5 Port Air Operated Valve
Series SYA3000/5000/7000

How to Order

A, B port size

Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SYA3000
01	1/8	SYA5000
02	1/4	SYA7000

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SYA3000
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SYA5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
C8	One-touch fitting for ø8	SYA7000
C10	One-touch fitting for ø10	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SYA3000
N7	One-touch fitting for ø1/4"	
N3	One-touch fitting for ø5/32"	SYA5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
N9	One-touch fitting for ø5/16"	SYA7000
N11	One-touch fitting for ø3/8"	

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

∗ Except for M5

Bracket

Nil	Without bracket
F1	With foot bracket (2 position single only)
F2	With side bracket

Series

3	SYA3000
5	SYA5000
7	SYA7000

Body ported SYA [5] [1] 20 − [C6] [ ] − [ ]

Base mounted SYA [5] [1] 40 − [ ] [ ]

Series

3	SYA3000
5	SYA5000
7	SYA7000

Type of actuation

1	2 position single (A)4 2(B) (EA)5 1 3(EB) (P)
2	2 position double (A)4 2(B) (EA)5 1 3(EB) (P)
3	3 position closed center (A)4 2(B) (EA)5 1 3(EB) (P)
4	3 position exhaust center (A)4 2(B) (EA)5 1 3(EB) (P)
5	3 position pressure center (A)4 2(B) (EA)5 1 3(EB) (P)

P, R port thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Port size

Symbol	Port size	Applicable series
Nil	Without sub-plate	
01	1/8 With sub-plate	SYA3000
02	1/4 With sub-plate	SYA5000
02	1/4 With sub-plate	SYA7000
03	3/8 With sub-plate	

Specifications

Fluid		Air
Operating pressure range MPa	2 position single	0.15 to 0.7
	2 position double	–100 kPa to 0.7
	3 position	–100 kPa to 0.7
Pilot pressure range Note 1) MPa	2 position single	(0.7 x P + 0.1) to 0.7 P: Operating pressure range
	2 position double	0.1 to 0.7
	3 position	0.2 to 0.7
Ambient and fluid temperature (°C)		–10 to 60 (No freezing.)
Manual override (Manual operation)		Non-locking push type
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance (m/s²) Note 2)		150/30

Note 1) In case of single type, be certain that pressure within operating pressure range be supplied to supply port, because return pressure is introduced from supply port {1(P)} for activation.

Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, when pilot signal is ON and OFF. (Value in the initial state)

Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve and armature when pilot signal is ON and OFF. (Value in the initial state)

⚠ Caution

Be sure to read before handling. Refer to front matter 53 for Safety Instructions and pages 3 to 8 for 3/4/5 Port Solenoid Valve Precautions.



How to Order Manifold Base

Same manifolds as series SY (Non plug-in style) are prepared.
(For 20, 41, 42 and 45 Types)

SS5YA$^{3}_{5}$– Fill the same as SS5Y$^{3}_{5}$.

(Refer to pages 324, 376 and 422.)

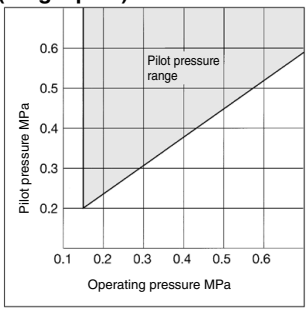
∗ Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>

SS5YA5-42-03-02 1 set (Type 42, 3 station manifold base part no.)
∗ SYA5140 1 set (Single air operated valve part no.)
∗ SYA5240 1 set (Double air operated valve part no.)
∗ SY5000-26-20A 1 set (Blanking plate assembly part no.)
└ The asterisk denotes the symbol for assembly.
Prefix it to the part nos. of the solenoid valve, etc.

Note) When single body ported air operated valves are ordered, manifold mounting screws and gaskets are not included. Order them separately if necessary. (For details, refer to pages 353 and 416.)

Pilot Pressure Range (Single pilot)



Flow Characteristics/Weight

Model/Series SYA3□20 (Body ported)

Valve model	Type of actuation		Pilot port size	Port size		Flow characteristics						Weight (g)
						1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			
				P, EA, EB	A, B	C[dm³/(s·bar)]	b	Cv	C[dm³/(s·bar)]	b	Cv	
SYA3□20-M5	2 position	Single	M5 x 0.8	M5 x 0.8	M5 x 0.8	0.61	0.44	0.16	0.64	0.45	0.18	35
		Double										37
	3 position	Closed center				0.48	0.46	0.13	0.47	0.43	0.13	39
		Exhaust center				0.47	0.42	0.13	0.47 [0.44]	0.41 [0.37]	0.13 [0.12]	
		Pressure center				0.50 [0.41]	0.48 [0.35]	0.15 [0.11]	0.47	0.43	0.13	
SYA3□20-C4	2 position	Single			C4 (One-touch fitting for ø4)	0.72	0.29	0.18	0.64	0.34	0.17	44
		Double										46
	3 position	Closed center				0.59	0.28	0.15	0.59	0.30	0.15	48
		Exhaust center				0.63	0.35	0.16	0.42 [0.41]	0.34 [0.37]	0.11 [0.11]	
		Pressure center				0.76 [0.46]	0.42 [0.34]	0.21 [0.12]	0.59	0.29	0.15	
SYA3□20-C6	2 position	Single			C6 (One-touch fitting for ø6)	0.76	0.30	0.19	0.65	0.39	0.17	40
		Double										42
	3 position	Closed center				0.76	0.55	0.24	0.60	0.33	0.16	44
		Exhaust center				0.65	0.32	0.16	0.64 [0.42]	0.31 [0.36]	0.17 [0.11]	
		Pressure center				0.77 [0.49]	0.34 [0.43]	0.21 [0.15]	0.61	0.34	0.16	

Note) [ ]: denotes normal position.

Model/Series SYA3□40 (Base mounted)

Valve model	Type of actuation		Pilot port size	Port size	Flow characteristics Note 1)						Weight Note 2) (g)
					1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			
					C[dm³/(s·bar)]	b	Cv	C[dm³/(s·bar)]	b	Cv	
SYA3□40-01□	2 position	Single	M5 x 0.8	1/8	1.0	0.30	0.24	1.1	0.30	0.26	69 (34)
		Double									71 (36)
	3 position	Closed center			0.77	0.28	0.18	0.85	0.30	0.19	73 (38)
		Exhaust center			0.73	0.31	0.18	1.1 [0.55]	0.26 [0.52]	0.24 [0.16]	
		Pressure center			1.2 [0.51]	0.24 [0.45]	0.29 [0.14]	0.89	0.47	0.24	

Note 1) [ ]: denotes normal position.
Note 2) ( ): Without sub-plate.

Flow Characteristics/Weight

Model/Series SYA5□20 (Body ported)

Valve model	Type of actuation		Pilot port size	Port size		Flow characteristics						Weight (g)
						1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			
				P, EA, EB	A, B	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
SYA5□20-01□	2 position	Single	M5 x 0.8	1/8	1/8	1.9	0.35	0.49	2.4	0.39	0.61	58
		Double										64
	3 position	Closed center				1.7	0.43	0.45	1.8	0.35	0.46	69
		Exhaust center				1.5	0.44	0.41	2.5 [1.5]	0.32 [0.43]	0.59 [0.40]	
		Pressure center				2.2 [0.91]	0.46 [0.58]	0.61 [0.28]	1.8	0.38	0.46	
SYA5□20-C4	2 position	Single			C4 (One-touch fitting for ø4)	0.75	0.43	0.20	0.85	0.64	0.30	82
		Double										87
	3 position	Closed center				0.74	0.40	0.19	0.84	0.57	0.28	93
		Exhaust center				0.75	0.36	0.19	0.84 [0.84]	0.64 [0.53]	0.30 [0.27]	
		Pressure center				0.78 [0.71]	0.44 [0.37]	0.21 [0.18]	0.84	0.57	0.27	
SYA5□20-C6	2 position	Single			C6 (One-touch fitting for ø6)	1.5	0.33	0.33	2.0	0.37	0.52	76
		Double										82
	3 position	Closed center				1.3	0.31	0.33	1.6	0.32	0.39	87
		Exhaust center				1.3	0.33	0.33	1.8 [1.4]	0.35 [0.37]	0.44 [0.35]	
		Pressure center				1.7 [0.80]	0.31 [0.47]	0.42 [0.23]	1.7	0.33	0.44	
SYA5□20-C8	2 position	Single			C8 (One-touch fitting for ø8)	1.9	0.21	0.45	2.3	0.29	0.57	68
		Double										74
	3 position	Closed center				1.6	0.29	0.39	1.7	0.38	0.46	79
		Exhaust center				1.4	0.38	0.39	2.0 [1.5]	0.37 [0.40]	0.52 [0.43]	
		Pressure center				2.2 [1.6]	0.32 [0.44]	0.56 [0.44]	1.8	0.41	0.50	

Note) [ ]: denotes normal position.

Model/Series SYA5□40 (Base mounted)

Valve model	Type of actuation		Pilot port size	Port size	Flow characteristics Note 1)						Weight Note 2) (g)
					1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			
					C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
SYA5□40-02□	2 position	Single	M5 x 0.8	1/4	2.4	0.41	0.64	2.8	0.29	0.66	105 (42)
		Double									110 (47)
	3 position	Closed center			1.8	0.47	0.50	1.8	0.40	0.47	115 (52)
		Exhaust center			1.4	0.55	0.44	3.0 [1.2]	0.33 [0.48]	0.72 [0.37]	
		Pressure center			3.3 [0.84]	0.36 [0.60]	0.85 [0.28]	1.8	0.40	0.48	

Note 1) [ ]: denotes the normal position.
Note 2) ( ): denotes without sub-plate.

Model/Series SYA7□20 (Body ported)

Valve model	Type of actuation		Pilot port size	Port size		Flow characteristics						Weight (g)
						1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			
				P, EA, EB	A, B	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
SYA7□20-02□	2 position	Single	M5 x 0.8	P port: 1/4 EA, EB port : 1/8	1/4	4.1	0.23	0.93	3.3	0.33	0.81	94
		Double										100
	3 position	Closed center				2.9	0.31	0.70	2.4	0.38	0.63	110
		Exhaust center				2.5	0.39	0.65	3.4 [2.1]	0.35 [0.38]	0.82 [0.54]	
		Pressure center				4.3 [2.4]	0.23 [0.32]	0.97 [0.61]	2.2	0.39	0.58	
SYA7□20-C8	2 position	Single			C8 (One-touch fitting for ø8)	3.2	0.26	0.77	3.2	0.37	0.82	100
		Double										106
	3 position	Closed center				2.6	0.24	0.63	2.4	0.31	0.62	116
		Exhaust center				2.4	0.25	0.57	2.6 [1.9]	0.42 [0.46]	0.70 [0.56]	
		Pressure center				3.3 [2.4]	0.28 [0.22]	0.78 [0.57]	2.2	0.34	0.60	
SYA7□20-C10	2 position	Single			C10 (One-touch fitting for ø10)	3.8	0.26	0.86	3.2	0.34	0.82	97
		Double										103
	3 position	Closed center				2.8	0.27	0.67	2.4	0.21	0.59	113
		Exhaust center				2.5	0.25	0.59	2.7 [2.0]	0.38 [0.38]	0.70 [0.56]	
		Pressure center				3.8 [2.4]	0.25 [0.31]	0.89 [0.61]	2.3	0.38	0.61	

Note) [ ]: denotes normal position.

Model/Series SYA7□40 (Base mounted)

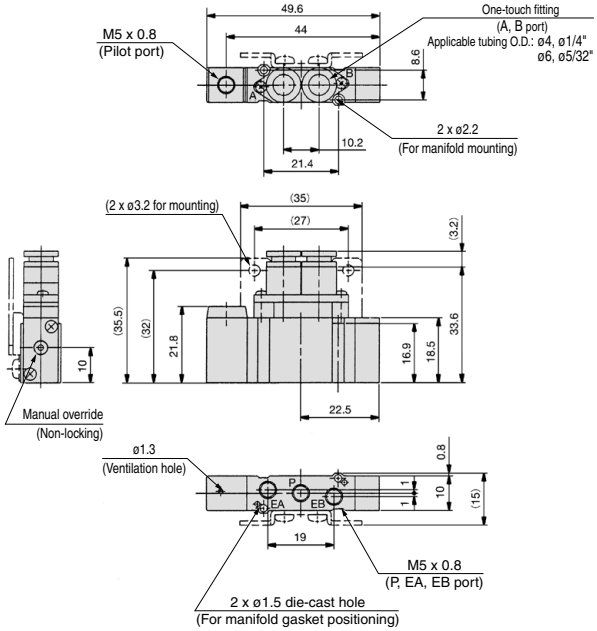
Valve model	Type of actuation		Pilot port size	Port size	Flow characteristics Note 1)						Weight Note 2) (g)
					1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			
					C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
SYA7□40-02□	2 position	Single	M5 x 0.8	1/4	4.1	0.41	1.1	4.1	0.29	1.0	202 (73)
		Double									210 (81)
	3 position	Closed center			3.0	0.43	0.80	2.6	0.41	0.72	218 (89)
		Exhaust center			2.6	0.42	0.71	4.7 [1.7]	0.35 [0.48]	1.1 [0.49]	
		Pressure center			5.3 [2.3]	0.39 [0.49]	1.3 [0.65]	2.2	0.49	0.63	
SYA7□40-03	2 position	Single		3/8	4.9	0.29	1.2	4.5	0.27	1.1	202 (73)
		Double									210 (81)
	3 position	Closed center			3.0	0.40	0.80	2.6	0.45	0.73	218 (89)
		Exhaust center			2.6	0.42	0.71	4.8 [1.7]	0.35 [0.48]	1.1 [0.49]	
		Pressure center			5.3 [2.3]	0.31 [0.51]	1.3 [0.64]	2.3	0.45	0.66	

Note 1) [ ]: denotes the normal position.
Note 2) ( ): denotes without sub-plate.

Dimensions/Series SYA3000: Body Ported

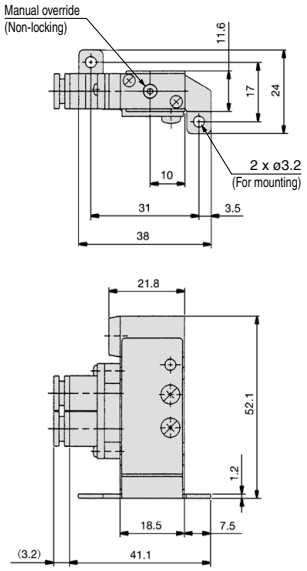
2 position single

SYA3120- $^{C4, N3}_{C6, N7}$ **(-F2)**

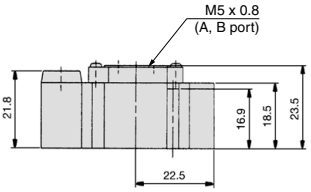


Foot bracket

SYA3120- $^{C4, N3}_{C6, N7}$ **-F1**



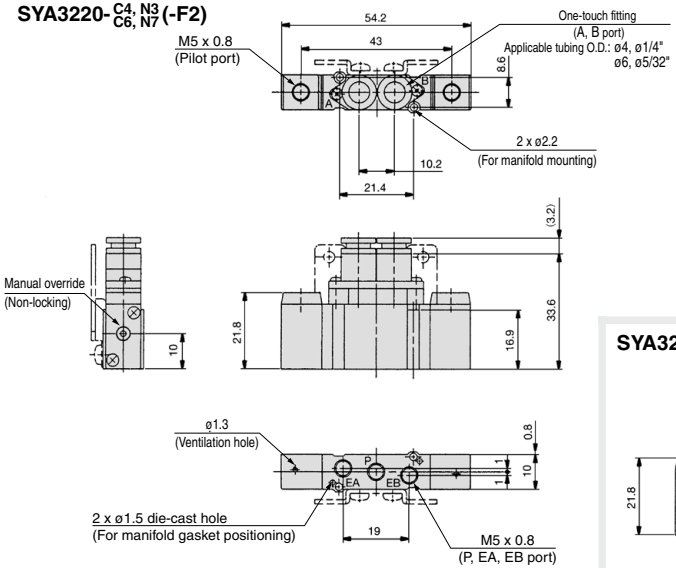
SYA3120-M5



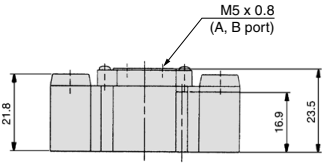
Dimensions/Series SYA3000: Body Ported

2 position double

SYA3220-$^{C4, N3}_{C6, N7}$(-F2)

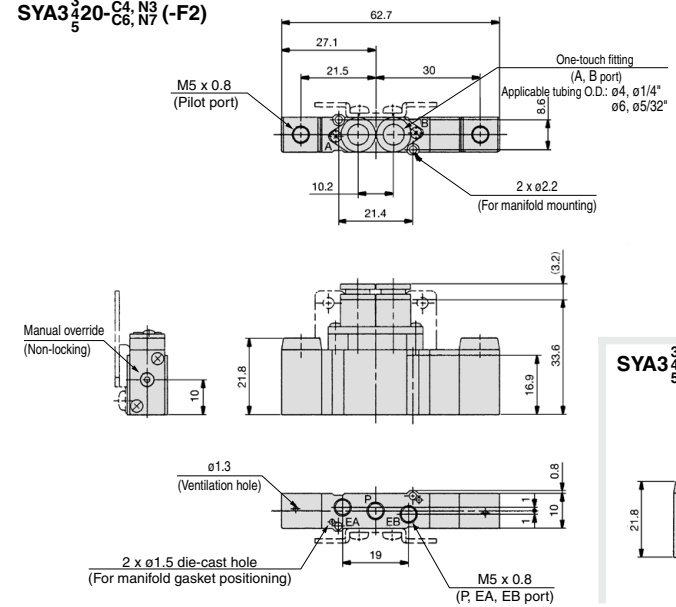


SYA3220-M5

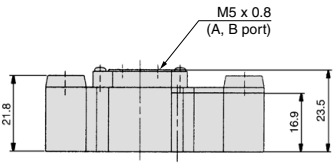


3 position closed center / exhaust center / pressure center

SYA3$^{3}_{5}$4$^{3}_{5}$20-$^{C4, N3}_{C6, N7}$(-F2)

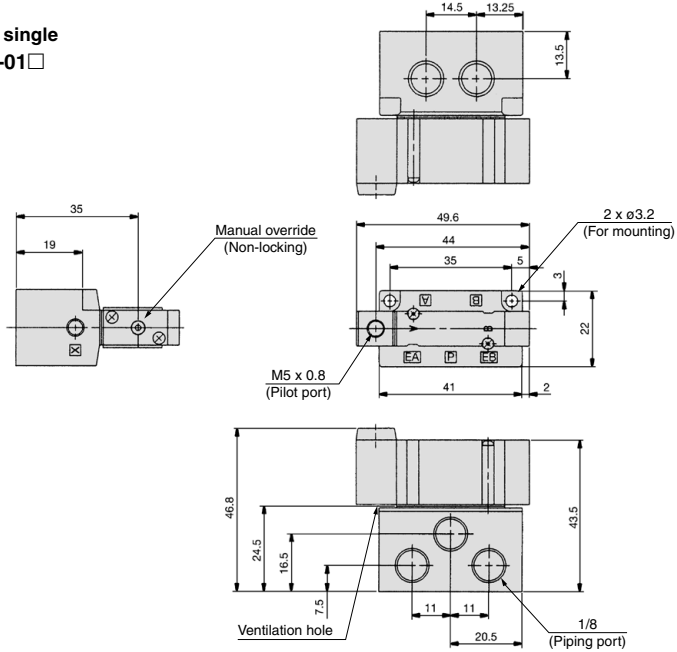


SYA3$^{3}_{5}$4$^{3}_{5}$20-M5

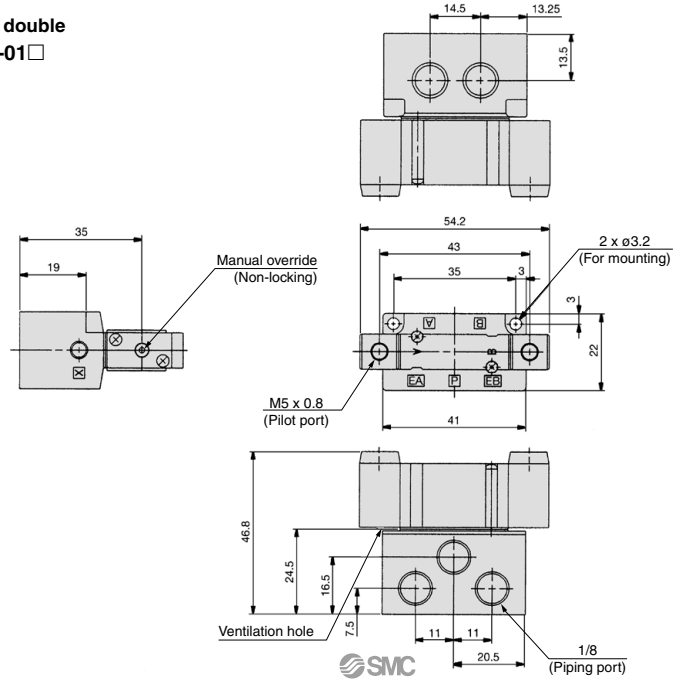


Dimensions/Series SYA3000: Base Mounted

2 position single
SYA3140-01□



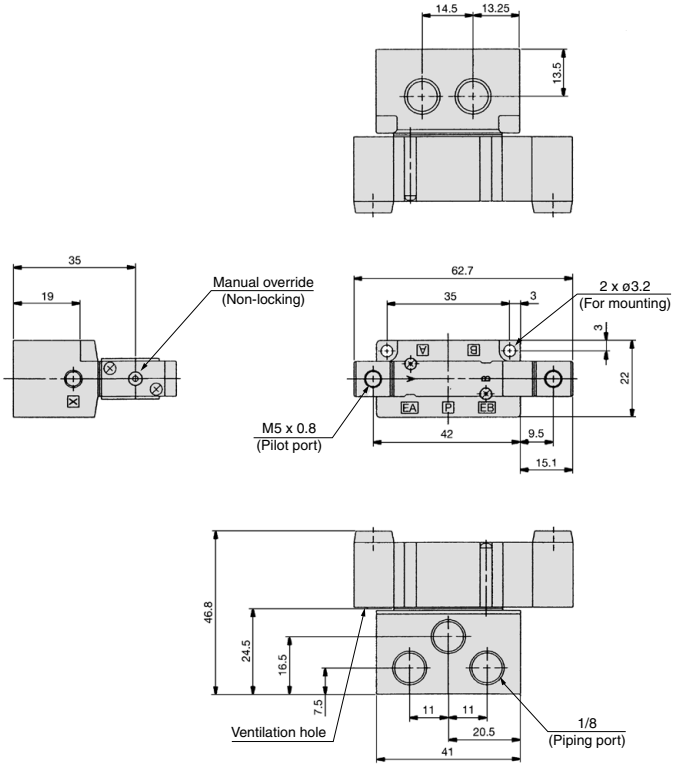
2 position double
SYA3240-01□



Dimensions/Series SYA3000: Base Mounted

3 position closed center / exhaust center / pressure center

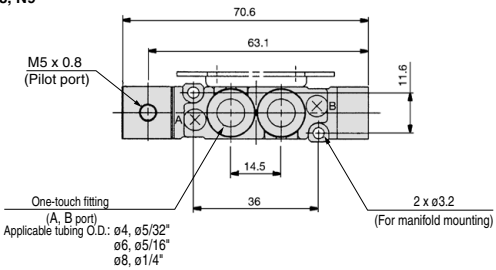
SYA3$^{3}_{5}$40-01□

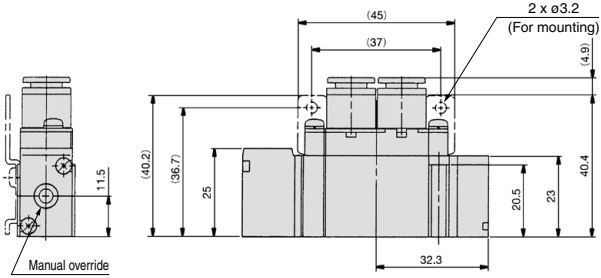


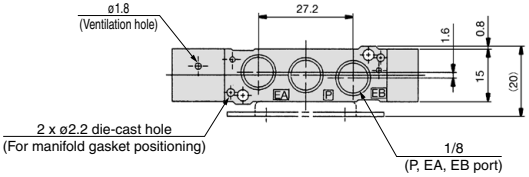
Dimensions/Series SYA5000: Body Ported

2 position single

SYA5120-C4, N3 C6, N7 C8, N9 □(-F2)

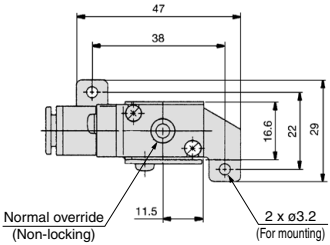


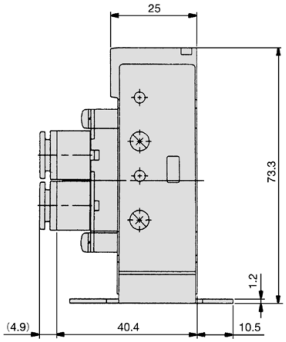




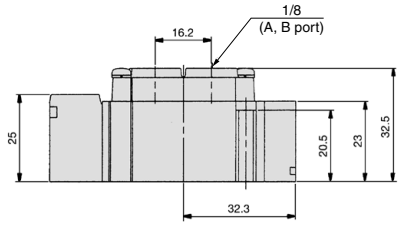
Foot bracket

SYA5120-C4, N3 C6, N7 C8, N9 □-F1





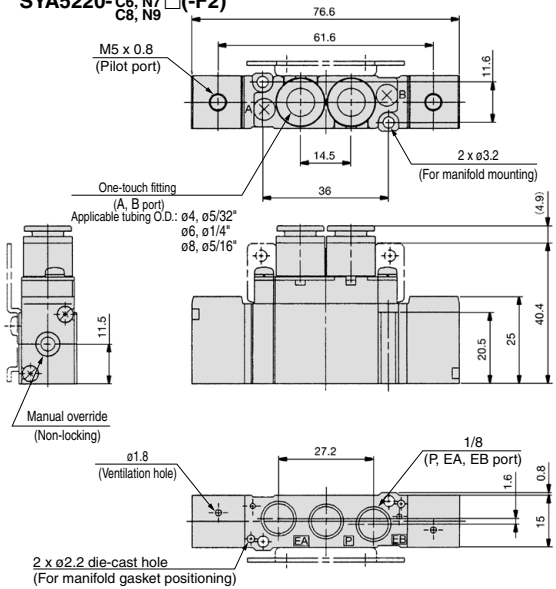
SYA5120-01□



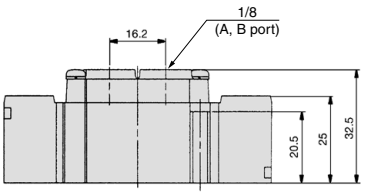
Dimensions/Series SYA5000: Body Ported

2 position double

SYA5220- C4, N3 / C6, N7 / C8, N9 **□(-F2)**

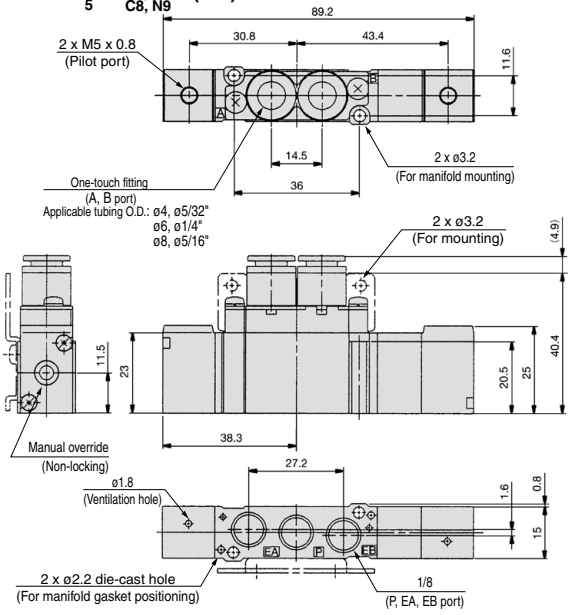


SYA5220-01□

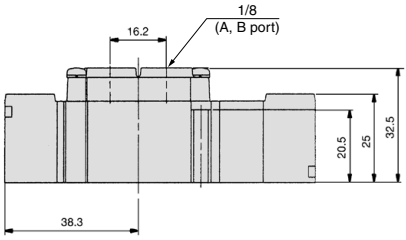


3 position closed center / exhaust center / pressure center

SYA5 3/4/5 **20-** C4, N3 / C6, N7 / C8, N9 **□(-F2)**

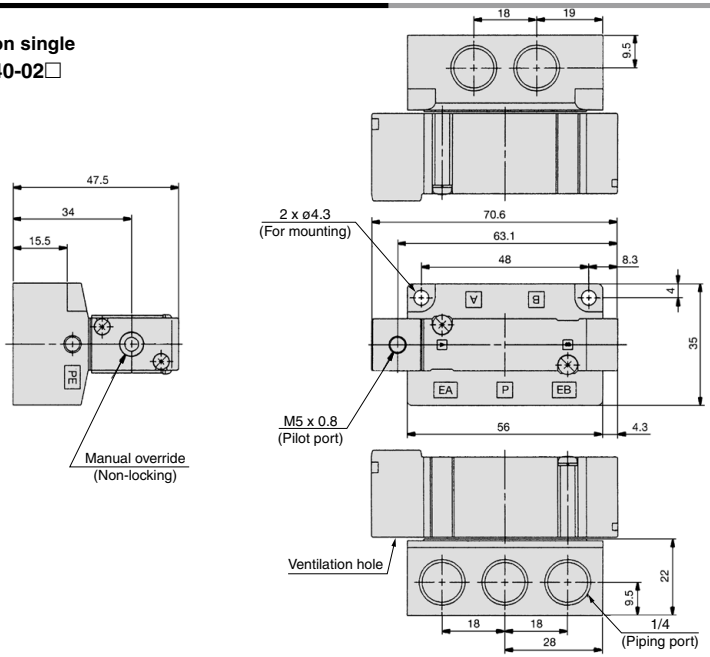


SYA5 3/4/5 **20-01□**

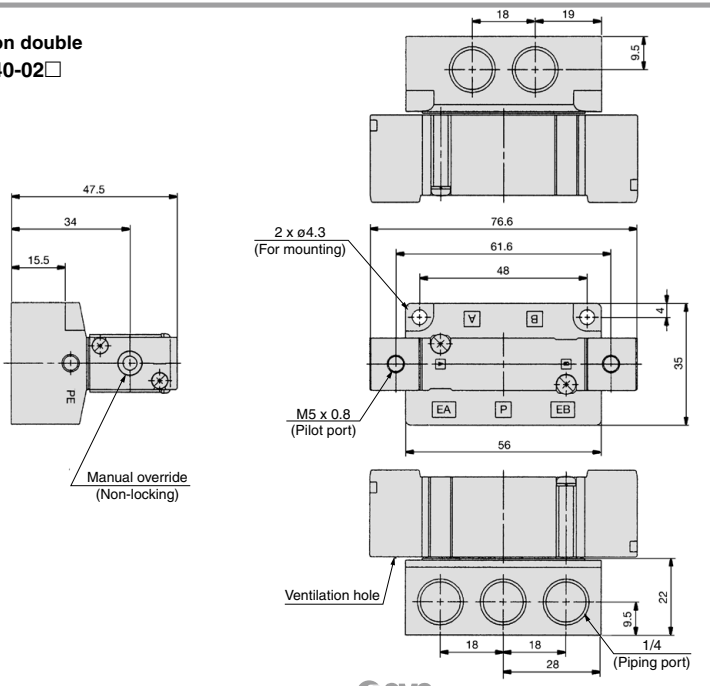


Dimensions/Series SYA5000: Base Mounted

2 position single
SYA5140-02□



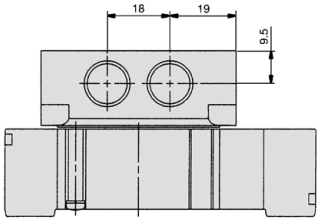
2 position double
SYA5240-02□

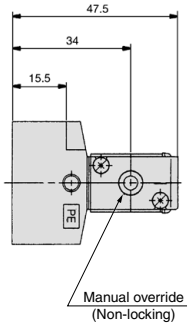


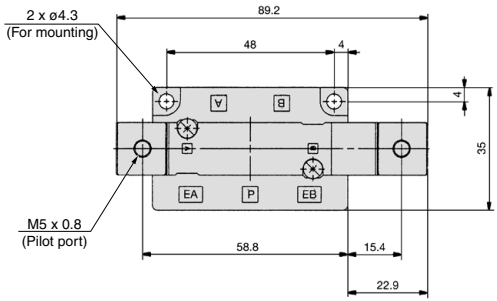
Dimensions/Series SYA5000: Base Mounted

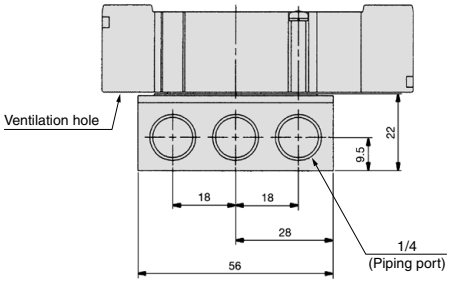
3 position closed center / exhaust center / pressure center

SYA5$^{3}_{4}_{5}$40-02□



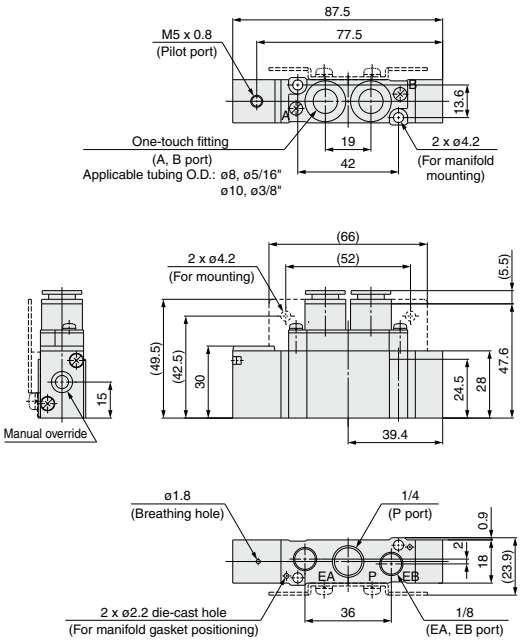




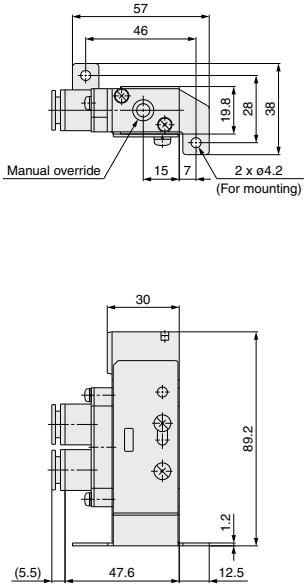


Dimensions/Series SYA7000: Body Ported

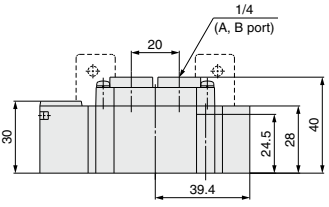
2 position single
SYA7120-$^{C8, N9}_{C10, N11}$□(-F2)



Foot bracket
SYA7120-$^{C8, N9}_{C10, N11}$□-F1



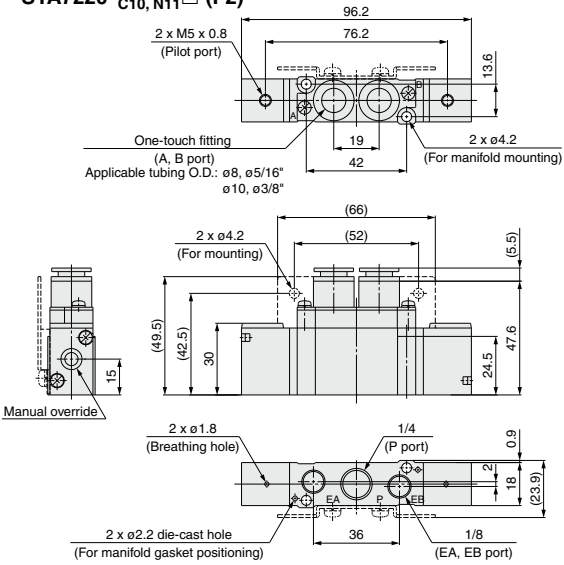
SYA7120-02□(-F2)



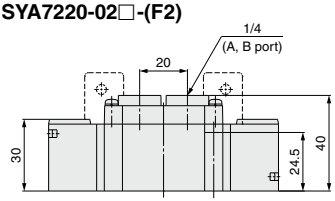
Dimensions/Series SYA7000: Body Ported

2 position double

SYA7220-$^{C8, N9}_{C10, N11}$□-(F2)

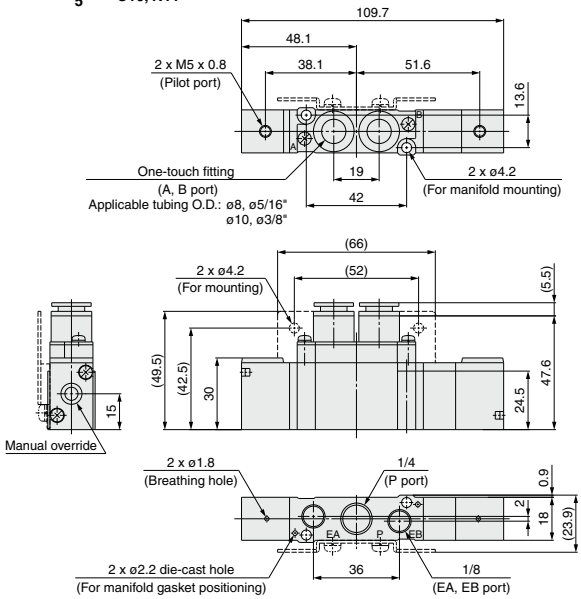


SYA7220-02□-(F2)

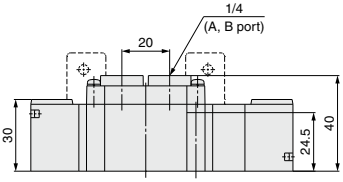


3 position closed center / exhaust center / pressure center

SYA7$^{3}_{4}_{5}$20-$^{C8, N9}_{C10, N11}$□-(F2)

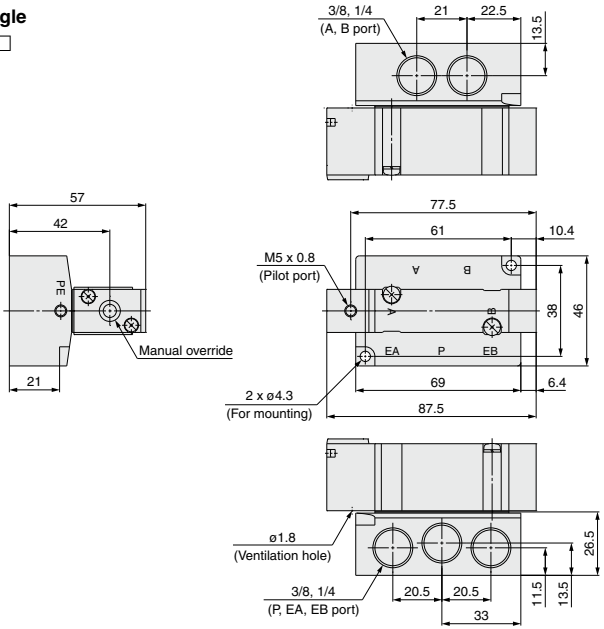


SYA7$^{3}_{4}_{5}$20-02□-(F2)

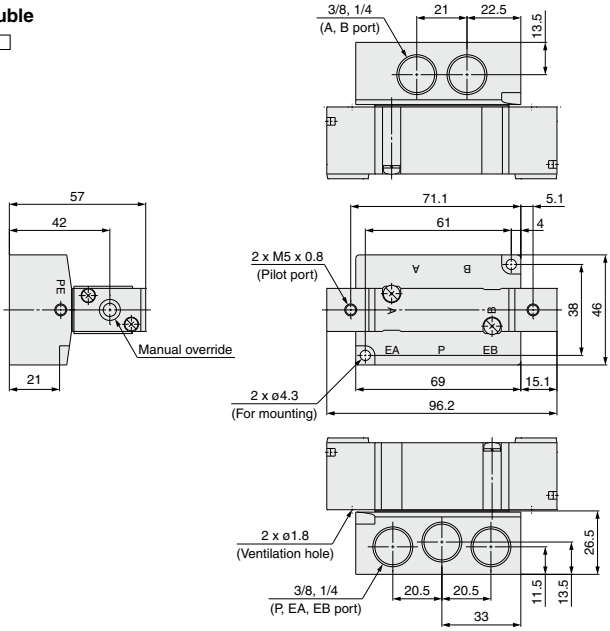


Dimensions/Series SYA7000: Base Mounted

2 position single
SYA7140-$\frac{02}{03}$□



2 position double
SYA7240-$\frac{02}{03}$□



Dimensions/Series SYA7000: Base Mounted

3 position closed center / exhaust center / pressure center

SYA7$^{3}_{5}$40-$^{02}_{03}$□

