

5 Port Operated Valve Series SYA3000/5000/7000

Features

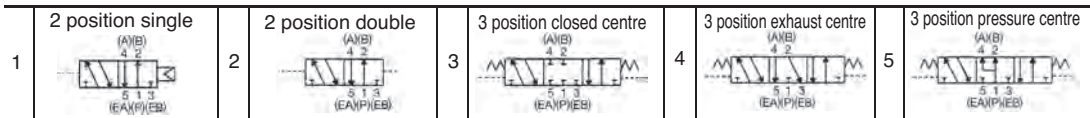
- Modular 5 port air pilot valves.
- Competitive flow figures.
- Choice of body ported or base mounted.
- May be mixed with solenoid operated versions.
- Threaded or one-touch fitting cylinder ports.



Body ported

Base mounted

Symbols



How to Order

Series	
3	SYA3000
5	SYA5000
7	SYA7000

Body ported SYA **5** **1** 20 — **C6** **F**

Base mounted SYA **5** **1** 40 — **01F**

A, B port size		Thread piping	
Body ported valve	Symbol	Port size	Applicable series
	M5	M5	SYA3000
	01	1/8	SYA5000
	02	1/4	SYA7000

One-touch fitting (Metric size)			
Body ported valve	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	

P, R port thread type
F G
 Not M5 thread piping.

Type of actuation		
1	2 position single	
2	2 position double	
3	3 position closed centre	
4	3 position exhaust centre	
5	3 position pressure centre	

Port size		
Symbol	Port size	Applicable series
—	Without sub-plate	
01F	1/8 With sub-plate	SYA3000
02F	1/4 With sub-plate	SYA5000 SYA7000
03F	3/8 With sub-plate	SYA7000
00F	Without sub-plate G Thread pilot	SYA7000

Product Recommendation



Stocked items for fast delivery

SYA3120-C4	SYA3240	SYA5120-C4F	SYA5240	SYA5520-01F	SYA7220-C8F
SYA3120-C6	SYA3240-01F	SYA5120-C6F	SYA5320-01F	SYA7120-02F	SYA7240
SYA3120-M5	SYA3320-C6	SYA5120-C8F	SYA5320-C4F	SYA7120-C10F	SYA7320-02F
SYA3140	SYA3320-M5	SYA5140	SYA5320-C8F	SYA7120-C8F	SYA7340
SYA3220-C4	SYA3520-C6	SYA5220-01F	SYA5340	SYA7140	SYA7420-02F
SYA3220-C6	SYA3520-M5	SYA5220-C6F	SYA5420-01F	SYA7220-02F	SYA7440
SYA3220-M5	SYA5120-01F	SYA5220-C8F	SYA5440	SYA7220-C10F	SYA7520-02F



Accessories and Related Products

(Accessories)

Series AN - Silencers - page 556

(Related Products)

Series AC - Air Preparation - page 1076

Series TU - Tubing - page 1223

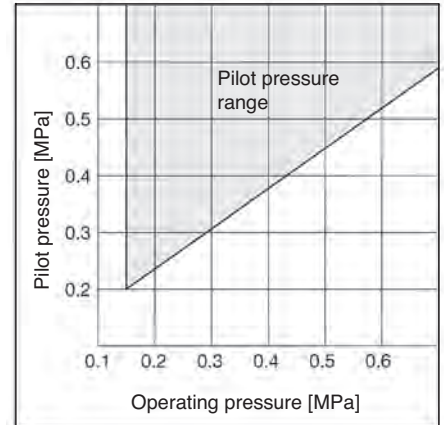
Series KQ2 - Fittings - page 1184

Accessories

Side mounting bracket and foot mounting brackets for body ported types are common to solenoid operated SY valves. See that section for details and part numbers.

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 MPa	2 position single	See the next chart	
	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	

**Pilot Pressure Range
(Single pilot)**

Flow Characteristics/Weight
Model/Series SYA3000

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) ^{Note 2)}	C [dm ³ /(s·bar)]	b	Cv	Q [L/min] (ANR) ^{Note 2)}	
SYA3□20-C4 (Body Ported)	2 position	Single	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	
	3 position	Closed centre				0.63	0.35	0.16	166	0.42	0.34	0.11	110	48
		Exhaust centre				0.76	0.42	0.21	210	0.59	0.29	0.15	149	

Note 1) Flow and mass differ slightly for M5 and C6 ported version.
 Note 2) These valves have been calculated according to ISO 6358.

Model/Series SYA5000

Valve model	Type of actuation		Pilot port size (Nominal size)	Port size		Flow characteristics ^{Note 1)}								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) ^{Note 2)}	C [dm ³ /(s·bar)]	b	Cv	Q [L/min] (ANR) ^{Note 2)}	
SYA5□20-C6 (Body Ported)	2 position	Single	M5	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	
	3 position	Closed centre				1.3	0.33	0.33	337	1.8	0.35	0.44	473	87
		Exhaust centre				1.7	0.31	0.42	435	1.7	0.33	0.44	441	

Note 1) Flow and mass differ slightly for 01, C4 and C8 ported version.
 Note 2) These valves have been calculated according to ISO 6358.
 Note 3) Valves in [] denote normal position.



Flow Characteristics/Weight

Model/Series SYA7000

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) ^{Note 2)}	C [dm ³ /(s-bar)]	b	Cv	Q [L/min] (ANR) ^{Note 2)}	
SYA7□20-C8	2 position	Single	1/8	P port: 1/4	C8 (One-touch fitting for ø8)	3.2	0.26	0.77	794	3.2	0.37	0.82	794	138
		Double				2.6	0.24	0.63	637	2.4	0.31	0.62	637	183
	3 position	Closed center		2.4		0.25	0.57	592	2.6	0.42	0.70	592	192	
		Exhaust center		3.3		0.28	0.78	829	2.2	0.34	0.60	829		

Valve model	Type of actuation		Pilot port size (Nominal size)	Port size	Flow characteristics ^{Note 1)}								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) ^{Note 2)}	C [dm ³ /(s-bar)]	b	Cv	Q [L/min] (ANR) ^{Note 2)}	
SYA7□40-02	2 position	Single	1/8	1/4	4.1	0.41	1.1	1123	4.1	0.29	1.0	1036	240
		Double			3.0	0.43	0.80	834	2.6	0.41	0.72	712	286
	3 position	Closed center			2.6	0.42	0.71	718	4.7	0.35	1.1	1235	294
		Exhaust center			5.3	0.39	1.3	1431	2.2	0.49	0.63	641	

Note 1) []: Flow and mass differ slightly for 02,C10 and 03 ported versions.

Note 2) These valves have been calculated according to ISO 6358.

Note

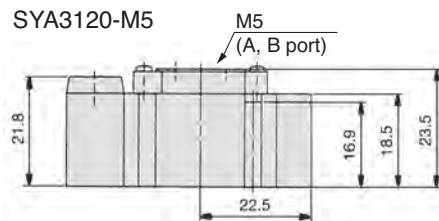
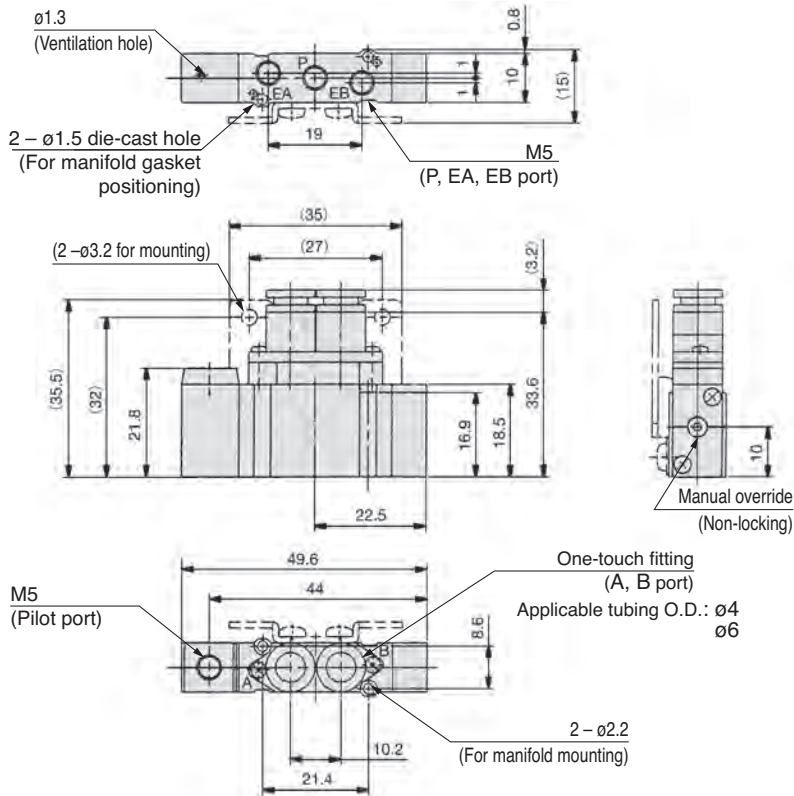
Manifold and single sub-bases:
 The SYA valves are the same manifolds and sub-bases as the solenoid operated SY series.
 See that series for information and ordering information.

Dimensions

Series SYA3000: Body Ported

2 position single

SYA3120-^{C4}/_{C6}



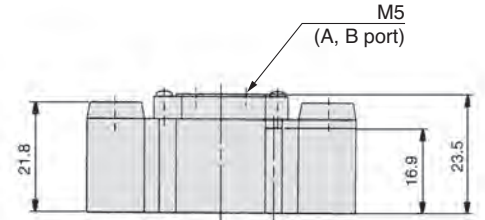
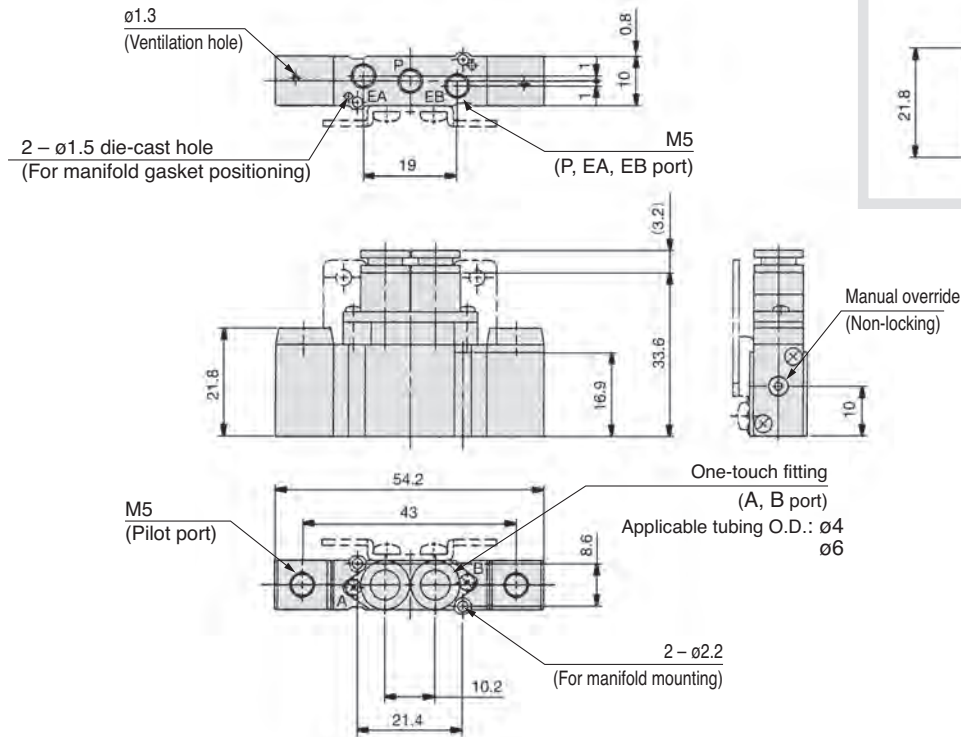
Dimensions

Series SYA3000: Body Ported

2 position double

SYA3220-^{C4}/_{C6}

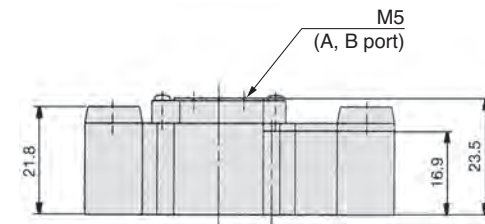
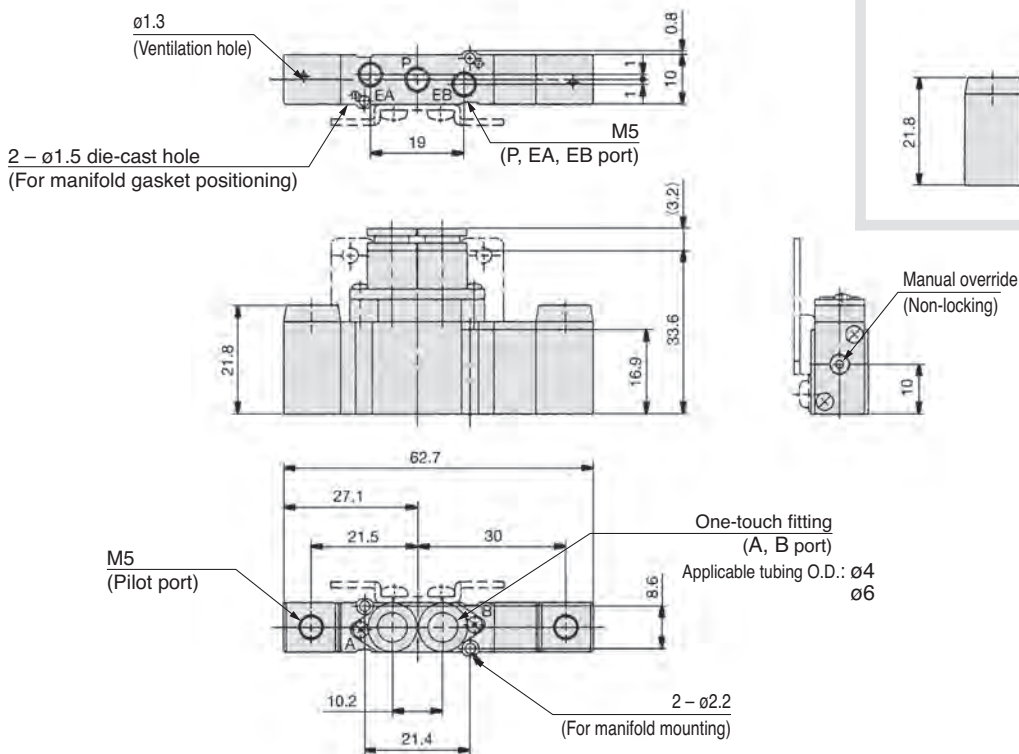
SYA3220-M5



3 position closed centre/exhaust centre/pressure centre

SYA3420-³/₅ C4/C6

SYA3420-M5

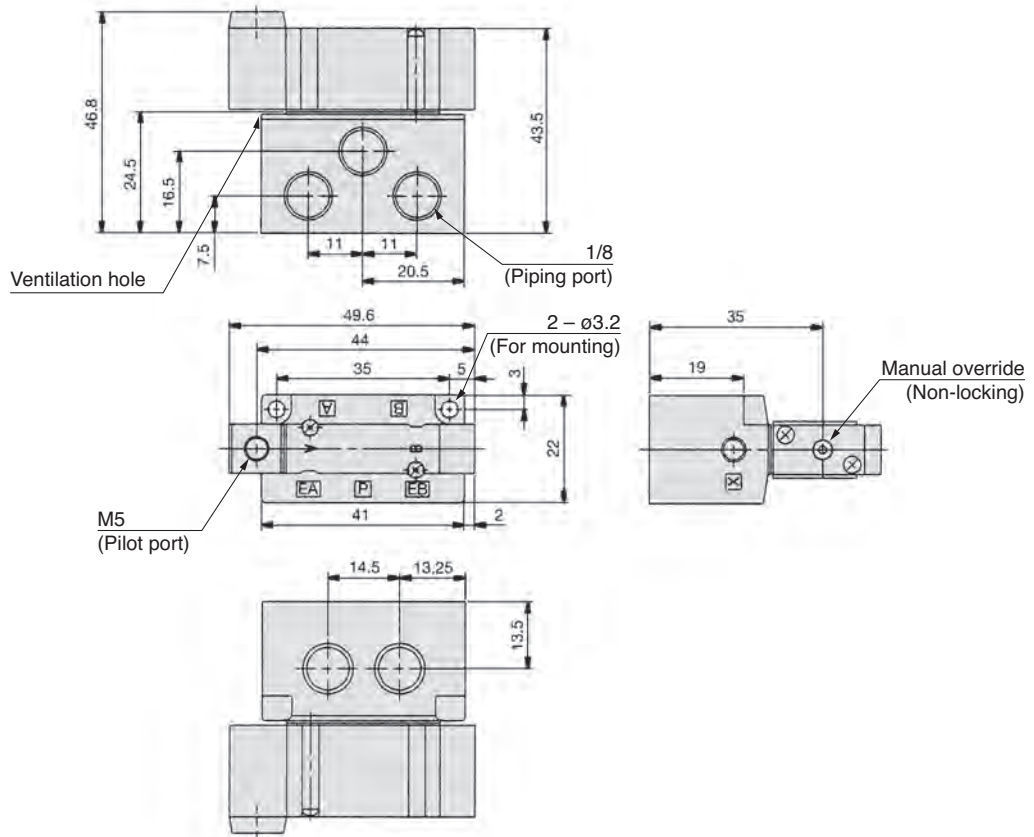


Dimensions

Series SYA3000: Base Mounted

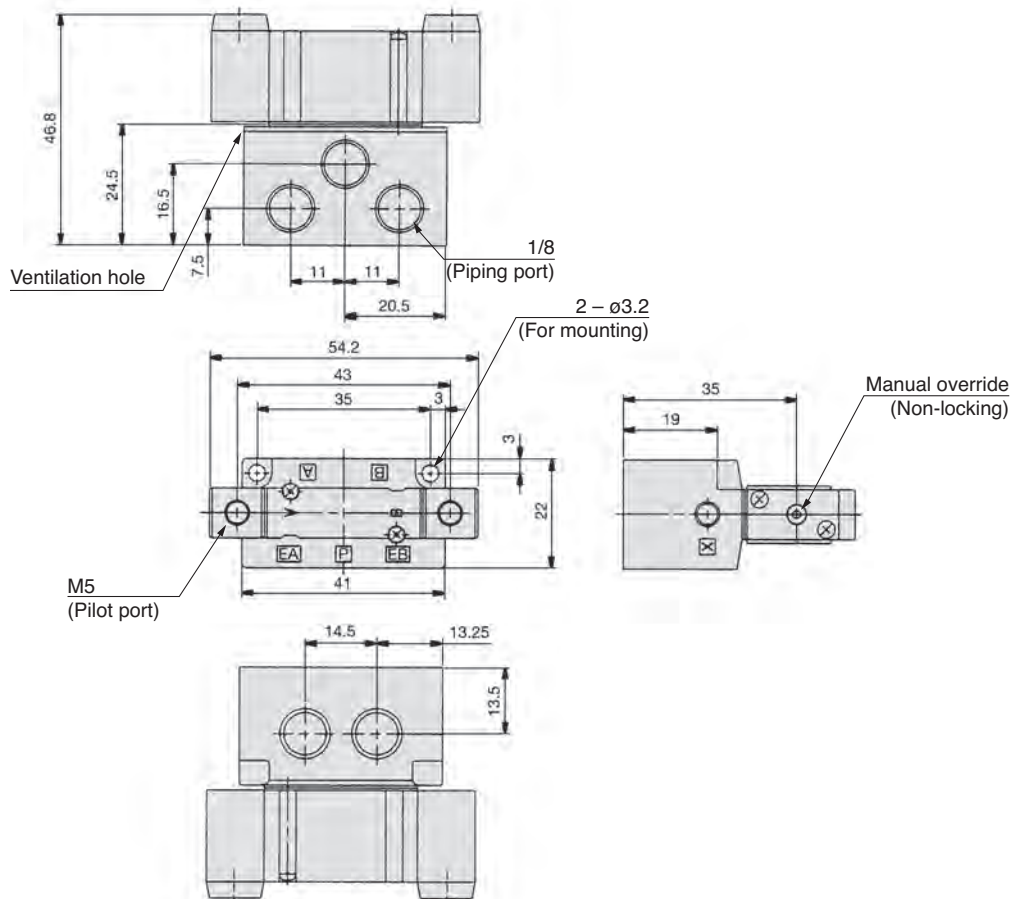
2 position single

SYA3140-01F



2 position double

SYA3240-01F

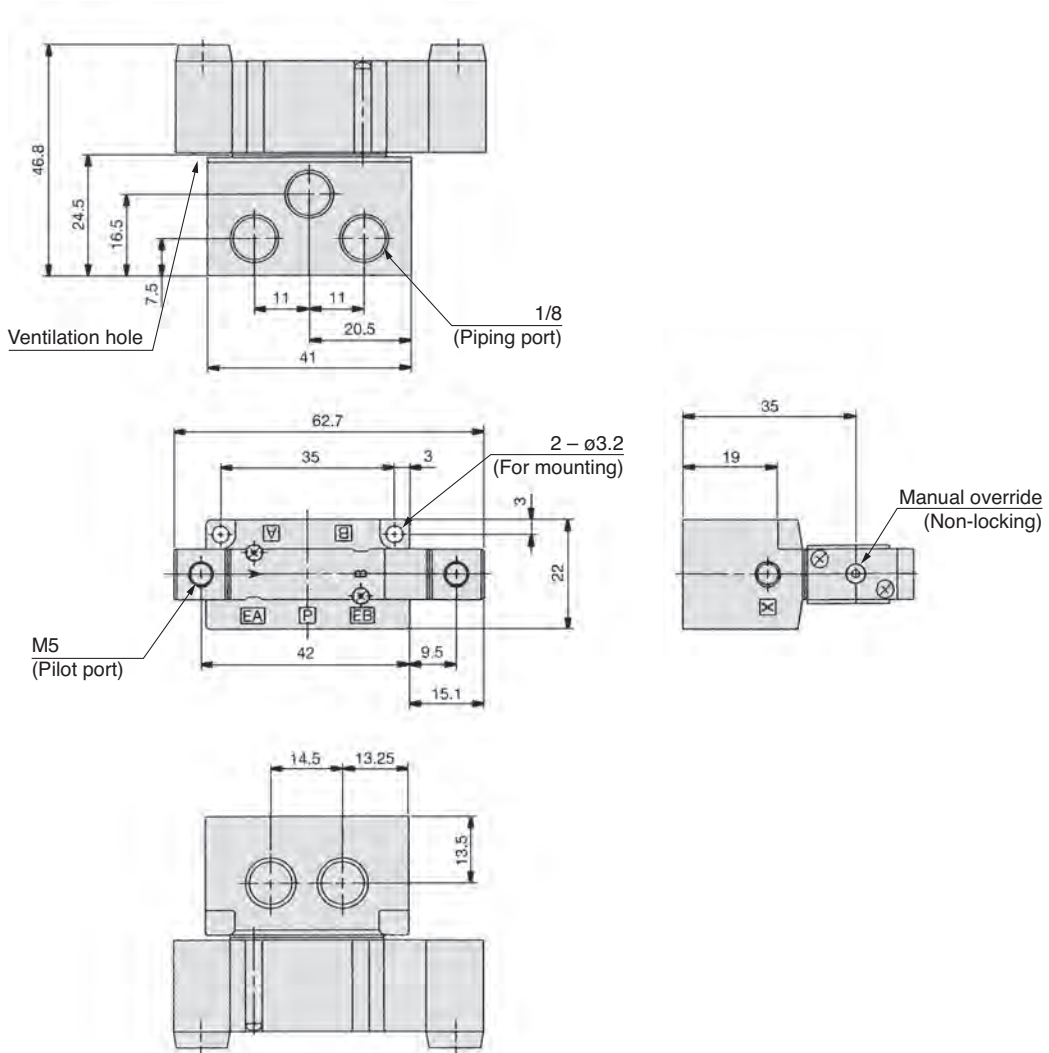


Dimensions

Series SYA3000: Base Mounted

3 position closed centre/exhaust centre/pressure centre

SYA3³440-01F₅



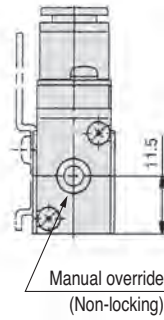
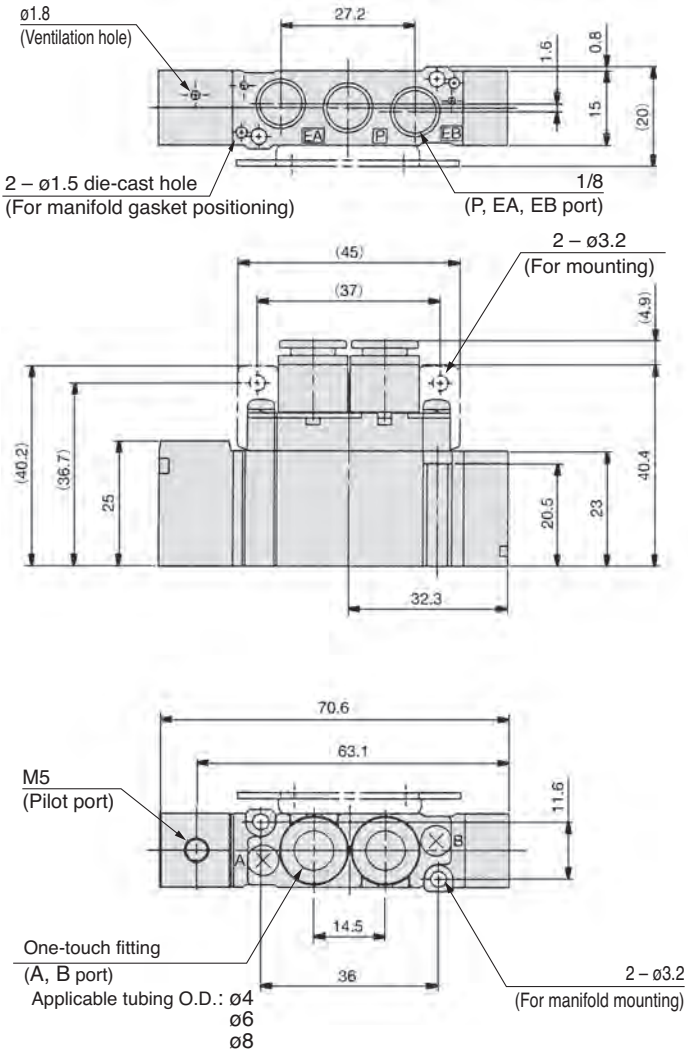
Dimensions

Series SYA5000: Body Ported

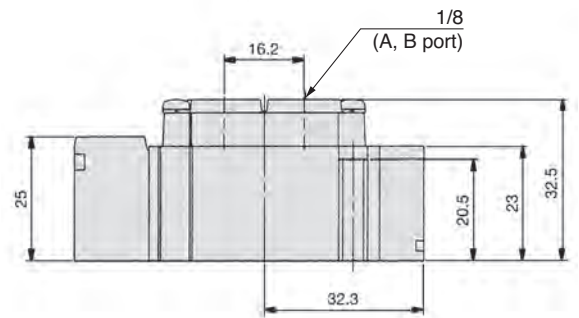
2 position single

SYA5120-
C4
C6 F
C8

Valves



SYA5120-01F

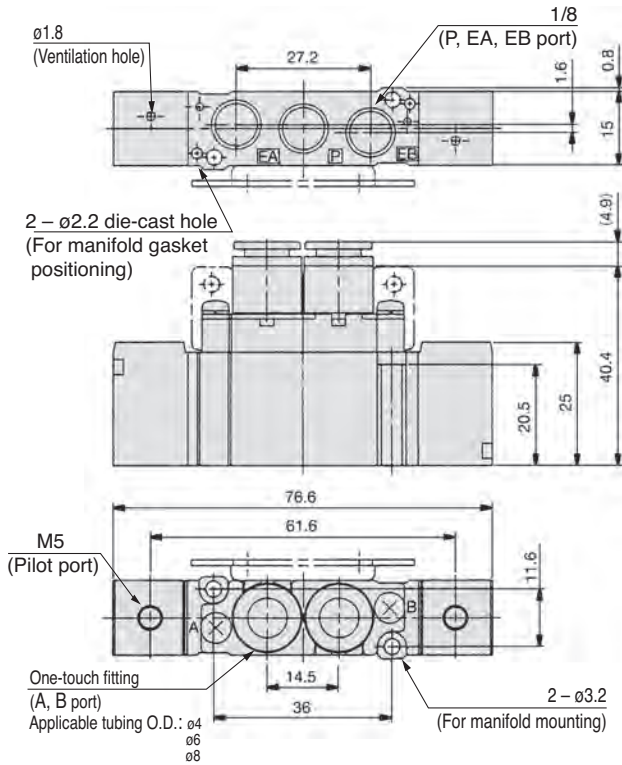


Dimensions

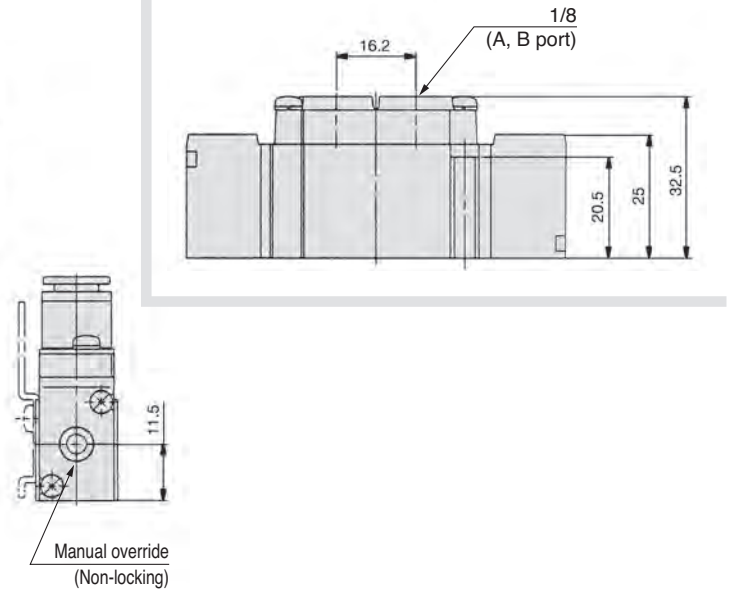
Series SYA5000: Body Ported

2 position double

SYA5220-
C4
C6 F
C8

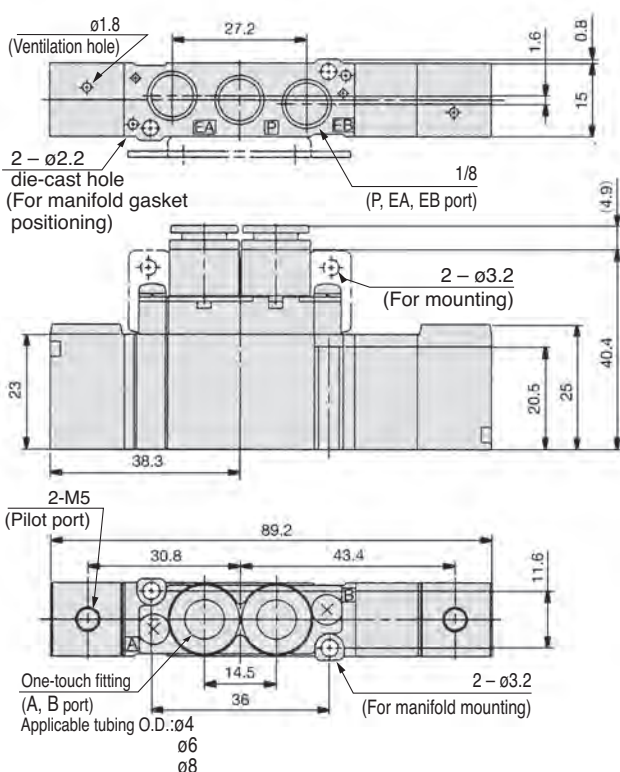


SYA5220-01F

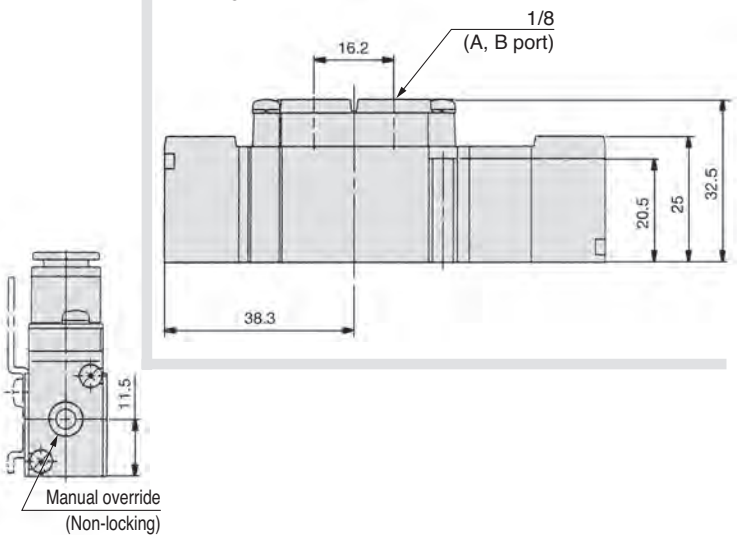


3 position closed centre/exhaust centre/pressure centre

SYA5420-
C4
C6 F
C8

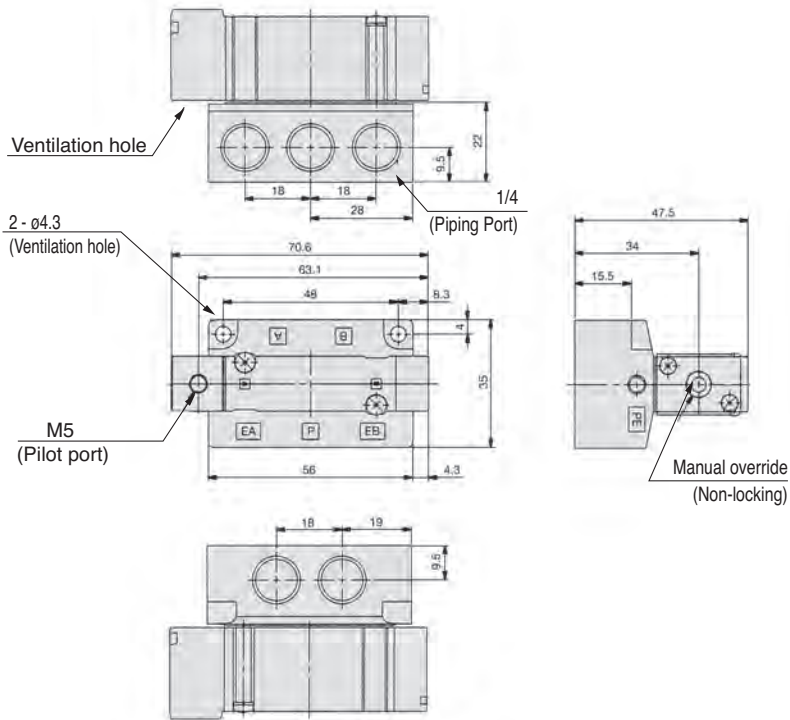


SYA5420-01F

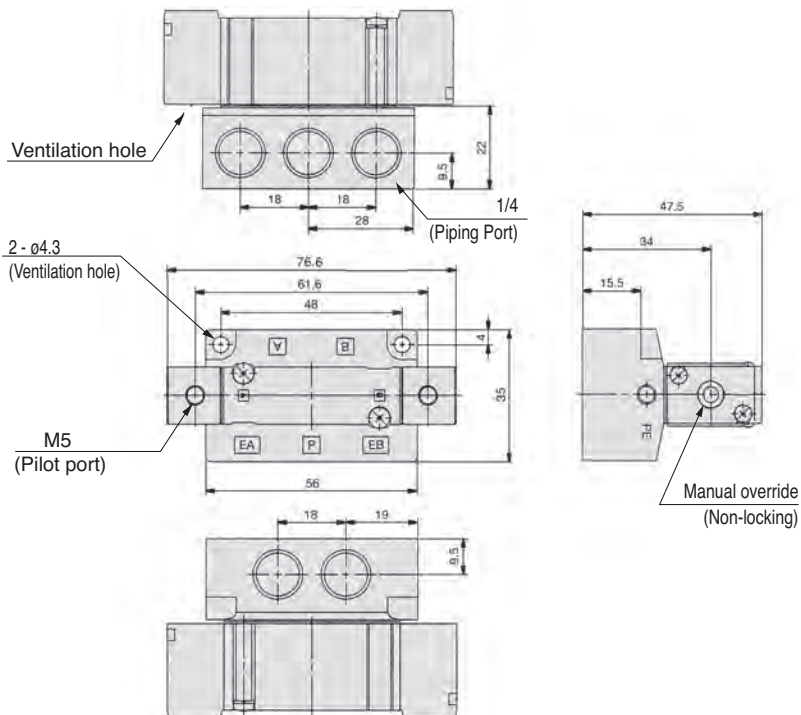


Dimensions

Series SYA5000: Base Mounted
 2 position single
 SYA5140-02F



2 position double
 SYA5240-02F

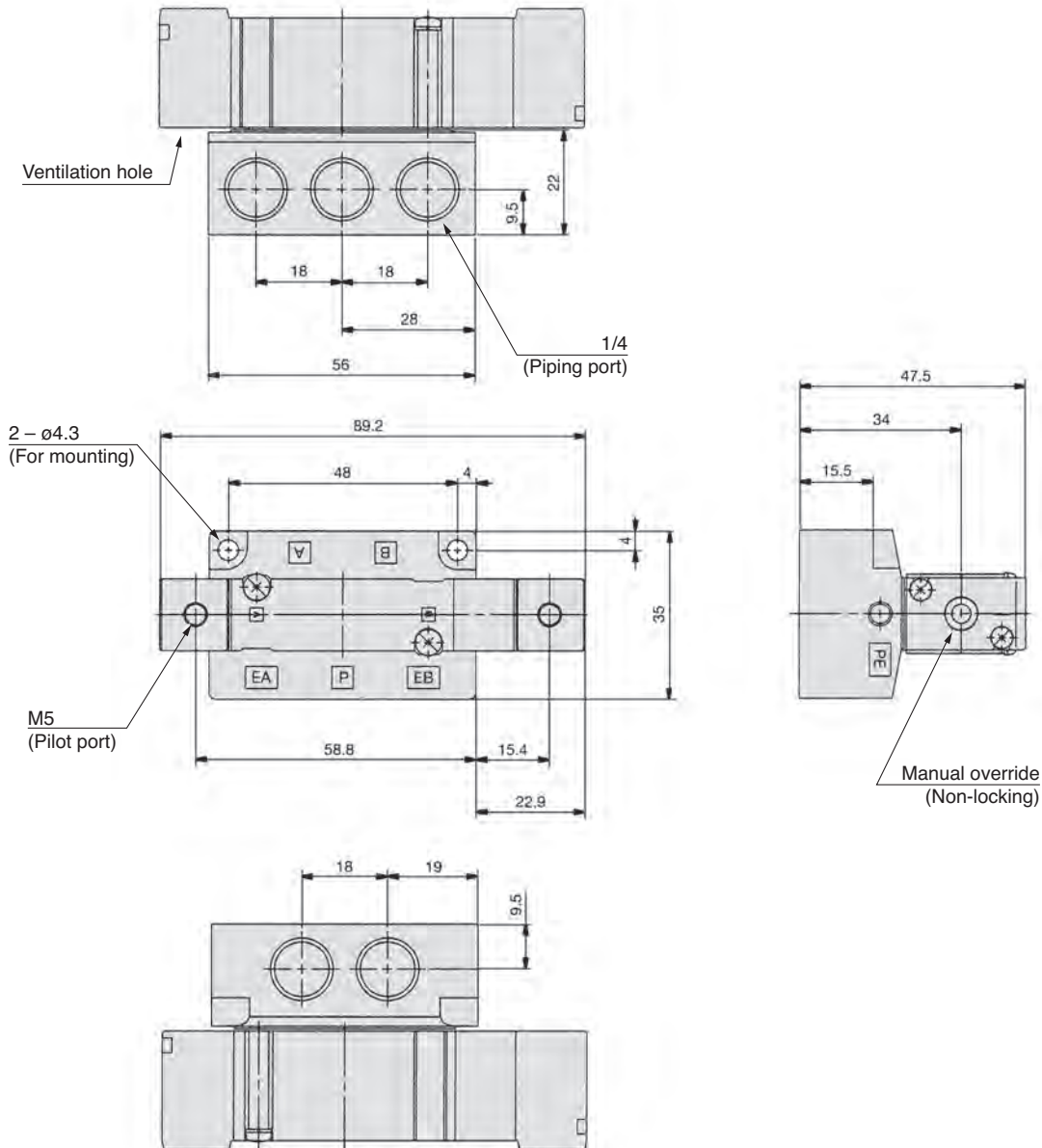


Dimensions

Series SYA5000: Base Mounted

3 position closed centre/exhaust centre/pressure centre

SYA5440-02F
3
5

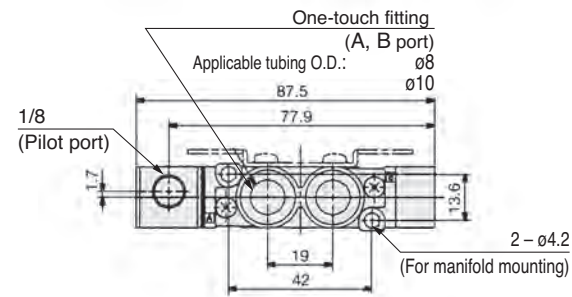
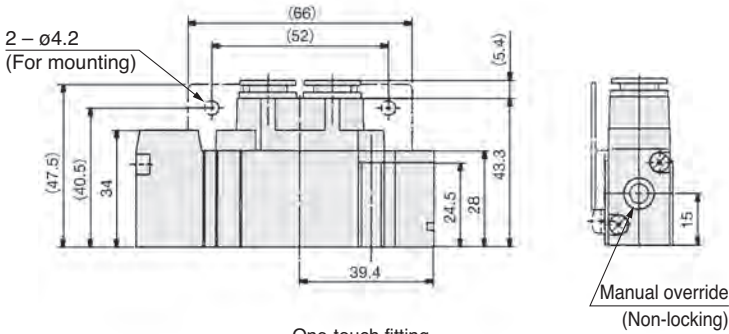
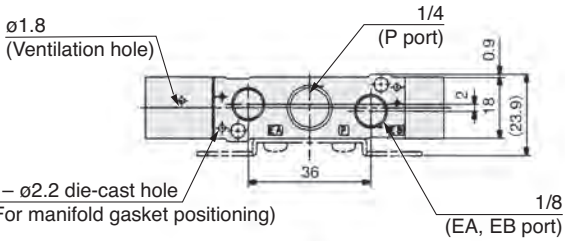


Dimensions

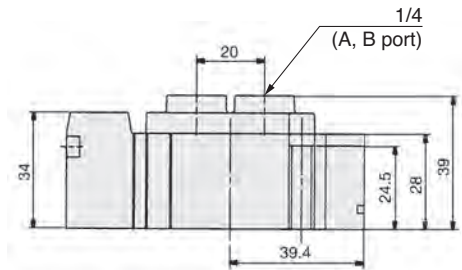
Series SYA7000: Body Ported

2 position single

SYA7120-^{C8}_{C10}F



SYA7120-02F

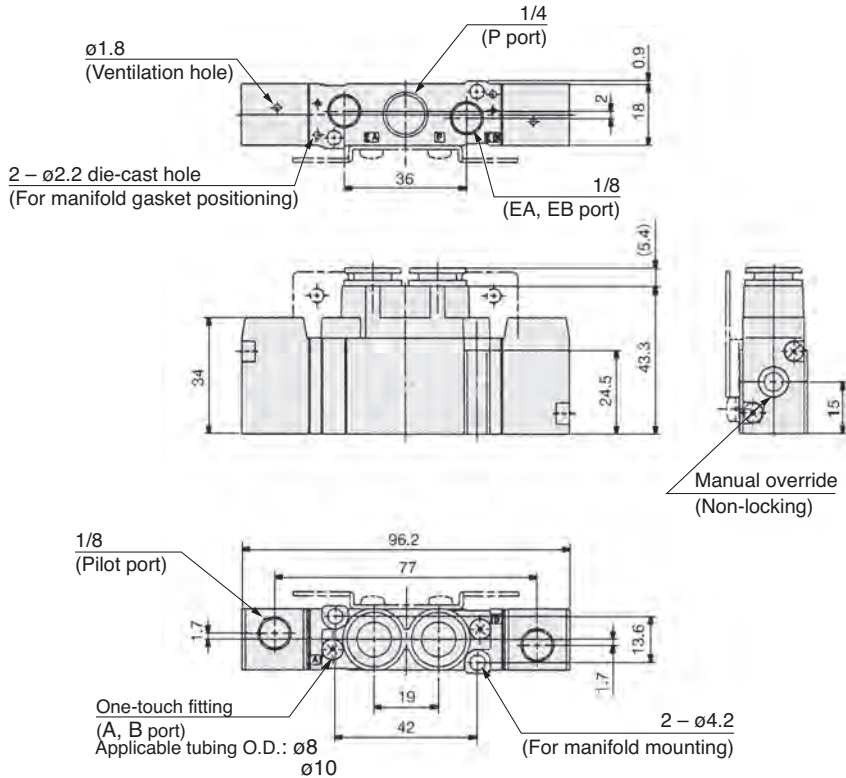


Dimensions

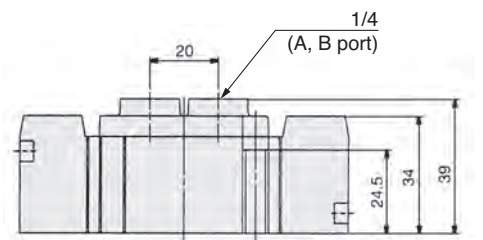
Series SYA7000: Body Ported

2 position double

SYA7220-^{C8}_{C10}F

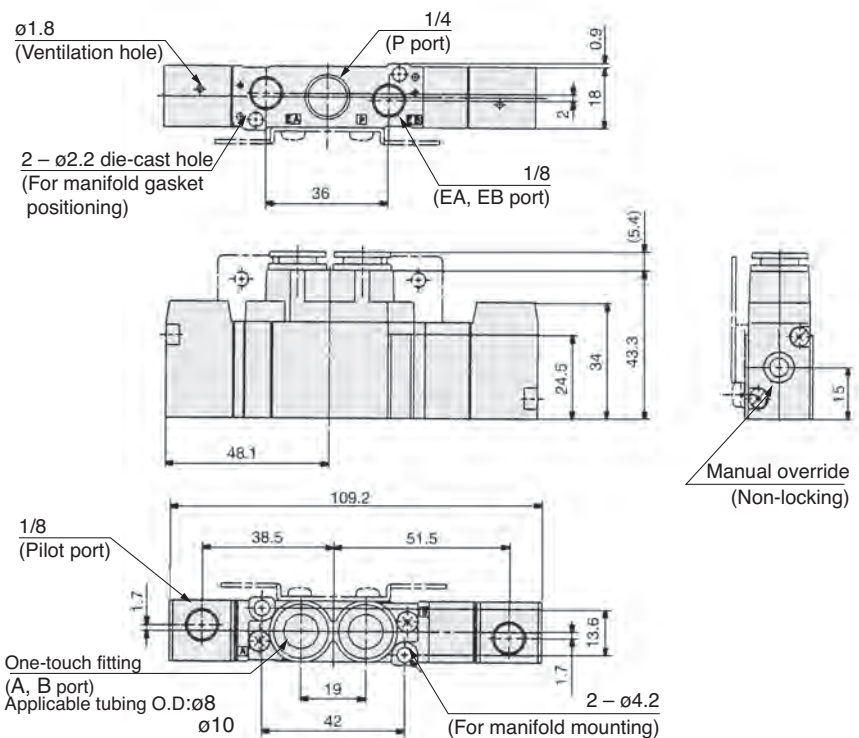


SYA7220-02F

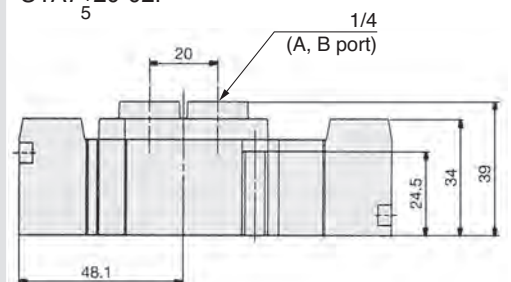


3 position closed centre/exhaust centre/pressure centre

SYA7420-³₅-^{C8}_{C10}F



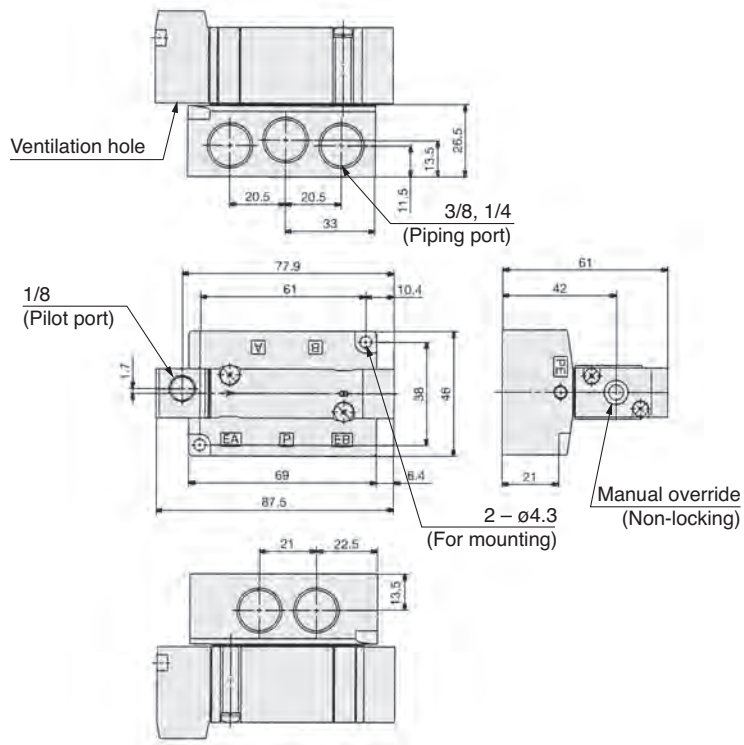
SYA7420-02F



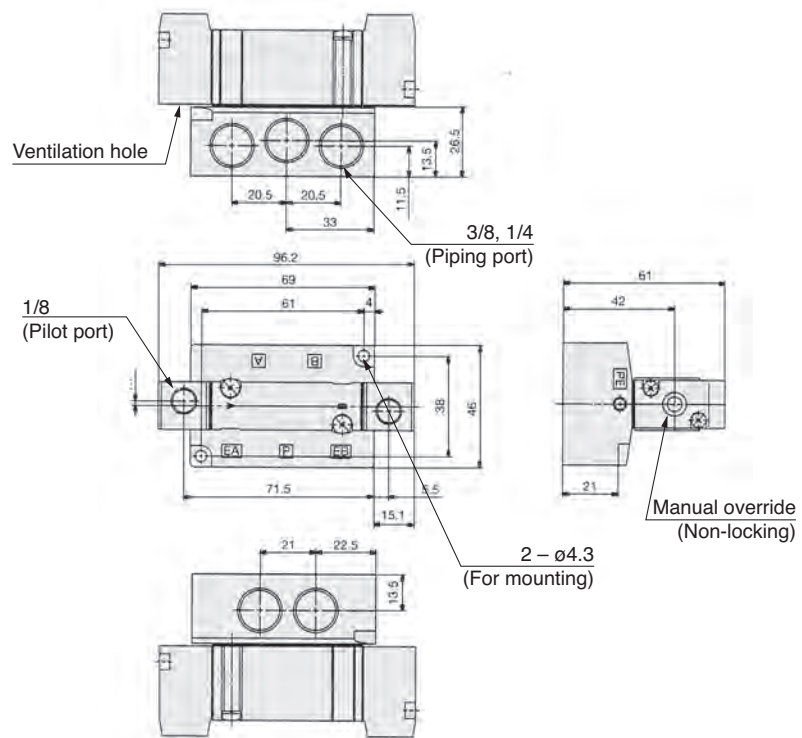
Dimensions

Series SYA7000: Base Mounted

2 position single
SYA7140-⁰²/₀₃F



2 position double
SYA7240-⁰²/₀₃F

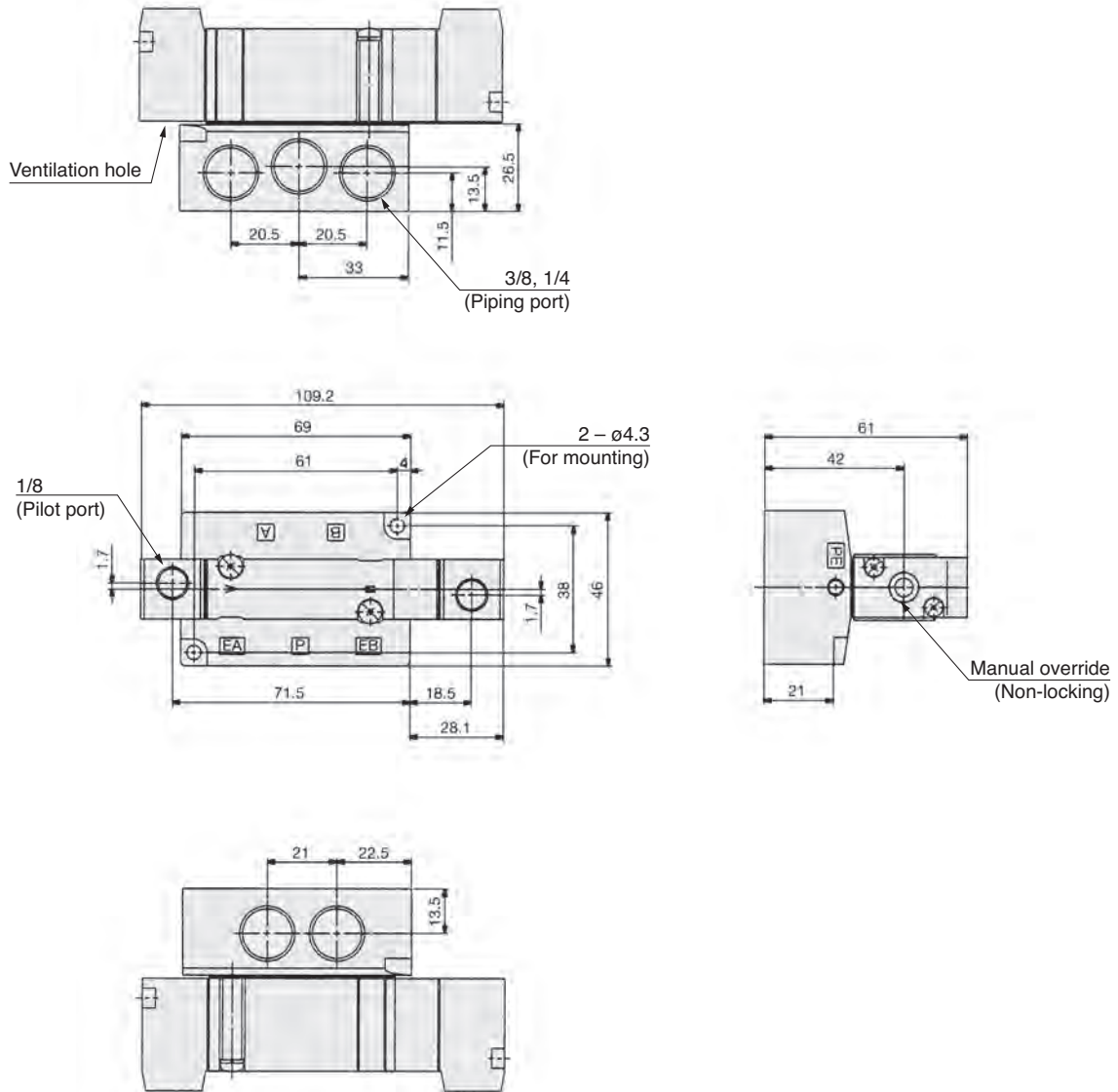


Dimensions

Series SYA7000: Base Mounted

3 position closed centre/exhaust centre/pressure centre

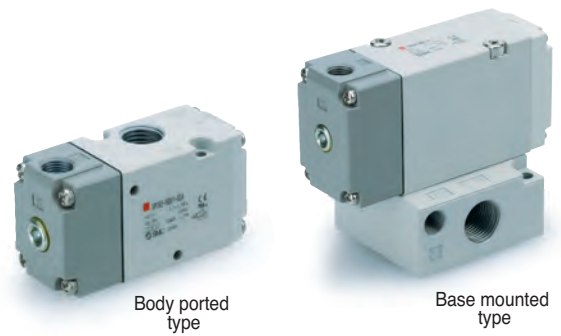
SYA7³440-⁰²₅F



3 Port Air Operated Valve Series VPA300/500/700

Features

- Changeable from normally closed type to normally open type.
- Body ported or base mounted.
- Suitable to use in vacuum applications up to -100 KPa



Body ported type

Base mounted type

How to Order

Body ported VPA 3 4 2 □ - 1 - 01F A

Base mounted VPA 3 4 4 □ - 1 - 01F A

Series

3	VPA300
5	VPA500
7	VPA700

Body option

—	Standard
V	For vacuum

Type of actuation

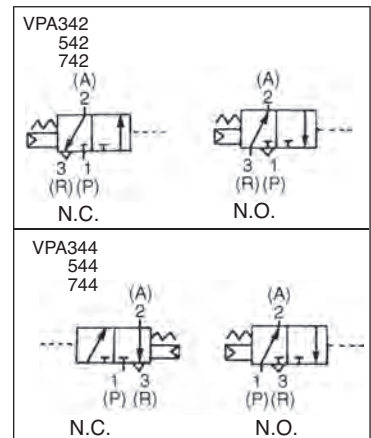
A	N.C. (Normally closed)
B	N.O. (Normally open)

Port size / Thread type

Symbol	Port size	VPA300	VPA500	VPA700
note) —	Without sub-plate	○	○	○
01	G1/8	○	—	—
02	G1/4	○	○	—
03	G3/8	—	○	○
04	G1/2	—	—	○

Note) Only available for base mounted valve VPA344, VPA544 and VPA744 with gasket and two mounting bolts.

Symbols



How to Order Sub-plate

VP 3 00 - 202 - 1 □

Series

3	VPA344
5	VPA544
7	VPA744

Thread type

F	G
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Port size

Symbol	VPA344	VPA544	VPA744
1	1/8	1/4	3/8
2	1/4	3/8	1/2



Accessories

Bracket with 2 screws

VPA342	VP300-227-1A
VPA542	VP500-227-1A
VPA742	VP700-227-1A

Product Recommendation



Stocked items for fast delivery (Body Ported Valves)

VPA342-1-01FA	VPA342-1-02FB	VPA342V-1-02FA	VPA542-1-03FA
VPA542V-1-03FA	VPA742-1-04FA	VPA342-1-02FA	



Stocked items for fast delivery (Base Mounted Valves)

VPA344-1-A	VPA544-1-03FA	VPA544-1-A
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Accessories and Related Products

- (Accessories)
Series AN - Silencers - page 556
- (Related Products)
Series AC - Air preparation - page 1076
Series TU - Tubing - page 1223
Series KQ2 - Fittings - page 1184

Specifications

Fluid	Air	
Function	N.C. or N.O. (Can be switched.)	
Operating pressure range [MPa]	Standard	0.2 to 1.0
	Vacuum	-100KPa to 0.2
Pilot pressure [MPa]	Same as operating pressure (Min. 0.2 MPa)	
Ambient and fluid temperature [°C]	-10 to 50 (No freezing)	
Lubrication	Not required	
Mounting orientation	Free	
Impact/ Vibration Resistance [m/s ²]	300/50	

Flow Characteristics/Weight

Model	Port size	1 → 2 (P → A)				2 → 3 (A → R)				Weight [g] ^{Note}
		C [dm ³ /(s·bar)]	b	Cv	Q [L/min] (ANR) ^{Note 2}	C [dm ³ /(s·bar)]	b	Cv	Q [L/min] (ANR) ^{Note 2}	
VPA342	G1/8	3.5	0.26	0.8	868	3.6	0.26	0.9	893	118
	G1/4	4.2	0.22	1.0	1018	4.2	0.23	1.0	1023	114
VPA542	G1/4	7.9	0.21	1.8	1903	7.2	0.27	1.8	1797	237
	G3/8	8.9	0.16	2.2	2085	8.9	0.20	2.1	2132	229
VPA742	G3/8	11.9	0.21	2.7	2867	11.8	0.20	2.7	2826	501
	G1/2	15.1	0.21	3.6	3637	15.3	0.22	3.7	3707	484

Note 1) Flow and mass differ slightly for M5 and C6 ported version.

Note 2) These valves have been calculated according to ISO 6358.

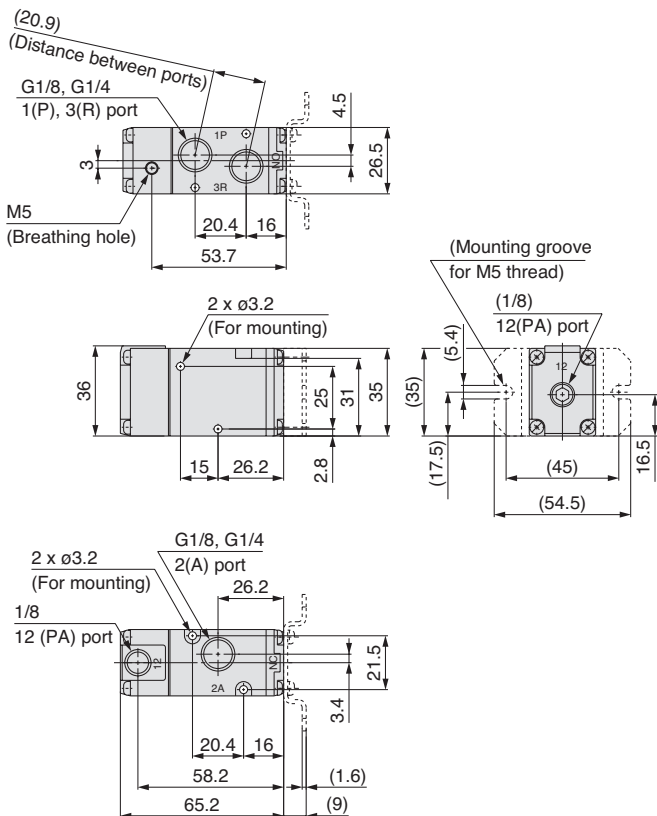
Model	Port size	1 V 2 (P → A)				2 → 3 (A → R)				Weight [g] ^{Note}
		C [dm ³ /(s·bar)]	b	Cv	Q [L/min] (ANR) ^{Note 2}	C [dm ³ /(s·bar)]	b	Cv	Q [L/min] (ANR) ^{Note 2}	
VPA344	G1/8	3.6	0.22	0.8	872	3.5	0.24	0.8	858	185 (118)
	G1/4	3.9	0.22	0.9	945	3.8	0.14	0.9	881	180 (118)
VPA544	G1/4	7.5	0.16	1.7	1757	7.3	0.20	1.7	1749	358 (233)
	G3/8	8.8	0.07	2.0	1968	8.8	0.13	2.0	2029	350 (233)
VPA744	G3/8	12.9	0.10	2.9	2929	13.3	0.24	3.1	3260	693 (476)
	G1/2	14.7	0.05	3.3	3256	15.0	0.17	3.4	3534	675 (476)

Note 1) Flow and mass differ slightly for M5 and C6 ported version.

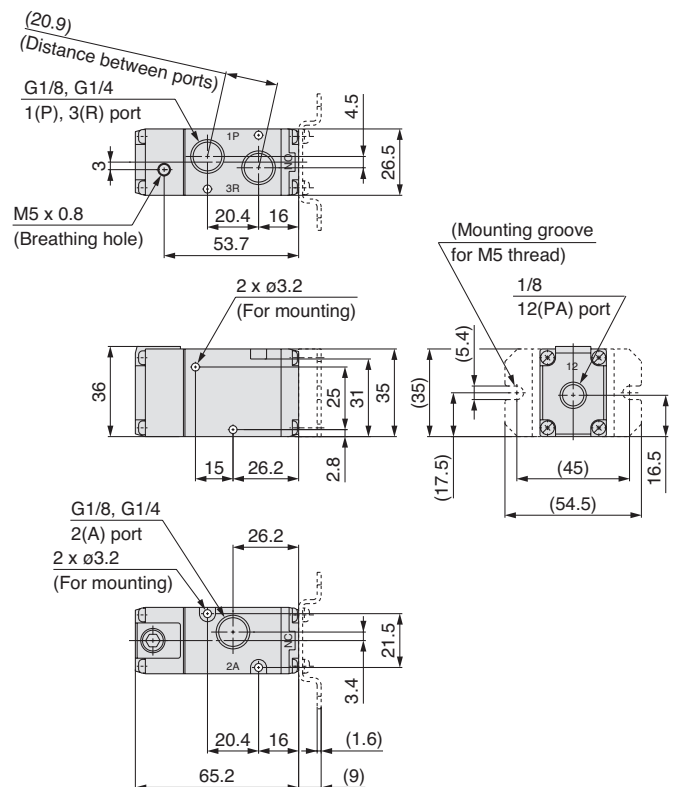
Note 2) These valves have been calculated according to ISO 6358.

Dimensions

Standard/Body Ported/VPA342-1-⁰¹F_A^A_B

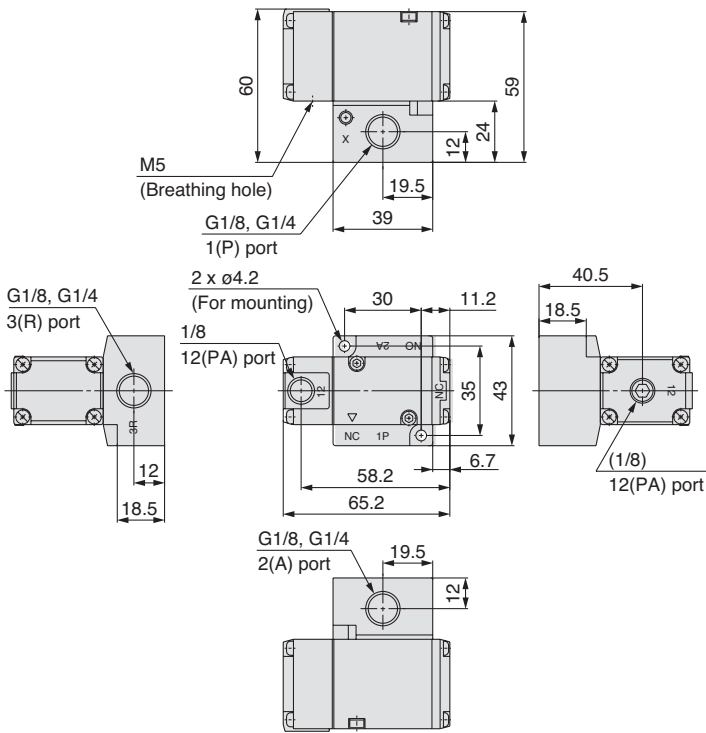


For vacuum/Body Ported/VPA342V-1-⁰¹F_A^A_B

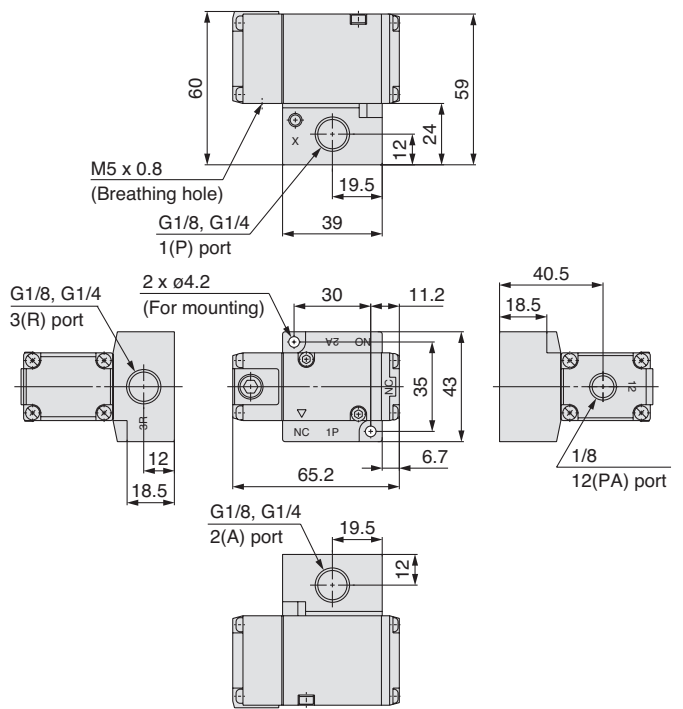


Dimensions

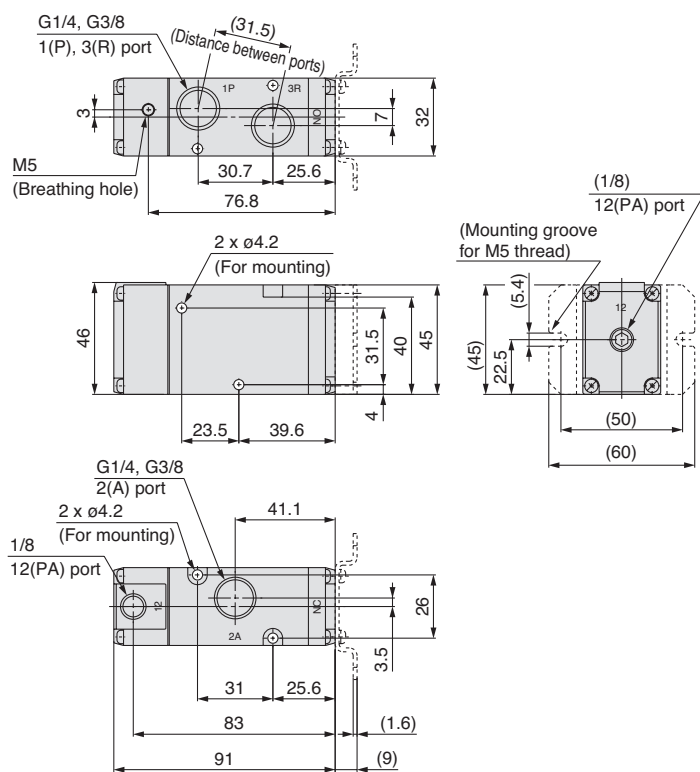
Standard/Base mounted/VPA344-1-01^F₀₂^A_B



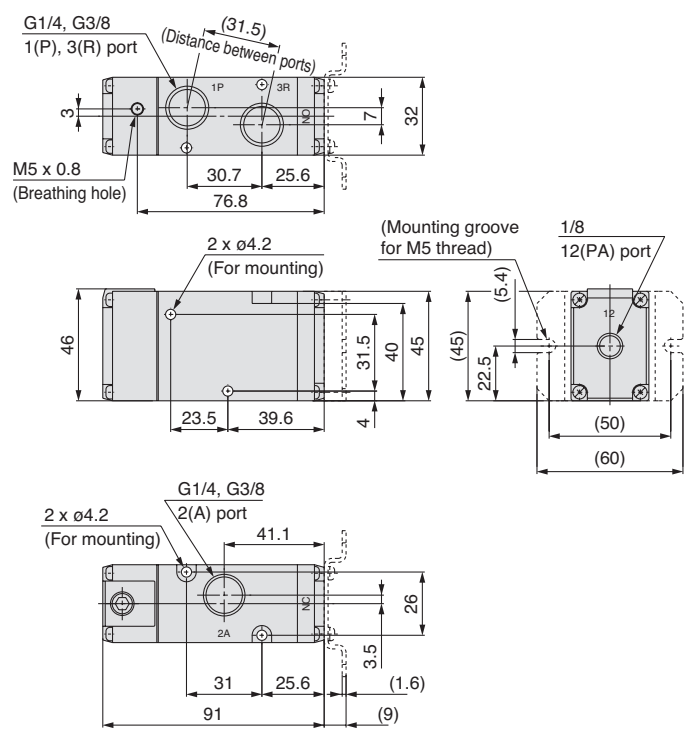
For vacuum/Base Mounted/VPA344V-1-01^F₀₂^A_B



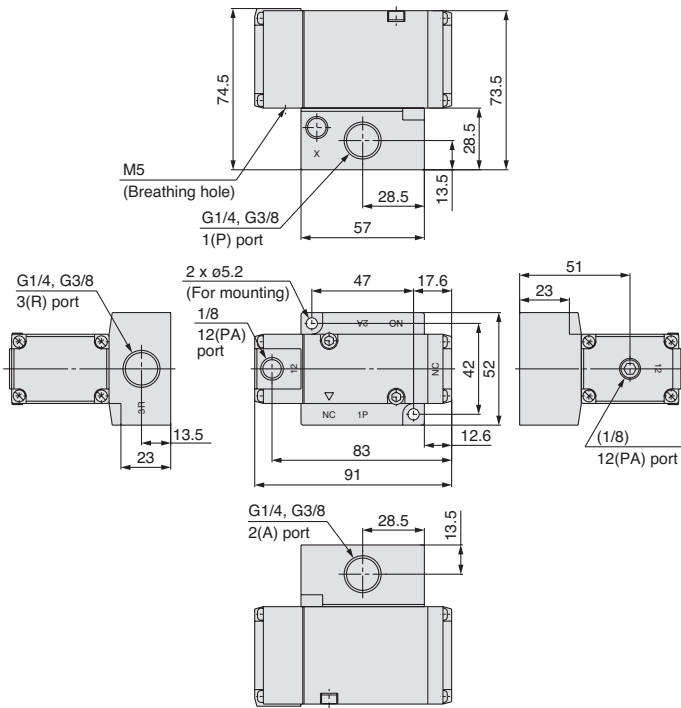
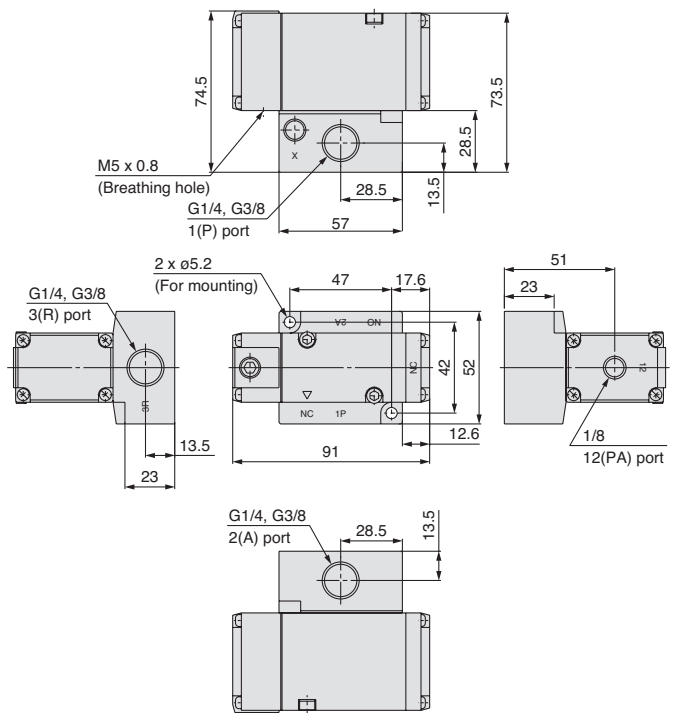
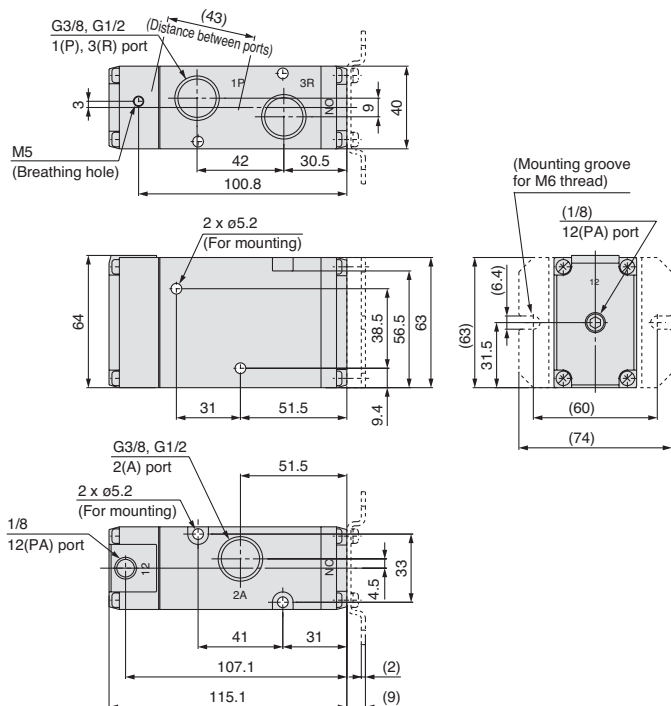
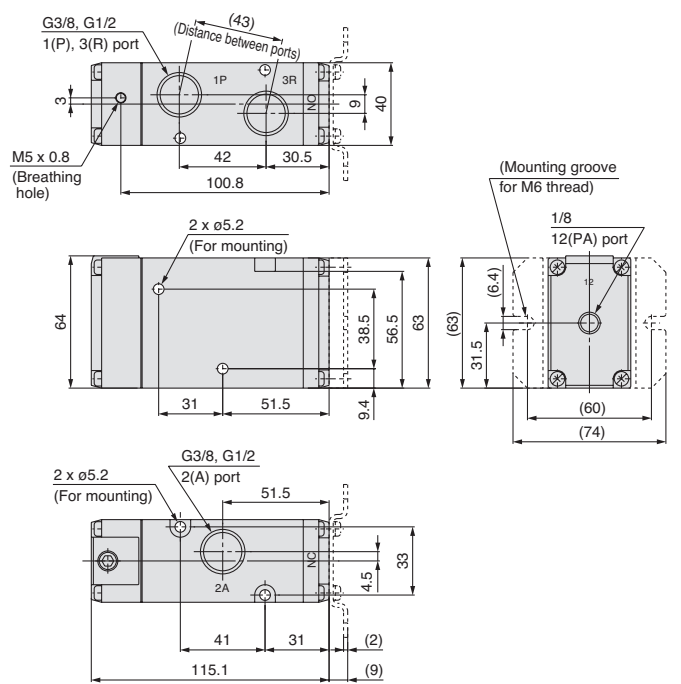
Standard/Body Ported/VPA542-1-02^F₀₃^A_B



For vacuum/Body Ported/VPA542V-1-02^F₀₃^A_B

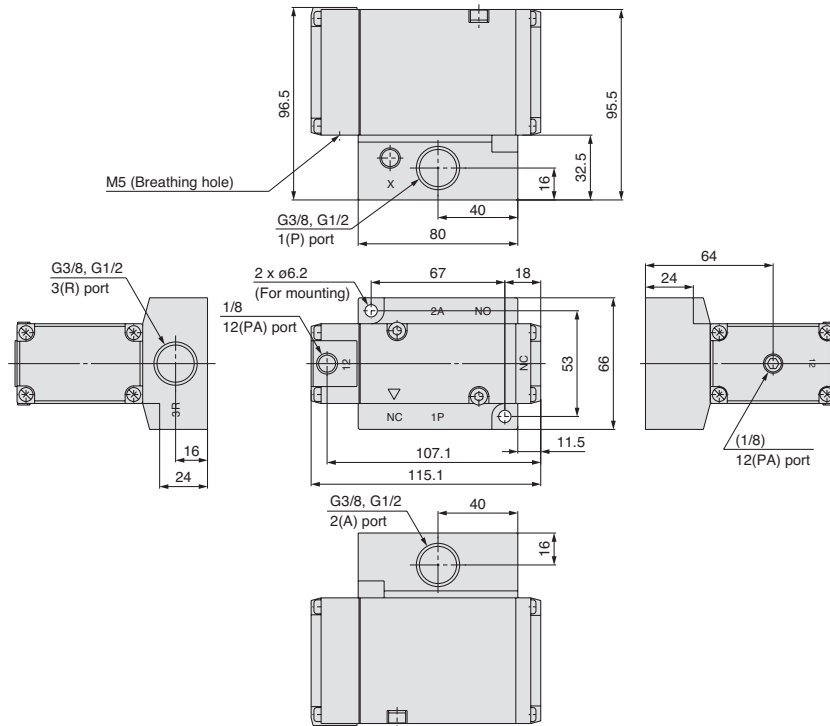


Dimensions

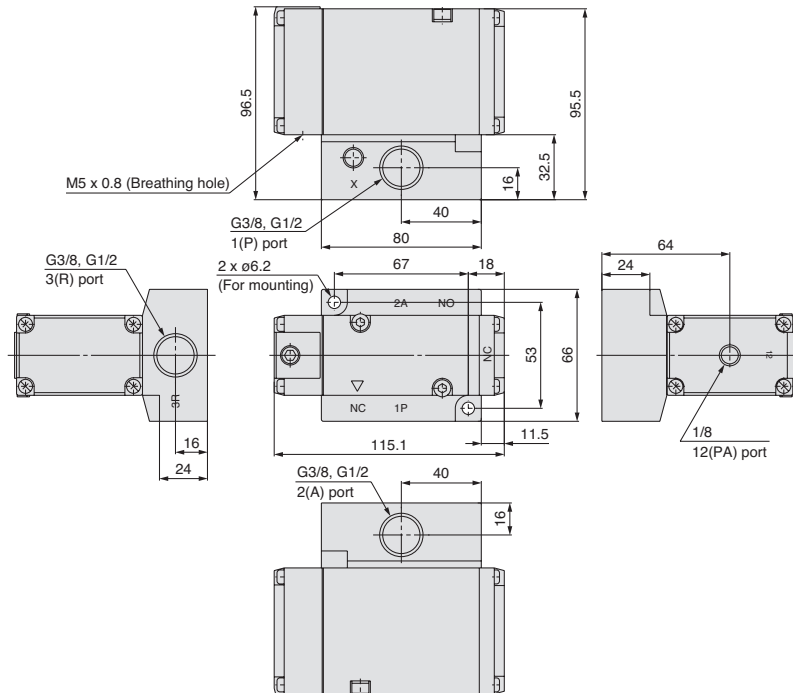
 Standard/Base Mounted/VPA544-1-⁰²/₀₃F^A/_B

 For vacuum/Base Mounted-VPA544V-1-⁰²/₀₃F^A/_B

 Standard/Body Ported/VPA742-1-⁰³/₀₄F^A/_B

 For vacuum/Body Ported/VPA742V-1-⁰³/₀₄F^A/_B


Dimensions

Standard/Base Mounted/VPA744-1-⁰³/₀₄F^A/_B

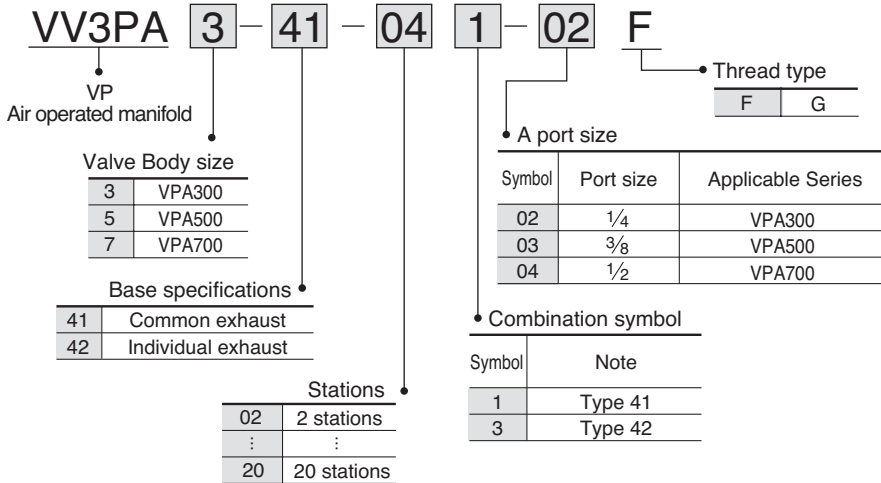


For vacuum/Base Mounted VPA744V-1-⁰³/₀₄F^A/_B



Manifold specifications Series VPA300/500/700

How to Order



Manifold Specifications

Series	Base model	Piping specifications			Applicable valve	Applicable stations ^(Note)	Manifold base Mass: W [g] Stations: n						
		1P (SUP) port type	3R (EXH) port type	Port size									
VPA300	VV3PA3-41	Common	Common	1/4	VPA344	2 to 20 stations	W = 110n + 90						
	VV3PA3-42		Individual										
VPA500	VV3PA5-41		Common	3/8				VPA544	2 to 20 stations	W = 190n + 150			
	VV3PA5-42		Individual										
VPA700	VV3PA7-41		Common	1/2							VPA744	2 to 20 stations	W = 410n + 380
	VV3PA7-42		Individual										

Note) Supply pressure to 1(P) ports and exhaust air from 3(R) ports on both sides for 10 stations or more.

Specifications

Manifold base type	B mount (Single base)
Exhaust type	Common exhaust (type 41), Individual exhaust (type 42)
Supply (P) port type	Common supply port
Max. valve stations	20 stations

Note) If there are more than 10 stations, supply air to P port on both sides of the manifold and exhaust from R port on both sides of the manifold.

Manifold Option

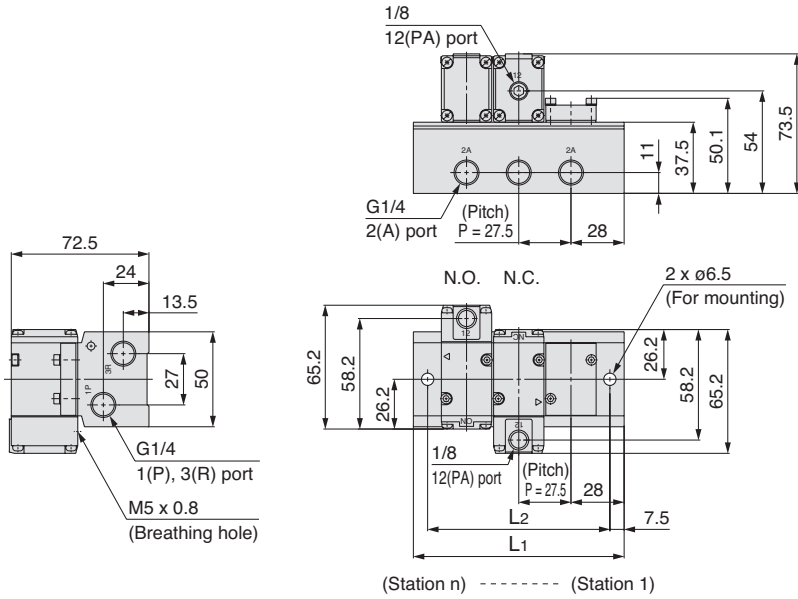
Blanking plate assembly (With a gasket and two mounting bolts)

Part no.	Applicable manifold base model
VP300-25-1A	VV3PA3
VP500-25-1A	VV3PA5
VP700-25-1A	VV3PA7



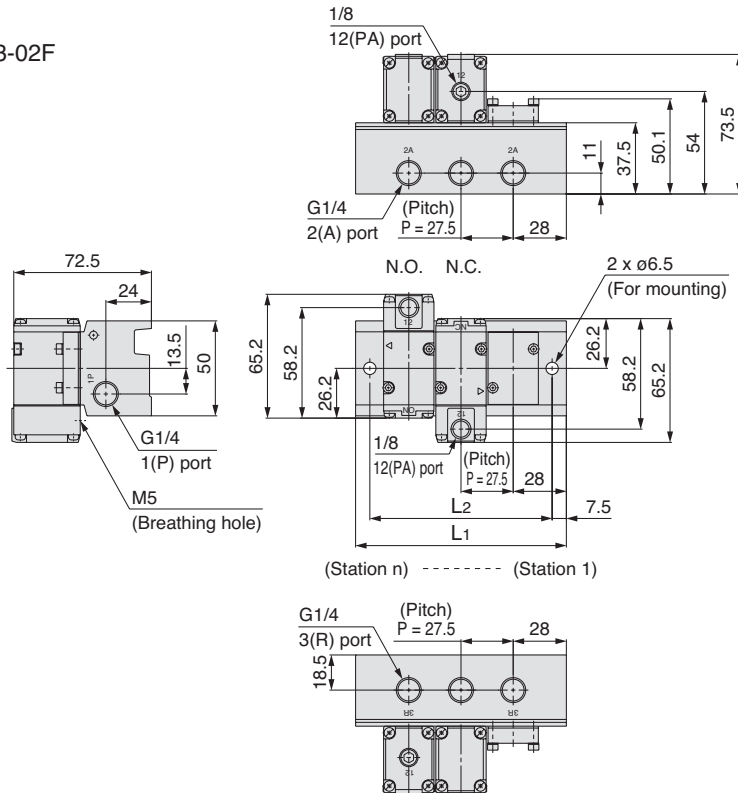
Dimensions: VPA300 Size

VV3PA3-41- Stations 1-02F



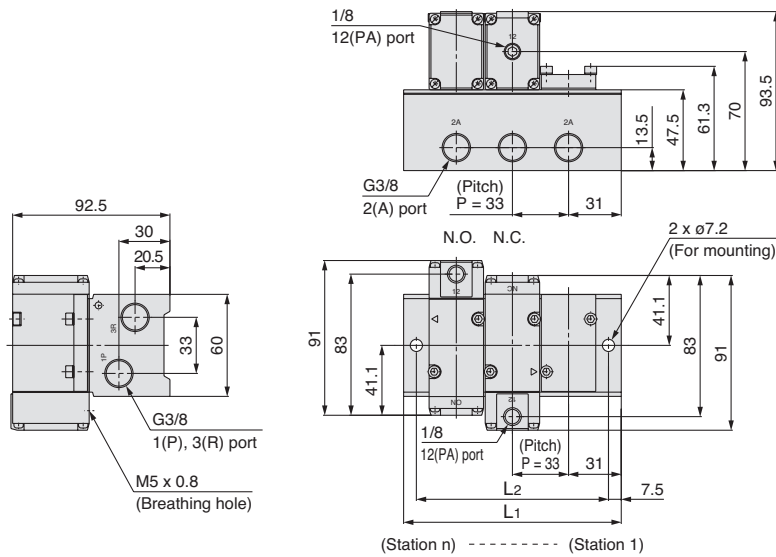
Station n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	83.5	111	138.5	166	193.5	221	248.5	276	303.5	331	358.5	386	413.5	441	468.5	496	523.5	551	578.5
L2	68.5	96	123.5	151	178.5	206	233.5	261	288.5	316	343.5	371	398.5	426	453.5	481	508.5	536	563.5

VV3PA3-42- Stations 3-02F

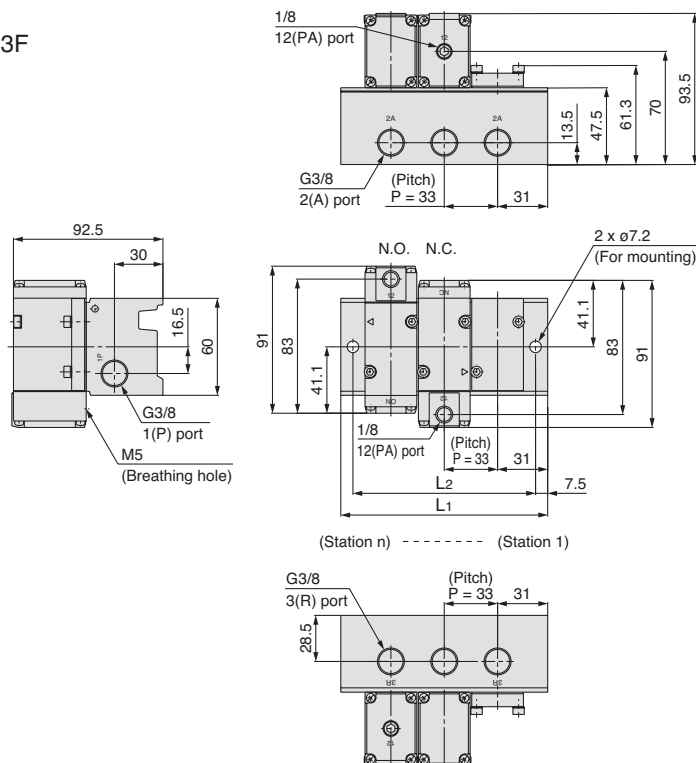


Station n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	83.5	111	138.5	166	193.5	221	248.5	276	303.5	331	358.5	386	413.5	441	468.5	496	523.5	551	578.5
L2	68.5	96	123.5	151	178.5	206	233.5	261	288.5	316	343.5	371	398.5	426	453.5	481	508.5	536	563.5

Dimensions: VPA500 Size

 VV3PA5-41-Stations 1-03F


Station n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	95	128	161	194	227	260	293	326	359	392	425	458	491	524	557	590	623	656	689
L ₂	80	113	146	179	212	245	278	311	344	377	410	443	476	509	542	575	608	641	674

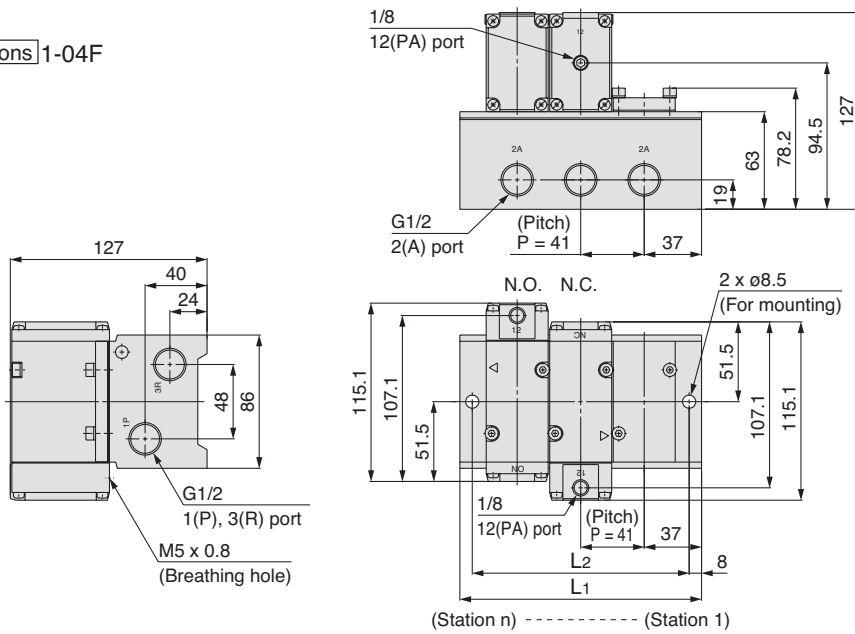
 VV3PA5-42-Stations 3-03F


Station n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	95	128	161	194	227	260	293	326	359	392	425	458	491	524	557	590	623	656	689
L ₂	80	113	146	179	212	245	278	311	344	377	410	443	476	509	542	575	608	641	674



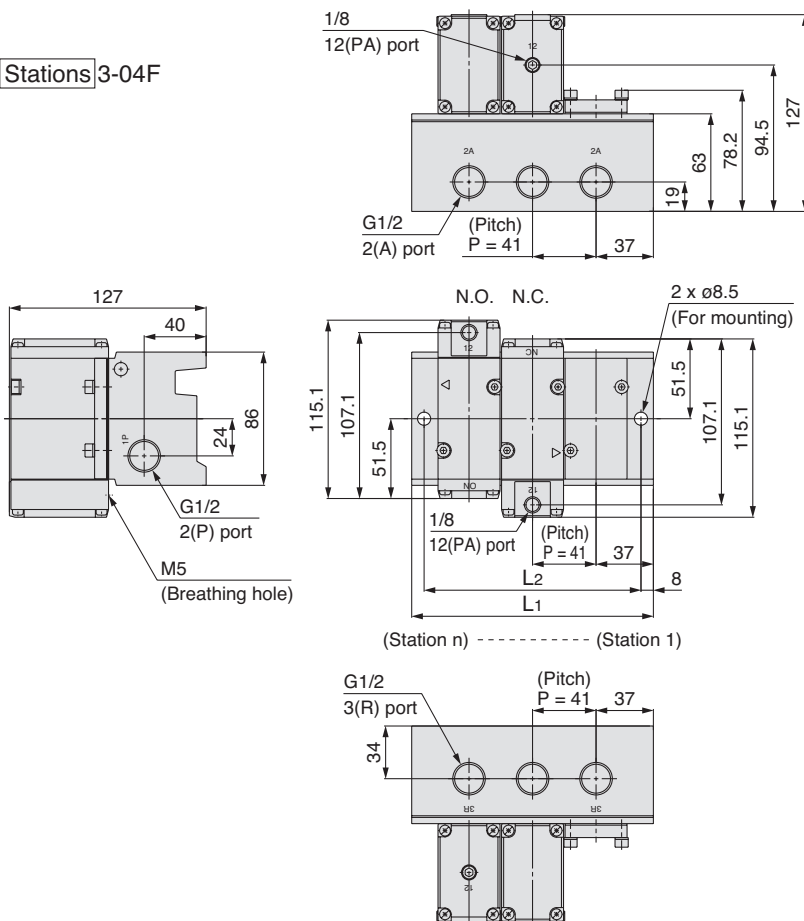
Dimensions: VPA700 Size

VV3PA7-41- [Stations] 1-04F



Station n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	115	156	197	238	279	320	361	402	443	484	525	566	607	648	689	730	771	812	853
L2	99	140	181	222	263	304	345	386	427	468	509	550	591	632	673	714	755	796	837

VV3PA7-42- [Stations] 3-04F



Station n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	115	156	197	238	279	320	361	402	443	484	525	566	607	648	689	730	771	812	853
L2	99	140	181	222	263	304	345	386	427	468	509	550	591	632	673	714	755	796	837