



Air valve(3/2 way)

Product series

Air valve: 3A100 Series 58



Air valve: 3A200 Series 59



Air valve: 3A300 Series 60



Air valve: 4A100 Series 61



Air valve: 4A200 Series 63



Air valve: 4A300 Series 65



Air valve: 4A400 Series 67



Manifold Series 69



Air valve(ISO standard): EAV Series 71



Air valve: 7A, TMA Series 78



Installation and Application

1. Before installing, be sure the valve hasn't been damaged via transportation.
2. It's suggested to use the medium lubricated by 40 μ m filter element. Be aware of the flow direction and port size.
3. Please notice whether the installation condition accords with technical requirements (such as "act-uation frequency", "working pressure" and "scope of application temperature"), then the equipment can be installed and used.
4. Notice the flow direction of air during installation, P is the air intake, A (B) is the work port and R (S) is the exhaust outlet.
5. Take measure to avoid vibration and frozen.
6. Firstly press the base gasket into the base, and then connect the base with the valve body by the affiliated screws. The base gasket can be pressed into the installation places that are not used temporarily, and then seal them with affiliated blank cap. When the system expands, take the blank cap off and install relative air valves;
7. To keep the dust away, please use the silencer for the exhaust ports. Never forget to install dirt-proof boot in air intake and outlet during dismounting.

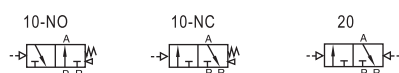
Air valve(3/2 way)

AIRTAC

3A100 Series



Symbol

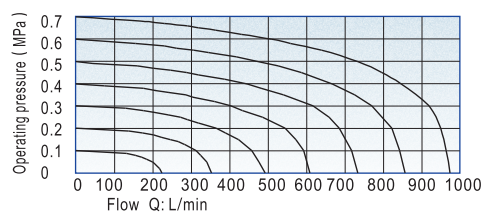


Product feature

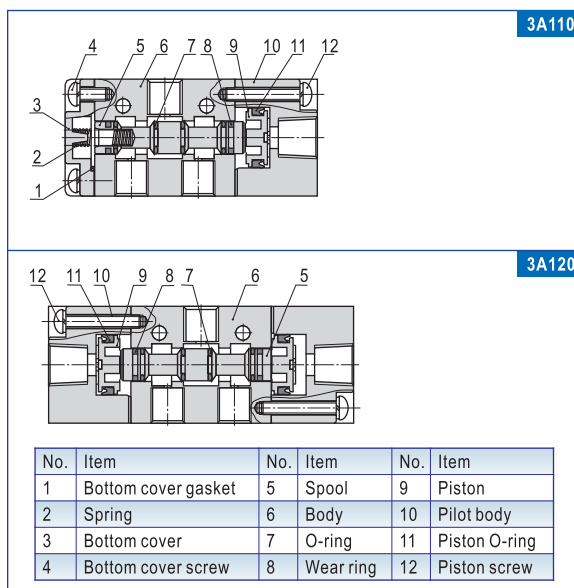
1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Double air control valves have memory function.
3. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
4. No need to add oil for lubrication.
5. Multi-mounting helps to install and apply.
6. Integrate with the manifold to save installation space.

Flow chart

Model: 3A110-06-NO



Inner structure



Specification

Model	3A110-M5	3A120-M5	3A110-06	3A120-06
Fluid	Air(to be filtered by 40 μ m filter element)			
Acting	Exterior control			
Port size ①	M5		1/8"	
Orifice size	5.5mm ² (Cv=0.31)		12.0mm ² (Cv=0.67)	
Valve type	3 port 2 position			
Lubrication ②	Not required			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.5MPa(215psi)			
Temperature °C	-20~70			
Material of body	Aluminum alloy			
Max. frequency ③	5 cycle/sec			

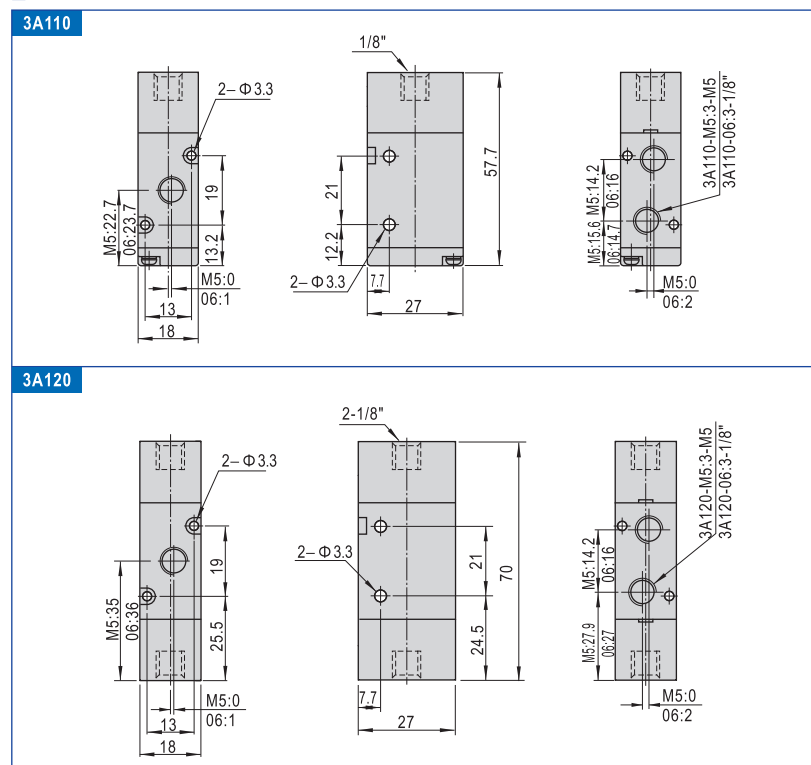
- ① PT thread, NPT thread and G thread are available.
- ② It can not stop in the midway of lubricating. Lubricants like ISO VG32 or equivalent are recommended.
- ③ The maximum actuation frequency is in the no-load state.

Ordering code

3A 1 10 06 NO P			
Model	3A: Air Valve(3/2 way)	Thread type	Port size Thread type
Code	1: 100 Series	1/8"	P: PT T: NPT G: G
Valve type	10: Single air control 20: Double air control	M5	No this code
Port size	M5: M5 06: 1/8"	Acting type	Valve type Acting type
		10	NC: Normally close NO: Normally open
		20	NO code

Please refer to 69 for manifold specification and the order way.

Dimension



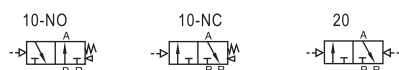
Air valve(3/2 way)

3A200 Series

AIRTAC



Symbol

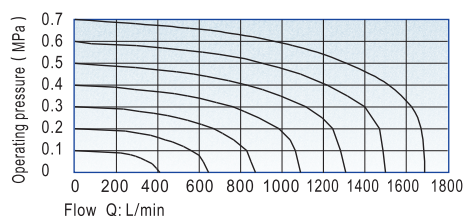


Product feature

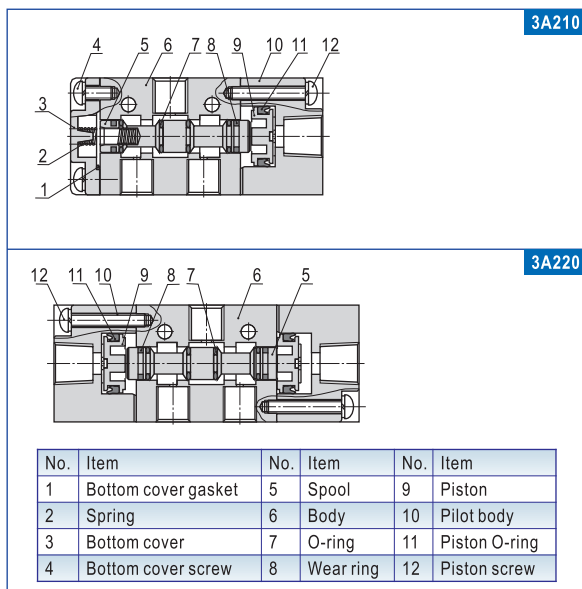
1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Double air control valves have memory function.
3. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
4. No need to add oil for lubrication.
5. Multi-mounting helps to install and apply.
6. Integrate with the manifold to save installation space.

Flow chart

Model: 3A210-08-NO



Inner structure



Specification

Model	3A210-05	3A220-06	3A210-08	3A220-08
Fluid	Air(to be filtered by 40 μ m filter element)			
Acting	Exterior control			
Port size ①	In=Out=1/8"		In=Out=1/4"	
Orifice size	14.0mm ² (Cv=0.78)		16.0mm ² (Cv=0.89)	
Valve type	3 port 2 position			
Lubrication ②	Not required			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.5MPa(215psi)			
Temperature °C	-20~70			
Material of body	Aluminum alloy			
Max. frequency ③	5 cycle/sec			

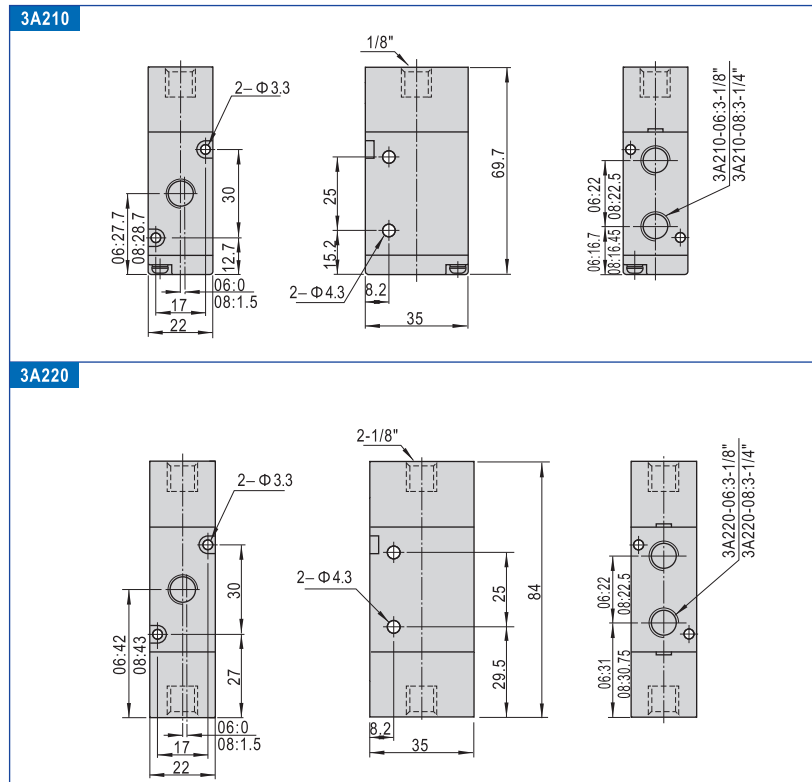
- ① PT thread, NPT thread and G thread are available.
 ② It can not stop in the midway of lubricating. Lubricants like ISO VG32 or equivalent are recommended.
 ③ The maximum actuation frequency is in the no-load state.

Ordering code

3A 2 10 08 NO P			
Model	3A: Air Valve(3/2 way)	Thread type	P: PT T: NPT G: G
Code	2: 200 Series	Acting type	Valve type Acting type 10 NC: Normally close 20 NO: Normally open
Valve type	10: Single air control 20: Double air control	Port size	06: 1/8" 08: 1/4"

Please refer to 69 for manifold specification and the order way.

Dimension



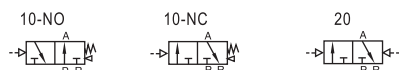
Air valve(3/2 way)

AIRTAC

3A300 Series



Symbol

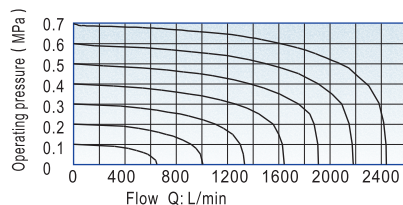


Product feature

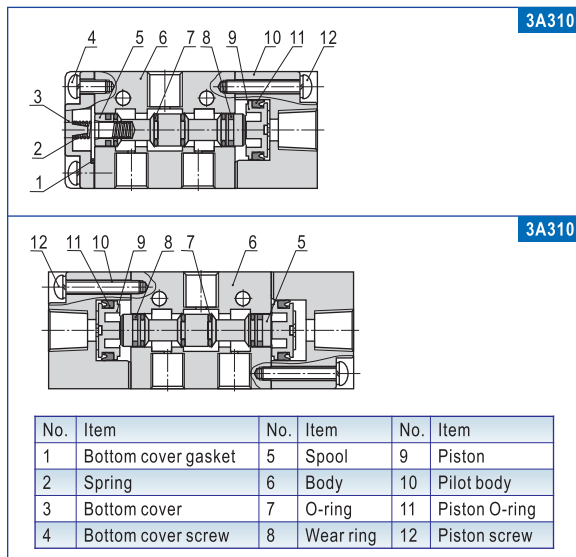
1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Double air control valves have memory function.
3. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
4. No need to add oil for lubrication.
5. Multi-mounting helps to install and apply.
6. Integrate with the manifold to save installation space.

Flow chart

Model: 3A310-10-NO



Inner structure

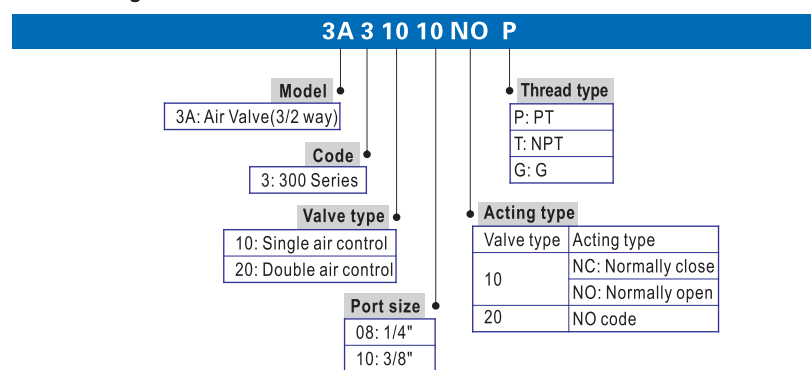


Specification

Model	3A310-08	3A320-08	3A310-10	3A320-10
Fluid	Air(to be filtered by 40 μ m filter element)			
Acting	Exterior control			
Port size ①	In=Out=1/4"		In=Out=3/8"	
Orifice size	25.0mm ² (Cv=1.35)		30.0mm ² (Cv=1.67)	
Valve type	3 port 2 position			
Lubrication ②	Not required			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.5MPa(215psi)			
Temperature °C	-20~70			
Material of body	Aluminum alloy			
Max. frequency ③	5 cycle/sec			

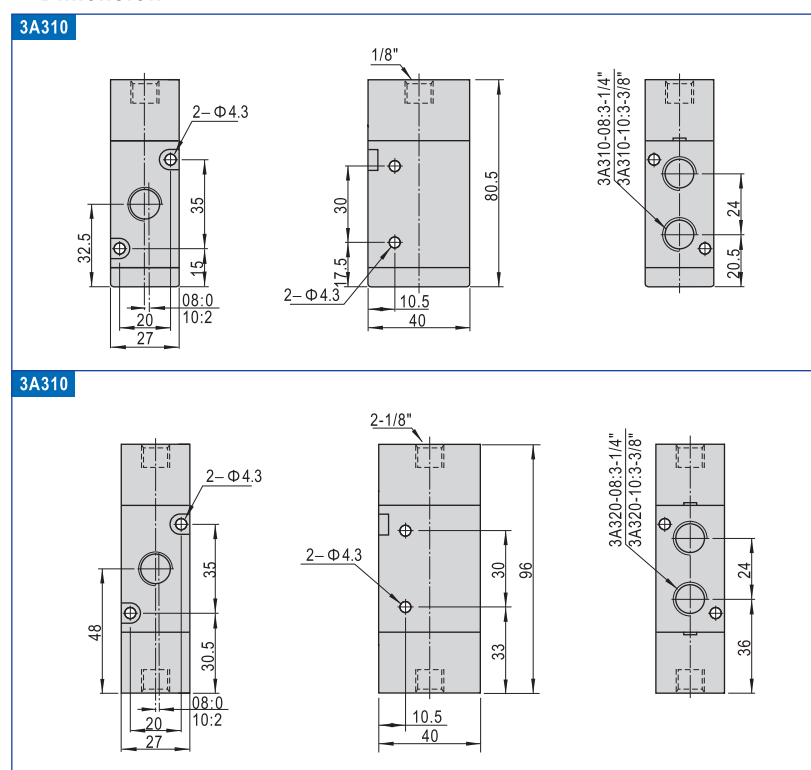
- ① PT thread, NPT thread and G thread are available.
 ② It can not stop in the midway of lubricating. Lubricants like ISO VG32 or equivalent are recommended.
 ③ The maximum actuation frequency of no-load state.

Ordering code



Please refer to 69 for manifold specification and the order way.

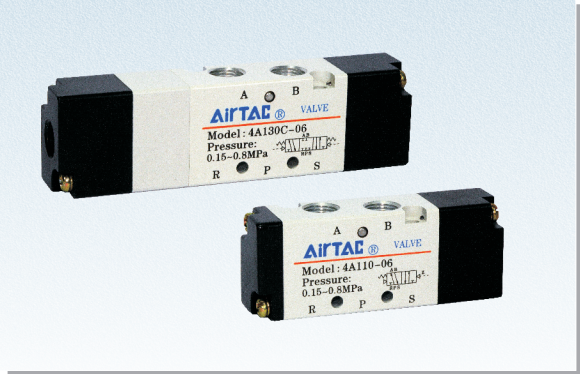
Dimension



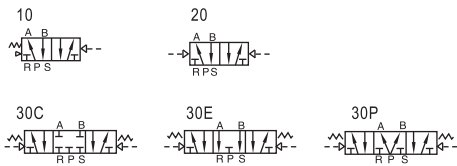
Air valve(5/2, 5/3 way)



4A100 Series



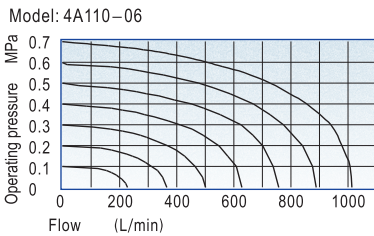
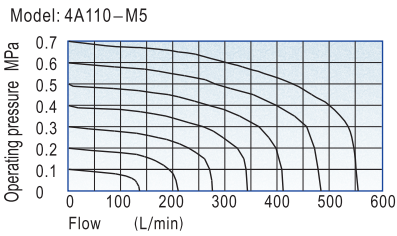
Symbol



Product feature

- 1. Structure in sliding column mode: good tightness and sensitive reaction.
- 2. Three position air valves have three kinds of central function for your choice.
- 3. Double air control valves have memory function.
- 4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
- 5. No need to add oil for lubrication.
- 6. Integrate with the manifold to save installation space.

Flow chart



Specification

Model	4A110-M5 4A120-M5	4A130C-M5 4A130E-M5 4A130P-M5	4A110-06 4A120-06	4A130C-06 4A130E-06 4A130P-06
Fluid	Air(to be filtered by 40 μ m filter element)			
Acting	Exterior control			
Port size ①	In=Out=M5		In=Out=1/8"	
Orifice size	5.5mm ² (Cv=0.31)	5.0mm ² (Cv=0.28)	12.0mm ² (Cv=0.67)	9.0mm ² (Cv=0.50)
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.5MPa(215psi)			
Temperature °C	-20~70			
Material of body	Aluminum alloy			
Lubrication ②	Not required			
Max. frequency ③	5 cycle/sec	3 cycle/sec	5 cycle/sec	3 cycle/sec
Weight (g)	4A110-M5:85 4A120-M5:140	165	4A110-06:85 4A120-06:140	165

- ① PT thread, NPT thread and G thread are available.
- ② It can not stop in the midway of lubricating. Lubricants like ISO VG32 or equivalent are recommended.
- ③ The maximum actuation frequency of no-load state.

Ordering code

4A 1 10 06 P

Model
4A: Air Valve(5/2, 5/3 way)

Code
1: 100 Series

Valve type
10: Single air control 5/2 way
20: Double air control 5/2 way
30C: Double air control 5/3 way closed center
30E: Double air control 5/3 way exhaust center
30P: Double air control 5/3 way pressure center

Thread type

Port size	Thread type
1/8"	P: PT T: NPT G: G
M5	No this code

Port size
M5: M5
06: 1/8"

Please refer to 70 for manifold specification and the order way.



4A100



Air valve(5/2, 5/3 way)

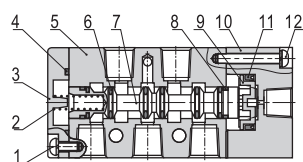
AirTAC

4A100 Series

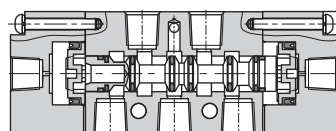
Inner structure



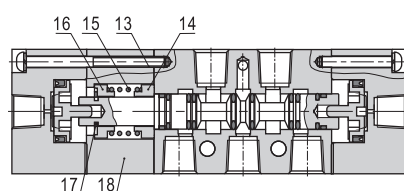
4A100



4A110



4A120

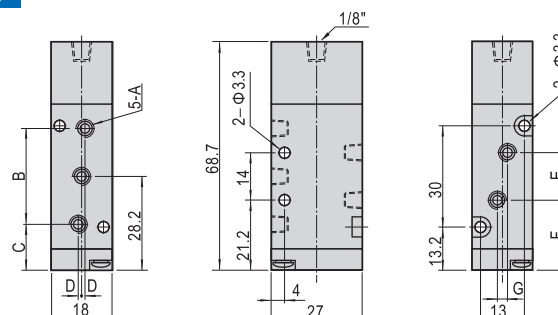


4A130C

No.	Item	No.	Item	No.	Item
1	Screw	7	Spool	13	Screw
2	Spring	8	Wear ring	14	Spring holder
3	Bottom cover	9	Piston	15	Return Spring
4	Bottom cover gasket	10	Pilot body	16	Spring holder
5	Body	11	O-ring	17	E Clip
6	O-ring	12	Screw	18	Side cover

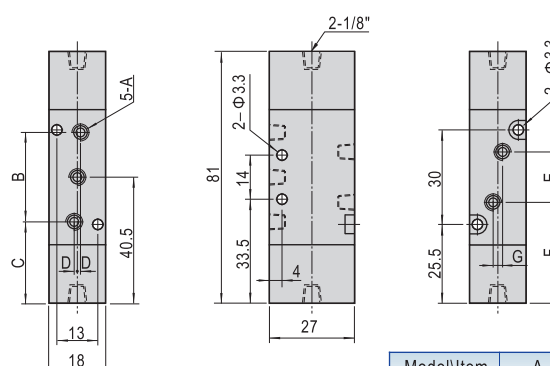
Dimension

4A110



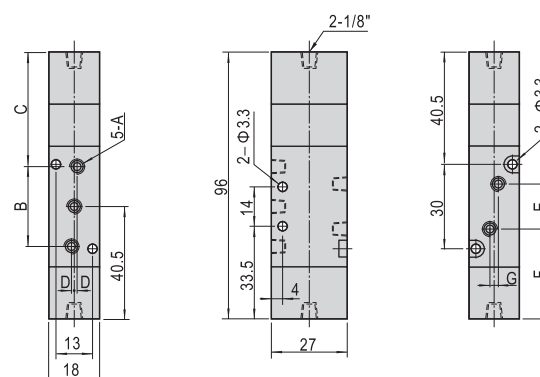
Model\Item	A	B	C	D	E	F	G
4A110-M5	M5x0.8	27	14.7	0	14	21.2	0
4A110-06	1/8"	28	14.2	1	16	20.2	3

4A120



Model\Item	A	B	C	D	E	F	G
4A120-M5	M5x0.8	27	27	0	14	33.5	0
4A120-06	1/8"	28	26.5	1	16	32.5	3

4A130



Model\Item	A	B	C	D	E	F	G
4A130-M5	M5x0.8	27	42	0	14	33.5	0
4A130-06	1/8"	28	41.5	1	16	32.5	3



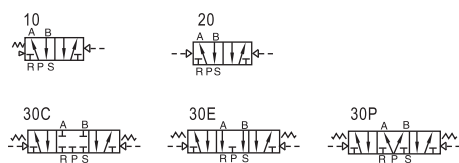
Air valve(5/2, 5/3 way)

4A200 Series

AirTAC



Symbol

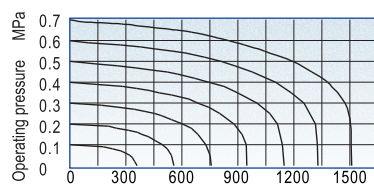


Product feature

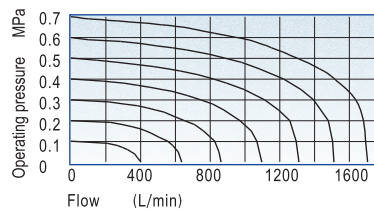
1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Three position air valves have three kinds of central function for your choice.
3. Double air control valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Integrate with the manifold to save installation space.

Flow chart

Model: 4A210-06



Model: 4A210-08



Specification

Model	4A210-06 4A220-06	4A230C-06 4A230E-06 4A230P-06	4A210-08 4A220-08	4A230C-08 4A230E-08 4A230P-08
Fluid	Air(to be filtered by 40 μm filter element)			
Acting	Exterior control			
Port size ①	In=Out=Exhaust=1/8"		In=Out=1/4" Exhaust=1/8"	
Orifice size	14.0mm ² (Cv=0.78)	12.0mm ² (Cv=0.67)	16.0mm ² (Cv=0.89)	12.0mm ² (Cv=0.67)
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.5MPa(215psi)			
Temperature °C	-20~70			
Material of body	Aluminum alloy			
Lubrication ②	Not required			
Max. frequency ③	5 cycle/sec	3 cycle/sec	5 cycle/sec	3 cycle/sec
Weight (g)	4A210-06:185 4A220-06:285	365	4A210-08:185 4A220-08:285	365

① PT thread, NPT thread and G thread are available.

② It can not stop in the midway of lubricating. Lubricants like ISO VG32 or equivalent are recommended.

③ The maximum actuation frequency of no-load state.

Ordering code

4A 2 10 08 P			
Model	4A: Air Valve(5/2, 5/3 way)	Thread type	P: PT T: NPT G: G
Code	2: 200 Series	Port size	06: 1/8" 08: 1/4"
Valve type	10: Single air control 5/2 way 20: Double air control 5/2 way 30C: Double air control 5/3 way closed center 30E: Double air control 5/3 way exhaust center 30P: Double air control 5/3 way pressure center		

Please refer to 70 for manifold specification and the order way.



4A200



Air valve(5/2, 5/3 way)

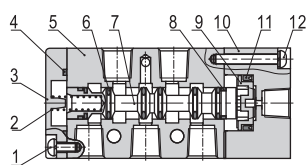
AirTAC

4A200 Series

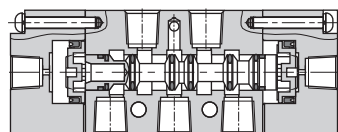
Inner structure



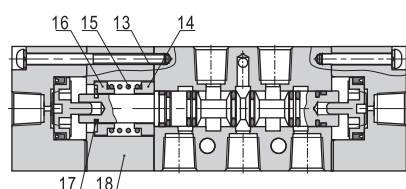
4A200



4A210



4A220

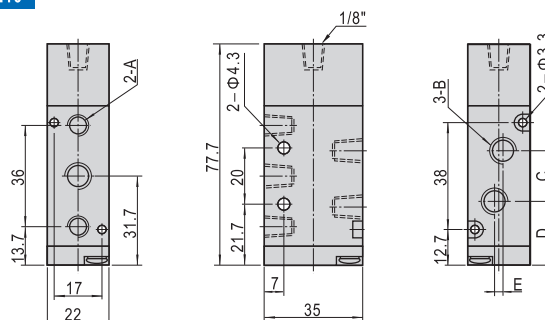


4A230C

No.	Item	No.	Item	No.	Item
1	Screw	7	Spool	13	Screw
2	Spring	8	Wear ring	14	Spring holder
3	Bottom cover	9	Piston	15	Return Spring
4	Bottom cover gasket	10	Pilot body	16	Spring holder
5	Body	11	O-ring	17	E Clip
6	O-ring	12	Screw	18	Side cover

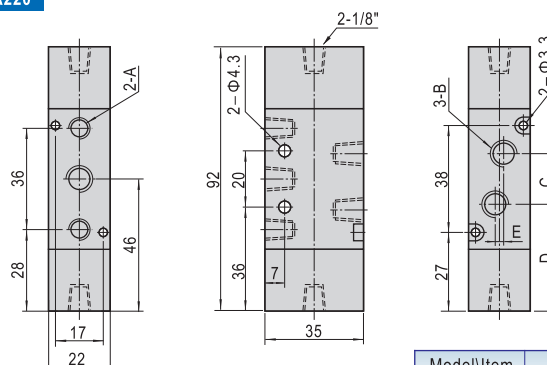
Dimension

4A210



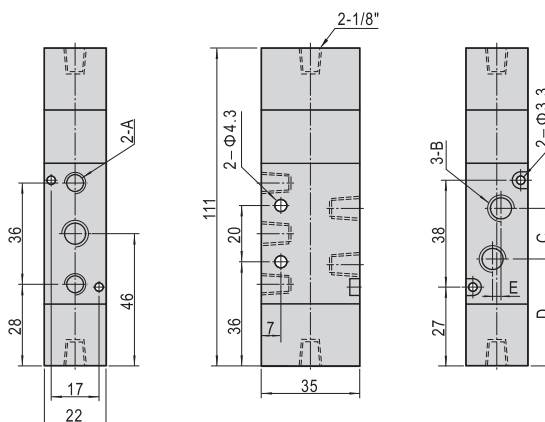
Model\Item	A	B	C	D	E
4A210-06	1/8"	1/8"	18	22.7	0
4A210-08	1/8"	1/4"	21	21.2	3

4A220



Model\Item	A	B	C	D	E
4A220-06	1/8"	1/8"	18	37	0
4A220-08	1/8"	1/4"	21	35.5	3

4A230



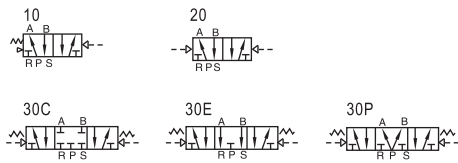
Model\Item	A	B	C	D	E
4A230-06	1/8"	1/8"	18	37	0
4A230-08	1/8"	1/4"	21	35.5	3



Air valve(5/2, 5/3 way)
4A300 Series



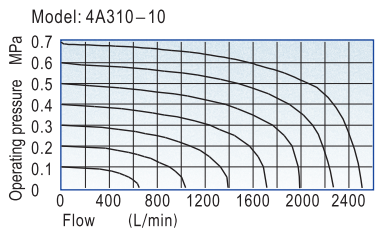
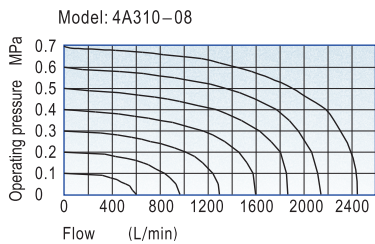
Symbol



Product feature

- 1. Structure in sliding column mode: good tightness and sensitive reaction.
- 2. Three position air valves have three kinds of central function for your choice.
- 3. Double air control valves have memory function.
- 4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
- 5. No need to add oil for lubrication.
- 6. Integrate with the manifold to save installation space.

Flow chart



Specification

Model	4A310-08 4A320-08	4A330C-08 4A330E-08 4A330P-08	4A310-10 4A320-10	4A330C-10 4A330E-10 4A330P-10
Fluid	Air(to be filtered by 40 μ m filter element)			
Acting	Exterior control			
Port size ①	In=Out=Exhaust=1/4"		In=Out=3/8" Exhaust=1/4"	
Orifice size	25.0mm ² (Cv=1.40)	18.0mm ² (Cv=1.00)	30.0mm ² (Cv=1.68)	18.0mm ² (Cv=1.00)
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.5MPa(215psi)			
Temperature °C	-20~70			
Material of body	Aluminum alloy			
Lubrication ②	Not required			
Max. frequency ③	4 cycle/sec	3 cycle/sec	4 cycle/sec	3 cycle/sec
Weight (g)	4A310-08:275 4A320-08:365	505	4A310-10:275 4A320-10:365	505

- ① PT thread, NPT thread and G thread are available.
- ② It can not stop in the midway of lubricating. Lubricants like ISO VG32 or equivalent are recommended.
- ③ The maximum actuation frequency of no-load state.

Ordering code

4A 3 10 10 P

Model: 4A: Air Valve(5/2, 5/3 way)

Code: 3: 300 Series

Valve type: 10: Single air control 5/2 way
20: Double air control 5/2 way
30C: Double air control 5/3 way closed center
30E: Double air control 5/3 way exhaust center
30P: Double air control 5/3 way pressure center

Thread type: P: PT
T: NPT
G: G

Port size: 08: 1/4"
10: 3/8"

Please refer to 70 for manifold specification and the order way.



4A300



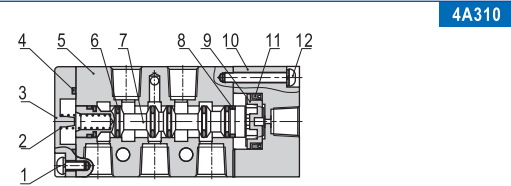
Air valve(5/2, 5/3 way)

AirTAC

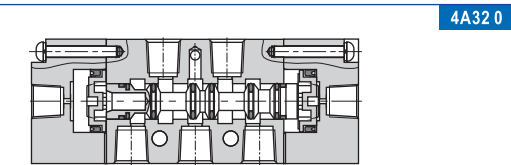
4A300 Series



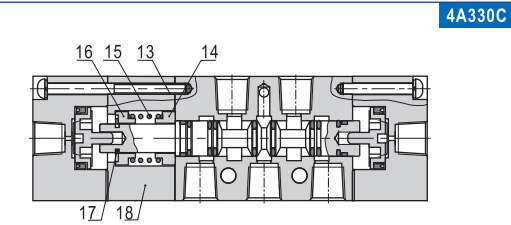
Inner structure



4A310



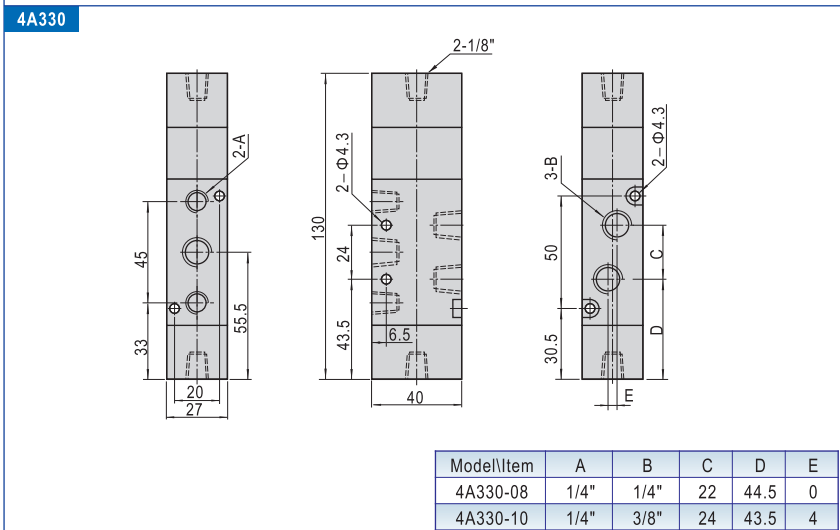
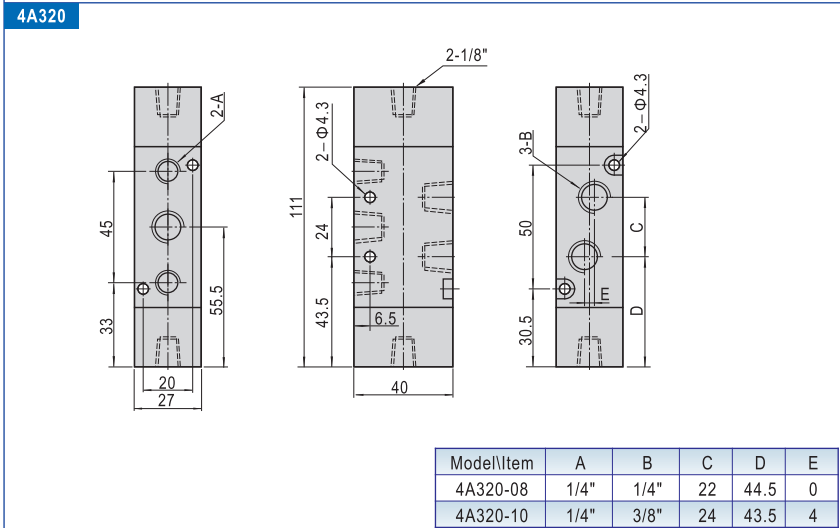
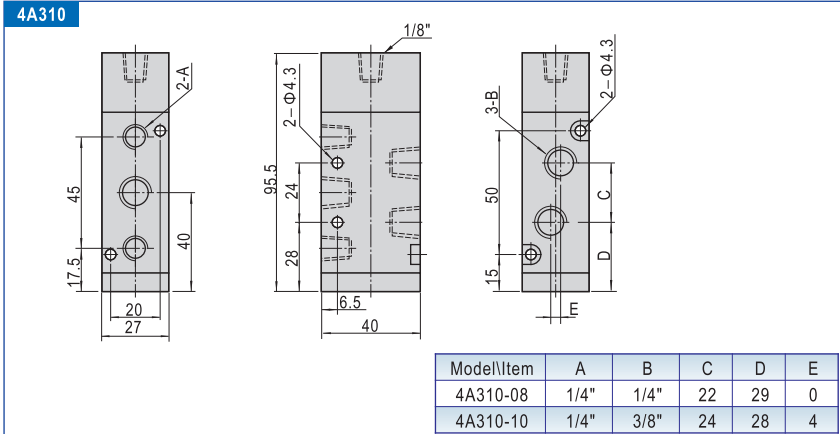
4A320



4A330C

No.	Item	No.	Item	No.	Item
1	Screw	7	Spool	13	Screw
2	Spring	8	Wear ring	14	Spring holder
3	Bottom cover	9	Piston	15	Return Spring
4	Bottom cover gasket	10	Pilot body	16	Spring holder
5	Body	11	O-ring	17	E Clip
6	O-ring	12	Screw	18	Side cover

Dimension



Air valve(5/2, 5/3 way)

4A400 Series

AirTAC



Specification

Model	4A410-15	4A420-15	4A430C-15	4A430E-15	4A430P-15
Fluid	Air(to be filtered by 40 μ m filter element)				
Acting	Exterior control				
Port size ①	In=Out=Exhaust=1/2"				
Orifice size	50.0mm ² (Cv=2.79)		30.0mm ² (Cv=1.68)		
Valve type	5 port 2 position		5 port 3 position		
Operating pressure	0.15~0.8MPa(21~114psi)				
Proof pressure	1.5MPa(215psi)				
Temperature °C	-20~70				
Material of body	Aluminum alloy				
Lubrication ②	Not required				
Max. frequency ③	3 cycle/sec				
Weight (g)	555	685	735		

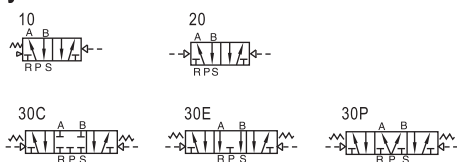
① PT thread, NPT thread and G thread are available.

② It can not stop in the midway of lubricating. Lubricants like ISO VG32 or equivalent are recommended.

③ The maximum actuation frequency of no-load state.

4A400

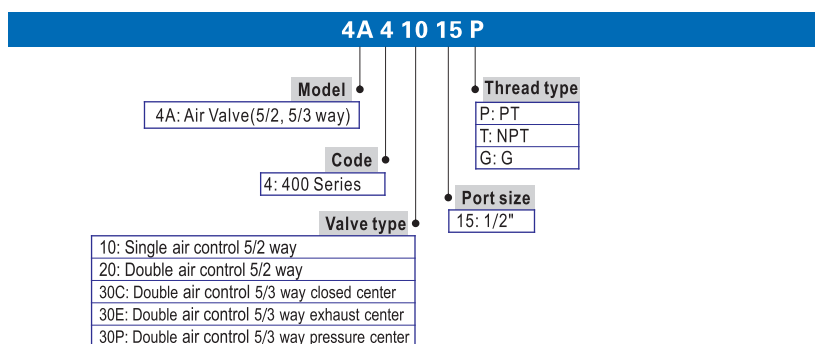
Symbol



Product feature

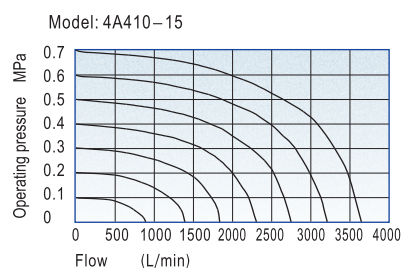
1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Three position air valves have three kinds of central function for your choice.
3. Double air control valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Integrate with the manifold to save installation space.

Ordering code



Please refer to 70 for manifold specification and the order way.

Flow chart



Air valve(5/2, 5/3 way)

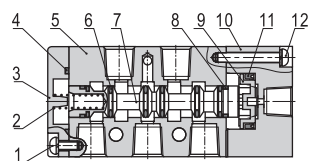
AirTAC

4A400 Series

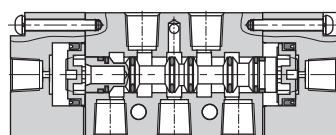


4A400

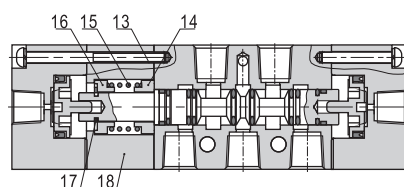
Inner structure



4A410



4A420

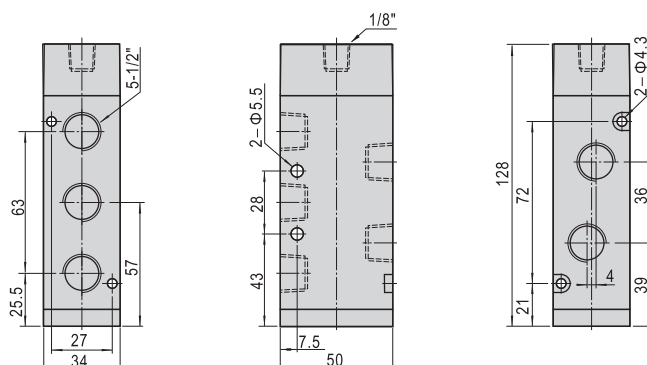


4A430C

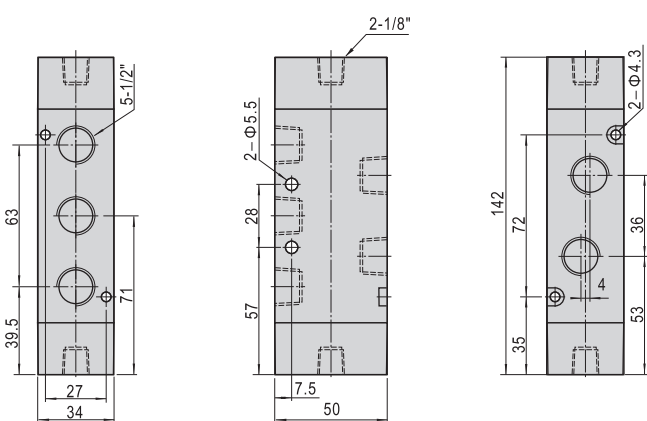
No.	Item	No.	Item	No.	Item
1	Screw	7	Spool	13	Screw
2	Spring	8	Wear ring	14	Spring holder
3	Bottom cover	9	Piston	15	Return Spring
4	Bottom cover gasket	10	Pilot body	16	Spring holder
5	Body	11	O-ring	17	E Clip
6	O-ring	12	Screw	18	Side cover

Dimension

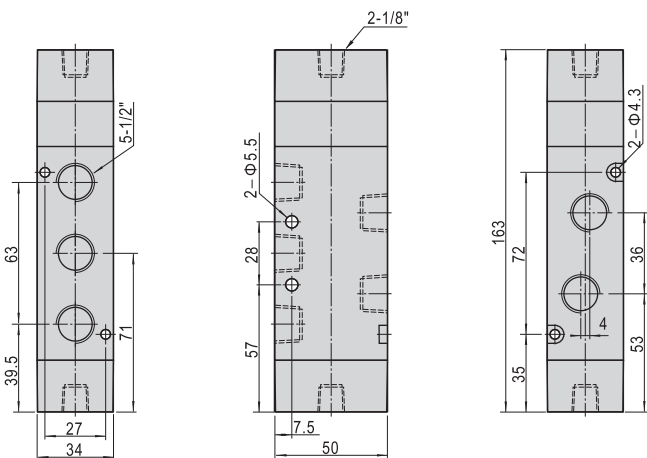
4A410



4A420



4A430



Air valve(Accessories)

Manifold

AirTAC



Product feature

1. It is available to integrate the direction control valves of the same series to form value group to save space and cost;
2. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring;
3. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.

Specification

Item\Manifold Model	100M	200M	300M
Fluid	Air(to be filtered by 40 μ m filter element)		
Temperature °C	-20~70		
Adaptable valve's series	3A100 Series	3A200 Series	3A300 Series

Ordering code

Ordering code contains the two parts of the manifold's and the blank plate's.

1 Ordering code for manifold

3V100M 5F P		
Model	Thread type	
	P: PT	
	T: NPT	
	G: G	
Number of stations	1F: 1 Station	
	2F: 2 Station	
		
	16F: 16 Station	

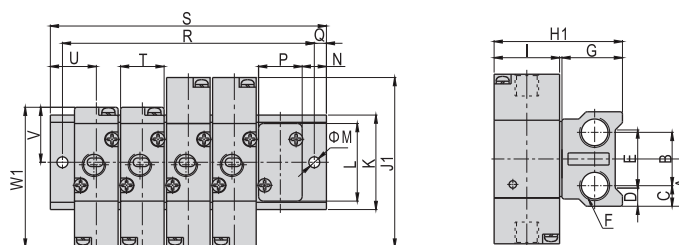
2 Ordering code for blank plate

P-3V100M R2		
Model	Code	
	R2: Blank plate for manifold	
	3V100M: 100 Series Manifold	
	3V200M: 200 Series Manifold	
	3V300M: 300 Series Manifold	

Remark:1. Manifold kits contains manifold, seal and screw.
2. Blank plate kits contains blank plate, and screw.

Dimensions

With 3A air valve



Model\Item	A	B	C	D	E	F	G	H1	I	J1	K	L	M	N	P	Q	T	U	V	W1
3V100M	19.5	22	8.5	7.5	24	1/4"	25	53	27	70	39	32	4.5	10	18	5	18	19	22.7	57.7
3V200M	22.5	25	10	8	29	1/4"	25	61	35	84	45	40	4.5	12	22	6	22	23	27.7	69.7
3V300M	26	28	12	8	36	3/8"	29	70	40	96	52	47	4.5	13.5	27	6	27	27	32.5	80.5

Model\Item	R															
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
3V100M	28	47	66	85	104	123	142	161	180	199	218	237	256	275	294	313
3V200M	34	57	80	103	126	149	172	195	218	241	264	287	310	333	356	379
3V300M	42	70	98	126	154	182	210	238	266	294	322	350	378	406	434	462

Model\Item	S															
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
3V100M	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323
3V200M	46	69	92	115	138	161	184	207	230	253	276	299	322	345	368	391
3V300M	54	82	110	138	166	194	222	250	278	306	334	362	390	418	446	474

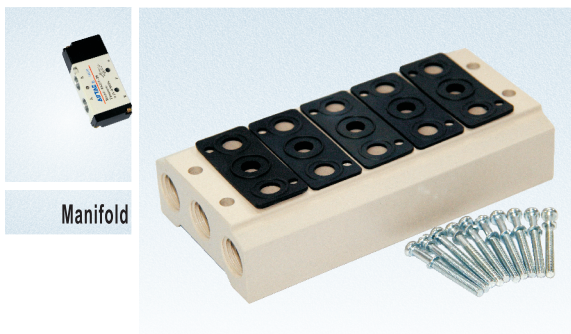


Manifold

Air valve(Accessories)

Manifold

AirTAC



Specification

Item\Manifold Model	100M	200M	300M	400M
Fluid	Air(to be filtered by 40 μm filter element)			
Temperature °C	-20~70			
Adaptable valve's series	4A100 Series	4A200 Series	4A300 Series	4A400 Series

Ordering code

Ordering code contains the two parts of the manifold's and the blank plate's.

1 Ordering code for manifold

100M 5F P		
Model	Thread type	
100M: 100 Series Manifold	P: PT	
200M: 200 Series Manifold	T: NPT	
300M: 300 Series Manifold	G: G	
400M: 400 Series Manifold		
Number of stations		
1F: 1 Station		
2F: 2 Station		
.....		
16F: 16 Station		

2 Ordering code for blank plate

P-100M R2	
Model	Code
100M: 100 Series Manifold	R2: Blank plate for manifold
200M: 200 Series Manifold	
300M: 300 Series Manifold	
400M: 400 Series Manifold	

Product feature

1. It is available to integrate the direction control valves of the same series to form value group to save space and cost;
2. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring;
3. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.

① 100M, 200M series have a maximum of 16 stations ; 300M series have a maximum of 12 stations; 400M series have a maximum of 8 stations.

Dimension

With 4A air valve

Side view diagram of a manifold assembly. Dimensions shown include Y (width of the main body), X (width of the flange), Q (flange thickness), R (flange radius), S (flange height), T (flange width), U (flange width), V (flange width), and ØE (flange hole diameter).

Top view diagram of a manifold assembly. Dimensions shown include L (total length), H (total height), G (flange width), F (flange width), I (flange width), J (flange width), K1 (flange width), M1 (flange width), A (flange width), B (flange width), C (flange width), E (flange width), and 盲板 (Blind Plate).

Model\Item	A	B	C	E	F	G	H	I	J	K1	M1	Q	R	S	T	U	V	X	Y
100M□F	58	43.2	20	4.5	18.3	19	5	10	28.2	81	96	1/4"	40	30	29	14	9	25	27
200M□F	61	50.7	21	4.5	22.4	23	6	12	31.7	92	111	1/4"	43	32	30.5	14.5	9	27	35
300M□F	75	64.8	26	4.5	27.3	27	6	13.5	40	111	130	3/8"	53	48	37.5	13.5	11	30	40
400M□F	104	94.5	32	5.5	34.3	31.5	7	14.5	57	142	163	1/2"	68	63	52	18.5	18	38	50

Model\Item	L															
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
100M□F	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323
200M□F	46	69	92	115	138	161	184	207	230	253	276	299	322	345	368	391
300M□F	54	82	110	138	166	194	222	250	278	306	334	362	-	-	-	-
400M□F	63	98	133	168	203	238	273	308	-	-	-	-	-	-	-	-

Model\Item	P															
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
100M□F	28	47	66	85	104	123	142	161	180	199	218	237	256	275	294	313
200M□F	34	57	80	103	126	149	172	195	218	241	264	287	310	333	356	379
300M□F	42	70	98	126	154	182	210	238	266	294	322	350	-	-	-	-
400M□F	49	84	119	154	189	224	259	294	-	-	-	-	-	-	-	-

