

# 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
O1	1/8	SYA5000
O2	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	SYA5000
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"	SYA5000
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

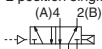
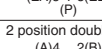
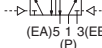
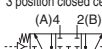
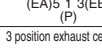
**Body ported** SYA 5 1 20 - C6 [ ] - [ ]

**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	
O1	1/8 With sub-plate	SYA3000
O2	1/4 With sub-plate	SYA5000
O2	1/4 With sub-plate	SYA7000
O3	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 <sup>Note 1)</sup> MPa	2 position single	$(0.7 \times P + 0.1)$ 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	

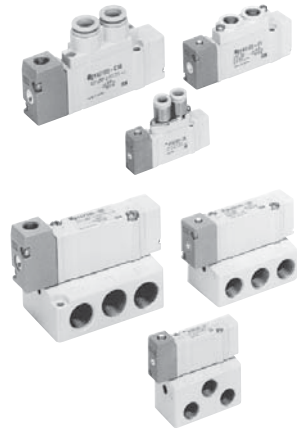
Note 1) In case of single type, be certain that pressure within operating pressure range be supplied to supply port, because return pressure is introduced from supply port {1(P)} for activation.

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 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<sup>3</sup><sub>5</sub><sup>7</sup>** Fill the same as SS5Y<sup>3</sup><sub>5</sub><sup>7</sup>.  
 (Refer to pages 324, 376 and 422.)

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

<Example>

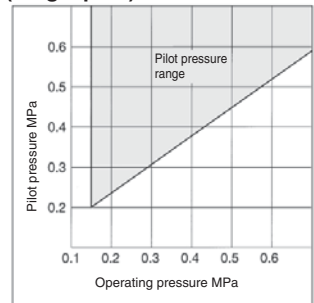
- SS5YA5-42-03-02** 1 set (Type 42, 3 station manifold base part no.)
- \* SYA5140 1 set (Single air operated valve part no.)
- \* SYA5240 1 set (Double air operated valve part no.)
- \* SY5000-26-20A 1 set (Blanking plate assembly part no.)

⊣ 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)



- SYA
- SYJA
- VZA
- VFA
- VFRA
- VPA4
- VSA4
- SYJA
- VZA
- VTA
- VGA
- VPA
- VPA3

# 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						Weight (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	Exhaust center											0.48	0.46	0.13	0.47	0.41 [0.37]	0.13 [0.12]	39								
		Pressure center											0.47	0.42	0.13	0.47 [0.44]	0.41 [0.37]	0.13 [0.12]									
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	Exhaust center																		0.59			0.28	0.15	0.59	0.30	0.15	48
	Pressure center																		0.63			0.35	0.16	0.42 [0.41]	0.34 [0.37]	0.11 [0.11]	
2 position	Single		M5 x 0.8	M5 x 0.8	C6 (One-touch fitting for ø6)	0.76 [0.46]	0.42 [0.34]	0.21 [0.12]	0.59	0.29	0.15	40															
	Double											42															
3 position	Exhaust center											0.76							0.30			0.19	0.65	0.39	0.17	44	
	Pressure center											0.76							0.55			0.24	0.60	0.33	0.16		
2 position	Single	M5 x 0.8										M5 x 0.8	C6 (One-touch fitting for ø6)	0.65	0.32	0.16	0.64 [0.42]	0.31 [0.36]	0.17 [0.11]	40							
	Double																			42							
3 position	Exhaust center																			0.77 [0.49]	0.34 [0.43]	0.21 [0.15]	0.61	0.34	0.16	44	
	Pressure center																										

Note) [ ]: 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>						Weight <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	Exhaust center									0.77	0.28	0.18	0.85	0.30	0.19	73 (38)							
		Pressure center									0.73	0.31	0.18	1.1 [0.55]	0.26 [0.52]	0.24 [0.16]								
2 position	Single	M5 x 0.8									1/8	1.2 [0.51]	0.24 [0.45]	0.29 [0.14]	0.89	0.47		0.24	40					
	Double																		42					
3 position	Exhaust center																0.76		0.30	0.19	0.65	0.39	0.17	44
	Pressure center																0.76		0.55	0.24	0.60	0.33	0.16	

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 P, EA, EB, A, B		Flow characteristics						Weight (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 Double	M5 x 0.8	1/8	1/8	C4			C6			58
					Cv			Cv			64
	3 position Closed center Exhaust center Pressure center				1/8			1/8			69
					Cv			Cv			69
SYA5□20-C4	2 position Single Double	M5 x 0.8	1/8	1/8	C4			C6			82
					Cv			Cv			87
	3 position Closed center Exhaust center Pressure center				1/8			1/8			93
					Cv			Cv			93
SYA5□20-C6	2 position Single Double	M5 x 0.8	1/8	1/8	C6			C8			76
					Cv			Cv			82
	3 position Closed center Exhaust center Pressure center				1/8			1/8			87
					Cv			Cv			87
SYA5□20-C8	2 position Single Double	M5 x 0.8	1/8	1/8	C8			C10			68
					Cv			Cv			74
	3 position Closed center Exhaust center Pressure center				1/8			1/8			79
					Cv			Cv			79

Note 1) [ ]: 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>						Weight <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 Double	M5 x 0.8	1/4	1/4	C4			C6			105 (42)
					Cv			Cv			110 (47)
	3 position Closed center Exhaust center Pressure center				1/4			1/4			115 (52)
					Cv			Cv			115 (52)

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 P, EA, EB, A, B		Flow characteristics						Weight (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 Double	M5 x 0.8	1/4	1/4	C4			C6			94
					Cv			Cv			100
	3 position Closed center Exhaust center Pressure center				1/4			1/4			110
					Cv			Cv			110
SYA7□20-C8	2 position Single Double	M5 x 0.8	1/4	1/4	C8			C10			100
					Cv			Cv			106
	3 position Closed center Exhaust center Pressure center				1/4			1/4			116
					Cv			Cv			116
SYA7□20-C10	2 position Single Double	M5 x 0.8	1/4	1/4	C10			C12			97
					Cv			Cv			103
	3 position Closed center Exhaust center Pressure center				1/4			1/4			113
					Cv			Cv			113

Note 1) [ ]: 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>						Weight <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 Double	M5 x 0.8	1/4	1/4	C4			C6			202 (73)
					Cv			Cv			210 (81)
	3 position Closed center Exhaust center Pressure center				1/4			1/4			218 (89)
					Cv			Cv			218 (89)
SYA7□40-03	2 position Single Double	M5 x 0.8	3/8	3/8	C6			C8			202 (73)
					Cv			Cv			210 (81)
	3 position Closed center Exhaust center Pressure center				3/8			3/8			218 (89)
					Cv			Cv			218 (89)

Note 1) [ ]: denotes the normal position.

Note 2) ( ): denotes without sub-plate.

SYA

SYJA

VZA

VFA

VFRA

VPA4

VSA4

SYJA

VZA

VTA

VGA

VPA

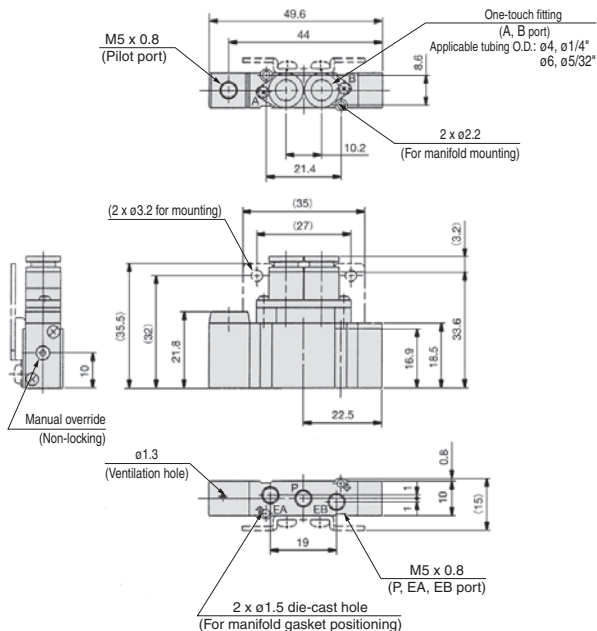
VPA3

# Series SYA3000/5000/7000

## Dimensions/Series SYA3000: Body Ported

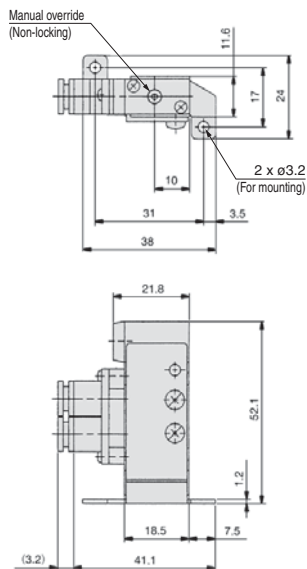
### 2 position single

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

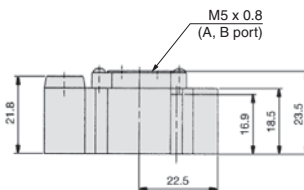


### Foot bracket

SYA3120-C4, N3  
C6, N7 -F1



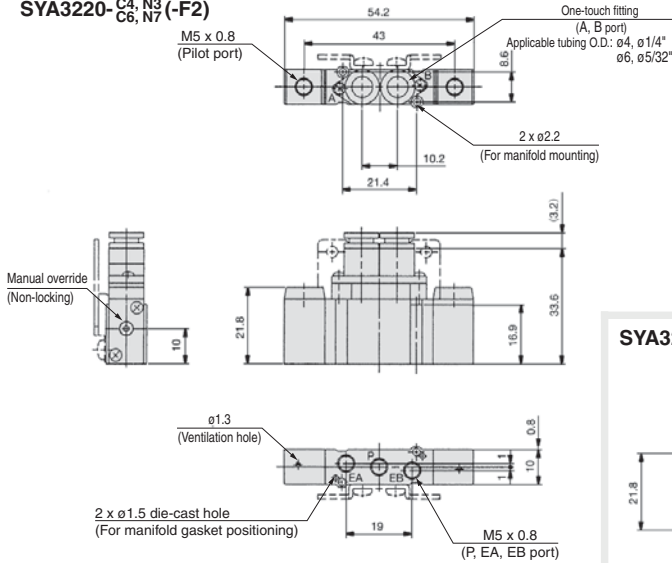
### SYA3120-M5



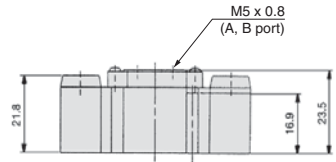
## Dimensions/Series SYA3000: Body Ported

### 2 position double

#### SYA3220-C4, N3 (-F2) C6, N7

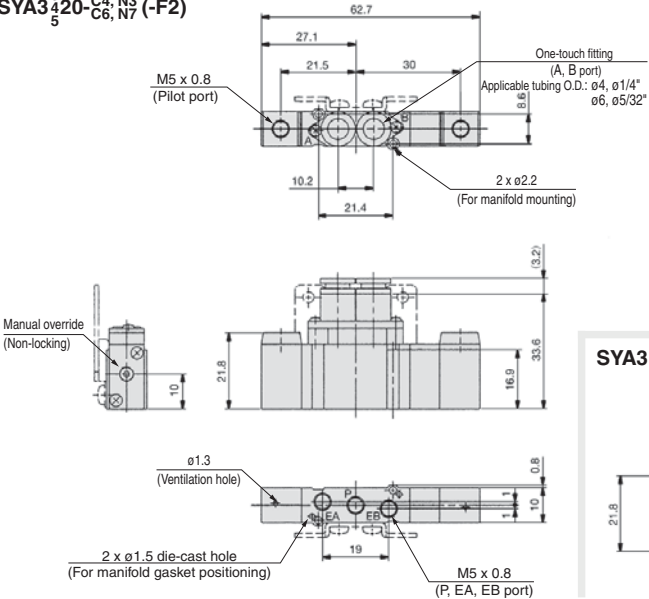


#### SYA3220-M5

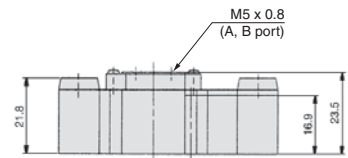


### 3 position closed center / exhaust center / pressure center

#### SYA3420-C4, N3 (-F2) C6, N7



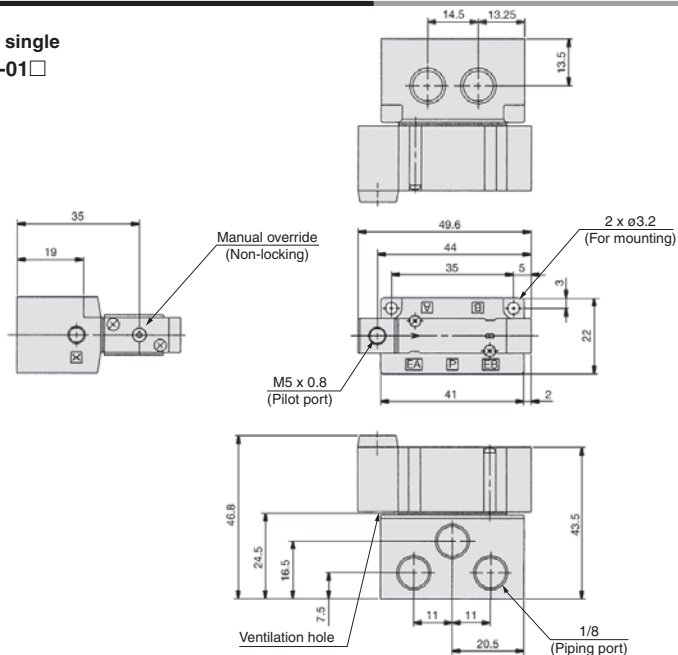
#### SYA3420-M5



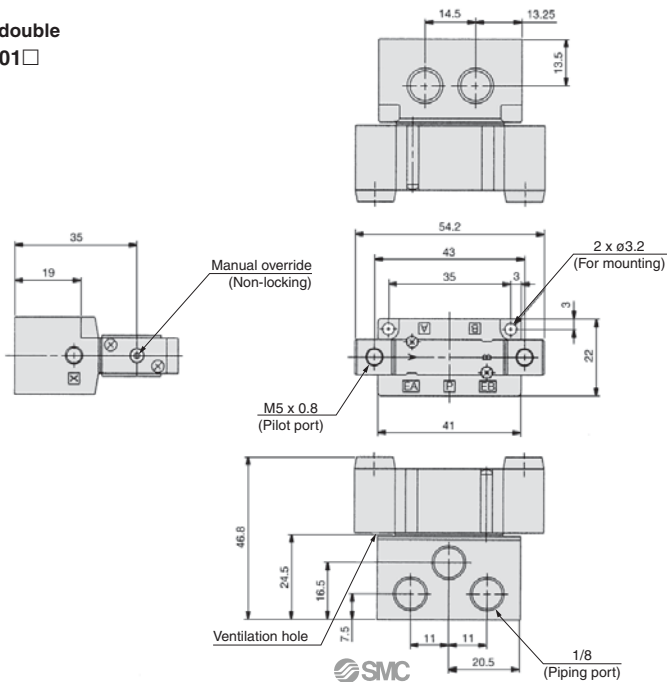
# Series SYA3000/5000/7000

## Dimensions/Series SYA3000: Base Mounted

2 position single  
SYA3140-01□



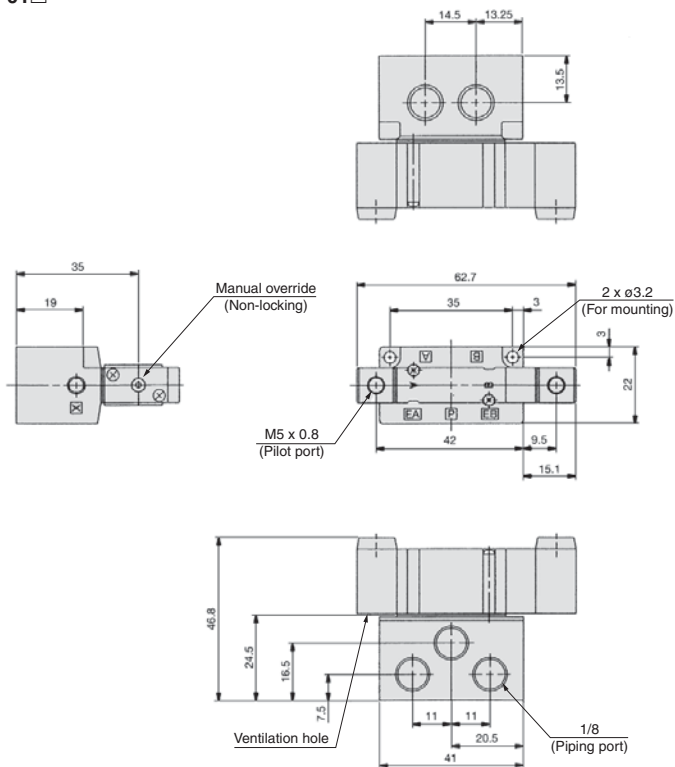
2 position double  
SYA3240-01□



**Dimensions/Series SYA3000: Base Mounted**

3 position closed center / exhaust center / pressure center

SYA3<sup>3</sup><sub>4</sub><sup>4</sup><sub>5</sub>40-01□



SYA
SYJA
VZA
VFA
VFRA
VPA4
VSA4
SYJA
VZA
VTA
VGA
VPA
VPA3

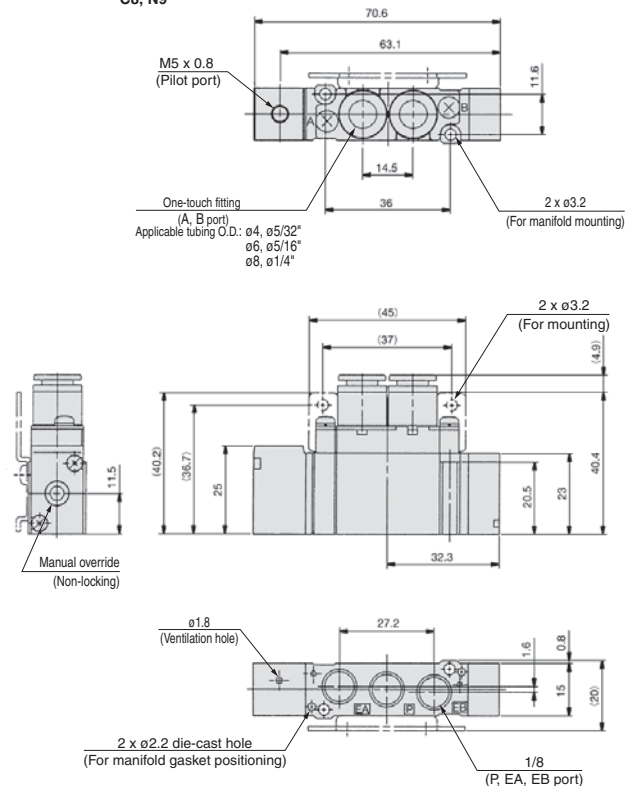


# Series SYA3000/5000/7000

## Dimensions/Series SYA5000: Body Ported

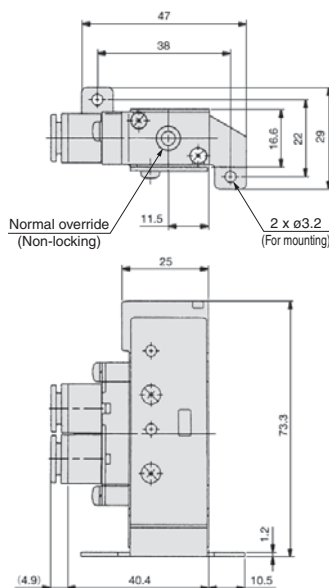
### 2 position single

C4, N3  
SYA5120-C6, N7 □(-F2)  
C8, N9

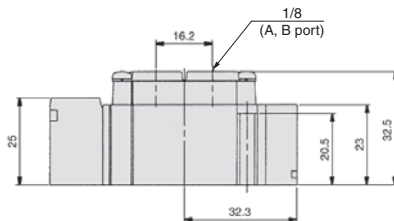


### Foot bracket

C4, N3  
SYA5120-C6, N7 □-F1  
C8, N9

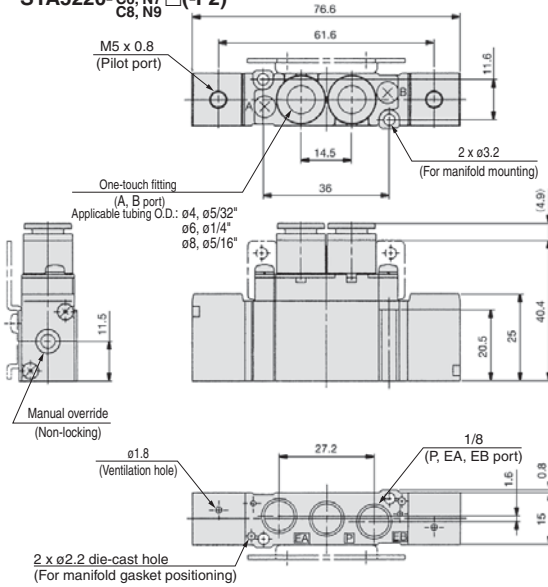


### SYA5120-01 □

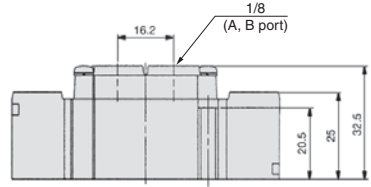


**Dimensions/Series SYA5000: Body Ported**

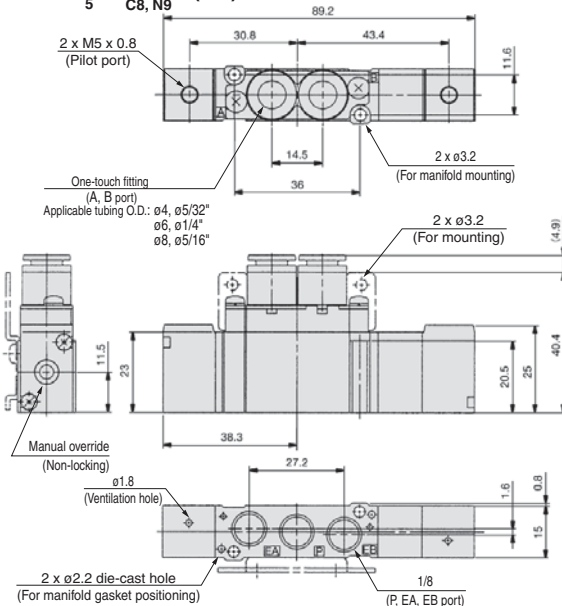
**2 position double**  
**SYA5220-01** □  
 C4, N3 (-F2)  
 C6, N7 □  
 C8, N9



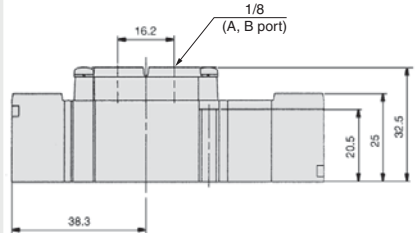
**SYA5220-01** □



**3 position closed center / exhaust center / pressure center**  
**SYA5420-01** □  
 C4, N3 (-F2)  
 C6, N7 □  
 C8, N9



**SYA5420-01** □

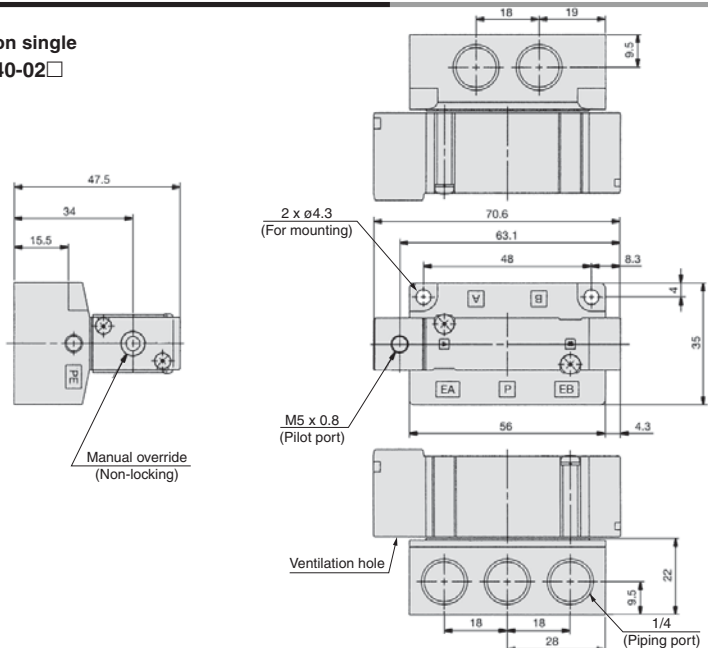


SYA
SYJA
VZA
VFA
VFRA
VPA4
VSA4
SYJA
VZA
VTA
VGA
VPA
VPA3

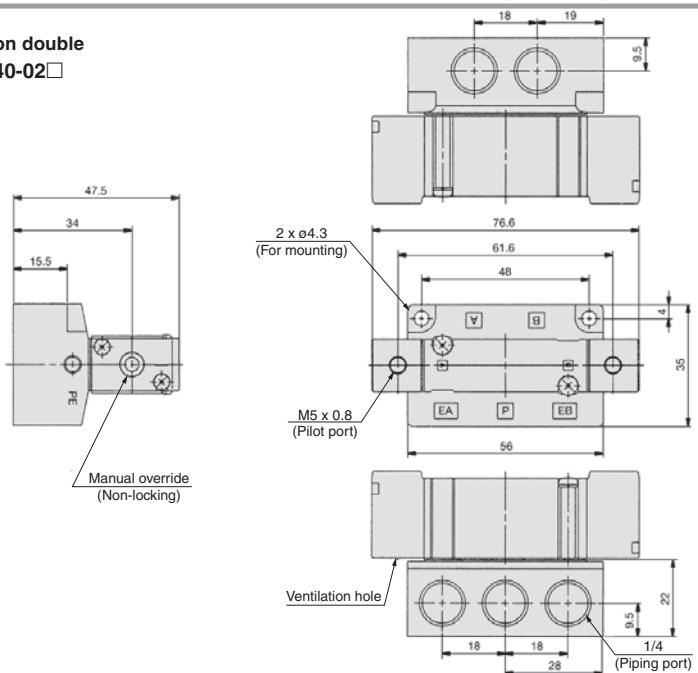
# Series SYA3000/5000/7000

## Dimensions/Series SYA5000: Base Mounted

### 2 position single SYA5140-02□



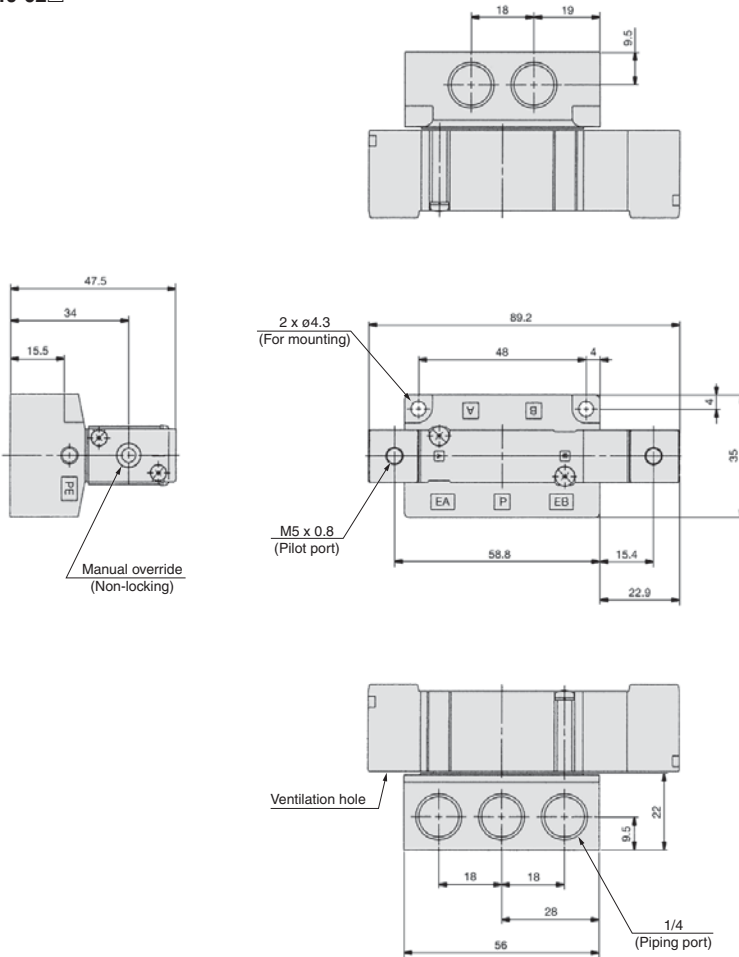
### 2 position double SYA5240-02□



**Dimensions/Series SYA5000: Base Mounted**

3 position closed center / exhaust center / pressure center

SYA<sup>3</sup><sub>5</sub>440-02□



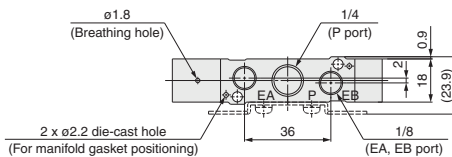
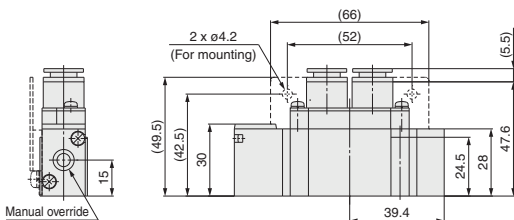
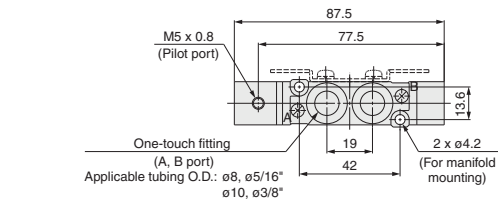
SYA
SYJA
VZA
VFA
VFRA
VPA4
VSA4
SYJA
VZA
VTA
VGA
VPA
VPA3

# Series SYA3000/5000/7000

## Dimensions/Series SYA7000: Body Ported

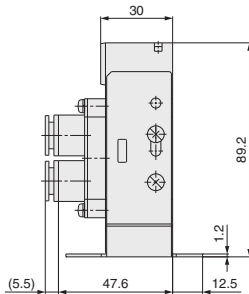
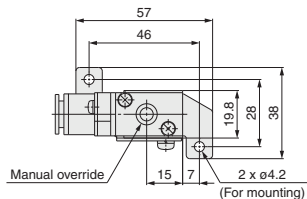
### 2 position single

SYA7120-C<sub>8, N9</sub>  
C<sub>10, N11</sub> □ (-F2)

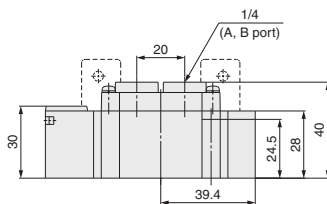


### Foot bracket

SYA7120-C<sub>8, N9</sub>  
C<sub>10, N11</sub> □ (-F1)



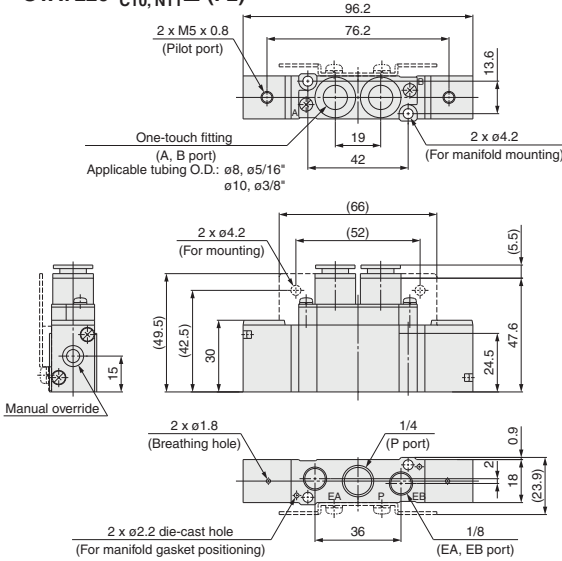
### SYA7120-02 □ (-F2)



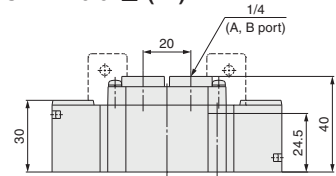
## Dimensions/Series SYA7000: Body Ported

### 2 position double

#### SYA7220-C<sub>8</sub>, N<sub>9</sub> □-(F2) C<sub>10</sub>, N<sub>11</sub> □-(F2)

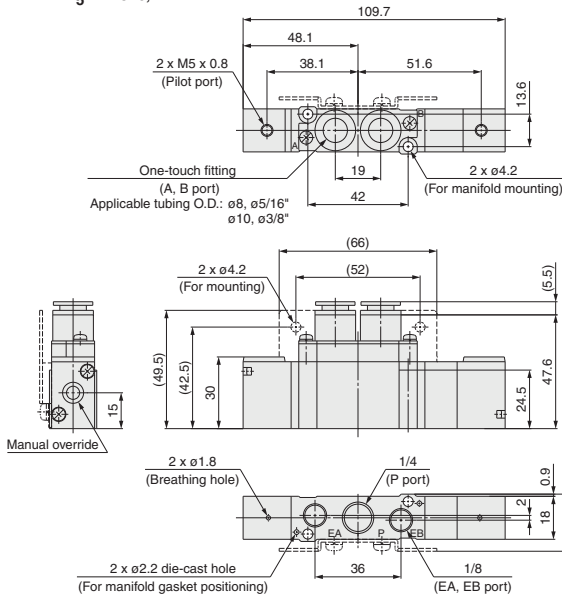


#### SYA7220-02 □-(F2)

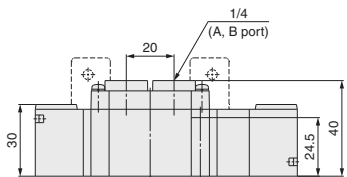


### 3 position closed center / exhaust center / pressure center

#### SYA7<sup>3</sup>/<sub>5</sub>20-C<sub>8</sub>, N<sub>9</sub> □-(F2) C<sub>10</sub>, N<sub>11</sub> □-(F2)



#### SYA7<sup>3</sup>/<sub>5</sub>20-02 □-(F2)



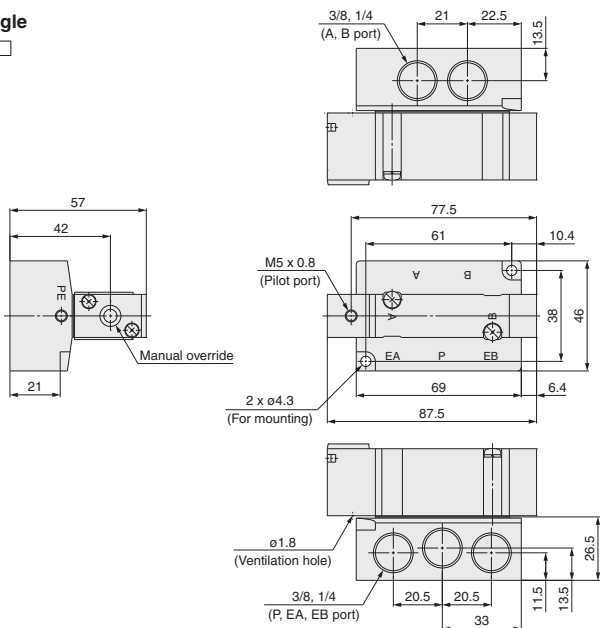
SYA
SYJA
VZA
VFA
VFRA
VPA4
VSA4
SYJA
VZA
VTA
VGA
VPA
VPA3

# Series SYA3000/5000/7000

## Dimensions/Series SYA7000: Base Mounted

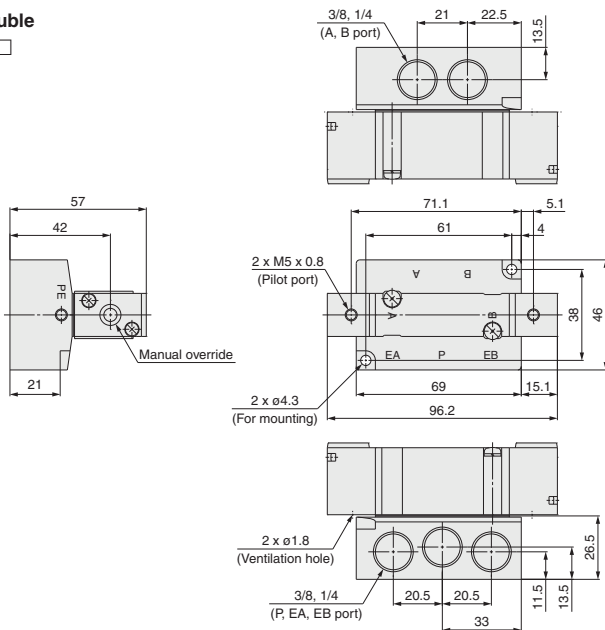
### 2 position single

SYA7140-<sup>02</sup>/<sub>03</sub> □



### 2 position double

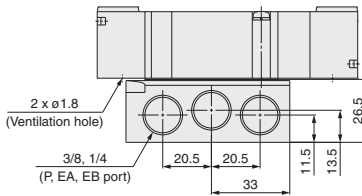
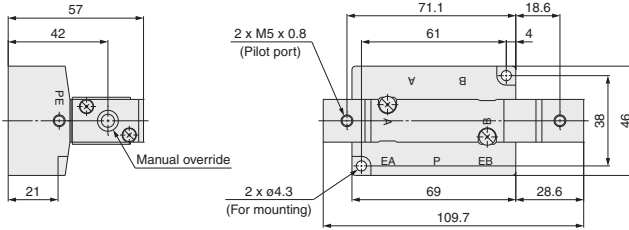
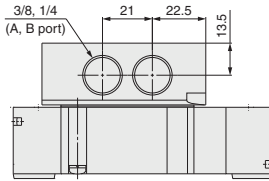
SYA7240-<sup>02</sup>/<sub>03</sub> □



**Dimensions/Series SYA7000: Base Mounted**

3 position closed center / exhaust center / pressure center

SYA<sub>3</sub>7<sub>5</sub>40-02-03 □



SYA
SYJA
VZA
VFA
VFRA
VPA4
VSA4
SYJA
VZA
VTA
VGA
VPA
VPA3