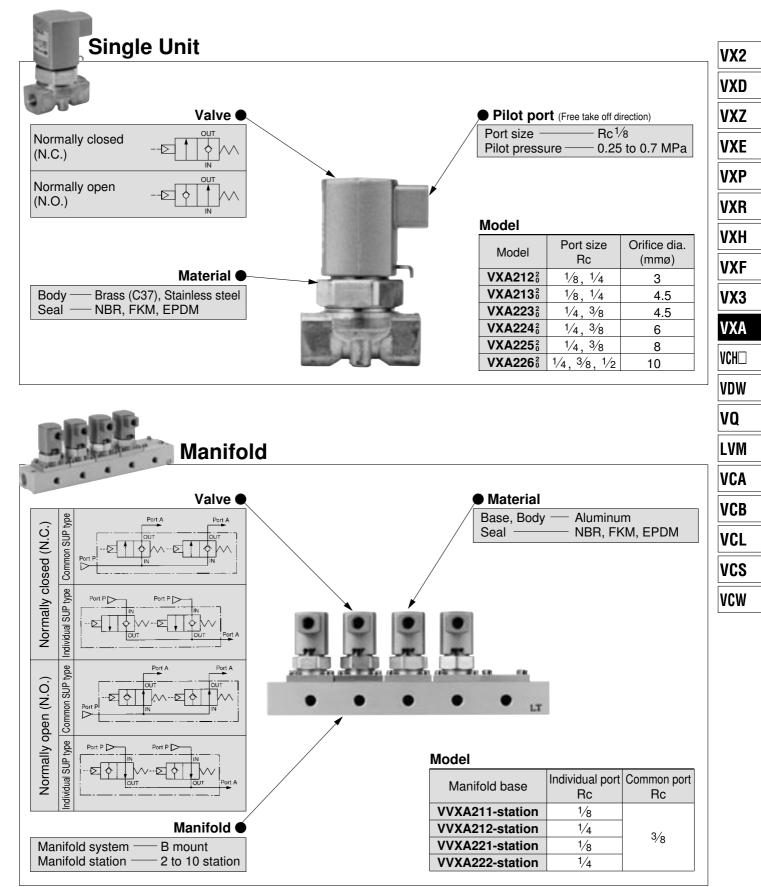
Direct Air Operated 2 Port Valve Series VXA21/22 For Air, Water, Oil



Standard Specifications

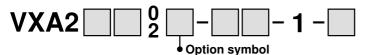
	Туре		Single Unit	Manifold	
	Valve construction		Pilot operated poppet		
Valve specifications	Withstand pressure	MPa	1.5		
specifications	Body material		Brass (C37), Stainless steel	Aluminum	
	Seal material		NBR, FKM, EPDM	NBR, FKM, EPDM	

Contents

For Air /Single Unit ······	P.208
For Air /Manifold ······	P.210
For Water /Single Unit	P.212
For Oil /Single Unit ······	P.214
For Oil /Manifold	P.216
Construction: Single Unit	P.218
Construction: Manifold	P.219
Dimensions: Single Unit	P.220
Dimensions: Manifold	P.221

Applicable Fluid Check List

Direct Air Operated 2 Port Valve Series VXA21/22 All Options (Single Unit) All Refer to pages 208, 212, and 214 for specifications and models.



Fluid and application	Option symbol	Seal material	Body material	Holder material (drive part)
Air	Nil		Brass (C37)	
Air	G	NBR	Stainless steel	
Medium vacuum (0.1 Pa·abs),	V Note 2)	FKM	Brass (C37)	
Non-leak Note 1)	M Note 2)	FKIVI	Stainless steel	
Matar	Nil		Brass (C37)	PPS
Water	G	NBR	Stainless steel	FF3
Oil Note 3)	A A		Brass (C37)	
OII Note of	Н	FKM	Stainless steel	
Other combination	В	EPDM	Brass (C37)	
	J	EFDM	Stainless steel	

All Options (Manifold) Refer to pages 210 and 216 for specifications and models.

<u>1</u>3 – 00 – 1 VXA2

Option	symbol
--------	--------

Fluid and application	Option symbol	Seal material	Body material	Holder material (drive part)	
Air	Air Nil NBR				
Medium vacuum, Non-leak Note 1)	V Note 2)	FKM	.	550	
Oil Note 3) A		FKM	Aluminum	PPS	
Other combination	В	EPDM			

Note 1) The leakage amount (10⁻⁶ Pa·m³/s) of "V" options are values when differential pressure is 0.1 MPa. Note 2) Use grease for vacuums on sliding parts. Use silicon grease elsewhere. Note 3) The dynamic viscosity of the fluid must not exceed 50 mm²/s or less.

* If using for other fluids, please consult with SMC.

Series VXA21/22

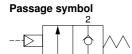
For Air /Single Unit

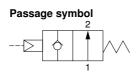
(Inert gas, Non-leak, Medium vacuum)

Model/Valve Specifications

N.C.

N.O.







Model/Valve

Port size	Orifice diameter (mmø)	Model	Max. operating pressure differential (MPa)	Pilot pressure (MPa)	Flo	w characterist Air b	ics Cv	Max. system pressure (MPa)	Proof pressure (MPa)	Mass (g)
1/8	3	VXA2122	(IVIFa) 1.0		1.3	0.50	0.38	(1011 a)		
(6Å)	4.5	VXA2139	0.5	1	2.3	0.45	0.70	-		
	3	VXA2122	1.0	1	1.3	0.50	0.38	1.0		170
	4.5	VXA2132	0.5	1	0.5	0.45	0.75	. 1.0		
1/4	4.5	VXA2232	1.0	1	2.5	0.45	0.75			050
(8A)	6	VXA2242	0.6	1	3.3	0.50	1.1			250
	8	VXA225 ⁰ 2	0.2	0.25 to 0.7	6.4	0.40	1.8	0.4	1.5	240
	10	VXA226 ⁰	0.1		8.8	0.40	2.3	0.4		340
	4.5	VXA2232	1.0]	2.5	0.45	0.75	1.0		050
3/8	6	VXA2242	0.6		3.3	0.50	1.1	1.0		250
(10A)	8	VXA225 ⁰ 2	0.2]	6.4	0.40	1.8			240
	10	VXA226 ⁰	0.1]	11.0	0.38	2.8	0.4		340
1⁄2 (15A)	10	VXA226 ⁰ 2	0.1]	11.0	0.38	2.8			420

Refer to "Glossary of Terms" on page 26 for details on the max. operating pressure differential and the max. system pressure.

Fluid and Ambient Temperature

Fluid tempe		
Valve opti	Ambient temperature (°C)	
Nil, Others	V, M	
-5 Note) to 60	-5 Note) to 40	-5 to 40

Note) Dew point temperature: -5°C or less

Valve Leakage Rate

Internal Leakage

	Leakage rate					
Seal material	Air	Non-leak, ^{Note)} Medium vacuum				
NBR, EPDM, FKM	1 cm ³ /min or less	10 ⁻⁶ Pa·m ³ /sec or less				
External Leakage						

Leakage rate			
Air	Non-leak, ^{Note)} Medium vacuum		
1 cm ³ /min or less	10 ⁻⁶ Pa·m ³ /sec or less		
	Air		

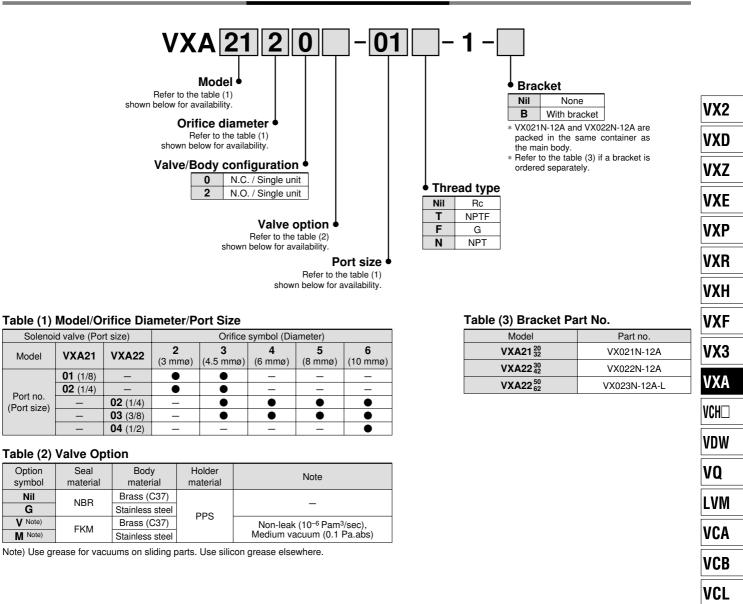
Note) Value for option "V", "M" (Non-leak, Medium vacuum))



Direct Air Operated 2 Port Valve Series VXA21/22

For Air/Single Unit

How to Order (Single Unit)



Model

Port no.

(Port size)

Option

symbol

Nil

G

V Note)

M Note)



VCS

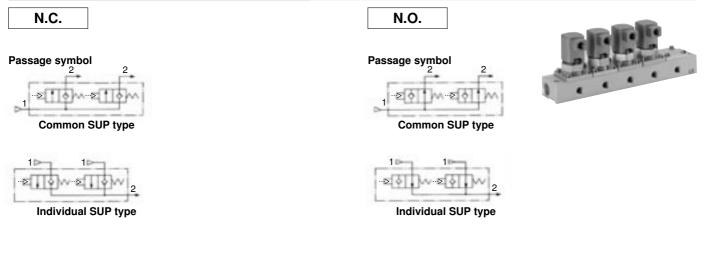
VCW

Series VVXA21/22



(Inert gas, Non-leak, Medium vacuum)

Model for Manifold/Valve Specifications



Model for Manifold/Valve Specifications

Orifice		Max. operating	Pilot	Pilot Flow characteristics		Max.	Proof	Note)	
diameter	Model	pressure	pressure		Air		pressure	pressure	Mass
(mmø)		differential (MPa)	(MPa)	C[dm ³ /(s·bar)]	b	Cv	(MPa)	(MPa)	(g)
3	VXA2123-00	1.0		1.3	0.50	0.38			120
4.5	VXA213 ¹ / ₃ -00	0.5	0.25 to 0.7	2.3	0.45	0.70	1.0	1.5	120
4.5	VXA2233-00	1.0	0.25 10 0.7	2.0	0.45	0.70	1.0	1.5	160
6	VXA224 ¹ ₃ -00	0.6		3.3	0.50	1.1]		100

• Refer to "Glossary of Terms" on page 26 for details on the max. operating pressure differential and the max. system pressure.

Fluid and Ambient Temperature

Fluid temp		
Solenoid valv	Ambient temperature (°C)	
Nil, A, B	Nil, A, B V	
-5 Note) to 60 -5 Note) to 40		-5 to 40

Note) Dew point temperature: -5°C or less

Valve Leakage Rate

Internal Leakage

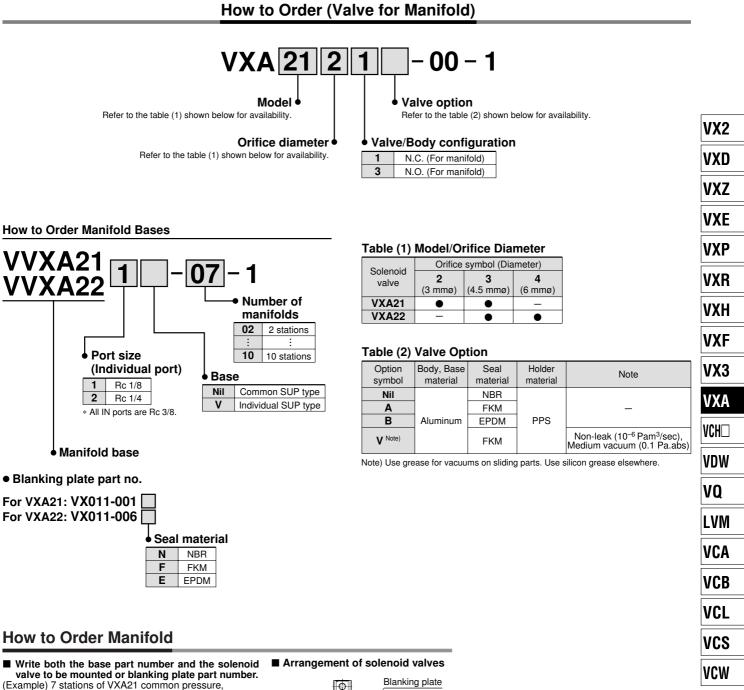
	Leakage rate					
Seal material	Air	Non-leak, ^{Note)} Medium vacuum				
NBR, EPDM, FKM	1 cm ³ /min or less	10 ⁻⁶ Pa·m ³ /sec or less				
External Leakage						
	Lookago rato					

	Leakage rate			
Seal material	Air	Non-leak, ^{Note)} Medium vacuum		
NBR, EPDM, FKM	1 cm ³ /min or less	10 ⁻⁶ Pa·m ³ /sec or less		
-				

Note) Value for option "V" (Non-leak, Medium vacuum)

Direct Air Operated 2 Port Valve Series VVXA21/2

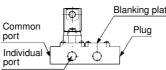
For Air/Manifold



(Base)	VVXA211-07-11 pc.
(Valve)	* VXA2121-00-1
(Blanking plate)	* VX011-001N

individual port Rc 1/8.

" \ast " is the symbol for mounting. When shipping mounted on a base, add an " \ast " in front of the valve and blanking plate model.



The standard arrangement of manifolds should be placed on an individual port on this side, each solenoid valve from the left side and a blank plate in the right side. The right side of the common port provides plug.



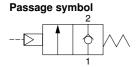
Series VXA21/22

For Water /Single Unit

Model/Valve Specifications

N.C.

N.O.



Passage symbol



Model/Valve Specifications

Port size	Orifice diameter (mmø)	Model	Pilot pressure (MPa)	Max. operating pressure differential (MPa)	Wa	acteristics ater Cv converted	Max. system pressure (MPa)	Proof pressure (MPa)	Mass (g)
1/8	3	VXA2122	-	1.0	7.9	0.33			
(6A)	4.5	VXA2132		0.5	15	0.61	1		170
	3	VXA2122		1.0	7.9	0.33	1.0		170
	4.5	VXA2132		0.5	15	0.61	1.0	1.5	
1/4	4.5	VXA2232		1.0	15	0.01			250
(8A)	6	VXA2242		0.6	26	1.1	0.4		250
	8	VXA225 ⁰	0.25 to 0.7	0.2	41	1.7			340
	10	VXA226 ⁰ 2		0.1	46	1.9			340
	4.5	VXA2232		1.0	15	0.61	1.0		050
3/8	6	VXA2242		0.6	26	1.1	1.0		250
(10A)	8	VXA225 ⁰ ₂		0.2	41	1.7			0.40
	10	VXA226 ⁰		0.1	58	2.4	0.4		340
1⁄2 (15A)	10	VXA226 ⁰ 2		0.1	58	2.4]		420

• Refer to "Glossary of Terms" on page 26 for details on the max. operating pressure differential and the max. system pressure.

Fluid and Ambient Temperature

Ambient temperature (°C)		
-5 to 40		

Note) With no freezing

Valve Leakage Rate

Internal Leakage

J-	
Seal material	Leakage rate (Water)
NBR, EPDM	0.1 cm ³ /min or less
External Leakage	
Seal material	Leakage rate (Water)
NBR, EPDM	0.1 cm ³ /min or less

Direct Air Operated 2 Port Valve Series VXA21/22

For Water/Single Unit

How to Order (Single Unit)

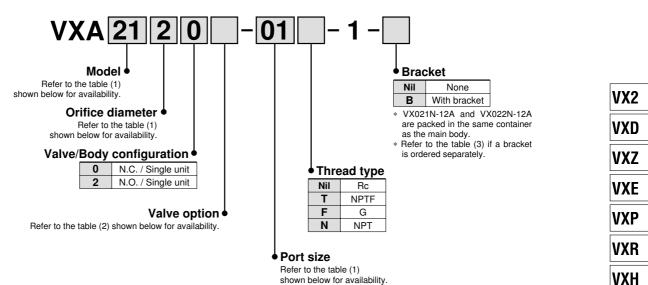


Table (1) Model/Orifice Diameter/Port Size

۱ ۱	Valve (Port size)			Orifice symbol (Diameter)			
Model	VX21	VX22	2 (3 mmø)	3 (4.5 mmø)	4 (6 mmø)	5 (8 mmø)	6 (10 mmø)
	01 (1/8)	_	•	•	_	_	_
	02 (1/4)	-	•	•	-	_	_
Port no. (Port size)	_	02 (1/4)	_	•	•	•	•
(FOIT SIZE)	_	03 (3/8)		•	•	•	•
	_	04 (1/2)	_	_	_	_	•

Table (2) Valve Option

Option symbol	Seal material	Body material	Holder material	Note
Nil	NBR	Brass (C37)	PPS	
G	INDR	Stainless steel		
В	EPDM	Brass (C37)	FFS	_
J		Stainless steel		

Table (3) Bracket Part No.

Model	Part no.
VX21 ²⁰ ₃₂	VX021N-12A
VX22 ³⁰	VX022N-12A
VX22 ⁵⁰ 62	VX023N-12A-L

VX2
VXD
VXZ
VXE
VXP
VXR
VXH
VXF
VX3
VXA
VCH
VDW
VQ
LVM
VCA
VCB
VCL
VCS
VCW

Dimensions \rightarrow page 220 (Single unit)

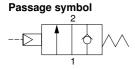
Series VXA21/22

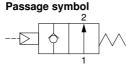


Model/Valve Specifications

N.C.

N.O.





 \bigstar When the fluid is oil. –

The dynamic viscosity of the fluid must not exceed 500 $\mbox{mm}^2\mbox{/s}.$



Model/Valve Specifications

Port size	Orifice diameter (mmø)	Model	Max. operating pressure differential (MPa)	Pilot pressure (MPa)	C	acteristics Dil Cv converted	Max. system pressure (MPa)	Proof pressure (MPa)	Mass (g)
1⁄8	3	VXA2122	1.0		7.9	0.33			
(6A)	4.5	VXA213 ⁰	0.5		15	0.61			170
	3	VXA2122	1.0	_	7.9	0.33	1.0		170
	4.5	VXA213 ⁰	0.5		15	0.61	- 1.0	1.5	
1/4	4.5	VXA223 ⁰	1.0		15	0.01			250
(8A)	6	VXA224 ⁰	0.6]	26	1.1			250
	8	VXA225 ⁰	0.2	0.25 to 0.7	41	1.7	0.4		340
	10	VXA226 ⁰	0.1		46	1.9	0.4		340
	4.5	VXA223 ⁰	1.0		15	0.61	1.0		050
3/8	6	VXA224 ⁰	0.6		26	1.1	1.0		250
(10A)	8	VXA225 ⁰	0.2		41	1.7			0.40
	10	VXA226 ⁰	0.1		58	2.4	0.4		340
1⁄2 (15A)	10	VXA226 ⁰ 2	0.1		58	2.4			420

• Refer to "Glossary of Terms" on page 26 for details on the max. operating pressure differential and the max. system pressure.

Fluid and Ambient Temperature

Fluid temperature (°C)	
Valve option symbol	Ambient temperature (°C)
A, H	
-5 ^{Note)} to 40	-5 to 40

Note) Dynamic viscosity: 500 mm²/s or less

Valve Leakage Rate

Internal Leakage

Seal material	Leakage rate (Oil)		
FKM	0.1 cm ³ /min or less		
External Leakage			
Seal material	Leakage rate (Oil)		
FKM	0.1 cm ³ /min or less		

Direct Air Operated 2 Port Valve Series VXA21/2

How to Order (Single Unit)

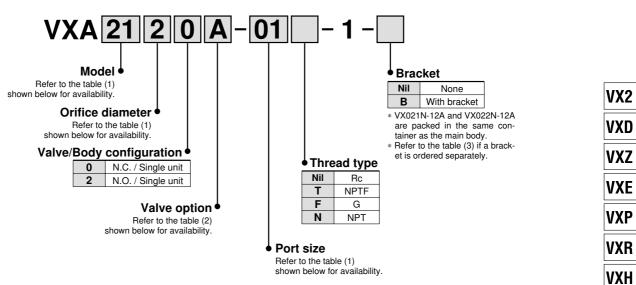


Table (1) Model/Orifice Diameter/Port Size

Soleno	id valve (Po	rt size)	Orifice symbol (Diameter)							
Model	VX21	VX22	2 (3 mmø)	3 (4.5 mmø)	4 (6 mmø)	5 (8 mmø)	6 (10 mmø)			
	01 (1/8)	_	•	•	_	_	_			
Dentine	02 (1/4)	_	•	•	_	_	_			
Port no. (Port size)	_	02 (1/4)		•	•	•	•			
(1 011 5120)	_	03 (3/8)	_	•	•	•	•			
	_	04 (1/2)		_	_	—	•			

Table (2) Valve Option

Option symbol	Seal material	Body material	Holder material
A	FKM	Brass (C37)	PPS
н		Stainless steel	-

For Oil/Single Unit

The additives contained in oil are different depending on the type and manufacturers, so the durability of seal materials will vary. For details, please consult with SMC.

Table (3) Bracket Part No.

		- I V
Model	Part no.	v
VX21 ²⁰ ₃₂	VX021N-12A	
VX22 ³⁰ 42	VX022N-12A	
VX22 ³⁰ ₆₂	VX023N-12A-L	V

Dimensions \rightarrow page 220 (Single unit)



Series VVXA21/22

For Oil /Manifold

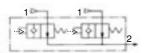
Valve for Manifold/Valve Specifications

N.C.

Passage symbol



Common SUP type



Individual SUP type

Valve for Manifold/Valve Specifications

Orifice	ice Max. operating Pilot		Flow char	acteristics	Max. system	Proof	Note)									
diameter	Model	pressure	P	P	pressure	pressure	pressure	Air		Air		Air		pressure	pressure	Mass
(mmø)	differential (MPa) (MPa)		(MPa)	Av x 10 ⁻⁶ m ²	Cv converted	(MPa)	(MPa)	(g)								
3	VXA212 ¹ / ₃ -00	1.0		7.9	0.33		1.5	120								
4 5	VXA213 ¹ / ₃ -00	0.5	0.25 to 0.7	15	0.61	1.0										
4.5	VXA223 ¹ / ₃ -00	1.0	0.25 10 0.7	15	0.01	1.0		160								
6	VXA224 ¹ / ₃ -00	0.6		26	1.1			160								

· Refer to "Glossary of Terms" on page 26 for details on the max. operating pressure differential and the max. system pressure.

Fluid and Ambient Temperature

Fluid temperature (°C) Valve option symbol	Ambient temperature (°C)
Α	
-5 Note) to 40	-5 to 40
Note) Dynamic viscosity: 500 mm	2/s or less

C VISCOSITY: 500 mm²/s

Valve Leakage Rate

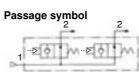
Internal Leakage

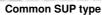
Seal material	Leakage rate
FKM	0.1 cm ³ /min or less
External Leakage	
Seal material	Leakage rate
FKM	0.1 cm ³ /min or less

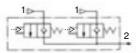
A When the fluid is oil.

The dynamic viscosity of the fluid must not exceed 500 mm²/s.

N.O.







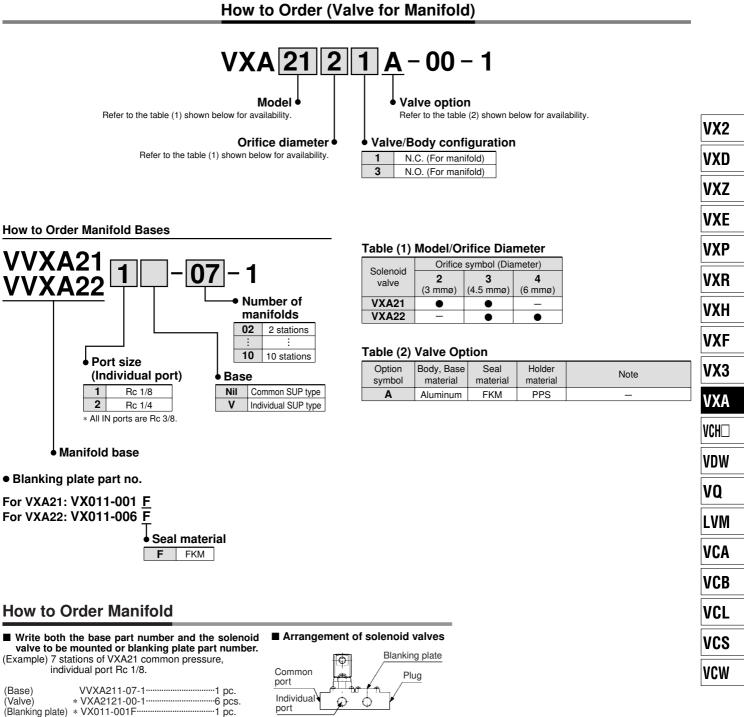
Individual SUP type

SMC

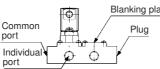
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Direct Air Operated 2 Port Valve Series VVXA21/2

For Oil/Manifold



"*" is the symbol for mounting. When shipping mounted on a base, add an "*" in front of the valve and blanking plate model



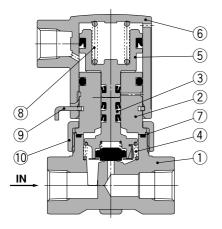
The standard arrangement of manifolds should be placed on an individual port on this side, each solenoid valve from the left side and a blank plate in the right side. The right side of the common port provides plug.



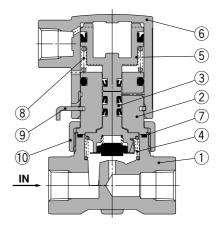


Construction: Single Unit

Normally closed (N.C.) Body material: Brass (C37), Stainless steel



Normally open (N.O.) Body material: Brass (C37), Stainless steel



Component Parts

		Mate	erial					
No.	Description Body Adapter Holder assembly Return spring Piston assembly Pilot cover O-ring Piston spring Retainer	Body material Brass (C37) specification	Body material stainless steel specification					
1	Body	Brass (C37)	Stainless steel					
2	Adapter	C36	Stainless steel					
3	Holder assembly	(NBR, FKM, EPDM), Stainless steel, PPS						
4	Return spring	Stainless steel						
5	Piston assembly	(NBR), P	olyacetal					
6	Pilot cover	ADO	C12					
7	O-ring	(NBR, FKI	N, EPDM)					
8	Piston spring	Stainles	ss steel					
9	Retainer	Stainles	ss steel					
10	Nut	Brass (C37)	Brass (C37), Ni plated					
Thor	natoriale in paranthason	are the coal materials						

The materials in parentheses are the seal materials.

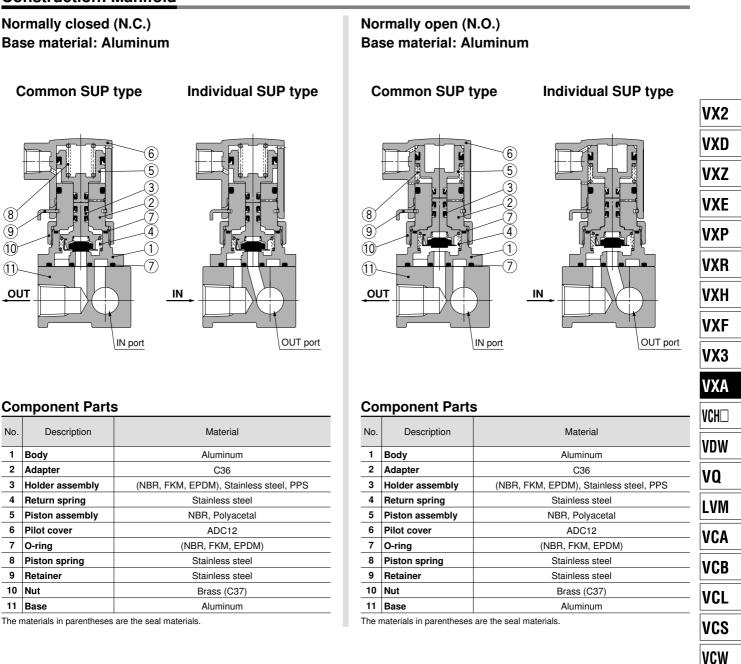
Component Parts

		Mat	erial					
No.	Body Adapter Holder assembly Return spring Piston assembly Pilot cover O-ring	Body material Brass (C37) specification	Body material stainless steel specification					
1	Body	Brass (C37)	Stainless steel					
2	Adapter	C36	Stainless steel					
3	Holder assembly	(NBR, FKM, EPDM),	Stainless steel, PPS					
4	Return spring	Stainless steel						
5	Piston assembly	(NBR), P	olyacetal					
6	Pilot cover	ADO	C12					
7	O-ring	(NBR, FKI	M, EPDM)					
8	Piston spring	Stainles	ss steel					
9	Retainer	Stainles	ss steel					
10	Nut	Brass (C37)	Brass (C37), Ni plated					

The materials in parentheses are the seal materials.



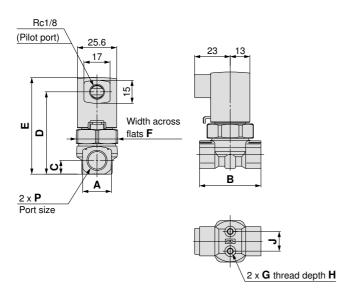
Construction: Manifold





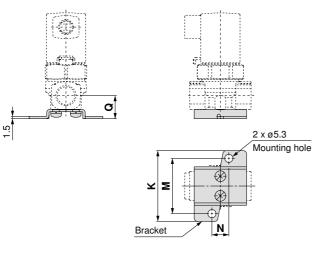
Dimensions: Single Unit/Body Material: Brass (C37), Stainless Steel

Normally closed (N.C.): VXA21□0/VXA22□0 Normally open (N.O.): VXA21□2/VXA22□2

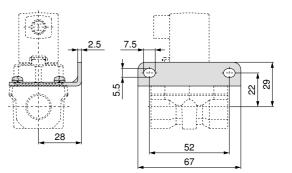


												(mm)
Model		Orifice diameter	Port size P	А	в	с	D	Е	F	G	н	J
N.C.	N.O.	Giameter	F									
VXA21⊡0	VXA21□2	ø3, ø4.5	1/8, 1/4	19	40	9	54	63	27	M4	6	12.8
VXA22(3,4)0	VXA22(3,4)2	ø4.5, ø6	1/4, 3/8	22	45	10.5	60	69	32	M5	8	19
VXA22(5,6)0	VXA22(5,6)2	ø8, ø10	1/4, 3/8, 1/2	29	50	14	66	76	32	M5	8	23

Specifications with bracket Orifice \emptyset 3, \emptyset 4.5, \emptyset 6



Orifice ø8, ø10



							(mm)		
Model		Orifice Port size diameter P							
N.C.	N.O.	Ulameter	F	К	М	N	Q		
VXA21□0	VXA21□2	ø3, ø4.5	1/8, 1/4	46	36	11	15		
VXA22(3,4)0	VXA22(3,4)2	ø4.5, ø6	1/4, 3/8	56	46	13	17.5		

For Air, Oil

VX2

VXD

VXZ

VXE

VXP

VXR

VXH

VXF

VX3

VXA

VCH

VDW

VQ

LVM

VCA

VCB

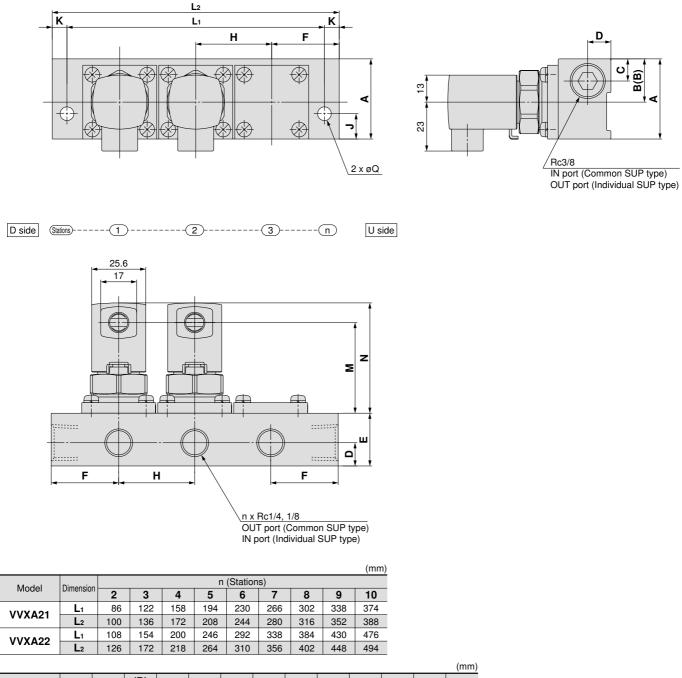
VCL

VCS

VCW

Dimensions: Manifold/Base Material: Aluminum

Normally closed (N.C.): VVXA21/VVXA22 Normally open (N.O.)



SMC

Model	Α	в	(B) Individual SUP type	с	D	E	F	н	J	к	М	N	Q
VVXA21	38	20.5	17.5	10.5	11	25	32	36	12	7	43	52	6.5
VVXA22	49	26.5	22.5	13	13	30	40	46	15	9	48	57	8.5