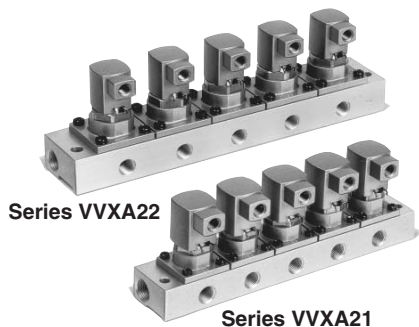


Direct Air Operated 2 Port Valve/Manifold For Air, Gas, Vacuum and Oil

Series VVXA21/22



- **Common SUP type and individual SUP type (for vacuum use) standard models**
Compatible with a wide variety of fluids.
- **A wide variety of applicable fluids.**
Combination of seal materials (NBR, FKM or EPDM) can be selected freely, depending on the purpose.
- **Able to replace valves with the piping remained unchanged.**
- **Weight-saving aluminum base and body.**
- **Brass base and stainless steel base are available.**
Please contact SMC for details.

VC□

VDW

VQ

VX2

VX□

VX3

VXA

VN□

LVC

LVA

L VH

LVD

LVQ

LQ

LVN

TI/
TIL

PA

PAX

PB

Variations

Valve

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

Manifold

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

Material

Base, Body	Aluminum
Seal	NBR, FKM, EPDM

Model

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

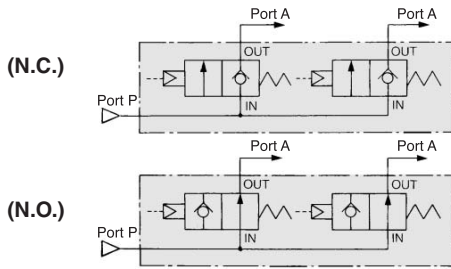
Series VVXA21/22

The VX* series will be revised shortly.

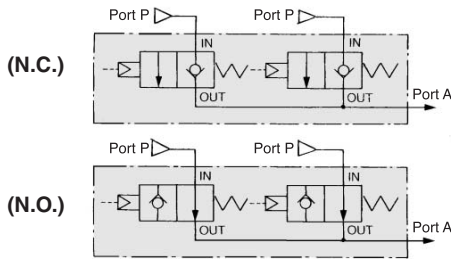
Normally Closed (N.C.), Normally Open (N.O.)

JIS Symbol

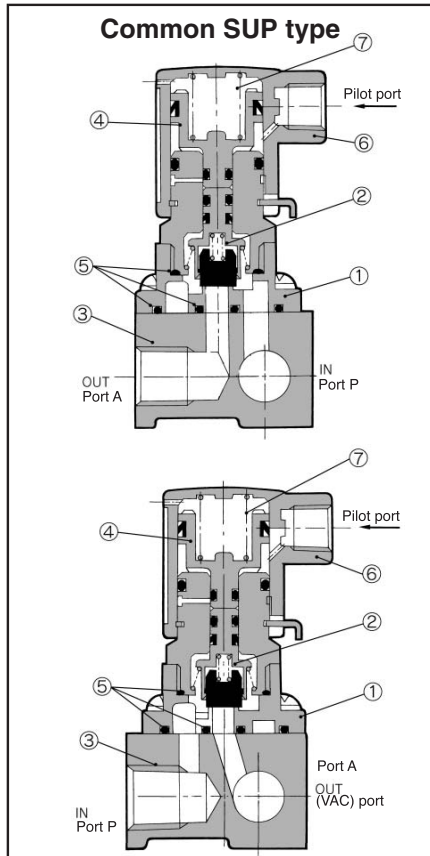
Common SUP type



Individual SUP type



Construction/ Principal Parts Material



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

Fluid

Standard specifications	Option
Air (Standard, Dry)	Vacuum (up to 1.3×10^2 Pa) (V)
Vacuum (up to 1.3×10^2 Pa)	Non-leak (10^{-6} Pa·m ³ /s or less) (V)
Turbine oil	
Carbon dioxide (CO ₂), Nitrogen gas (N ₂)	



Note) Refer to page 17-3-13 "Applicable Fluids Check List" for details of special fluids outside of the standard options and specifications.

Manifold Specifications

Manifold	B Mount	
Manifold type	Common pressure supply, individual pressure supply (For vacuum)	
Number of valves	2 to 10 stations	
Blanking plate (With O-rings, screws)	VVXA21	VX011-001
	VVXA22	VX011-006



Note) Common port is placed on vacuum side.

Manifold Base and Applicable Valve Part No.

Manifold base	Individual port Rc	Applicable valve	Weight per one station (g)
VVXA211-stations	1/8	VXA21□□ ₁ -00	n x 70 + 50
VVXA212-stations	1/4		
VVXA221-stations	1/8	VXA22□□ ₃ -00	n x 130 + 110
VVXA222-stations	1/4		

Solenoid Valve for Manifold

Orifice size (mm)	Model	Max. operating pressure differential (MPa)	Flow characteristics					Max. system pressure (MPa)	Proof pressure (MPa)	Weight (g)
			Oil		Air					
			Av x 10 ⁻⁶ m ²	Cv converted	C [dm ³ /(s·bar)]	b	Cv			
3	VXA212-00	1.0	7.9	0.33	1.3	0.50	0.38	1.0	1.5	120
4.5	VXA213-00	0.5	15	0.61	2.3	0.45	0.70			
	VXA223-00	1.0								
6	VXA224-00	0.6	26	1.1	3.3	0.50	1.1			160



Note) Refer to "Glossary" on page 17-3-15 for details of max. operating pressure differential

Operating Fluid and Ambient Temperature

Temperature conditions	Operating fluid temperature (°C)			Ambient temperature (°C)
	Air (Standard)	Oil (Standard)	Vacuum ⁽³⁾ (V)	
Maximum	60	40	40	40
Minimum	-5 ⁽¹⁾	-5 ⁽²⁾	-5	-5



Note 1) Dew point: -5°C or less Note 2) 500 cSt or less
Note 3) "V" in parentheses is option symbol.

Tightness of Valve (Leak rate)

Seal material	Fluid		
	Air	Liquid	Non-leak, Vacuum ⁽²⁾
NBR, FKM, EPDM	1 cm ³ /min or less	0.1 cm ³ /min or less ⁽¹⁾	10 ⁻⁶ Pa·m ³ /s or less



Note 1) Differs depending on the operating conditions such as pressure, etc.
Note 2) Value on option "V" (Non-leak, Vacuum).

Pilot Pressure

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

Direct Air Operated 2 Port Valve/Manifold For Air, Gas, Vacuum and Oil Series VVXA21/22

The VX* series will be revised shortly.

How to Order

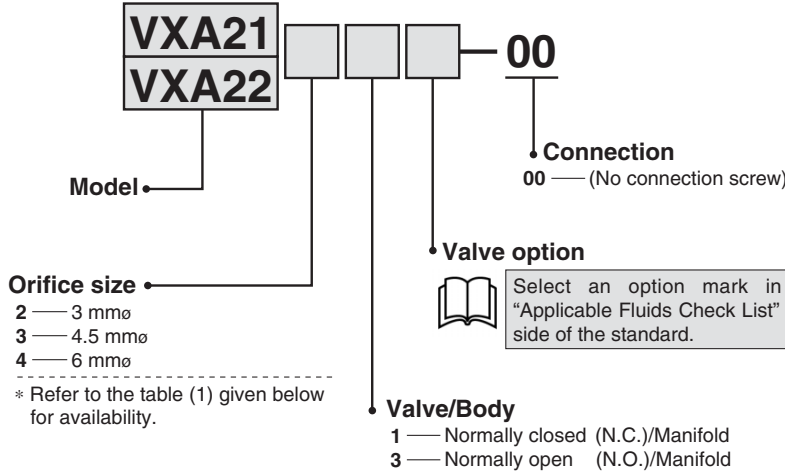
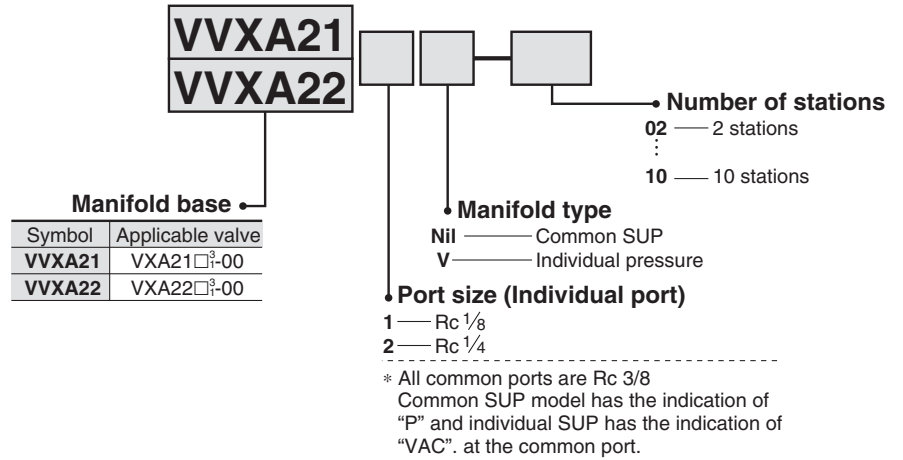


Table (1) Orifice Size

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

How to Order Manifold Base



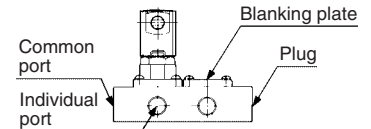
How to Order Manifold

■ Write both the base part number and the solenoid valve to be mounted or blanking plate part number.

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

- (Base) VVXA211-07..... 1 pc.
- (Valve) VXA2121-00..... 6 pcs.
- (Blanking 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.

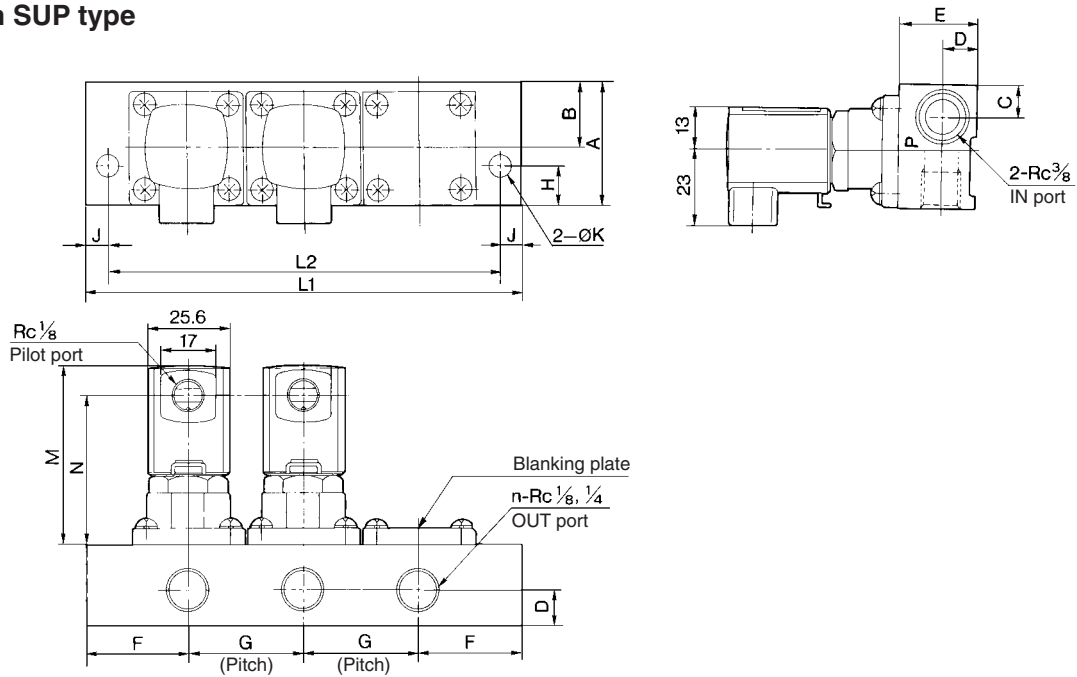
- VC
- VDW
- VQ
- VX2
- VX
- VX3
- VXA**
- VN
- LVC
- LVA
- LVH
- LVD
- LVQ
- LQ
- LVN
- TI/
TIL
- PA
- PAX
- PB

Series VVXA21/22

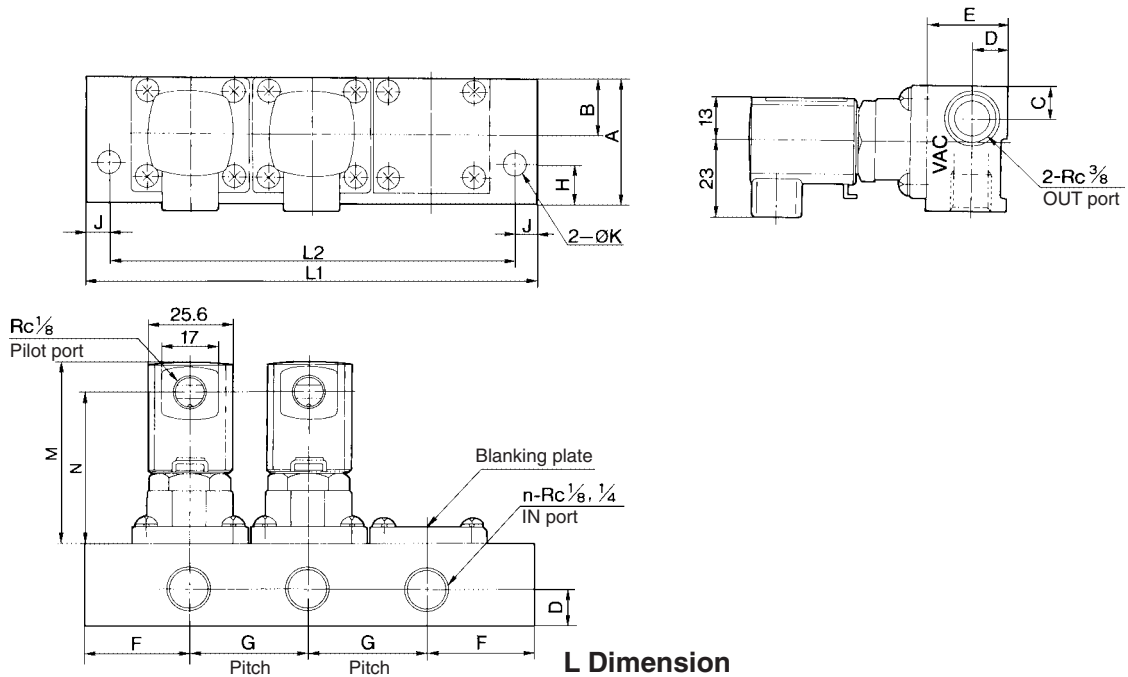
The VX* series will be revised shortly.

Dimensions/Manifold

Common SUP type



Individual SUP type



L Dimension

Model	Symbol	Stations									
		2	3	4	5	6	7	8	9	10	
VVXA21□	L ₁	100	136	172	208	244	280	316	352	388	
	L ₂	86	122	158	194	230	266	302	338	374	
VVXA22□	L ₁	126	172	218	264	310	356	402	448	494	
	L ₂	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 type

Direct Air Operated 3 Port Valve/Manifold For Air, Gas, Vacuum and Oil

Series VVXA31/32



- **A wide variety of applicable fluids.**
Combination of seal materials (NBR, FKM, or EPDM) can be selected freely, depending on the purpose.
- **Able to replace valves with the piping remained unchanged.**
- **N.C./N.O. switchover is easy.**
- **Weight-saving aluminum base and body.**
(Not applicable to water or steam.)

VC□

VDW

VQ

VX2

VX□

VX3

VXA

VN□

LVC

LVA

LVH

LVD

LVQ

LQ

LVN

TI/
TIL

PA

PAX

PB

Variations

Valve

Common (C.O.)

Material

Base, Body — Aluminum
Seal material — NBR, FKM, EPDM

Manifold

Manifold — B mount
Manifold stations — 2 to 10 stations

Model

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

Common (C.O.)

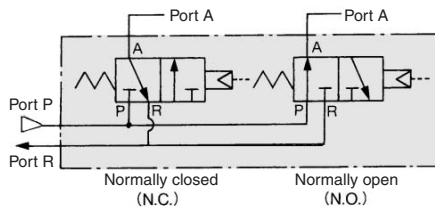
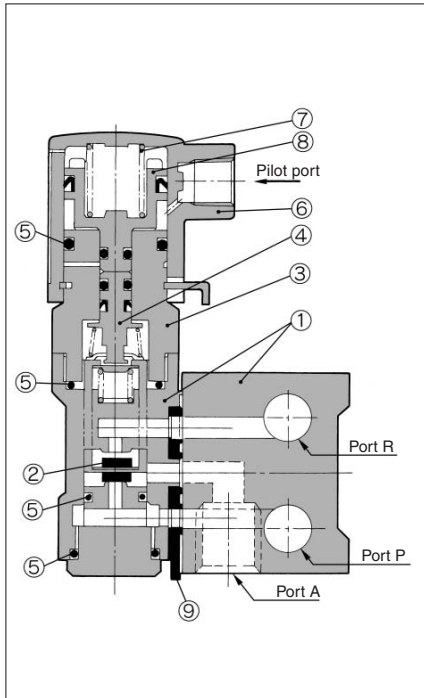
Fluid

Standard specifications	Option ^{Note)}
Air (Standard, Dry)	Vacuum (up to 1.3×10^{-1} Pa).....(V)
Vacuum (up to 1.3×10^2 Pa)	Non-leak (10^{-6} Pa·m ³ /s or less).....(V)
Turbine oil
Carbon dioxide (CO ₂), Nitrogen gas (N ₂)	Other



Note) Refer to page 17-3-14 "Applicable Fluids Check List" for details of special fluids outside of the standard options and specifications.

JIS Symbol

Construction/
Principal Parts Material

No.	Description	Material	
		Standard	Option
①	Manifold body, Base	Aluminum	Brass (Base is made of aluminum.)
②	Valve assembly	NBR, Polyacetal	FKM/EPDM
③	Adapter	Aluminum	FKM/EPDM
④	Travel assembly	NBR, Polyacetal	FKM/EPDM
⑤	O-ring	NBR	FKM/EPDM
⑥	Pilot cover	Aluminum	—
⑦	Piston spring	Stainless steel	—
⑧	Piston	NBR, Polyacetal	—
⑨	Gasket	NBR	FKM/EPDM

Manifold Specifications

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

Manifold Base And Applicable Valve Part No.

Manifold base	Individual port Rc	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 (mm)	Model	Max. operating pressure differential (MPa)	Flow characteristics					Max system pressure (MPa)	Proof pressure (MPa)	Weight (g)
			Oil		Air					
			Av x 10 ⁶ (m ²)	Cv converted	C [dm ³ /(s·bar)]	b	Cv			
1.5	VXA3115-00	1.0	1.9	0.08	0.29	0.32	0.08	1.0	1.5	150
2.2	VXA3125-00	0.5	3.8	0.16	0.60	0.25	0.15			
	VXA3225-00	1.0	4.6	0.19	0.64	0.40	0.17			230
3	VXA3135-00	0.3	8.0	0.24	0.82	0.20	0.20			150
	VXA3235-00	0.6	9.0	0.33	1.10	0.25	0.27			230
4	VXA3245-00	0.3	12	0.60	1.66	0.20	0.38			230



Note) • Add the V type (VXA31) 80 g, (VXA32) 130 g
• Refer to "Glossary" on page 17-3-15 for details of max. operating pressure differential and max. system pressure.

Operating Fluid and Ambient Temperature

Temperature conditions	Operating fluid temperature (°C)			Ambient temperature (°C)
	Air (Standard)	Oil (Standard)	Vacuum ⁽³⁾ (V)	
Maximum	60	40	40	40
Minimum	-5 ⁽¹⁾	-5 ⁽²⁾	-5	-5



Note 1) Dew point: -5°C or less
Note 2) 500 cSt or less
Note 3) "V" in parentheses is option symbol.

Tightness of Valve (Leak rate)

Seal material	Fluid		
	Air	Liquid	Non-leak, Vacuum ⁽²⁾
NBR, FKM, EPDM	1 cm ³ /min or less	0.1 cm ³ /min or less ⁽¹⁾	10 ⁻⁶ Pa·m ³ /s or less



Note 1) Differs depending on the operating conditions such as pressure, etc.
Note 2) Value on option "V" (Non-leak, Vacuum).

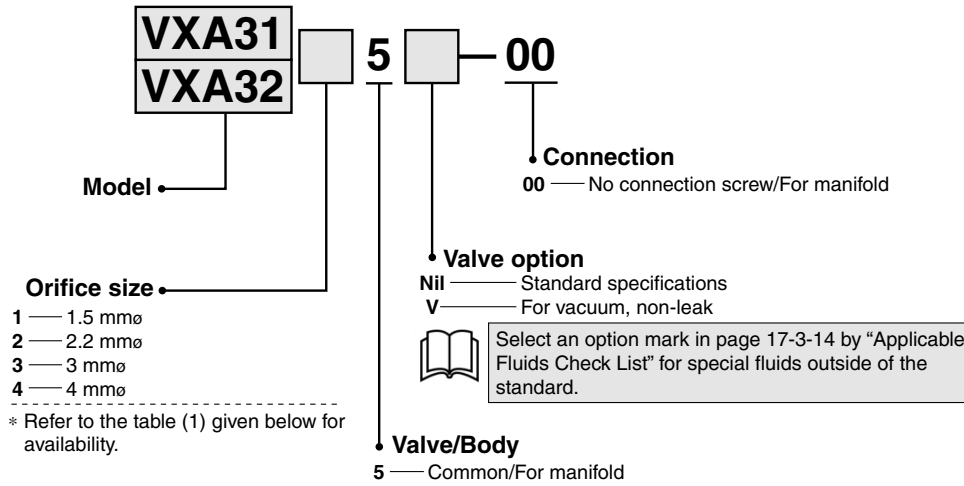
Pilot Pressure

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

Direct Air Operated 3 Port Valve/Manifold For Air, Gas, Vacuum and Oil Series **VVXA31/32**

The VX* series will be revised shortly.

How to Order

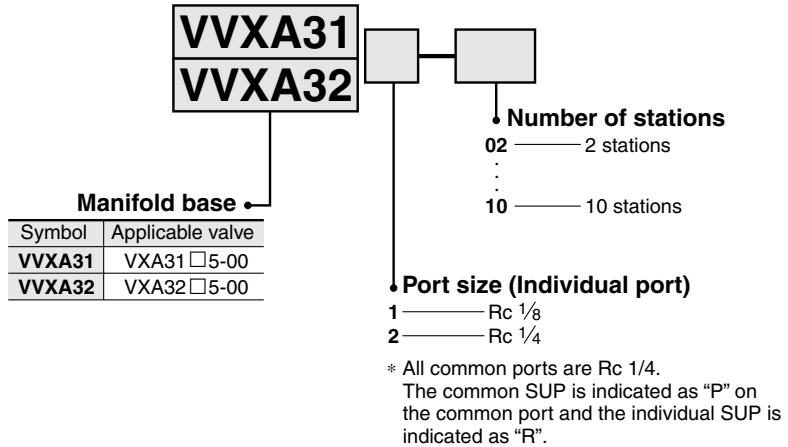


- VC
- VDW
- VQ
- VX2
- VX
- VX3
- VXA**
- VN
- LVC
- LVA
- LVH
- LVD
- LVQ
- LQ
- LVN
- TI/TIL
- PA
- PAX
- PB

Table (1) Orifice Size

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

How to Order Manifold Base



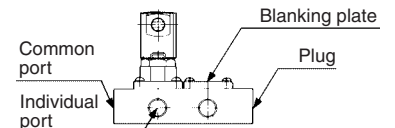
How to Order Manifold

■ Write both the base part number and the solenoid valve to be mounted or blanking plate part number.

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

- (Base P/N) VXA311-07..... 1 pc
- (Valve P/N) VXA3115-00..... 6 pcs
- (Blanking plate P/N) VX011-004..... 1 pc

■ Arrangement of solenoid valves

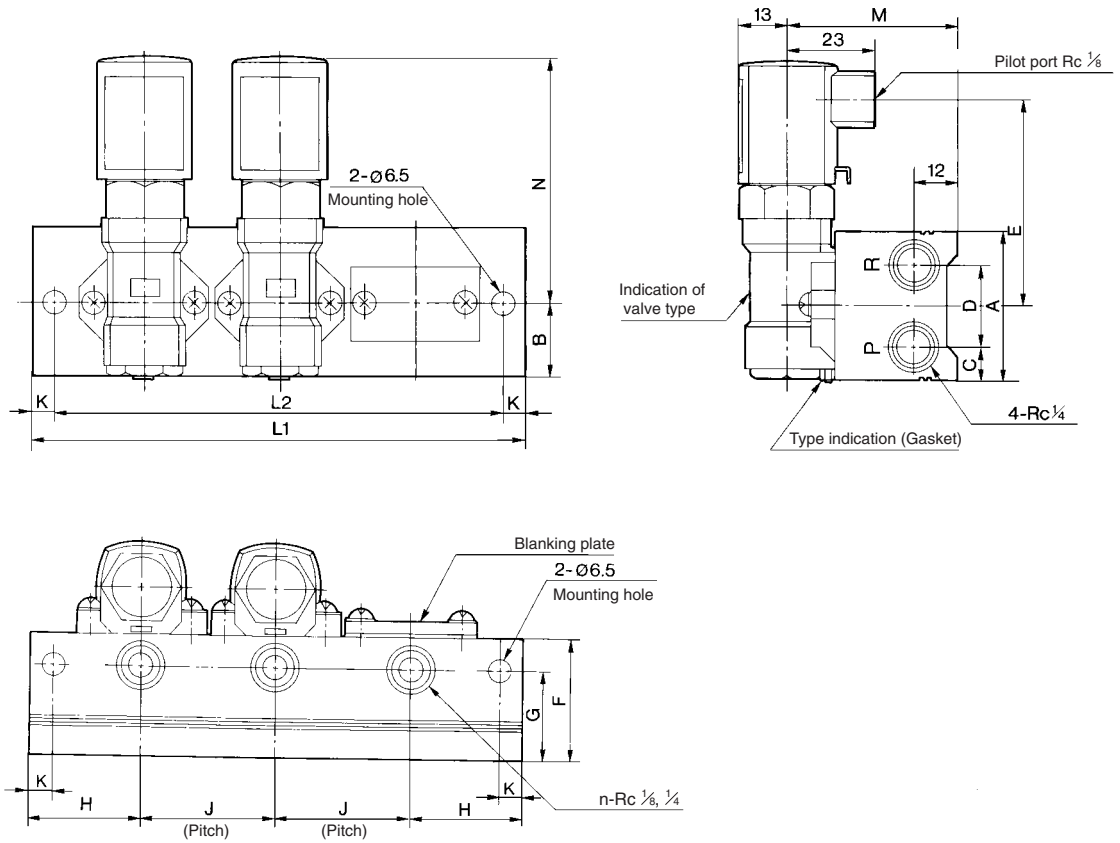


The standard arrangement of manifolds should be placed on an individual port on this side, each solenoid valve from the left side and a blank plate in the right side. The right side of the common port provides plug.

Series VVXA31/32

The VX* series will be revised shortly.

Dimensions



Model	Symbol	Stations								
		2	3	4	5	6	7	8	9	10
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