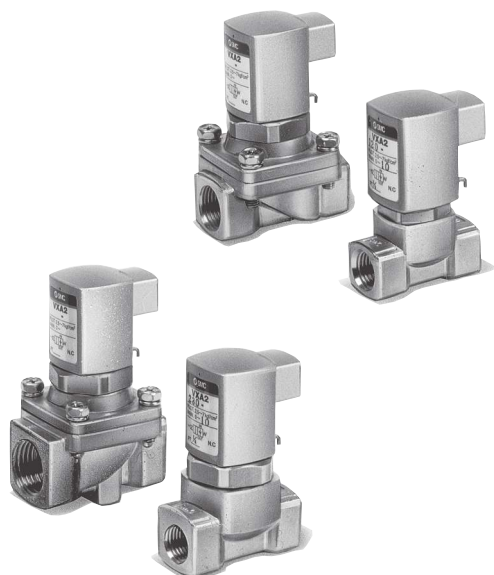


Direct Air Operated 2 Port Valve

## Series VXA21/22

For Air, Gas, Vacuum, Water and Oil



- Proper selection of body sealing materials permits application of a wide variety of fluids.

Application can be matched by simply choosing body material (Brass or Stainless steel) and seal material (NBR, FPM, EPR or PTFE).

- Easy to disassemble and reassemble in a short time.

- Compatible with high viscosity fluids (500cSt)

### Variations

#### Valve ●

Normally closed  
(N.C.)

Normally open  
(N.O.)

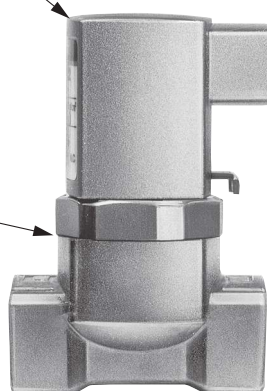
#### Material ●

Body — Brass, Stainless steel  
Seal — NBR, FPM, EPR

#### ● Pilot port (Free take off direction)

Port size —  $\frac{1}{8}$

Pilot pressure — 0.25 to 0.7MPa



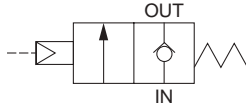
#### Model

Model	Port size	Orifice size (mmø)
VXA212 <sup>2</sup> <sub>0</sub>	1/8, 1/4	3
VXA213 <sup>2</sup> <sub>0</sub>	1/8, 1/4	4.5
VXA223 <sup>2</sup> <sub>0</sub>	1/4, 3/8	4.5
VXA224 <sup>2</sup> <sub>0</sub>	1/4, 3/8	6
VXA225 <sup>2</sup> <sub>0</sub>	1/4, 3/8	8
VXA226 <sup>2</sup> <sub>0</sub>	1/4, 3/8, 1/2	10

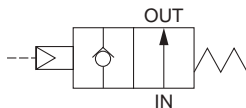
## Normally Closed (N.C.)/Normally Open (N.O.)

### Symbol

N.C.

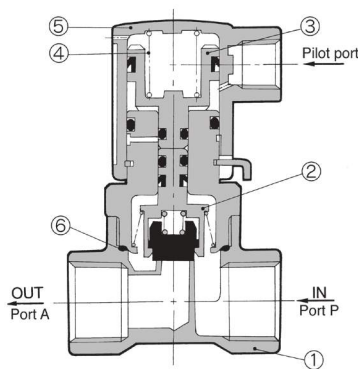


N.O.

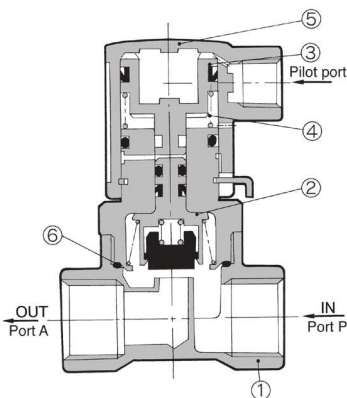


### Construction/Components

#### Normally closed (N.C.)



#### Normally open (N.O.)



No.	Description	Material	
		Standard	Option
①	Body	Brass	Stainless steel
②	Valve assembly	Stainless steel, Brass, NBR, Polyacetal	Stainless steel FPM/EPR
③	Piston assembly	Polyacetal/NBR	—
④	Piston spring	Stainless steel	—
⑤	Pilot cover	Aluminium	—
⑥	O ring	NBR	FPM/EPR

### Applicable Fluids

Standard	Option (1)
Water (Standard, Up to 40°C)	Vacuum (Up to 10 <sup>-3</sup> Torr).....(V, M)
Air (Standard, dry), Turbine oil	Non-leak (10 <sup>-5</sup> atm cc/sec or less).....(V, M)
Vacuum (Up to 1 Torr)	
Carbon dioxide (CO <sub>2</sub> ), Nitrogen gas(N <sub>2</sub> )	
Freon11, 113, 114	



Note 1) Refer to p.4.0-10 "Applicable Fluid Check List" for detail of a special fluid out of the standard and the option specifications.

### Model/Valve Specifications

Port size Rc(PT)	Orifice size (mmø)	Flow rate		Model	Max.operating pressure differential (MPa)	Max. system pressure (MPa)	Proof pressure (MPa)	Weight (g)
		N <sub>2</sub> /min	Effective area (mm <sup>2</sup> )					
1/8 (6A)	3	323.9	6	VXA212 <sub>0</sub> <sup>2</sup>	1.0	1.0	1.5	170
	4.5	598.72	11	VXA213 <sub>0</sub> <sup>2</sup>	0.5			
1/4 (8A)	3	323.9	6	VXA212 <sub>0</sub> <sup>2</sup>	1.0			250
	4.5	598.72	11	VXA213 <sub>0</sub> <sup>2</sup>	0.5			
				VXA223 <sub>0</sub> <sup>2</sup>	1.0			340
				6	1030.58	19		
	8	1668.55	31	VXA225 <sub>0</sub> <sup>2</sup>	0.2	250		
10	1864.85	34	VXA226 <sub>0</sub> <sup>2</sup>	0.1	340			
3/8 (10A)	4.5	598.72	11	VXA223 <sub>0</sub> <sup>2</sup>		1.0		1.0
	6	1030.58	19	VXA224 <sub>0</sub> <sup>2</sup>	0.6			
	8	1668.55	31	VXA225 <sub>0</sub> <sup>2</sup>	0.2	0.4		
	10	2355.6	43	VXA226 <sub>0</sub> <sup>2</sup>	0.1			
1/2 (15A)	10	2355.6	43	VXA226 <sub>0</sub> <sup>2</sup>	0.1			



Note) Refer to p.4.0-13 the glossary for detail of max. operating pressure differential and max. system pressure.

### Ambient and Fluid Temperature

Temperature	Fluid temperature °C				Ambient temperature °C
	Water (Standard)	Air (Standard)	Oil (Standard)	Vacuum (3) (V, M)	
Max.	40	60	40	40	40
Min.	1	-5 (1)	-5 (2)	-5	-5



Note 1) Dew point: -5°C or less Note 2) 500cSt or less  
Note 3) "V" and "M" in the parenthesis are option symbols.

### Tightness of Valve(Leakage)

Seal	Fluid	Air	Liquid	Non-leak Vacuum (2) (V, M)
NBR, FPM, EPR		≤1cm <sup>3</sup> /min	≤0.1cm <sup>3</sup> /min (1)	≤10 <sup>-5</sup> atm cc/sec

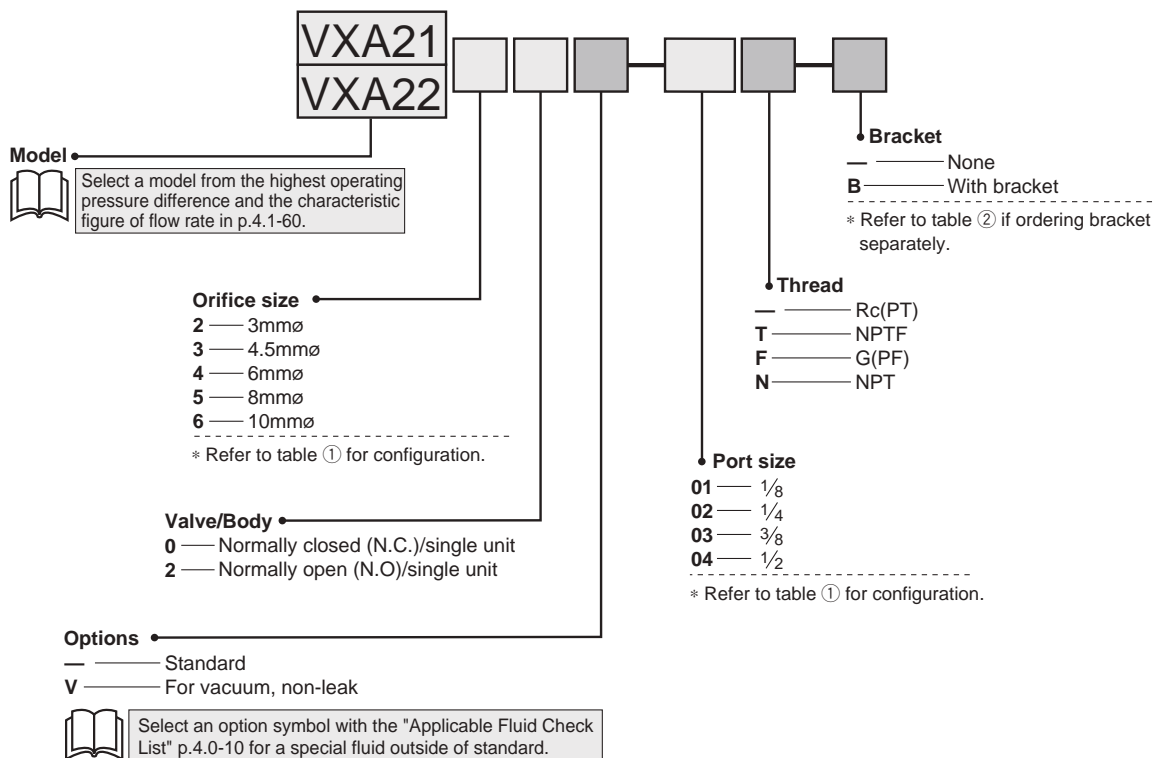


Note 1) Different from the operating condition of pressure.  
Note 2) Value on option "V", "M" (Non-leak, Vacuum).

### Pilot Pressure

Type	Pressure (MPa)
VXA21□□	0.25 to 0.7
VXA22□□	

## How to Order



**Table ① Port/Orifice Size**

Model		Orifice size (No.)				
VXA21	VXA22	2 (3mmø)	3 (4.5mmø)	4 (6mmø)	5 (8mmø)	6 (10mmø)
01 (1/8)	—	●	●	—	—	—
02 (1/4)	—	●	●	—	—	—
—	02 (1/4)	—	●	●	●	●
—	03 (3/8)	—	●	●	●	●
—	04 (1/2)	—	—	—	—	●

**Table ② Bracket Part Number**

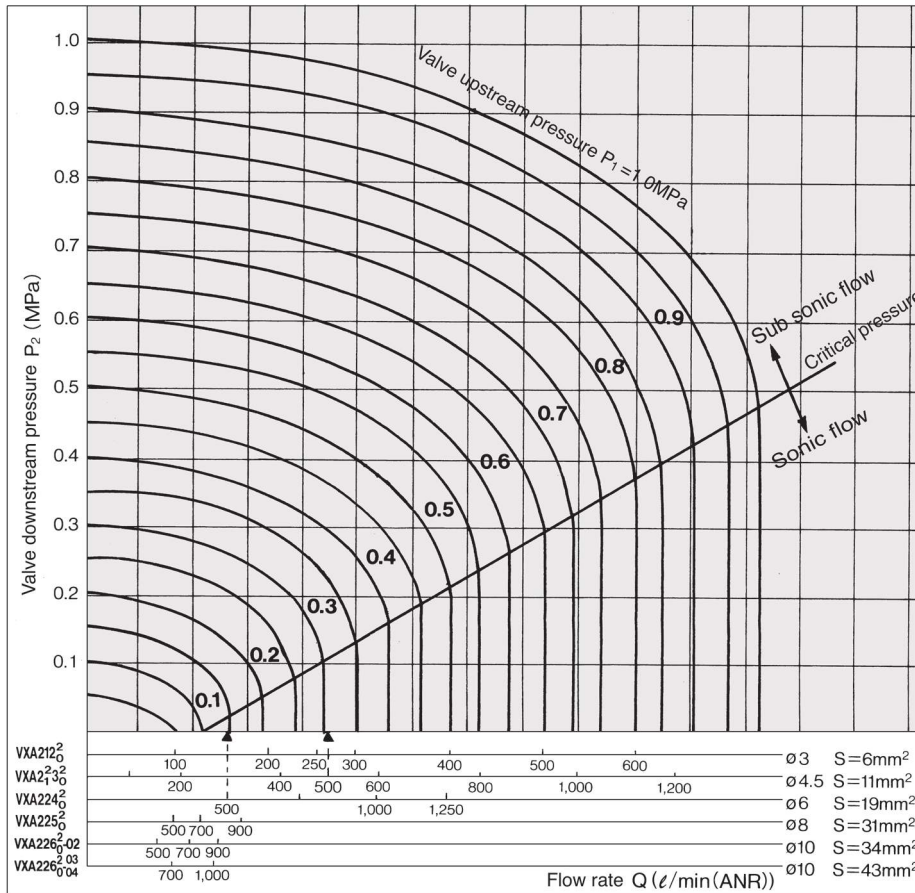
Model	Part number
VXA212□ VXA213□	VX070-020
VXA223□ VXA224□	VX070-022
VXA225□ VXA226□	VX070-029

### Ordering Example

(Example) Series VXA21, Orifice size 4.5mmø, Normal closed, Rc(PT)1/4  
(Part number)**VXA2130-02**

# VXA21/22

## Air



### How to Read the Graph

In the sonic flow region:

For a flow of 500 l/min(ANR)

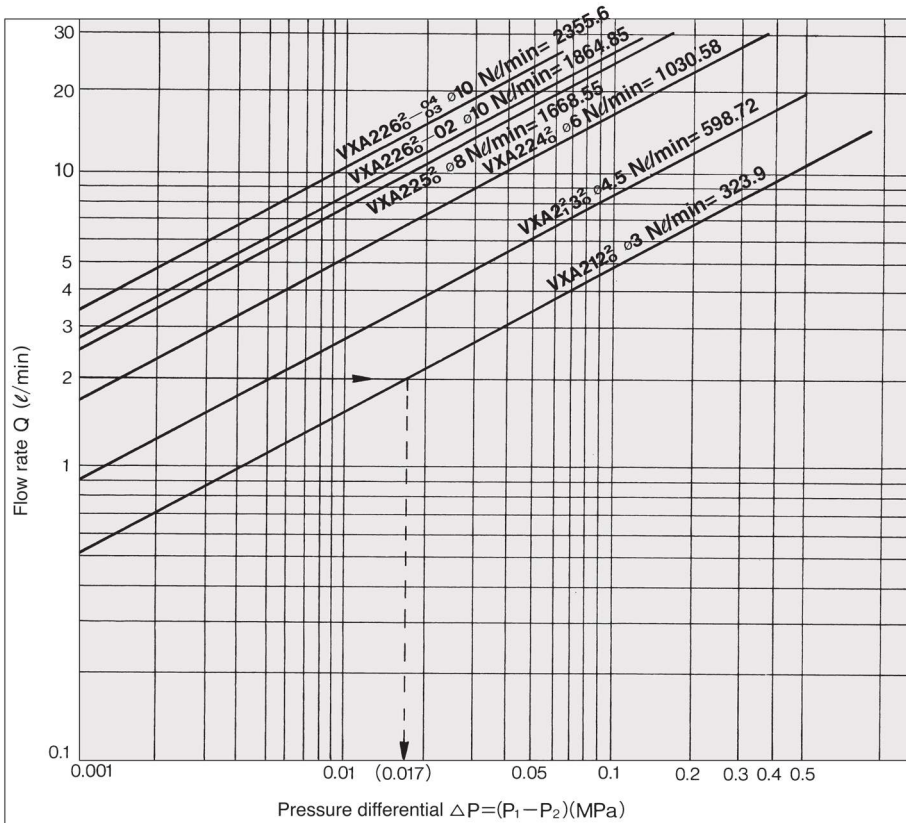
Orifice ø6 (VXA224<sub>0</sub><sup>2</sup>).....P<sub>1</sub> ≅ 0.14MPa

Orifice ø4.5 valve (VXA21<sub>3</sub><sup>2</sup>)...P<sub>1</sub> ≅ 0.3MPa

### How to Calculate Flow/Air

- Equation in the domain of subsonic flow  
 $P_1 + 0.1013 = (1 + 1.8941)(P_2 + 0.1013)$ 
  - Calculation by Cv factor  
 $Q = 4073.4 \cdot C_v \cdot \sqrt{\Delta P (P_2 + 0.1013)} \dots \text{l/min(ANR)}$
  - Calculation by effective area  
 $Q = 226.3 \cdot S \cdot \sqrt{\Delta P (P_2 + 0.1013)} \dots \text{l/min(ANR)}$
- Equation in the domain sonic flow  
 $P_1 + 0.1013 \geq 1.8941(P_2 + 0.1013)$ 
  - Calculation by Cv factor  
 $Q = 1972.8 \cdot C_v \cdot (P_1 + 0.1013) \dots \text{l/min(ANR)}$
  - Calculation by effective area  
 $Q = 109.6 \cdot S \cdot (P_1 + 0.1013) \dots \text{l/min(ANR)}$

## Water



### How to Read the Graph

In case of a flow of 2 l/min.

Orifice ø3 valve (VXA212<sub>0</sub><sup>2</sup>)...ΔP ≅ 0.017MPa

### How to Calculate Flow/Water

- Calculation by Cv factor  
 $Q = 14.2 \cdot C_v \cdot \sqrt{10.2 \cdot \Delta P} \dots \text{l/min}$
- Calculation by effective area[Smm²]  
 $Q = 0.8 \cdot S \cdot \sqrt{10.2 \cdot \Delta P} \dots \text{l/min}$

Q : Flow (Air l/min(ANR)), (Steam kg/h), (Water l/min)

ΔP: Pressure differential (P<sub>1</sub> - P<sub>2</sub>)

P<sub>1</sub> : Upstream pressure (MPa)

P<sub>2</sub> : Downstream pressure (MPa)

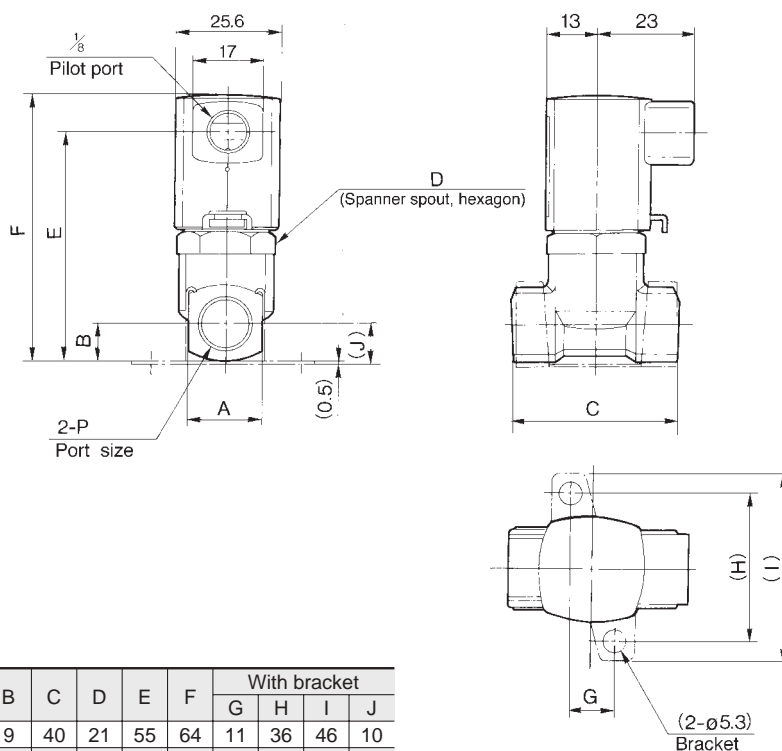
θ : Fluid temperature (°C)

S : Effective area (mm²)

Cv : Cv factor (l)

## Dimensions (Orifice size 3 mm $\phi$ , 4.5 mm $\phi$ , 6 mm $\phi$ )

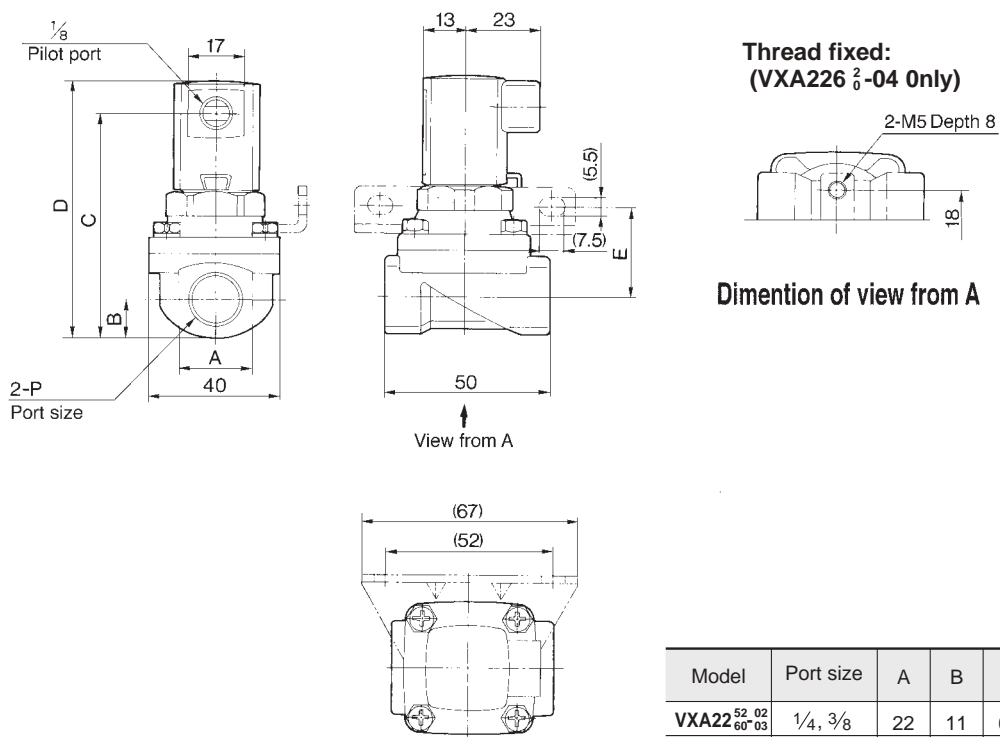
VXA212□, VXA213□, VXA223□, VXA224□



Model	Port size P	A	B	C	D	E	F	With bracket			
								G	H	I	J
VXA21	1/8, 1/4	18	9	40	21	55	64	11	36	46	10
VXA22	1/4, 3/8	21	10.5	45	27	62	71	13	46	56	11.5

## Dimensions (Orifice size 8mm $\phi$ , 10mm $\phi$ )

VXA225□, VXA226□



Model	Port size	A	B	C	D	Bracket
						E
VXA22 <sup>52 02</sup> <sub>60 03</sub>	1/4, 3/8	22	11	67	77	27
VXA226 <sup>2 04</sup> *	1/2	28	14.5	73	83	30

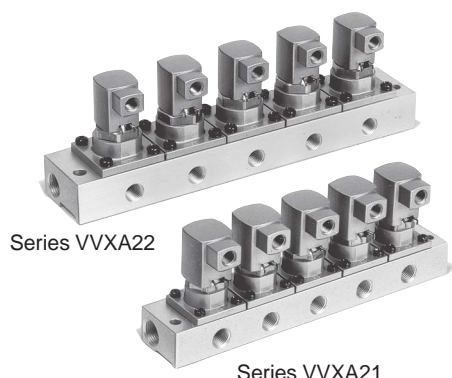
\* Fixing with thread is also possible.



Direct Air Operated  
2 Port Valve/Manifold

# Series VVXA21/22

For Air, Gas, Vacuum and Oil Use



Common SUP style and individual SUP style (for vacuum use) standard models.

Compatible with a wide variety of fluids.

Application can be matched by simply choosing the correct seal materials(NBR, FPM or EPR).

It is possible to replace valve without changing existing piping.

Weight-saving aluminium base and body.  
(Not applicable to water or steam)

## Variations

**Valve**

	Normally closed (N.C.)		Normally open (N.O.)	
	Common SUP	Individual SUP	Common SUP	Individual SUP

**Manifold**

Manifold style — B mount  
Manifold stations — 2 to 10 stations

**Material**

Base, Body — Aluminum  
Seal — NBR, FPM, EPR

**Model**

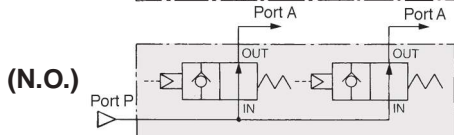
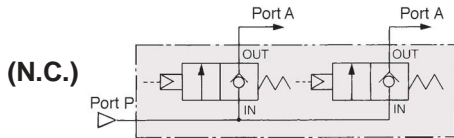
Manifold base	Individual port	Common port
VVXA211-stations	1/8	3/8
VVXA212-stations	1/4	
VVXA221-stations	1/8	
VVXA222-stations	1/4	



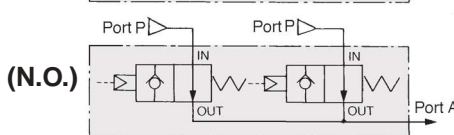
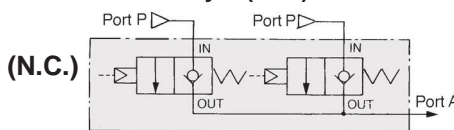
## Normally Closed (N.C.)/Normally Open (N.O.)

### Symbol

#### Common SUP style

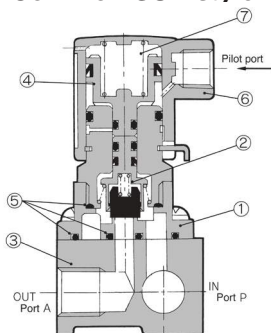


#### Individual SUP style (N.C.)

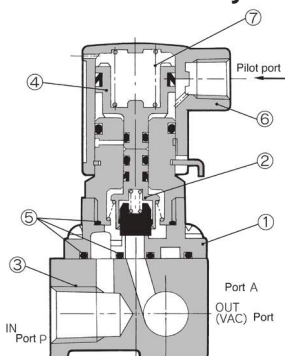


### Construction/Components

#### Common SUP style



#### Individual SUP style



No.	Description	Material	
		Standard	Option
①	Body	Aluminium	—
②	Valve assembly	NBR, Stainless steel, Brass, Polyacetal	EPR/FPM
③	Base	Aluminium	—
④	Piston assembly	Polyacetal, NBR	—
⑤	O ring	NBR	FPM/EPR
⑥	Pilot cover	Aluminium	—
⑦	Piston spring	Stainless steel	—

### Applicable Fluids

Standard	Option <sup>(1)</sup>
Air (Standard, Dry)	Vacuum (Up to 10 <sup>-3</sup> Torr)..... (V)
Vacuum (Up to 1Torr)	Non-leak (10 <sup>-5</sup> atm cc/sec or less)..... (V)
Turbine oil	
Carbon dioxide (CO <sub>2</sub> ), Nitrogen gas (N <sub>2</sub> )	
Freon11, 113, 114	



Note 1) Refer to p.4.0-10 "Applicable Fluid Check List" for detail of a special fluid out of the standard and the option specifications.

### Manifold Specifications

Manifold	B Mount	
Manifold base	Common pressure supply, individual pressure supply (For vacuum) <sup>(1)</sup>	
Number of valves	2 to 10 stations	
Blank plate (With O rings, screws)	VVXA21	VX011-001
	VVXA22	VX011-006



Note 1) Common port is placed on vacuum side.

### Manifold Base and Applicable Solenoid Valve

Manifold base	Individual port	Applicable solenoid valve	Weight per one station
VVXA211-stations	1/8	VXA21□ <sup>3</sup> -00	n X 70+50
VVXA212-stations	1/4		
VVXA221-stations	1/8	VXA22□ <sup>3</sup> -00	n X 130+110
VVXA222-stations	1/4		

### Solenoid Valve for Manifold

Orifice size (mmø)	Flow rate		Model	Max. operating pressure differential (MPa)	Max. system pressure (MPa)	Proof pressure (MPa)	Weight (g)
	Nl/min	Effective area (mm <sup>2</sup> )					
3	323.9	6	VXA212 <sup>3</sup> -00	1.0	1.0	1.5	120
4.5	598.72	11	VXA213 <sup>3</sup> -00	0.5			160
			VXA223 <sup>3</sup> -00	1.0			
6	1030.58	19	VXA224 <sup>3</sup> -00	0.6			



Note) Refer to p.4.0-13 the glossary for detail of max. operating pressure differential and max. system pressure.

### Ambient and Fluid

Temperature	Fluid temperature °C			Ambient temperature °C
	Air (Standard)	Oil (Standard)	Vacuum <sup>(3)</sup> (V)	
Max.	60	40	40	40
Min.	-5 <sup>(1)</sup>	-5 <sup>(2)</sup>	-5	-5



Note 1) Dew point: -10°C or less Note 2) 500cSt or less

Note 3) "V" in the parenthesis is option symbol.

### Tightness of Valve(Leakage)

Seal	Fluid	Air	Liquid	Non-leak vacuum <sup>(2)</sup>
		1cm <sup>3</sup> /min or less	0.1cm <sup>3</sup> /min or less <sup>(1)</sup>	10 <sup>-5</sup> atm cc/sec or less
	NBR, FPM, EPR			



Note 1) Differ from the operating condition of pressure.

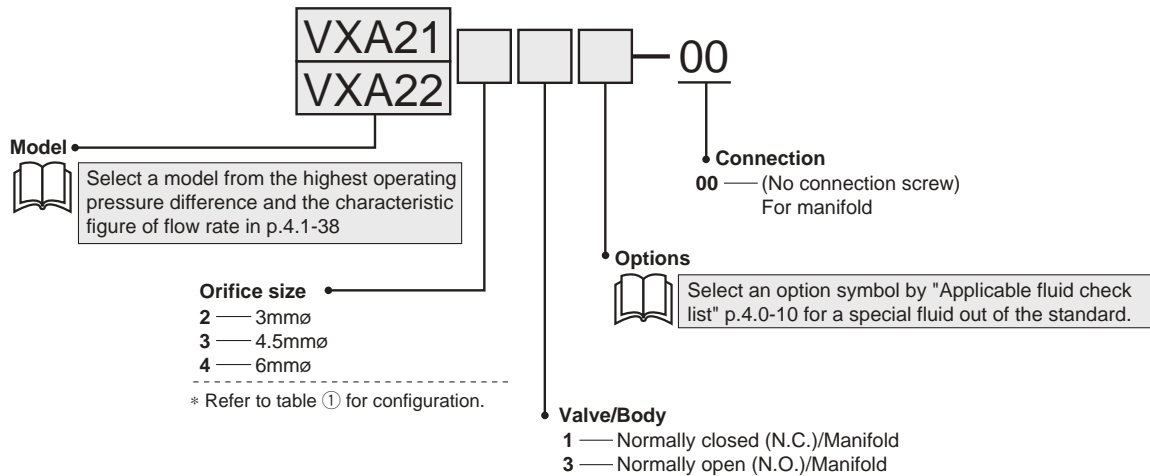
Note 2) Value on option "V" (Non-leak, Vacuum).

### Pilot Pressure

Model	Pressure (MPa)
VXA21□□	0.25 to 0.7
VXA22□□	



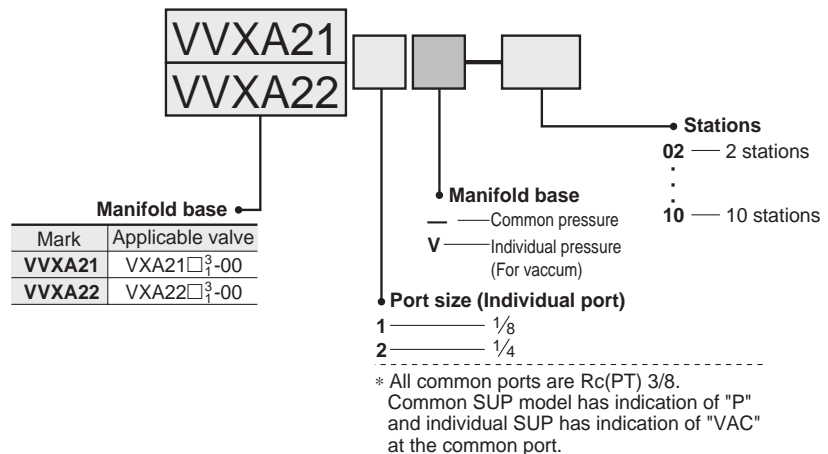
## How to Order/Manifold



**Table ① Orifice Size**

Model	Orifice size (No.)		
	2 (3mmø)	3 (4.5mmø)	4 (6mmø)
VXA21	●	●	—
VXA22	—	●	●

## How to Order Manifold Base

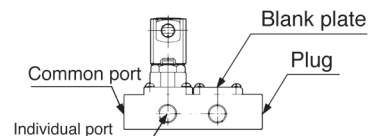


### Write both the base style and the style of valve or blank plate manifold.

(Example) 7 stations of VXA21 common pressure, individual port Rc(PT)1/8.

(Base) VVXA211-07 .....1 pc.  
(Valve) VXA2121-00 .....6 pcs.  
(Blank plate) VX011-001 .....1 pc.

### Arrangement of solenoid valves

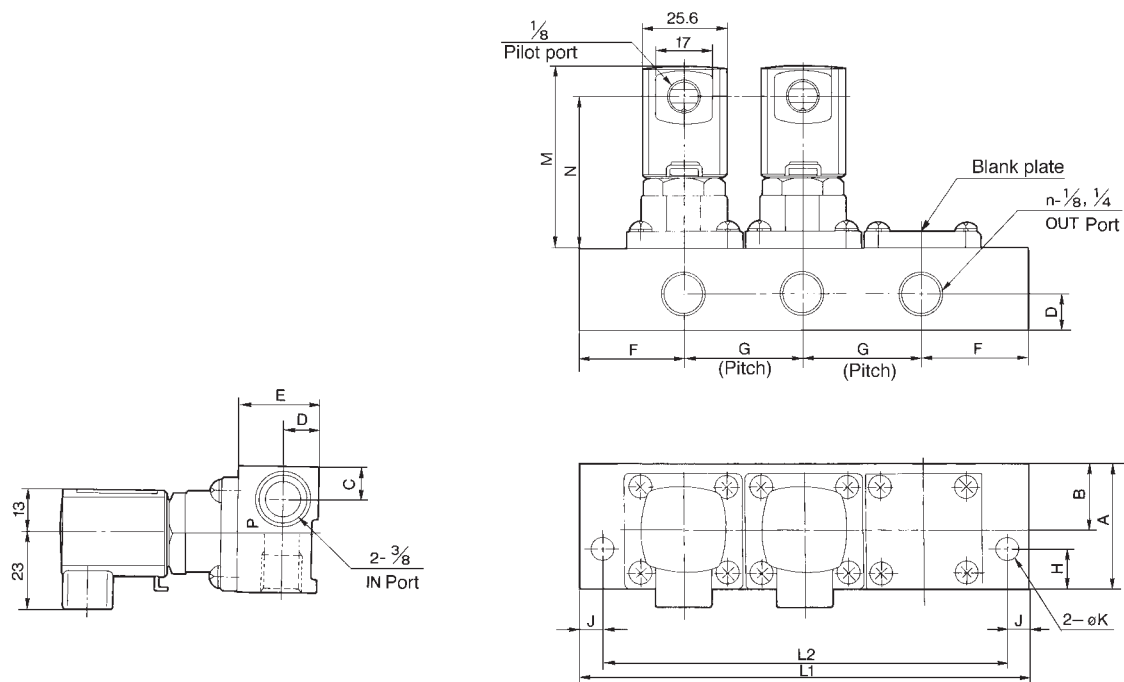


The standard arrangement of manifolds should be placed on an individual port on this side, each solenoid valve from the left side and a blank plate in the right side. The right side of the common port provides plug.

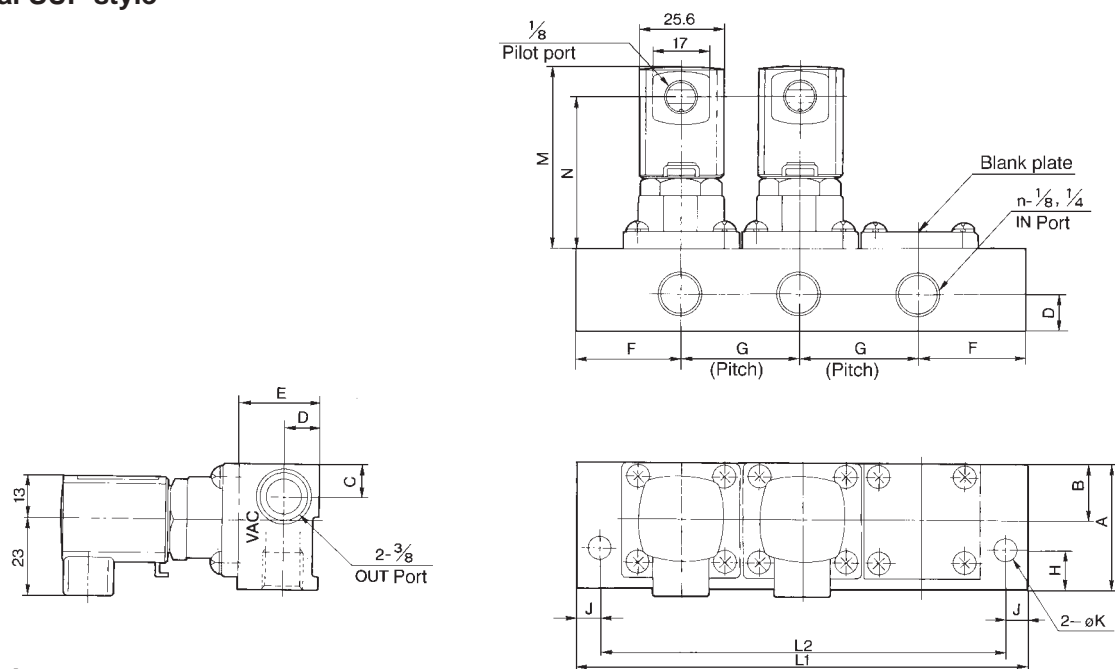
# VVXA21/22

## Dimensions

### Common SUP style



### Individual SUP style



### L: Dimensions

Model	Stations	2	3	4	5	6	7	8	9	10
	L									
VVXA21□	L1	100	136	172	208	244	280	316	352	388
	L2	86	122	158	194	230	266	302	338	374
VVXA22□	L1	126	172	218	264	310	356	402	448	494
	L2	108	154	200	246	292	338	384	430	476

Model	A	B	C	D	E	F	G	H	J	K	M	N
VVXA21□	38	20.5 [17.5]	10.5	11	25	32	36	12	7	6.5	54	45
VVXA22□	49	26.5 [22.5]	13	13	30	40	46	15	9	8.5	58	49

[ ]: Individual pressure style

Direct Air Operated 3 Port Valve

# Series VXA31/32

For Air, Gas, Vacuum, Water and Oil



**Proper selection of body and sealing materials permits application of a wide variety of fluids.**

Application can be matched by simply choosing body material (Brass or Stainless steel) and seal material (NBR, FPM or EPR).

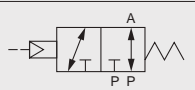
**C.O. style easy to use; operatable as either N.C. or N.O.**

**Easy to disassemble and reassemble in a short time.**

**Compatible with high viscosity fluids (500cSt).**

## Variations

Common  
(C.O.)



Valve ●

● Pilot port (Free take off direction)

Connecting port size — 1/8  
Pilot pressure — 0.25 to 0.7 (MPa)

Material ●

Body — Brass, Stainless steel  
Seal — NBR, FPM, EPR

### Model

Model	Connecting port size	Orifice size (mmø)
VXA3114	1/8, 1/4	1.5
VXA3124	1/8, 1/4	2.2
VXA3134	1/8, 1/4	3
VXA3224	1/4, 3/8	2.2
VXA3234	1/4, 3/8	3
VXA3244	1/4, 3/8	4

## Common (C.O.)

### Applicable Fluids

Standard	Option <sup>(1)</sup>
Water (Standard, Up to 40°C) Air (Standard, Dry), Turbine oil, Vacuum (Up to 1 Torr), Carbon dioxide (CO <sub>2</sub> ), Nitrogen gas (N <sub>2</sub> ), Freon11, 113, 114	Vacuum (Up to 10 <sup>-3</sup> Torr) ..... (V, M) Non-leak (10 <sup>-5</sup> atm cc/sec or less)..... (V, M)



Note 1) Refer to p.4.0-11 "Applicable Fluid Check List" for detail of a special fluid out of the standard and the option specifications.

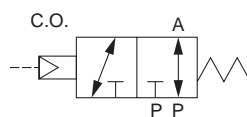
### Model/Valve Specifications

Port size Rc(PT)	Orifice size (mmø)	Flow rate		Model	Max. operating pressure differential (MPa)	Max. system pressure (MPa)	Proof pressure (MPa)	Weight <sup>(1)</sup> (g)
		Nl/min	Effective orifice (mm <sup>2</sup> )					
1/8 (6A)	1.5	78.52	1.4	VXA3114	1.0	1.0	1.5	280
	2.2	157.04	2.8	VXA3124	0.5			
	3	235.56	4.3	VXA3134	0.3			
1/4 (8A)	1.5	78.52	1.4	VXA3114	1.0			410
		157.04	2.8	VXA3124	0.5			
		186.49	3.4	VXA3224	1.0			
	2.2	235.56	4.3	VXA3134	0.3			280
		323.9	6	VXA3234	0.6			
		490.75	9	VXA3244	0.3			
3/8 (10A)	2.2	186.49	3.4	VXA3224	1.0			410
	3	323.9	6	VXA3234	0.6			
	4	490.75	9	VXA3244	0.3			

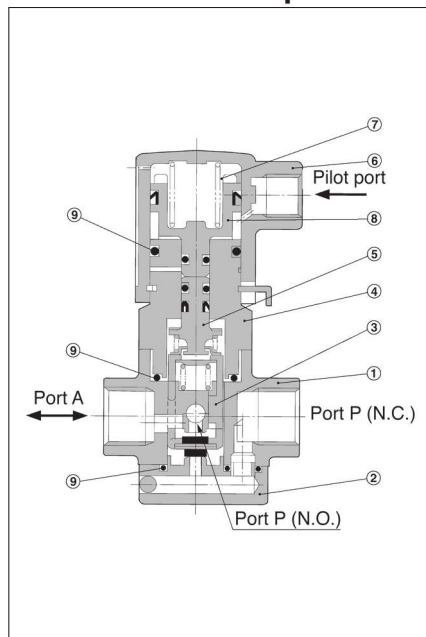


Note 1) Refer to p.4.0-13 the glossary for detail of max.operating pressure differential and max. system pressure.

### Symbol



### Construction/Components



No.	Description	Standard	
①	Body assembly	Brass	Stainless steel
②	Retainer assembly	Brass	Stainless steel
③	Valve assembly	NBR Polyacetal	FPM/EPR Stainless steel
④	Adapter	Brass	Stainless steel
⑤	Travel assembly	Stainless steel, NBR, Polyacetal	FPM/EPR Stainless steel
⑥	Pilot cover	Aluminium	—
⑦	Piston spring	Stainless steel	—
⑧	Piston assembly	Polyacetal, NBR	—
⑨	O ring	NBR	FPM/EPR

### Ambient and Fluid Temperature

Temperature	Fluid temperature °C				Ambient temperature °C
	Water (Standard)	Air (Standard)	Oil (Standard)	Vacuum <sup>(3)</sup> (V, M)	
Max.	40	60	40	40	40
Min.	1	-5 <sup>(1)</sup>	-5 <sup>(2)</sup>	-5	-5

Note 1) Dew point: -10°C or less. Note 2) 500cSt or less.

Note 3) "V", "M" in the parenthesis are option symbols.

### Tightness of Valve(Leakage)

Seal	Fluid	Air	Liquid	Non-leak, Vacuum <sup>(2)</sup>
NBR, FPM, EPR		≤1cm <sup>3</sup> /min	≤0.1cm <sup>3</sup> /min <sup>(1)</sup>	≤10 <sup>-5</sup> atm cc/sec



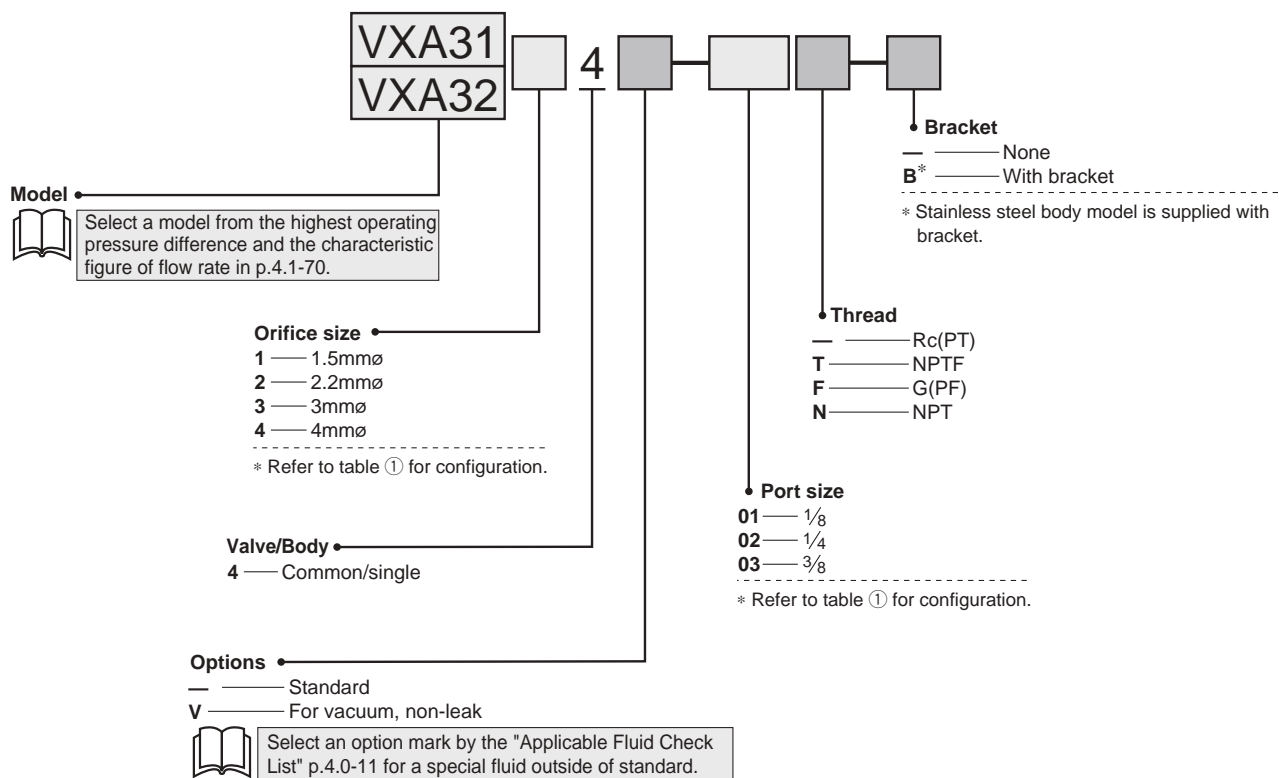
Note 1) Differ from the operating condition of pressure.

Note 2) Value on option "V", "M" (Non-leak, Vacuum).

### Pilot Pressure

Model	Pressure MPa
VXA31□4 VXA32□4	0.25 to 0.7

## How to Order



**Table ① Port/Orifice Size**

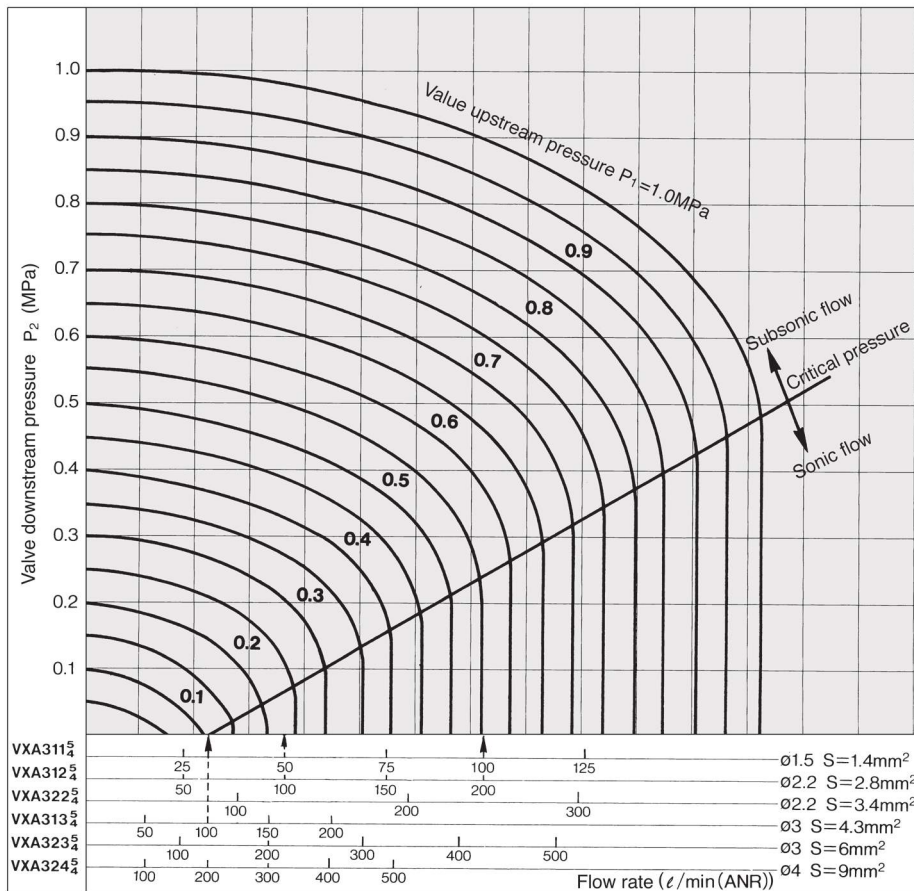
Valve (Port size)		Orifice size (No.)			
VXA31	VXA32	1 (1.5mmø)	2 (2.2mmø)	3 (3mmø)	4 (4mmø)
01 (1/8)	—	●	●	●	—
02 (1/4)	—	●	●	●	—
—	02 (1/4)	—	●	●	●
—	03 (3/8)	—	●	●	●

### Ordering Example

(Example) Series VXA31, Orifice size 1.5mmø, Rc(PT)1/8  
(Part number) **VXA3114-01**

# VXA31/32

## Air



### How to Read the Graph

In the sonic flow region:

For a flow of 100 l/min (ANR)

Orifice  $\phi 3$  (VXA313 $\frac{5}{4}$ )..... $P_1 \cong 0.1$  MPa

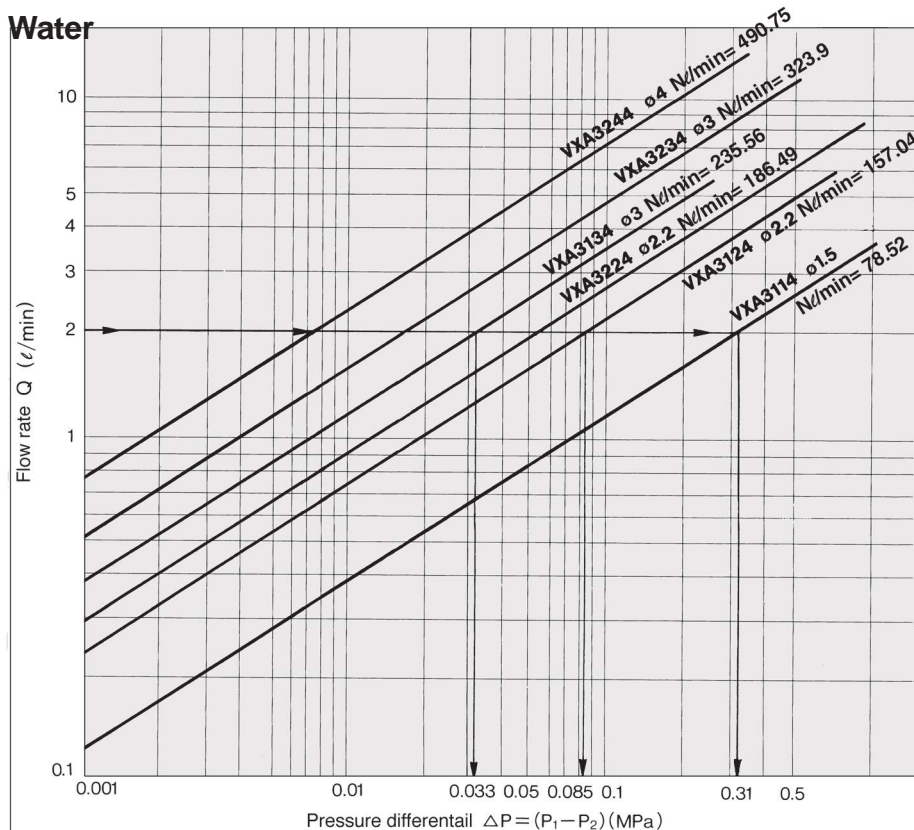
Orifice  $\phi 2.2$  (VXA312 $\frac{5}{4}$ )..... $P_1 \cong 0.23$  MPa

Orifice  $\phi 1.5$  (VXA311 $\frac{5}{4}$ )..... $P_1 \cong 0.55$  MPa

### How to Calculate Flow/Air

- Equation in the domain of subsonic flow  
 $P_1 + 0.1013 = (1 \text{ to } 1.8941)(P_2 + 0.1013)$ 
  - Calculation by Cv factor  
 $Q = 4073.4 \cdot C_v \cdot \sqrt{\Delta P (P_2 + 0.1013)}$  ..... l/min (ANR)
  - Calculation by effective area  
 $Q = 226.3 \cdot S \cdot \sqrt{\Delta P (P_2 + 0.1013)}$  ..... l/min (ANR)
- Equation in the domain of sonic flow  
 $P_1 + 0.1013 \geq 1.8941(P_2 + 0.1013)$ 
  - Calculation by Cv factor  
 $Q = 1972.8 \cdot C_v \cdot (P_1 + 0.1013)$  ..... l/min (ANR)
  - Calculation by effective area  
 $Q = 109.6 \cdot S \cdot (P_1 + 0.1013)$  ..... l/min (ANR)

## Water



### How to Read the Graph

In case of a flow of 2 l/min.

Orifice  $\phi 3$  valve (VXA3134)..... $\Delta P \cong 0.033$  MPa

Orifice  $\phi 2.2$  valve (VXA3124)..... $\Delta P \cong 0.085$  MPa

Orifice  $\phi 1.5$  valve (VXA3114)..... $\Delta P \cong 0.31$  MPa

### How to Calculate Flow/Water

- Calculation by Cv factor  
 $Q = 14.2 \cdot C_v \cdot \sqrt{10.2 \cdot \Delta P}$  ..... l/min
- Calculation by effective area [Smm²]  
 $Q = 0.8 \cdot S \cdot \sqrt{10.2 \cdot \Delta P}$  ..... l/min

Q : Flow (Air l/min (ANR)), (Steam kg/h), (Water l/min)

$\Delta P$ : Pressure differential ( $P_1 - P_2$ )

$P_1$  : Upstream pressure (MPa)

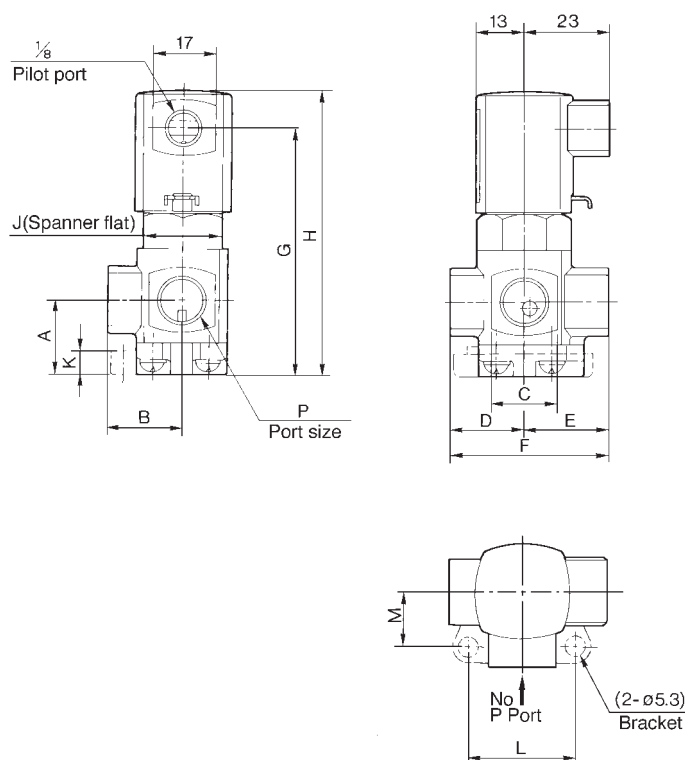
$P_2$  : Downstream pressure (MPa)

$\theta$  : Fluid temperature ( $^{\circ}\text{C}$ )

S : Effective area (mm²)

Cv : Cv factor (l)

## Dimensions



Symbol Model	Port size P	A	B	C	D	E	F	G	H	J	With bracket		
											K	L	M
<b>VXA31</b>	1/8, 1/4	19	20	18	20	22.5	42.5	71	81	21	6	29	14.5
<b>VXA32</b>	1/4, 3/8	25	20	21	20	27.5	47.5	80	90	27	7.5	32	17





Direct Air Operated  
3 Port Valve/Manifold

# Series VVXA31/32

For Air, Gas, Vacuum and Oil



Compatible with a wide variety of fluids.

Application can be matched by simply choosing the correct seal material (NBR, FPM or EPR).

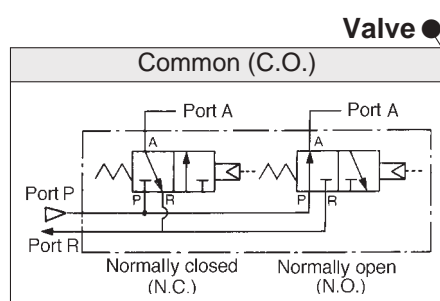
It is possible to replace valve without changing existing piping.

Configuration can be changed from N.C. to N.O., and from N.O. to N.C. easily.

Weight-saving aluminium base and body.

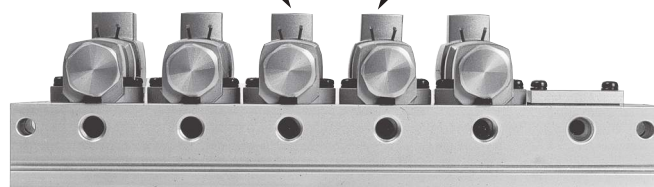
(Not applicable to water or steam.)

## Variations



**Material**

Base, Body	Aluminium
Seal	NBR, FPM, EPR



**Manifold**

Manifold style	B mount
Manifold stations	2 to 10 stations

**Model**

Manifold base	Port A	Port P	Port R
VVXA311-stations	1/8	1/4	1/4
VVXA312-stations	1/4		
VVXA321-stations	1/8		
VVXA322-stations	1/4		

# VVXA31/32

## Common (C.O.)

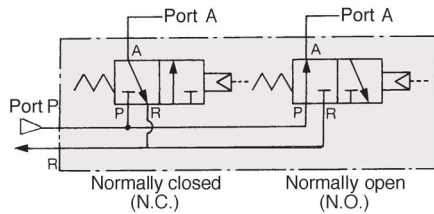
### Applicable Fluids

Standard	Option <sup>(1)</sup>
Air (Standard, Dry), Vacuum (Up to 1 Torr), Turbine oil, Carbon dioxide (CO <sub>2</sub> ), Nitrogen gas (N <sub>2</sub> ) Freon 11, 113, 114	Vacuum (Up to 10 <sup>-3</sup> Torr) ..... (V) Non-leak or less (10 <sup>-5</sup> atm cc/sec or less) ..... (V) ..... Others

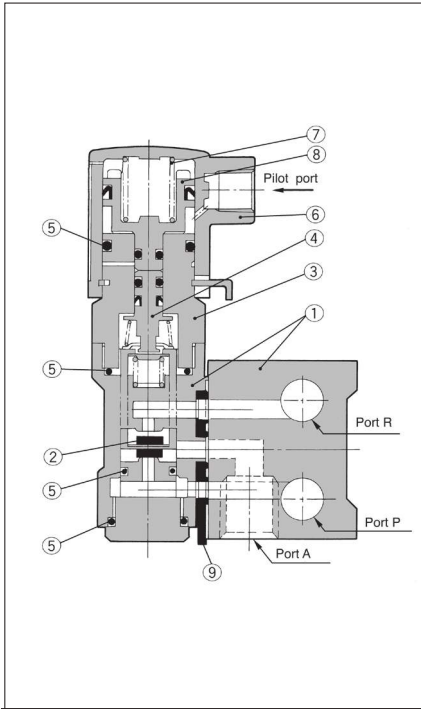


Note 1) Refer to p.4.0-11 "Applicable Fluid Check List" for detail of a special fluid out of the standard and the option specifications.

### Symbol



### Construction/Components



No.	Description	Material	
		Standard	Options
①	Manifold body, base	Aluminium	Brass (Base is aluminium.)
②	Valve assembly	NBR Polyacetal	EPR/FPM
③	Adapter	Aluminium	EPR/FPM
④	Travel assembly	NBR Polyacetal	EPR/FPM
⑤	O ring	NBR	EPR/FPM
⑥	Pilot cover	Aluminium	—
⑦	Piston spring	Stainless steel	—
⑧	Piston	NBR Polyacetal	—
⑨	Gasket	NBR	FPM/EPR

### Manifold Specifications

Manifold	B Mount	
Manifold base	Common supply, Common exhaust, Common out	
Number of valves	2 to 10 stations	
Blanking plate (With gasket, screws)	VVXA31	VX011-004
	VVXA32	VX011-005

### Manifold Base and Applicable Valve

Manifold base	Individual port	Applicable valve	Base weight (g)
VVXA311-stations	1/8	VXA31□5-00	n X 100+50
VVXA312-stations	1/4		
VVXA321-stations	1/8	VXA32□5-00	n X 160+70
VVXA322-stations	1/4		

### Model/Valve Specifications

Orifice size (mmø)	Flow rate		Model	Max. operating pressure differential (MPa)	Max. system pressure (MPa)	Proof pressure (MPa)	Weight <sup>(1)</sup> (g)
	N <sub>2</sub> /min	Effective area (mm <sup>2</sup> )					
1.5	78.52	1.4	VXA3115-00	1.0	1.0	1.5	150
2.2	157.04	2.8	VXA3125-00	0.5			230
	186.49	3.4	VXA3225-00	1.0			150
3	235.56	4.3	VXA3135-00	0.3			230
	323.9	6	VXA3235-00	0.6			
4	490.75	9	VXA3245-00	0.3			



Note 1) •Add the V type (VXA31) 80g, (VXA32)130g.

•Refer to p.4.0-13 the glossary for detail of max. operating pressure and max. system.

### Ambient and Fluid

Temperature	Fluid temperature °C			Ambient temperature °C
	Air (Standard)	Oil (Standard)	Vacuum <sup>(3)</sup> (V)	
Max.	60	40	40	40
Min.	-5 <sup>(1)</sup>	-5 <sup>(2)</sup>	-5	-5



Note 1) Dew point: -5°C or less Note 2) 500cSt or less

Note 3) "V" in the parenthesis is option symbol.

### Tightness of Valve(Leakage)

Seal	Fluid	Air	Liquid	Non-leak, Vacuum <sup>(2)</sup>
	NBR, FPM, EPR	≤1cm <sup>3</sup> /min	≤0.1cm <sup>3</sup> /min <sup>(1)</sup>	≤10 <sup>-5</sup> atm cc/sec



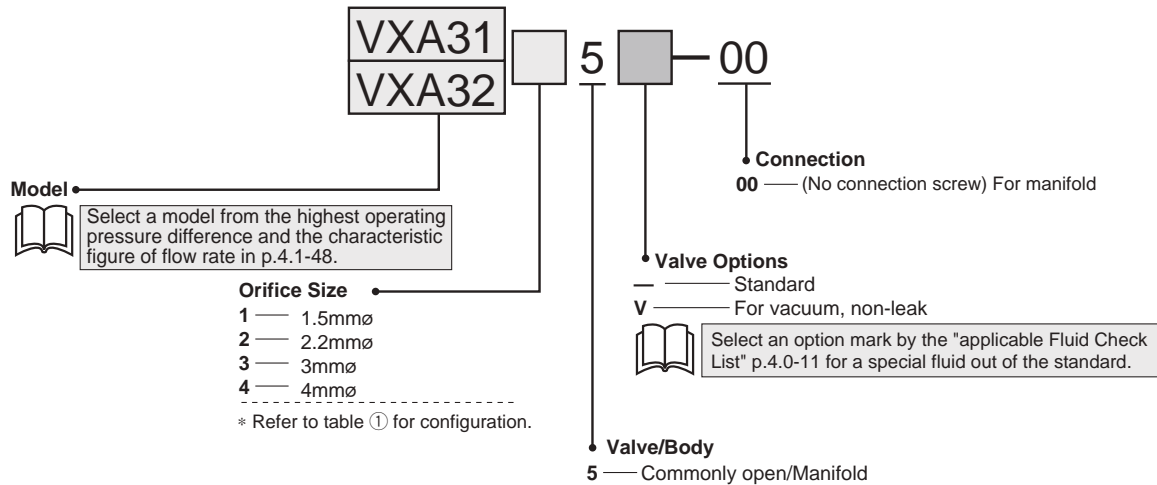
Note 1) Differ from the operating condition of pressure.

Note 2) Value on option "V" (Non-leak, Vacuum).

### Pilot Pressure

Model	Pressure MPa
VXA31□5 VXA32□5	0.25 to 0.7

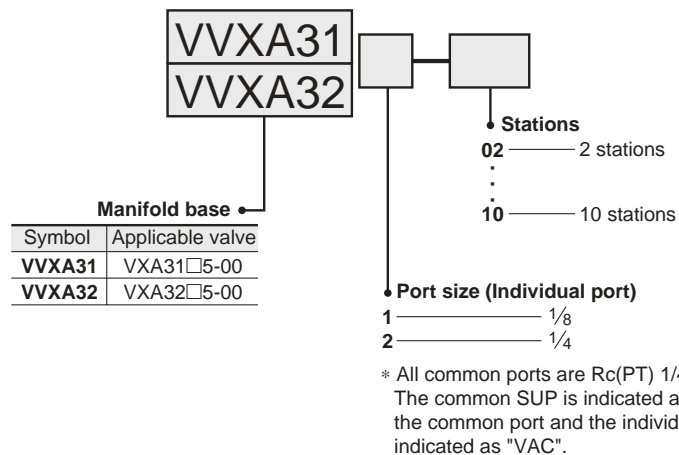
## How to Order/Manifold



**Table ① Orifice Size**

Model	Orifice size (No.)			
	1 (1.5mmø)	2 (2.2mmø)	3 (3mmø)	4 (4mmø)
VXA31	●	●	●	—
VXA32	—	●	●	●

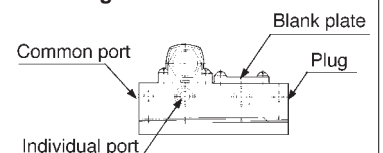
## How to Order Manifold Base



■Write both the base style and the style of valve or blank plate manifold.  
(Example) 7stations of VXA31, Individual port Rc(PT)1/8

(Base) VXA311-07..... 1 pc  
(Valve) VXA3115-00..... 6 pcs.  
(Blank plate) VX011-004..... 1 pc.

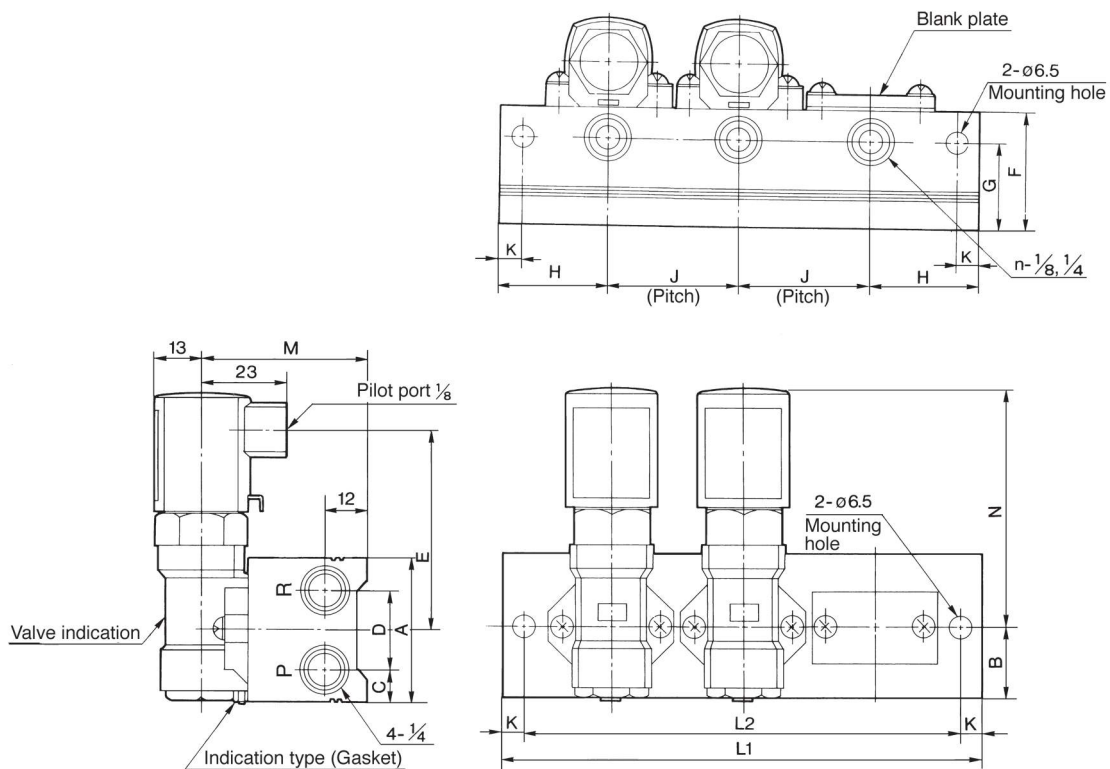
■Arrangement of solenoid valves



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.

# VVXA31/32

## Dimensions



Model \ Stations		Stations								
		L	2	3	4	5	6	7	8	9
VVXA31	L1	96	132	168	204	240	276	312	348	384
	L2	84	120	156	192	228	264	300	336	372
VVXA32	L1	126	172	218	264	310	356	402	448	494
	L2	108	154	200	246	292	338	384	430	476

Model \ Symbol	A	B	C	D	E	F	G	H	J	K	M	N
VVXA31	40	20	9	22	59	33	24	30	36	6	45.5	69
VVXA32	44	22	10	24	66	34	25	40	46	9	50.5	76