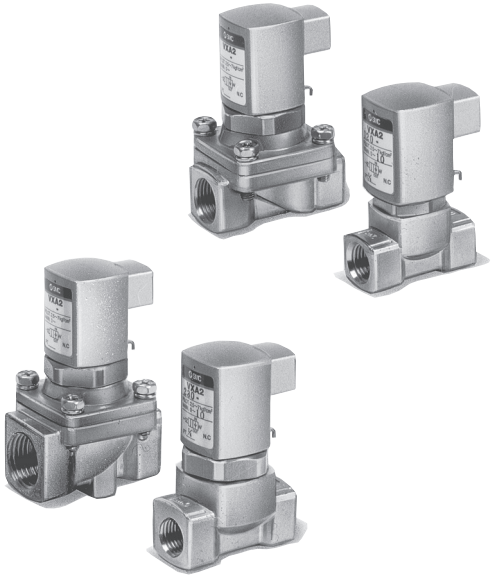
Direct Air Operated 2 Port Valve

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)

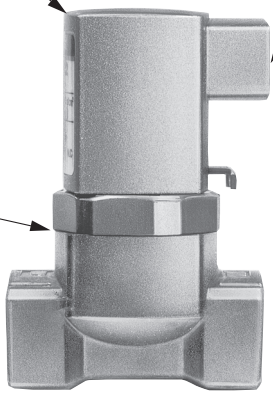
Variations

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 —— 1/8
Pilot pressure —— 0.25 to 0.7MPa

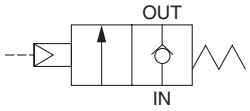
Model

Model	Port size	Orifice size (mmø)
VXA212$^{2}_{0}$	1/8, 1/4	3
VXA213$^{2}_{0}$	1/8, 1/4	4.5
VXA223$^{2}_{0}$	1/4, 3/8	4.5
VXA224$^{2}_{0}$	1/4, 3/8	6
VXA225$^{2}_{0}$	1/4, 3/8	8
VXA226$^{2}_{0}$	1/4, 3/8, 1/2	10

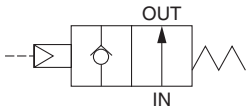
Normally Closed (N.C.)/Normally Open (N.O.)

Symbol

N.C.

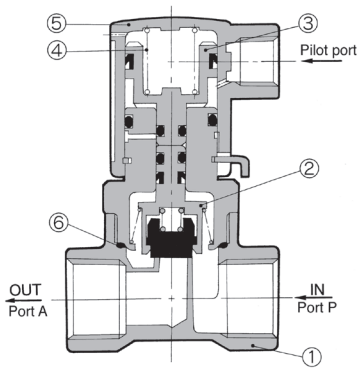


N.O.

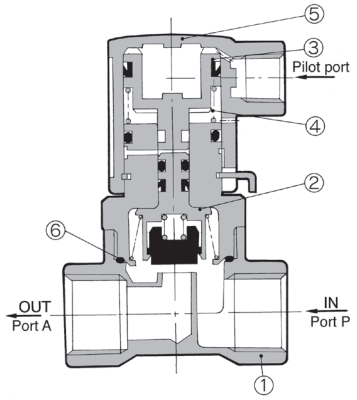


Construction/Components

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) Air (Standard, dry), Turbine oil Vacuum (Up to 1 Torr) Carbon dioxide (CO_2), Nitrogen gas(N_2) Freon11, 113, 114	Vacuum (Up to 10^{-3} Torr)·····(V, M) Non-leak (10^{-5} atm cc/sec or less)·····(V, M)

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 Nℓ/min	Flow rate Effective area (mm^2)	Model	Max.operating presure differential (MPa)	Max. system pressure (MPa)	Proof pressure (MPa)	Weight (g)
1/8 (6A)	3	323.9	6	**VXA212$^{2}_{0}$**	1.0	1.0	1.5	170
	4.5	598.72	11	**VXA213$^{2}_{0}$**	0.5			
1/4 (8A)	3	323.9	6	**VXA212$^{2}_{0}$**	1.0			
	4.5	598.72	11	**VXA213$^{2}_{0}$**	0.5			
				VXA223$^{2}_{0}$	1.0			250
	6	1030.58	19	**VXA224$^{2}_{0}$**	0.6			
	8	1668.55	31	**VXA225$^{2}_{0}$**	0.2	0.4		340
	10	1864.85	34	**VXA226$^{2}_{0}$**	0.1			
3/8 (10A)	4.5	598.72	11	**VXA223$^{2}_{0}$**	1.0	1.0		250
	6	1030.58	19	**VXA224$^{2}_{0}$**	0.6			
	8	1668.55	31	**VXA225$^{2}_{0}$**	0.2	0.4		340
	10	2355.6	43	**VXA226$^{2}_{0}$**	0.1			
1/2 (15A)	10	2355.6	43	**VXA226$^{2}_{0}$**	0.1			420

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 temperture °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)

Fluid / Seal	Air	Liquid	Non-leak Vacuum (2) V, M
NBR, FPM, EPR	≤1cm^3/min	≤0.1cm^3/min (1)	≤10^{-5}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□□ **VXA22□□**	0.25 to 0.7

How to Order

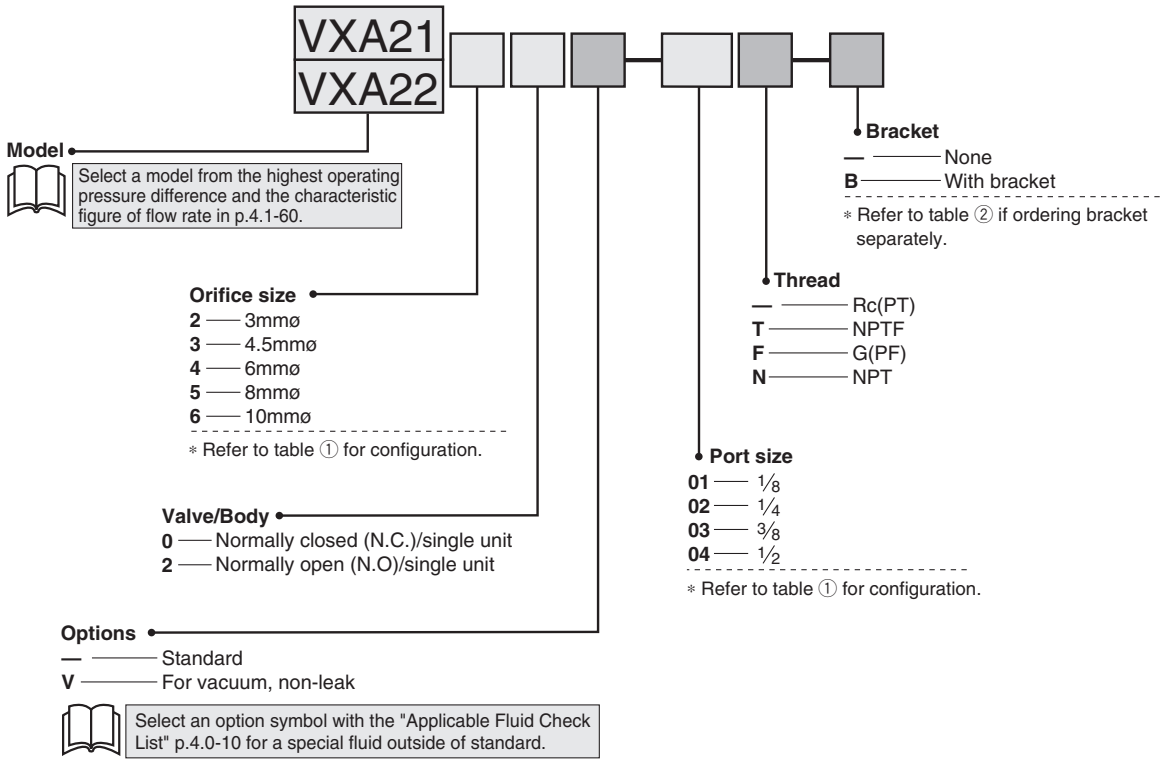


Table ① Port/Orifice Size

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)	—	—	—	—	●

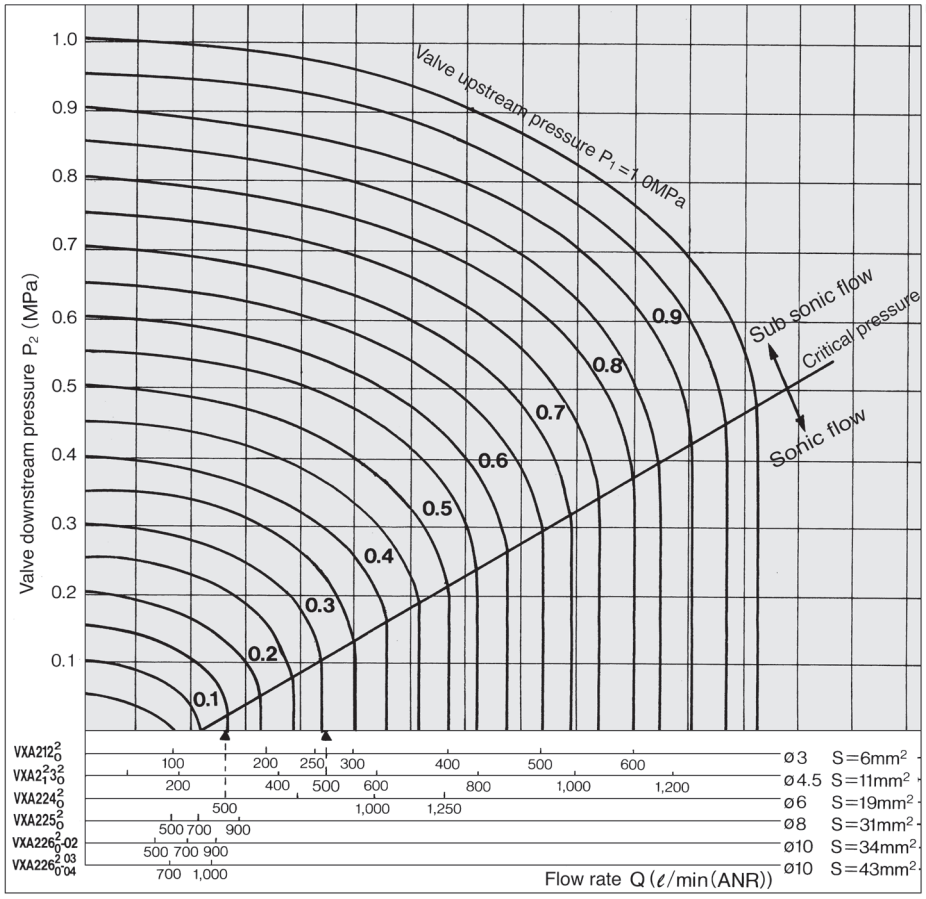
Table ② Bracket Part Number

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**

Air



How to Read the Graph

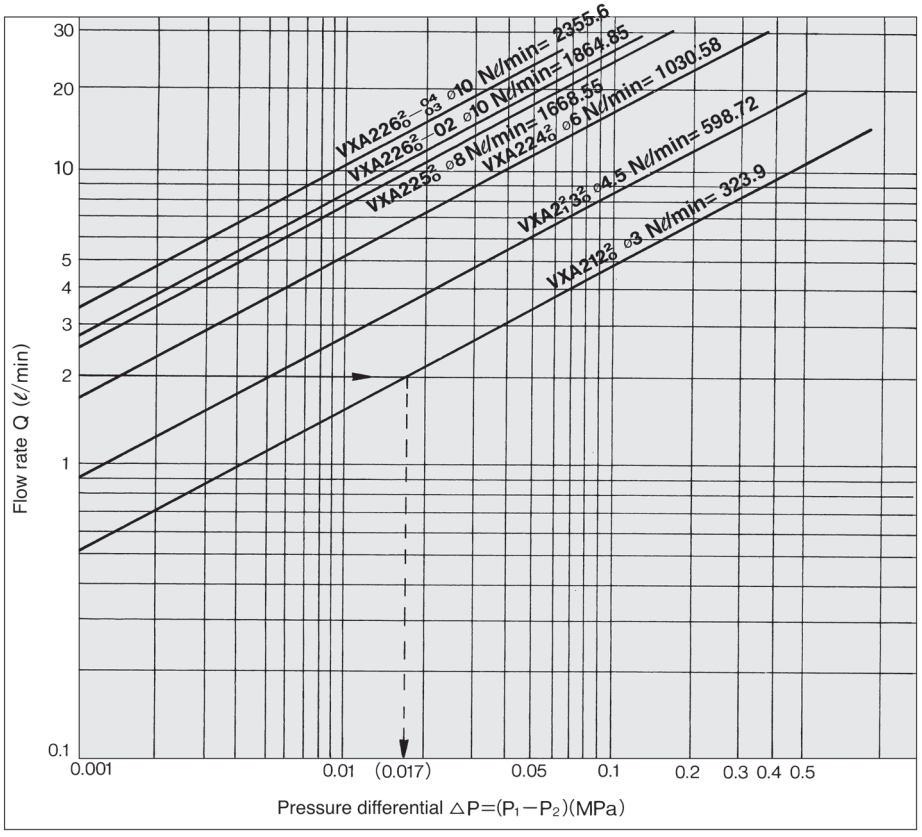
In the sonic flow region:
For a flow of 500 ℓ/min.(ANR)
Orifice ø6 (VXA224$^{2}_{0}$)·····$P_1 \cong 0.14$MPa
Orifice ø4.5 valve (VXA2$^{2}_{1}$3$^{2}_{0}$)···$P_1 \cong 0.3$MPa

How to Calculate Flow/Air

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

②Equation in the domain sonic flow
$P_1+0.1013 \geqq 1.8941(P_2+0.1013)$
- Calculation by Cv factor
  $Q=1972.8 \cdot Cv \cdot (P_1+0.1013)$·····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

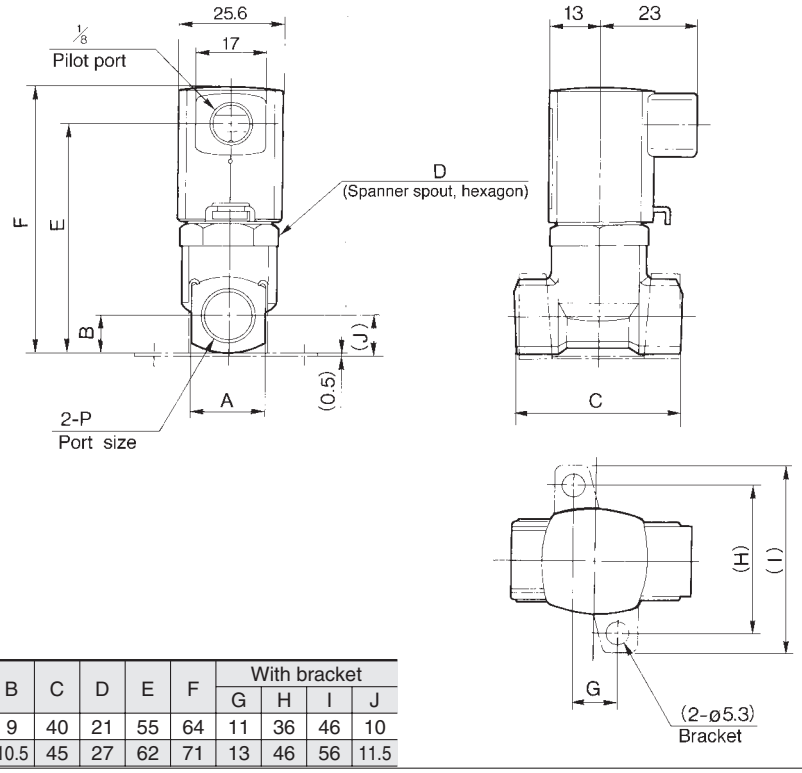
In case of a flow of 2 ℓ/min.
Orifice ø3 valve (VXA212$^{2}_{0}$)···$\triangle P \cong 0.017$MPa

How to Calculate Flow/Water

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

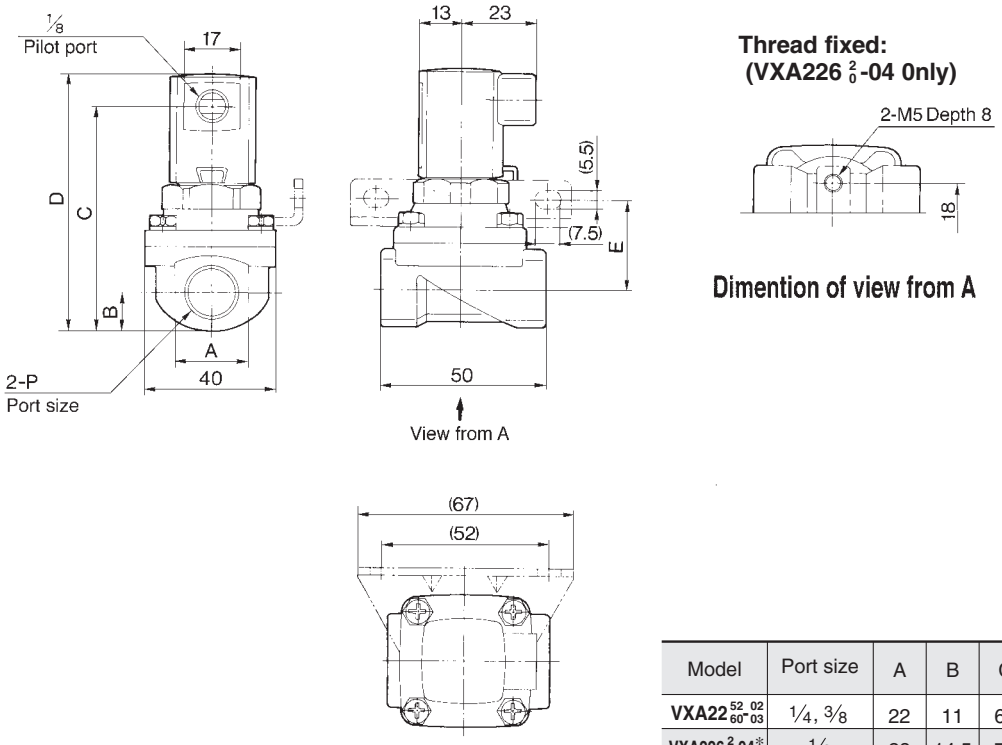
Q : Flow (Air ℓ/min(ANR)), (Steam kg/h), (Water ℓ/min)
△P : Pressure differential (P_1–P_2)
P_1 : Upstream pressure (MPa)
P_2 : Downstream pressure (MPa)
θ : Fluid temperature (°C)
S : Effective area (mm²)
Cv : Cv factor (/)

Dimensions (Orifice size 3 mmø, 4.5 mmø, 6 mmø)
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 8mmø, 10mmø)
VXA225□, VXA226□



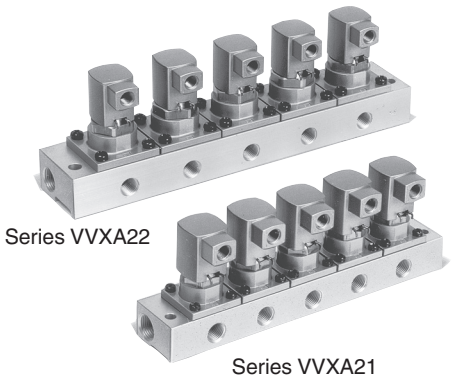
Model	Port size	A	B	C	D	Bracket
						E
VXA22 52/60-02/03	1/4, 3/8	22	11	67	77	27
VXA226 2/0-04*	1/2	28	14.5	73	83	30

* Fixing with thread is also possible.

Direct Air Operated
2 Port Valve/Manifold

Series VVXA21/22

For Air, Gas, Vacuum and Oil Use



Series VVXA22

Series VVXA21

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

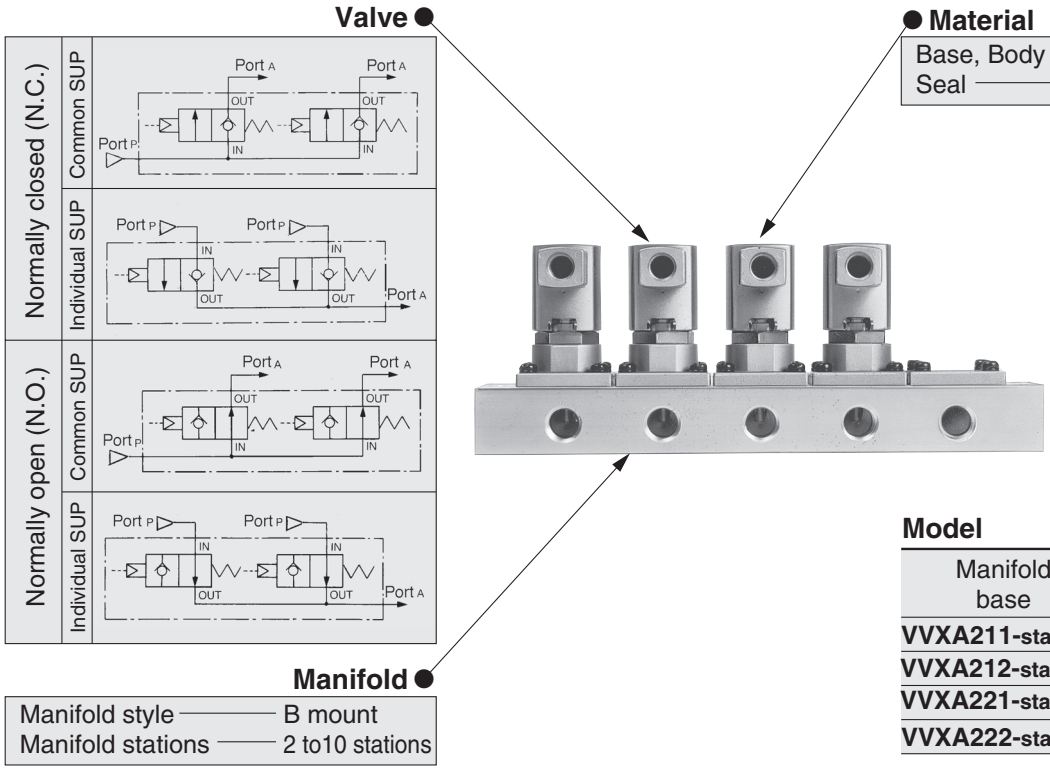
Compatible with a wide variety of fluids.

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



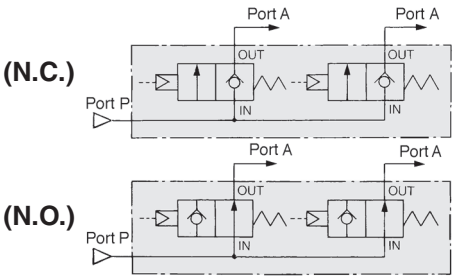
Model

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

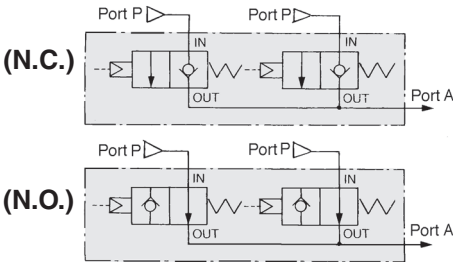
Normally Closed (N.C.)/Normally Open (N.O.)

Symbol

Common SUP style

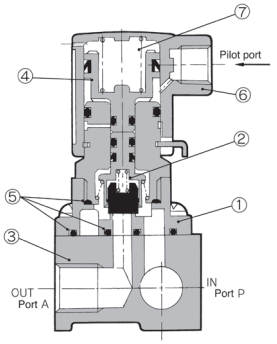


Individual SUP style (N.C.)

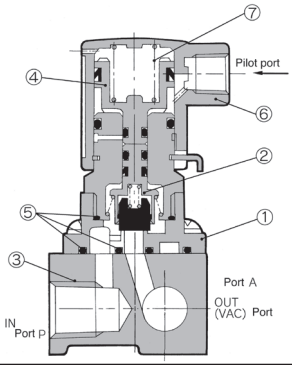


Construction/Components

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 (1)
Air (Standard, Dry) Vacuum (Up to 1Torr) Turbine oil Carbon dioxide (CO_2), Nitrogen gas (N_2) Freon11, 113, 114	Vacuum (Up to 10^{-3} Torr)····· (V) Non-leak (10^{-5} atm cc/sec or less)····· (V)

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 specfications.

Manifold Specifications

Manifold	B Mount	
Manifold base	Common pressure supply, individual pressure supply (For vacuum) (1)	
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□$^{3}_{1}$-00**	n X 70+50
VVXA212-stations	1/4		
VVXA221-stations	1/8	**VXA22□$^{3}_{1}$-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^2)					
3	323.9	6	**VXA212$^{3}_{1}$-00**	1.0	1.0	1.5	120
4.5	598.72	11	**VXA213$^{3}_{1}$-00**	0.5			
			VXA223$^{3}_{1}$-00	1.0			160
6	1030.58	19	**VXA224$^{3}_{1}$-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 (3) (V)	
Max.	60	40	40	40
Min.	–5 (1)	–5 (2)	–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)

Fluid / Seal	Air	Liquid	Non-leak vacuum (2)
NBR, FPM, EPR	1cm³/min or less	0.1cm³/min or less (1)	10^{-5}atm cc/sec or less

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

Pilot Pressure

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

How to Order/Manifold

VXA21
VXA22 □□□ — 00

Model

Select a model from the highest operating pressure difference and the characteristic figure of flow rate in p.4.1-38

Orifice size
2 — 3mmø
3 — 4.5mmø
4 — 6mmø

∗ Refer to table ① for configuration.

Valve/Body
1 — Normally closed (N.C.)/Manifold
3 — Normally open (N.O.)/Manifold

Options

Select an option symbol by "Applicable fluid check list" p.4.0-10 for a special fluid out of the standard.

Connection
00 — (No connection screw) For manifold

Table ① Orifice Size

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

How to Order Manifold Base

VVXA21
VVXA22 □ □ —

Manifold base

Mark	Applicable valve
VVXA21	VXA21□$^{3}_{1}$-00
VVXA22	VXA22□$^{3}_{1}$-00

Port size (Individual port)
1 — 1/8
2 — 1/4

∗ All common ports are Rc(PT) 3/8. Common SUP model has indication of "P" and individual SUP has indication of "VAC" at the common port.

Manifold base
— — Common pressure
V — Individual pressure (For vaccum)

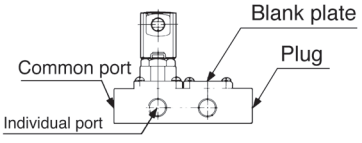
Stations
02 — 2 stations
⋮
10 — 10 stations

■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.

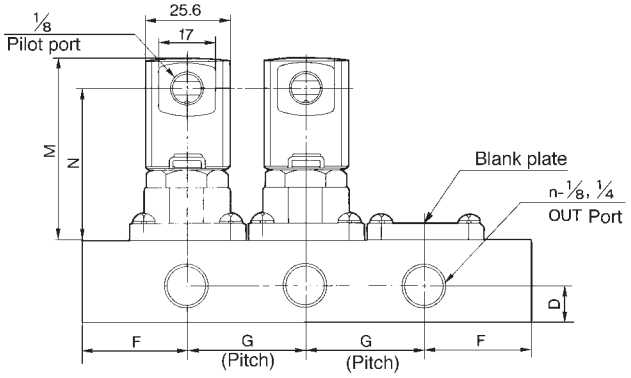
■Arrangement of solenoid valves

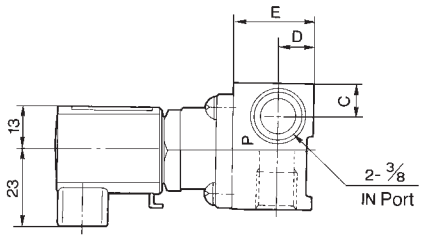


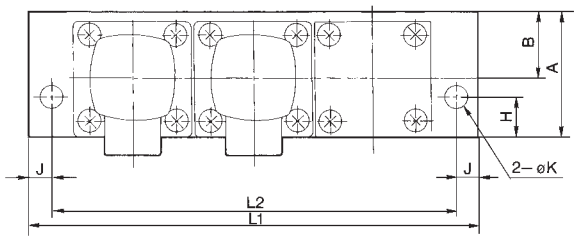
The standard arrangement of manifolds should be placed on an individual port on this side, each solenoid valve from the left side and a blank plate in the right side. The right side of the common port provides plug.

Dimensions

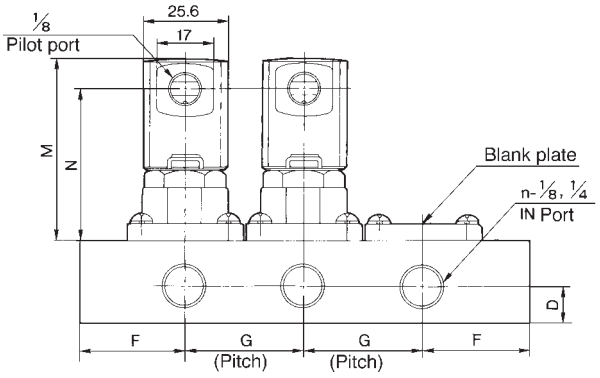
Common SUP style

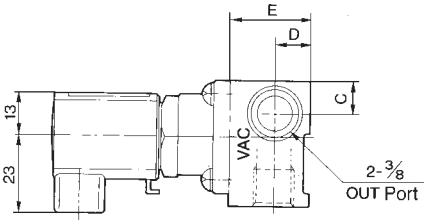


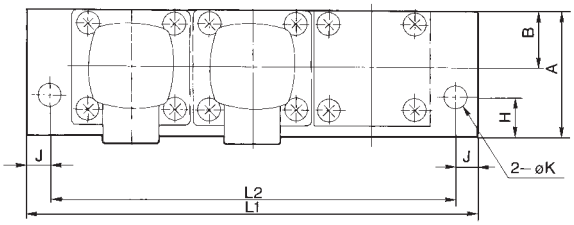




Individual SUP style







L: Dimensions

Model	Stations / L	2	3	4	5	6	7	8	9	10
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

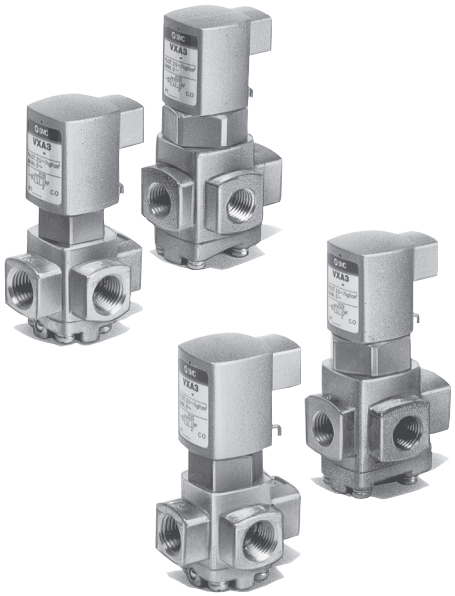
Model	A	B	C	D	E	F	G	H	J	K	M	N
VVXA21□	38	20.5 [17.5]	10.5	11	25	32	36	12	7	6.5	54	45
VVXA22□	49	26.5 [22.5]	13	13	30	40	46	15	9	8.5	58	49

[ ]: 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.**

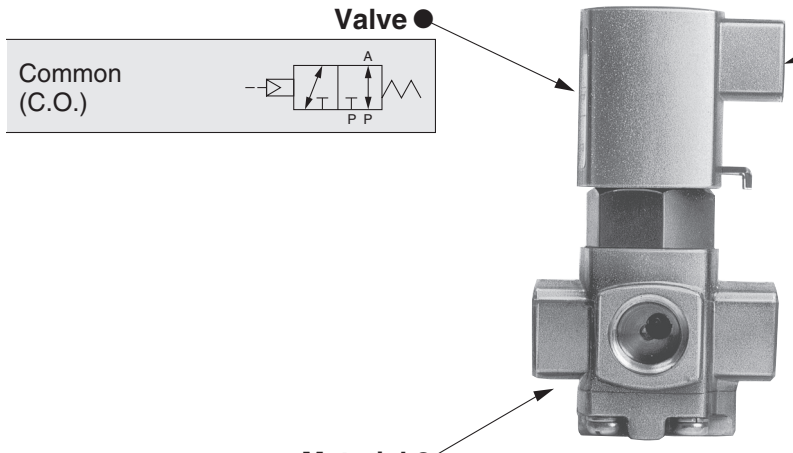
  Application can be matched by simply choosing body material (Brass or Stainless steel) and seal material(NBR, FPM or EPR).

- **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



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 (1)
Water (Standard, Up to 40°C) Air (Standard, Dry), Turbine oil, Vacuum (Up to 1 Torr), Carbon dioxide (CO_2), Nitrogen gas (N_2), Freon11, 113, 114	Vacuum (Up to 10^{-3} Torr) ····· (V, M) Non-leak (10^{-5} 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 Nℓ/min	Flow rate Effective orifice (mm^2)	Model	Max. operating pressure differential (MPa)	Max. system pressure (MPa)	Proof pressure (MPa)	(1) Weight (g)
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			
	2.2	157.04	2.8	**VXA3124**	0.5			
		186.49	3.4	**VXA3224**	1.0			410
	3	235.56	4.3	**VXA3134**	0.3			280
		323.9	6	**VXA3234**	0.6			410
	4	490.75	9	**VXA3244**	0.3			
3/8 (10A)	2.2	186.49	3.4	**VXA3224**	1.0			
	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.

Ambient and Fluid Temperature

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

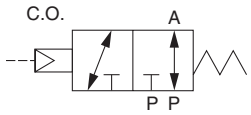
Seal \ Fluid	Air	Liquid	Non-leak, Vacuum(2)
NBR, FPM, EPR	≤1cm^3/min	≤0.1cm^3/min(1)	≤10^{-5}atm cc/sec

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

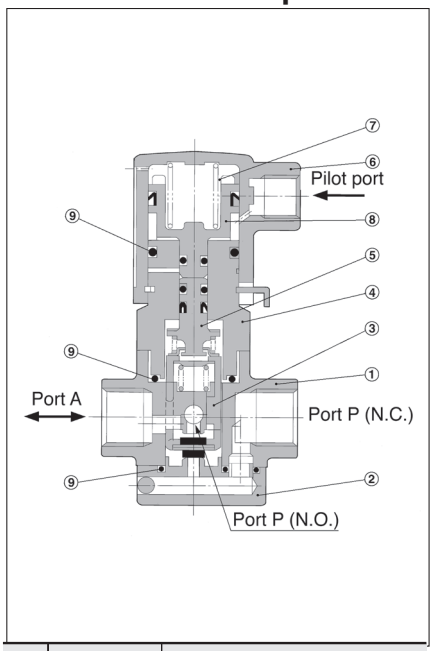
Pilot Pressure

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

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

How to Order

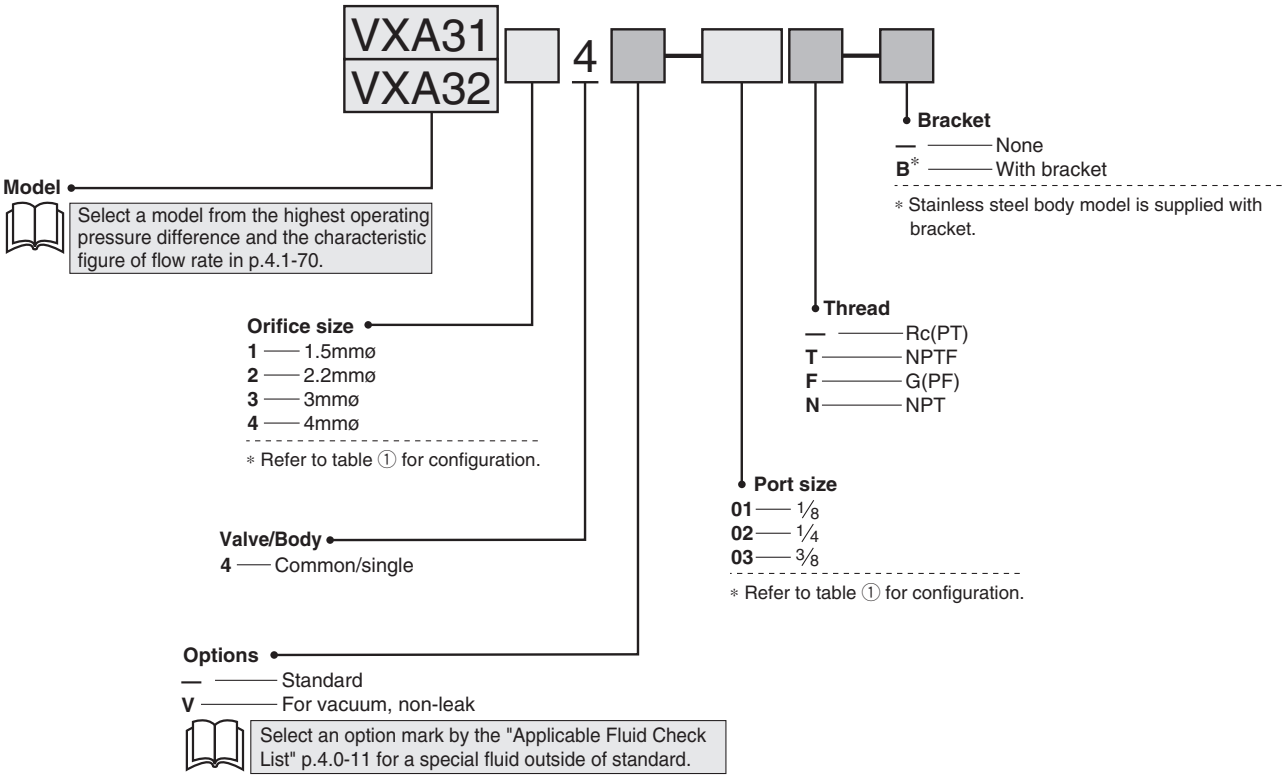


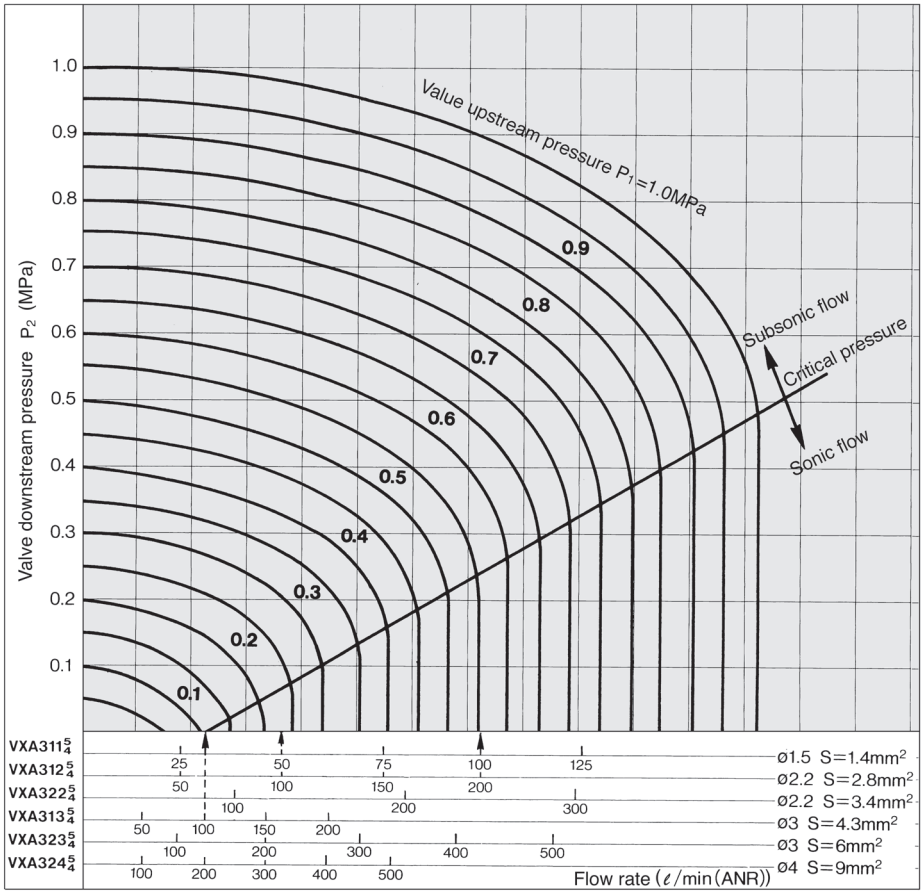
Table ① Port/Orifice Size

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**

Air



How to Read the Graph

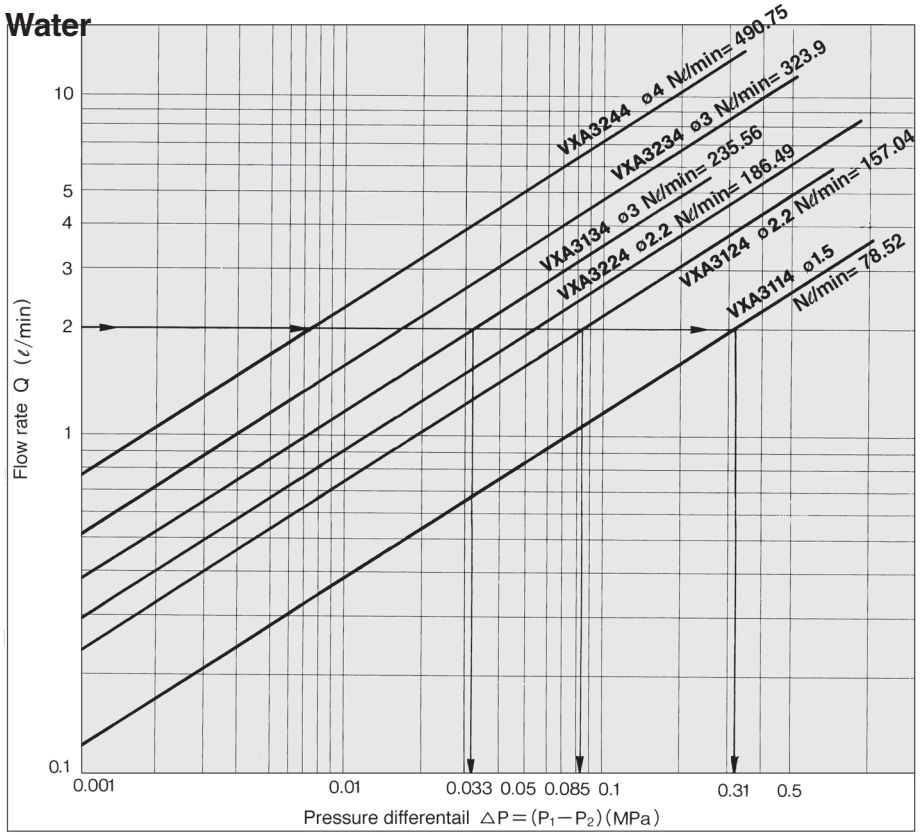
In the sonic flow region:
For a flow of 100 ℓ/min.(ANR)
Orifice ø3 (VXA313$^{5}_{4}$).....$P_1 \cong 0.1$MPa
Orifice ø2.2 (VXA312$^{5}_{4}$).....$P_1 \cong 0.23$MPa
Orifice ø1.5 (VXA311$^{5}_{4}$).....$P_1 \cong 0.55$MPa

How to Calculate Flow/Air

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

②Equation in the domain of sonic flow
$P_1+0.1013 \geqq 1.8941(P_2+0.1013)$
- Calculation by Cv factor
  $Q=1972.8 \cdot Cv \cdot (P_1+0.1013)$ ····· 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

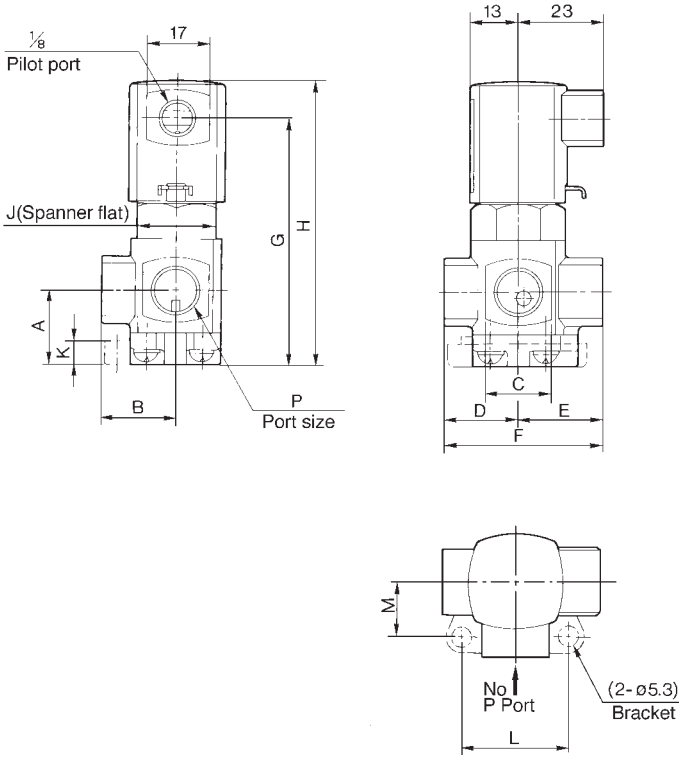
In case of a flow of 2 ℓ/min.
Orifice ø3 valve (VXA3134)....$\triangle P \cong 0.033$MPa
Orifice ø2.2 valve (VXA3124)...$\triangle P \cong 0.085$ MPa
Orifice ø1.5 valve (VXA3114)...$\triangle P \cong 0.31$MPa

How to Calculate Flow/Water

- Calculation by Cv factor
  $Q=14.2 \cdot Cv \cdot \sqrt{10.2 \cdot \triangle P}$ ·····ℓ/min
- Calculation by effective area[Smm^2]
  $Q=0.8 \cdot S \cdot \sqrt{10.2 \cdot \triangle P}$ ·····ℓ/min

Q : Flow (Air ℓ/min(ANR)), (Steam kg/h), (Water ℓ/min)
$\triangle P$: Pressure differential (P_1–P_2)
P_1 : Upstream pressure (MPa)
P_2 : Downstream pressure (MPa)
θ : Fluid temperature (°C)
S : Effective area (mm^2)
Cv : Cv factor (/)

Dimensions

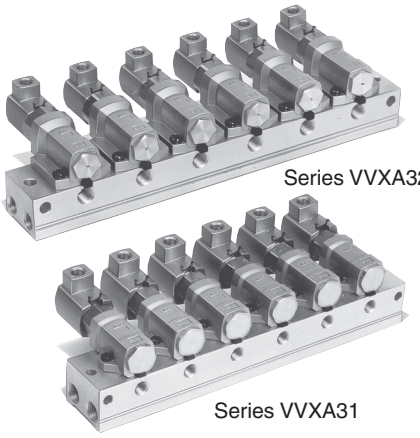


Model \ Symbol	Port size P	A	B	C	D	E	F	G	H	J	With bracket		
											K	L	M
VXA31	1/8, 1/4	19	20	18	20	22.5	42.5	71	81	21	6	29	14.5
VXA32	1/4, 3/8	25	20	21	20	27.5	47.5	80	90	27	7.5	32	17

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.

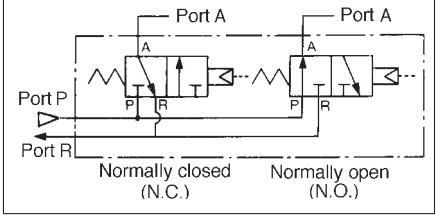
Weight-saving aluminium base and body.

(Not applicable to water or steam.)

Variations

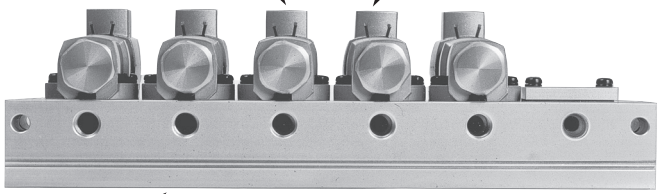
Valve

Common (C.O.)



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		

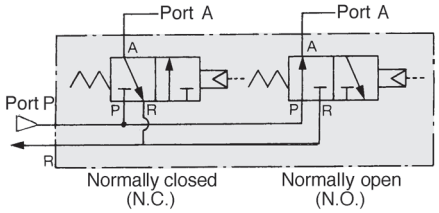
Common (C.O.)

Applicable Fluids

Standard	Option (1)
Air (Standard, Dry), Vacuum (Up to 1 Torr), Turbine oil, Carbon dioxide (CO_2), Nitrogen gas (N_2) Freon 11, 113, 114	Vaccum (Up to 10^{-3} Torr) ····· (V) Non-leak or less (10^{-5} 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



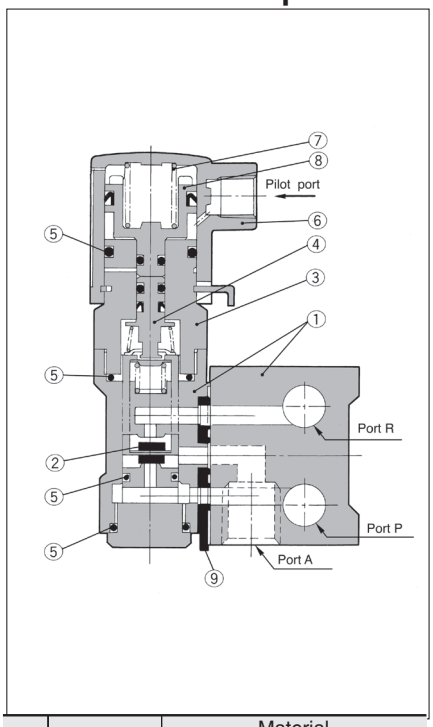
Manifold Specifications

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		

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

Model/Valve Specifications

Orifice size (mmø)	Flow rate		Model	Max. operating pressure differential (MPa)	Max. system pressure (MPa)	Proof pressure (MPa)	(1) Weight (g)
	Nℓ/min	Effective area (mm^2)					
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			
	186.49	3.4	**VXA3225-00**	1.0			230
3	235.56	4.3	**VXA3135-00**	0.3			150
	323.9	6	**VXA3235-00**	0.6			230
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(3) (V)	
Max.	60	40	40	40
Min.	–5 (1)	–5 (2)	–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)

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

Note 1) Differ from the operating conditon 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

VXA31 / VXA32 □ 5 □ — 00

Model

Select a model from the highest operating pressure difference and the characteristic figure of flow rate in p.4.1-48.

Orifice Size

1 — 1.5mmø
2 — 2.2mmø
3 — 3mmø
4 — 4mmø

∗ Refer to table ① for configuration.

Valve/Body

5 — Commonly open/Manifold

Valve Options

— — Standard
V — For vacuum, non-leak

Select an option mark by the "applicable Fluid Check List" p.4.0-11 for a special fluid out of the standard.

Connection

00 — (No connection screw) For 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

VVXA31 / VVXA32 □ — □

Manifold base

Symbol	Applicable valve
VVXA31	VXA31□5-00
VVXA32	VXA32□5-00

Stations

02 — 2 stations
·
·
·
10 — 10 stations

Port size (Individual port)

1 — 1/8
2 — 1/4

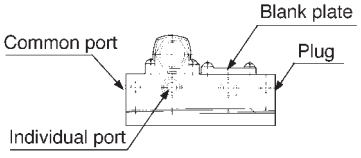
∗ All common ports are Rc(PT) 1/4.
The common SUP is indicated as "P" on the common port and the individual SUP is indicated as "VAC".

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

(Example) 7stations of VXA31, Individual port Rc(PT)1/8

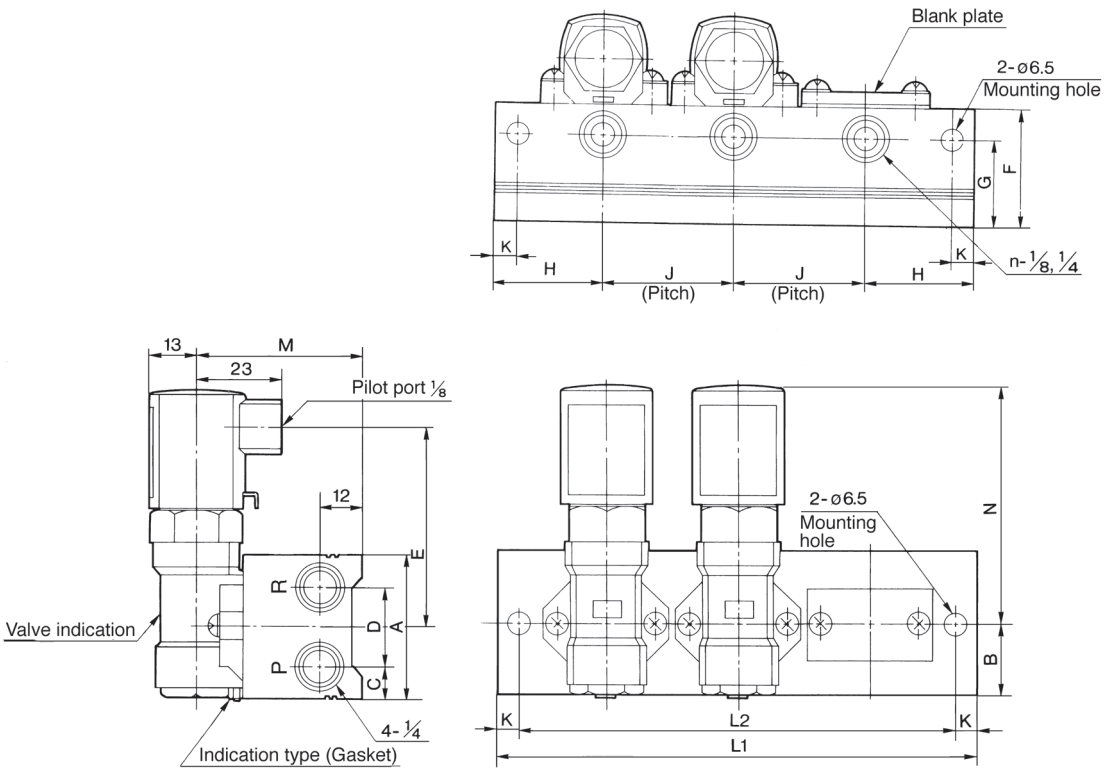
(Base)	VXA311-07····· 1 pc
(Valve)	VXA3115-00····· 6 pcs.
(Blank plate)	VX011-004····· 1 pc.

■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.

Dimensions



Model \ Stations / L		2	3	4	5	6	7	8	9	10
VVXA31	L_1	96	132	168	204	240	276	312	348	384
	L_2	84	120	156	192	228	264	300	336	372
VVXA32	L_1	126	172	218	264	310	356	402	448	494
	L_2	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