

5 Port Air Operated Valve

Series SYA3000/5000/7000

How to Order

A, B port size

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

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for $\phi 5/32"$	SYA3000
N7	One-touch fitting for $\phi 1/4"$	SYA3000
N3	One-touch fitting for $\phi 5/32"$	SYA5000
N7	One-touch fitting for $\phi 1/4"$	SYA5000
N9	One-touch fitting for $\phi 9/16"$	SYA5000
N7	One-touch fitting for $\phi 1/4"$	SYA7000
N9	One-touch fitting for $\phi 9/16"$	SYA7000

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for $\phi 4$	SYA3000
C6	One-touch fitting for $\phi 6$	SYA3000
C4	One-touch fitting for $\phi 4$	SYA5000
C6	One-touch fitting for $\phi 6$	SYA5000
C8	One-touch fitting for $\phi 8$	SYA5000
C8	One-touch fitting for $\phi 8$	SYA7000
C10	One-touch fitting for $\phi 10$	SYA7000

Thread type

-	Rc
F	G
N	NPT
T	NPTF

* Except for M5

Bracket

-	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

Base mounted SYA 7 1 40

P, R port thread type

-	Rc
F	G
N	NPT
T	NPTF

P, R port thread type

-	Rc
F	G
N	NPT
T	NPTF

Port size

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

Port size


Symbol	Port size
-	Without sub-plate
00	Without sub-plate (Pilot port: expect for RC)
02	1/4 With sub-plate
03	3/8 With sub-plate

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

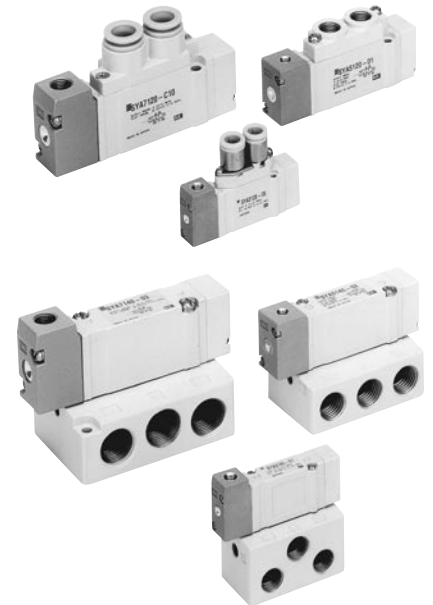
Specifications

Fluid		Air
Operating pressure range MPa	2 position single	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.2 to 0.7
Pilot pressure range ^{Note 1)} MPa	2 position single	$(0.7 \times P + 0.1)$ to $0.7P$: Operating pressure range
	2 position double	0.1 to 0.7
	3 position	0.2 to 0.7
Ambient and fluid temperature (°C)		Max. 60
Manual override (Manual operation)		Non-locking push type
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance (m/s ²) ^{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 8.3 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

For Safety Instructions and Common Precautions, refer to back page 1 through to 15.



How to Order Manifold Base

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

SS5YA³₅⁷ — Fill the same as SS5Y³₅⁷.


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

<Example>

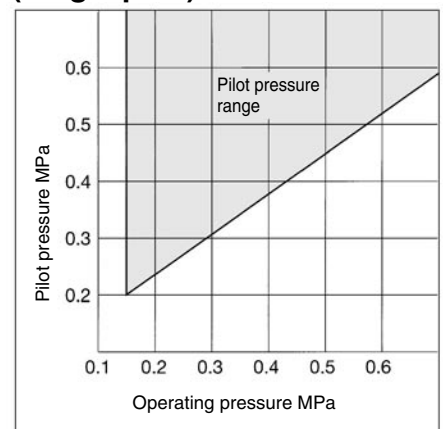
- SS5YA5-42-03-02 1 set (Type 42, 3 station manifold base part no.)
- * SYA5140 1 set (Single air operated valve part no.)
- * SYA5240 1 set (Double air operated valve part no.)
- * SY5000-26-20A-Q 1 set (Blanking plate assembly part no.)

↳ 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 bolts and gaskets are not included. Order them separately if necessary.
(For details, refer to page 56.)

Pilot Pressure Range (Single pilot)



SYA3000/5000/7000

Flow Characteristics/Weight

Model/Series SYA3□20 (Body ported)

Valve model	Type of actuation		Pilot port size (Nominal size)	Port size		Flow characteristics								Weight (g)					
						1 → 4/2 (P → A/B)				4/2 → 5/3 (A/B → EA/EB)									
						C (dm ³ /(s·bar))	b	Cv	Q[l/min(ANR)]*	C (dm ³ /(s·bar))	b	Cv	Q[l/min(ANR)]*						
SYA3□20-M5	2 position	Single	M5	M5	M5	M5	0.61	0.44	0.16	171	0.64	0.45	0.18	181	35				
		Double					0.48	0.46	0.13	137	0.47	0.43	0.13	131	37				
	3 position	Closed center					0.47	0.42	0.13	130	0.47 (0.44)	0.41 (0.37)	0.13 (0.12)	129 (117)	39				
		Exhaust center					0.50 (0.41)	0.48 (0.35)	0.15 (0.11)	145 (108)	0.47	0.43	0.13	131					
SYA3□20-C4	2 position	Single					M5	M5	M5	C4 (One-touch fitting for ø4)	0.72	0.29	0.18	182	0.64	0.34	0.17	167	44
		Double									0.59	0.28	0.15	148	0.59	0.30	0.15	150	46
	3 position	Closed center									0.63	0.35	0.16	166	0.42 (0.41)	0.34 (0.37)	0.11 (0.11)	110 (109)	48
		Exhaust center									0.76 (0.46)	0.42 (0.34)	0.21 (0.12)	210 (120)	0.59	0.29	0.15	149	
SYA3□20-C6	2 position	Single	M5	M5	M5	C6 (One-touch fitting for ø6)					0.76	0.30	0.19	193	0.65	0.39	0.17	176	40
		Double									0.76	0.55	0.24	233	0.60	0.33	0.16	156	42
	3 position	Closed center									0.65	0.32	0.16	167	0.64(0.42)	0.31 (0.36)	0.17 (0.11)	164 (111)	44
		Exhaust center									0.77 (0.49)	0.34 (0.43)	0.21 (0.15)	201 (136)	0.61	0.34	0.16	159	

Note) (): denotes normal position.

* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream pressure of 0.6 MPa (relative pressure) and a differential pressure of 0.1MPa.

Model/Series SYA3□40 (Base mounted)

Valve model	Type of actuation		Pilot port size (Nominal 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 (dm ³ /(s·bar))	b	Cv	Q[l/min(ANR)]*	C (dm ³ /(s·bar))	b	Cv	Q[l/min(ANR)]*	
SYA3□40-01□	2 position	Single	M5	1/8	1.0	0.30	0.24	254	1.1	0.30	0.26	280	69 (34)
		Double			0.77	0.28	0.18	193	0.85	0.30	0.19	216	71 (36)
	3 position	Closed center			0.73	0.31	0.18	187	1.1 (0.55)	0.26 (0.52)	0.24 (0.16)	273 (164)	73 (38)
		Exhaust center			1.2 (0.51)	0.24 (0.45)	0.29 (0.14)	294 (144)	0.89	0.47	0.24	255	

Note 1) (): denotes normal position.

Note 2) []: Without sub-plate.

* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream pressure of 0.6 MPa (relative pressure) and a differential pressure of 0.1MPa.

Flow Characteristics/Weight

Model/Series SYA5□40 (Body ported)

Valve model	Type of actuation		Pilot port size (Nominal size)	Port size		Flow characteristics ^{Note)}								Weight (g)		
						1 → 4/2 (P → A/B)				4/2 → 5/3 (A/B → EA/EB)						
						C [dm³/(s·bar)]	b	Cv	Q [l/min(ANR)]*	C [dm³/(s·bar)]	b	Cv	Q [l/min(ANR)]*			
SYA5□20-01□	2 position	Single	M5 x 0.8	1/8	Rc 1/8	1.9	0.35	0.49	499	2.4	0.39	0.61	648	58		
		Double				1.7	0.43	0.45	473	1.8	0.35	0.46	473	64		
	3 position	Closed center				1.5	0.44	0.41	420	2.5 [1.5]	0.32 [0.43]	0.59 [0.40]	644 [417]	69		
		Exhaust center Pressure center				2.2 [0.91]	0.46 [0.58]	0.61 [0.28]	626 [287]	1.8	0.38	0.46	483			
SYA5□20-C4	2 position	Single			M5 x 0.8	1/8	C4 (One-touch) fitting for ø4	0.75	0.43	0.20	209	0.85	0.64	0.30	285	82
		Double						0.74	0.40	0.19	201	0.84	0.57	0.28	263	87
	3 position	Closed center						0.75	0.36	0.19	198	0.84 [0.84]	0.64 [0.53]	0.30 [0.27]	281 [253]	93
		Exhaust center Pressure center						0.78 [0.71]	0.44 [0.37]	0.21 [0.18]	219 [189]	0.84	0.57	0.27	263	
SYA5□20-C6	2 position	Single	M5 x 0.8	1/8			C6 (One-touch) fitting for ø6	1.5	0.33	0.33	389	2.0	0.37	0.52	533	76
		Double						1.3	0.31	0.33	333	1.6	0.32	0.39	412	82
	3 position	Closed center						1.3	0.33	0.33	337	1.8 [1.4]	0.35 [0.37]	0.44 [0.35]	473 [373]	87
		Exhaust center Pressure center						1.7 [0.80]	0.31 [0.47]	0.42 [0.23]	435 [229]	1.7	0.33	0.44	441	
SYA5□20-C8	2 position	Single			M5 x 0.8	1/8	C8 (One-touch) fitting for ø8	1.9	0.21	0.45	458	2.3	0.29	0.57	581	68
		Double						1.6	0.29	0.39	404	1.7	0.38	0.46	456	74
	3 position	Closed center						1.4	0.38	0.39	375	2.0 [1.5]	0.37 [0.40]	0.52 [0.43]	533 [411]	79
		Exhaust center Pressure center						2.2 [1.6]	0.32 [0.44]	0.56 [0.44]	567 [448]	1.8	0.41	0.50	493	

Note) [] : denotes normal position.

* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream pressure of 0.6 MPa (relative pressure) and a differential pressure of 0.1MPa.

Model/Series SYA5□40 (Base mounted)

Valve model	Type of actuation		Pilot port size (Nominal 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	Q [l/min(ANR)]*	C [dm³/(s·bar)]	b	Cv	Q [l/min(ANR)]*	
SYA5□40-02□	2 position	Single	M5 x 0.8	1/4	P port: 1/4	2.4	0.41	0.64	658	2.8	0.29	0.66	707	105 (42)
		Double				1.8	0.47	0.50	516	1.8	0.40	0.47	490	110 (47)
	3 position	Closed center				1.4	0.55	0.44	430	3.0 [1.2]	0.33 [0.48]	0.72 [0.37]	778 [347]	115 (52)
		Exhaust center Pressure center				3.3 [0.84]	0.36 [0.60]	0.85 [0.28]	873 [270]	1.8	0.40	0.48	490	

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

* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream pressure of 0.6 MPa (relative pressure) and a differential pressure of 0.1MPa.

Model/Series SYA7□20 (Body ported)

Valve model	Type of actuation		Pilot port size (Nominal size)	Port size		Flow characteristics								Weight (g)			
						1 → 4/2 (P → A/B)				4/2 → 5/3 (A/B → EA/EB)							
						C [dm³/(s·bar)]	b	Cv	Q [l/min(ANR)]*	C [dm³/(s·bar)]	b	Cv	Q [l/min(ANR)]*				
SYA7□20-02□	2 position	Single	1/8	1/4	P port: 1/4	4.1	0.23	0.93	999	3.3	0.33	0.81	855	132			
		Double				2.9	0.31	0.70	742	2.4	0.38	0.63	644	177			
	3 position	Closed center				2.5	0.39	0.65	675	3.4 [2.1]	0.35 [0.38]	0.82 [0.54]	893 [563]	186			
		Exhaust center Pressure center				4.3 [2.4]	0.23 [0.32]	0.97 [0.61]	1048 [618]	2.2	0.39	0.58	594				
SYA7□20-C8	2 position	Single			1/8	1/4	EA, EB port: 1/8	C8 (One-touch) fitting for ø8	3.2	0.26	0.77	794	3.2	0.37	0.82	852	138
		Double							2.6	0.24	0.63	637	2.4	0.31	0.62	614	183
	3 position	Closed center							2.4	0.25	0.57	592	2.6 [1.9]	0.42 [0.46]	0.70 [0.56]	718 [541]	192
		Exhaust center Pressure center							3.3 [2.4]	0.28 [0.22]	0.78 [0.57]	829 [581]	2.2	0.34	0.60	574	
SYA7□20-C10	2 position	Single	1/8	3/8			EA, EB port: 1/8	C10 (One-touch) fitting for ø10	3.8	0.26	0.86	943	3.2	0.34	0.82	835	135
		Double							2.8	0.27	0.67	699	2.4	0.21	0.59	578	180
	3 position	Closed center							2.5	0.25	0.59	616	2.7 [2.0]	0.38 [0.38]	0.70 [0.56]	724 [536]	189
		Exhaust center Pressure center							3.8 [2.4]	0.25 [0.31]	0.89 [0.61]	937 [614]	2.3	0.38	0.61	617	

Note) [] : denotes normal position.

* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream pressure of 0.6 MPa (relative pressure) and a differential pressure of 0.1MPa.

Model/Series SYA7□40 (Base mounted)

Valve model	Type of actuation		Pilot port size (Nominal 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	Q [l/min(ANR)]*	C [dm³/(s·bar)]	b	Cv	Q [l/min(ANR)]*				
SYA7□40-02□	2 position	Single	1/8	1/4	P port: 1/4	4.1	0.41	1.1	1123	4.1	0.29	1.0	1036	240 (111)			
		Double				3.0	0.43	0.80	834	2.6	0.41	0.72	712	286 (157)			
	3 position	Closed center				2.6	0.42	0.71	718	4.7 [1.7]	0.35 [0.48]	1.1 [0.49]	1235 [492]	294 (165)			
		Exhaust center Pressure center				5.3 [2.3]	0.39 [0.49]	1.3 [0.65]	1431 [670]	2.2	0.49	0.63	641				
SYA7□40-03	2 position	Single			1/8	3/8	EA, EB port: 1/8	C10 (One-touch) fitting for ø10	4.9	0.29	1.2	1238	4.5	0.27	1.1	1123	240 (111)
		Double							3.0	0.40	0.80	816	2.6	0.45	0.73	734	286 (157)
	3 position	Closed center							2.6	0.42	0.71	718	4.8 [1.7]	0.35 [0.48]	1.1 [0.49]	1261 [492]	294 (165)
		Exhaust center Pressure center							5.3 [2.3]	0.31 [0.51]	1.3 [0.64]	1356 [682]	2.3	0.45	0.66	649	

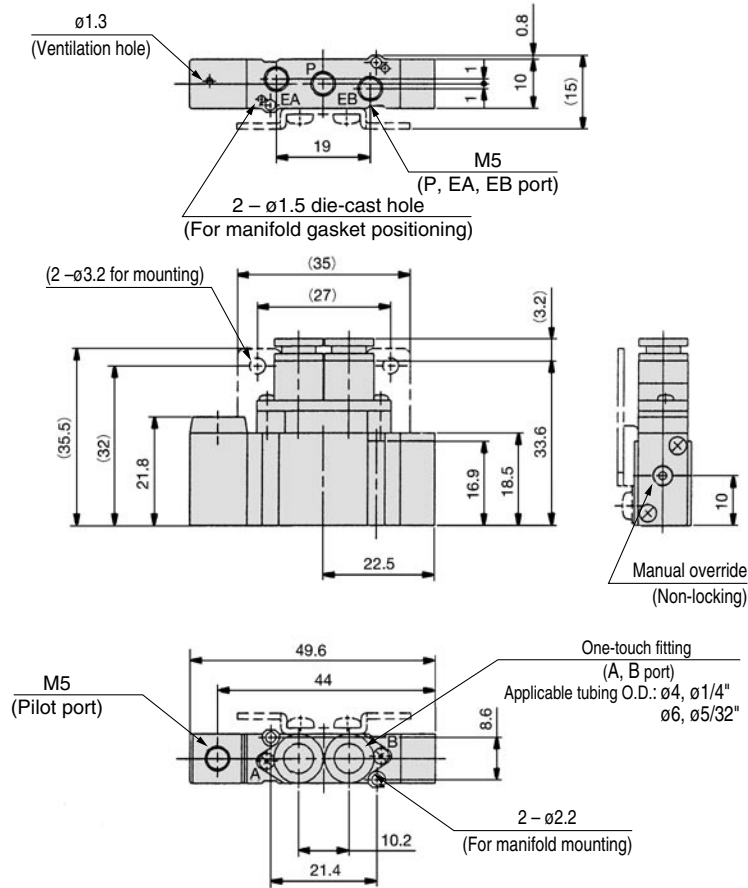
Note 1) [] : denotes the normal position.
Note 2) () : denotes without sub-plate.

* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream pressure of 0.6 MPa (relative pressure) and a differential pressure of 0.1MPa.

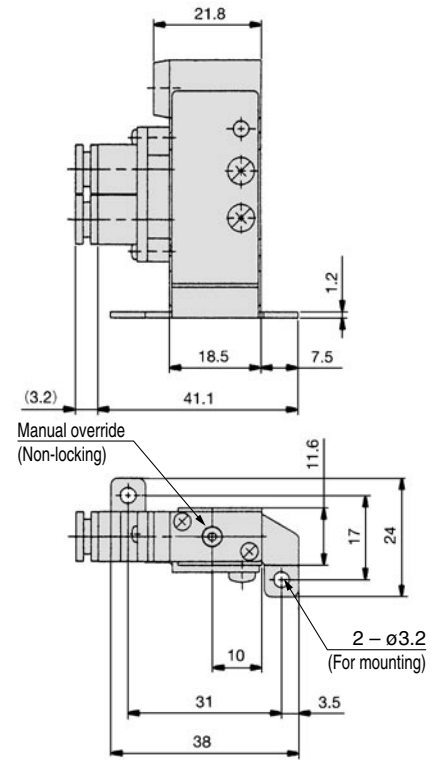
SYA3000/5000/7000

Series SYA3000: Body Ported

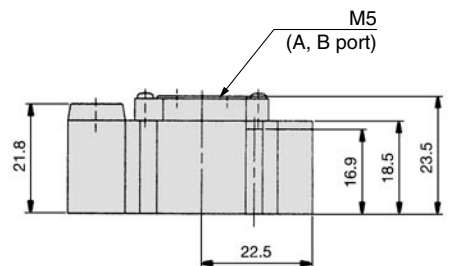
2 position single SYA3120-C4, N3 (-F2) C6, N7



Foot bracket SYA3120-C4, N3 (-F1) C6, N7



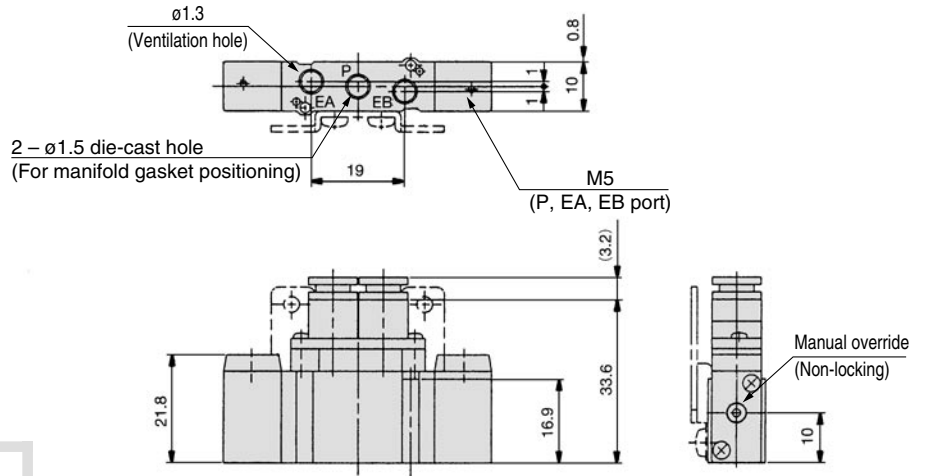
SYA3120-M5



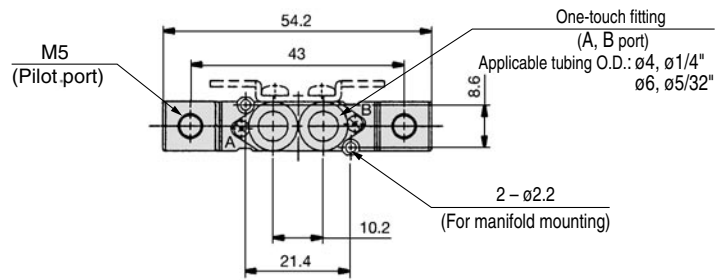
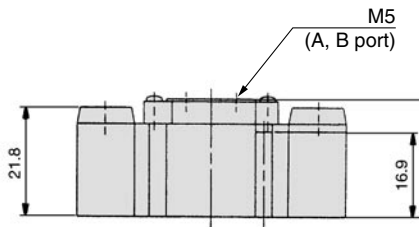
Series SYA3000: Body Ported

2 position double

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

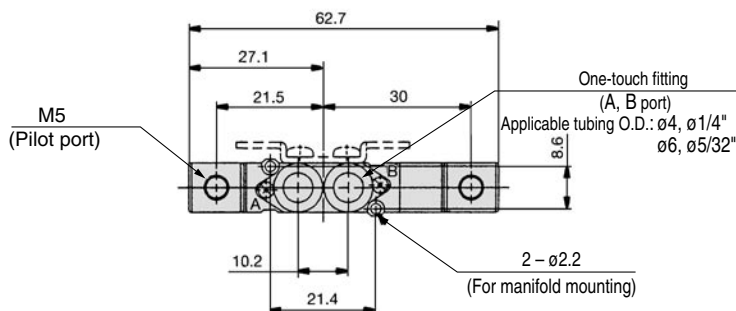
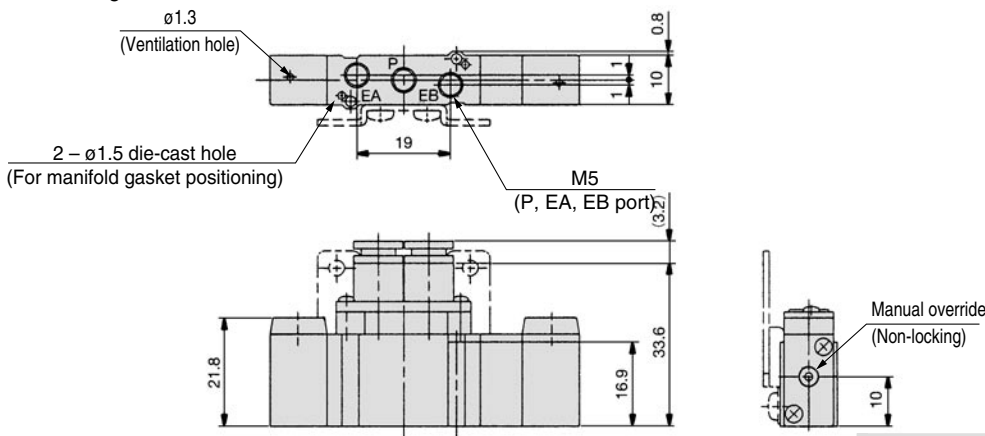


SYA3220-M5

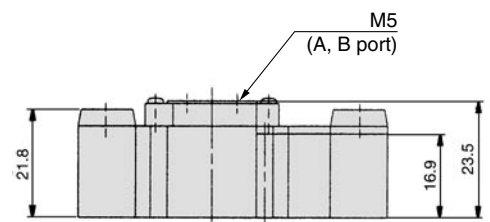


3 position closed center / exhaust center / pressure center

SYA3³₄20-^{C4, N3}_{C6, N7} (-F2)



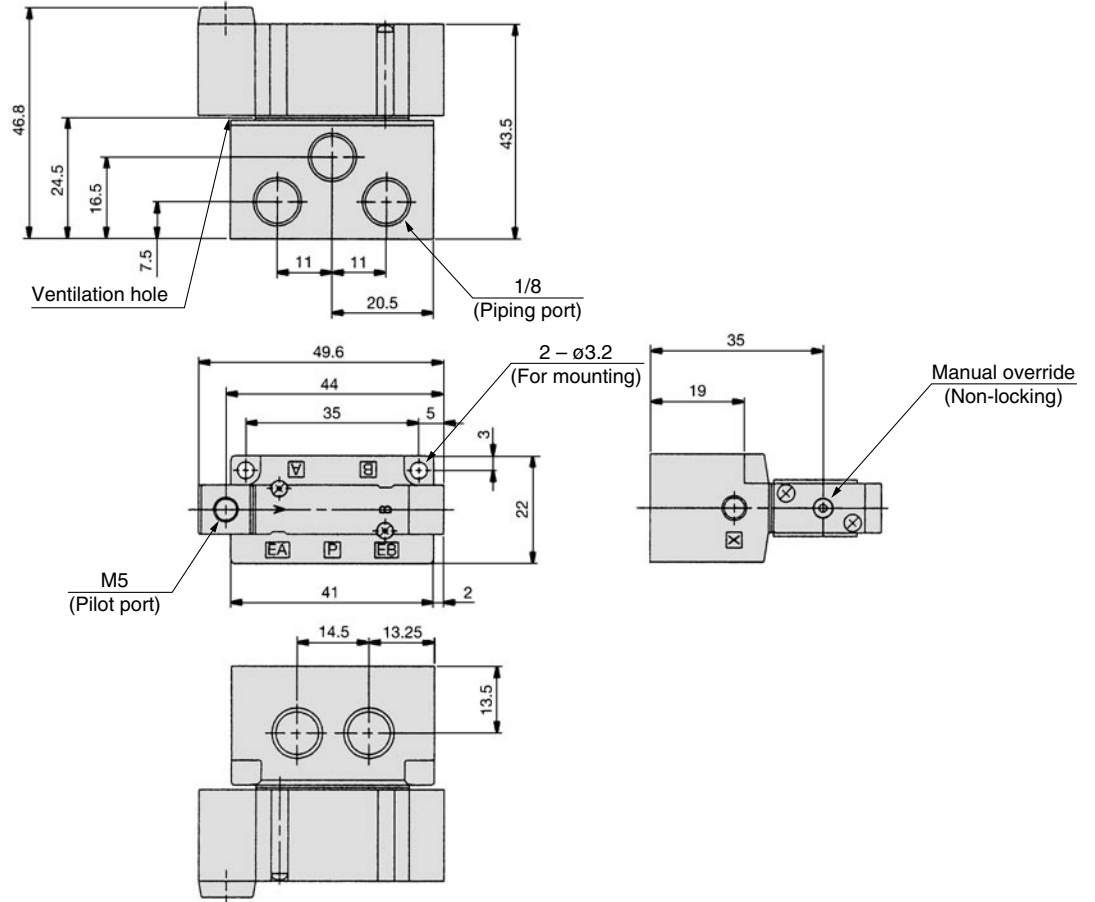
SYA3³₄20-M5



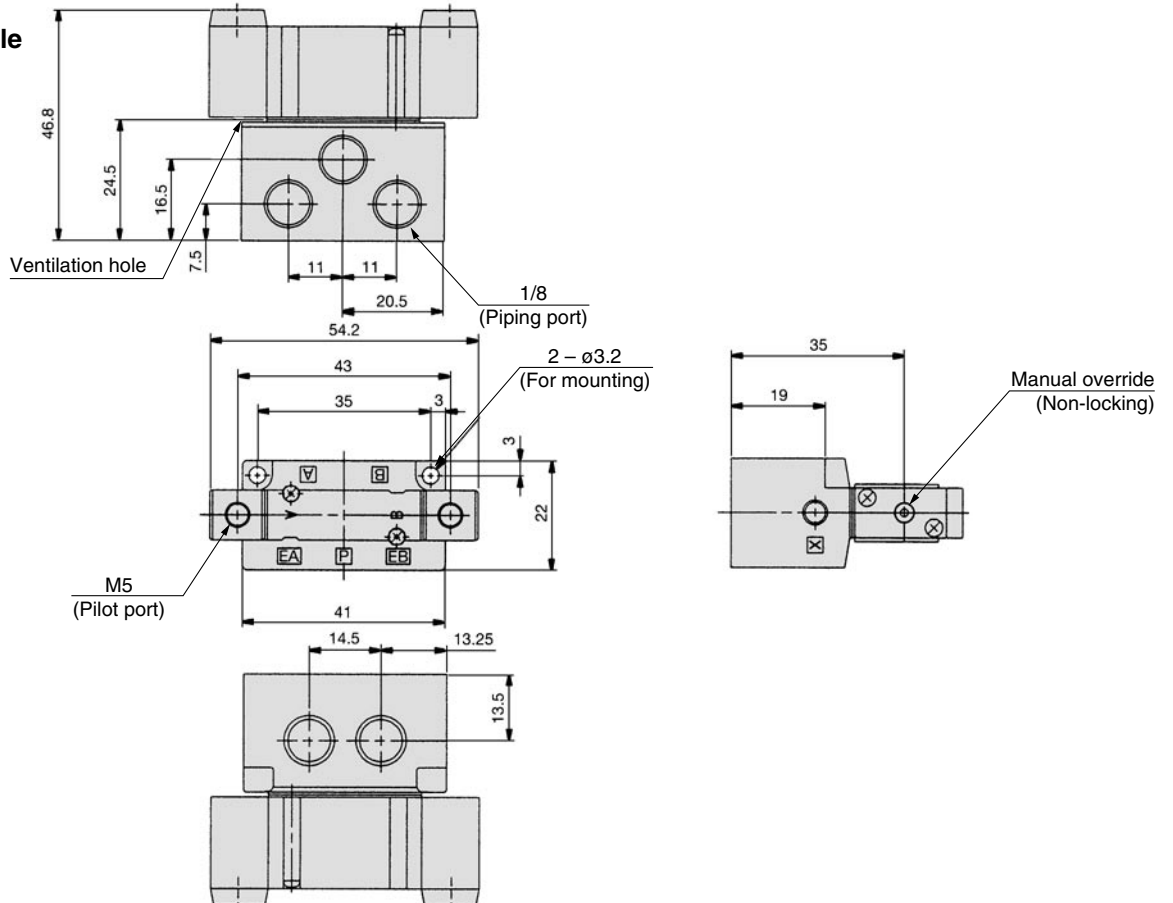
SYA3000/5000/7000

Series SYA3000: Base Mounted

2 position single SYA3140-01□



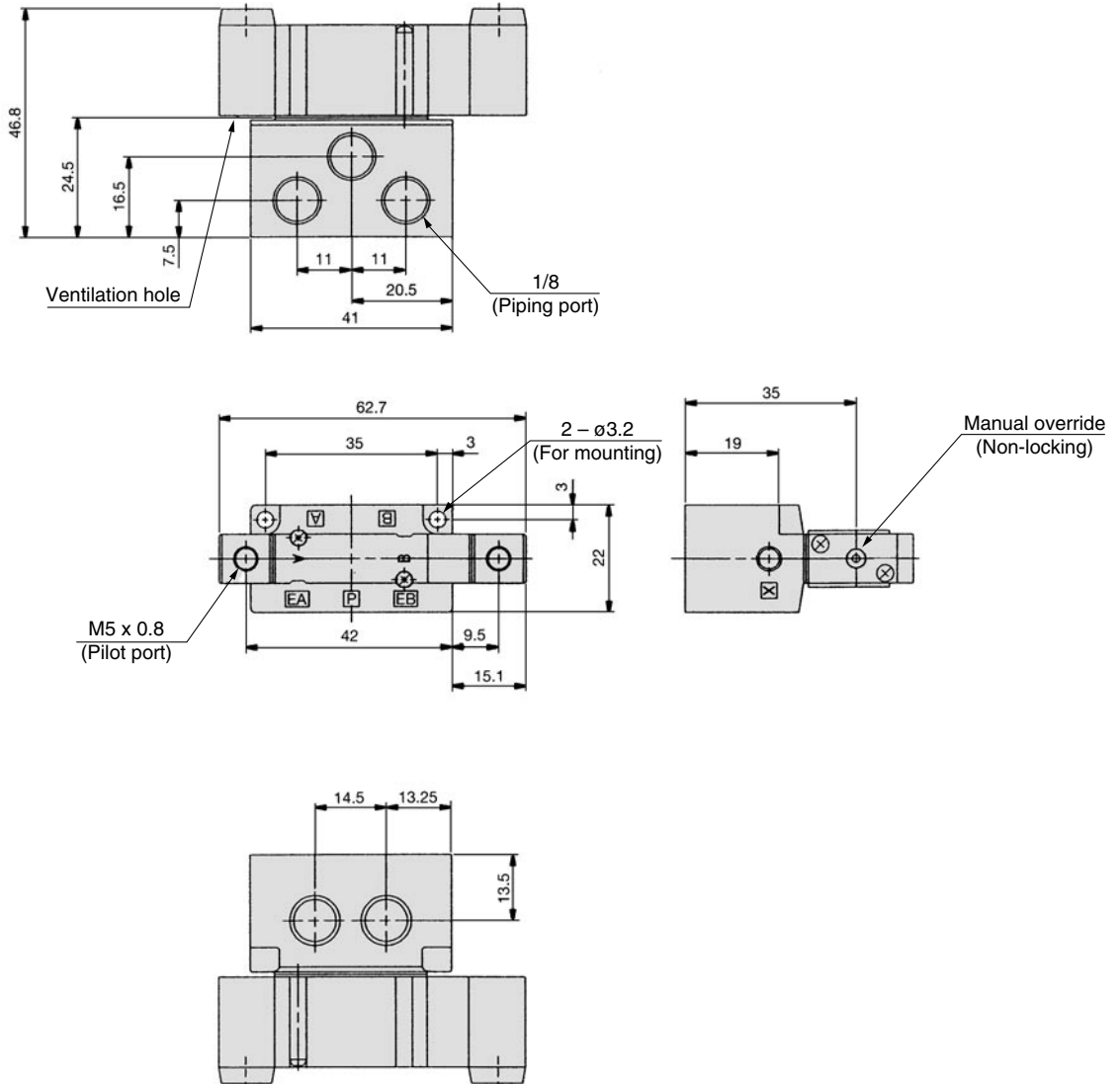
2 position double SYA3240-01□



Series SYA3000: Base Mounted

3 position closed center / exhaust center / pressure center

SYA3³/₅40-01□

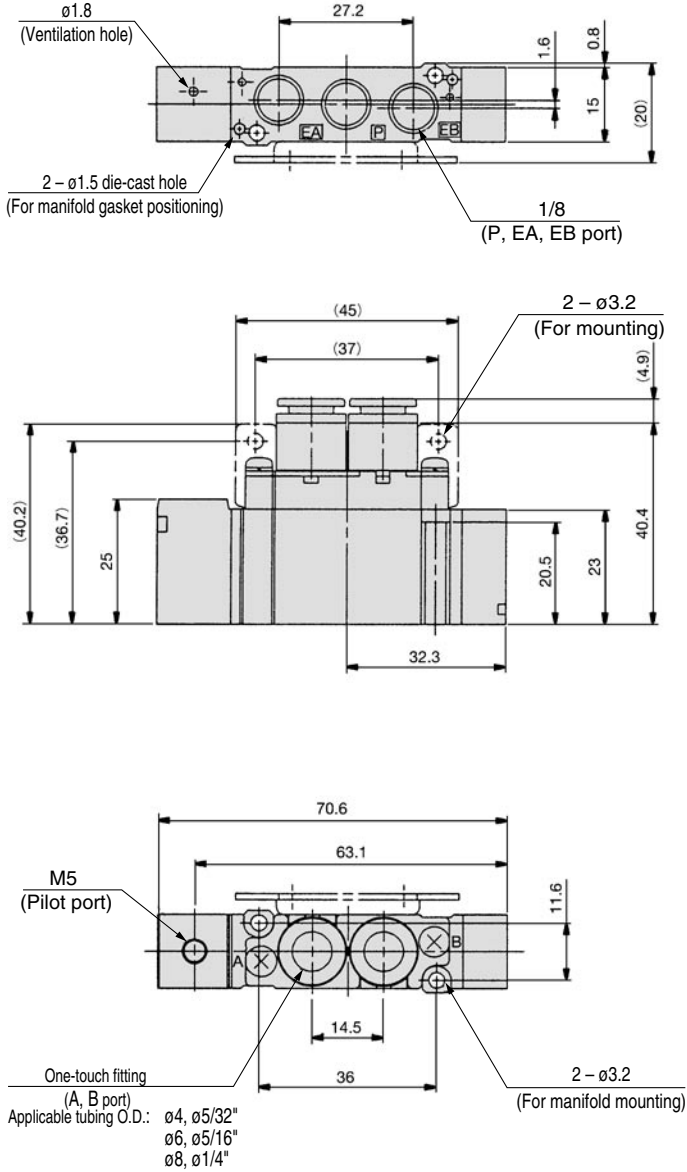


SYA3000/5000/7000

Series SYA5000: Body Ported

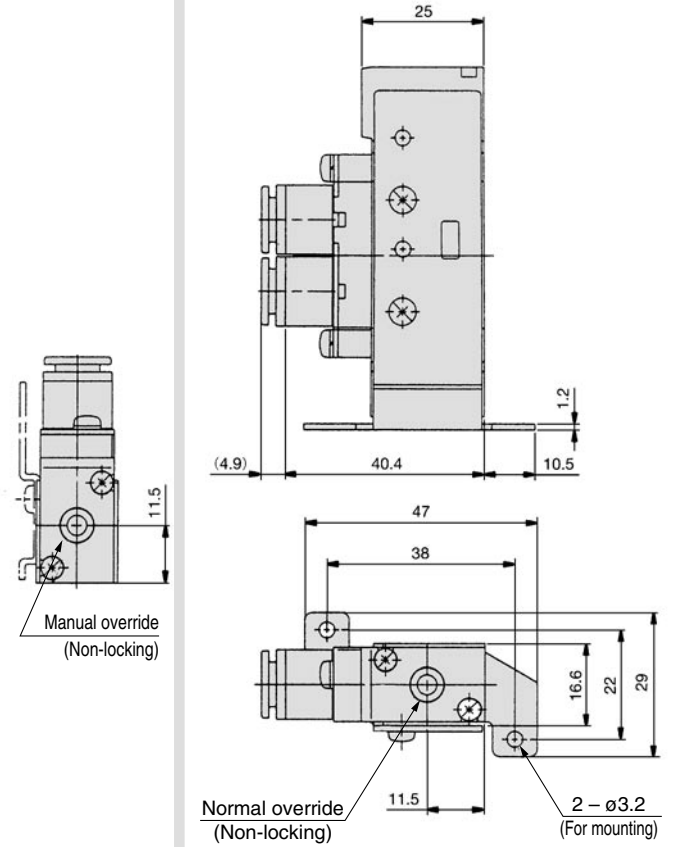
2 position single

SYA5120-C6, N7 □ (-F2)
C4, N3
 C8, N9

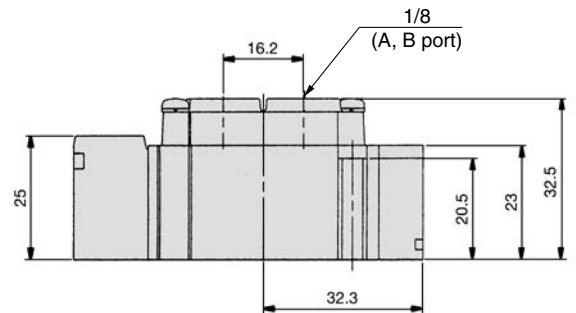


Foot bracket

SYA5120-C6, N7 □ -F1
C4, N3
 C8, N9



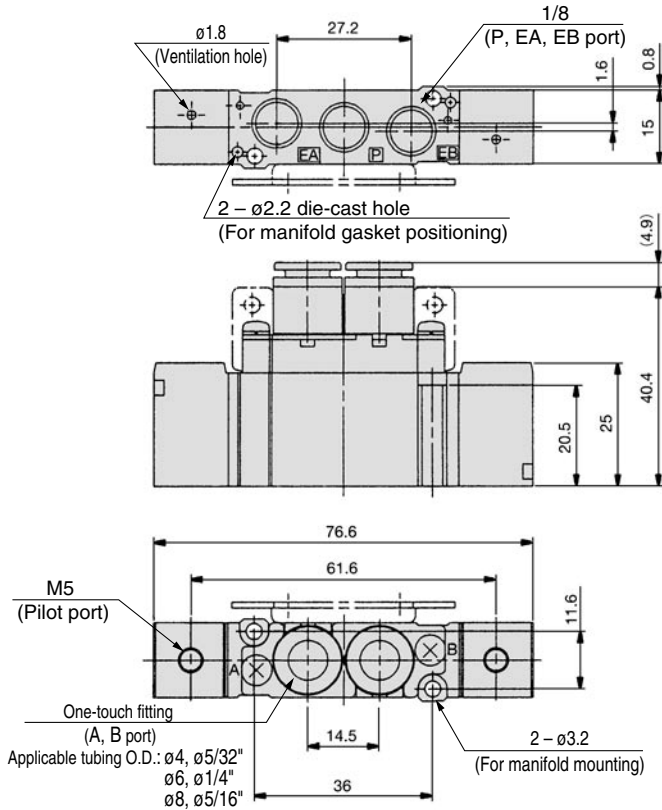
SYA5120-01 □



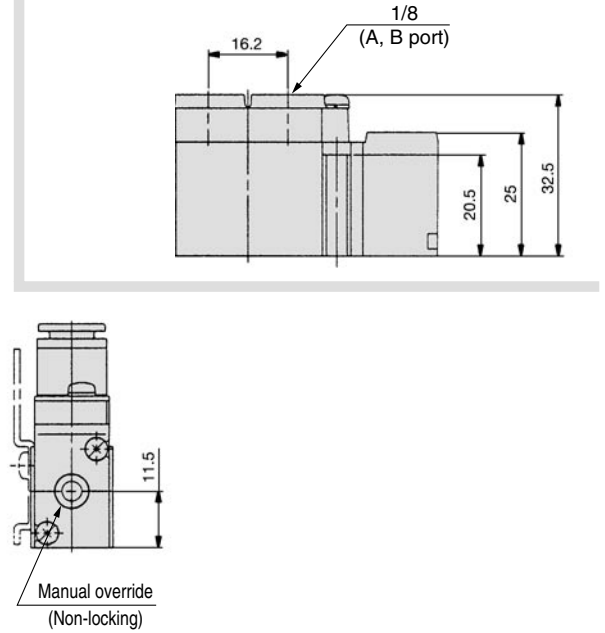
Series SYA5000: Body Ported

2 position double

C4, N3
SYA5220-01 □ (-F2)
 C6, N7
 C8, N9

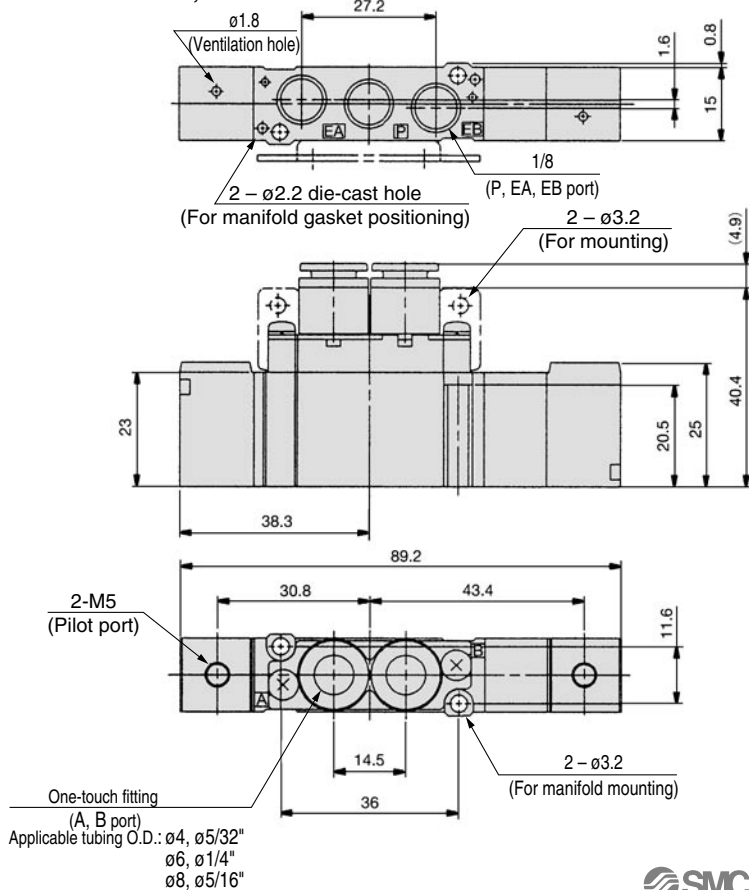


SYA5220-01 □

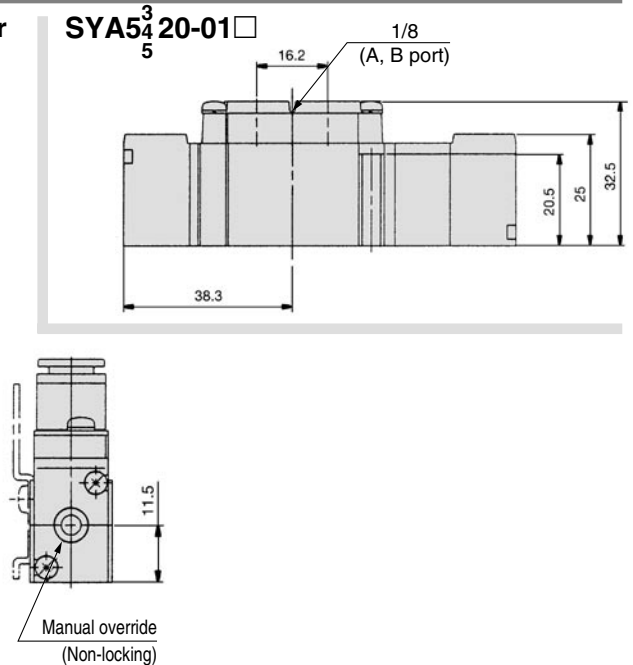


3 position closed center / exhaust center / pressure center

C4, N3
SYA5420-01 □ (-F2)
 C6, N7
 C8, N9



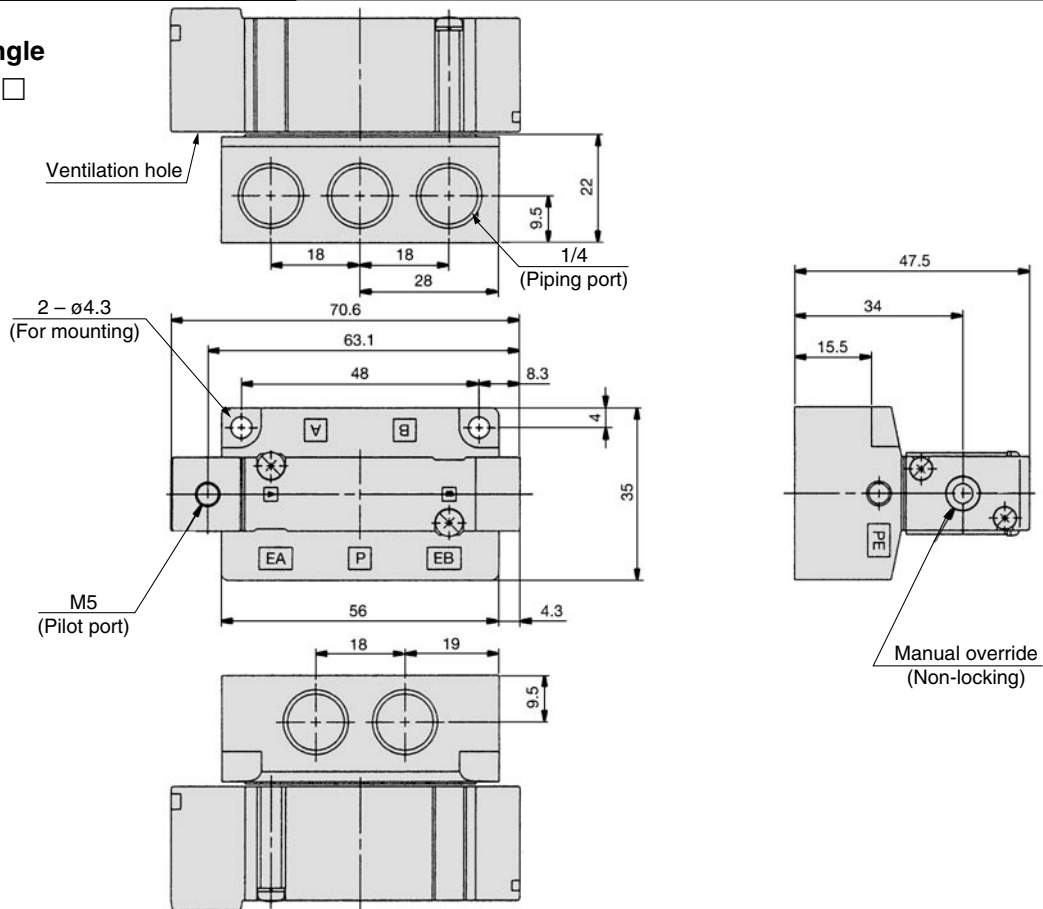
SYA5420-01 □



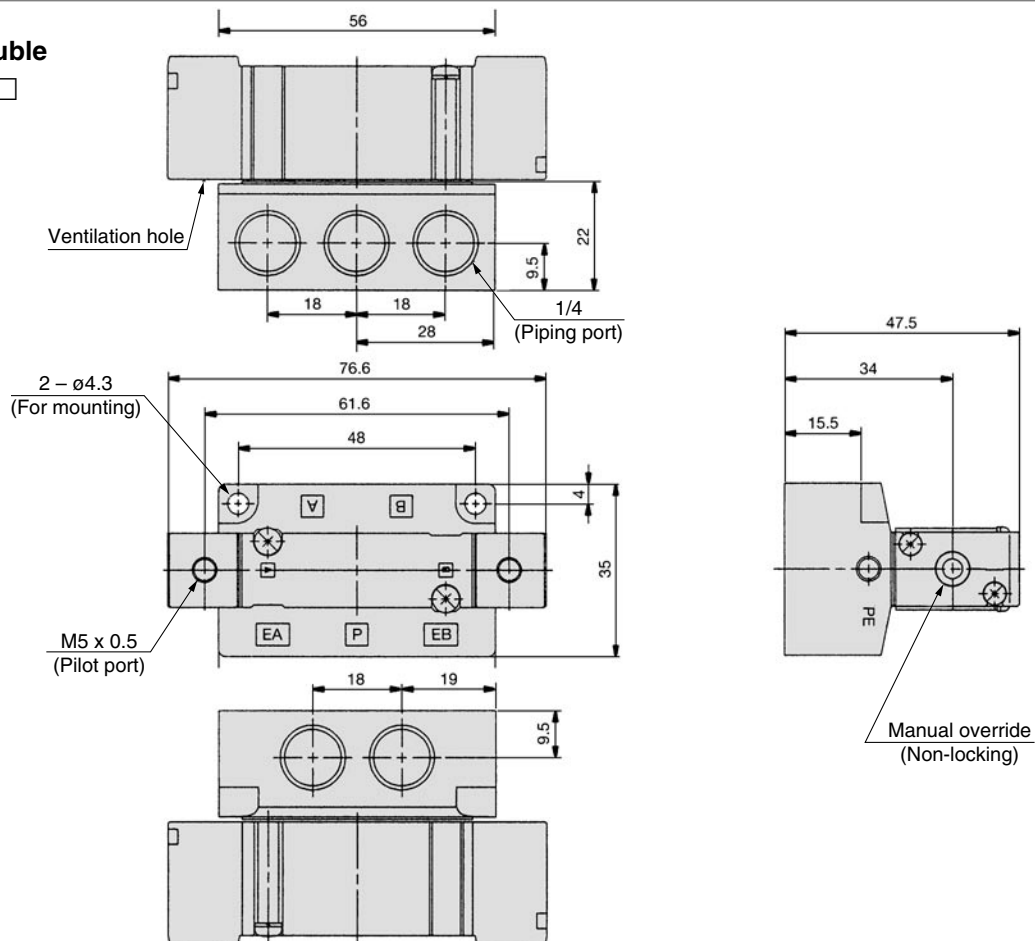
SYA3000/5000/7000

Series SYA5000: Base Mounted

2 position single SYA5140-02□



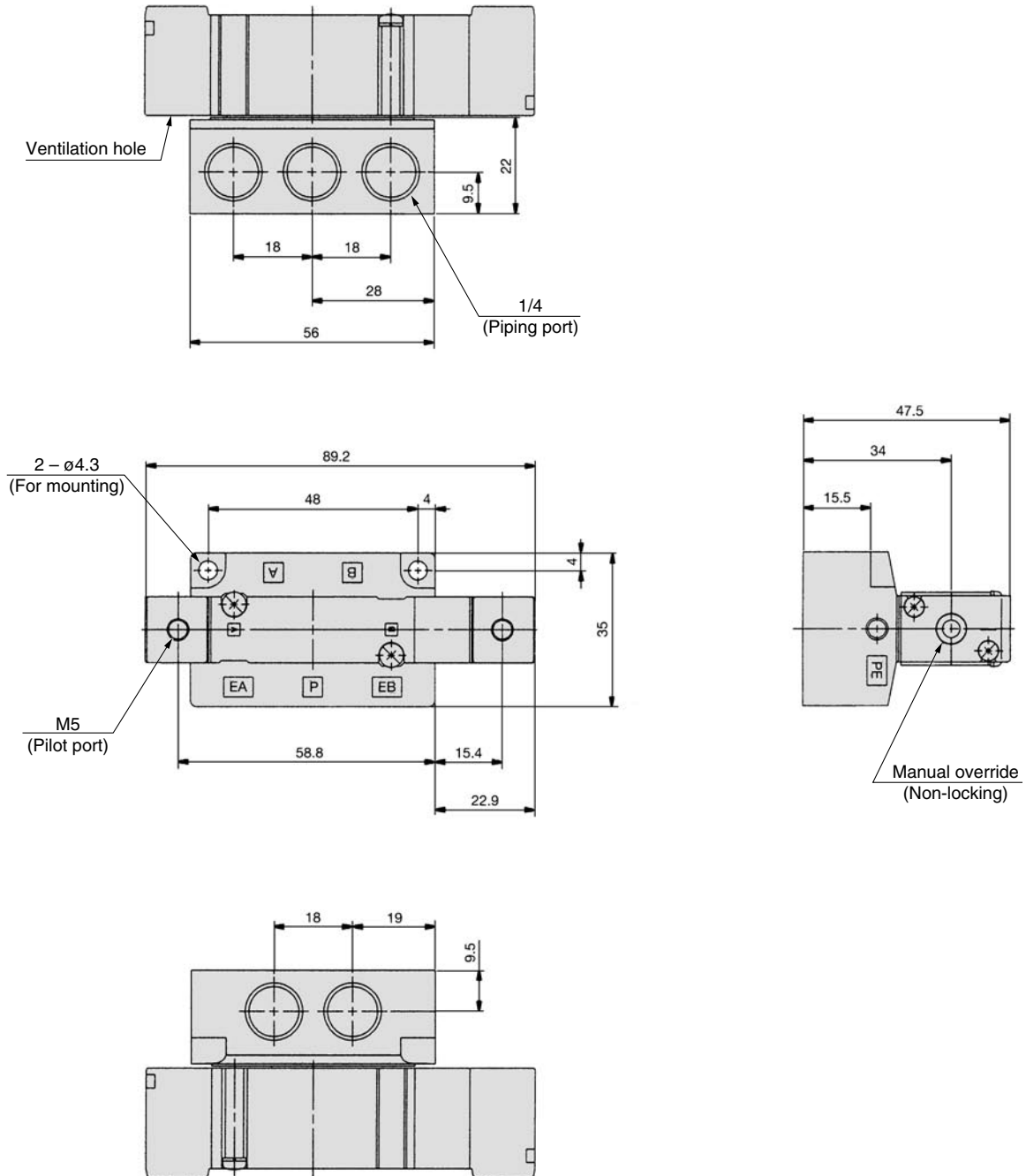
2 position double SYA5240-02□



Series SYA5000: Base Mounted

3 position closed center / exhaust center / pressure center

SYA5³/₄40-02□

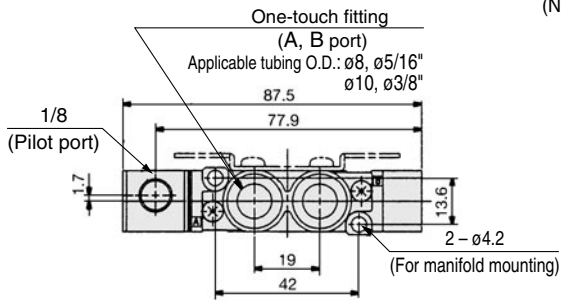
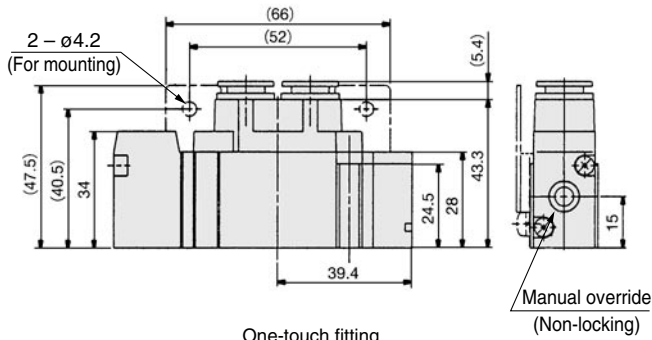
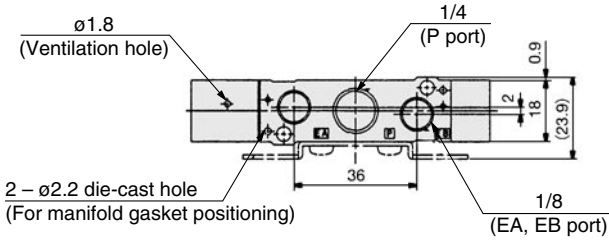


SYA3000/5000/7000

Series SYA7000: Body Ported

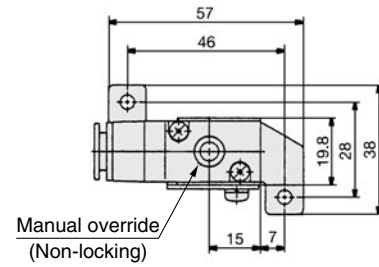
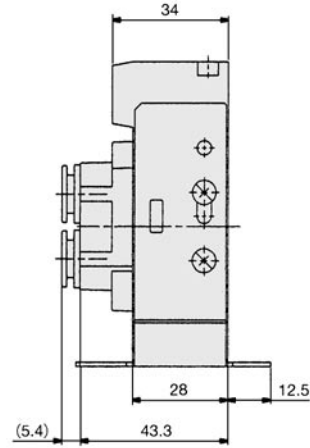
2 position single

SYA7120-C8, N9
C10, N11 □ (-F2)

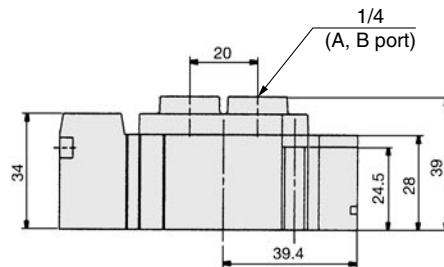


Foot bracket

SYA7120-C8, N9
C10, N11 □ -F1



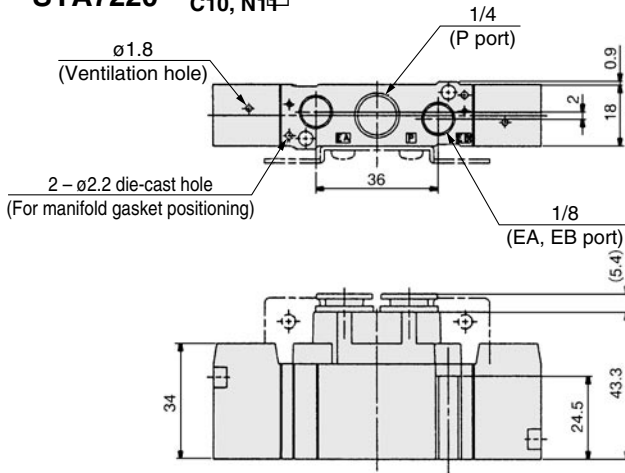
SYA7120-02 □



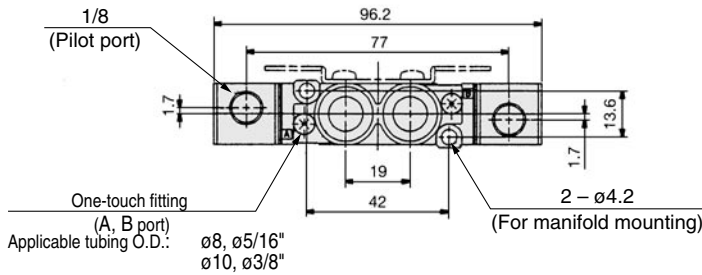
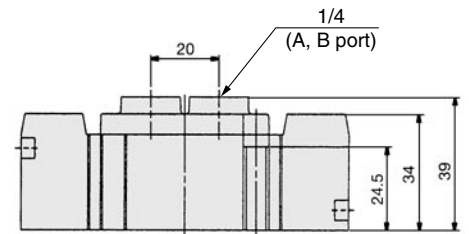
Series SYA7000: Body Ported

2 position double

SYA7220- C8, N9
C10, N14

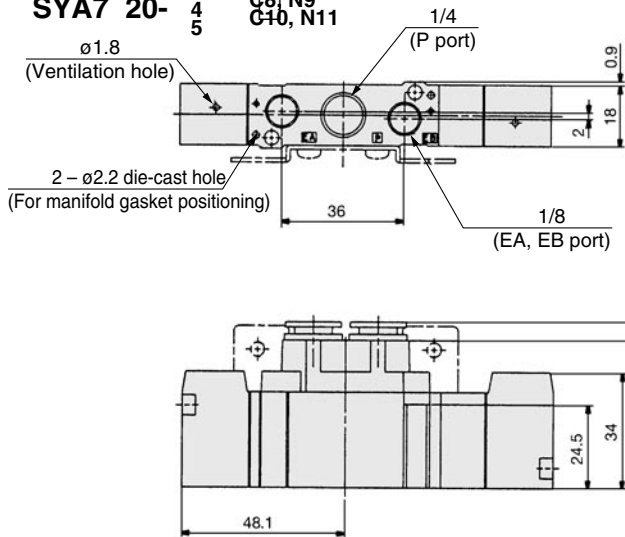


SYA7220-02

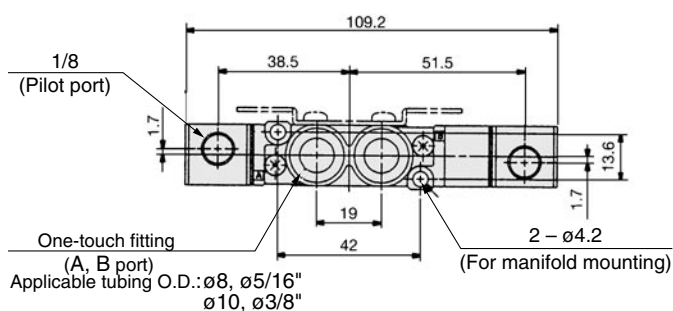
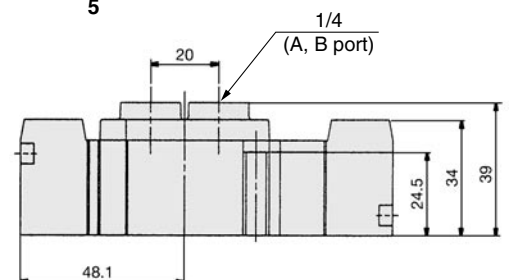


3 position closed center / exhaust center / pressure center

SYA7 20- 3/4, 5
C8, N9
C10, N11



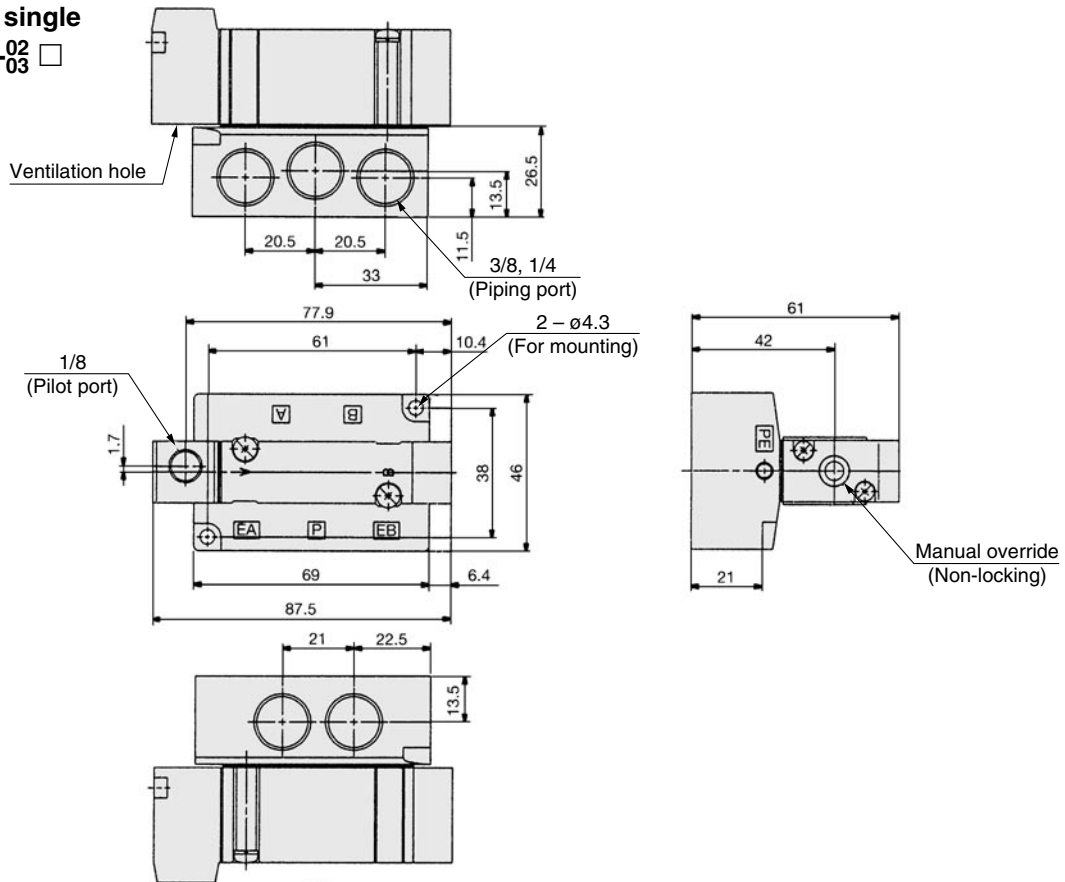
SYA7 3/4 5 20-02



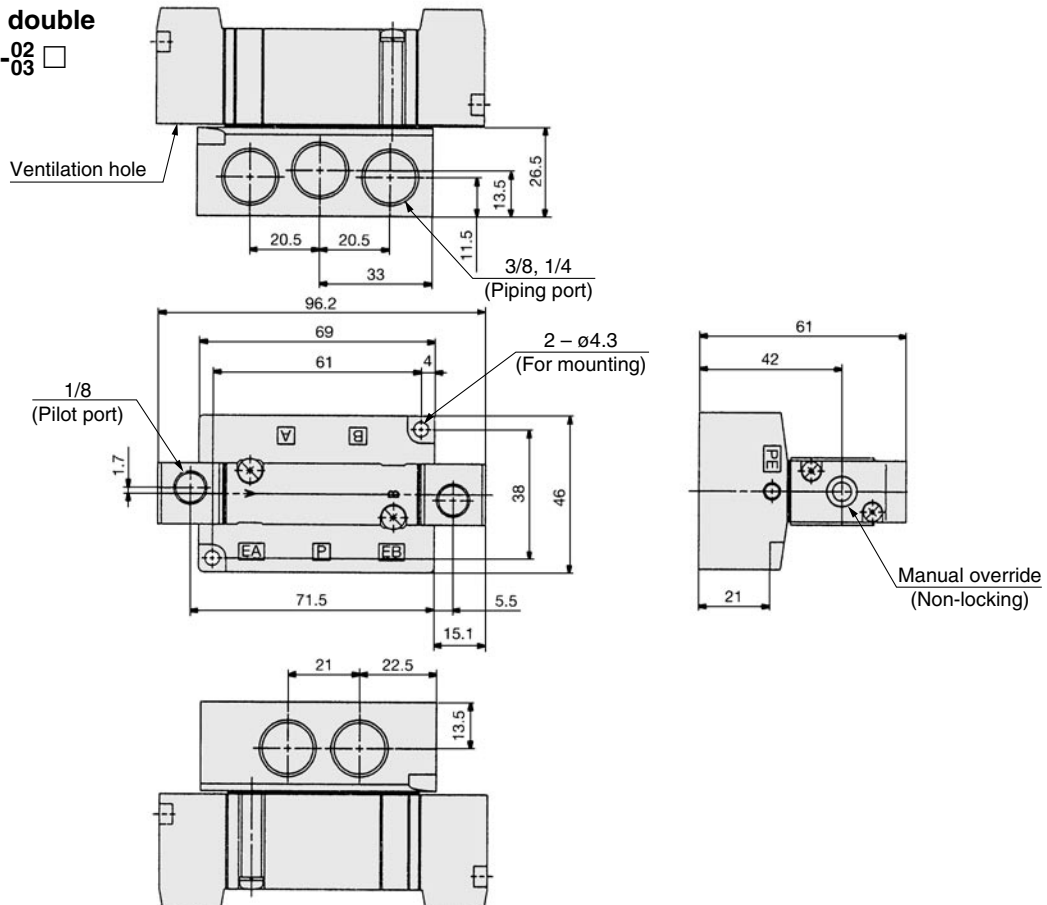
SYA3000/5000/7000

Series SYA7000: Base Mounted

2 position single SYA7140-02 □



2 position double SYA7240-02 □



Series SYA7000: Base Mounted

3 position closed center / exhaust center / pressure center

SYA7 $\frac{3}{5}$ 40-0 $\frac{2}{3}$ □

