

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	SYA7000
C8	One-touch fitting for ø8	
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"	SYA7000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	

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 —

Series

3	SYA3000
5	SYA5000
7	SYA7000

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
02	1/4 With sub-plate	SYA7000
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

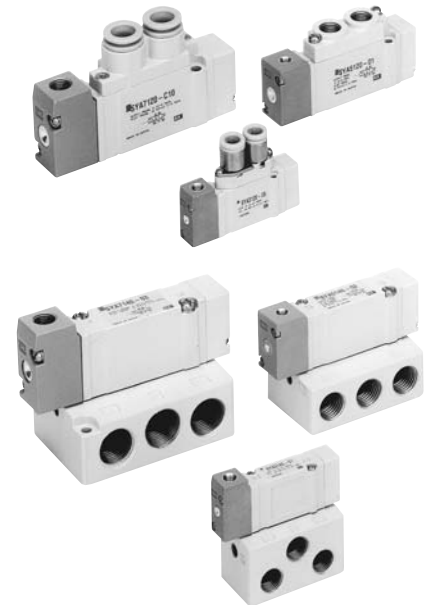
Specifications

Fluid		Air
Operating pressure range MPa	2 position single	0.15 to 0.7
	2 position double	-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 0.7P: 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/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.

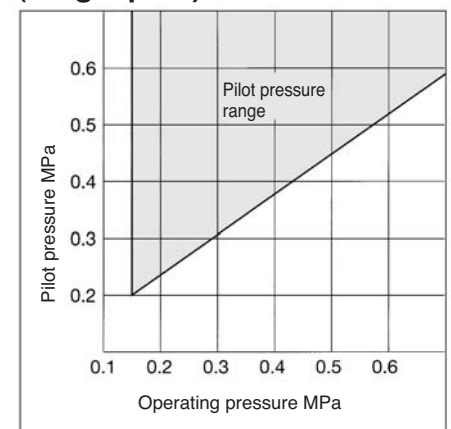
* Specify the part numbers for valves and options together beneath the manifold base part number.
<Example>

- 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)																			
						P, EA, EB	A, B	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													35															
		Double																37															
	3 position	Closed center																C4 (One-touch fitting for ø4)	0.48	0.46	0.13	137	0.47	0.43	0.13	131	39						
		Exhaust center																	0.47	0.42	0.13	130	0.47 (0.44)	0.41 (0.37)	0.13 (0.12)	129 (117)							
Pressure 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	C4 (One-touch fitting for ø4)													44
		Double																															46
	3 position	Closed center	C6 (One-touch fitting for ø6)	0.59	0.28	0.15	148	0.59	0.30	0.15	150	48																					
		Exhaust center		0.63	0.35	0.16	166	0.42 (0.41)	0.34 (0.37)	0.11 (0.11)	110 (109)																						
Pressure 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	C6 (One-touch fitting for ø6)																												40
		Double																															42
	3 position	Closed center																C6 (One-touch fitting for ø6)	0.76	0.30	0.19	193	0.65	0.39	0.17	176	44						
		Exhaust center																	0.76	0.55	0.24	233	0.60	0.33	0.16	156							
Pressure center	0.65	0.32																	0.16	167	0.64(0.42)	0.31 (0.36)	0.17 (0.11)	164 (111)									
	0.77 (0.49)	0.34 (0.43)																	0.21 (0.15)	201 (136)	0.61	0.34	0.16	159									



Note 1 (): 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)														
					C (dm ³ /(s·bar))	b	Cv	Q[l/min(ANR)]*	C (dm ³ /(s·bar))	b	Cv	Q[l/min(ANR)]*															
														1 → 4/2 (P → A/B)				4/2 → 5/3 (A/B → EA/EB)									
SYA3□40-01□	2 position	Single	M5	1/8														69 (34)									
		Double																71 (36)									
	3 position	Closed center																C6 (One-touch fitting for ø6)	0.77	0.28	0.18	193	0.85	0.30	0.19	216	73 (38)
		Exhaust center																	0.73	0.31	0.18	187	1.1 (0.55)	0.26 (0.52)	0.24 (0.16)	273 (164)	
Pressure 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)								
						P, EA, EB	A, B	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	C	1.9	0.35	0.49	499	C	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)	C	0.75	0.43	0.20	209	C	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)	C	1.5	0.33	0.33	389	C	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)	C	1.9	0.21	0.45	458	C	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)						
						P, EA, EB	A, B	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	C	C	2.4	0.41	0.64	658	C	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)								
						P, EA, EB	A, B	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	M5 x 0.8	1/4	C	C	4.1	0.23	0.93	999	C	3.3	0.33	0.81	855	94		
		Double					2.9	0.31	0.70	742		2.4	0.38	0.63	644	100		
	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]	110				
		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			M5 x 0.8	1/4	C8 (One-touch) (fitting for ø8)	C	3.2	0.26	0.77	794	C	3.2	0.37	0.82	852	100
		Double							2.6	0.24	0.63	637		2.4	0.31	0.62	614	106
	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]	116		
		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	M5 x 0.8	1/8			C10 (One-touch) (fitting for ø10)	C	3.8	0.26	0.86	943	C	3.2	0.34	0.82	835	97
		Double							2.8	0.27	0.67	699		2.4	0.21	0.59	578	103
	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]	113		
		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)								
						P, EA, EB	A, B	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	M5 x 0.8	1/4	C	C	4.1	0.41	1.1	1123	C	4.1	0.29	1.0	1036	202 (73)		
		Double					3.0	0.43	0.80	834		2.6	0.41	0.72	712	210 (81)		
	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]	218 (89)				
		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			M5 x 0.8	3/8	C	C	4.9	0.29	1.2	1238	C	4.5	0.27	1.1	1123	202 (73)
		Double							3.0	0.40	0.80	816		2.6	0.45	0.73	734	210 (81)
	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]	218 (89)		
		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.

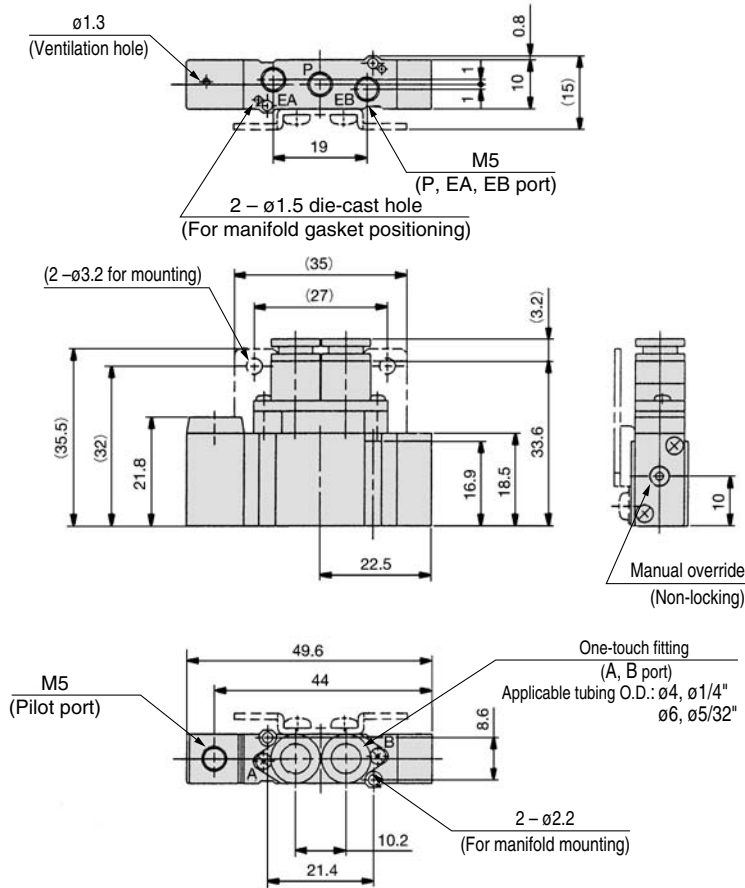
* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream pressure of 0.6 MPa (relative pressure) and a differential pressure of 0.1MPa.

SYA3000/5000/7000

Series SYA3000: Body Ported

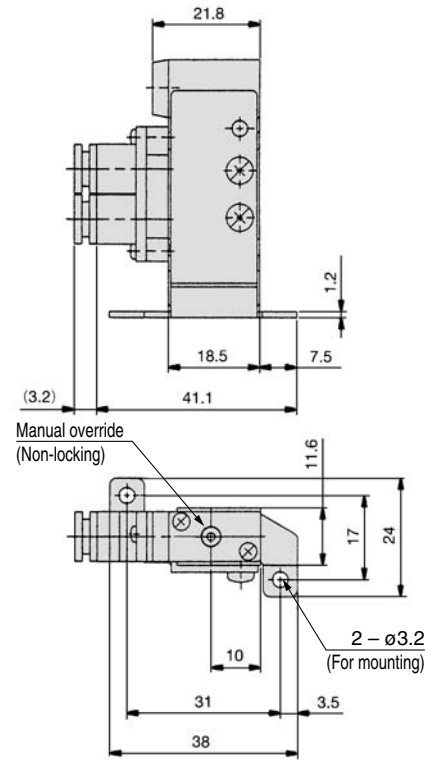
2 position single

SYA3120-C4, N3 (-F2)
C6, N7

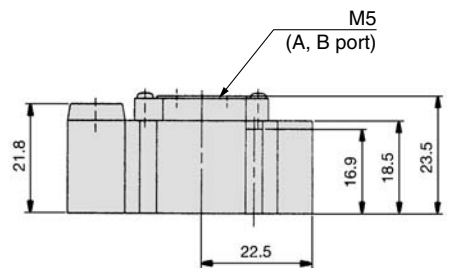


Foot bracket

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



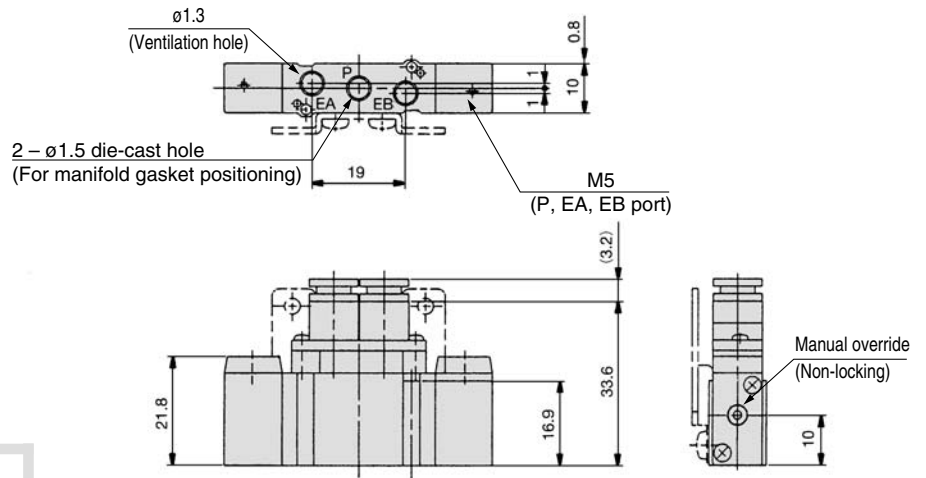
SYA3120-M5



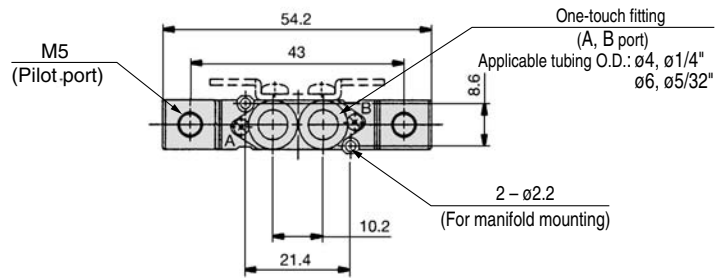
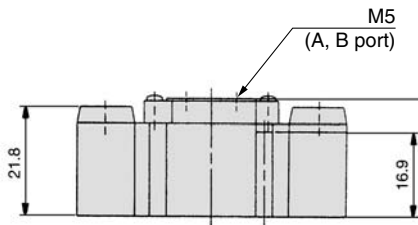
Series SYA3000: Body Ported

2 position double

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

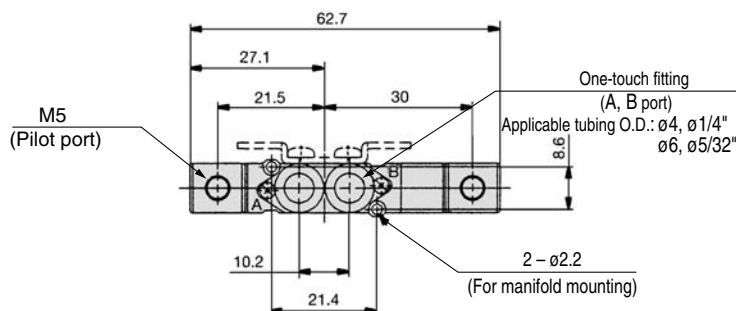
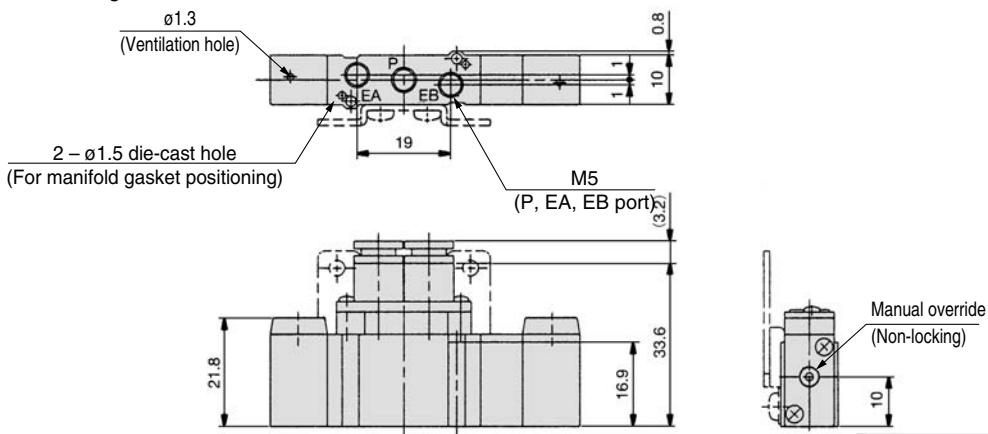


SYA3220-M5

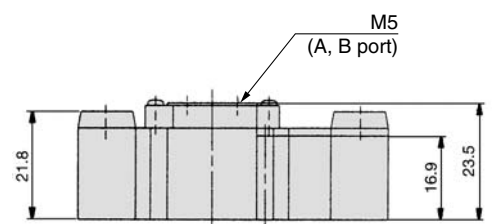


3 position closed center / exhaust center / pressure center

SYA3³₄20-^{C4, N3}/_{C6, N7} (-F2)



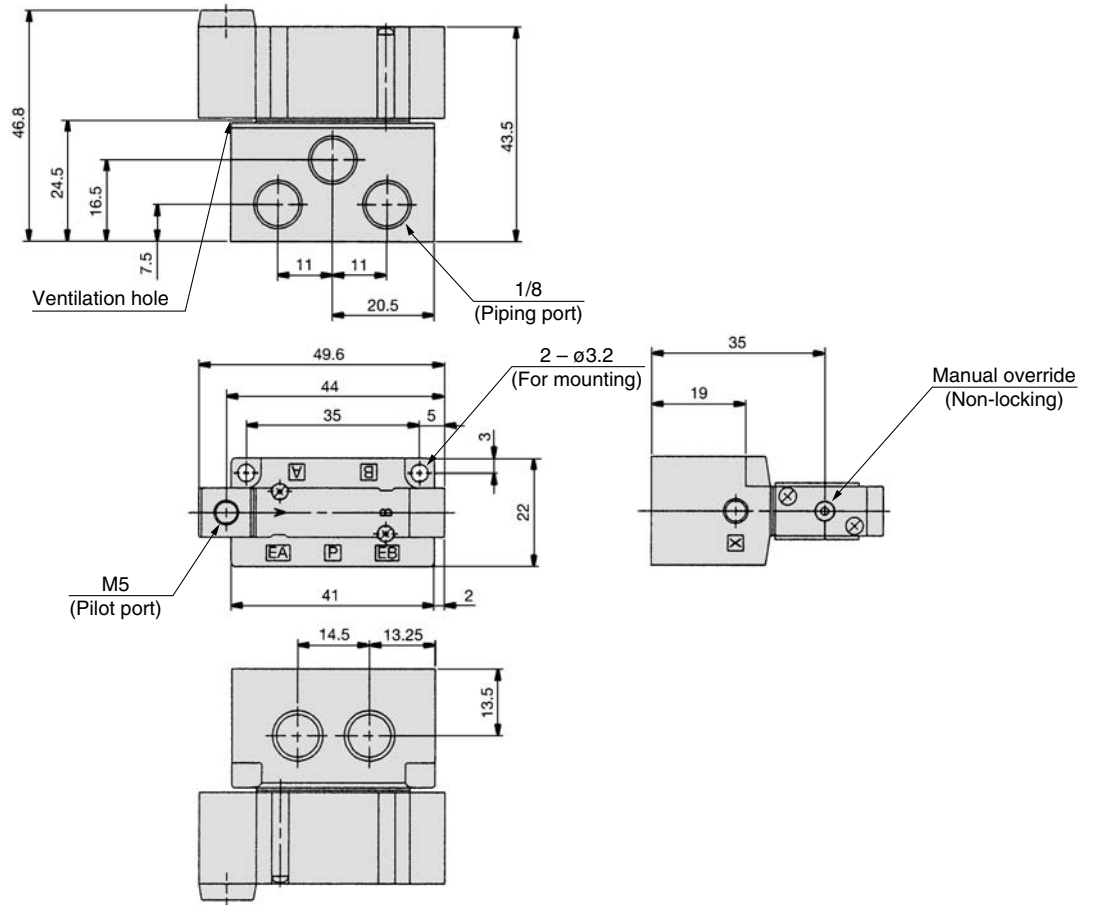
SYA3³₄20-M5



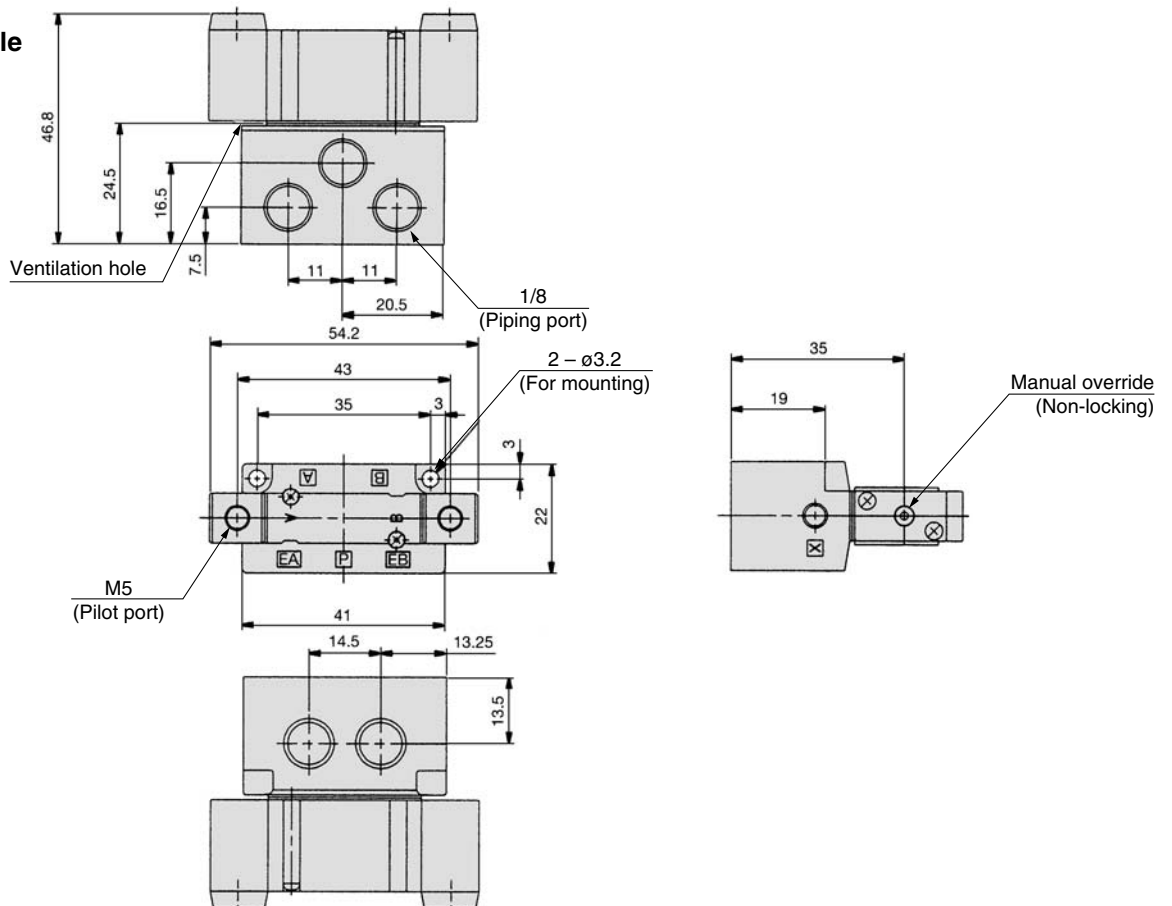
SYA3000/5000/7000

Series SYA3000: Base Mounted

2 position single SYA3140-01□



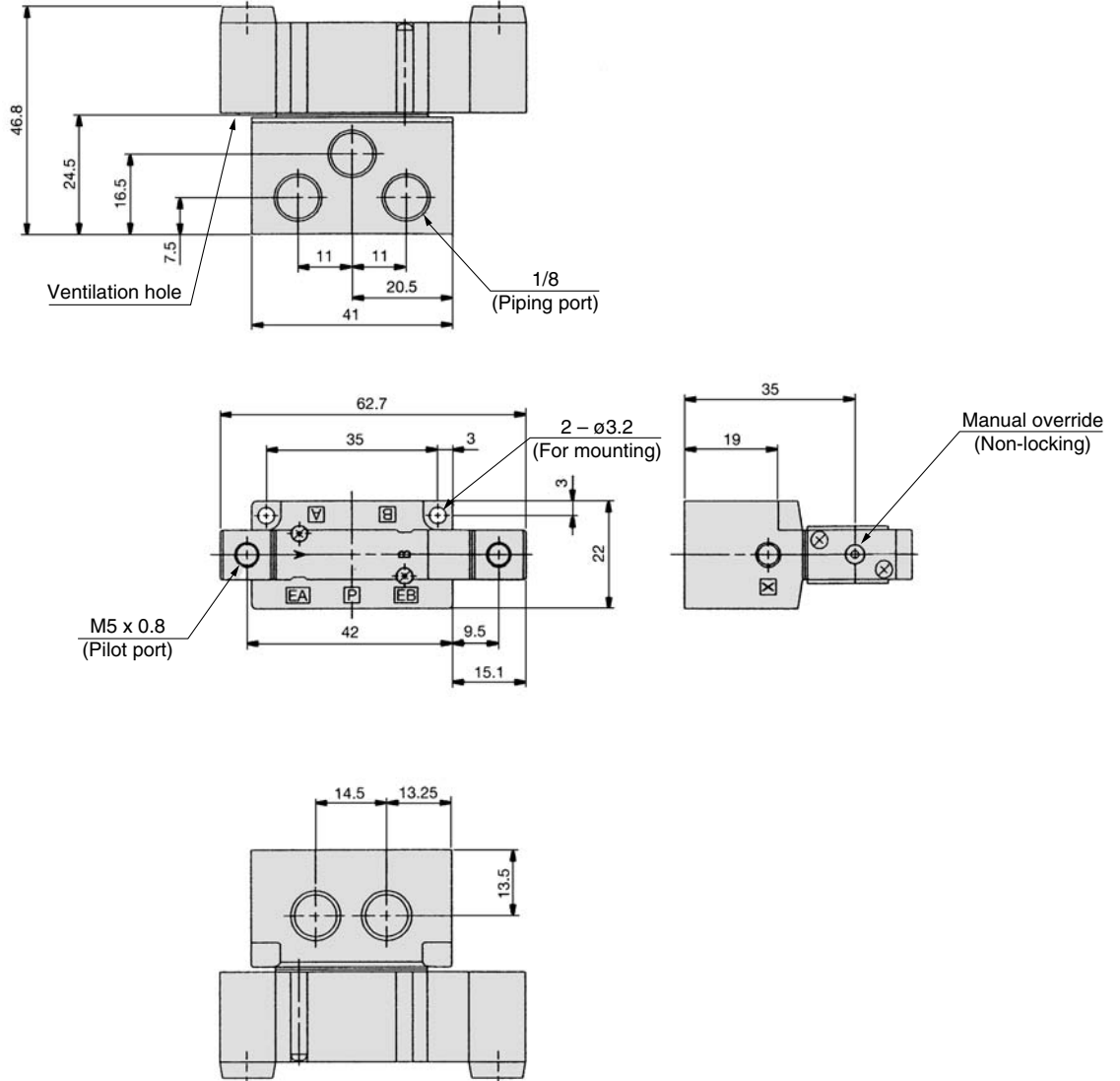
2 position double SYA3240-01□



Series SYA3000: Base Mounted

3 position closed center / exhaust center / pressure center

SYA $\frac{3}{4}$ $\frac{3}{5}$ 40-01□

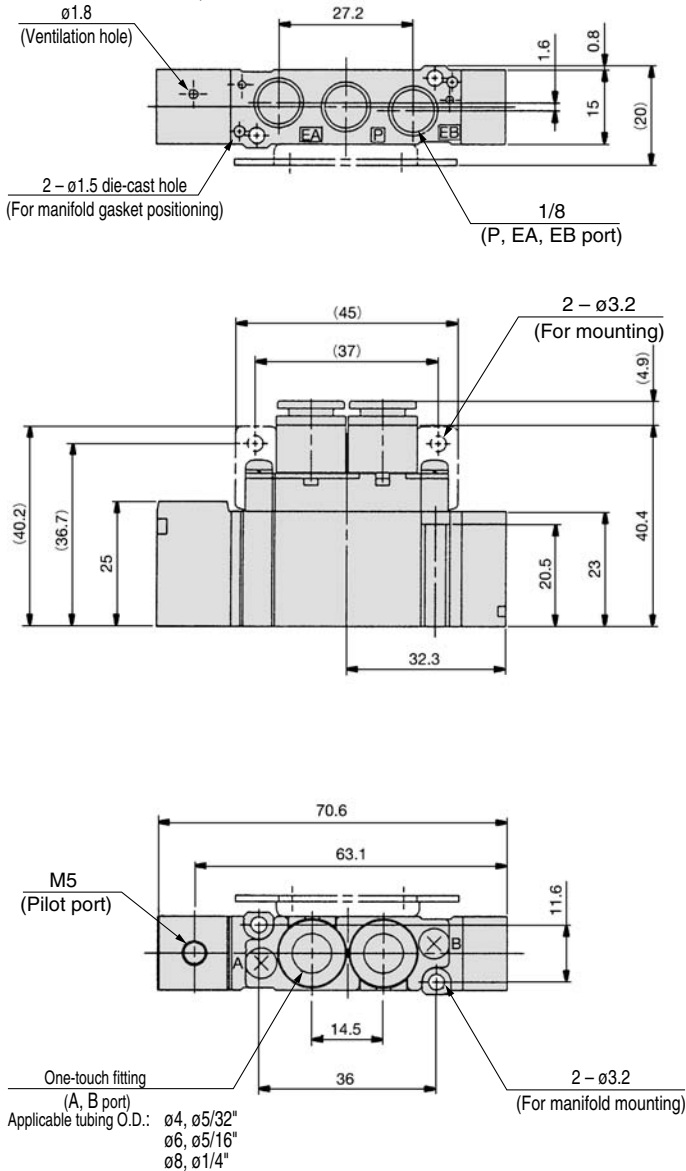


SYA3000/5000/7000

Series SYA5000: Body Ported

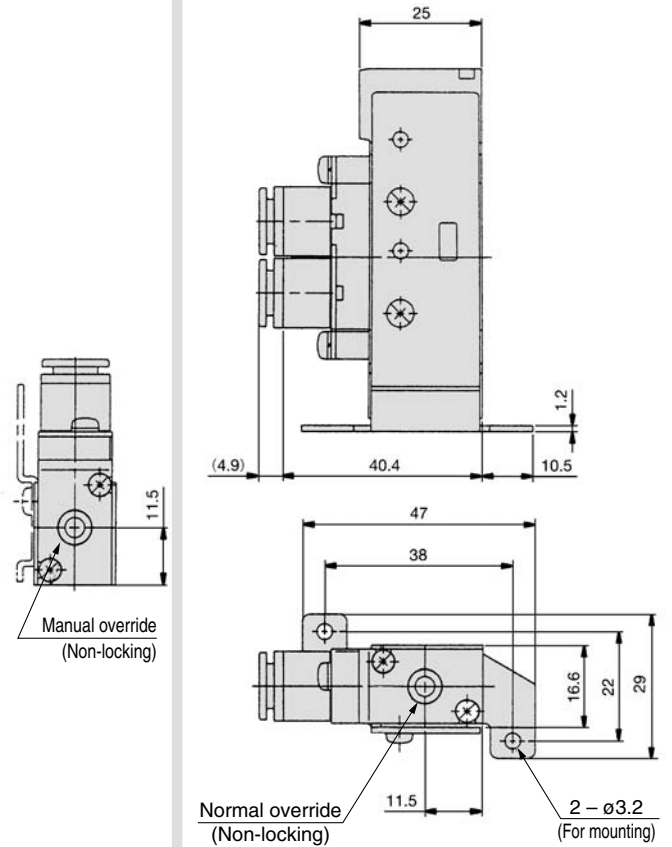
2 position single

SYA5120-C4, N3
C6, N7 □ (-F2)
C8, N9

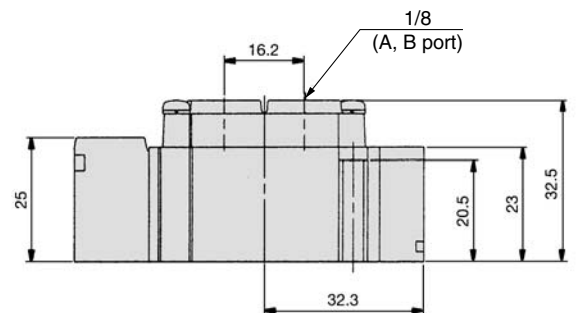


Foot bracket

SYA5120-C4, N3
C6, N7 □ (-F1)
C8, N9



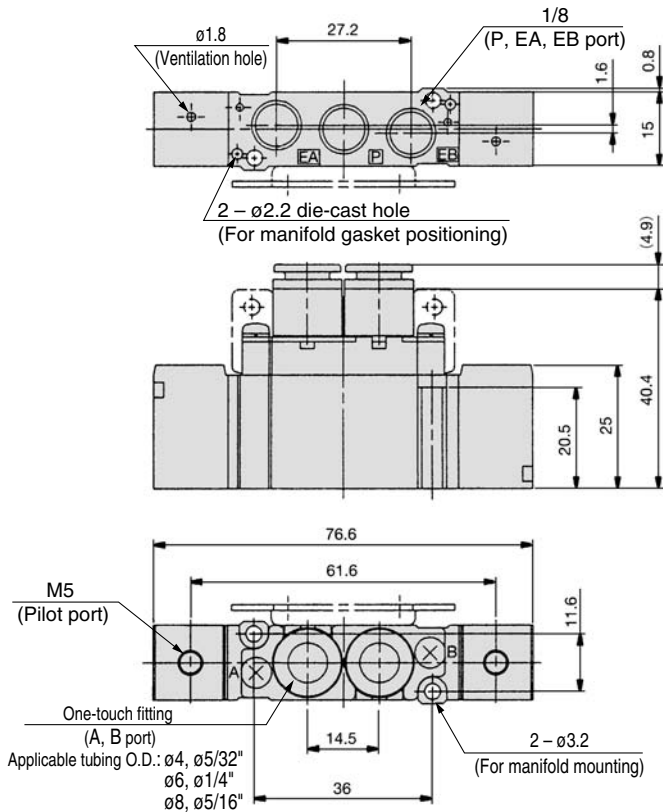
SYA5120-01 □



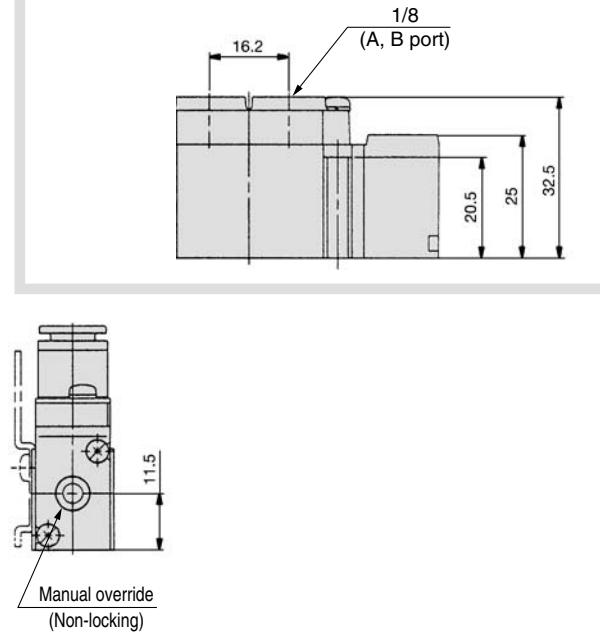
Series SYA5000: Body Ported

2 position double

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

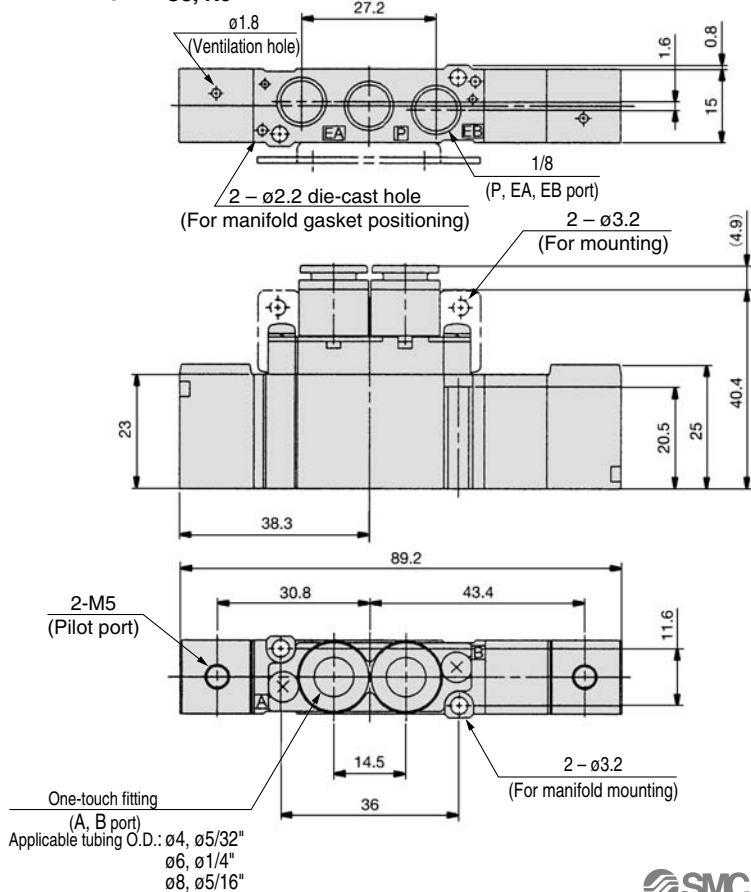


SYA5220-01 □

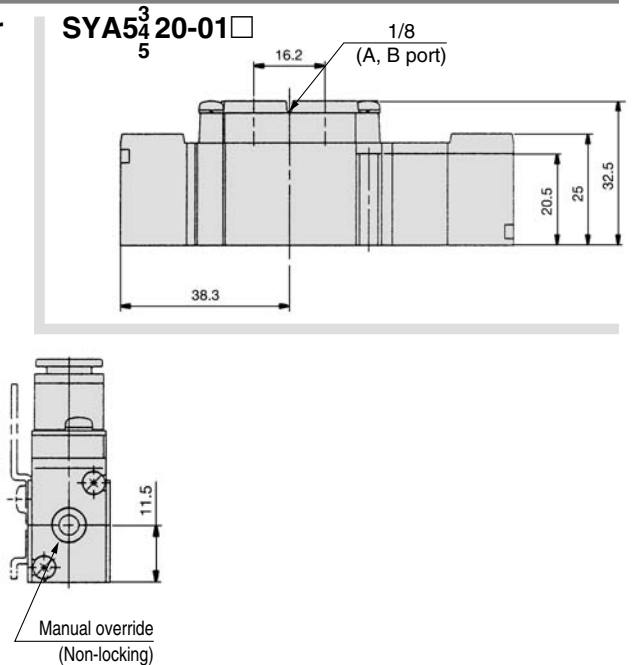


3 position closed center / exhaust center / pressure center

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



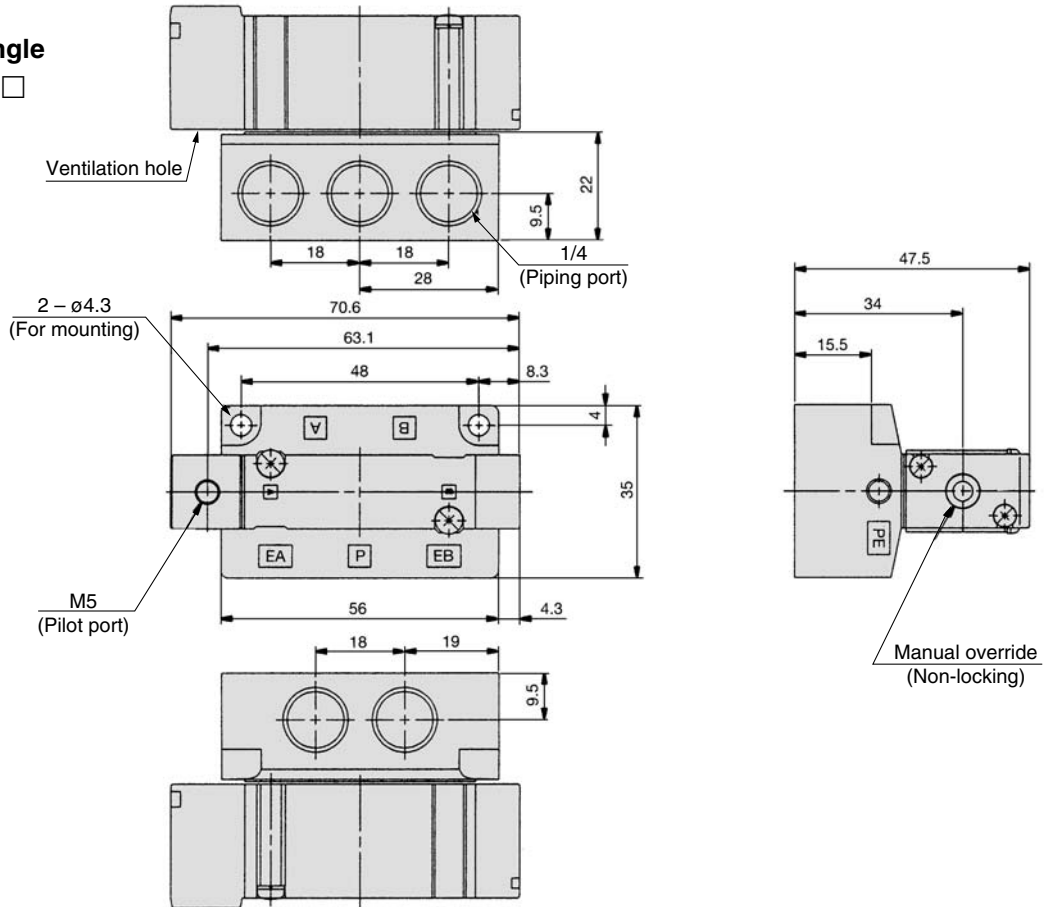
SYA5420-01 □



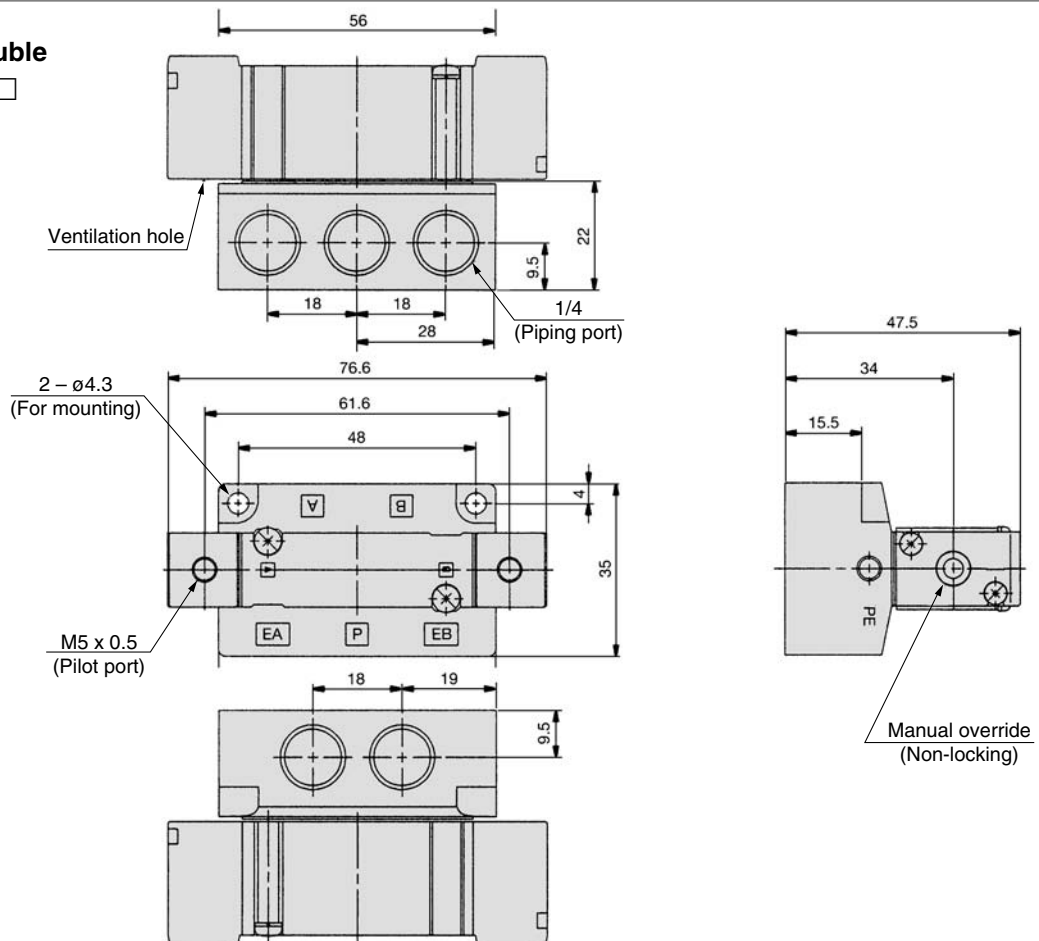
SYA3000/5000/7000

Series SYA5000: Base Mounted

2 position single SYA5140-02□



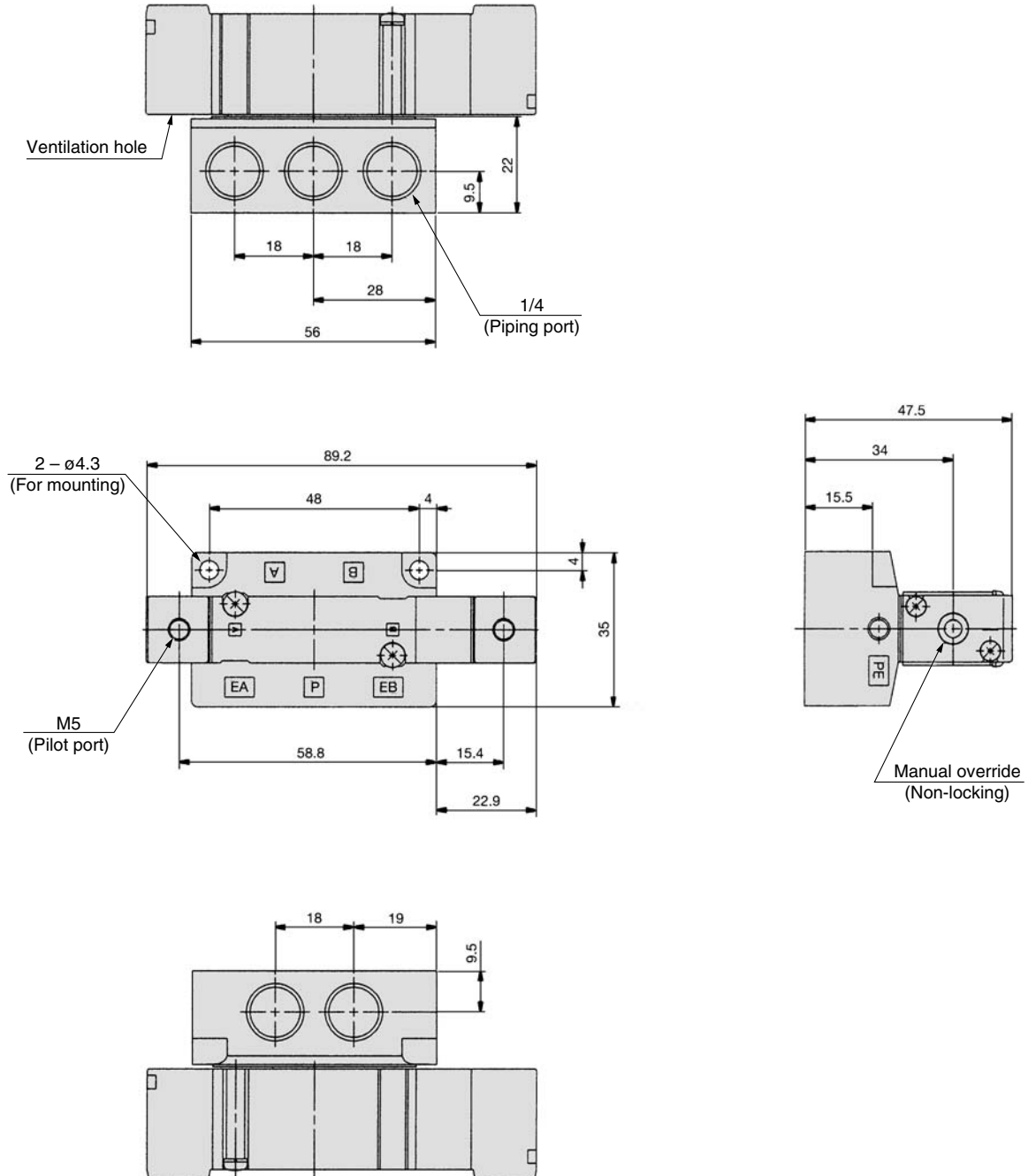
2 position double SYA5240-02□



Series SYA5000: Base Mounted

3 position closed center / exhaust center / pressure center

SYA5³₄40-02□

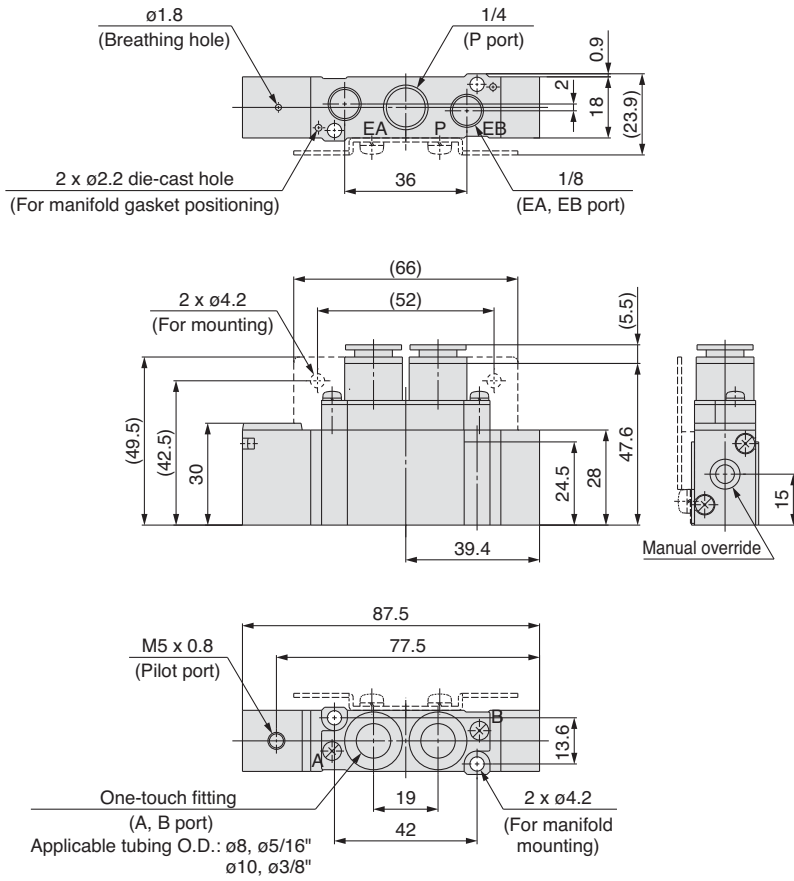


SYA3000/5000/7000

Series SYA7000: Body Ported

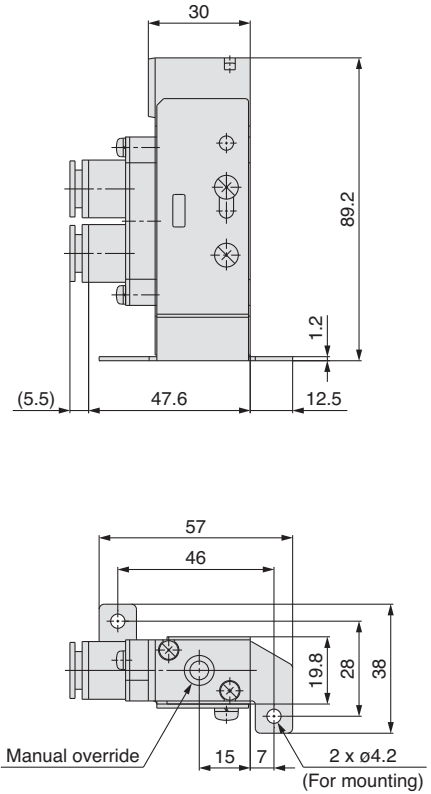
2 position single

SYA7120-C8, N9
C10, N11 □(-F2)

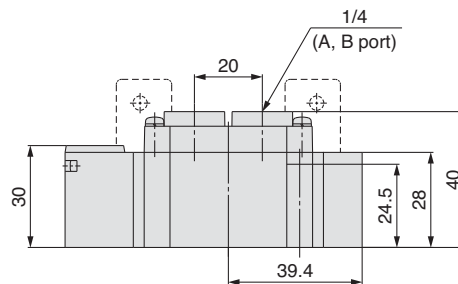


Foot bracket

SYA7120-C8, N9
C10, N11 □(-F1)



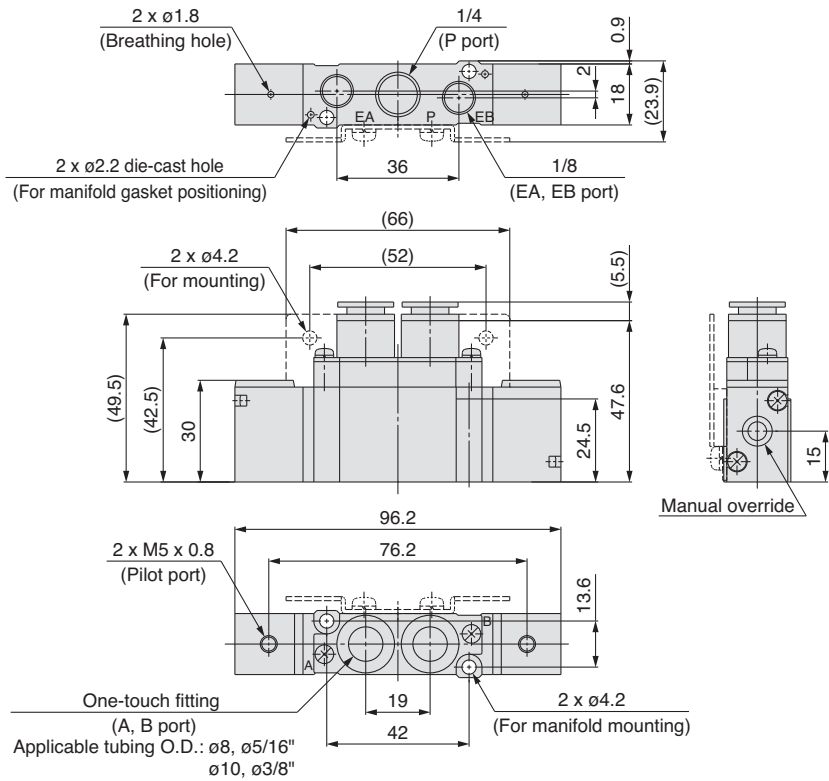
SYA7120-02 □(-F2)



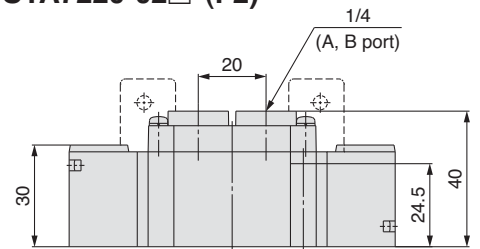
Dimensions/Series SYA7000: Body Ported

2 position double

SYA7220-^{C8, N9}_{C10, N11}□-(F2)

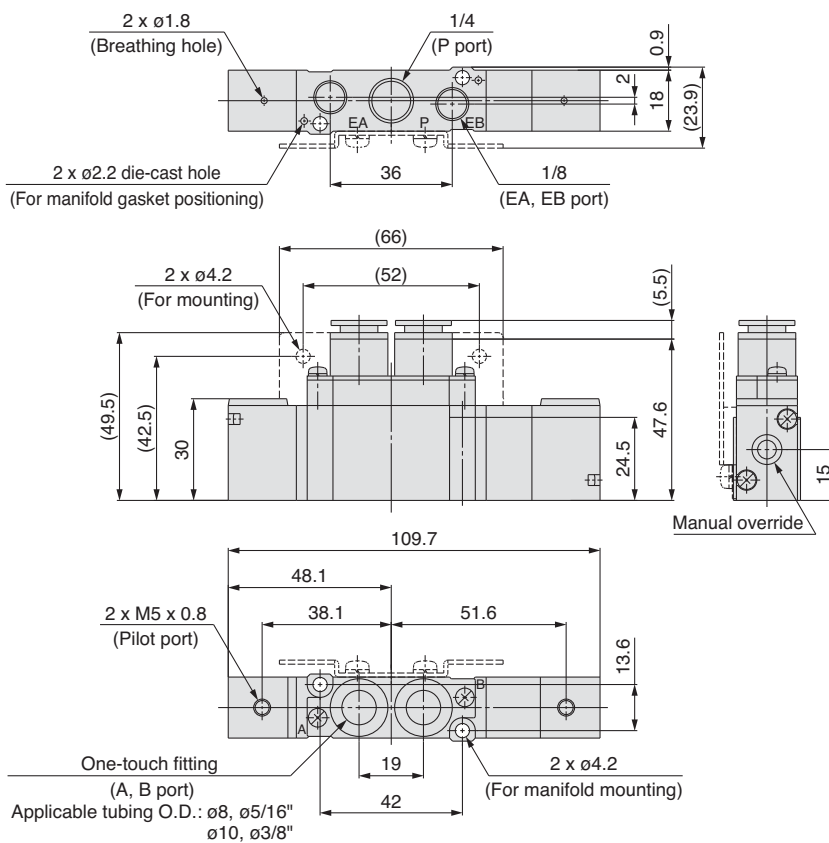


SYA7220-02□-(F2)

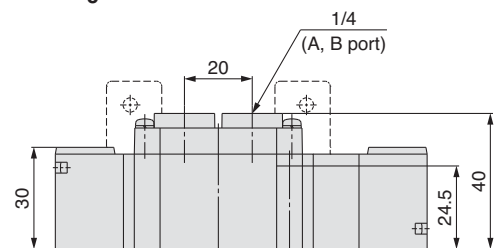


3 position closed center / exhaust center / pressure center

SYA7³₄20-^{C8, N9}_{C10, N11}□-(F2)



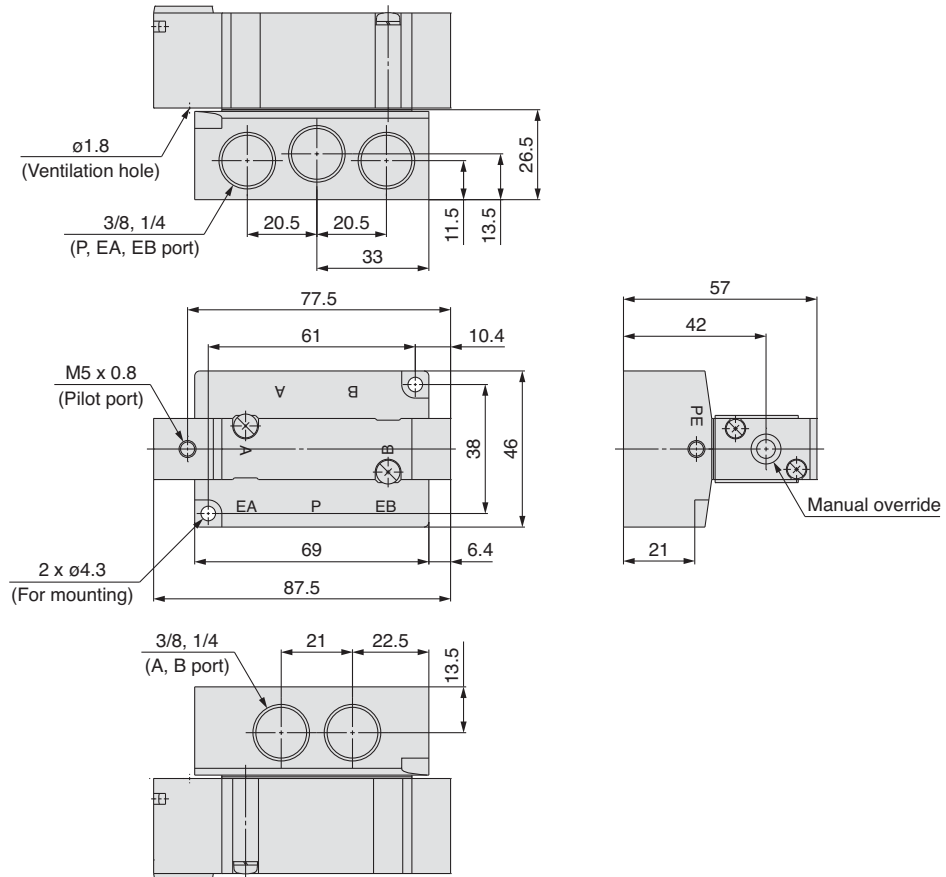
SYA7³₄20-02□-(F2)



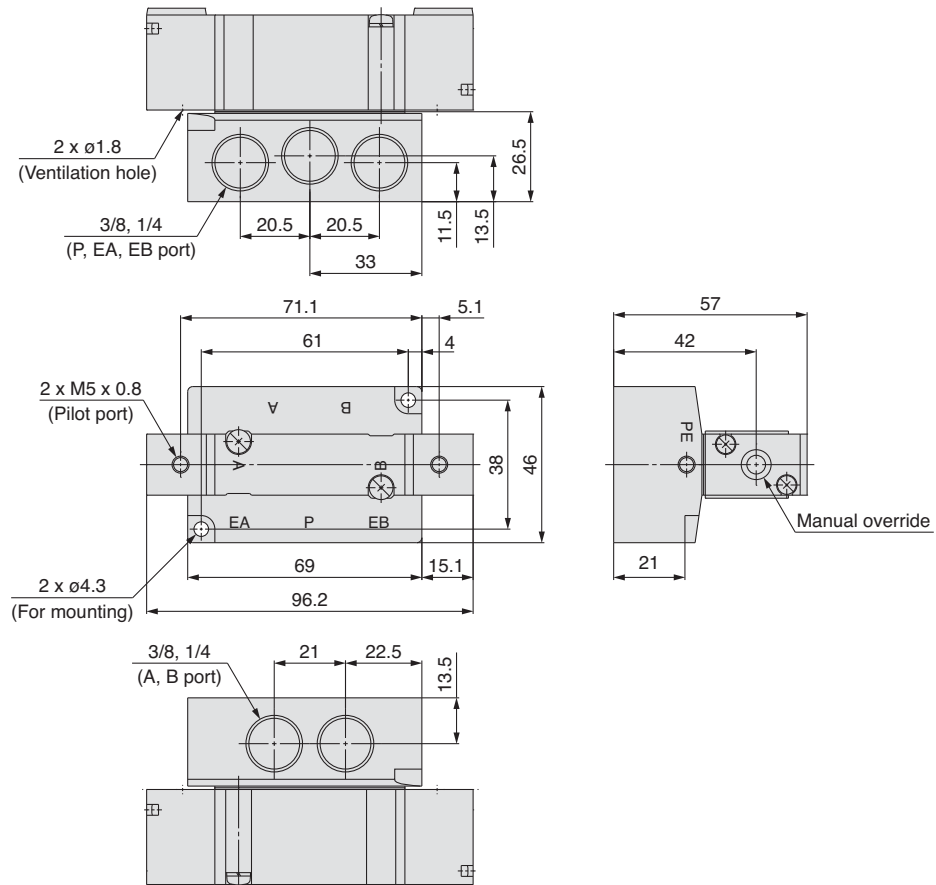
SYA3000/5000/7000

Dimensions/Series SYA7000: Base Mounted

2 position single SYA7140-02 03 □



2 position double SYA7240-02 03 □



Dimensions/Series SYA7000: Base Mounted

3 position closed center / exhaust center / pressure center

SYA7³₄40-0²₀₃□

