

4/5 Port Air Operated Valve

Series VSA4□20

Model

Valve model	Body size	Function	Port size Rc	Flow characteristics						Pilot port size	Note) Mass (kg)
				P→A/B			A/B→EA/EB				
				C [dm ³ (s·bar)]	b	Cv	C [dm ³ (s·bar)]	b	Cv		
VSA4120-01	1/4	2 position single	1/8	4.1	0.30	0.95	4.2	0.34	1.0	Rc 1/8	0.60
VSA4120-02			1/4	5.9	0.30	1.3	5.1	0.47	1.2	Rc 1/8	
VSA4120-03			3/8	6.5	0.33	1.5	5.6	0.51	1.4	Rc 1/8	
VSA4220-01	1/4	2 position double	1/8	4.1	0.30	0.95	4.2	0.34	1.0	Rc 1/8	0.70
VSA4220-02			1/4	5.9	0.30	1.3	5.1	0.47	1.2	Rc 1/8	
VSA4220-03			3/8	6.5	0.33	1.5	5.6	0.51	1.4	Rc 1/8	
VSA4320-01	1/4	3 position closed center	1/8	4.0	0.31	0.95	4.1	0.34	1.0	Rc 1/8	0.86
VSA4320-02			1/4	6.0	0.28	1.4	5.0	0.44	1.2	Rc 1/8	
VSA4320-03			3/8	6.6	0.31	1.5	5.4	0.48	1.3	Rc 1/8	
VSA4420-01	1/4	3 position exhaust center	1/8	4.0	0.31	0.96	4.3	0.33	1.1	Rc 1/8	0.86
VSA4420-02			1/4	5.8	0.30	1.3	4.7	0.48	1.2	Rc 1/8	
VSA4420-03			3/8	6.4	0.33	1.5	5.1	0.53	1.3	Rc 1/8	

Note) The table shows the valve without sub-plate. With sub-plate: Add 0.24 kg



Specifications

Max. operating pressure	1.0 MPa
Pilot air pressure	0.1 to 1.0 MPa
Ambient temperature and operating fluid temperature	-10 to 60°C (1)
Lubrication	Not required (2)
Impact/Vibration resistance (m/s ²) (3)	150/50
Enclosure	Dustproof (Enclosure class 0) (4)



Note 1) Use dry air to prevent condensation when operating at low temperature.

Note 2) Use turbine oil Class 1 (ISO VG32), if lubricated.

Note 3) Impact resistance: No malfunction from test using drop impact tester, to axis and right angle directions of main valve, each one time when pilot signal is ON and OFF. (Value in the initial stage)

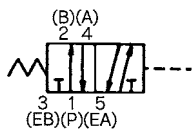
Vibration resistance: No malfunction from test with 45 to 2000 Hz one sweep, to axis and right angle direction of main valve, each one time when pilot signal ON and OFF. (Value in the initial stage)

Note 4) As per JIS C0920

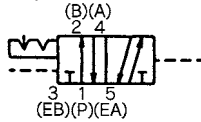
- Manifold possible.
- When requiring bottom piping, please specify it.

JIS Symbol

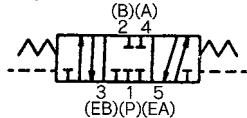
2 position single



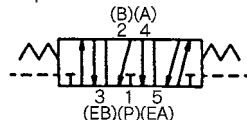
2 position double



3 position closed center



3 position exhaust center



Sub-plate Assembly Part No.: VS4020-S-⁰¹/₀₂/₀₃

* Mounting bolt and gasket are not included.

Mounting Bolts, Gasket Part No.: BG-VS4020

How to Order

VSA 4 1 2 0 - 02 [] - [] - []

Air operated valve (VSA)

4/5 port valve (4)

Function

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

Body size

2	1/4 standard
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Piping

0	Sub-plate side ported
1*	Sub-plate bottom ported
4	Without sub-plate (For manifold)

* Option

Port size

00	Without sub-plate
01	Rc 1/8
02	Rc 1/4
03	Rc 3/8

Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	PF

* Option

Pilot

Nil	Body side
1*	Base side (Without sub-plate)

* Option

Option

Nil	None
PA	Non-locking manual override

⚠ Caution

* Bottom ported: Rc 1/8 and 1/4 only

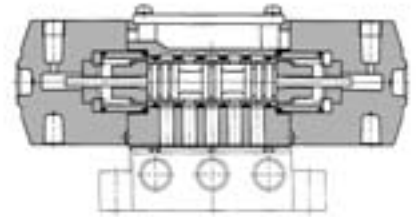
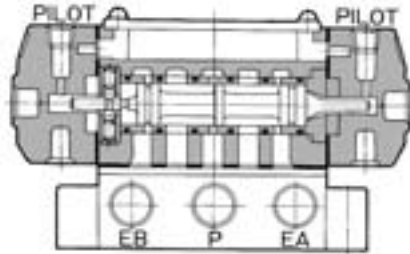
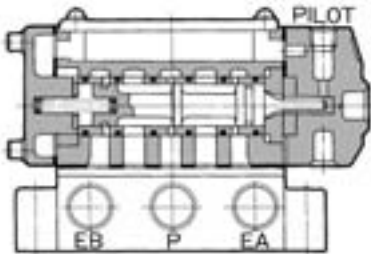
Be sure to read this before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Construction

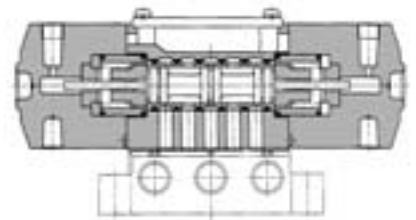
2 position single: VSA4120

2 position double: VSA4220

3 position closed center: VSA4320



3 position exhaust center: VSA4420



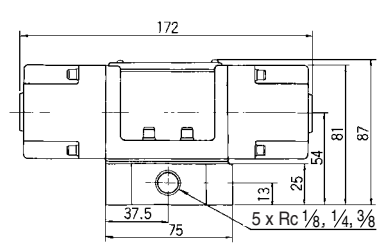
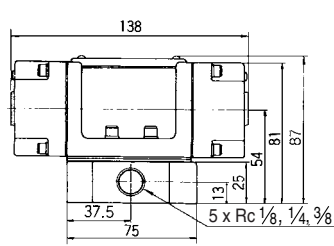
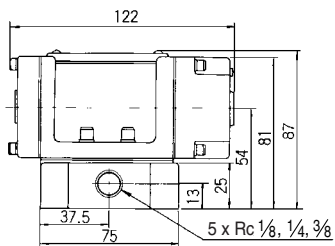
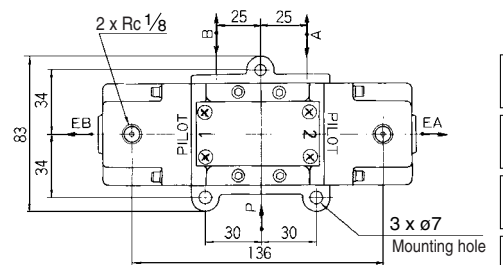
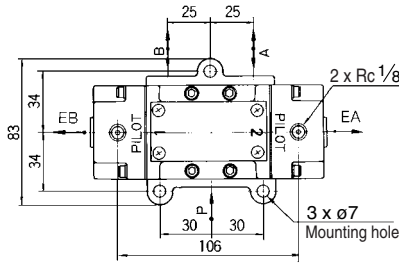
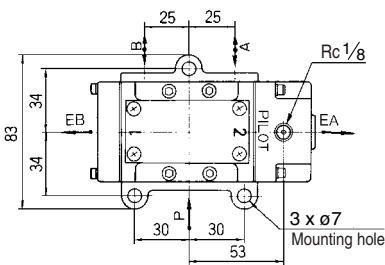
Dimensions

2 position single: VSA4120

2 position double: VSA4220

3 position closed center: VSA4320

3 position exhaust center: VSA4420



- SYA
- SYJA
- VZA
- VFA
- VFRA
- V□A

4/5 Port Air Operated Valve

Series VSA4□30

Model

Valve model	Body size	Function	Port size Rc	Flow characteristics						Pilot port size	Note) Mass (kg)
				P → A/B			A/B → EA/EB				
				C [dm ³ (s·bar)]	b	Cv	C [dm ³ (s·bar)]	b	Cv		
VSA4130-02	3/8	2 position single	1/4	6.4	0.16	1.4	6.3	0.13	1.4	Rc 1/8	0.75
VSA4130-03			3/8	8.7	0.28	2.1	8.2	0.13	1.9	Rc 1/8	
VSA4130-04			1/2	9.2	0.14	2.2	9.6	0.17	2.4	Rc 1/8	
VSA4230-02	3/8	2 position double	1/4	6.4	0.16	1.4	6.3	0.13	1.4	Rc 1/8	0.86
VSA4230-03			3/8	8.7	0.28	2.1	8.2	0.13	1.9	Rc 1/8	
VSA4230-04			1/2	9.2	0.14	2.2	9.6	0.17	2.4	Rc 1/8	
VSA4330-02	3/8	3 position closed center	1/4	6.2	0.23	1.4	5.8	0.15	1.3	Rc 1/8	0.90
VSA4330-03			3/8	8.1	0.27	2.0	7.5	0.11	1.7	Rc 1/8	
VSA4330-04			1/2	10	0.18	2.4	9.5	0.14	2.2	Rc 1/8	
VSA4430-02	3/8	3 position exhaust center	1/4	6.6	0.24	1.5	5.5	0.15	1.2	Rc 1/8	0.90
VSA4430-03			3/8	8.9	0.25	2.2	6.7	0.14	1.5	Rc 1/8	
VSA4430-04			1/2	11	0.15	2.5	9.4	0.14	2.2	Rc 1/8	

Note) The table shows the value without sub-plate. With sub-plate: Add 0.41 kg



Specifications

Max. operating pressure	1.0 MPa
Pilot air pressure	0.1 to 1.0 MPa
Ambient temperature and operating fluid temperature	-10 to 60°C (1)
Lubrication	Not required (2)
Impact/Vibration resistance (m/s ²) (3)	150/50
Enclosure	Dustproof (Enclosure class 0) (4)



Note 1) Use dry air to prevent condensation when operating at low temperature.

Note 2) Use turbine oil Class 1 (ISO VG32) if lubricated.

Note 3) Impact resistance: No malfunction from test using drop impact tester, to axis and right angle directions of main valve, each one time when pilot signal is ON and OFF. (Value in the initial stage)

Vibration resistance: No malfunction from test with 45 to 2000 Hz one sweep, to axis and right angle direction of main valve, each one time when pilot signal ON and OFF. (Value in the initial stage)

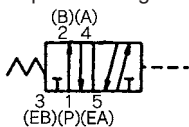
Note 4) As per JIS C0920

• Manifold possible.

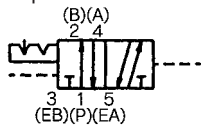
• When requiring bottom piping, please specify it.

JIS Symbol

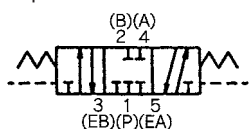
2 position single



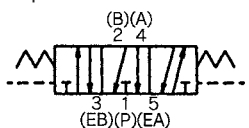
2 position double



3 position closed center



3 position exhaust center

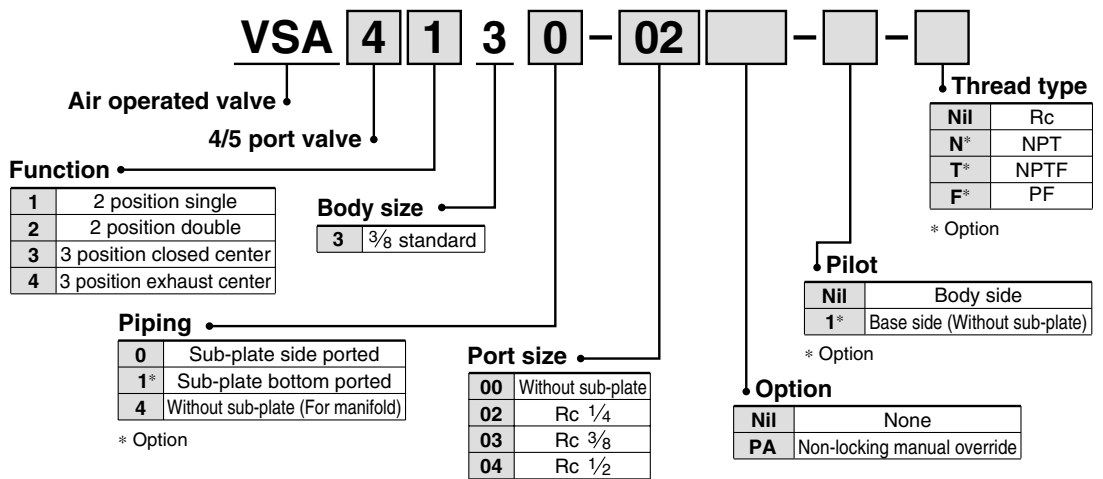


Sub-plate Assembly Part No.: VS4030-S-⁰²₀₃⁰⁴

* Mounting bolt and gasket are not included.

Mounting Bolts, Gasket Part No.: BG-VS4030

How to Order



Caution

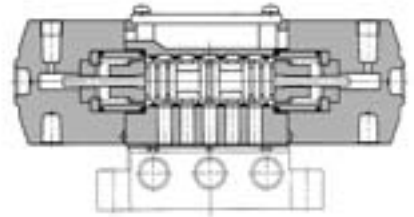
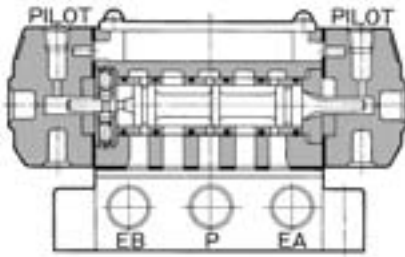
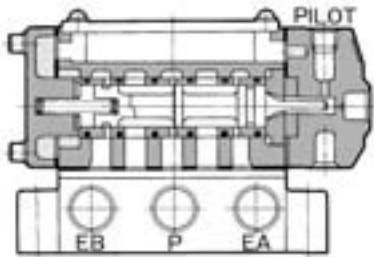
Be sure to read this before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Construction

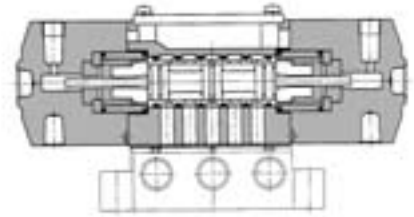
2 position single: VSA4130

2 position double: VSA4230

3 position closed center: VSA4330



3 position exhaust center: VSA4430



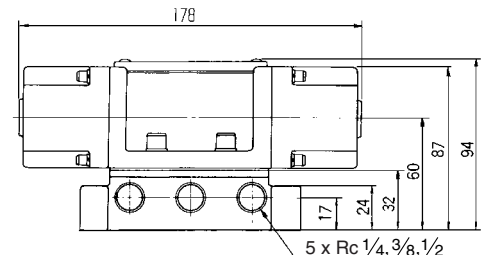
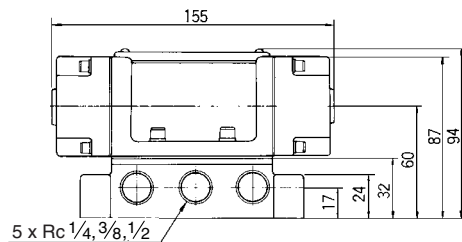
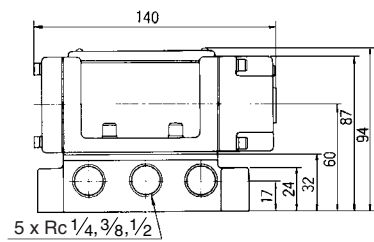
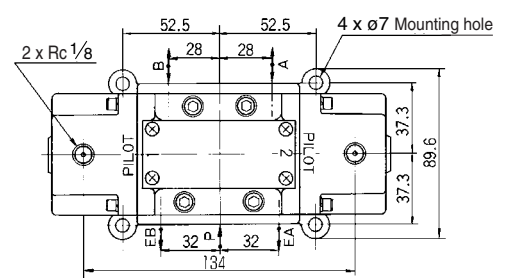
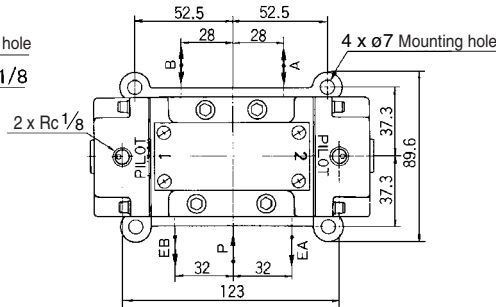
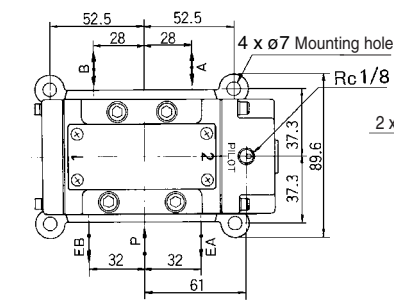
Dimensions

2 position single: VSA4130

2 position double: VSA4230

3 position closed center: VSA4330

3 position exhaust center: VSA4430



- SYA
- SYJA
- VZA
- VFA
- VFRA
- V□A

4/5 Port Air Operated Valve

Series VSA4□40

Model

Valve model	Body size	Function	Port size Rc	Flow characteristics						Pilot port size	Note) Mass (kg)
				P→A/B			A/B→EA/EB				
				C [dm ³ (s·bar)]	b	Cv	C [dm ³ (s·bar)]	b	Cv		
VSA4140-04	1/2	2 position single	1/2	12	0.15	3.0	13	0.24	3.3	Rc 1/8	1.31
VSA4140-06		3/4	15	0.31	4.1	16	0.32	4.2	Rc 1/8		
VSA4240-04	1/2	2 position double	1/2	13	0.15	3.0	13	0.24	3.3	Rc 1/8	1.50
VSA4240-06		3/4	15	0.31	4.1	16	0.32	4.2	Rc 1/8		
VSA4340-04	1/2	3 position closed center	1/2	14	0.22	3.5	13	0.26	3.2	Rc 1/8	1.73
VSA4340-06		3/4	17	0.27	4.2	16	0.25	4.2	Rc 1/8		
VSA4440-04	1/2	3 position exhaust center	1/2	15	0.18	3.6	13	0.18	3.0	Rc 1/8	1.73
VSA4440-06		3/4	17	0.39	4.6	17	0.30	4.3	Rc 1/8		

Note) The table shows the value without sub-plate. With sub-plate: Add 0.6 kg for Rc 1/2, 1.4 kg for Rc 3/4.



Specifications

Max. operating pressure	1.0 MPa
Pilot air pressure	0.1 to 1.0 MPa
Ambient temperature and operating fluid temperature	-10 to 60°C ⁽¹⁾
Lubrication	Not required ⁽²⁾
Impact/Vibration resistance (m/s ²) ⁽³⁾	150/50
Enclosure	Dustproof (Enclosure class 0) ⁽⁴⁾

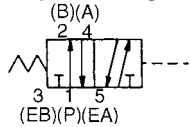
Note 1) Use dry air to prevent condensation when operating at low temperature.
 Note 2) Use turbine oil Class 1 (ISO VG32), if lubricated.
 Note 3) Impact resistance: No malfunction from test using drop impact tester, to axis and right angle directions of main valve, each one time when pilot signal is ON and OFF. (Value in the initial stage)
 Vibration resistance: No malfunction from test with 45 to 2000 Hz one sweep, to axis and right angle direction of main valve, each one time when pilot signal ON and OFF. (Value in the initial stage)

Note 4) As per JIS C0920

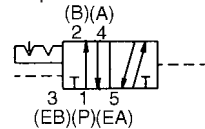
- Manifold possible.
- When requiring bottom piping, please specify it.

JIS Symbol

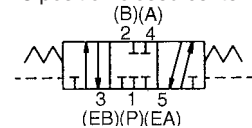
2 position single



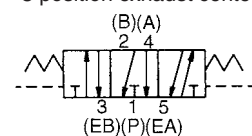
2 position double



3 position closed center



3 position exhaust center

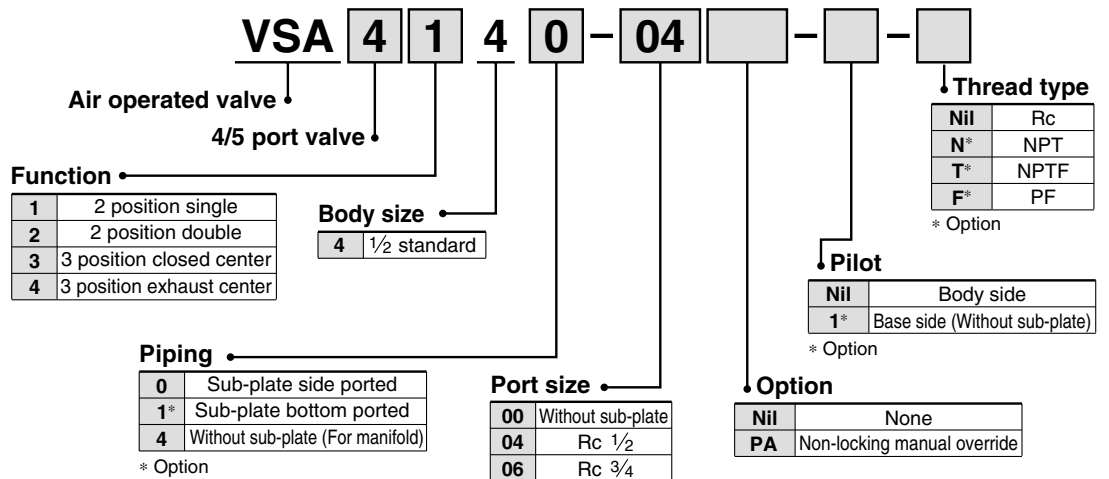


Sub-plate Assembly Part No.: VS4040-S-⁰⁴/₀₆

* Mounting bolt and gasket are not included.

Mounting Bolts, Gasket Part No.: BG-VS4040

How to Order



* A different sub-plate must be used for Rc 1/2 and 3/4.

⚠ Caution

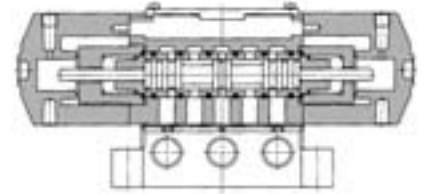
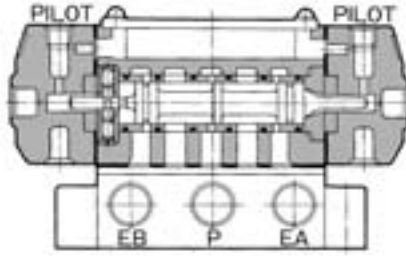
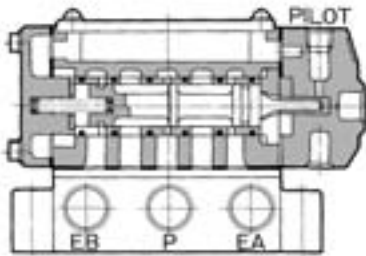
Be sure to read this before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Construction

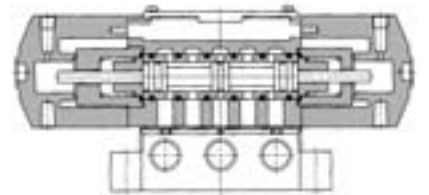
2 position single: VSA4140

2 position double: VSA4240

3 position closed center: VSA4340



3 position exhaust center: VSA4440



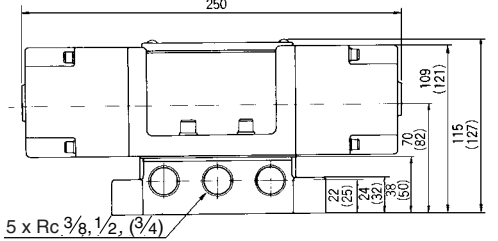
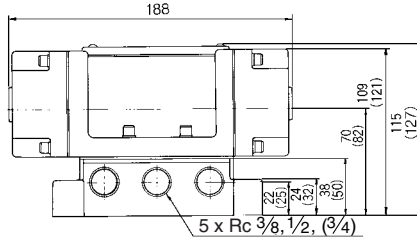
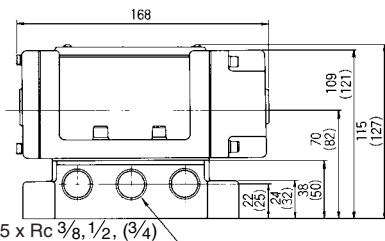
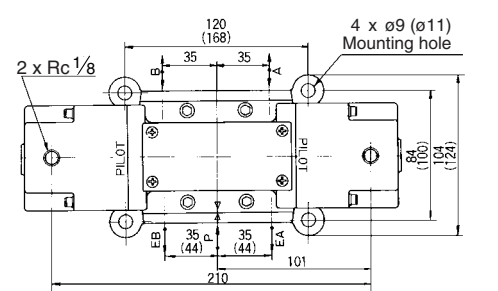
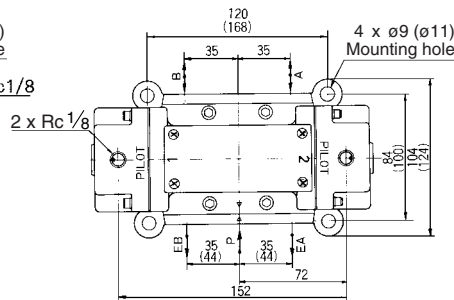
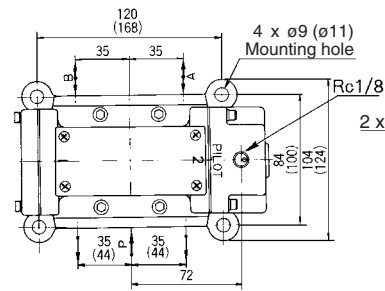
Dimensions

2 position single: VSA4140

2 position double: VSA4240

3 position closed center: VSA4340

3 position exhaust center: VSA4440

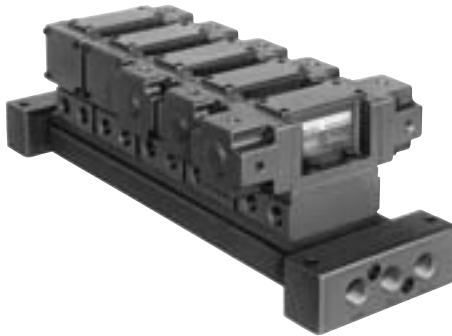


- SYA
- SYJA
- VZA
- VFA
- VFRA
- V□A

(): Value for Rc 3/4

Series VSA4□□0

Manifold Specifications 1



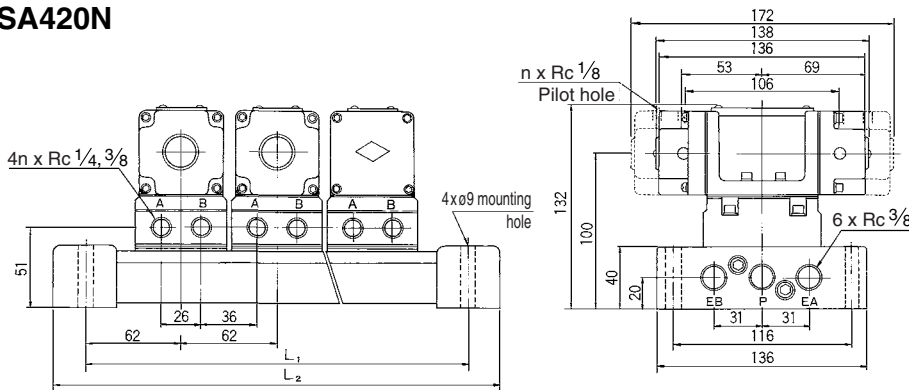
Specifications

Manifold type	Type E	Valve manifold with the same body size *
	Type N	Valve manifold with the same body size
	Type V	Valve manifold with the different body sizes
Stations	2 to 10 stations (Standard)	
EXH port	Common EXH, Individual EXH	
Piping	Side piping, Bottom piping	

* Type E is available only for common EXH and side piping.

Manifold: Type N

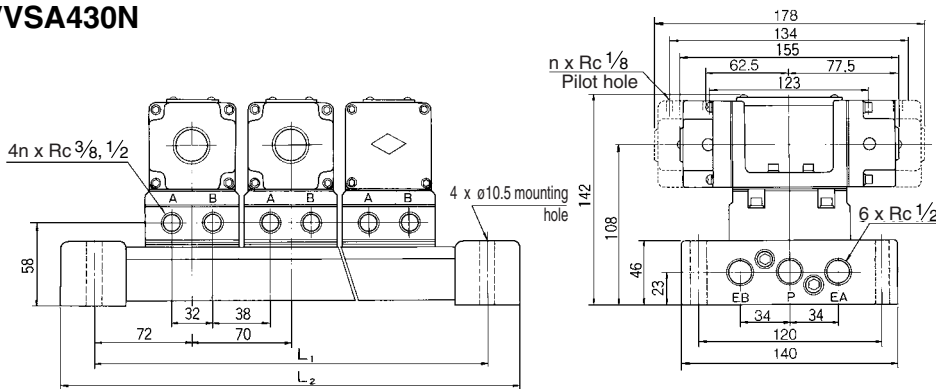
VVSA420N



n	L	Dimensions (mm)	
		L ₂	L ₁
2 stations		226	186
3 stations		288	248
4 stations		350	310
5 stations		412	372
n stations		62n + 102	62n + 62
Applicable valve		VSA4120, VSA4220 VSA4320, VSA4420	

Manifold weight general equation
 $M = 0.66n + 0.75$ (kg) n: Station

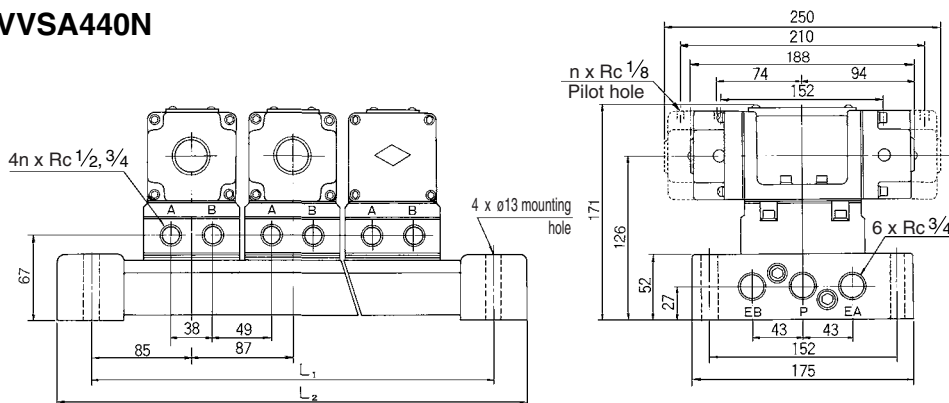
VVSA430N



n	L	Dimensions (mm)	
		L ₂	L ₁
2 stations		256	214
3 stations		326	284
4 stations		396	354
5 stations		466	424
n stations		70n + 116	70n + 74
Applicable valve		VSA4130, VSA4230 VSA4330, VSA4430	

Manifold weight general equation
 $M = 0.87n + 0.95$ (kg) n: Station

VVSA440N

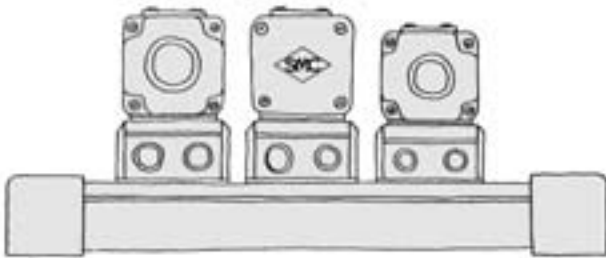


n	L	Dimensions (mm)	
		L ₂	L ₁
2 stations		307	257
3 stations		394	344
4 stations		481	431
5 stations		568	518
n stations		87n + 133	87n + 83
Applicable valve		VSA4140, VSA4240 VSA4340, VSA4440	

Manifold weight general equation
 $M = 1.56n + 1.73$ (kg) n: Station

Manifold Specifications 2

Manifold: Type V



Type E/Valve Manifold with the Same Body Size

Manifold base size	Applicable valve	EXH port	Port size Rc		
			P	A, B	EA, EB
1/4 standard	VSA4□20	Common EXH	3/8	1/8, 1/4, 3/8	3/8
3/8 standard	VSA4□30	Common EXH	1/2	3/8, 1/2	1/2

Piping specifications/Side ported is only available.

Type N/Valve Manifold with the Same Body Size

Manifold base size	Applicable valve	EXH port	Port size Rc		
			P	A, B	EA, EB
1/4 standard	VSA4□20	Common EXH	3/8	1/8, 1/4, 3/8	3/8
		Individual EXH			1/4, 3/8
3/8 standard	VSA4□30	Common EXH	1/2	3/8, 1/2	1/2
		Individual EXH			3/8, 1/2
1/2 standard	VSA4□40	Common EXH	3/4	1/2, 3/4	3/4
		Individual EXH			1/2, 3/4

Piping specifications/Side and bottom ported.

Type V/Body Size

Manifold base size	Applicable valve	EXH port	Valve size	Port size Rc		
				P	A, B	EA, EB
3/8 standard	VSA4□20	Common EXH	1/4	1/2	1/4, 3/8 3/8, 1/2	1/2
			3/8			
1/2 standard	VSA4□30	Common EXH	1/4	3/4	3/8, 1/2 1/2, 3/4	1/4
			3/8			3/8
	VSA4□40	Common EXH	3/8	3/4	3/8, 1/2 3/8, 1/2	3/4
			1/2			3/8

Piping specifications/Side and bottom ported.

How to Order

VV SA 4 2 0 - 05 N 1 -

Manifold Air operated valve, Series VSA 4 port valve

Body size

Symbol	Size
2	1/4
3	3/8
4	1/2

Piping

Symbol	P	A, B	EA, EB
0	Side	Side	Side
1	Side	Bottom	Side
9	Others		

EXH port

Symbol	Type
1	Common
2	Individual

Manifold type

Symbol	Type
E	Type E
N	Type N
V	Type V

Thread type

Nil	Rc
N *	NPT
T *	NPTF
F *	PF

* Option

Stations

Symbol	No. of stations
02	2 stations
⋮	⋮
10	10 stations

Manifold Optional Parts

Option	Body size	Assembly part no.	Attached parts
Blank plate	1/4	XT015-4A	Gasket, Bolt
	3/8	XT016-5A	
	1/2	XT038N-4A	
Interface speed control	1/4	AXT394A	Gasket, Bolt
	3/8	AXT393A	
	1/2	AXT396A	

Indicate valve and option number with the manifold base number.

<Example>

(Manifold base) **VVSA430-05N1** 1
 (2 position single) VSA4134-00 3
 (2 position double) VSA4234-00 1
 (Blank plate) XTO16-5A 1

SYA

SYJA

VZA

VFA

VFRA

V□A



* A and B port sizes are same as port sizes in standard body size. When requiring different port size, contact SMC.