

# 5 Port Air Operated Valve

## Series SYA3000/5000/7000

### How to Order

**A, B port size**

Symbol	Port size	Applicable series
M5	M5 x 0.8	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 $\phi 5/16''$	SYA5000
N9	One-touch fitting for $\phi 5/16''$	SYA7000
N11	One-touch fitting for $\phi 3/8''$	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**

Symbol	Thread type
Nil	Rc
F	G
N	NPT
T	NPTF

\* Except for M5

**Bracket**

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

**Series**

Series	Applicable 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**

Symbol	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

**Type of actuation**

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


**Port size**

Symbol	Port size
Nil	Without sub-plate
02	1/4 With sub-plate
03	3/8 With sub-plate

# 5 Port Air Operated Valve *Series SYA3000/5000/7000*

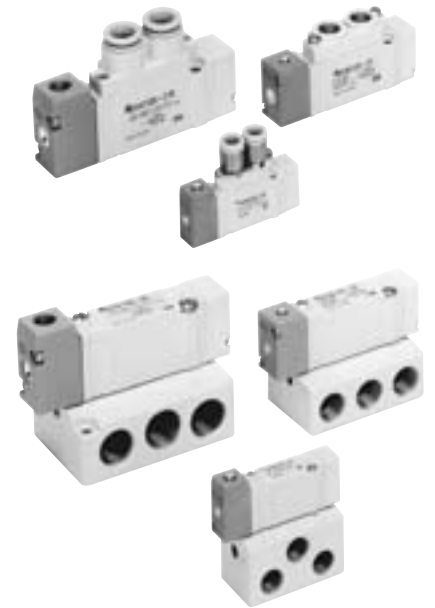
## Specifications

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 <sup>Note 1)</sup> 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/s <sup>2</sup> ) <sup>Note 2)</sup>		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 matters 58 and 59 for Safety Instructions and pages 3 to 7 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<sup>3</sup><sub>5</sub>— Fill the same as SS5Y<sup>3</sup><sub>5</sub>.


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

<Example>

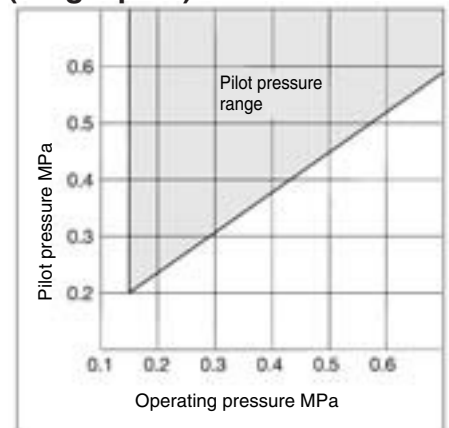
- SS5YA5-42-03-02** 1 set (Type 42, 3 station manifold base part no.)
- \* SYA5140 1 set (Single air operated valve part no.)
  - \* SYA5240 1 set (Double air operated valve part no.)
  - \* SY5000-26-2A 1 set (Blanking plate assembly part no.)

↳ 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 page 173.)

## Pilot Pressure Range (Single pilot)



SYA

SYJA

VZA

VFA

VFRA


V□A

# Series SYA3000/5000/7000

## Flow Characteristics/Weight


### Model/Series SYA3□20 (Body ported)

Valve model	Type of actuation		Pilot port size	Port size		Flow characteristics						Mass (g)																			
						1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)																						
						P, EA, EB	A, B		C (dm <sup>3</sup> /(s·bar))	b	Cv		C (dm <sup>3</sup> /(s·bar))	b	Cv																
SYA3□20-M5	2 position	Single	M5 x 0.8	M5 x 0.8	M5 x 0.8	C4 (One-touch fitting for ø4)	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	0.47 [0.44]	0.41 [0.37]	0.13 [0.12]	39									
		Exhaust center																													
		Pressure center																													
SYA3□20-C4	2 position	Single											M5 x 0.8	M5 x 0.8	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	0.42 [0.41]	0.34 [0.37]	0.11 [0.11]	48
		Exhaust center																													
		Pressure center																													
SYA3□20-C6	2 position	Single	M5 x 0.8	M5 x 0.8	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	0.64 [0.42]	0.31 [0.36]	0.17 [0.11]	44	
		Exhaust center																													
		Pressure center																													

 Note 1 [ ]: denotes normal position.

### Model/Series SYA3□40 (Base mounted)

Valve model	Type of actuation		Pilot port size	Port size	Flow characteristics <sup>Note 1)</sup>						Mass <sup>Note 2)</sup> (g)									
					1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)												
					C (dm <sup>3</sup> /(s·bar))	b	Cv	C (dm <sup>3</sup> /(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	1.1 [0.55]	0.26 [0.52]	0.24 [0.16]	73 (38)
		Exhaust center																		
		Pressure center																		
3 position	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.

# 5 Port Air Operated Valve *Series SYA3000/5000/7000*

## Flow Characteristics/Weight

### Model/Series SYA5□20 (Body ported)

Valve model	Type of actuation		Pilot port size	Port size		Flow characteristics						Mass (g)			
						1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)						
						C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(s·bar)]	b	Cv				
SYA5□20-01□	2 position	Single	M5 x 0.8	1/8	A, B	1.9	0.35	0.49	2.4	0.39	0.61	58			
		Double				1.7	0.43	0.45	1.8	0.35	0.46	64			
	3 position	Closed center				1.5	0.44	0.41	2.5 [1.5]	0.32 [0.43]	0.59 [0.40]	69			
		Exhaust center 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				M5 x 0.8	1/8	A, B	0.75	0.43	0.20	0.85	0.64	0.30	82
		Double							0.74	0.40	0.19	0.84	0.57	0.28	87
	3 position	Closed center							0.75	0.36	0.19	0.84 [0.84]	0.64 [0.53]	0.30 [0.27]	93
		Exhaust center 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	M5 x 0.8	1/8	A, B				1.5	0.33	0.33	2.0	0.37	0.52	76
		Double							1.3	0.31	0.33	1.6	0.32	0.39	82
	3 position	Closed center							1.3	0.33	0.33	1.8 [1.4]	0.35 [0.37]	0.44 [0.35]	87
		Exhaust center 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				M5 x 0.8	1/8	A, B	1.9	0.21	0.45	2.3	0.29	0.57	68
		Double							1.6	0.29	0.39	1.7	0.38	0.46	74
	3 position	Closed center							1.4	0.38	0.39	2.0 [1.5]	0.37 [0.40]	0.52 [0.43]	79
		Exhaust center 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 <sup>Note 1)</sup>						Mass <sup>Note 2)</sup> (g)
					1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			
					C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(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			1.8	0.47	0.50	1.8	0.40	0.47	110 (47)
	3 position	Closed center			1.4	0.55	0.44	3.0 [1.2]	0.33 [0.48]	0.72 [0.37]	115 (52)
		Exhaust center 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						Mass (g)			
						1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)						
						C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(s·bar)]	b	Cv				
SYA7□20-02□	2 position	Single	M5 x 0.8	1/4	A, B	4.1	0.23	0.93	3.3	0.33	0.81	94			
		Double				2.9	0.31	0.70	2.4	0.38	0.63	100			
	3 position	Closed center				2.5	0.39	0.65	3.4 [2.1]	0.35 [0.38]	0.82 [0.54]	110			
		Exhaust center 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				M5 x 0.8	1/4	A, B	3.2	0.26	0.77	3.2	0.37	0.82	100
		Double							2.6	0.24	0.63	2.4	0.31	0.62	106
	3 position	Closed center							2.4	0.25	0.57	2.6 [1.9]	0.42 [0.46]	0.70 [0.56]	116
		Exhaust center 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	M5 x 0.8	1/8	A, B				3.8	0.26	0.86	3.2	0.34	0.82	97
		Double							2.8	0.27	0.67	2.4	0.21	0.59	103
	3 position	Closed center							2.5	0.25	0.59	2.7 [2.0]	0.38 [0.38]	0.70 [0.56]	113
		Exhaust center 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 <sup>Note 1)</sup>						Mass <sup>Note 2)</sup> (g)		
					1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)					
					C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(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			3.0	0.43	0.80	2.6	0.41	0.72	210 (81)		
	3 position	Closed center			2.6	0.42	0.71	4.7 [1.7]	0.35 [0.48]	1.1 [0.49]	218 (89)		
		Exhaust center 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			M5 x 0.8	3/8	4.9	0.29	1.2	4.5	0.27	1.1	202 (73)
		Double					3.0	0.40	0.80	2.6	0.45	0.73	210 (81)
	3 position	Closed center					2.6	0.42	0.71	4.8 [1.7]	0.35 [0.48]	1.1 [0.49]	218 (89)
		Exhaust center 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.

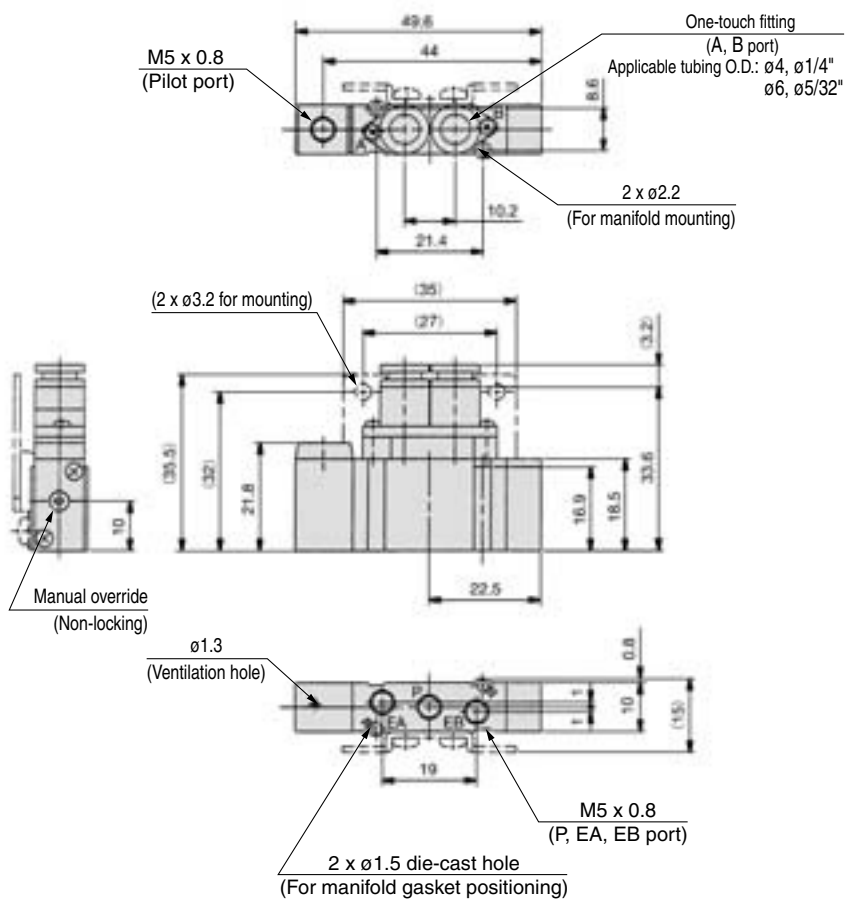
SYA  
SYJA  
VZA  
VFA  
VFRA  
V□A

# Series SYA3000/5000/7000

## Dimensions/Series SYA3000: Body Ported

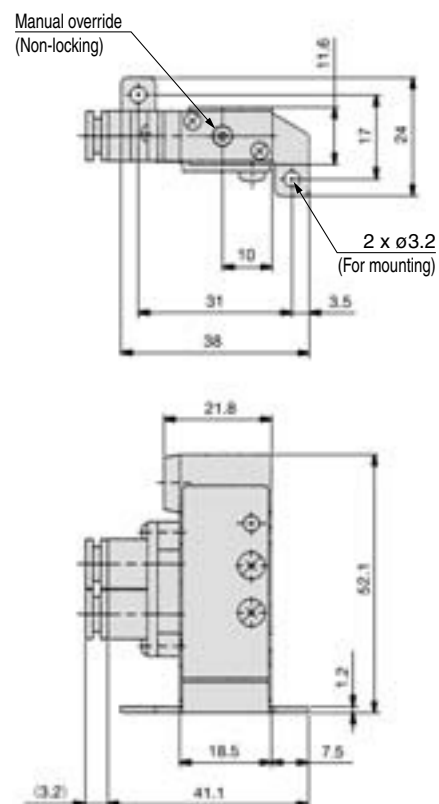
### 2 position single

SYA3120-<sup>C4, N3</sup><sub>C6, N7</sub> (-F2)

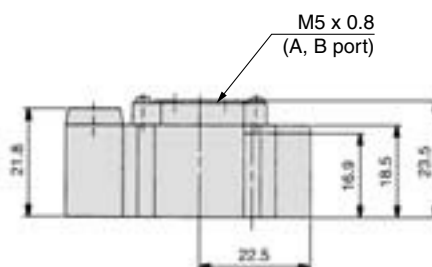


### Foot bracket

SYA3120-<sup>C4, N3</sup><sub>C6, N7</sub> -F1



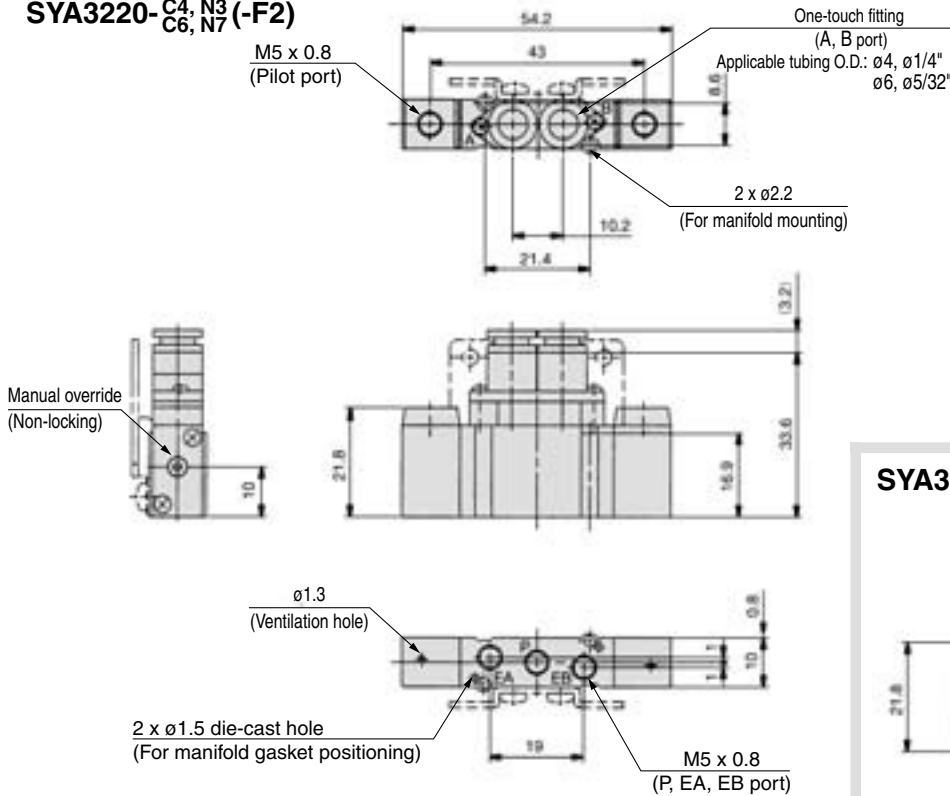
### SYA3120-M5



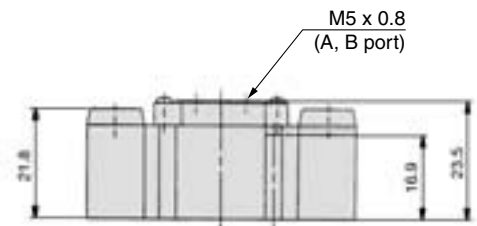
## Dimensions/Series SYA3000: Body Ported

### 2 position double

**SYA3220-**<sup>C4, N3</sup><sub>C6, N7</sub> (-F2)

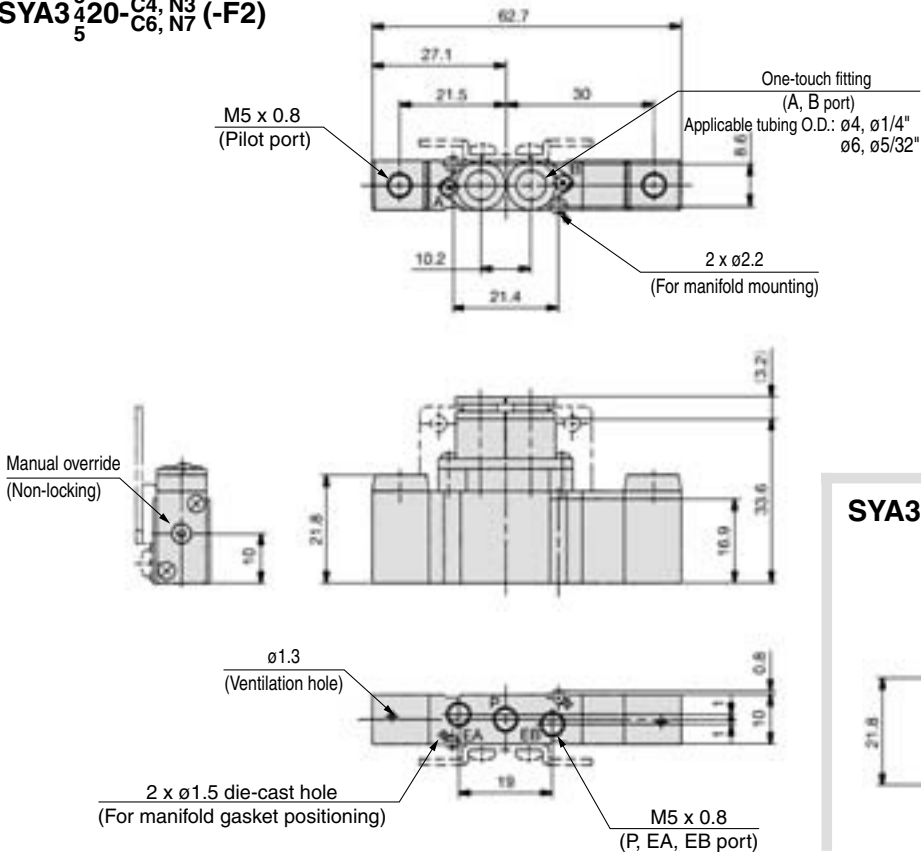


### SYA3220-M5

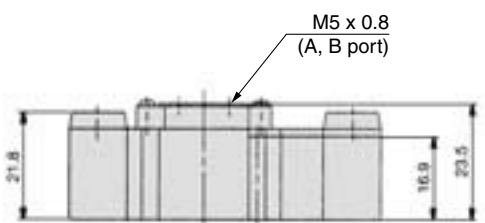


### 3 position closed center / exhaust center / pressure center

**SYA3<sup>3</sup>420-**<sup>C4, N3</sup><sub>5</sub><sup>C6, N7</sup> (-F2)



### SYA3<sup>3</sup>420-M5

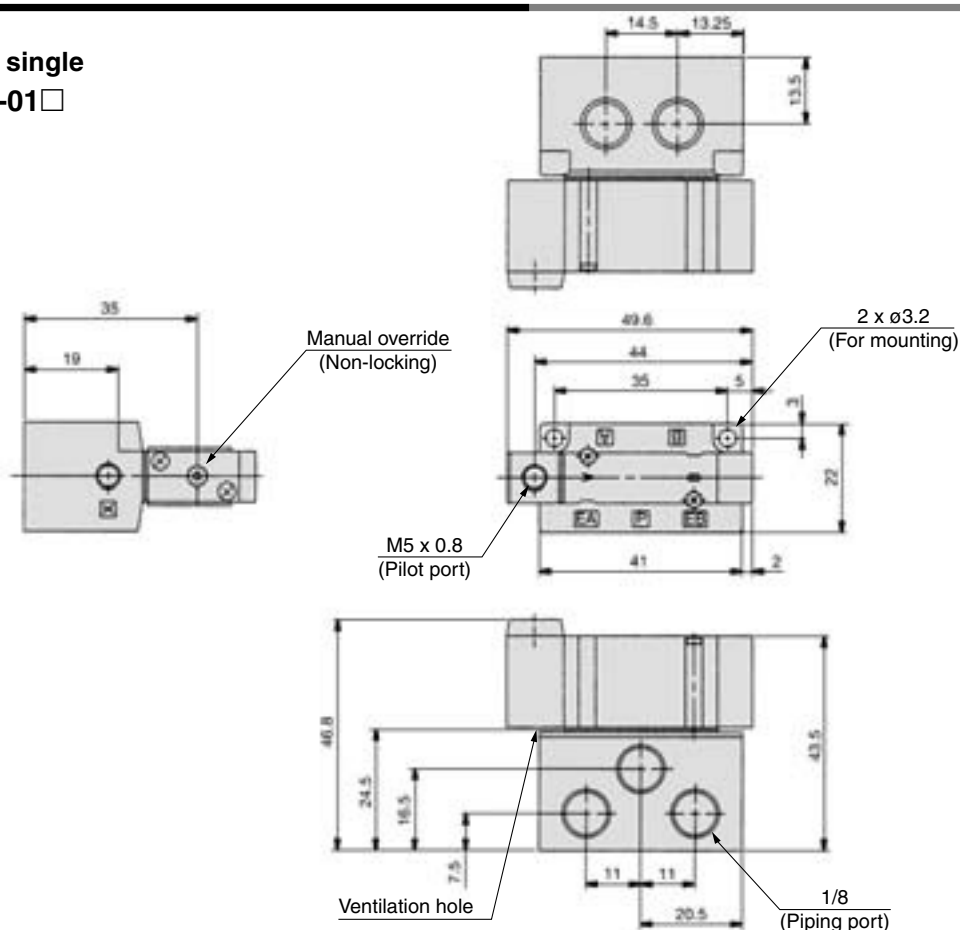


- SYA
- SYJA
- VZA
- VFA
- VFRA
- V□A

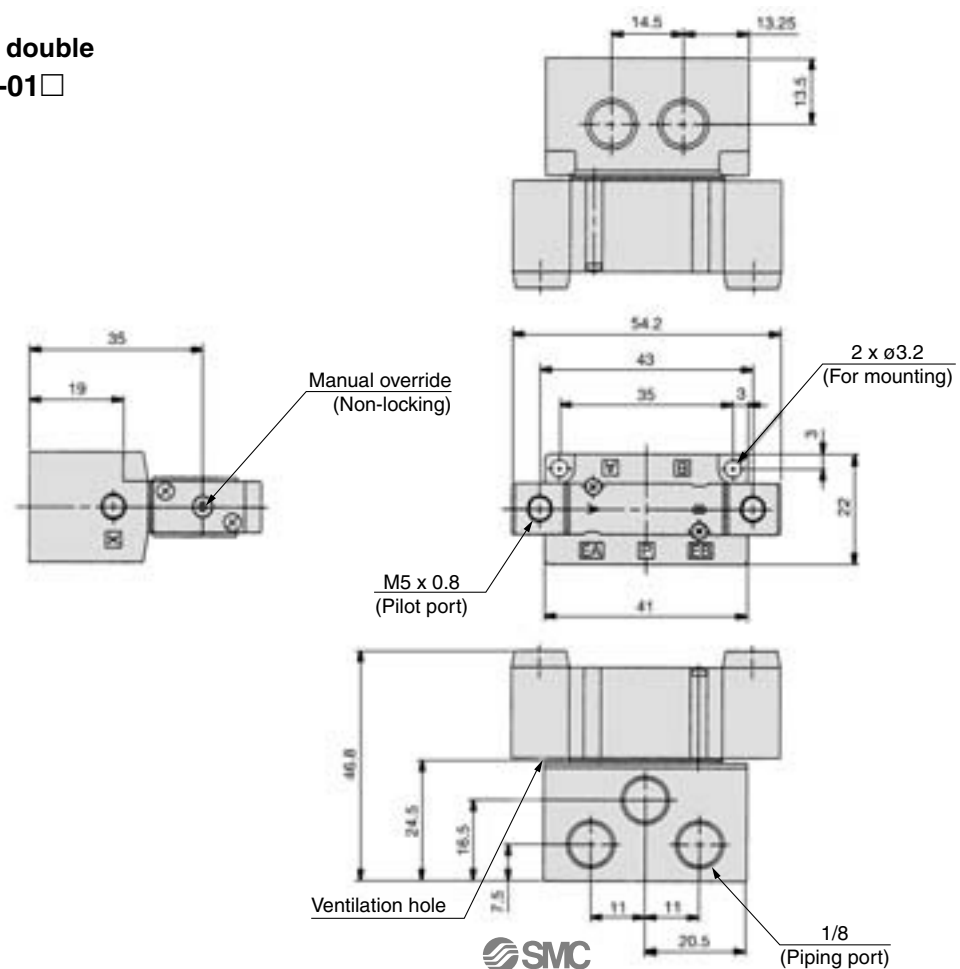
# Series SYA3000/5000/7000

## Dimensions/Series SYA3000: Base Mounted

2 position single  
SYA3140-01□



2 position double  
SYA3240-01□

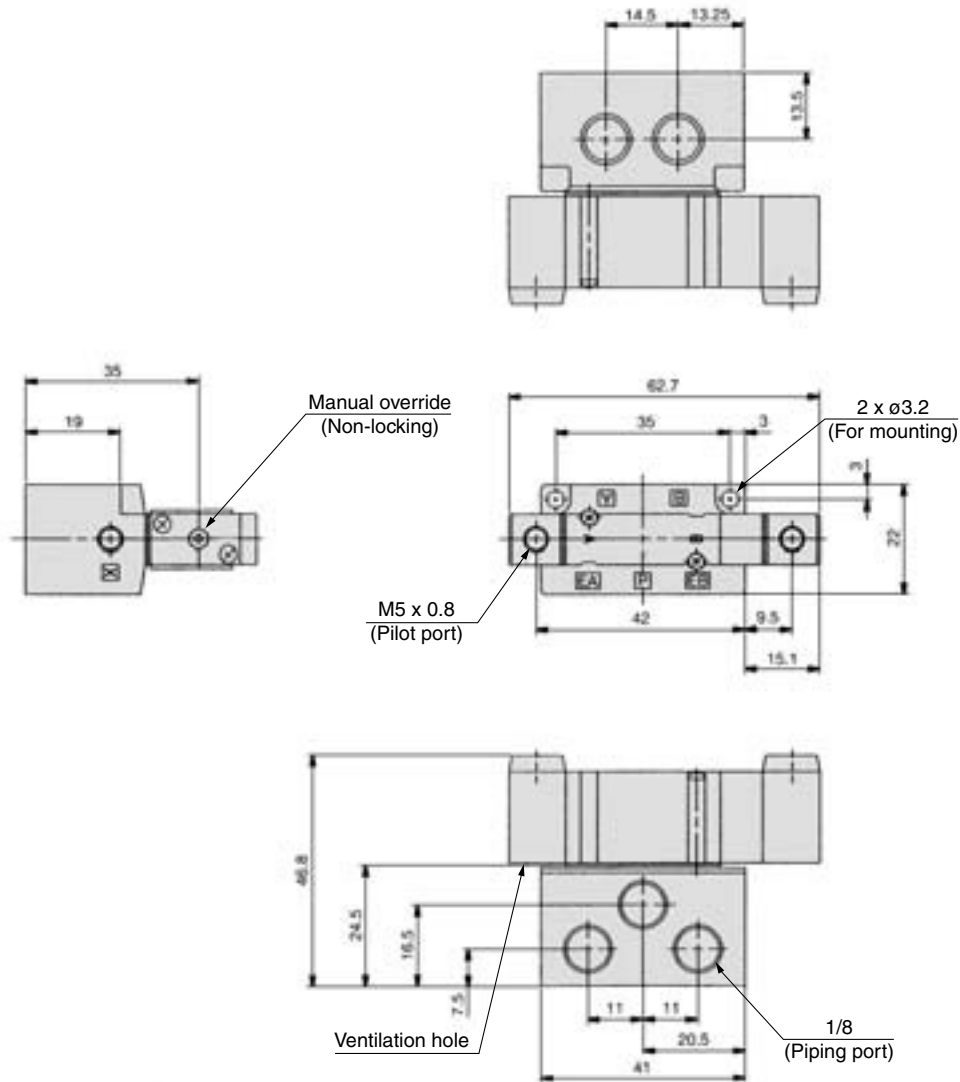


# 5 Port Air Operated Valve *Series SYA3000/5000/7000*

## Dimensions/Series SYA3000: Base Mounted

3 position closed center / exhaust center / pressure center

SYA3<sup>3</sup><sub>4</sub>40-01□



SYA

SYJA

VZA

VFA

VFRA

V□A

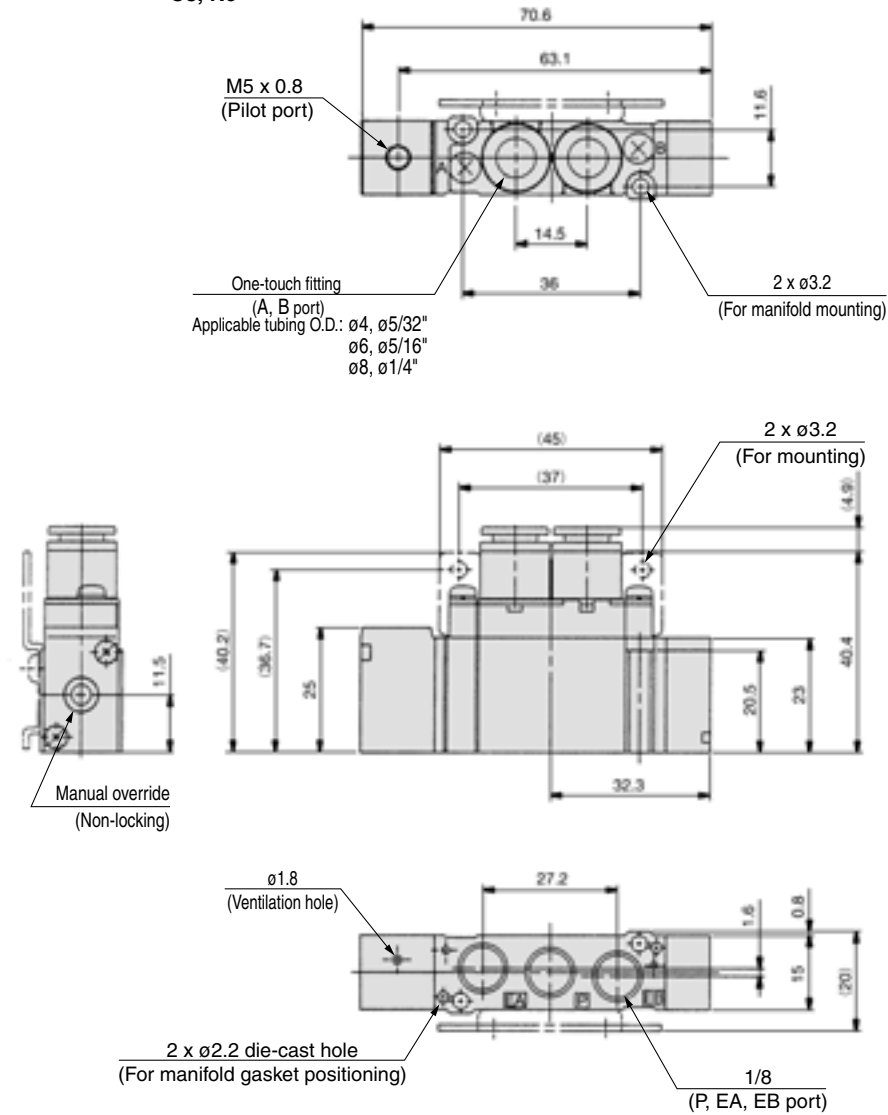


# Series SYA3000/5000/7000

## Dimensions/Series SYA5000: Body Ported

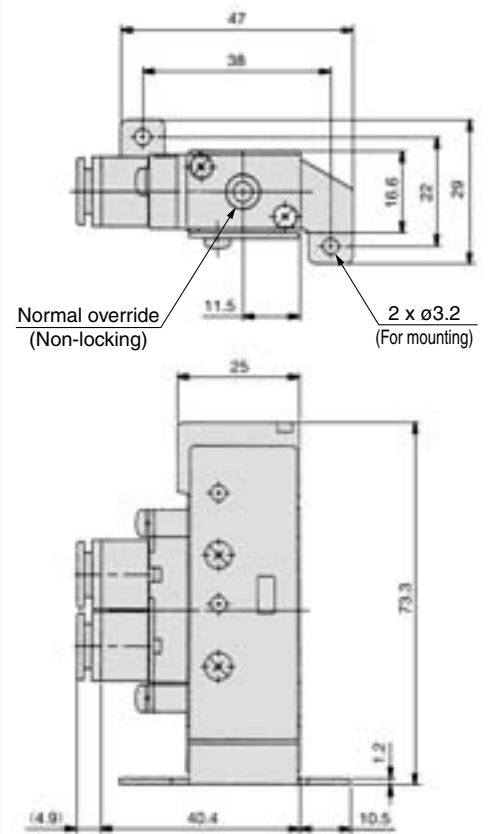
### 2 position single

SYA5120-<sup>C4, N3</sup><sub>C6, N7</sub>□(-F2)  
C8, N9

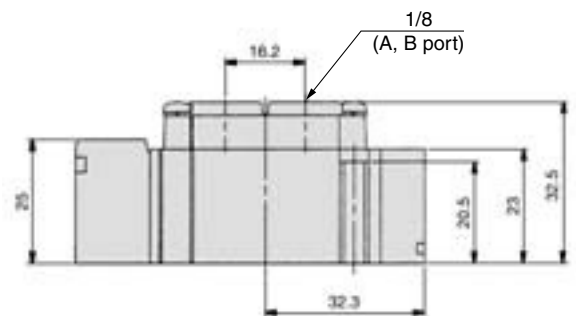


### Foot bracket

SYA5120-<sup>C4, N3</sup><sub>C6, N7</sub>□-F1  
C8, N9

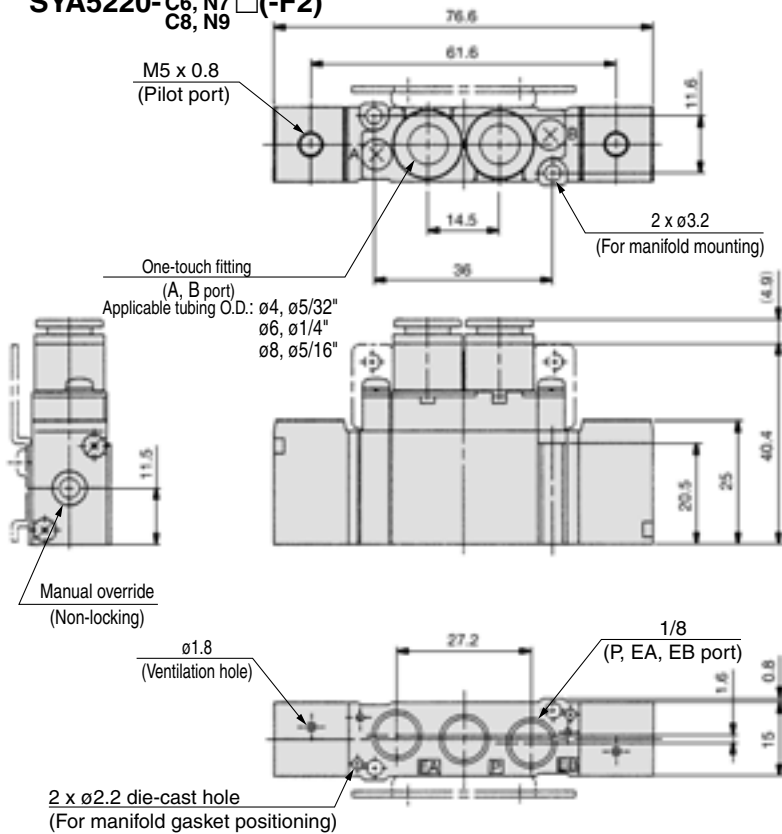


### SYA5120-01□

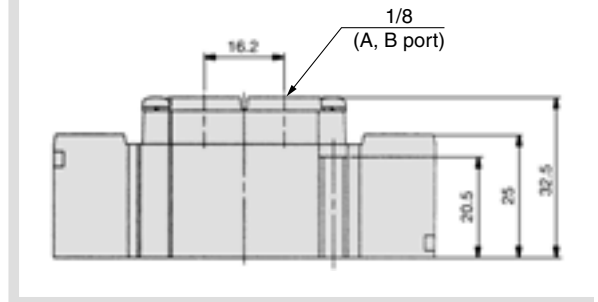


## Dimensions/Series SYA5000: Body Ported

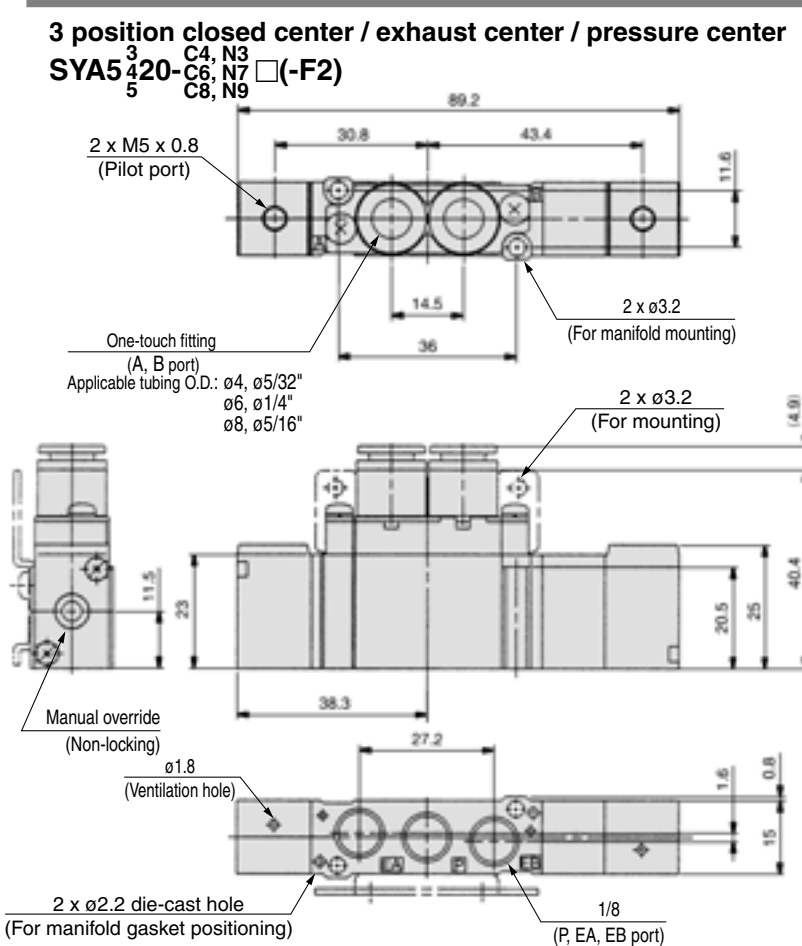
**2 position double**  
C4, N3  
**SYA5220-C6, N7** □ (-F2)  
C8, N9



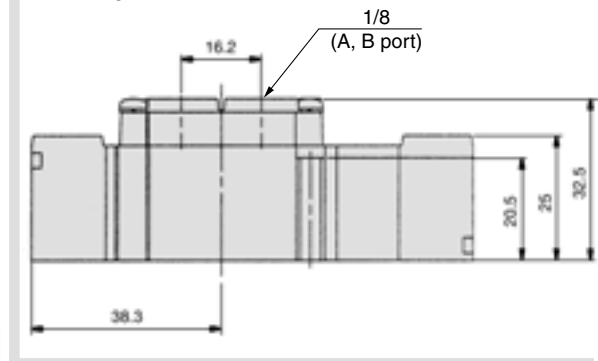
**SYA5220-01** □



**3 position closed center / exhaust center / pressure center**  
C4, N3  
**SYA5420-C6, N7** □ (-F2)  
C8, N9



**SYA5420-01** □



**SYA**

**SYJA**

**VZA**

**VFA**

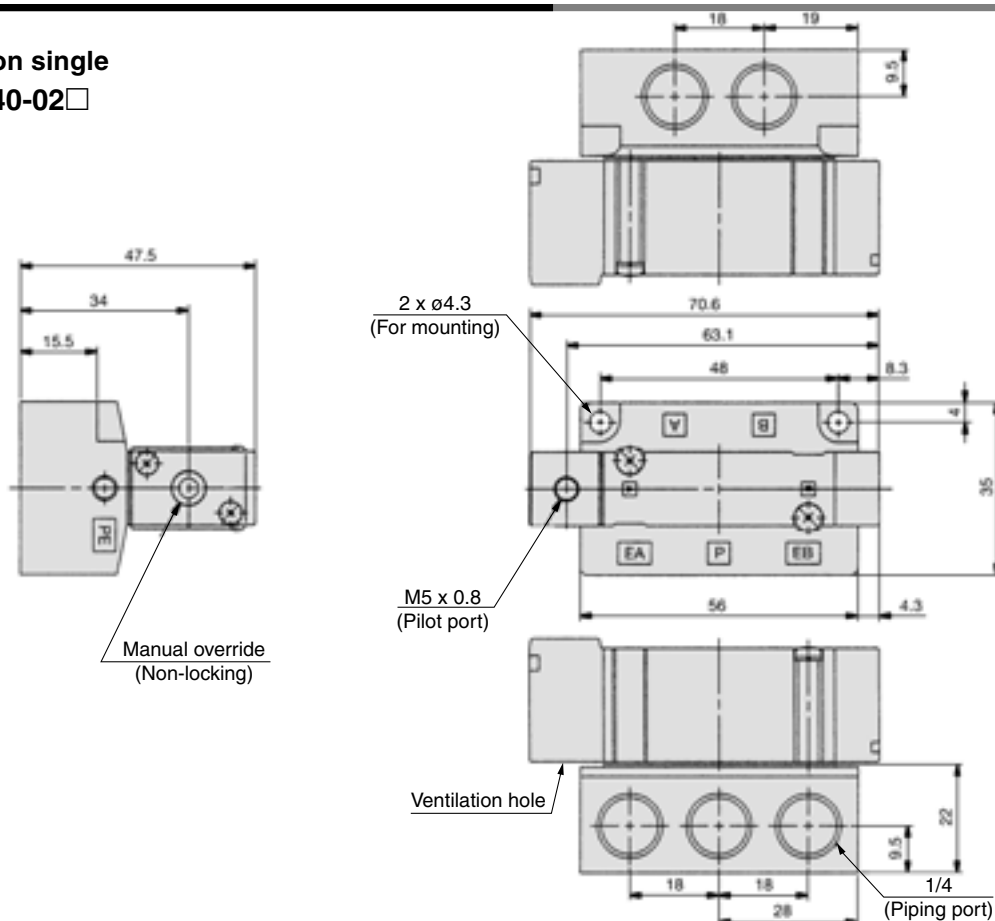
**VFRA**

**V□A**

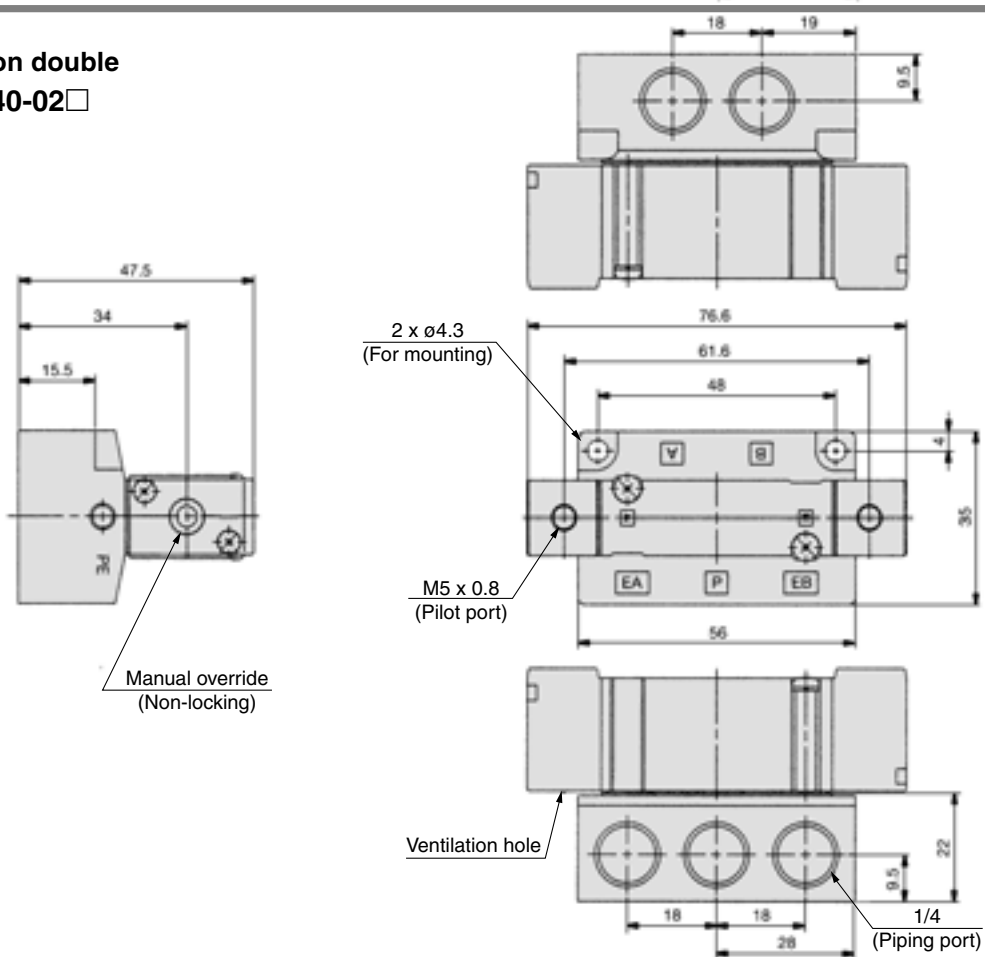
# Series SYA3000/5000/7000

## Dimensions/Series SYA5000: Base Mounted

2 position single  
SYA5140-02□



2 position double  
SYA5240-02□

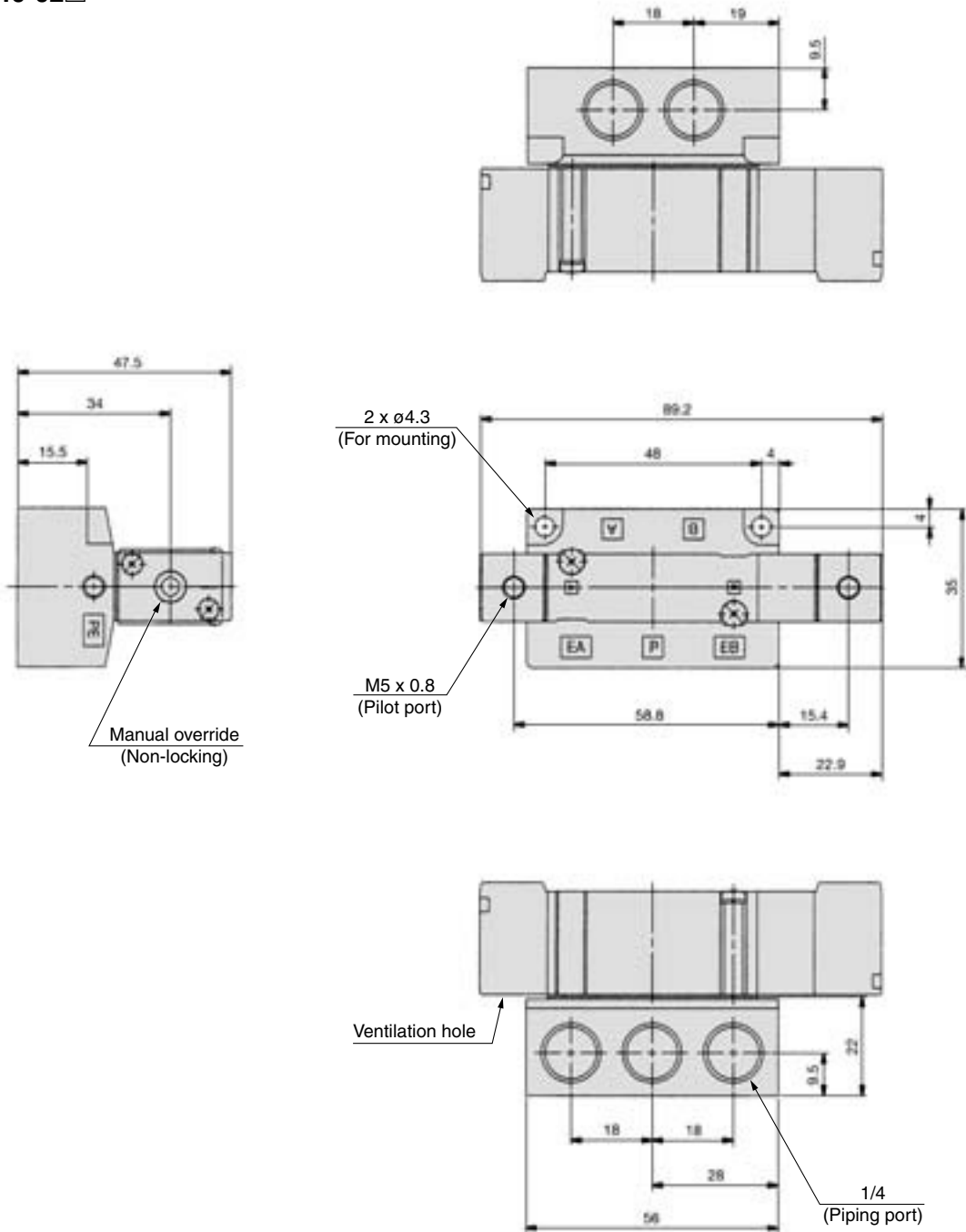


# 5 Port Air Operated Valve *Series SYA3000/5000/7000*

## Dimensions/Series SYA5000: Base Mounted

3 position closed center / exhaust center / pressure center

SYA5<sup>3</sup>/<sub>4</sub>40-02□

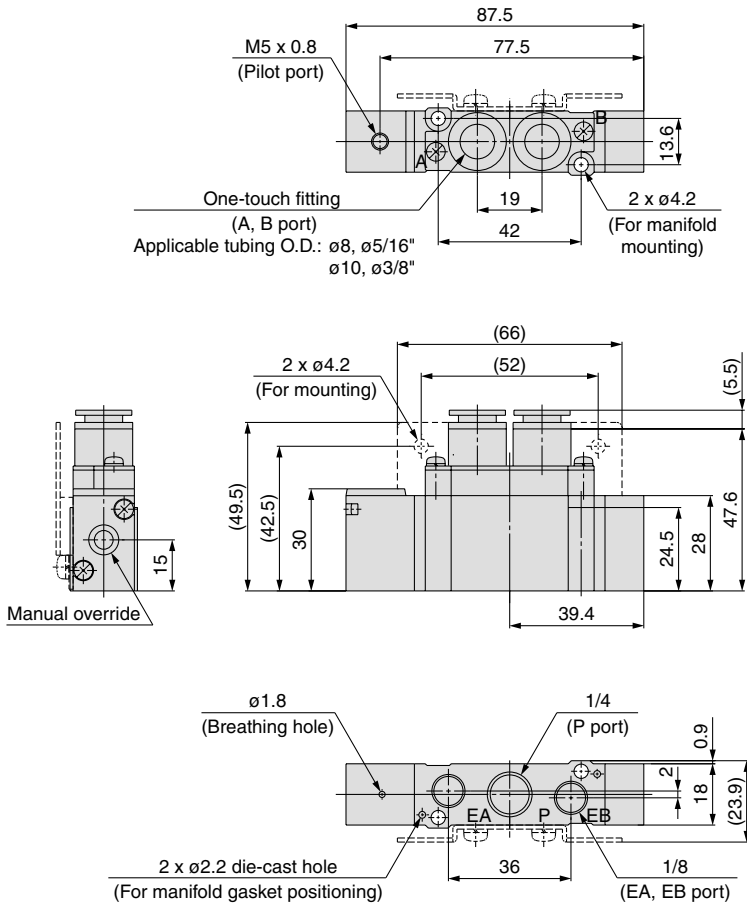


- SYA
- SYJA
- VZA
- VFA
- VFRA
- V□A

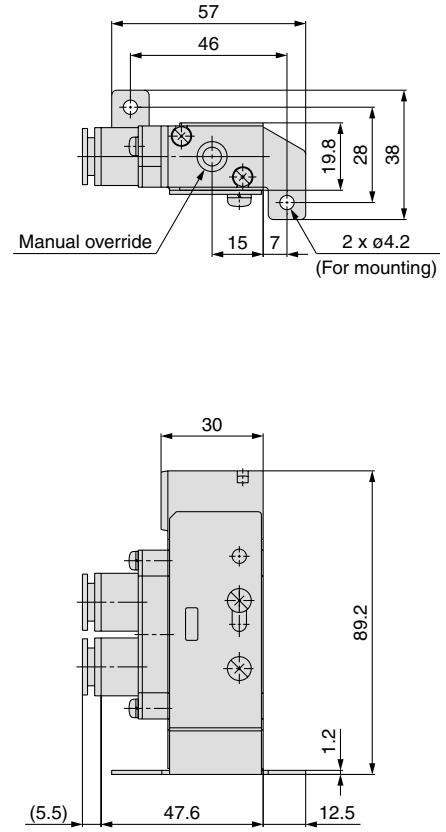
# Series SYA3000/5000/7000

## Dimensions/Series SYA7000: Body Ported

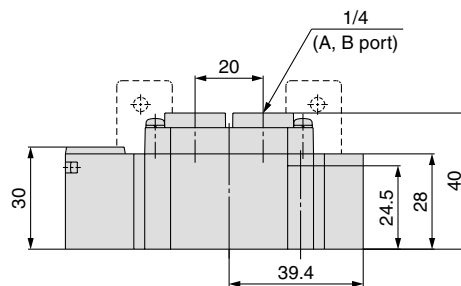
### 2 position single SYA7120-C8, N9 C10, N11□(-F2)



### Foot bracket SYA7120-C8, N9 C10, N11□-F1



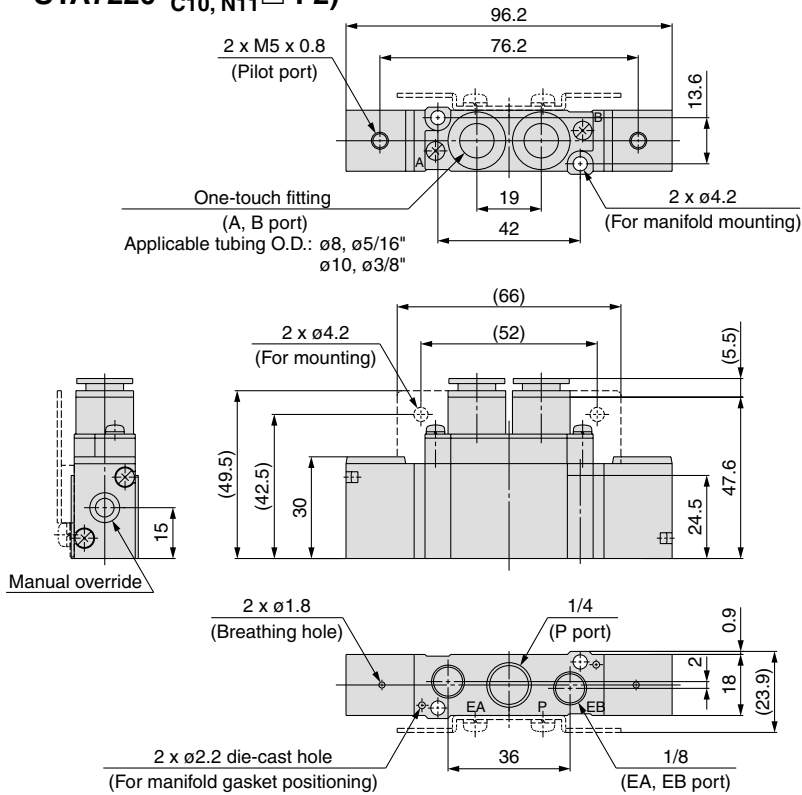
### SYA7120-02□(-F2)



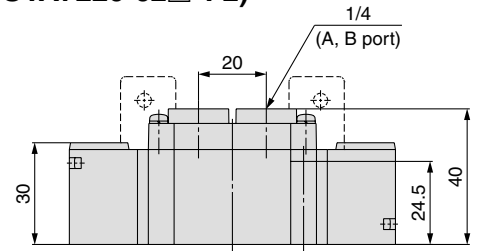
## Dimensions/Series SYA7000: Body Ported

### 2 position double

**SYA7220-<sup>C8, N9</sup><sub>C10, N11</sub>□-F2)**

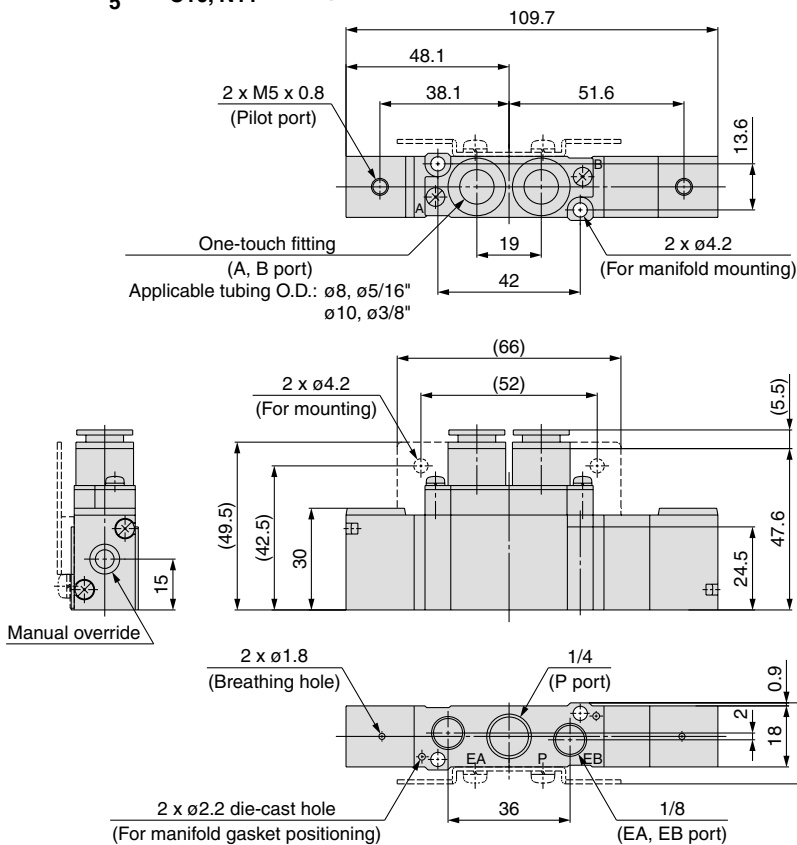


**SYA7220-02□-F2)**

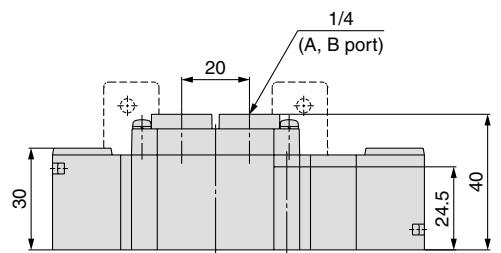


### 3 position closed center / exhaust center / pressure center

**SYA7<sup>3</sup>/<sub>4</sub>20-<sup>C8, N9</sup><sub>C10, N11</sub>□-F2)**



**SYA7<sup>3</sup>/<sub>4</sub>20-02□-F2)**



SYA

SYJA

VZA

VFA

VFRA

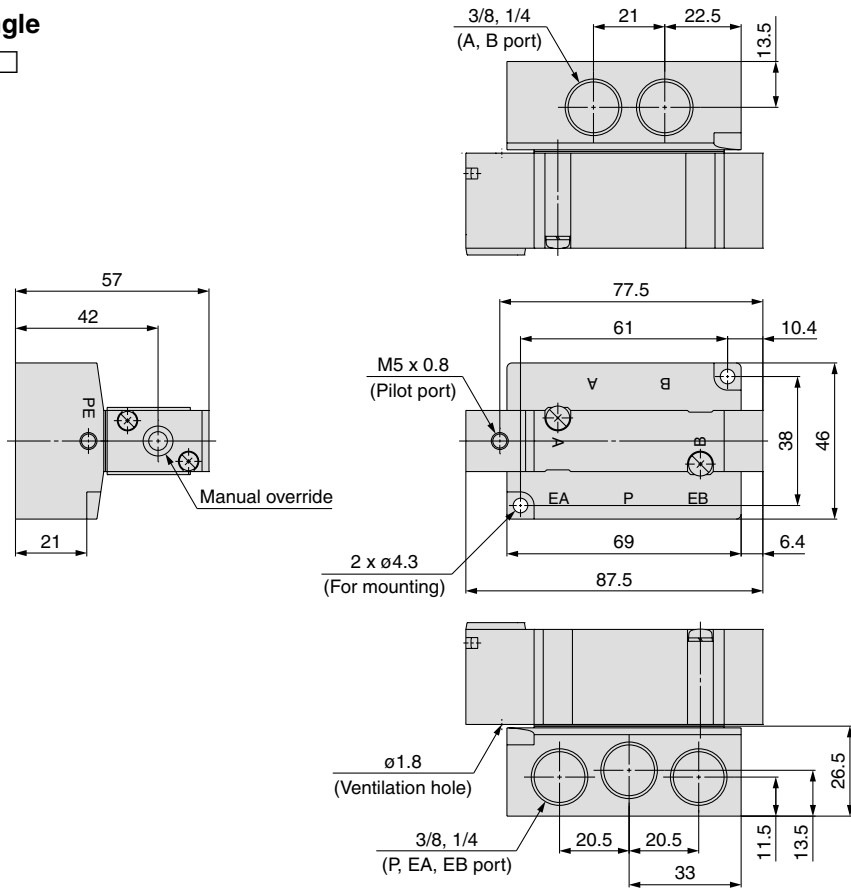
V□A

# Series SYA3000/5000/7000

## Dimensions/Series SYA7000: Base Mounted

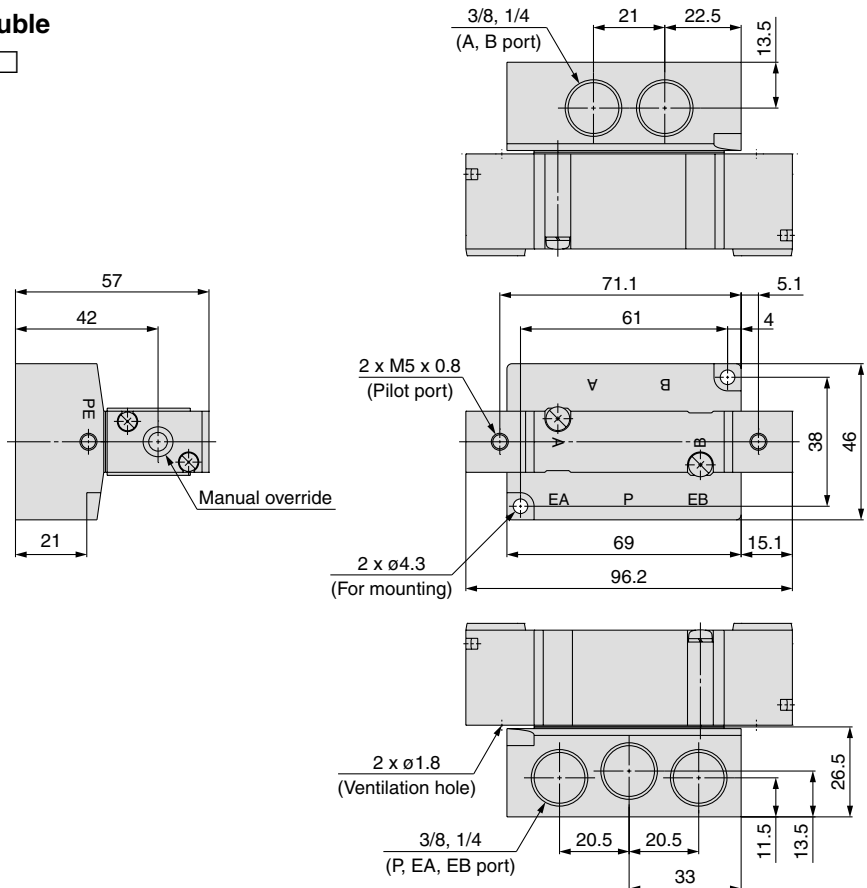
### 2 position single

SYA7140-<sup>02</sup>/<sub>03</sub> □



### 2 position double

SYA7240-<sup>02</sup>/<sub>03</sub> □

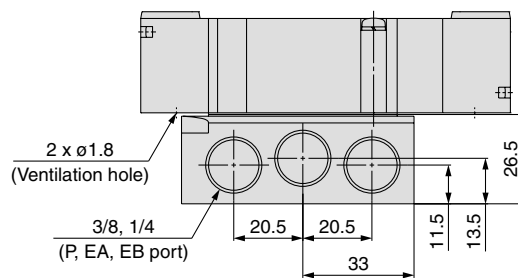
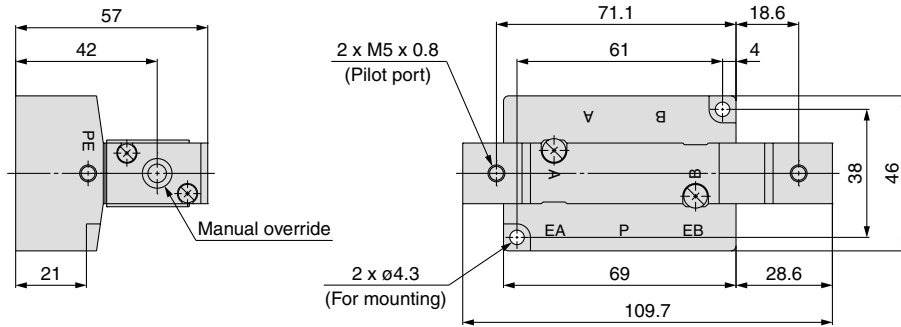
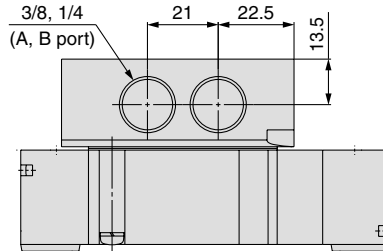


# 5 Port Air Operated Valve *Series SYA3000/5000/7000*

## Dimensions/Series SYA7000: Base Mounted

3 position closed center / exhaust center / pressure center

SYA7<sup>3</sup><sub>4</sub>40-<sup>02</sup><sub>03</sub> □



- SYA
- SYJA
- VZA
- VFA
- VFRA
- V□A