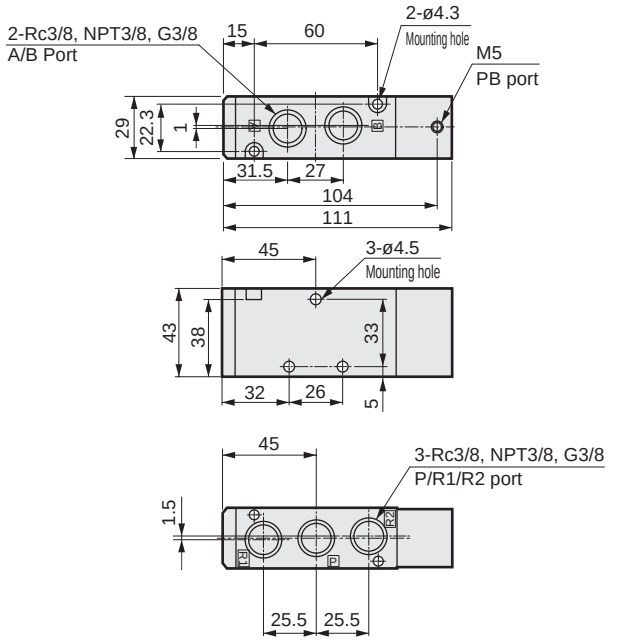
● 2-position double/3 position



Dimensions

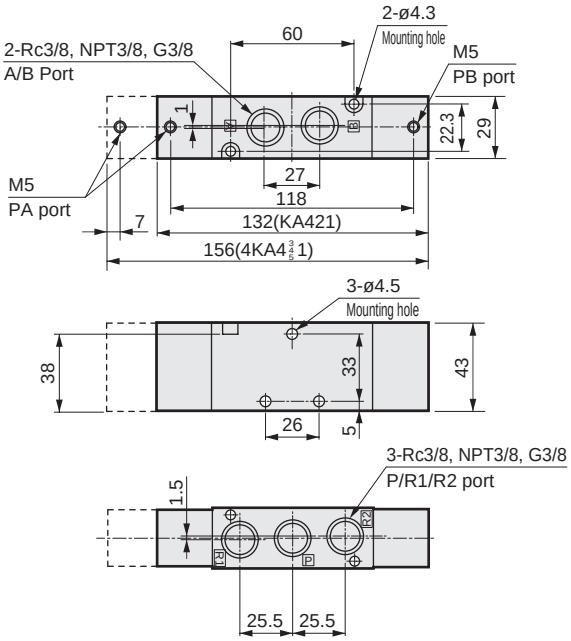
4KA411

● 2-position single

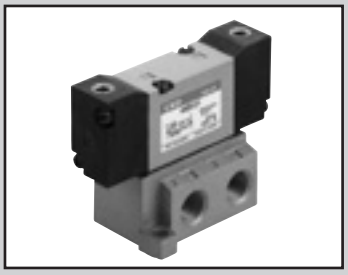


4KA4 2 3 4 5 1

● 2-position double/3 position



* Refer to pages 1276, 1278, 1280 for type with mounting plate (P).



Master valve sub-plate piping
Pilot operated 3, 5-port pneumatic valve

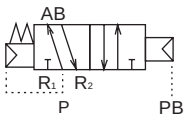
4KB1/2/3/4 Series

● Cylinder bore size: ø20 to ø160

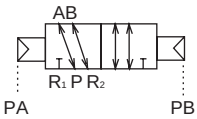
RoHS

JIS symbol

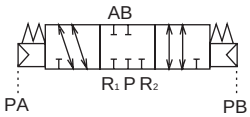
● 5-port valve
2 position single



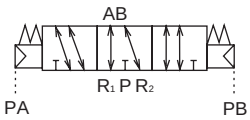
2-position double



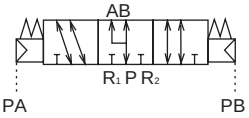
3-position all ports Block



3-position A/B/R connection



3-position P/A/B connection



4KB1 only R1, R2
Common exhaust

Common specifications

Item	Description
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	0.70
Min. working pressure MPa	Refer to section on working pressure in table below
Proof pressure MPa	1.05
Ambient temperature °C	−5 to 50
Fluid temperature °C	5 to 50
Lubrication	Not required
Vibration resistance m/s^2	50 or less
Shock resistance m/s^2	300 or less
Atmosphere	Cannot be used in corrosive gas environment.

Individual specifications: sub-plate piping (discrete valve/manifold)

Position No. of solenoids					Model No.		Specifications					
							*1 Port size					
2-position single	2-position double	3-position all ports closed	3-position A/B/R connection	3-position P/A/B connection	Series Model No.		Air supply port P	Cylinder port A/B	Exhaust port R1/R2	Pilot port PA/PB	Working pressure MPa	Pilot pressure MPa
●					4KB1	4KB111	Rc,NPT,G 1/8	Rc, NPT, G 1/8	Rc,NPT,G 1/8	M5	0.15 to 0.7	(0.6 x working pressure + 0.06) to 0.7
●						M4KB111		M5/Rc, NPT, G 1/8				
	●					4KB121		Rc, NPT, G 1/8			0 to 0.7	0.15 to 0.7
	●					M4KB121		M5/Rc, NPT, G 1/8				
		●				4KB131		Rc, NPT, G 1/8				0.2 to 0.7
		●				M4KB131		M5/Rc, NPT, G 1/8				
			●			4KB141		Rc, NPT, G 1/8				
			●			M4KB141		M5/Rc, NPT, G 1/8				
				●		4KB151		Rc, NPT, G 1/8				
				●		M4KB151		M5/Rc, NPT, G 1/8				
●					4KB2	4KB211	Rc,NPT,G 1/8	Rc,NPT,G 1/8	Rc,NPT,G 1/4	M5	0.15 to 0.7	(0.6 x working pressure + 0.06) to 0.7
●						M4KB211	Rc,NPT,G 1/4					
	●					4KB221	Rc,NPT,G 1/8				0 to 0.7	0.2 to 0.7
	●					M4KB221	Rc,NPT,G 1/4					
		●				4KB231	Rc,NPT,G 1/8					
		●				M4KB231	Rc,NPT,G 1/4					
			●			4KB241	Rc,NPT,G 1/8					
			●			M4KB241	Rc,NPT,G 1/4					
				●		4KB251	Rc,NPT,G 1/8					
				●		M4KB251	Rc,NPT,G 1/4					
●					4KB3	4KB311	Rc,NPT,G 1/4	Rc,NPT,G 1/4	Rc,NPT,G 1/4	M5	0.15 to 0.7	(0.6 x working pressure + 0.06) to 0.7
●						M4KB311	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
	●					4KB321	Rc,NPT,G 1/4		Rc,NPT,G 1/4		0 to 0.7	0.2 to 0.7
	●					M4KB321	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
		●				4KB331	Rc,NPT,G 1/4		Rc,NPT,G 1/4			
		●				M4KB331	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
			●			4KB341	Rc,NPT,G 1/4		Rc,NPT,G 1/4			
			●			M4KB341	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
				●		4KB351	Rc,NPT,G 1/4		Rc,NPT,G 1/4			
				●		M4KB351	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
●					4KB4	4KB411	Rc,NPT,G 3/8	Rc,NPT,G 3/8	Rc,NPT,G 3/8	M5	0.15 to 0.7	(0.6 x working pressure + 0.06) to 0.7
●						M4KB411	Rc,NPT,G 1/2		Rc,NPT,G 1/2			
	●					4KB421	Rc,NPT,G 3/8		Rc,NPT,G 3/8		0 to 0.7	0.2 to 0.7
	●					M4KB421	Rc,NPT,G 1/2		Rc,NPT,G 1/2			
		●				4KB431	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
		●				M4KB431	Rc,NPT,G 1/2		Rc,NPT,G 1/2			
			●			4KB441	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
			●			M4KB441	Rc,NPT,G 1/2		Rc,NPT,G 1/2			
				●		4KB451	Rc,NPT,G 3/8		Rc,NPT,G 3/8			
				●		M4KB451	Rc,NPT,G 1/2		Rc,NPT,G 1/2			

*1: There are options available with the port size other than those in the above table. Refer to the model No. display on page 1358.

Flow characteristics

Series	Model No.	Port size	C[dm^3/(s·bar)]	b
4KB1	4KB111	Rc1/8	0.89	0.44
	M4KB111	M5/Rc1/8	0.71	0.25
	4KB121	Rc1/8	0.89	0.44
	M4KB121	M5/Rc1/8	0.71	0.25
	4KB131	Rc1/8	0.63	0.50
	M4KB131	M5/Rc1/8	0.60	0.23
	4KB141	Rc1/8	1.2	0.29
	M4KB141	M5/Rc1/8	0.81	0.25
	4KB151	Rc1/8	0.75	0.39
	M4KB151	M5/Rc1/8	0.67	0.32
4KB2	4KB211	Rc1/8	2.7	0.24
	M4KB211		2.1	0.13
	4KB221		2.7	0.24
	M4KB221		2.1	0.13
	4KB231		2.4	0.29
	M4KB231		1.8	0.11
	4KB241		3	0.27
	M4KB241		2	0.17
	4KB251		2.4	0.34
	M4KB251		1.8	0.23
4KB3	4KB311	Rc1/4	6.3	0.26
	M4KB311		4.5	0.11
	4KB321		6.3	0.26
	M4KB321		4.5	0.11
	4KB331		5.6	0.27
	M4KB331		4.4	0.21
	4KB341		6.6	0.20
	M4KB341		4.8	0.18
	4KB351		5.9	0.27
	M4KB351		4.3	0.20
4KB4	4KB411	Rc3/8	12	0.24
	M4KB411		8.9	0.22
	4KB421		12	0.24
	M4KB421		8.9	0.22
	4KB431		11	0.27
	M4KB431		8.9	0.24
	4KB441		13	0.21
	M4KB441		9.4	0.23
	4KB451		10	0.22
	M4KB451		8.6	0.20

*1: Effective cross-sectional area “S” and sonic conductance “C” are converted as S ≈ 5.0 x C.

4KB1 to 4 Series

Master valve; sub-plate piping

How to order

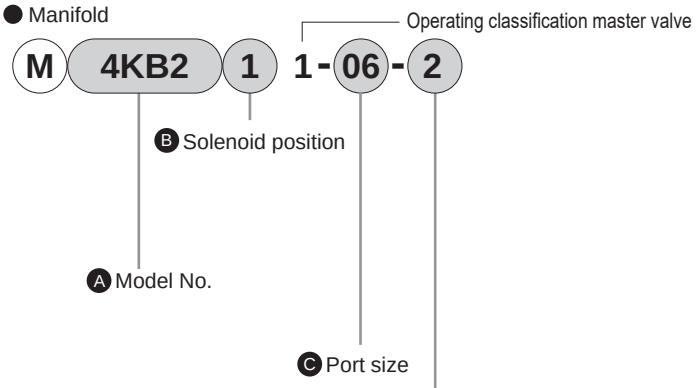
● Single master valve

4KB2 1 1-06

● Single master valve for manifold (gasket, mounting screws included)

4KB2 1 8-00

● Manifold



[Example of model No.]

4KB311-08

A Model : 4KB3
B Solenoid position : 2-position single
C Port size : Rc1/4

Precautions for model No. selection

*1: 8 is suited to manifold combination. Read the following for how to list the combination.
*2: H6 and H8 can be manufactured with up to 10 stations.

Code	Description	A Model No. 4KB1	4KB2	4KB3	4KB4
B Solenoid position					
1	2-position single	●	●	●	●
2	2-position double	●	●	●	●
3	3-position all ports closed	●	●	●	●
4	3-position A/B/R connection	●	●	●	●
5	3-position P/A/B connection	●	●	●	●
8	2-position/3-position mix manifold (*1)	●	●	●	●
C Port size					
Port	Port P/A/B (Discrete valve)	Port R1/R2 (discrete valve) (1)= Rc1/8 (2)= Rc1/4 (3)= Rc3/8 (4)= Rc1/2			
06	Rc1/8	(1)	(2)		
08	Rc1/4		(2)	(2)	
10	Rc3/8			(3)	(3)
15	Rc1/2				(4)
Port	Port A/B (Manifold)	Port P/R1/R2 (manifold) (1)= Rc1/8 (2)= Rc1/4 (3)= Rc3/8 (4)= Rc1/2			
M5	M5 *2	(1)			
06	Rc1/8	(1)	(2)		
08	Rc1/4		(2)	(3)	
10	Rc3/8			(3)	(4)
15	Rc1/2				(4)
M5Y	M5 (rear piping)	(1)			
06 Y	Rc1/8 (rear piping)		(2)		
08 Y	Rc1/4 (rear piping)			(3)	
10 Y	Rc3/8 (rear piping)				(4)
H 6	ø6 push-in fitting (*2)	(1)	(2)		
H 8	ø8 push-in fitting (*2)		(2)	(3)	
H 10	ø10 push-in fitting			(3)	(4)
H 12	ø12 push-in fitting				(4)
Port	Port P/A/B (Discrete valve)	Port R1/R2 (discrete valve) (5)= NPT1/8 (6)= NPT1/4 (7)= NPT3/8 (8)= NPT1/2			
06N	NPT1/8	(5)	(6)		
08N	NPT1/4		(6)	(6)	
10N	NPT3/8			(7)	(7)
15N	NPT1/2				(8)
Port	Port A/B (Manifold)	Port P/R1/R2 (manifold) (5)= NPT1/8 (6)= NPT1/4 (7)= NPT3/8 (8)= NPT1/2			
M5N	M5	(5)			
06N	NPT1/8	(5)	(6)		
08N	NPT1/4		(6)	(7)	
10N	NPT3/8			(7)	(8)
15N	NPT1/2				(8)
06YN	NPT1/8 (rear piping)		(6)		
08YN	NPT1/4 (rear piping)			(7)	
10YN	NPT3/8 (rear piping)				(8)
Port	Port P/A/B (Discrete valve)	Port R1/R2 (discrete valve) (9)= G1/8 (10)= G1/4 (11)= G3/8 (12)= G1/2			
06G	G1/8	(9)	(10)		
08G	G1/4		(10)	(10)	
10G	G3/8			(11)	(11)
15G	G1/2				(12)
Port	Port A/B (Manifold)	Port P/R1/R2 (manifold) (9)= G1/8 (10)= G1/4 (11)= G3/8 (12)= G1/2			
M5G	M5	(9)			
06G	G1/8	(9)	(10)		
08G	G1/4		(10)	(11)	
10G	G3/8			(11)	(12)
15G	G1/2				(12)
06 YG	G1/8 (rear piping)		(10)		
08 YG	G1/4 (rear piping)			(11)	
10 YG	G3/8 (rear piping)				(12)
D Station No.					
2 to 12	2 to 12 stations				●
2 to 15	2 to 15 stations			●	
2 to 20	2 to 20 stations	●	●		

[Mix manifold]

● How to list combination content

When selecting a combination manifold (write 8 from B), list the code (refer to table 1) for required functions and the layout No. (numbering up to specified station No. with left side as 1) in the field for remarks below the normal model No. display as shown in the example.

[Table 1]

Code	Function
S1	2-position single
S2	2-position double
S3	3-position all ports closed
S4	3-position A/B/R connection
S5	2-position P/A/B connection
MP	Masking plate

1	2	3	4	5	6	7
2-position single	2-position double	3-position All ports closed	3-position All ports closed	2-position double	2-position single	3-position A/B/R connection
(S1)	(S2)	(S3)	(S3)	(S2)	(S1)	(S4)

S1	S2	S3	S4	S5	MP
2	2	2	1	0	0

Example

Model No. when a combination manifold (7 stations) of an array such as at left is configured with 4KB3 and port A/B: Rc1/8, side piping:

M4KB381-06-7- 2 2 2 1 0 0

S1 = 1, 6 S2 = 2, 5 S3 = 3, 4 S4 = 7

Code Position

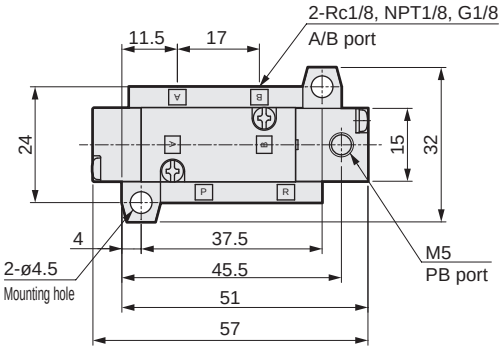
● With a mix manifold, when using 10 or more actuators of the same model No., specify using the codes in the table below.

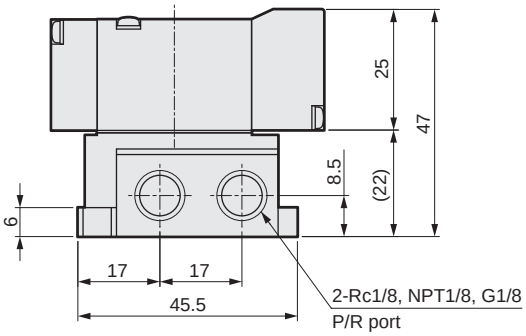
Actuator quantity	10	11	12	13	14	15	16	17	18	19
Code	A	B	C	D	E	F	G	H	I	J

Dimensions

4KB111

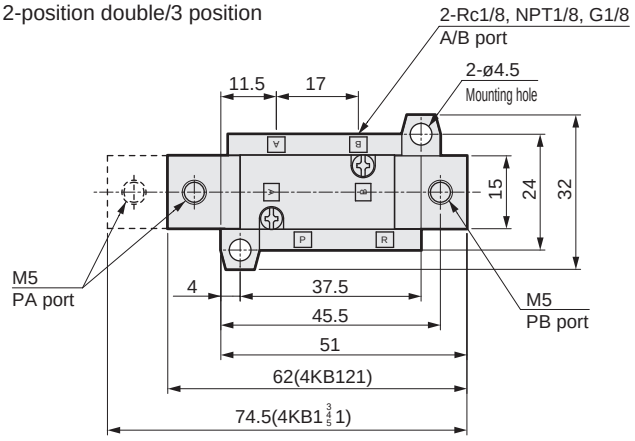
● 2-position single

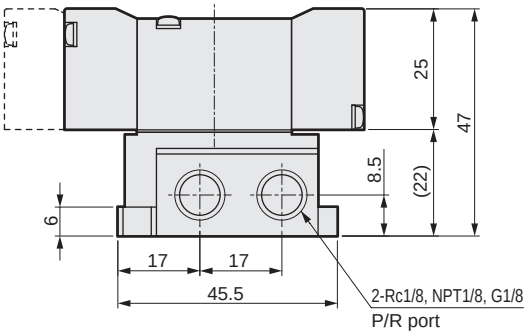




4KB1$^{2}_{3}_{4}_{5}$1

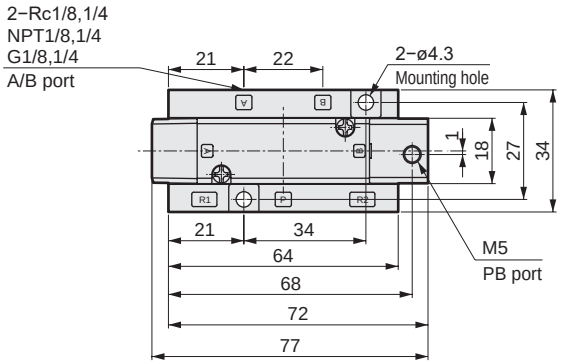
● 2-position double/3 position

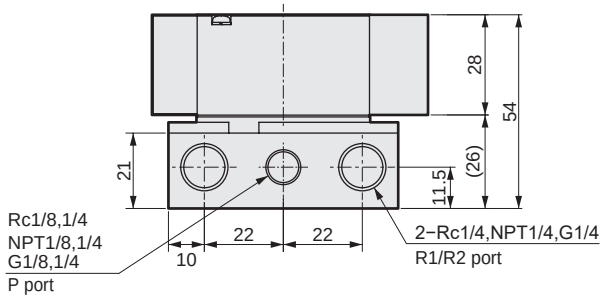




4KB211

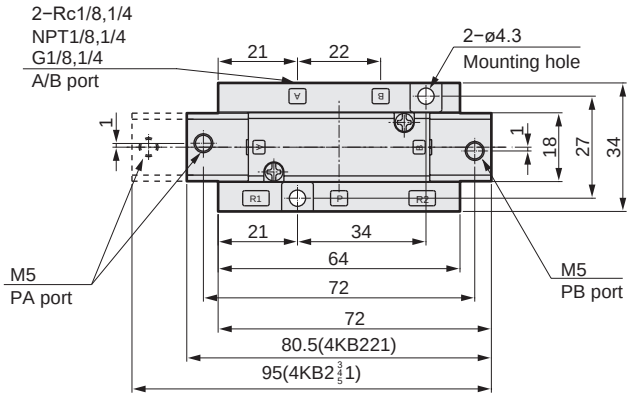
● 2-position single

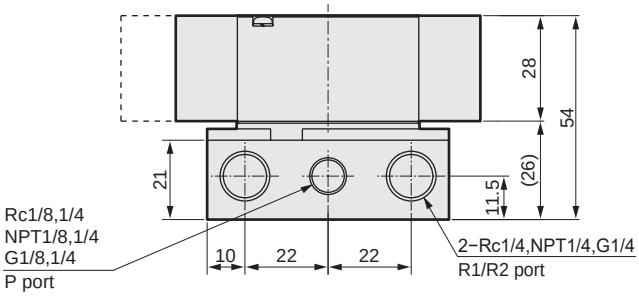




4KB2$^{2}_{3}_{4}_{5}$1

● 2-position double/3 position

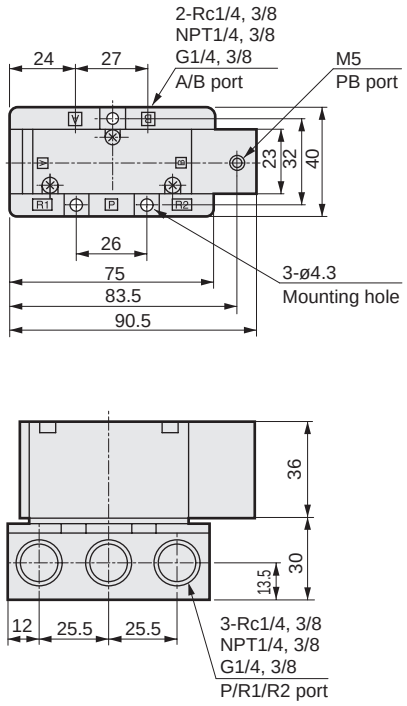




Dimensions

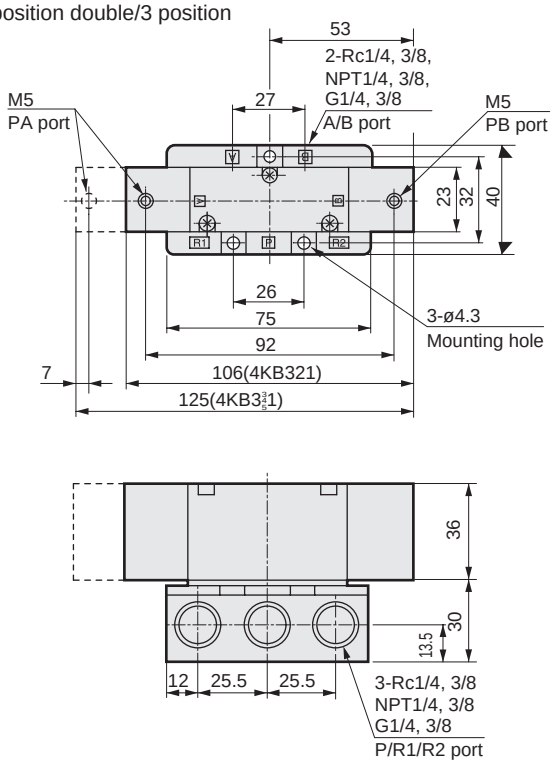
4KB311

● 2-position single



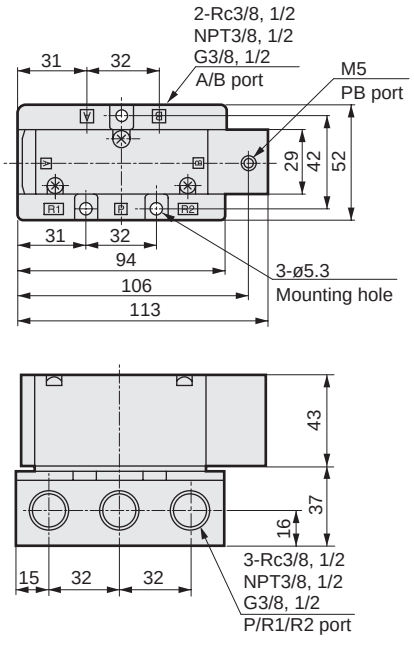
4KB3$^{2}_{3}_{4}_{5}$1

● 2-position double/3 position



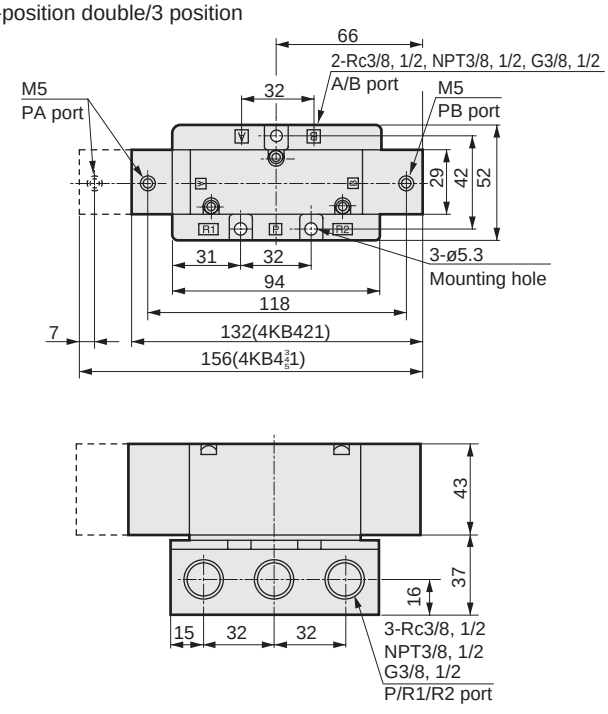
4KB411

● 2-position single



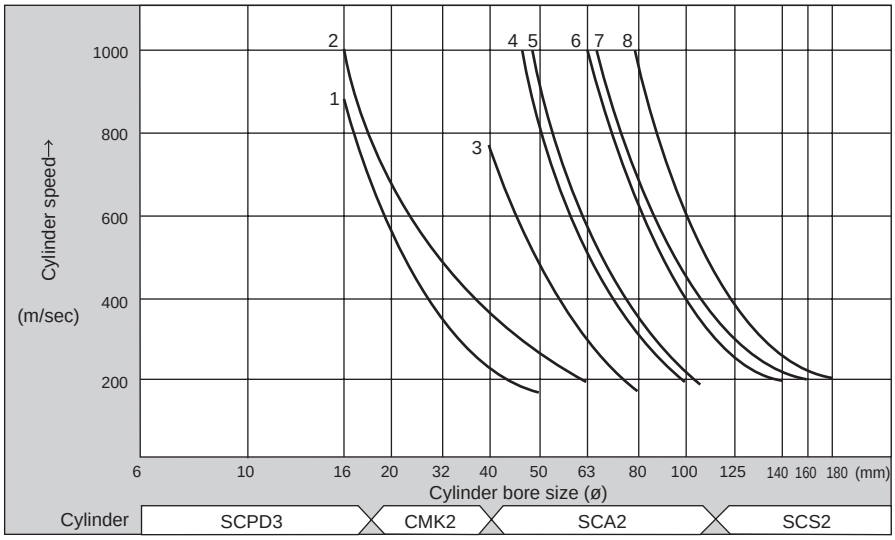
4KB4$^{2}_{3}_{4}_{5}$1

● 2-position double/3 position



The cylinder average speed is obtained from the combination of 4K$^{A}_{B}$ Series and piping system.

Example: For the system when moving SCA2-63 with a speed of 500 mm/sec, system "4" devices can be selected. For clean air system components, select system "4" devices with which a required flow rate of 520 ℓ/min or more will flow.



Standard system table

System No.	Valve	Speed controller	Silencer	Piping (1m)	Composite effective sectional area (mm^2)	Required flow rate (ℓ/min)
1	4KA1$^{1}_{2}$0-M5	SC-M5-S	SL-M5	ø4xø2.5	1.6	115
2	4KB1$^{1}_{2}$0-06	SC1-6	SLW-6S	ø6xø4	3.2	215
3	4KA2$^{1}_{2}$0-06	SC1-6	SLW-6S	ø6xø4	4.8	346
4	4KB2$^{1}_{2}$0-08	SC1-8	SLW-8S	ø8xø5.7	8	581
5	4KA3$^{1}_{2}$0-08	SC1-8	SLW-8S	ø8xø5.7	9.1	660
6	4KB3$^{1}_{2}$0-10	SC1-10	SLW-10L	ø10xø7.2	16.5	1285
7	4KA4$^{1}_{2}$0-10	SC1-10	SLW-10L	ø10xø7.2	19	1289
8	4KB4$^{1}_{2}$0-15	SC1-15	SLW-15A	ø12xø8.9	25.8	1749

*1: The required flow rate is the condition for when the pressure is 0.5 MPa.
*2: Effective cross-sectional area “S” and sonic conductance “C” are converted as S ≈ 5.0 x C.

Clean air system components

Part name	Model No.	Port size	Max. flow rate ℓ/min (ANR)
F.R.L. combination	C1000-6-W	Rc$^{1}/_{8}$	450
	C1000-8-W	Rc$^{1}/_{4}$	630
	C3000-8-W	Rc$^{1}/_{4}$	1280
	C3000-10-W	Rc$^{3}/_{8}$	1750
	C4000-8-W	Rc$^{1}/_{4}$	1430
	C4000-10-W	Rc$^{3}/_{8}$	2400
	C4000-15-W	Rc$^{1}/_{2}$	3000
	C8000-20-W	Rc$^{3}/_{4}$	7000
	C8000-25(-A32)-W	Rc1(Rc1$^{1}/_{4}$)	7500
F.R. unit	W1000-6-W	Rc$^{1}/_{8}$	830
	W1000-8-W	Rc$^{1}/_{4}$	1150
	W3000-8-W	Rc$^{1}/_{4}$	2150
	W3000-10-W	Rc$^{3}/_{8}$	2430
	W4000-8-W	Rc$^{1}/_{4}$	2500
	W4000-10-W	Rc$^{3}/_{8}$	4350
	W4000-15(-A20)-W	Rc$^{1}/_{2}$, Rc$^{3}/_{4}$	4750
	W8000-20-W	Rc$^{3}/_{4}$	10000
	W8000-25(-A32)-W	Rc1(Rc1$^{1}/_{4}$)	10000
Air filter (F)	F1000-6-W	Rc$^{1}/_{8}$	460
	F1000-8-W	Rc$^{1}/_{4}$	610
	F3000-8-W	Rc$^{1}/_{4}$	1230
	F3000-10-W	Rc$^{3}/_{8}$	1500
	F4000-8-W	Rc$^{1}/_{4}$	1320
	F4000-10-W	Rc$^{3}/_{8}$	2140
	F4000-15(-A20)-W	Rc$^{1}/_{2}$ (Rc$^{3}/_{4}$)	3000
	F8000-20-W	Rc$^{3}/_{4}$	6400
	F8000-25(-A32)-W	Rc1(Rc1$^{1}/_{4}$)	6800

Part name	Model No.	Port size	Max. flow rate ℓ/min (ANR)
Regulator (R)	R1000-6-W	Rc$^{1}/_{8}$	770
	R1000-8-W	Rc$^{1}/_{4}$	1350
	R3000-8-W	Rc$^{1}/_{4}$	2000
	R3000-10-W	Rc$^{3}/_{8}$	2600
	R4000-8-W	Rc$^{1}/_{4}$	2500
	R4000-10-W	Rc$^{3}/_{8}$	4400
	R4000-15-W	Rc$^{1}/_{2}$ (Rc$^{3}/_{4}$)	5000
	R8000-20-W	Rc$^{3}/_{4}$	14000
	R8000-25(-A32)-W	Rc1(Rc1$^{1}/_{4}$)	11000
Lubricator (L)	L1000-6-W	Rc$^{1}/_{8}$	550
	L1000-8-W	Rc$^{1}/_{4}$	700
	L3000-8-W	Rc$^{1}/_{4}$	1100
	L3000-10-W	Rc$^{3}/_{8}$	2250
	L4000-8-W	Rc$^{1}/_{4}$	1000
	L4000-10-W	Rc$^{3}/_{8}$	1700
	L4000-15(-A20)-W	Rc$^{1}/_{2}$ (Rc$^{3}/_{4}$)	2700
	L8000-20-W	Rc$^{3}/_{4}$	6300
	L8000-25(-A32)-W	Rc1(Rc1$^{1}/_{4}$)	10000

(Note)
Max. flow rate: Flow rates for FRL, FR, and R when primary pressure is 0.7 MPa, set pressure is 0.5 MPa, and pressure drop is 0.1 MPa. Flow rate for F when primary pressure is 0.7 MPa and pressure drop is 0.02 MPa. Flow rate for L when primary pressure is 0.5 MPa and pressure drop is 0.03 MPa.