Body Ported
Metal Seal/Rubber Seal
Series VQ

Thin compact design with large flow capacity

(Flip type)

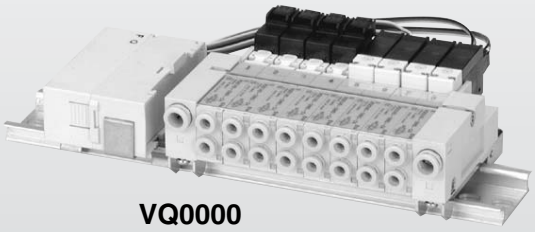
Model	Manifold pitch (mm)	Flow characteristics		Cylinder size
		Metal seal	Rubber seal	
		C [dm³/(s·bar)]	C [dm³/(s·bar)]	
VQ0000	10.5	0.50	0.59	Up to ø40
VQ1000	11	0.84	1.0	Up to ø50
VQ2000	16	2.3	2.7	Up to ø80

∗ Flow characteristics: 4/2 → 5/3 (A/B → R1/R2)

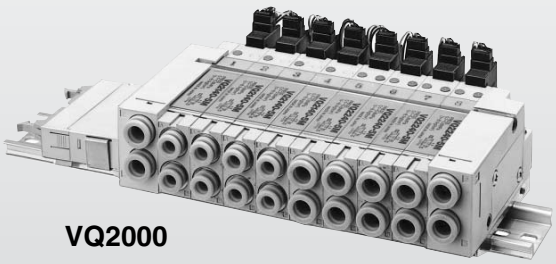
A variety of product groups meet all FA needs.

- **Flip type demonstrates space-saving effect.**
- **Cassette type enables flexible, speedy station increasing/decreasing.**

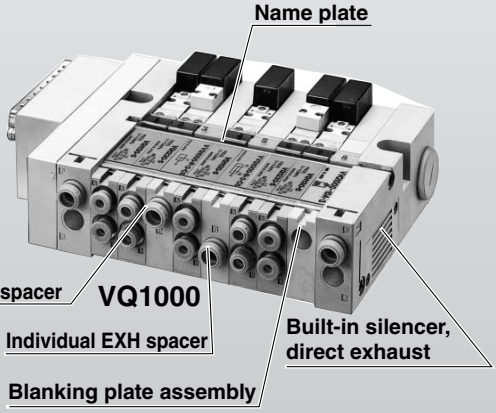
Flip type



VQ0000

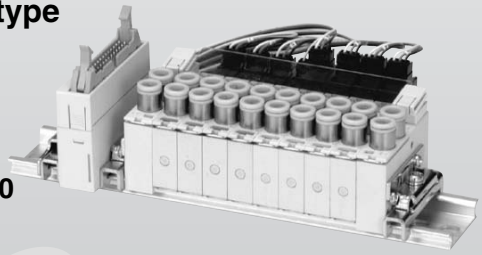


VQ2000



A variety of options

Cassette type



VQ1000

Unprecedented high speed response and long service life

(Metal seal, Single, With indicator light/surge voltage suppressor)

VQ0000	10 ms	200 million cycles
VQ1000	10 ms	
VQ2000	20 ms	

Dispersion accuracy ±2 ms

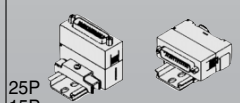
Innovative mounting methods

A valve can be changed without entirely disassembling the manifold.

Built-in One-touch fittings for easier piping.

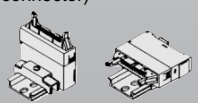
A variety of common wiring methods are standardized.

F kit (D-sub connector)



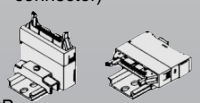
25P
15P

P kit (Flat ribbon cable connector)



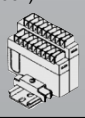
26P
20P
16P
10P

J kit (Flat ribbon cable connector)

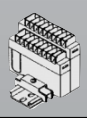


20P

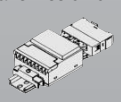
T kit (Terminal block)



L kit (Lead wire)



S kit (Serial transmission unit)



Valve Specifications

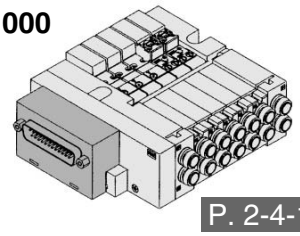
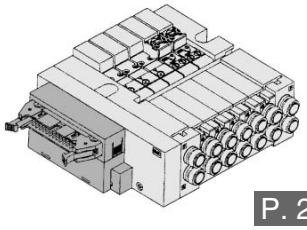
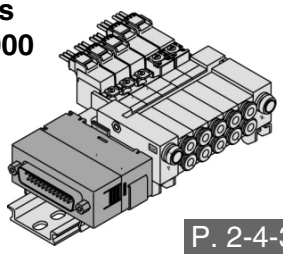
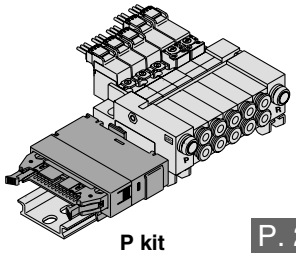
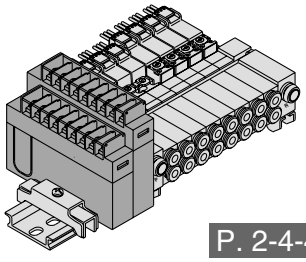
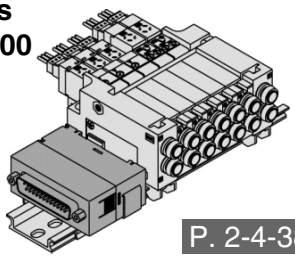
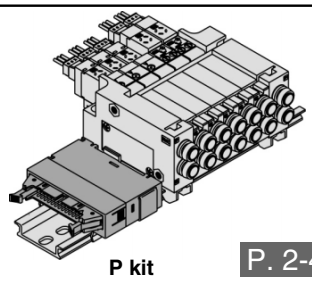
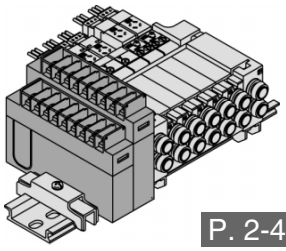
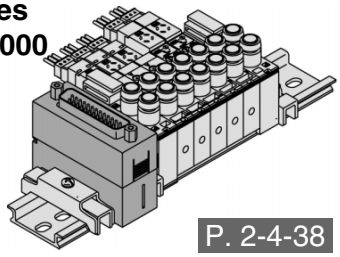
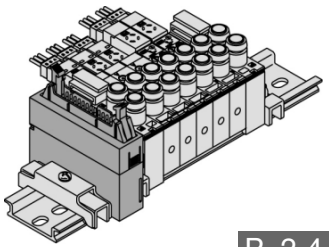
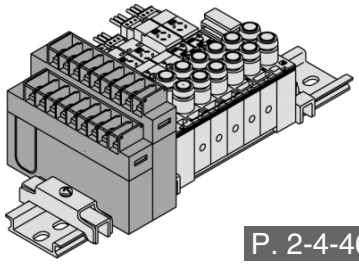
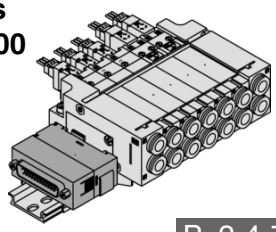
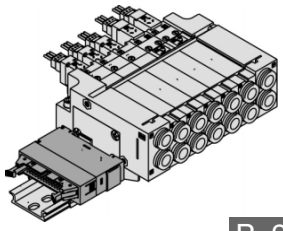
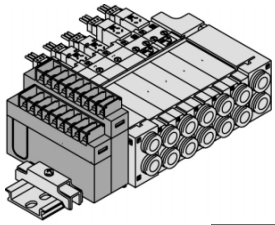
Body Ported

				Sonic conductance: C [dm³/(s·bar)] {4/2 → 5/3 (A/B → R1/R2)}		Type of actuation					Voltage			Electrical entry				Manual override		
				Double Single	3 position Closed center	Single	Double	Closed center	Exhaust center	Pressure center	12 V 24 V DC	100 V 110 V AC (50/60 Hz)	200 V 220 V AC (50/60 Hz)	Plug-in	Grommet	L plug connector	M plug connector	Push type, Tool required	Locking type	Locking type (Manual)
Plug-in	*Series VQ1000* P. 2-4-8	Rubber seal	**VQ1□30**	0.84	0.73	●	●	●	●	●	●	●	●	●				●	●	●
		Metal seal	**VQ1□31**	1.0	0.84		Latching													
				P. 2-4-10																
Plug lead	*Series VQ0000* P. 2-4-30	Rubber seal	**VQ0□40**	0.50	0.36	●	●	●	●		●	●	●		Single/ 3 position only	●	●	●	●	
		Metal seal	**VQ0□41**	0.59	0.42		Latching													
				P. 2-4-36																
	Series VQ1000 P. 2-4-30	Rubber seal	**VQ1□40**	0.84	0.73	●	●	●	●	●	●	●	●		Single/ 3 position only	●	●	●	●	●
		Metal seal	**VQ1□41**	1.0	0.84		Latching													
				P. 2-4-36																
	Series VQ2000 P. 2-4-30	Rubber seal	**VQ2□40**	2.3	—	●	●				●	●	●		Single only	●	●	●	●	●
		Metal seal	**VQ2□41**	2.7	—		Latching													
				P. 2-4-36																
Cassette	*Series VQ1000* P. 2-4-72	Rubber seal	**VQ1□70**	0.60	0.58	●	●	●	●	●	●	●	●		Single/ 3 position only	●	●	●	●	●
		Metal seal	**VQ1□71**	0.80	0.70		Latching													
				P. 2-4-74																

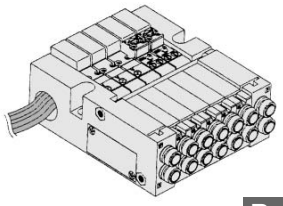
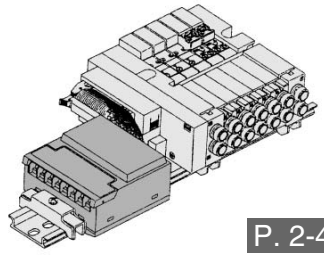
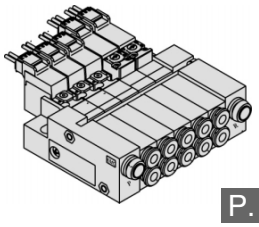
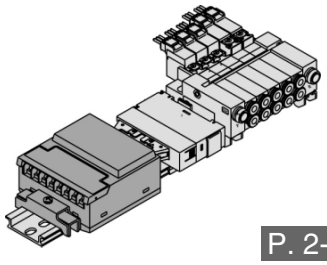
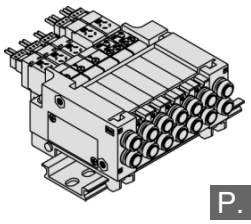
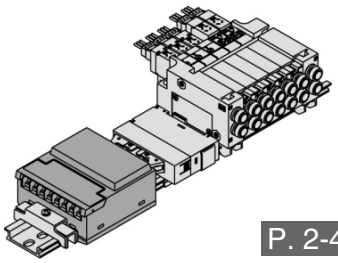
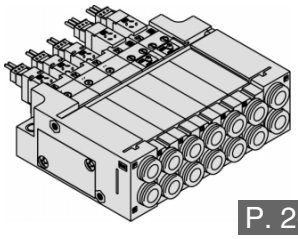
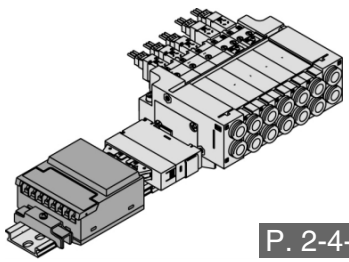
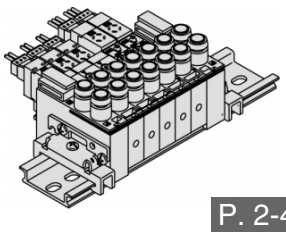
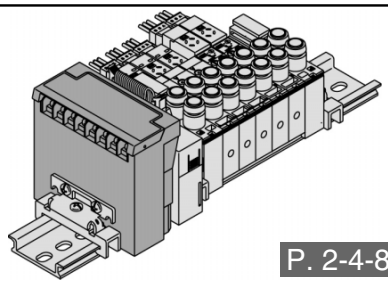
Option						
D-sub connector 15P	●	●	●	●	●	●
Flat ribbon cable 10P, 16P, 20P	●	●	●	●	●	●
Negative common specifications	● Except S kit	● Except S kit	● Except S kit	● Except S kit	● Except S kit	●
One-touch fitting Inch size	●	●	●	●	●	●
For special wiring spec.	● Except L kit	● Except L kit	● Except L kit	● Except L kit	● Except L kit	●
	P. 2-4-28	P. 2-4-68	P. 2-4-68	P. 2-4-68	P. 2-4-68	P. 2-4-92
Manifold Option						
Blanking plate	●	●	●	●	●	
Individual SUP/EXH	●	●	●	●	●	●
SUP/EXH passage spacer	●	●	●	●	●	●
Name plate	●	●	●	●	●	●
DIN rail mounting style	●	●	●	●	●	● Standard
Built-in silencer	●	●	●	●	●	
Silencer for EXH port	●	●	●	●	●	●
Elbow fitting for cylinder port						●
Plug for cylinder port	●		●	●	●	●
Double check block	●	●	●	●	●	●
	P. 2-4-23	P. 2-4-59	P. 2-4-60	P. 2-4-63	P. 2-4-63	P. 2-4-87

Series VQ/Body Ported: Variations

Manifold Variations

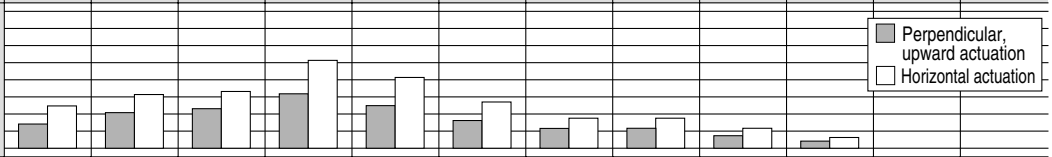
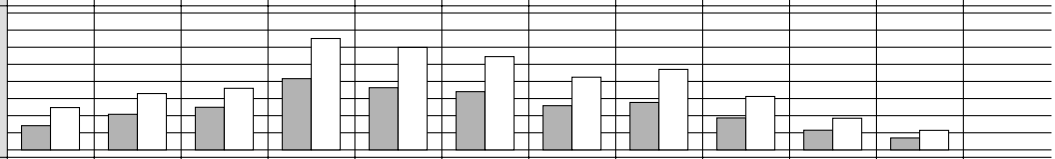
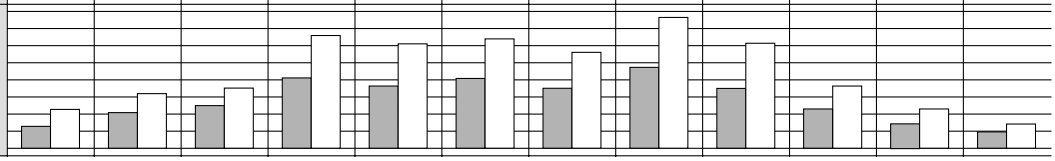
	F kit D-sub connector Conforming to MIL D-sub connector	P kit Flat ribbon cable connector (26, 20, 16, 10 pins) Conforming to MIL flat ribbon cable connector	J kit Flat ribbon cable connector (20 pins) Conforming to MIL flat. ribbon cable connector PC Wiring System compatible	T kit Terminal block Two kinds of terminal are available in accordance with the number of stations.
Plug-in	Series VQ1000  P. 2-4-12	 P/J kit P. 2-4-14		—
Plug Lead	Series VQ0000  P. 2-4-38	 P kit P. 2-4-42		 P. 2-4-46
	Series VQ1000  P. 2-4-38	 P kit P. 2-4-42		 P. 2-4-46
	Series VQ2000  P. 2-4-38	 P kit P. 2-4-42		 P. 2-4-46
Cassette	Series VQ1000  P. 2-4-76	 P kit P. 2-4-78		 P. 2-4-80

Manifold Variations

L C kit **Lead wire** Direct electrical entry type	S kit **Serial transmission unit** Enables single-wire solenoid valve-PLC operation	Port size SUP EXH port P, R	Port size Cylinder port A, B
L kit  P. 2-4-18	 P. 2-4-20	C6 (ø6) N7 (ø1/4") <Option> Built-in silencer	C3 (ø3.2) C4 (ø4) C6 (ø6) M5 (M5 thread) N1 (ø1/8") N3 (ø5/32") N7 (ø1/4")
C kit  P. 2-4-50	 P. 2-4-54	C6 (ø6) N7 (ø1/4") <Option> Built-in silencer	C3 (ø3.2) C4 (ø4) M5 (M5 thread) N1 (ø1/8") N3 (ø5/32")
C kit  P. 2-4-50	 P. 2-4-54	C6 (ø6) N7 (ø1/4") <Option> Built-in silencer	C3 (ø3.2) C4 (ø4) C6 (ø6) M5 (M5 thread) N1 (ø1/8") N3 (ø5/32") N7 (ø1/4")
C kit  P. 2-4-50	 P. 2-4-54	C8 (ø8) N9 (ø5/16") <Option> Built-in silencer	C6 (ø6) C8 (ø8) N7 (ø1/4") N9 (ø5/16")
C kit  P. 2-4-82	 P. 2-4-84	C6 (ø6) N7 (ø1/4") <Option> Built-in silencer	C3 (ø3.2) C4 (ø4) C6 (ø6) M5 (M5 thread) N1 (ø1/8") N3 (ø5/32") N7 (ø1/4")

Cylinder Speed Chart

Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

Series	Average speed (mm/s)	Bore size											
		Series CJ2 Pressure 0.5 MPa Load factor 50% Stroke 60 mm			Series CM2 Pressure 0.5 MPa Load factor 50% Stroke 300 mm				Series MB, CA1 Pressure 0.5 MPa Load factor 50% Stroke 500 mm				
		ø6	ø10	ø16	ø20	ø25	ø32	ø40	ø40	ø50	ø63	ø80	ø100
VQ0149-C4	800 700 600 500 400 300 200 100 0												
VQ014-$^{0}_{1}$C4 **VQ11$^{3}_{4}{}^{0}_{7}$-C6** **VQ214-$^{0}_{1}$C8**	800 700 600 500 400 300 200 100 0												
VQ2149-C8	800 700 600 500 400 300 200 100 0												

∗ It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
∗ The average velocity of the cylinder is what the stroke is divided by the total stroke time.
∗ Load factor: ((Load weight x 9.8)/Theoretical force) x 100%

Conditions

Body ported		Series CJ2	Series CM2	Series MB, CA1
VQ0149-C4	Tube bore x Length	T0425 x 1 m		
	Speed controller	AS2001F-04		
	Silencer	AN103-X233		
VQ11$^{30}_{41}$-C6	Tube bore x Length	T0604 x 1 m		
	Speed controller	AS3001F-06		
	Silencer	AN103-X233		
VQ2149-C8	Tube bore x Length	T0806 x 1 m		
	Speed controller	AS3001F-08		
	Silencer	AN200-KM8		

For details about certified products conforming to international standards, visit us at www.smcworld.com.

Series VQ2000

Body Ported

Plug Lead Unit: Flip Type

How to Order Manifold

VV5Q 2 4 — 08 F S1 — D

Series

2	VQ2000

Manifold

4	Plug lead unit/Flip

Simple specials are available with SMC Simple Specials System. For details about applicable models, please contact SMC.

Stations

01	1 station
⋮	⋮

The number of max. stations differs from kit to kit. (Refer to the table below.)

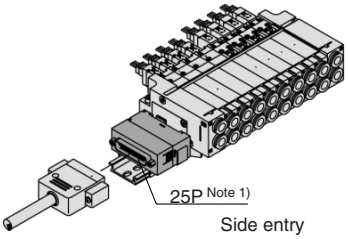
Option

Nil	None (C kit only)
D (2)	DIN rail mounting style
K (3)	Special wiring specifications (Except double wiring)
N	With name plate
S (4)	Built-in silencer, direct exhaust

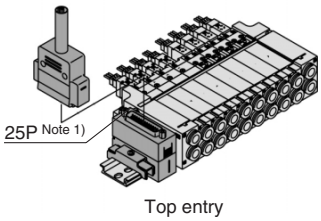
Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -DNS
Note 2) F, P, T, and S kits are of DIN rail include suffix -D
Note 3) Specify the wiring specifications in the manifold specification sheet. (Except C kit)
Note 4) F, P, T and S kits are provided with an exhaust on one side, while C kits are with an exhaust on both sides.

Kit/Electrical entry/Cable length

F kit (D-sub connector)



Side entry

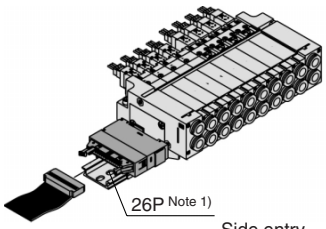


Top entry

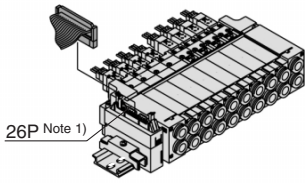
Connector entry direction					
Top entry		Side entry			
Kit F	U0	Kit F	S0	Without cable	Max. 16 (2) stations
	U1		S1	With cable (1.5 m)	
	U2		S2	With cable (3 m)	
	U3		S3	With cable (5 m)	

P. 2-4-38

P kit (Flat ribbon cable connector)



Side entry

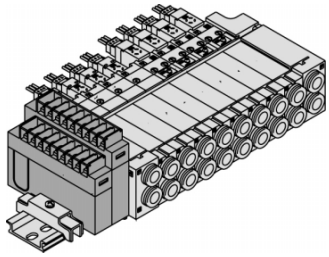


Top entry

Connector entry direction					
Top entry		Side entry			
Kit P	U0	Kit P	S0	Without cable	Max. 16 (2) stations
	U1		S1	With cable (1.5 m)	
	U2		S2	With cable (3 m)	
	U3		S3	With cable (5 m)	

P. 2-4-42

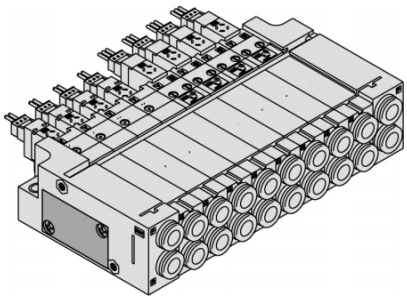
T kit (Terminal block)



P. 2-4-46

Kit T			
1	No. of terminals: 8, 1 row	Applicable stations 1 to 8	
2	No. of terminals: 16, 2 rows	Applicable stations 5 to 16	

C kit (Connector)

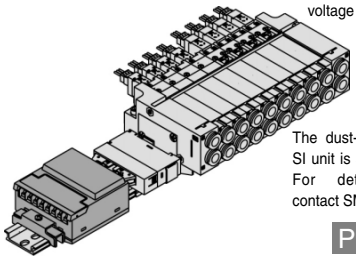


P. 2-4-50

C	Connector kit	Max. 16

S kit (Serial transmission unit)

The valve is equipped with an indicator light/surge voltage suppressor and the voltage is 24 VDC.



The dust-protected type SI unit is applicable, too. For details, please contact SMC.

P. 2-4-54

Kit S (3)			
	0	Without SI unit	(2) Max. 16 stations
	A	With general type SI unit (Series EX300)	
	B	Mitsubishi Electric Corp.: MELSECNET/MINI-S3 Data Link System	
	C	OMRON Corp.: SYSBUS Wire System	
	D	SHARP Corp.: Satellite I/O Link System	
	F1	NKE Corp.: Uni-wire System (16 output points)	
	H	NKE Corp.: Uni-wire H System	

Note 1) Besides the above, F and P kits with different number of pins are available. For details, refer to page 2-4-68.
Note 2) See page 2-4-69 for details.
Note 3) Please consult with SMC for the following serial transmission kits: Matsushita Electric Works, Ltd.; Rockwell Automation, Inc.; SUNX Corporation; Fuji Electric Co., Ltd.; OMRON Corporation.

SMC

How to Order Valves

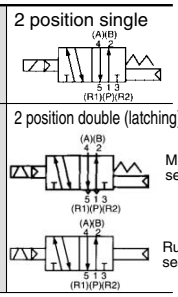
VQ 2 1 4 0 Y 5 L C6

Series

2	VQ2000

Type of actuation

1	2 position single
2	2 position double (latching)



Seal

0	Metal seal
1	Rubber seal

Coil voltage

1	100 VAC (50/60 Hz)
2 Note)	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4 Note)	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

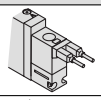
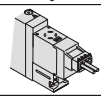
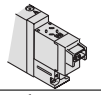
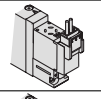
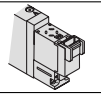
Note) The C kits is applicable to 200/220 VAC.

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	○ (1)
H (2)	High pressure type	(1.5 W) ○	—
Y (2)	Low wattage type	(0.5 W) ○	—

Note 1) For power consumption of AC type, refer to page 2-4-36.
Note 2) Except double (latching).

Electrical entry

	VQ2000
G: Grommet C kit single only. (Except AC)	
L: L plug connector With lead wire	 With light/ surge voltage suppressor
LO: L plug connector Without connector	 With light/ surge voltage suppressor
M: M plug connector With lead wire	 With light/ surge voltage suppressor
MO: M plug connector Without connector	 With light/ surge voltage suppressor

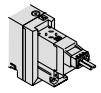
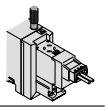
Note) LO and MO valves are used for F, P, T, and S kits. The plug connector and lead wire are attached to the manifold.

Cylinder port

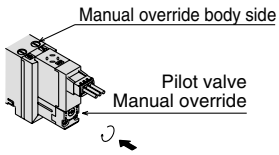
Symbol	Port size
C4	With One-touch fitting for ø4
C6	With One-touch fitting for ø6
C8	With One-touch fitting for ø8

Note) For inch-size One-touch fittings, refer to "Option" on page 2-4-69.

Manual override

Nil: Non-locking push type (Tool required)	B: Locking type (Tool required)	C: Locking type (Manual)
		

Note) A manual override for pilot valve is provided to the standard model for double type.

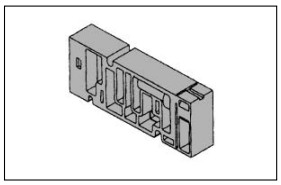


Note 1) For negative common specifications, refer to "Option" on page 2-4-69.
Note 2) Connector assembly will be required when the F, P, T, S kits add a valve. For part nos., refer to "Option" on page 2-4-69.

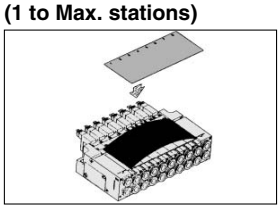
Manifold Option

P. 2-4-59

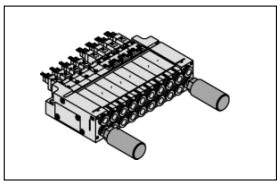
Blanking plate assembly
VVQ2000-10A-4



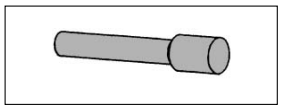
Name plate [-N4]
VVQ2000-N4-Station
(1 to Max. stations)



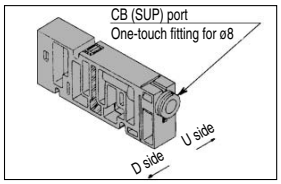
Silencer (For EXH port)
AN200-KM8



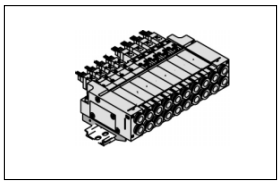
Blanking plug **KQ2P-$^{06}_{08}$**



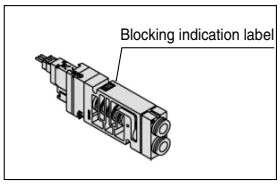
Individual SUP spacer
VVQ2000-P-4-C8



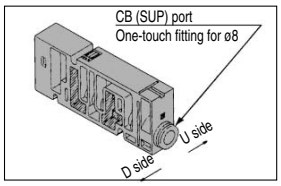
DIN rail mounting bracket
VVQ2000-57A-4



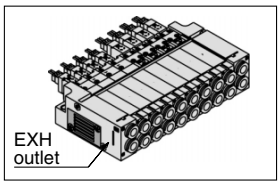
P R PR Block valve VQ2$^{1}_{2}$4$^{0}_{1}$-□-□□- P R PR



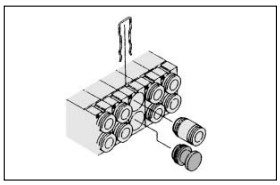
Individual EXH spacer
VVQ2000-R-4-C8



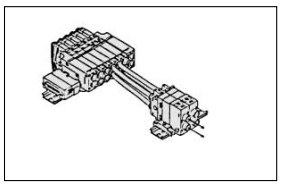
Built-in silencer,
direct exhaust [-S]



Port plug
VVQ1000-58A

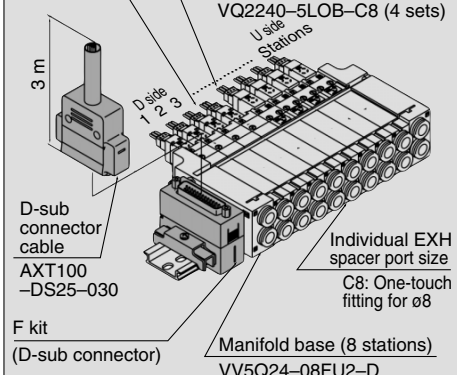


Double check block
VQ2000-FPG-□□



How to Order Manifold Assembly

Example Single solenoid (24 VDC)
VQ2140–5LO–C8 (4 sets)
Double solenoid (24 VDC)
VQ2240–5LOB–C8 (4 sets)



VV5Q24-08FU2-D ··· 1 set (F kit 8 station manifold base no.)
*VQ2140-5LO-C6 ··· 4 sets (Single solenoid part no.)
*VQ2240-5LOB-C6 ··· 4 sets (Double solenoid part no.)
The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Please indicate manifold base type, corresponding valve, and option parts. When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

• For replacement parts, refer to page 2-4-109.

Series VQ0000/1000/2000
Body Ported
Plug Lead Unit: Flip Type

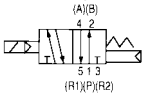
Model

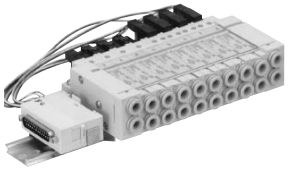
Series	Number of solenoids		Model		Flow characteristics: 1 → 4/2 (P → A/B) C [dm³/(s·bar)]	b	Cv	Flow characteristics: 4/2 → 5/3 (A/B → R1/R2) C [dm³/(s·bar)]	b	Cv	Response time (2) (ms): Standard: 1 W H: 1.5 W	Low wattage: 0.5 W	AC	Weight (g)
VQ0000	2 position	Single	Metal seal	VQ0140	0.43	0.20	0.10	0.50	0.19	0.12	12 or less	15 or less	29 or less	57
			Rubber seal	VQ0141	0.49	0.34	0.13	0.59	0.19	0.14	15 or less	20 or less	34 or less	
		Double (Latching)	Metal seal	VQ0240	0.43	0.20	0.10	0.50	0.19	0.12	12 or less	15 or less	29 or less	
			Rubber seal	VQ0241	0.49	0.34	0.13	0.59	0.19	0.14	15 or less	20 or less	34 or less	
	3 position	Closed center	Metal seal	VQ0340	0.34	0.12	0.08	0.36	0.38	0.10	20 or less	26 or less	40 or less	105
			Rubber seal	VQ0341	0.37	0.25	0.09	0.42	0.45	0.12	25 or less	33 or less	47 or less	
		Exhaust center	Metal seal	VQ0440	0.36	0.21	0.09	0.48	0.18	0.12	20 or less	26 or less	40 or less	
			Rubber seal	VQ0441	0.37	0.31	0.11	0.59	0.24	0.14	25 or less	33 or less	47 or less	
VQ1000	2 position	Single	Metal seal	VQ1140	0.77	0.14	0.18	0.84	0.14	0.19	12 or less	15 or less	29 or less	57
			Rubber seal	VQ1141	0.91	0.19	0.21	1.0	0.21	0.25	15 or less	20 or less	34 or less	
		Double (Latching)	Metal seal	VQ1240	0.77	0.14	0.18	0.84	0.14	0.19	12 or less	15 or less	29 or less	
			Rubber seal	VQ1241	0.91	0.19	0.21	1.0	0.21	0.25	15 or less	20 or less	34 or less	
	3 position	Closed center	Metal seal	VQ1340	0.67	0.13	0.16	0.73	0.13	0.17	20 or less	26 or less	40 or less	72
			Rubber seal	VQ1341	0.78	0.22	0.18	0.84	0.21	0.20	25 or less	33 or less	47 or less	
		Exhaust center	Metal seal	VQ1440	0.74	0.14	0.17	0.84	0.16	0.20	20 or less	26 or less	40 or less	
			Rubber seal	VQ1441	0.78	0.28	0.19	1.0	0.21	0.24	25 or less	33 or less	47 or less	
		Pressure center	Metal seal	VQ1540	0.74	0.14	0.17	0.82	0.18	0.20	20 or less	26 or less	40 or less	
			Rubber seal	VQ1541	0.80	0.28	0.19	0.84	0.21	0.22	25 or less	33 or less	47 or less	
VQ2000	2 position	Single	Metal seal	VQ2140	2.0	0.13	0.43	2.3	0.15	0.58	22 or less	29 or less	49 or less	103
			Rubber seal	VQ2141	2.3	0.21	0.54	2.7	0.25	0.62	24 or less	31 or less	51 or less	
		Double (Latching)	Metal seal	VQ2240	2.0	0.13	0.43	2.3	0.15	0.58	22 or less	29 or less	49 or less	
			Rubber seal	VQ2241	2.3	0.21	0.54	2.7	0.25	0.62	24 or less	31 or less	51 or less	

Note 1) Cylinder port size C4: (VQ0000), C6: (VQ1000), C8: (VQ2000)
Note 2) As per JIS B 8375-1981 (Supply pressure: 0.5 MPa; with indicator ligh/surge voltage suppressor; clean air) Subject to the pressure and air quality.

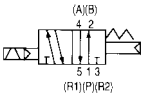
JIS Symbol

2 position single

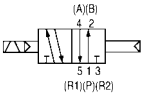




2 position double (Latching)

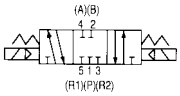


Metal seal

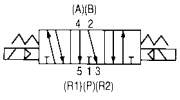


Rubber seal

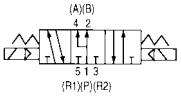
3 position closed center



3 position exhaust center



3 position pressure center



Standard Specifications

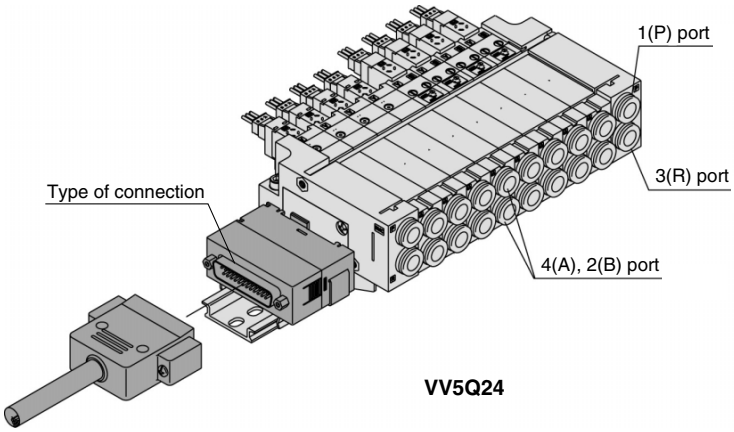
			Metal seal	Rubber seal
Valve specifications	Valve construction		Metal seal	Rubber seal
	Fluid		Air/Inert gas	Air/Inert gas
	Maximum operating pressure		0.7 MPa (High pressure type: 0.8 MPa) (3)	
	Min. operating pressure	Single	0.1 MPa	0.15 MPa
		Double (Latching)	0.1 MPa	0.15 MPa
		3 position	0.15 MPa	0.2 MPa
	Ambient and fluid temperature		−10 to 50°C (1)	
	Lubrication		Not required	
	Manual override		Push type/Locking type (Tool required, Manual type) Option	
	Impact resistance/Vibration resistance (2)		150/30 m/s²	
	Enclosure		Dust-protected	
Solenoid	Coil rated voltage		12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz)	
	Allowable voltage fluctuation		±10% of rated voltage	
	Coil insulation type		Class B or equivalent	
	Power consumption (Current)	24 VDC	1 W DC (42 mA), 1.5 W DC (63 mA) (3), 0.5 W DC (21 mA) (4)	
		12 VDC	1 W DC (83 mA), 1.5 W DC (125 mA) (3), 0.5 W DC (42 mA) (4)	
		100 VAC	Inrush 0.5 VA (5 mA), Holding 0.5 VA (5 mA)	
		110 VAC	Inrush 0.55 VA (5 mA), Holding 0.55 VA (5 mA)	
		200 VAC	Inrush 1.0 VA(5 mA), Holding 1.0 VA (5 mA)	
		220 VAC	Inrush 1.1 VA (5 mA), Holding 1.1 VA (5 mA)	

Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)
Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)
Note 3) Values in the case of high pressure type (1.5 W) specifications.
Note 4) Values in the case of low wattage type (0.5 W) specifications.

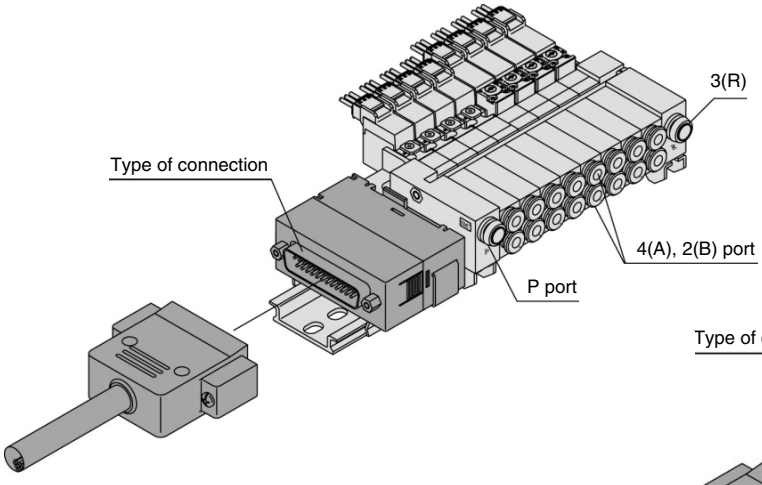
Manifold Specifications

Series	Base model	Type of connection	Porting specifications			Applicable (2) stations	Applicable solenoid valve	5 station weight (g)
			Port location	Port size (1)				
				1(P), 3(R)	4(A), 2(B)			
VQ0000	**VV5Q04-□□□**	■ F kit–D-sub connector ■ P kit–Flat cable connector ■ T kit–Terminal block ■ C kit–Individual connector ■ S kit–Serial transmission unit	Side	C6 (ø6) Option Built-in silencer, direct exhaust	C3 (ø3.2) C4 (ø4) M5 (M5 thread)	1 to 16 stations	VQ0□40 VQ0□41	225
VQ1000	**VV5Q14-□□□**	■ F kit–D-sub connector ■ P kit–Flat cable connector ■ T kit–Terminal block ■ C kit–Individual connector ■ S kit–Serial transmission unit	Side	C6 (ø6) Option Built-in silencer, direct exhaust	C3 (ø3.2) C4 (ø4) C6 (ø6) M5 (M5 thread)		VQ1□40 VQ1□41	380
VQ2000	**VV5Q24-□□□**	■ F kit–D-sub connector ■ P kit–Flat cable connector ■ T kit–Terminal block ■ C kit–Individual connector ■ S kit–Serial transmission unit	Side	C8 (ø8) Option Built-in silencer, direct exhaust	C4 (ø4) C6 (ø6) C8 (ø8)		VQ2□40 VQ2□41	671

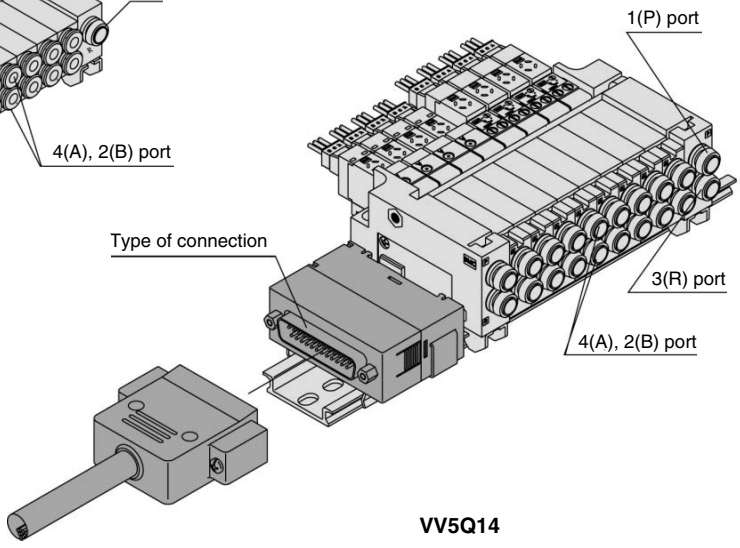
Note 1) Inch-size One-touch fittings are also available. For details, refer to page 2-4-69.
Note 2) See page 2-4-69 for details.



VV5Q24

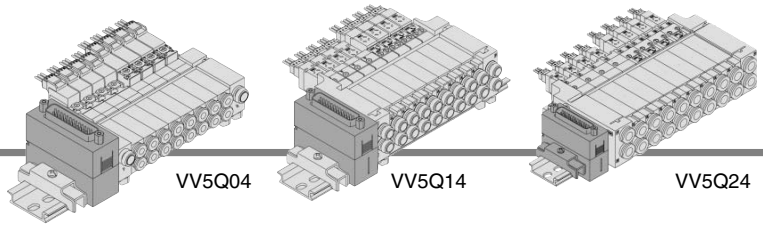


VV5Q04



VV5Q14

F VQ0000/1000/2000 Kit (D-sub connector)



- The D-sub connector reduces installation labor for electrical connections.
- Using the D-sub connector (25P), (15P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 16.

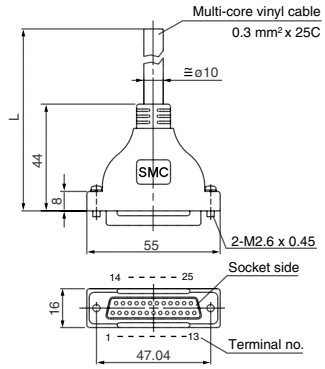
Manifold Specifications VV5Q14

Series	Porting specifications			Applicable stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
VQ0000	Side	C6	C3, C4, M5	Max. 16 stations
VQ1000	Side	C6	C3, C4, C6, M5	Max. 16 stations
VQ2000	Side	C8	C4, C6, C8	Max. 16 stations

D-sub Connector (25 pins)

AXT100-DS25- 015 / 030 / 050

The D-sub connector cable assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.



D-sub Connector Cable Assembly (Option)

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-DS25-015	Cable 25 core x 24AWG
3 m	AXT100-DS25-030	
5 m	AXT100-DS25-050	

∗ For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.

Connector manufacturers' example
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.

Electric Characteristics

Item	Characteristics
Conductor resistance Ω/km, 20°C	65 or less
Insulation resistance V, 1 min, AC	1000
Insulation resistance MΩ/km, 20°C	5 or more

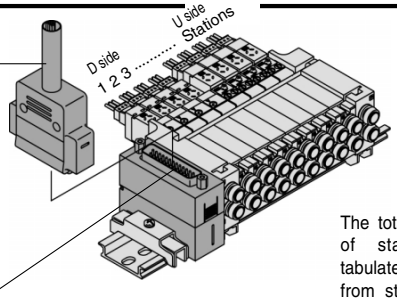
Note) The minimum bending radius of D-sub cable assembly is 20 mm.

Wire Color by Terminal No. of D-sub Connector Cable Assembly

Terminal no.	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Gray	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	None

Note) Types with 15 pin are also available. For details, refer to page 2-4-68.

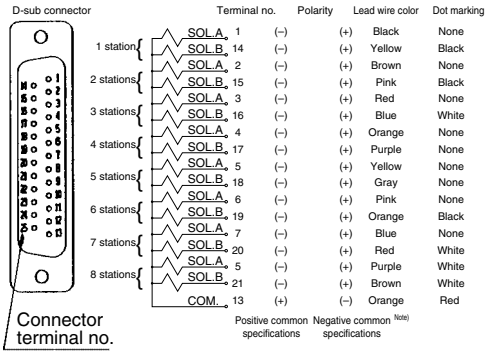
Cable assembly



The total number of stations is tabulated starting from station one on the D side.

Electrical wiring specifications

D-sub cable assembly AXT100-DS25- 015 / 030 / 050 Wire color



As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-69.

Note) When using the negative common specifications, use valves for negative common. (Refer to page 2-4-69.)

How to Order Manifold

VV5Q 1 4 – 08 F S 1 – D

Series

0	VQ0000
1	VQ1000
2	VQ2000

Manifold

4	Plug lead unit/Flip

Stations

01	1 station
⋮	⋮
16	16 stations

Note) For details, refer to page 2-4-69.

Cable (Length)

0	Without cable
1	With cable (1.5 m)
2	With cable (3 m)
3	With cable (5 m)

Connector entry direction

U	Top entry
S	Side entry

Option

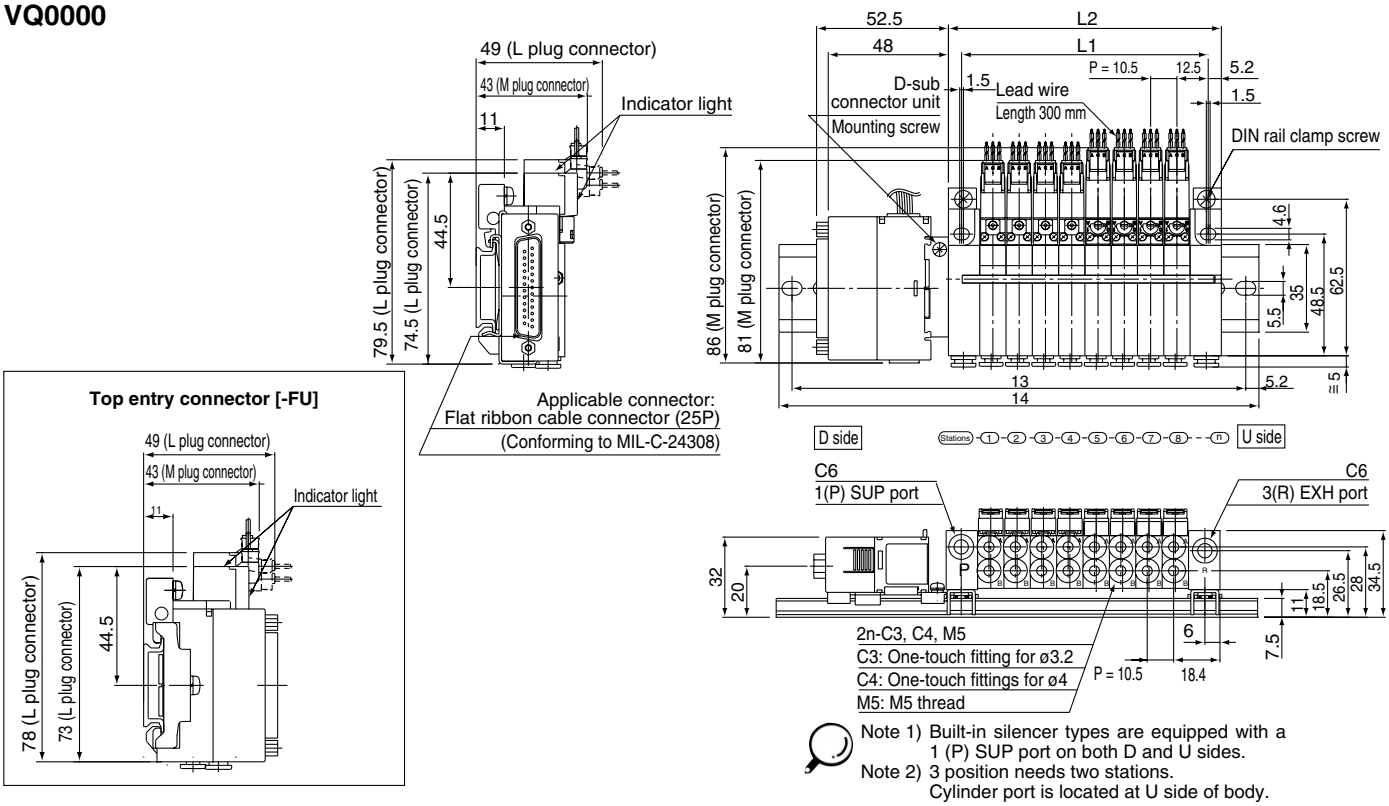
D (2)	DIN rail mounting style
K (3)	Special wiring specifications (Except double wiring)
N	With name plate
S	Built-in silencer, direct exhaust (U side only)

Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -DNS

Note 2) F kits are DIN rail mounting styles, include suffix -D.

Note 3) Specify the wiring specifications on the manifold specification sheet.

VQ0000



Note 1) Built-in silencer types are equipped with a 1 (P) SUP port on both D and U sides.
Note 2) 3 position needs two stations.
Cylinder port is located at U side of body.

Dimensions: Side Entry Connector [-FS]

Formula L1 = 10.5n + 14.5, L2 = 10.5n + 25 n: Station (Maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	25	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5
L2	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5	193
L3	112.5	125	137.5	150	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5	275
L4	123	135.5	148	160.5	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5

Dimensions: Top Entry Connector [-FU]

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L3	100	100	112.5	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	237.5	237.5	250
L4	110.5	110.5	123	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	248	248	260.5

How to Order Valves

VQ 1 1 4 0 Y – 5 LO [ ] – C6

Series

0	VQ0000
1	VQ1000
2	VQ2000

Seal

0	Metal seal
1	Rubber seal

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	○ (1)
H (2)	High pressure type	(1.5 W) ○	—
Y (2)	Low wattage type	(0.5 W) ○	—

Note 1) For power consumption of AC type, refer to page 2-4-36.
Note 2) Except double (latching).

Type of actuation

		VQ0000	VQ1000	VQ2000
1	2 position single	●	●	●
2	2 position double (Latching)	●	●	●
3	3 position closed center	● (1)	● (2)	—
4	3 position exhaust center	● (1)	● (2)	—
5	3 position pressure center	—	● (2)	—

Note 1) (2 stations space are occupied.)
Note 2) L plug connector is used for AC.

Coil voltage

1	100 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

Electrical entry

LO	L plug connector without connector
MO	M plug connector without connector

Note) Plug connector and lead wire layers are attached to the manifold.

Cylinder port

Symbol	Port size	VQ0000	VQ1000	VQ2000
C3	With One-touch fitting for ø3.2	●	●	—
C4	With One-touch fitting for ø4	●	●	●
C6	With One-touch fitting for ø6	—	●	●
C8	With One-touch fitting for ø8	—	—	●
M5	M5 thread	●	●	—

Note) For inch-size One-touch fittings, refer to "Option" on page 2-4-69.

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)
C	Locking type (Manual)

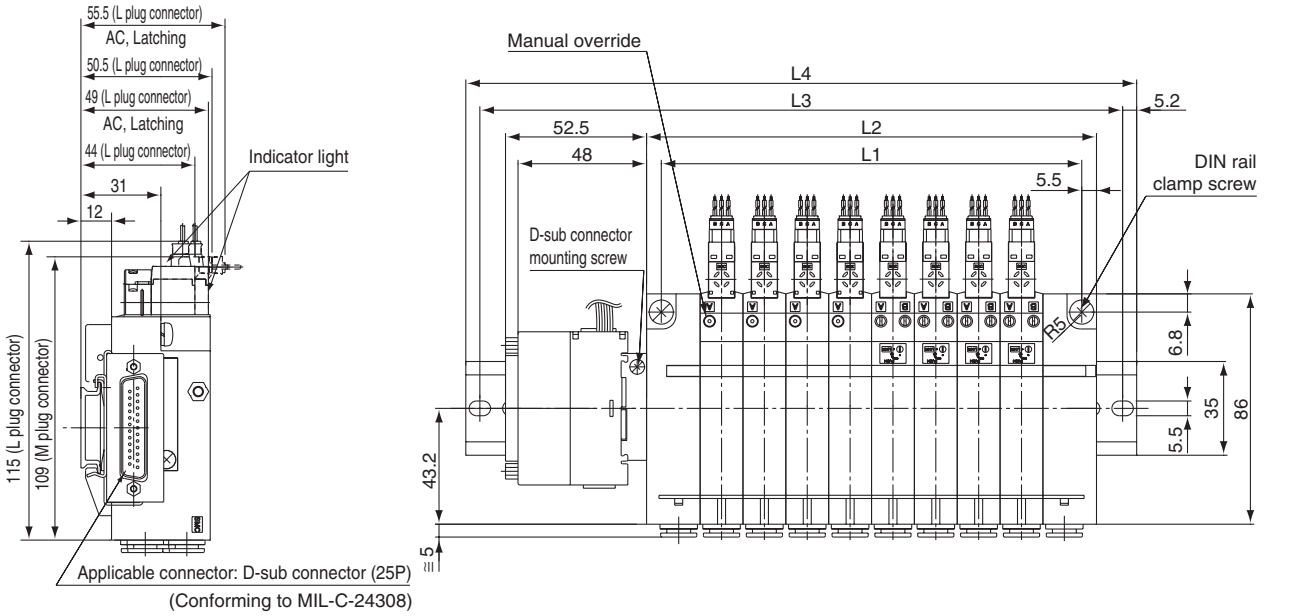
Note 1) All double latching valves of VQ0000 are non-locking push type. (Refer to page 2-4-66.)
Note 2) A manual override for pilot valve is provided to the standard model for double type.

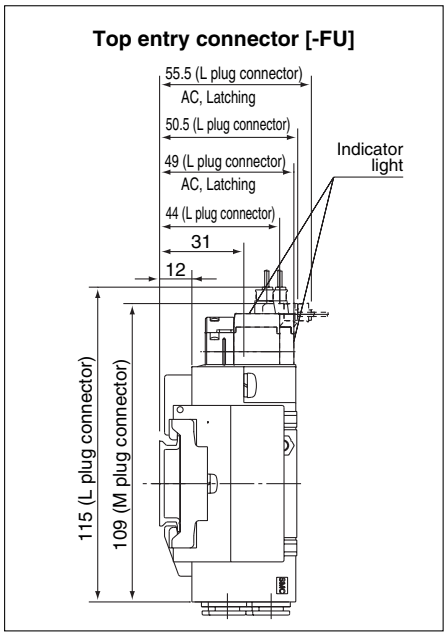
Note 1) For negative common specifications, refer to "Option" on page 2-4-69.
Note 2) Connector assembly will be required when the F kits add a valve. For part nos., refer to "Option" on page 2-4-69.

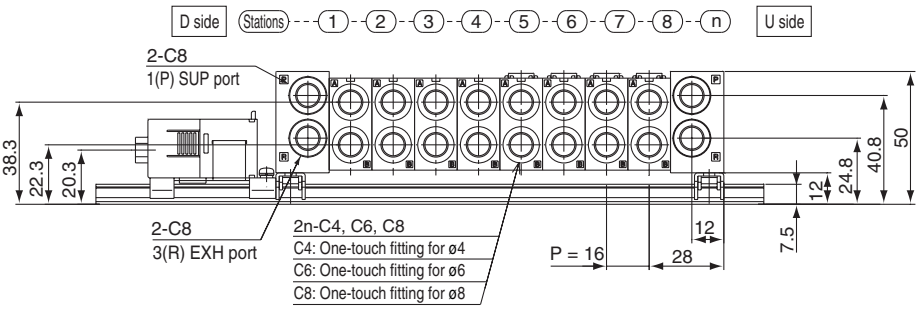
How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

VQ2000







Dimensions: Side Entry Connector [-FS]

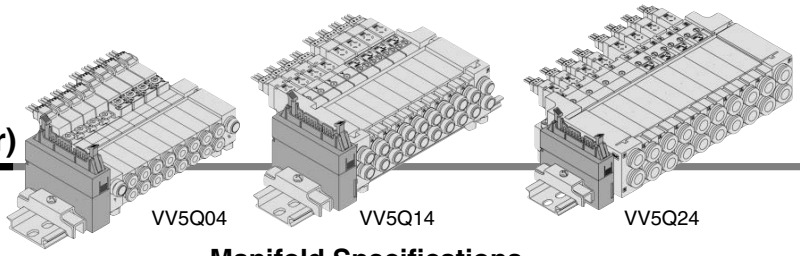
Formula L1 = 16n + 29, L2 = 16n + 40 n: Stations (Maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	45	61	77	93	109	125	141	157	173	189	205	221	237	253	269	285
L2	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296
L3	137.5	150	162.5	187.5	200	212.5	225	250	262.5	275	300	312.5	325	337.5	362.5	375
L4	148	160.5	173	198	210.5	223	235.5	260.5	273	285.5	310.5	323	335.5	348	373	385.5

Dimensions: Top Entry Connector [-FU]

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L3	112.5	137.5	150	162.5	175	200	212.5	225	237.5	262.5	275	287.5	312.5	325	337.5	350
L4	123	148	160.5	173	185.5	210.5	223	235.5	248	273	285.5	298	323	335.5	348	360.5

P VQ0000/1000/2000 Kit (Flat ribbon cable connector)

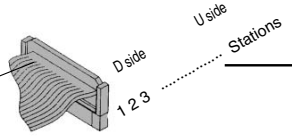


- MIL flat ribbon cable connector reduces installation labor savings for electrical connection.
- Using the connector for flat ribbon cable (26P), (10P, 16P, 20P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 16.

Manifold Specifications

Series	Porting specifications			Applicable stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
VQ0000	Side	C6	C3, C4, M5	Max. 16 stations
VQ1000	Side	C6	C3, C4, C6, M5	Max. 16 stations
VQ2000	Side	C8	C4, C6, C8	Max. 16 stations

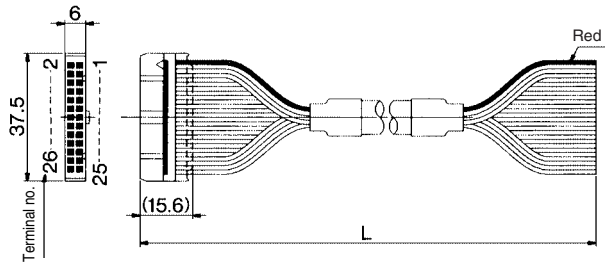
Flat Ribbon Cable (26 pins)



Cable assembly

AXT100-FC26-1 to 3

(Flat ribbon cable connector assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.)



Flat Ribbon Cable Connector Assembly (Option)

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-FC26-1	Cable 26 core x 28AWG
3 m	AXT100-FC26-2	
5 m	AXT100-FC26-3	

∗ For other commercial connectors, use a 26 pins type with strain relief conforming to MIL-C-83503.

Connector manufacturers' example

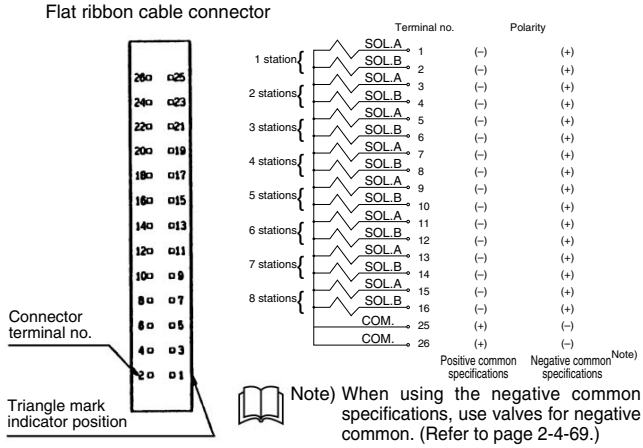
- Hirose Electric Co., Ltd.
- Japan Aviation Electronics Industry, Ltd.
- Sumitomo 3M Limited
- J.S.T. Mfg. Co., Ltd.
- Fujitsu Limited
- Oki Electric Cable Co., Ltd.

Note) Types with 10, 16, or 20 pin are also available. For details, refer to page 2-4-69.

VV5Q14

The total number of stations is tabulated starting from station one on the D side.

Electrical wiring specifications



Note) When using the negative common specifications, use valves for negative common. (Refer to page 2-4-69.)

As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-69.

How to Order Manifold

VV5Q 1 4 – 08 P S 1 – D

Series

0	VQ0000
1	VQ1000
2	VQ2000

Manifold

4	Plug lead unit/Flip

Stations

01	1 station
⋮	⋮
16	16 stations

Note) For details, refer to page 2-4-69.

Connector entry direction

U	Top entry
S	Side entry

Cable (Length)

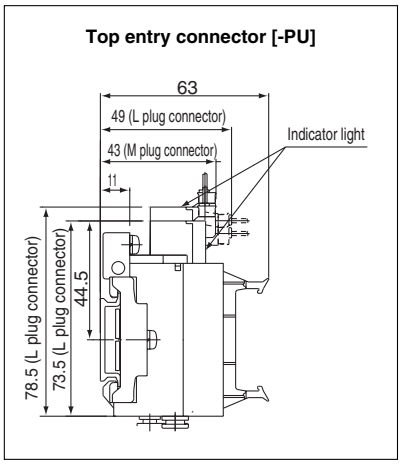
0	Without cable
1	With cable (1.5 m)
2	With cable (3 m)
3	With cable (5 m)

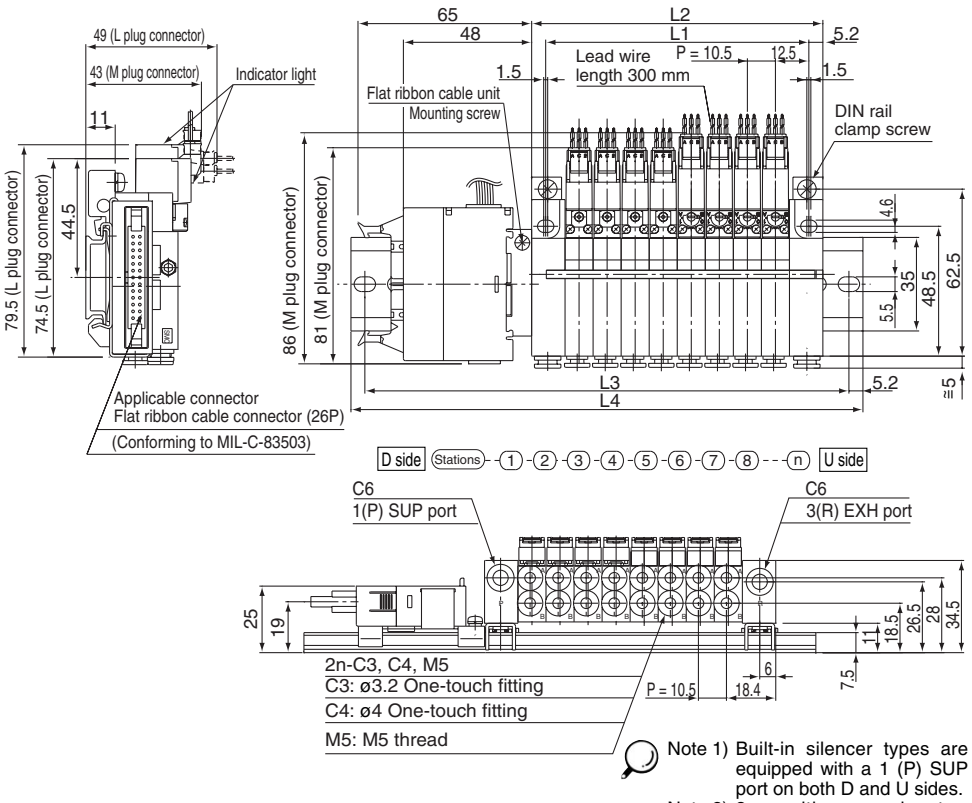
Option

D (2)	DIN rail mounting style
K (3)	Special wiring specifications (Except double wiring)
N	With name plate
S	Built-in silencer, direct exhaust (U side only)

Note 1) When two or more symbols are specified, indicate them alphabetically.
Example) -DNS
Note 2) P kits are DIN rail mounting styles, so include suffix -D.
Note 3) Specify the wiring specifications on the manifold specification sheet.

VQ0000





Note 1) Built-in silencer types are equipped with a 1 (P) SUP port on both D and U sides.
Note 2) 3 position needs two stations.
Cylinder port is located at U side of body.

Dimensions: Side Entry Connector [-PS]

Formula L1 = 10.5n + 14.5 L2 = 10.5n + 25 n: Station (Maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	25	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5
L2	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5	193
(L3)	112.5	125	137.5	150	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5	275
(L4)	123	135.5	148	160.5	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5

Dimensions: Top Entry Connector [-PU]

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L3	87.5	100	112.5	125	125	137.5	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250
L4	98	110.5	123	135.5	135.5	148	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5

How to Order Valves

VQ 1 1 4 0 Y – 5 LO [ ] – C6

Series

0	VQ0000
1	VQ1000
2	VQ2000

Seal

0	Metal seal
1	Rubber seal

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	○ (1)
H (2)	High pressure type	(1.5 W) ○	—
Y (2)	Low wattage type	(0.5 W) ○	—

Note 1) For power consumption of AC type, refer to page 2-4-36.
Note 2) Except double (latching).

Type of actuation

		VQ0000	VQ1000	VQ2000
1	2 position single	●	●	●
2	2 position double (Latching)	●	●	●
3	3 position closed center	● (1)	● (2)	—
4	3 position exhaust center	● (1)	● (2)	—
5	3 position pressure center	—	● (2)	—

Note 1) (2 stations space are occupied.)
Note 2) L plug connector is used for AC.

Coil voltage

1	100 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

Electrical entry

LO	L plug connector without connector
MO	M plug connector without connector

Note) Plug connector and lead wire layers are attached to the manifold.

Cylinder port

Symbol	Port size	VQ0000	VQ1000	VQ2000
C3	With One-touch fitting for ø3.2	●	●	—
C4	With One-touch fitting for ø4	●	●	●
C6	With One-touch fitting for ø6	—	●	●
C8	With One-touch fitting for ø8	—	—	●
M5	M5 thread	●	●	—

Note) For inch-size One-touch fittings, refer to "Option" on page 2-4-69.

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)
C	Locking type (Manual)

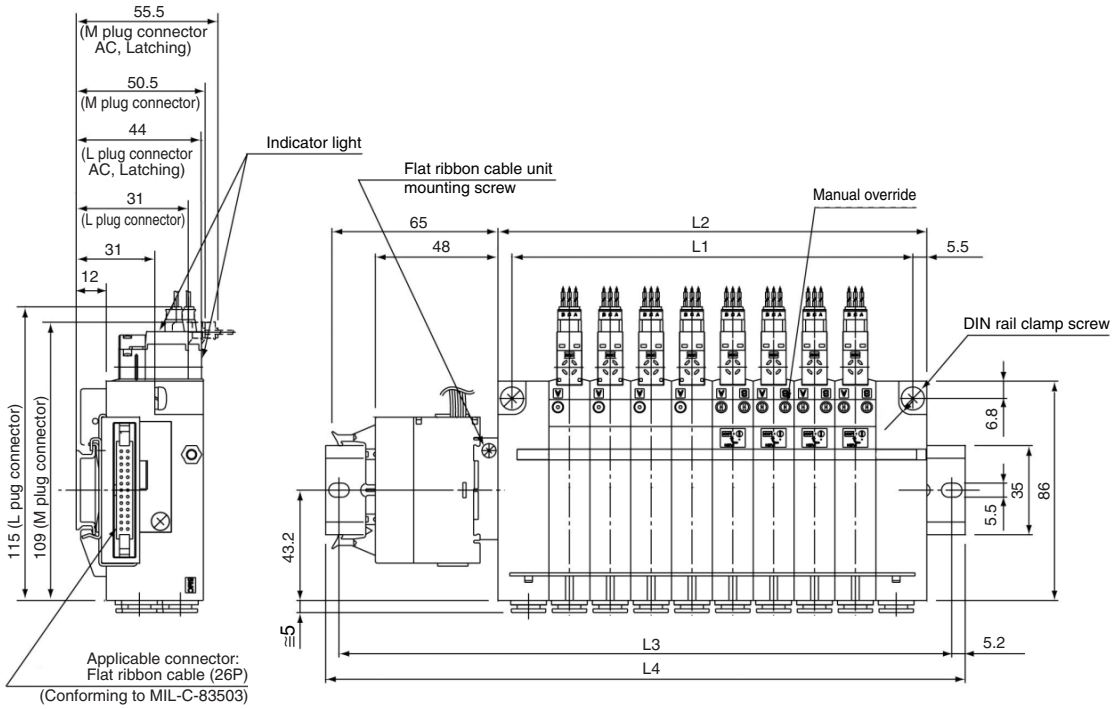
Note 1) All double latching valves of VQ0000 are non-locking push type.
Note 2) A manual override for pilot valve is provided to the standard model for double type.

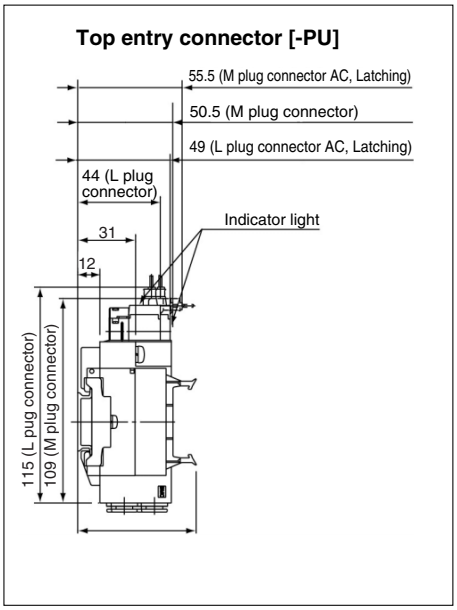
Note 1) For negative common specifications, refer to "Option" on page 2-4-69.
Note 2) Connector assembly will be required when the P kits add a valve. For model no., refer to "Option" on page 2-4-69.

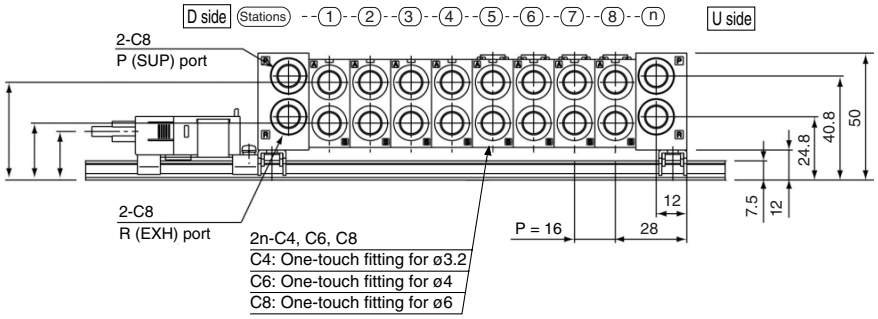
How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

VQ2000







Dimensions: Side Entry Connector [-PS]

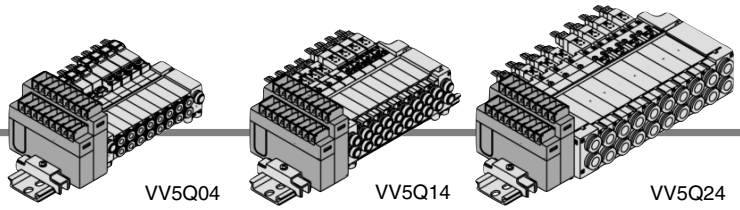
Formula L1 = 16n + 29, L2 = 16n + 40 n: Stations (Maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	45	61	77	93	109	125	141	157	173	189	205	221	237	253	269	285
L2	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296
L3	137.5	150	162.5	187.5	200	212.5	225	250	262.5	275	287.5	312.5	325	337.5	362.5	375
L4	148	160.5	173	198	210.5	223	235.5	260.5	273	285.5	298	323	335.5	348	373	385.5

Dimensions: Top Entry Connector [-PU]

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L3	112.5	125	137.5	162.5	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350
L4	123	135.5	148	173	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5

T VQ0000/1000/2000 Kit (Terminal block)

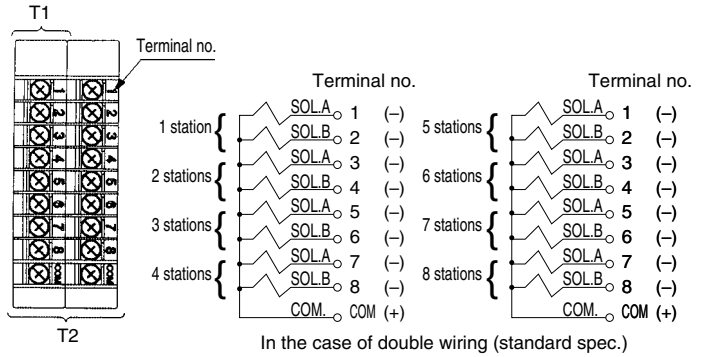


- It is a standard terminal block type.
- Two quantities of terminals can be selected in accordance with the number of stations.
  (8 terminals/16 terminals)
- Maximum stations are 16.

Manifold Specifications

Series	Porting specifications			Applicable stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
VQ0000	Side	C6	C3, C4, M5	Max. 16 stations
VQ1000	Side	C6	C3, C4, C6, M5	Max. 16 stations
VQ2000	Side	C8	C4, C6, C8	Max. 16 stations

● Electrical wiring specifications



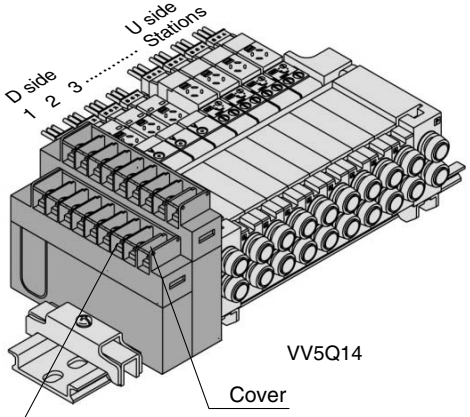
In the case of double wiring (standard spec.)
T1 (Terminal block of 1 row): 1 to 4 stations
T2 (Terminal block of 2 rows): 5 to 8 stations
T1 and T2 can be optionally chosen by adopting the combinations of single and double wiring (optional spec.), etc.

The quantity of terminal blocks used depends on the number of manifold stations.

Manifold	No. of terminals
1 to 4 stations	1 row
5 to 8 stations	2 rows

Wiring other than those above is possible. See page 2-4-69 for details.

Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option.
For details, refer to page 2-4-69.



● How to connect wires to terminal block

Open the terminal block cover to connect the wires to the terminal block.
(With M3 thread)

How to Order Manifold

VV5Q 1 4 – 08 T 2 – D

Series

0	VQ0000
1	VQ1000
2	VQ2000

Manifold

4	Plug lead unit/Flip

Stations

01	1 station
⋮	⋮
16	16 stations

Note 1) For negative common specifications, refer to "Option" on page 2-4-69.
Note 2) As option, the maximum number of stations can be increased based on special wiring specifications. For details, refer to page 2-4-69.

Option

D (2)	DIN rail mounting style
K (3)	Special wiring specifications (Except double wiring)
N	With name plate
S	Built-in silencer, direct exhaust (U side only)

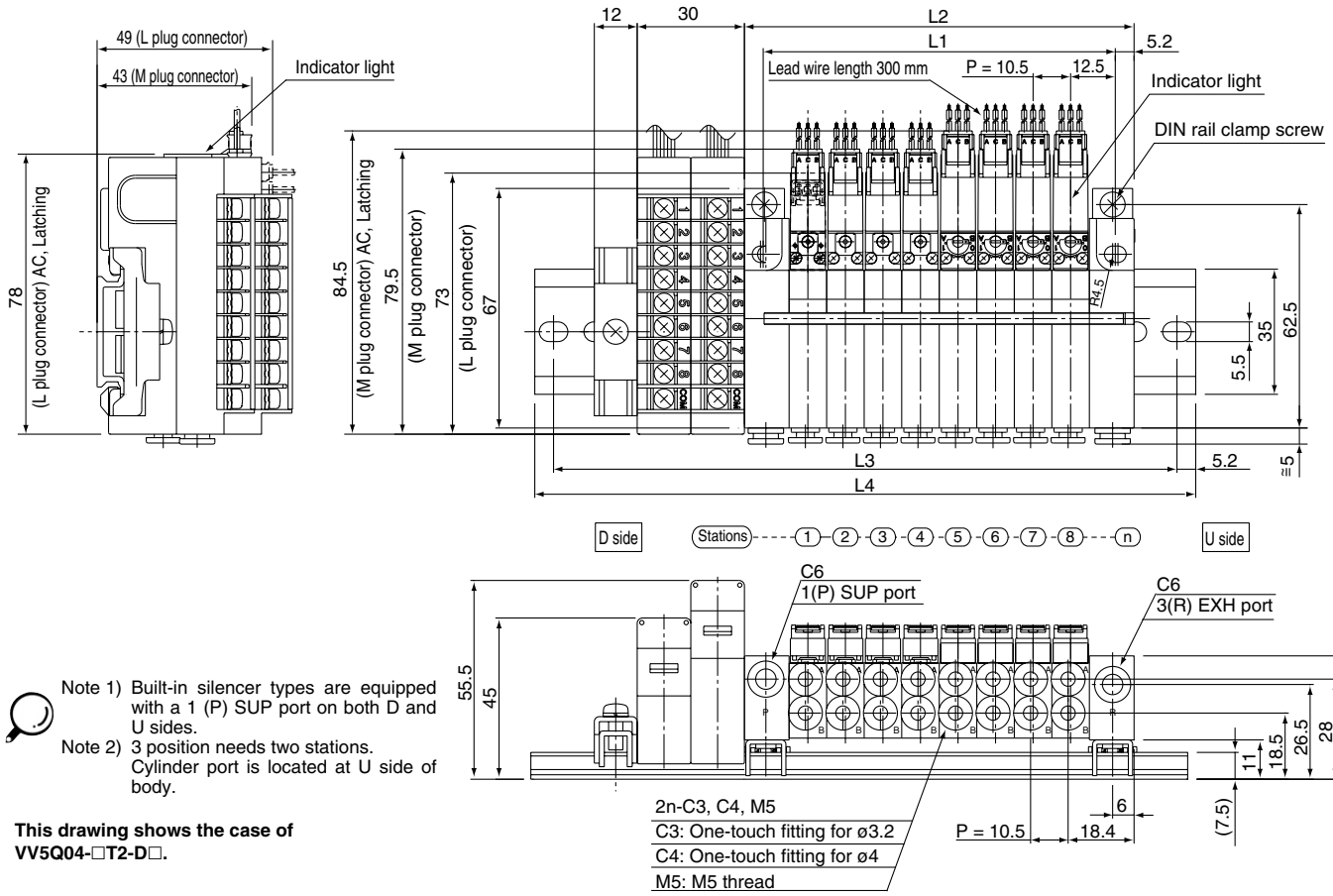
Note 1) When two or more symbols are specified, indicate them alphabetically.
Example) -DNS
Note 2) T kits are DIN rail mounted type, so include suffix -D.
Note 3) Specify the wiring specifications in the manifold specification sheet.

Number of terminals

1	8 terminals in 1 row	Applicable stations 1 to 4 stations (Double), 8 stations (Single)
2	16 terminals in 2 rows	Applicable stations 5 to 8 stations (Double), 16 stations (Single)

Note) The number of terminal blocks can be chosen regardless of station qty. Suffix the option symbol, K, when the wiring specification is special.

VQ0000



Note 1) Built-in silencer types are equipped with a 1 (P) SUP port on both D and U sides.
Note 2) 3 position needs two stations. Cylinder port is located at U side of body.

This drawing shows the case of VV5Q04-□T2-D□.

Dimensions

Equation L1 = 10.5n + 14.5, L2 = 10.5 n + 25 n: station (Maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	25	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5
L2	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5	193
L3	100	112.5	125	137.5	150	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5
L4	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273

How to Order Valves

VQ 1 1 4 0 Y – 5 LO □ – C6

Series

0	VQ0000
1	VQ1000
2	VQ2000

Seal

0	Metal seal
1	Rubber seal

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	○ (1)
H (1)	High pressure type	(1.5 W) ○	—
Y (2)	Low wattage type	(0.5 W) ○	—

Note 1) For power consumption of AC type, refer to page 2-4-36.
Note 2) Except double (latching).

Type of actuation

		VQ0000	VQ1000	VQ2000
1	2 position single	●	●	●
2	2 position double (Latching)	●	●	●
3	3 position closed center	● (1)	● (2)	—
4	3 position exhaust center	● (1)	● (2)	—
5	3 position pressure center	—	● (2)	—

Note 1) 2 stations space are occupied.
Note 2) L plug connector is used for AC.

Coil voltage

1	100 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

Electrical entry

LO	L plug connector without connector
MO	M plug connector without connector

Note) Plug connector and lead wire layers are attached to the manifold.

Note 1) For negative common specifications, refer to "Option" on page 2-4-69.
Note 2) Connector assembly will be required when the T kits add a valve. For model no., refer to "Option" on page 2-4-69.

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

Cylinder port

Symbol	Port size	VQ0000	VQ1000	VQ2000
C3	With One-touch fitting for ø3.2	●	●	—
C4	With One-touch fitting for ø4	●	●	●
C6	With One-touch fitting for ø6	—	●	●
C8	With One-touch fitting for ø8	—	—	●
M5	M5 thread	●	●	—

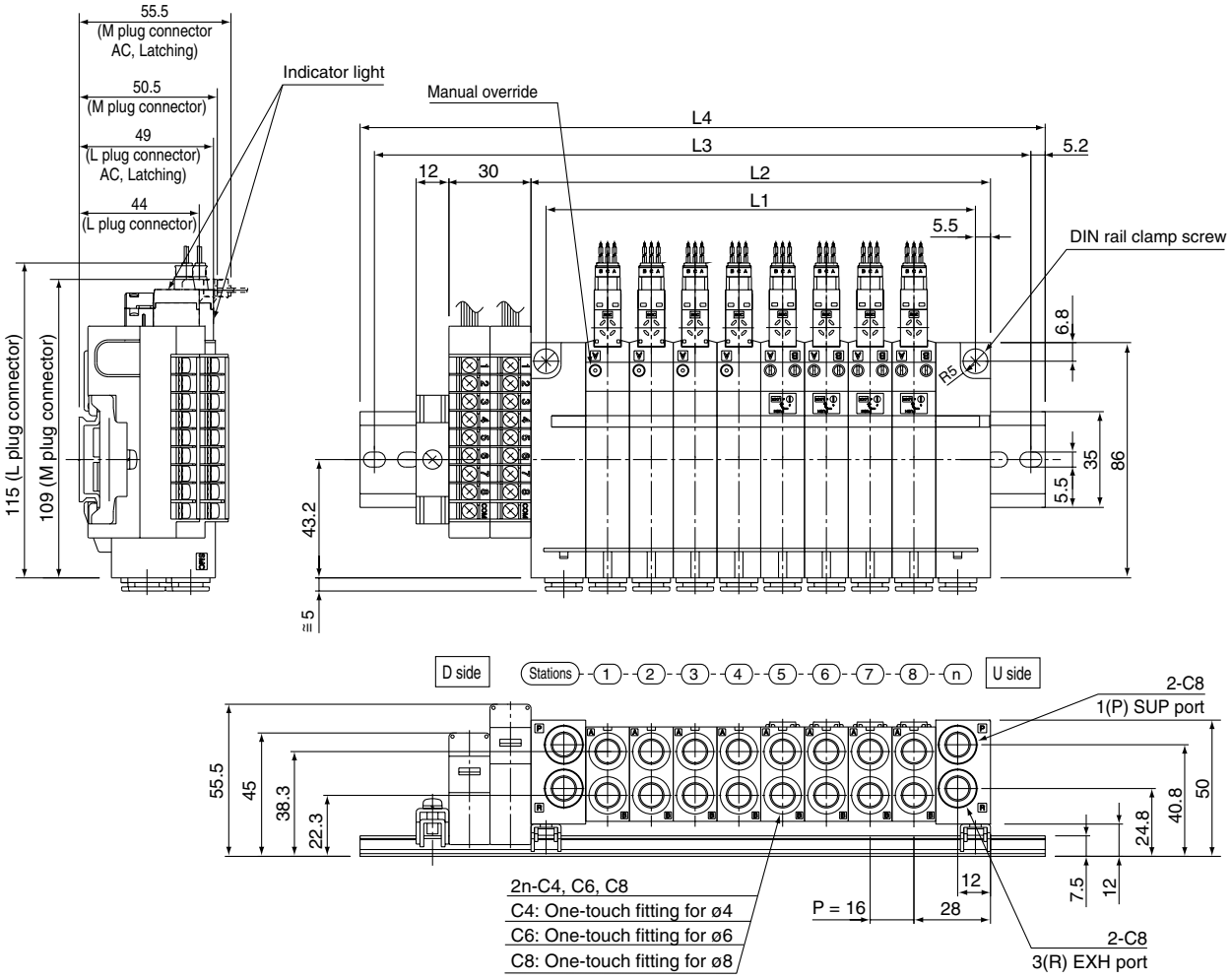
Note) For inch-size One-touch fittings, refer to "Option" on page 2-4-69.

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)
C	Locking type (Manual)

Note 1) All double latching valves of VQ0000 are non-locking push type. (Refer to page 2-4-66.)
Note 2) A manual override for pilot valve is provided to the standard model for double type.

VQ2000



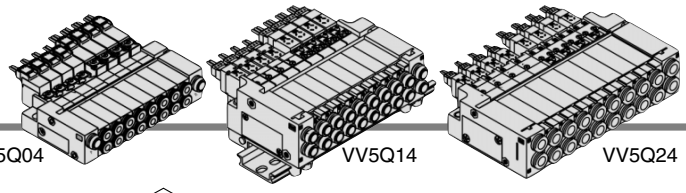
The drawing shows the case of VV5Q24-□T2.

Dimensions

Formula L1 = 16n + 29, L2 = 16n + 40 n: Station (Maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	45	61	77	93	109	125	141	157	173	189	205	221	237	253	269	285
L2	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296
L3	125	137.5	150	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5
L4	135.5	148	160.5	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373

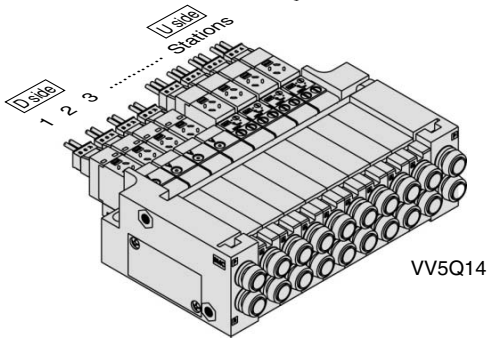
C VQ0000/1000/2000 Kit (Connector)



● Standard with lead wires connected to each valve individually.
● Maximum stations are 16.

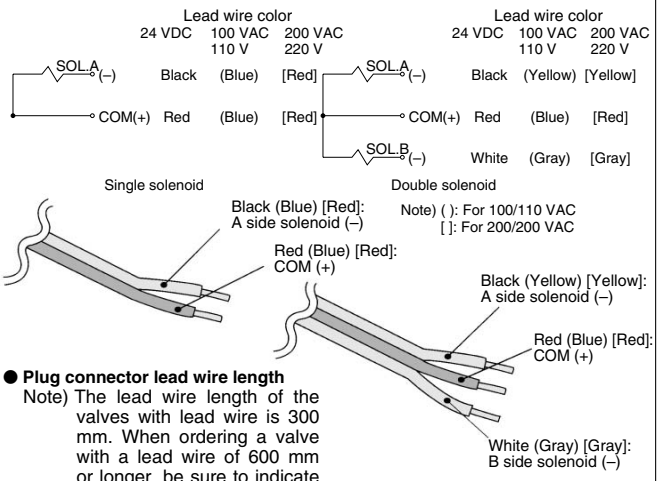
Manifold Specifications

Series	Porting specifications			Applicable stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
VQ0000	Side	C6	C3, C4, M5	Max. 16 stations
VQ1000	Side	C6	C3, C4, C6, M5	Max. 16 stations
VQ2000	Side	C8	C4, C6, C8	Max. 16 stations



● Wiring specifications: Positive COM

● The lead wires are connected to the valve as shown below. Connect each to the power supply side.



● Plug connector lead wire length

Note) The lead wire length of the valves with lead wire is 300 mm. When ordering a valve with a lead wire of 600 mm or longer, be sure to indicate the model number of the valve without connector and connector assembly.

Example) Lead wire length 1000 mm
VQ1140-5LO-C6··· 3 pcs.
AXT661-14A-10 ··· 3 pcs.

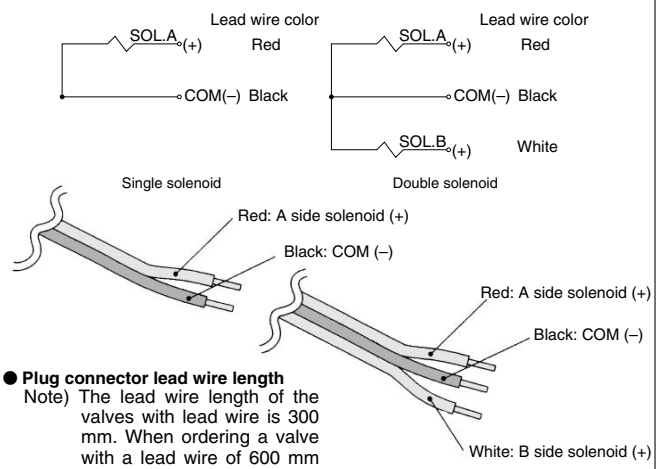
Connector Assembly Part No. (For DC)

Lead wire length	Single/3 position part no.	Double solenoid part no.
Socket only (3 pcs.)	AXT661-12A	
300 mm	AXT661-14A	AXT661-13A
600 mm	AXT661-14A-6	AXT661-13A-6
1000 mm	AXT661-14A-10	AXT661-13A-10
2000 mm	AXT661-14A-20	AXT661-13A-20
3000 mm	AXT661-14A-30	AXT661-13A-30

Note 1) 100/110 VAC for single: AXT661-31A-∗; for double: AXT661-32A-∗
200/220 VAC for single: AXT661-34A-∗; for double: AXT661-35A-∗
∗ are in accordance with the above table.
Note 2) 3 position type requires 2 sets for A side and B side.

● Wiring specifications: Negative COM (Option)

● The lead wires are connected to the valve as shown below. Connect each to the power supply side.



● Plug connector lead wire length

Note) The lead wire length of the valves with lead wire is 300 mm. When ordering a valve with a lead wire of 600 mm or longer, be sure to indicate the model number of the valve without connector and connector assembly.

Example) Lead wire length 1000 mm
VQ1140-5LO-C6···3 pcs.
AXT661-14A-10 ···3 pcs.

Connector Assembly Part No.

Lead wire length	Single/3 position part no.	Double solenoid part no.
Socket only (3 pcs.)	AXT661-12A	
300 mm	AXT661-14AN	AXT661-13AN
600 mm	AXT661-14AN-6	AXT661-13AN-6
1000 mm	AXT661-14AN-10	AXT661-13AN-10
2000 mm	AXT661-14AN-20	AXT661-13AN-20
3000 mm	AXT661-14AN-30	AXT661-13AN-30

Note 1) When using the negative common specifications, use valves for negative common.
Note 2) 3 position type requires 2 sets for A side and B side.

How to Order Manifold

VV5Q 1 4 – 08 C – N

Series

0	VQ0000
1	VQ1000
2	VQ2000

Manifold

4	Plug lead unit/Flip

Stations

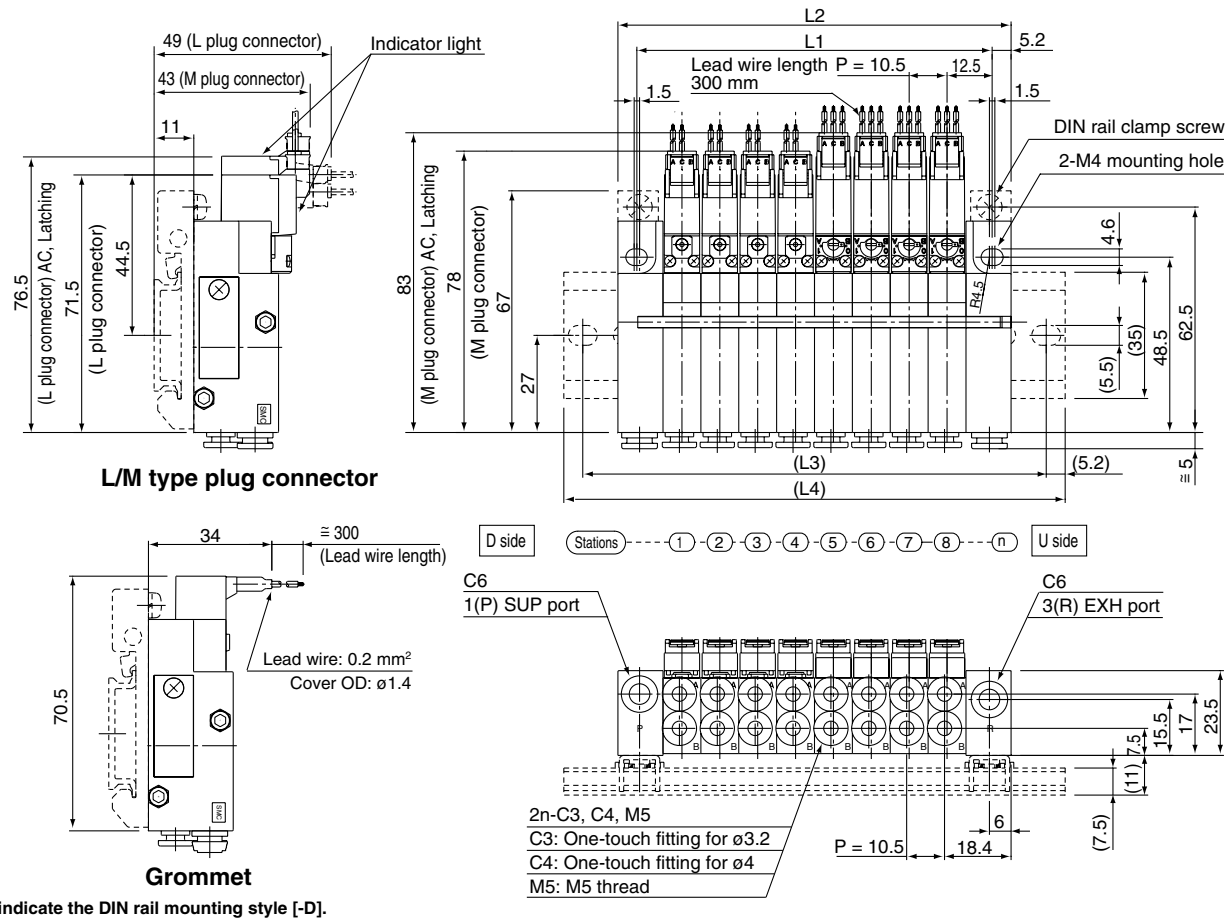
01	1 station
⋮	⋮
16	16 stations

Option

Nil	None
D	DIN rail mounting style
N	With name plate
S	Built-in silencer, direct exhaust

Note 1) When two or more symbols are specified, indicate them alphabetically.
Example) -DNS

VQ0000



The broken lines indicate the DIN rail mounting style [-D].

Note 1) Built-in silencer types are equipped with a 1 (P) SUP port on both D and U sides.

Note 2) 3 position needs two stations.
Cylinder port is located at U side of body.

Dimensions

Formula L1 = 10.5n + 14.5, L2 = 10.5 n + 25 n: Station (Maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	25	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5
L2	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5	193
(L3)	62.5	75	87.5	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200	212.5	212.5
(L4)	73	85.5	98	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5	223	223

How to Order Valves

VQ 1 1 4 0 Y – 5 L [ ] – C6

Series

0	VQ0000
1	VQ1000
2	VQ2000

Seal

0	Metal seal
1	Rubber seal

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	○ (1)
H (2)	High pressure type	(1.5 W) ○	—
Y (2)	Low wattage type	(0.5 W) ○	—

Note 1) For power consumption of AC type, refer to page 2-4-36.

Note 2) Except double (latching)

Type of actuation

		VQ0000	VQ1000	VQ2000
1	2 position single	●	●	●
2	2 position double (Latching)	●	●	●
3	3 position closed center	● (1)	● (2)	—
4	3 position exhaust center	● (1)	● (2)	—
5	3 position pressure center	—	● (2)	—

Note 1) 2 stations space are occupied.
Note 2) L plug connector is used for AC.

Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

Note 1) For negative common specifications, refer to "Option" on page 2-4-69.

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

Cylinder port

Symbol	Port size	VQ0000	VQ1000	VQ2000
C3	With One-touch fitting for ø3.2	●	●	—
C4	With One-touch fitting for ø4	●	●	●
C6	With One-touch fitting for ø6	—	●	●
C8	With One-touch fitting for ø8	—	—	●
M5	M5 thread	●	●	—

Note) For inch-size One-touch fittings, refer to "Option" on page 2-4-69.

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)
C	Locking type (Manual)

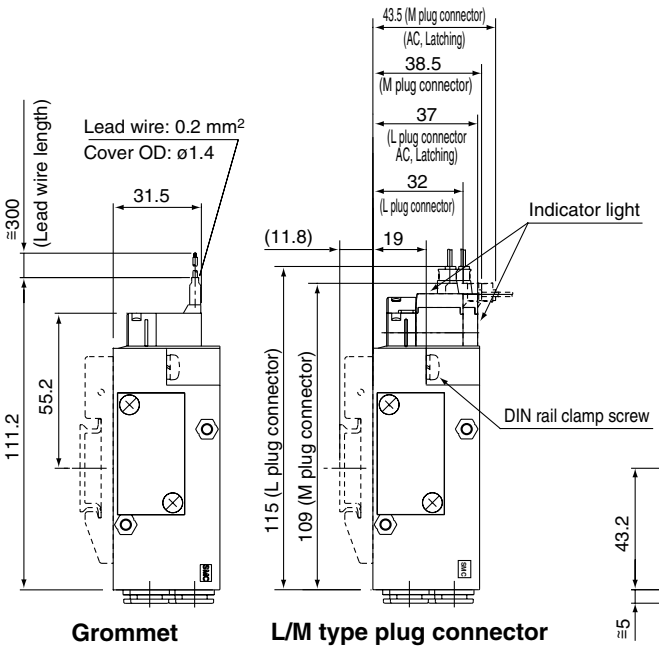
Note 1) All double latching valves of VQ0000 are non-locking push type.

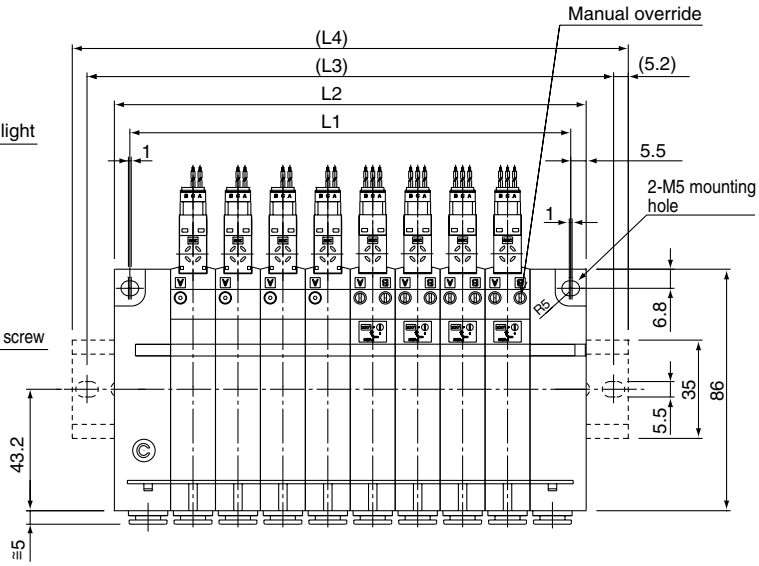
Note 2) A manual override for pilot valve is provided to the standard model for double type.

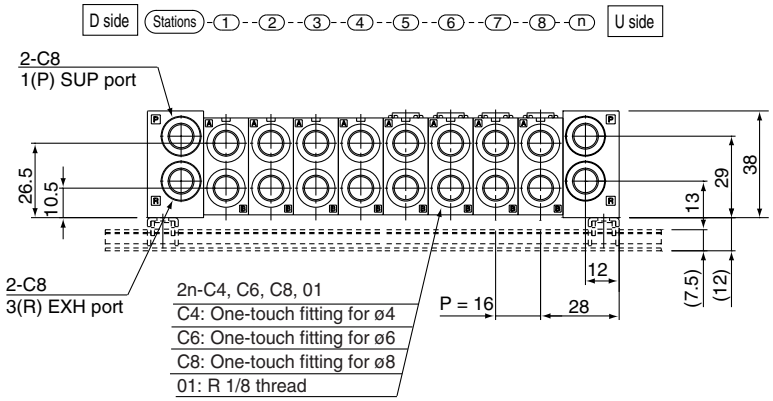
Electrical entry

G	Grommet (Except latching and 100/110 VAC type)
L	L plug connector with lead wire
LO	L plug connector without connector
M	M plug connector with lead wire
MO	M plug connector without connector

VQ2000





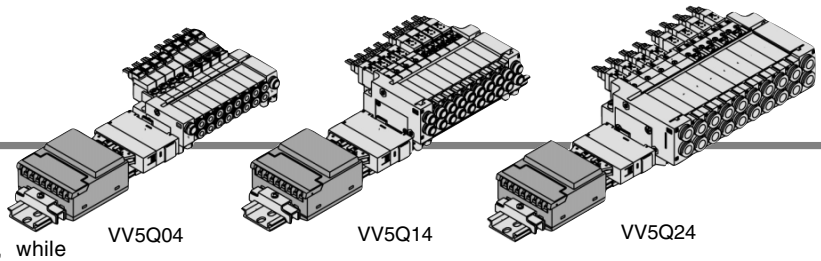


Dimensions

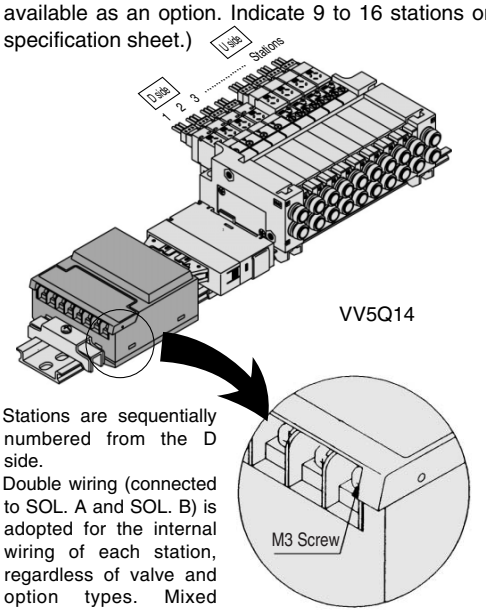
Formula L1 = 16n + 29, L2 = 16n + 40 n: Station (Maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	45	61	77	93	109	125	141	157	173	189	205	221	237	253	269	285
L2	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296
(L3)	87.5	100	112.5	125	150	162.5	175	187.5	212.5	225	237.5	262.5	275	287.5	300	325
(L4)	98	110.5	123	135.5	160.5	173	185.5	198	223	235.5	248	273	285.5	298	310.5	335.5

S VQ0000/1000/2000 Kit (Serial transmission unit)



- The serial transmission system reduces wiring work, while minimizing wiring and saving space.
- The system comes in an type SA (generic for small scale systems) for equipment with a small number of I/O points, or 32 points max., type SB (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., type SC (applicable to OMRON models), and type SD (applicable to SHARP models; 504 points max.).
- Maximum 8 stations, optional 16 stations possible. (16 stations available as an option. Indicate 9 to 16 stations on the manifold specification sheet.)

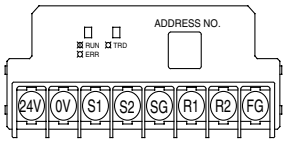
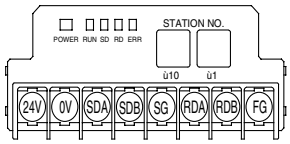


- Stations are sequentially numbered from the D side.
- Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-69.

Item	Specifications
External power supply	24 VDC±10%
Current consumption (Internal unit)	SA, SB, SD, SFI, SH: 0.1 A/SC: 0.3 A

Manifold Specifications

Series	Porting specifications			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ0000	Side	C6	C3, C4, M5	Max. 16 stations
VQ1000	Side	C6	C3, C4, C6, M5	Max. 16 stations
VQ2000	Side	C10	C4, C6, C8	Max. 16 stations

	Type SA With general type SI unit (Series EX300)	Type SB Mitsubishi Electric Corporation MELSECNET/MINI-S3 Data Link System
Name of terminal block (LED)	 LED / Description TRD: Lighting during data reception RUN/ERR: Blinking when received data is normal; Lighting when data reception	 LED / Description POWER: Lighting when power is turned ON RUN: Lighting when data transmission with the master station is normal RD: Lighting during data reception SD: Lighting during data transmission ERR.: Lighting when reception data error occurs. Light turns off when the error is corrected.
Note	• T unit Can be connected with PLC I/O card for serial transmission. EX300-TMB1··· For models of Mitsubishi Electric Corporation EX300-TTA1··· For models of OMRON Corporation EX300-TFU1··· For models of Fuji Electric Co., Ltd. EX300-T001··· For general models ∗Up to 32 points per unit. • No. of output points, 16 points	• Master station: PLC made by Mitsubishi Electric Corporation Series MELSEC-A AJ71PT32-S3, AJ71T32-S3 A1SJ71PT32-S3 ∗Max. 64 stations, connected to remote I/O stations (Max. 512 points). • No. of output points, 16 points. No. of sta. occupied, 2 stations

∗ For details on specifications and handling, refer to the separate technical instruction manual.

How to Order Manifold

VV5Q 1 4 – 08 S A – D

Series

0	VQ0000
1	VQ1000
2	VQ2000

Manifold

4	Plug lead unit/Flip

Stations

01	1 station
⋮	⋮
08(Note)	8 station (Double)
16	16 stations (Single)

Note) As option, the max. number of stations can be increased based on special wiring specifications. For details, refer to page 2-4-69.

Model

0	Without SI unit
A	With general type SI unit (Series EX300)
B	Mitsubishi Electric Corp.: MELSECNET/MINI-S3 Data Link System
C	OMRON Corp.: SYSBUS Wire System
D	SHARP Corp.: Satellite I/O Link System
F1	NKE Corp.: Uni-wire System (16 output points)
H	NKE Corp.: Uni-wire H System

Note) Please consult with SMC for the following serial transmission kits: Matsushita Electric Works, Ltd.; Rockwell Automation, Inc.; SUNX Corporation; Fuji Electric Co., Ltd.; OMRON Corporation.

∗ The dust-protected type SI unit is applicable, too. For details, please contact SMC.

Option

D (2)	DIN rail mounting style
K (3)	Special wiring specifications (Except double wiring)
N	With name plate
S	Built-in silencer, direct exhaust (U side only)

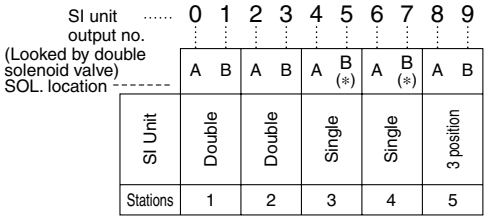
Note 1) When two or more symbols are specified, indicate them alphabetically.
Example) -DNS

Note 2) S kits are DIN rail mounting styles, so include suffix -D

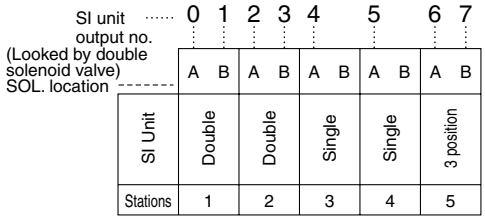
Note 3) Specify the wiring specifications in the manifold specification sheet.

● SI unit output and coil numbering

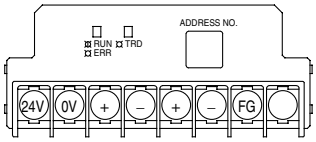
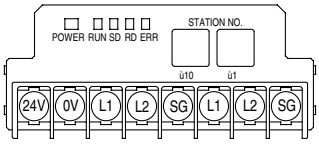
<Wiring example 1> Double wiring (Standard)



<Wiring example 2> Single/Double Mixed Wiring (Option)
Mixed wiring is available as an option.
Use the manifold specification sheet to specify.



The places of asterisk are not used.

	Type SC **OMRON Corporation** **SYSBUS Wire System**	**Type SD** **SHARP Corporation** **Satellite I/O Link System**
Name of terminal block (LED)		
	LED / Description RUN: Lights when transmission is normal and PLC is in operation mode T/R ERR: Blinks during data transmission/reception ON when transmission is abnormal.	LED / Description POWER: ON when power supply is ON RUN: Lights when power is ON and slave stations are operating normally ERROR: Lights when slave station switch setting is abnormal, communication is abnormal, PLC stopped and defective slave unit R.SET HOLD: ON for master unit control input
Note	• Master station unit: OMRON PLC SYSMAC C(CV) series Types C500-RM201 and C200H-RM201 ∗ 32 units max., transmission terminal connection (512 points max.) • No. of output points, 16 points	• Master station unit: SHARP's PLC New Satellite Series W ZW-31LM New Satellite Series JW JW-23LM, JW-31LM ∗ Max. 31 units, I/O slave stations connected (504 points max.) • No. of output points, 16 points

How to Order Valves

VQ 1 1 4 0 Y – 5 LO □ – C6

Series

0	VQ0000
1	VQ1000
2	VQ2000

Seal

0	Metal seal
1	Rubber seal

Function

Symbol	Specifications	DC
Nil	Standard type	(1.0 W) ○
H Note)	High pressure type	(1.5 W) ○
Y Note)	Low wattage type	(0.5 W) ○

Note) Except double (latching).

Type of actuation

		VQ0000	VQ1000	VQ2000
1	2 position single	●	●	●
2	2 position double (Latching)	●	●	●
3	3 position closed center	● (1)	● (2)	—
4	3 position exhaust center	● (1)	● (2)	—
5	3 position pressure center	—	● (2)	—

Note 1) 2 stations space are occupied.
Note 2) L plug connector is used for AC.

Coil voltage

5	24 VDC/With light/surge voltage suppressor

Note 1) Connector assembly will be required when the S kits add a valve.
For part nos., refer to "Option" on page 2-4-69.

Cylinder port

Symbol	Port size	VQ0000	VQ1000	VQ2000
C3	With One-touch fitting for ø3.2	●	●	—
C4	With One-touch fitting for ø4	●	●	●
C6	With One-touch fitting for ø6	—	●	●
C8	With One-touch fitting for ø8	—	—	●
M5	M5 thread	●	●	—

Note) For inch-size One-touch fittings, refer to "Option" on page 2-4-69.

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)
C	Locking type (Manual)

Note 1) All double latching valves of VQ0000 are non-locking push type. (Refer to page 2-4-66.)
Note 2) A manual override for pilot valve is provided to the standard model for double type.

Electrical entry

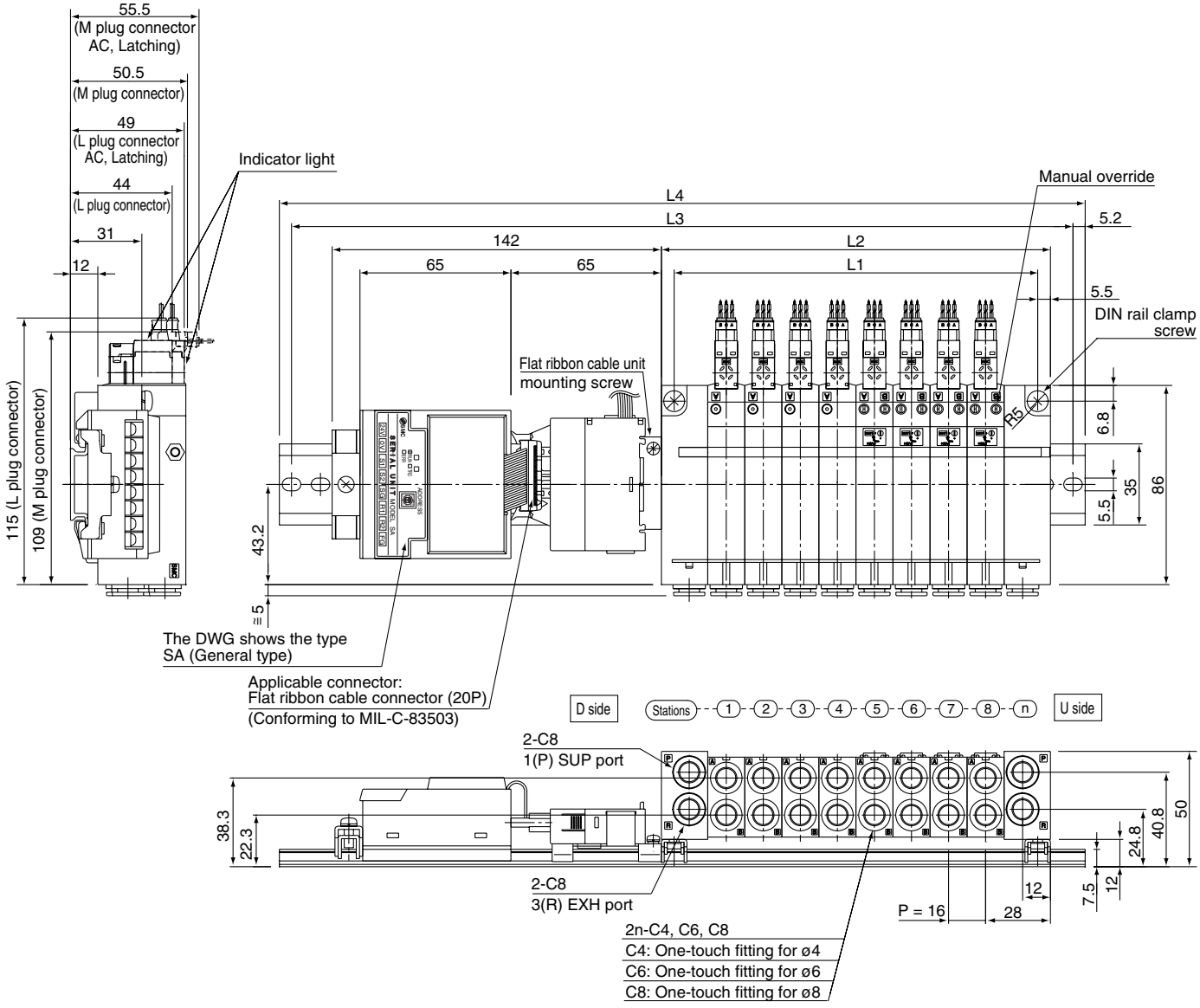
LO	L plug connector without connector
MO	M plug connector without connector

Note 1) Plug connector and lead wire layers are attached to the manifold.

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

VQ 2000



Dimensions

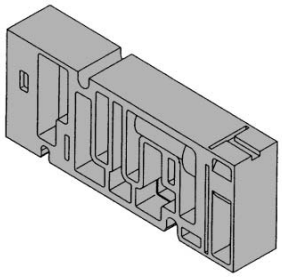
Formula L1 = 16n + 29, L2 = 16n + 40 n: Station (Maximum 16 stations)

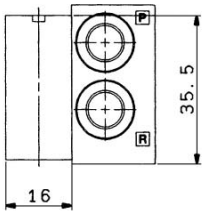
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	45	61	77	93	109	125	141	157	173	189	205	221	237	253	269	285
L2	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296
L3	225	237.5	250	275	287.5	300	325	337.5	350	362.5	387.5	400	412.5	437.5	450	462.5
L4	235.5	248	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473

Manifold Option Parts for VQ2000

Blanking plate assembly
VVQ2000-10A-4

It is used when a blanking plate is mounted to amanifold in advance for possible valve mounting, etc.

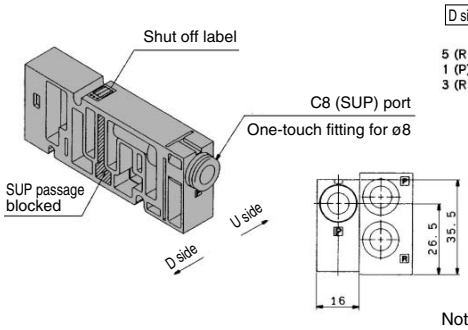


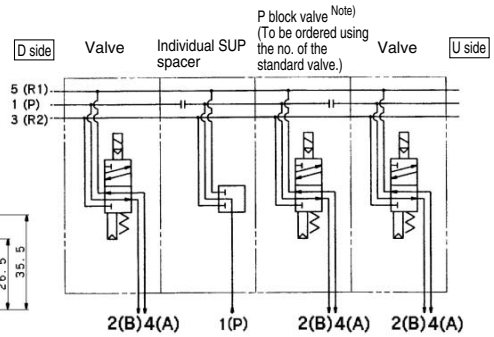


Individual SUP spacer
VVQ2000-P-4-C8

When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.)
Since the SUP passage on the spacer's D side is blocked in advance, it is mounted on the D side the valves U side. (Refer to the application example.)

* Specify the spacer mounting position and SUP block plate mounting position on the manifold specification sheet.



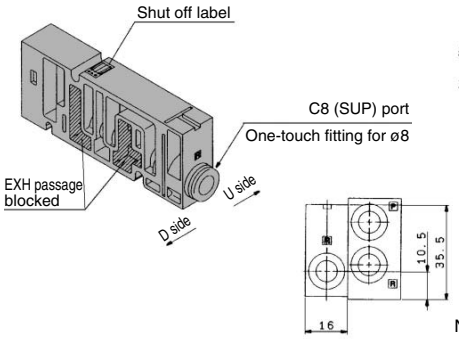


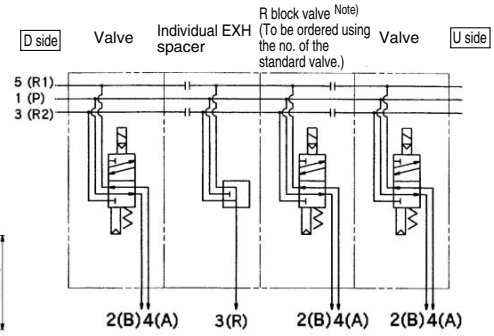
Note) P block valve is mounted in the blocking position when ordering an individual SUP spacer incorporated with a manifold. When separately ordering an individual SUP spacer, separately order a P block valve.

Individual EXH spacer
VVQ2000-R-4-C8

When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (1 station space is occupied.)
Since the EXH passage on the spacer's D side is blocked in advance, it is mounted on the D side of the valve for individual supply while blocking the valves U side. (Refer to the application example.)

* Specify the spacer mounting position and EXH block plate mounting position on the manifold specification sheet.
* When the electrical entry is F, P, T, S kit, and if you choose the option with built-in silencer, no exhaust port will be supplied on the D side end plate. In this case, mount a spacer for individual EXH on the 1st station.





Note) R block valve is mounted in the blocking position when ordering an individual EXH spacer incorporated with a manifold. When separately ordering an individual EXH spacer, separately order a R block valve.

P / R / PR Block valve
VQ2 1/2 4 0/1 -□-□□- P / R / PR

Valve no.

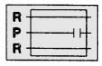
For a flip plug-in unit, block plate is built in the valve for blocking SUP and EXH passages. Since the no. is classified by the passage to be blocked, specify it by attaching the option no. to the valve no. The block valve is constructed so that U sides of SUP and EXH passages are blocked.

* Specify the number of stations on the manifold specification sheet.

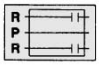
<Shut off label>

When using block plates for SUP, EXH passage, indication label for confirmation of the blocking position from outside is attached.
(One label for each)

* When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.
* Caution on handling P/RP block valve
  When the electrical entry is F, P, T, S kit, and if you choose the option with built-in silencer, no exhaust port will be supplied on the D side end plate. In this case, mount a spacer for individual EXH on the 1st station.

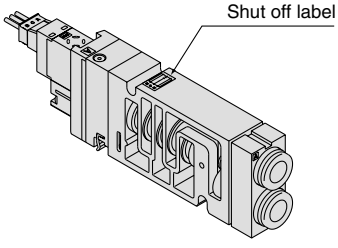


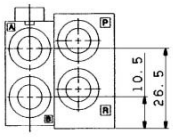
SUP passage blocked

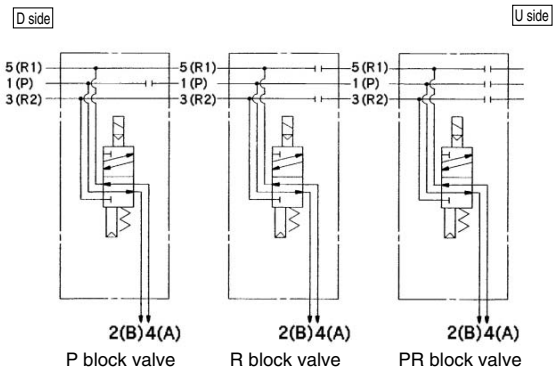


EXH passage blocked

SUP/EXH passage blocked





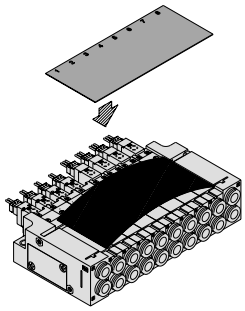


For SUP passage block	VQ2 1/2 4 0/1 -□-□□-P
For EXH passage block	VQ2 1/2 4 0/1 -□-□□-R
For SUP/EXH passage block	VQ2 1/2 4 0/1 -□-□□-PR

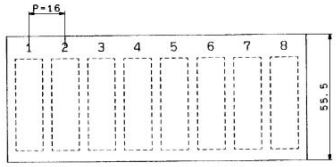
Manifold Option Parts for VQ2000

Name plate [-N4]
VVQ2000-N4-Station (1 to Max. stations)

It is a transparent resin plate for placing a label that Indicates solenoid valve function, etc.
Insert it into the groove on the side of the end plate and bend it as shown in the figure.



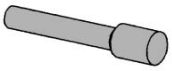
∗ When ordering assemblies incorporated with a manifold, add suffix N to the manifold no.

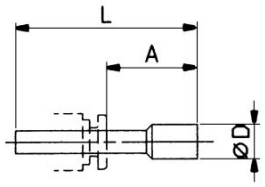


Blanking plug

KQ2P- $^{04}_{06}_{08}$

It is inserted into an unused cylinder port and SUP/EXH ports.
Purchasing order is available in units of 10 pieces.



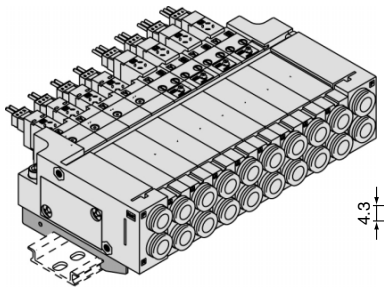


Dimensions

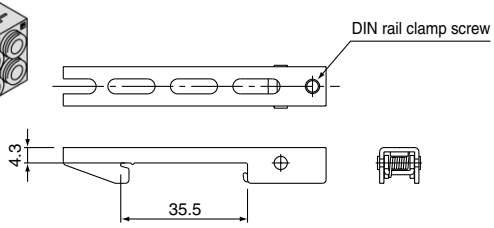
Applicable fittings size ød	Model	A	L	D
4	**KQ2P-04**	16	32	6
6	**KQ2P-06**	18	35	8
8	**KQ2P-08**	20.5	39	10

DIN rail mounting bracket
VVQ2000-57A-4

It is used for mounting a manifold on a DIN rail. The DIN rail mounting bracket is fixed to the manifold end plate. (The specification is the same as that for the option -D.)
1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).



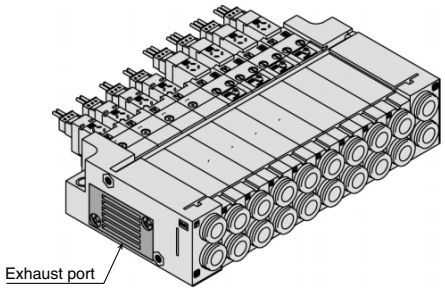
∗ When ordering assemblies incorporated with a manifold, add suffix -D to the manifold no.



Built-in silencer, Direct exhaust [-S]

This is type with an exhaust port atop the manifold endplate. The built-in silencer exhibits an excellent noise suppression effect.
F, P, T and S kits are provided with exhaust on one side.
Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

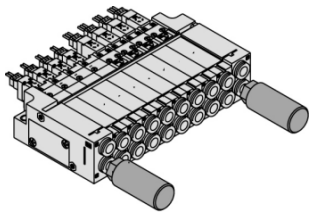
• For maintenance, refer to page 2-4-67.

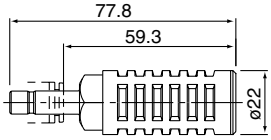


∗ When ordering assemblies incorporated with a manifold, add suffix -S to the manifold no.

Silencer (For EXH port)

This silencer is to be inserted into the EXH port (One-touch fittings) of the common exhaust.





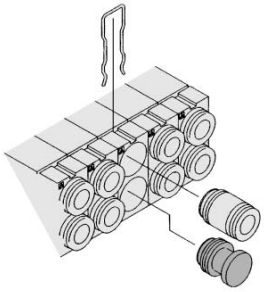
Dimensions

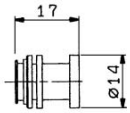
Series	Applicable fittings size ød	Model	A	L	D	Effective area (mm²)	Noise reduction (dB)
VQ2000	8	AN200-KM8	59.3	77.8	22	20	30

Port plug
VVQ1000-58A

The plug is used to block the cylinder port when usinga 4 port valve as a 3 port valve.
When ordering it incorporated with a manifold, suffix A or B, the symbol of the plug port, to the valve no.

Example) **VQ2140-5L-C8-A**
A port, Plug

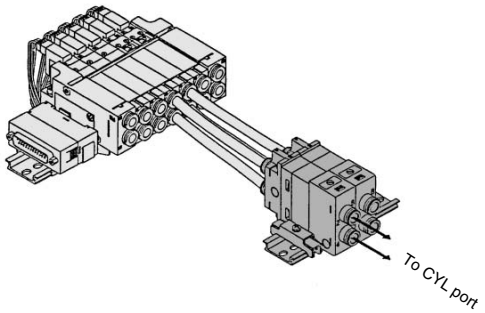




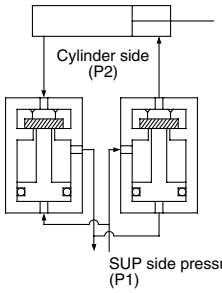
Manifold Option

Double check block (Separated type)
VQ2000-FPG-□□-□

It is used on the outlet side piping.
Combining the double check block with built-in pilot double check valve and a two-position single/double solenoid valve will prevent the dropping at the cylinder stroke end when the SUP residual pressure is released.



<Check valve operation principle>



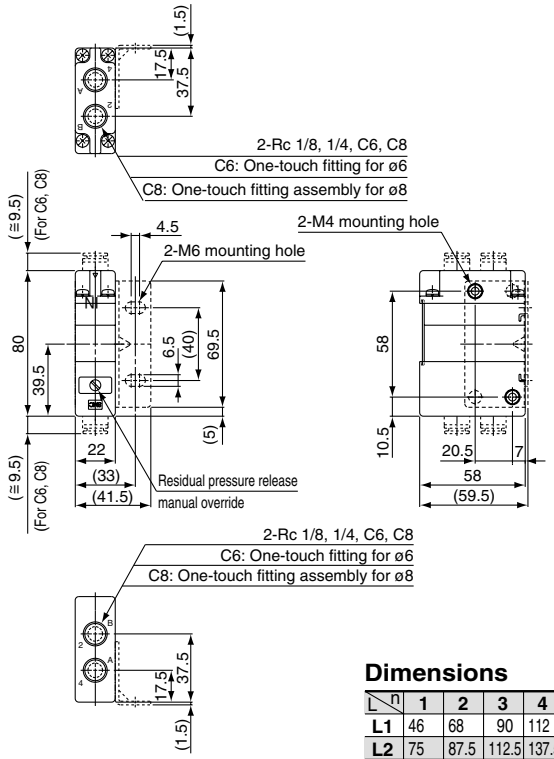
Specifications

Maximum operating pressure	0.8 MPa
Ambient and fluid temperature	0.15 MPa
Ambient and fluid temp.	–5 to 50° C
Flow characteristics: C	3.0 dm³/(s·bar)
Max. operating frequency	180 c.p.m

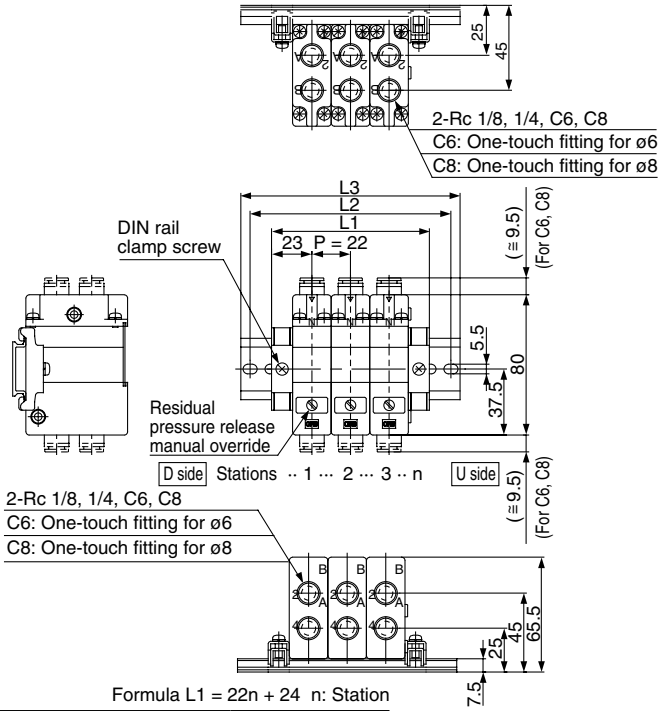
Note) Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa)

Dimensions

Single unit



Manifold



Dimensions

Formula L1 = 22n + 24 n: Station

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	46	68	90	112	134	156	178	200	222	244	266	288	310	332	354	376
L2	75	87.5	112.5	137.5	162.5	175	200	225	250	262.5	287.5	312.5	337.5	362.5	375	400
L3	85.5	98	123	148	173	185.5	210.5	235.5	260.5	273	298	323	348	373	385.5	410.5

How to Order

Double check block

VQ2000-FPG- 01 01 F

IN side port size

01	Rc 1/8
02	Rc 1/4
C6	One-touch fitting for ø6
C8	One-touch fitting for ø6

OUT side port size

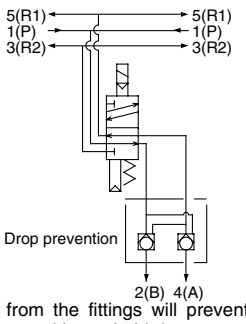
01	Rc 1/8
02	Rc 1/4
C6	One-touch fitting for ø6
C8	One-touch fitting for ø6

Option

Nil	None
D	DIN rail mounting style (For manifold)
F	With bracket
N	Name plate

Note) When two or more symbols are specified, indicate them alphabetically.
Example) -DN

<Example>



Manifold

VVQ2000-FPG- 06

Stations

01	1 station
⋮	⋮
16	16 stations

<Ordering Example>
VVQ2000-FPG-06····6 stations manifold
∗VQ2000-FPG-C6C6-D: 3 sets
∗VQ2000-FPG-C8C8-D: 3 sets
} Double check block

⚠ Caution

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap.
  Also check the cylinder's tube gasket, piston packing and rod packing for air leakage.
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- When screwing the fittings in the double check block, proper tightening torque is as shown below:

Connection threads	Proper tightening torque (N·m)
Rc 1/8	7 to 9
Rc 1/4	12 to 14

- If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop intermediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

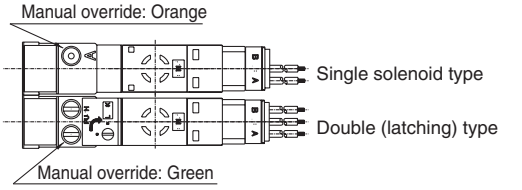
⚠ Precautions

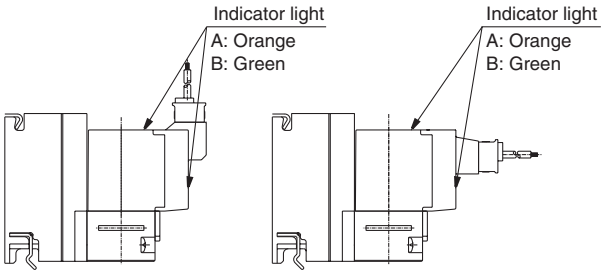
Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 2-9-2.

Light/Surge Voltage Suppressor

⚠ Caution

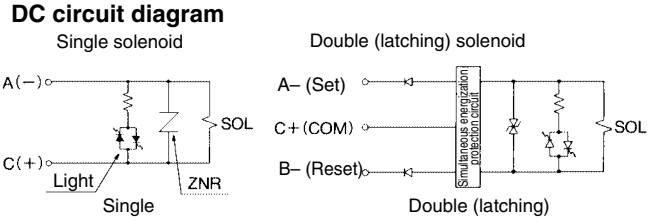
The lighting positions are concentrated on one side for both single solenoid and double (latching) type. In the double (latching) type, A side and B side energization are indicated by two colors which match the colors of the manual overrides.





M plug connector **L plug connector**

DC circuit diagram



Note 1) • A-side energization: A light (orange) illuminates.
• B-side energization: B light (green) illuminates.
• Equipped with a wiring error prevention (stop diode) mechanism and a surge absorption (ZNR/surge absorption diode) machanism.

Note 2) Applicable to negative COM specification models.

Note 3) In the case of double (latching), the electromagnetic valve channel is, A–(set): P → A, B → R, B–(reset): P → B, A → R.

Double (Latching solenoid) Type

⚠ Caution

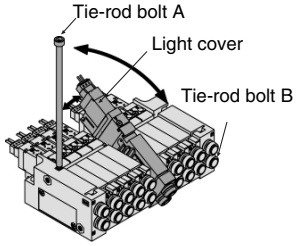
Different from the conventional double solenoid, the double type uses a latching (self-holding system) solenoid. Although the appearance is the same as the single solenoid, it is constructed so that the movable iron core in the solenoid is held in the ON position on A and B sides by instantaneous energization (20 ms or more).
The usage and function is the same as the double solenoid.

<Special Cautions for Latching Solenoid>

1. Select the circuit in which ON and OFF signals are not energized simultaneously.
2. 20 ms energization time is necessary for self-holding.
3. Avoid using the latching solenoid valves in environments where impact or collisions with the valve might occur. Also, do not use in places where strong magnetic fields are present.
4. Even though the armature in the solenoid of this valve is held on to B side, ON position (Reset), verify either A side, ON position or B side, ON position by energizing prior to use.
5. After manual operation, the main valve will return to its original position. Manual override on the pilot valve side can retain its switching position after manipulation.
6. Please contact SMC for long-term energization applications.
7. If the metal seal type goes down below the minimum operating pressure of supply air (0.1 MPa or less), the main valve will get back the home position. (B side ON position) Therefore, in the event of shutting the supply air or applying the air with being A side ON position remained, cylinder may be pulsated. In the event of manipulating the supply air, the valve's switching position has to be set in the home position side (B side ON position side).

How to Mount/Remove Solenoid Valve

⚠ Caution



<Procedure>

How to Remove

1. Loosen tie-rod bolt B. (Two to four turns)
2. After fully loosening the tie-rod bolt, take off bolt A upward as shown above.
3. Slide the valves aside to make a 1 mm clearance between the valve to be taken off and the others. As shown above, remove the whole valve while holding up the (a) side. (Avoid rough handing of the connector.)

Mounting

Reverse the sequence of steps above to remount.
Tighten the tie-rod bolts with the tightening torque at the right table while using caution not to tighten the only one side unevenly.

Torque Applied to Tie-rod Bolt

VQ0000	0.5 to 0.7 N·m
VQ1000	1.0 to 1.4 N·m
VQ2000	1.0 to 1.4 N·m

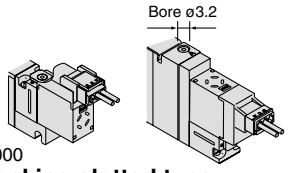
Note) Be careful not to push on the light cover while mounting/removing the valve.

Double (Latching solenoid) Type

⚠ Warning

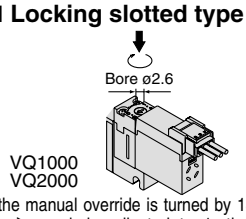
Without an electric signal for the solenoid valve the manual override is used for switching the main valve.

■ Push type (Tool required)

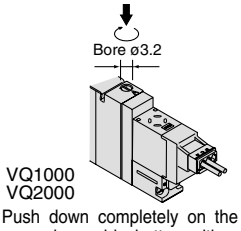


Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

■ Locking slotted type

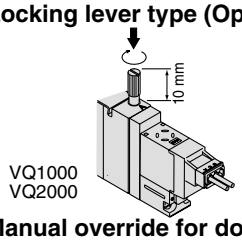


If the manual override is turned by 180° clockwise and the ▶ mark is adjusted to 1, then pushed in the direction of an arrow (↓), it will be locked in the ON state. If the manual override is turned by 180° counterclockwise and ▶ mark is adjusted to 0, locking will be released and the manual override will return.



Push down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it. Turn it counterclockwise to release it.

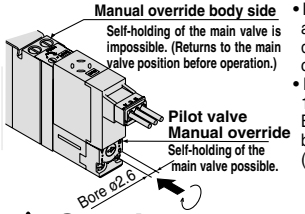
■ Locking lever type (Option)



Push down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it. Turn it counterclockwise to release it.

■ Manual override for double (latching) type

In the case of a double (latching) type, a manual override is provided not only on the body side but to the pilot as a standard. (VQ0000: Pilot valve only). After manual operation, the main valve of the manual on the body side returns to the position before the manual operation, however, the pilot valve manual override maintains the change-over position.



- If the manual override is turned by 180° clockwise and the ▶ mark is adjusted to A, then pushed in the direction of an arrow (⇕), it will be back to the reset condition. (passage P → A)
- If the manual override is turned by 180°counterclockwise and the ▶ mark is adjusted to B, then pushed in the direction of an arrow (⇕), it will be back to the reset condition. (passage P → B) (It is in the reset state at the time of shipment.)

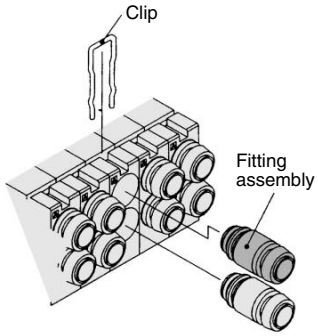
⚠ Caution

Do not apply excessive torque when turning the locking type manual override. (0.1 N·m or less)

Replacement of Cylinder Port Fittings

⚠ Caution

The cylinder port fittings are a cassette for easy replacement. (Except VQ1000)
The fittings are blocked by a clip inserted from the top of the valve. Remove the clip with a screwdriver to remove fittings. For replacement, insert the fitting assembly until it strikes against the inside wall and then re-insert the clip to the specified position.



Applicable tubing O.D	Fitting assembly part no.	
	VQ1000	**VQ2000**
Applicable tubing ø3.2	VVQ1000-50A-C3	—
Applicable tubing ø4	VVQ1000-50A-C4	VVQ1000-51A-C4
Applicable tubing ø6	VVQ1000-50A-C6	VVQ1000-51A-C6
Applicable tubing ø8	—	VVQ1000-51A-C8

Purchasing order is available in units of 10 pieces.

Caution

1. Protect O-rings from scratches and dust to prevent air leakage.
2. The tightening torque for inserting fittings to the M5 thread assembly should be 0.8 to 1.4 N·m

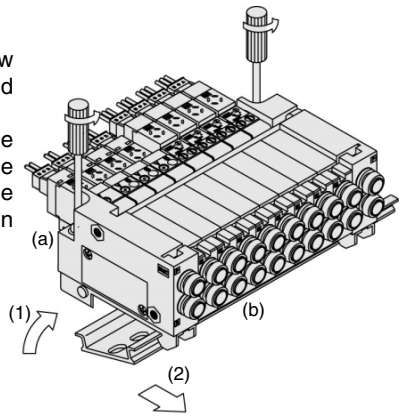
Mounting/Removing from the DIN Rail

⚠ Caution

<Procedure>

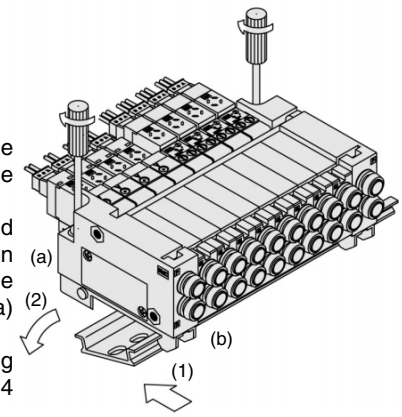
How to Remove

1. Loosen the clamp screw on side (a) of the end plate on both sides.
2. Lift side (a) of the manifold base and slide the end plate in the direction of (2) shown in the figure to remove.



Mounting

1. Hook side (b) of the manifold base on the DIN rail.
2. Press down side (a) and mount the end plate on the DIN rail. Tighten the clamp screw on side (a) of the end plate.
   The proper tightening torque for screws is 0.4 to 0.6 N·m.



How to Calculate the Flow Rate

For obtaining the flow rate, refer to pages 2-1-8 to 2-1-11.

Built-in Silencer Replacement Element

⚠ Caution

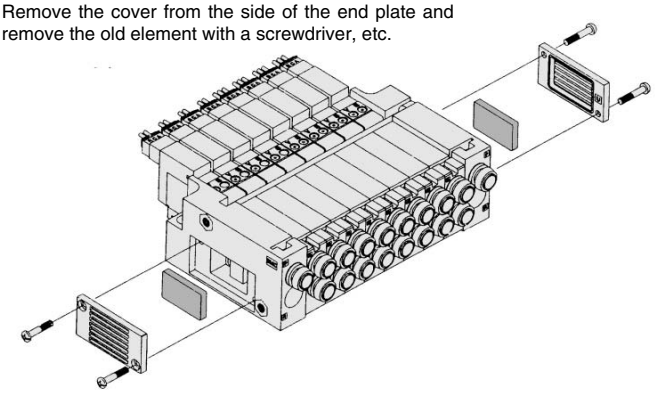
A silencer element is incorporated in the end plate on both sides of the manifold base. A dirty and choked element may reduce cylinder speed or cause malfunction. Clean or replace the dirty element.

Element Part No.

Type	Element part no.		
	VQ0000	**VQ1000**	**VQ2000**
Built-in silencer, direct exhaust (-S)	VVQ0000-82A-4	VVQ1000-82A-4	VVQ2000-82A-4

∗ The minimum order quantity is 10 pcs.

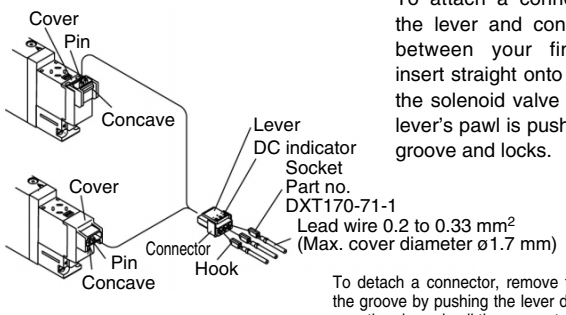
Remove the cover from the side of the end plate and remove the old element with a screwdriver, etc.



How to Use Plug Connector

⚠ Caution

Attaching and detaching connectors

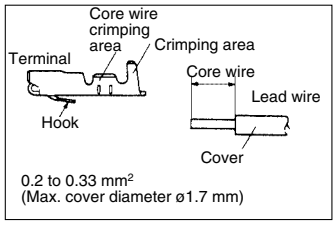


To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.

To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.

Crimping the lead wire and socket

Peel 3.2 to 3.7 mm of the tip of lead wire, enter the core wires and press contact it by a press tool. Be careful so that the cover of lead wire does not enter into the core press contacting part.



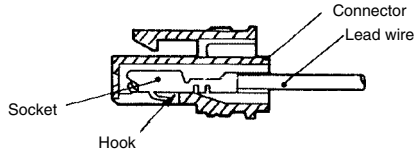
Attaching and detaching lead wires with sockets

Attaching

Insert a socket in the square hole (Indicated as +, –) of connector, push in the lead wire and lock by hanging the hook of socket to the seat of connector. (Pushing-in can open the hook and lock it automatically.) Then confirm the lock by lightly pulling on the lead wire.

Detaching

To detach a socket from a connector, pull out the lead wire while pressing the socket's hook with a stick having a thin tip (approx. 1 mm). If the socket will be used again, first spread the hook outward.

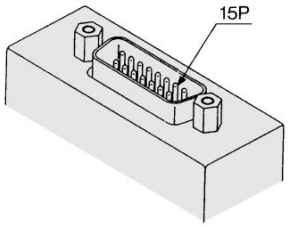


Option

Different Number of Connector Pins

F and P kits with the following number of pins are available. Besides the standard number (F = 25; P = 26) select the desired number of pins and cable length from the cable assembly list. Place an order for the cable assembly separately.

F kit (D-sub connector) 15 pins



How to order manifold

VV5Q14 — 06 F SA — D

- 06: Stations
- F SA: Kit/Electrical entry
- D: Option

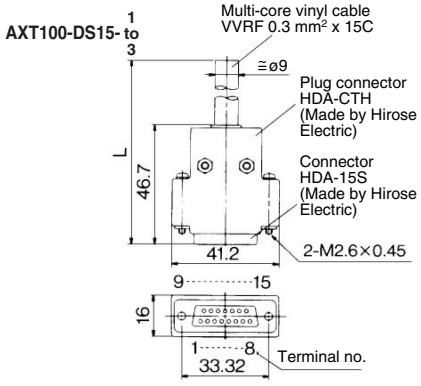
How to Order
D-sub connector, 15 pins
Connector location–Side (horizontal)
Without cable

Kit/Electrical entry

Pins \ Location	Top entry		Side entry	
15P (Max. 7 stations)	Kit F	UA	Kit F	SA

Wiring specifications

∗ In the same way as the 25-pin models (standard) the terminal no. 1 is for SOL.A at the 1st station, the terminal no. 9 for SOL.B at the 1st station, and the terminal no. 8 for COM.



Wire Color by Terminal No. of D-sub Connector Cable Assembly

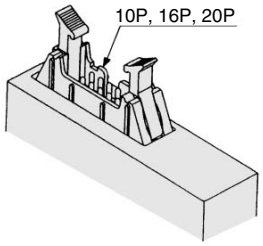
Terminal no.	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black

D-sub Connector Cable Assembly

Cable length (L) \ Pins	15P
1.5 m	AXT100-DS15-1
3 m	AXT100-DS15-2
5 m	AXT100-DS15-3

∗ For other commercial connectors, use a type conforming to MIL-C-24308.

P kit (Flat ribbon cable connector) 10 pins, 16 pins, 20 pins



How to order manifold

VV5Q14 — 06 P SC — D

- 06: Stations
- P SC: Kit/Electrical entry
- D: Option

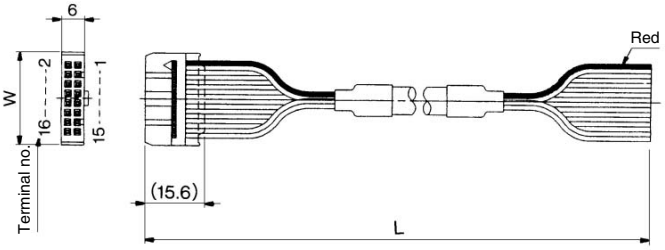
How to Order
Flat ribbon cable, 20 pins
Connector location–Side (Horizontal)
Without cable

Kit/Electrical entry

Pins \ Location	Top entry		Side entry	
10P (Max. 4 stations)	Kit P	UA	Kit P	SA
16P (Max. 7 stations)		UB		SB
20P (Max. 8 stations)		UC		SC

Wiring Specifications

∗ In the same way as the 26-pin models (standard) the terminal no. 1 is for SOL.A at the 1st station, the terminal no. 2 for SOL.B at the 1st station, and two pins from the max. terminal numbers are for COM.



Flat Ribbon Cable Assembly

Cable length (L) \ Pins	10P	16P	20P
1.5 m	AXT100-FC10-1	AXT100-FC16-1	AXT100-FC20-1
3 m	AXT100-FC10-2	AXT100-FC16-2	AXT100-FC20-2
5 m	AXT100-FC10-3	AXT100-FC16-3	AXT100-FC20-3
Connector width (W)	17.2	24.8	30

∗ For other commercial connectors, use a type with strain relief conforming to MIL-C-83503.

Special Wiring Specifications

In the internal wiring of F kit, P kit, T kit and S kit, double wiring (connected to SOL. A and SOL. B) is adopted for each station regardless of the valve and option types.
Mixed single and double wiring is available as an option.

1. How to order valves

Indicate an option symbol, -K, for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification sheet.

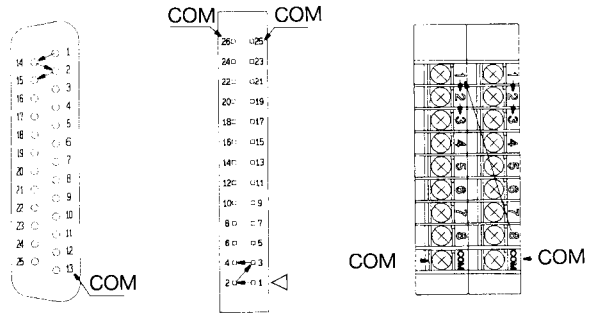
Example)

VV5Q14-09FS0-D K S

Others, option symbols: to be indicated alphabetically.

2. Wiring specifications

Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without skipping any terminal numbers.



F kit
D-sub connector (25P)

P kit
Flat ribbon cable connector (26P)

T kit
Terminal block (16 terminals)

3. Max. number of stations

The maximum number of stations depends upon the number of solenoids. Assuming one for a single and two for a double, determine the number of stations so that the total number is not more than the maximum number given in the following table.

kit	F kit (D-sub connector)		P kit (Flat ribbon cable connector)				T kit (Terminal block)		S kit (Serial)
Type	F⇅□ 25P	F⇅A 15P	P⇅□ 26P	P⇅C 20P	P⇅B 16P	P⇅A 10P	T1	T2	S□
Max. points	Note) 16	14	Note) 16	Note) 16	14	8	8	16	16

Note) Due to the limitation of internal wiring.

Negative Common Specifications

Specify the valve model no. as shown below for negative COM specification. The standard manifold no. can be used. Please contact SMC for negative COM S kit.

How to order negative COM valves

VQ1140 N − 5LO − C6

Negative common specifications

Inch-size One-touch Fittings

Refer to following model no. for inch-size One-touch fittings.

How to order manifold

VV5Q14 − 08FSO − DN − 00T

P, R port size

VQ0000	ø1/4"
VQ1000	ø1/4"
VQ2000	ø5/16"

How to order valves

VQ1140 − 5M − N7

Cylinder port

Symbol		N1	N3	N7	N9
Applicable tubing O.D. (Inch)		ø1/8"	ø5/32"	ø1/4"	ø5/16"
A, B port	**VQ0000**	○	○	—	—
	VQ1000	—	○	○	—
	VQ2000	—	○	○	○

Plug Connector Assembly Model

Connector assembly will be required when the F, P, T, S kits add a valve.
Specify the type of valve and connector assembly.

Connector Assembly Part No.

Specifications		Part no.
Single (2-wire)	Positive common	AXT661-14A-F
	Negative common	AXT661-14AN-F
Double (latching) (3-wire)	Positive common	AXT661-13A-F
	Negative common	AXT661-13AN-F

Note) Lead wire length: 300 mm
Note) The parts numbers above are applicable to VQ0000/1000 (2 to 16 stations) and VQ2000 (2 to 10 stations). VQ2000 (11 to 16 stations) uses AXT661-$\frac{13}{14}$A(N) -F425.

Option

DIN Rail Mounting

Each manifold can be mounted on a DIN rail.
Order it by indicating an option symbol for DIN rail mounting style, -D. In this case, a DIN rail which is approx. 30 mm longer than the manifold with the specified number of stations is attached. Besides, it is also available in the following cases.

● **When DIN rail is unnecessary (C kit only.)**
(DIN rail mounting brackets only are attached.)
Indicate the option symbol, -DO, for the manifold no.

Example)

VV5Q14-08C-DOS

Others, option symbols: to be indicated alphabetically.

● **When using DIN rail longer than the manifold with specified number of stations**
Clearly indicate the necessary number of stations next to the option symbol, -D, for the manifold no.

Example)

VV5Q14-08FS1-D09S

DIN rail for 9 stations

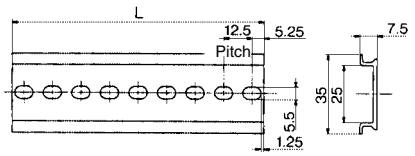
Others, option symbols: to be indicated alphabetically.

● **When changing the manifold style into a DIN rail mount**
Order brackets for mounting a DIN rail. (Refer to “Option” on pages 2-4-60, 61 and 64.)

No. VQ0000-57A4 (For VQ0000)
VQ1000-57A-4 (For VQ1000)
VQ2000-57A-4 (For VQ2000)
2 pcs. per one set

● **When ordering DIN rail only**
DIN rail no.: AXT100-DR-n

∗ Refer to the DIN rail dimension table for determining the length.



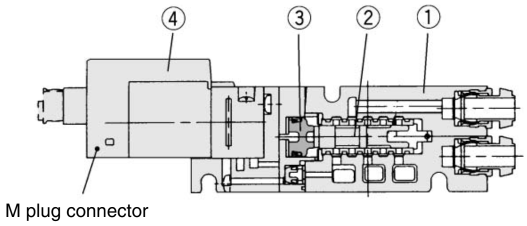
L Dimension

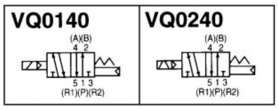
L = 12.5 x n + 10.5

No.	1	2	3	4	5	6	7	8	9	10
L dimension	23	35.5	48	60.5	73	85.5	98	110.5	123	135.5
No.	11	12	13	14	15	16	17	18	19	20
L dimension	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5
No.	21	22	23	24	25	26	27	28	29	30
L dimension	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5
No.	31	32	33	34	35	36	37	38	39	40
L dimension	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

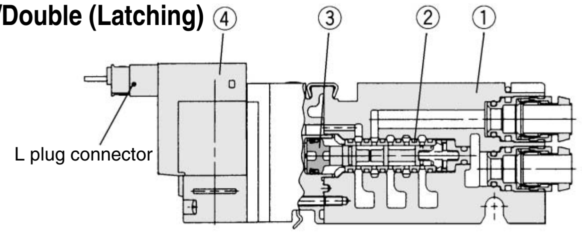
Construction: VQ0000, 1000, 2000/Plug Lead Unit, Flip Type

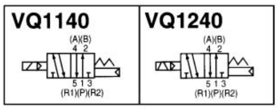
Metal seal
VQ0000



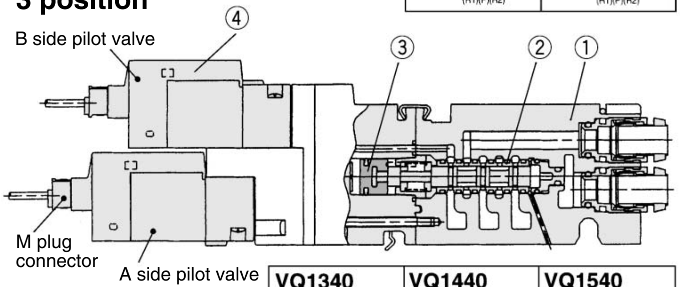


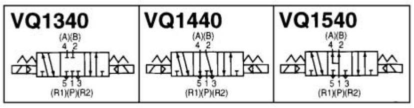
VQ1000
Single/Double (Latching)



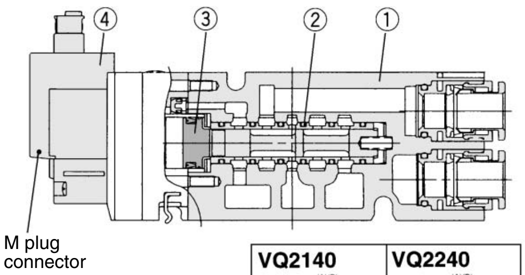


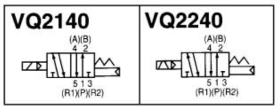
3 position





VQ2000





Component Parts

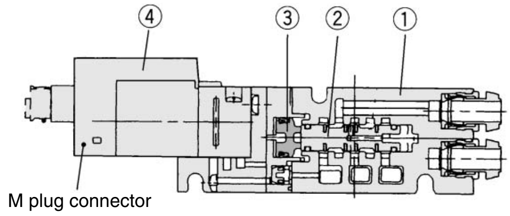
No.	Description	Material	Note
①	Body	Aluminum die-casted	
②	Spool/Sleeve	Stainless steel	
③	Piston	Resin	

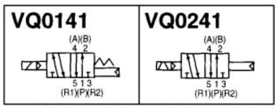
④ Pilot valve assembly

Single 3 position (VQ1000)	VQ111 (H)(Y) Note) - □ L / M-2 / G 3 — Nil (VQ0000), (VQ1000), (VQ2000); 0: VQ0000, 1: VQ1000, VQ2000; Voltage 1 to 6	
Double (Latching)	VQ110L - □ L / M-2 / 3 — Nil (VQ0000), (VQ1000), (VQ2000); Voltage 1 to 6	
3 position (VQ1000)	VQ111 (H)(Y) Note) - □ L / M / G - X18 {A side (Bottom side)}, Nil {B side (Top side)}; Voltage 1 to 6	The direction of the L and M connectors of a pilot valve is opposite to that of the single and double type.

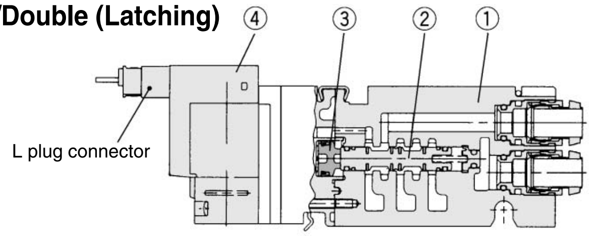
Note 1) (H): 1.5 W, (Y): 0.5 W, G type: DC only

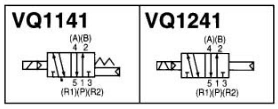
Rubber seal
VQ0000



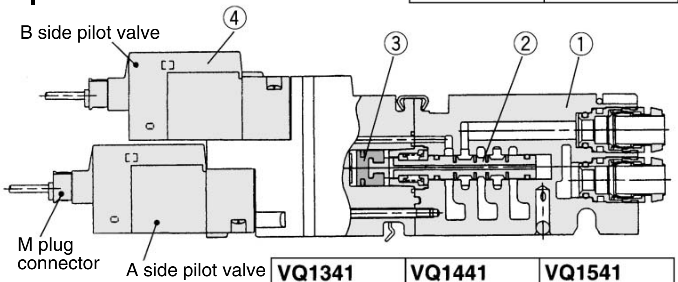


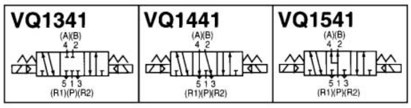
VQ1000
Single/Double (Latching)



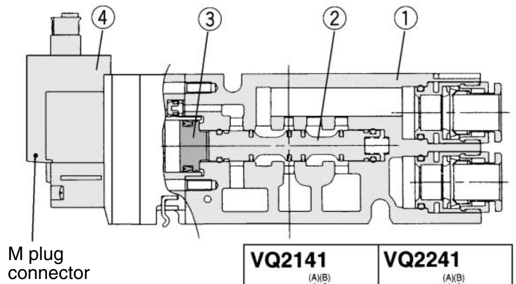


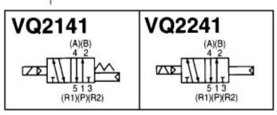
3 position





VQ2000





Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted	
②	Spool valve	Aluminum/HNBR	
③	Piston	Resin	

④ Pilot valve assembly

Single 3 position (VQ1000)	VQ111 (H)(Y) Note) - □ L / M-2 / G 3 — Nil (VQ0000), (VQ1000), (VQ2000); 0: VQ0000, 1: VQ1000, VQ2000; Voltage 1 to 6	
Double (Latching)	VQ110L - □ L / M-2 / 3 — Nil (VQ0000), (VQ1000), (VQ2000); Voltage 1 to 6	
3 position (VQ1000)	VQ111 (H)(Y) Note) - □ L / M / G - X18 {A side (Bottom side)}, Nil {B side (Top side)}; Voltage 1 to 6	The direction of the L and M connectors of a pilot valve is opposite to that of the single and double type.

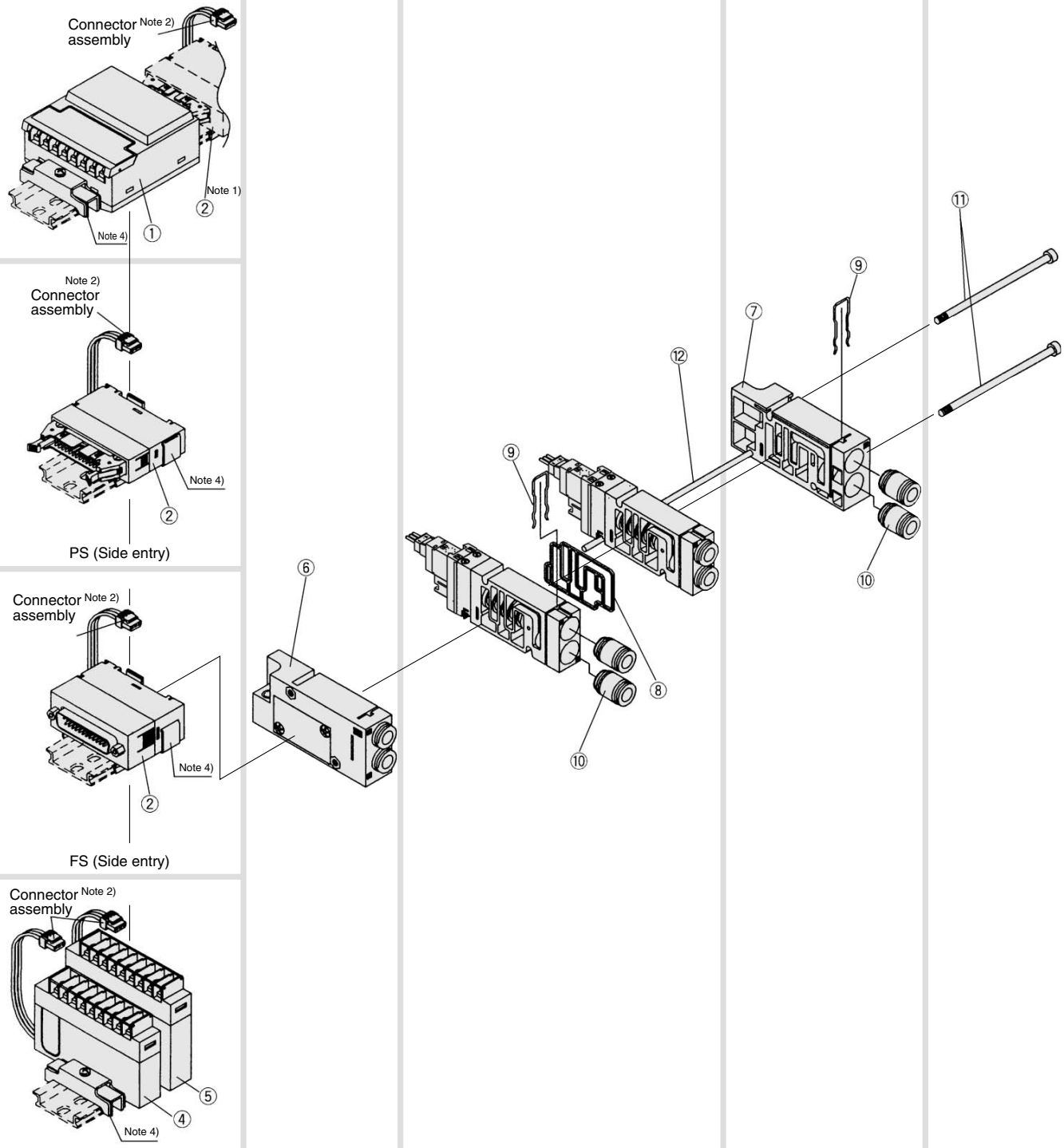
Note 1) (H): 1.5 W, (Y): 0.5 W, G type: DC only

VQ2000 (VV5Q24)/Plug Lead Unit, Flip Type

(F, P, T, S kit)

∗ For how to increase the stations, refer to the instruction manual.

	Housing assembly and SI unit (3)	U side end plate assembly	Valve	D side end plate assembly	Station increase parts
S kit					
P kit					
F kit					
T kit					



Note 1) S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PU20) of ① SI unit and ② P kit (20 pins).
Note 2) Since no connector assembly is included, order it separately. (Refer to page 2-4-69.)
Note 3) A housing assembly is not used for a C kit.
Note 4) A DIN rail clamping bracket is attached to each.

<Housing Assembly and SI Unit>

Housing assembly and SI unit no.

No.	Manifold	Part no.	Description
①[1]	(SA kit)	EX330-S001	General type SI unit (Series EX300)
	(SB kit)	EX130-SMB1	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric Corporation)
	(SC kit)	EX130-STA1	SI unit for SYSBUS Wire System (OMRON Corporation)
	(SD kit)	EX130-SSH1	SI unit for Satellite I/O Link System (SHARP Corporation)
	SF1 kit	EX130-SUW1	SI unit for 16 point Uni-wire System (NKE Corporation)
	SH kit	EX130-SUH1	SI unit for 16 point Uni-wire H System (NKE Corporation)
②	P^U_S kit	AXT100-2-P^U_S□[2]	Flat ribbon cable housing assembly □ = Number of pins: 26, 20, 16, 10
③	F^U_S kit	AXT100-2-F^U_S□[2]	D-sub connector housing assembly □ = Number of pins: 25, 15
④[3]	T kit	AXT100-2-TB1	Terminal block assembly (8 terminals)
⑤[3]	T kit	AXT100-2-TB2	Terminal block assembly (8 terminals)

Note 1) S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PS20) of ① SI unit and ② P kit (20 pins). Place an order for AXT100-2-PS20 separately.
Note 2) Top/vertical entry connector for FU and PU while side (horizontal) entry connector for FS and PS.
Note 3) Since no connector assembly is included, order it separately. (Refer to page 2-4-93.)
Note 4) In the case of standard specifications and double wiring, ④ is for 1 to 4 stations and ⑤ is for 5 to 8 stations.

<D Side End Plate Assembly>

⑥ D side end plate assembly no.

VVQ2000-3A-4-□

Option
Nil: Common exhaust
S: Built-in silencer, direct exhaust
(Applicable for C kit only)

Note) The ⑩'s fitting assembly is included.

<U Side End Plate Assembly No.>

⑦ U side end plate assembly no.

VVQ2000-2A-4-□

Option
Nil: Common exhaust
S: Built-in silencer, direct exhaust

Note) The ⑩'s fitting assembly is included.

<Replacement Parts>

No.	Part no.	Description	Material	Number
⑧	VVQ2000-80A-3-2	Seal	HNBR	12
⑨	VVQ2000-80A-3-4	Clip	Stainless steel	12

Note) A set of parts containing 12 pcs. each is enclosed.

<Fittings Assembly>

⑩ Fittings assembly part no.

VVQ1000-51A-□

Port size
C4: Applicable tubing ø4
C6: Applicable tubing ø6
C8: Applicable tubing ø8[1]

Note 1) Standard SUP/EXH port is C8.
Note 2) Purchasing order is available in units of 10 pieces.

<Station Increase Parts>

No.[3]	Part no.	Description	Material	Number[1]
⑪	VVQ2000-105A-4-□[2]	Tie-rod bolt	Carbon steel	2
⑫		Guide rod	Stainless steel	1

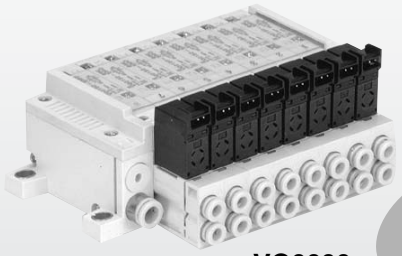
Note 1) Each number of replacement parts are included in one set.
Note 2) □: Number of stations (01 to 16)
Note 3) ⑪ and ⑫ are in one set.

Base Mounted
Metal Seal/Rubber Seal
Series VQ

Space-saving profile

All pilot valves are compactly mounted on one side. The space-saving design of mounting all fittings on one side permits mounting in three directions.

Space-saving ····· 45% less
Capacity-saving ····· 50% less



VQ0000 (VV5Q05)

Unprecedented high speed response and long service life

(Metal seal, single, with indicator light/surge voltage suppressor)

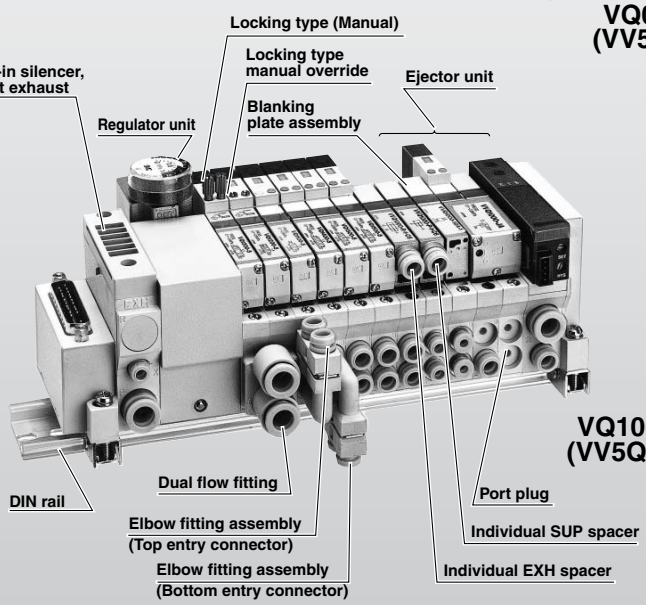
VQ0000	10 ms	200 million cycles
VQ1000	10 ms	
VQ2000	20 ms	

Dispersion accuracy ±2 ms

Thin compact design with large flow capacity

Model	Manifold pitch (mm)	Flow characteristics		Cylinder size
		Metal seal	Rubber seal	
		C [dm³/(s·bar)]	C [dm³/(s·bar)]	
VQ0000	10.7	0.44	0.53	Up to ø40
VQ1000	10.5	0.72	1.0	Up to ø50
VQ2000	16	2.6	3.2	Up to ø80

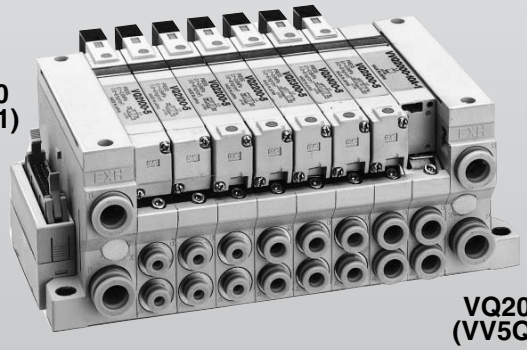
∗ Flow characteristics: 4/2 → 5/3 (A/B → R1/R2)



∗ The photo does not show an actual use example.

A variety of options

VQ1000 (VV5Q11)



VQ2000 (VV5Q21)

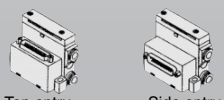
Innovative mounting methods

The non-bias, one-clamp structure permits easy valve replacement. (Plug-in unit)

Built-in One-touch fittings for easy piping.

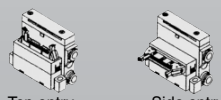
A variety of common wiring methods are standardized.

F kit (D-sub connector)
Number of pins: 15, 25



Top entry Side entry

P kit (Flat ribbon cable connector)
Number of pins: 10, 16, 20, 26

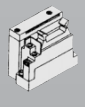


Top entry Side entry

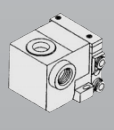
J kit (Flat ribbon cable connector)
Number of pins: 20
(PC Wiring System compliant)

Top entry Side entry

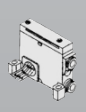
G kit (Flat ribbon cable with terminal block)
Number of pins: 20



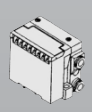
T kit (Terminal box)



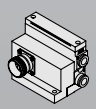
L kit (Lead wire)



S kit (Serial transmission unit)



M kit (Multi-connector kit)



(VQ2000 only)

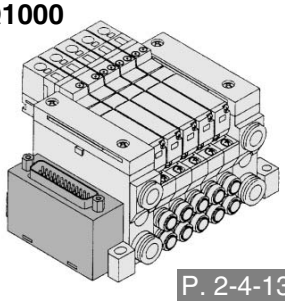
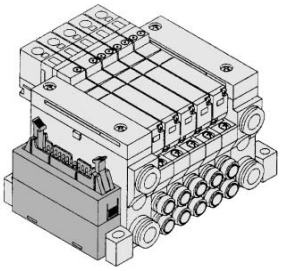
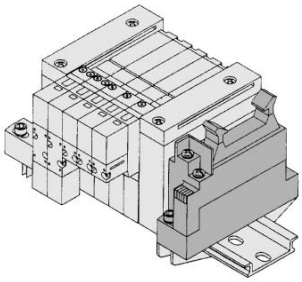
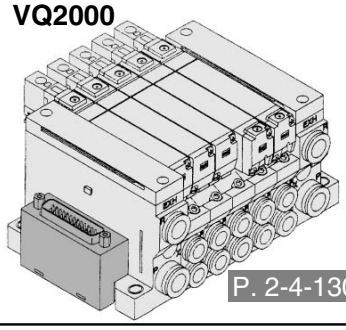
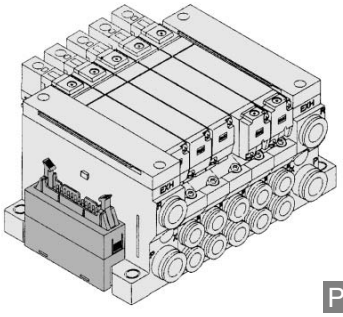
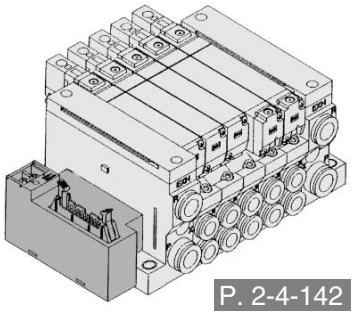
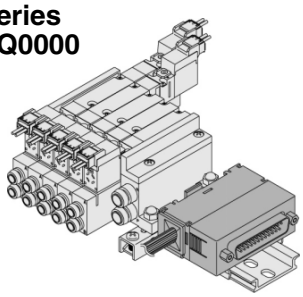
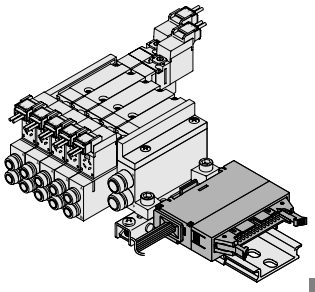
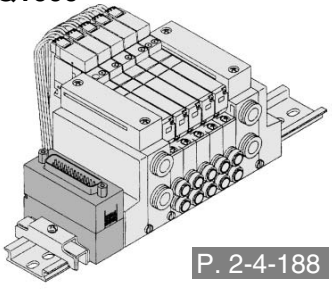
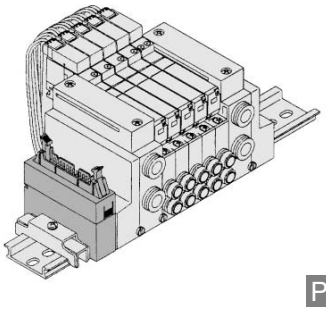
Valve Specifications

Base Mounted

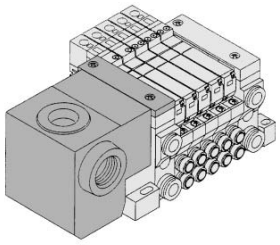
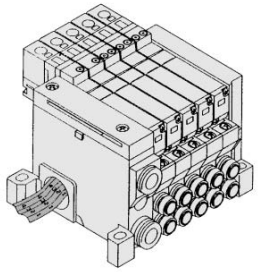
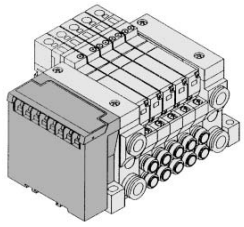
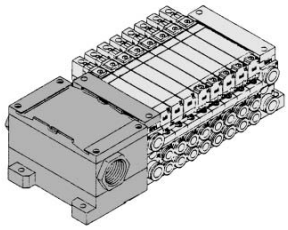
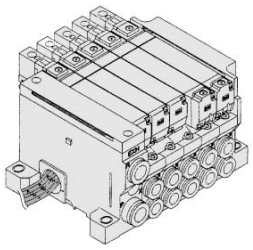
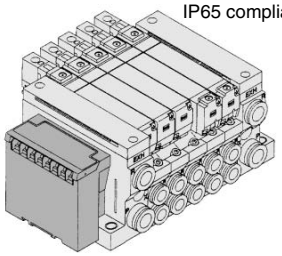
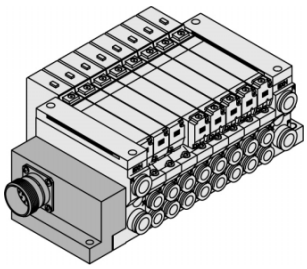
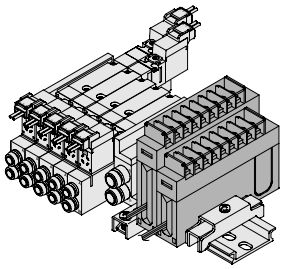
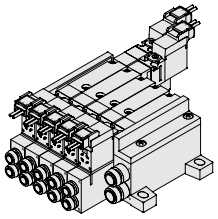
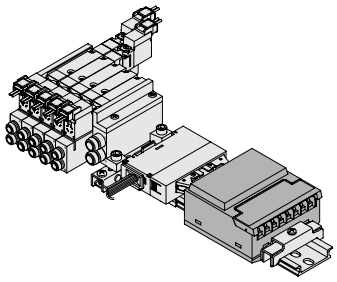
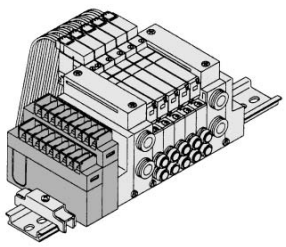
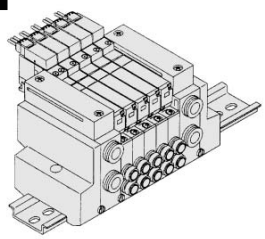
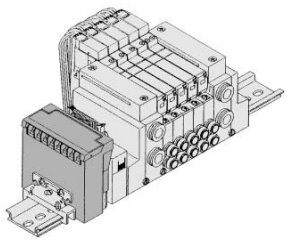
				Sonic conductance C [dm³/(s·bar)] 4/2 → 5/3 (A/B → R1/R2)		Type of actuation					Voltage			Electrical entry				Manual override		
				Double Single	3 position Closed center	Single	Double	Closed center	Exhaust center	Pressure center	12 V 24 V DC	100 V 110 V AC (50/60 Hz)	200 V 220 V AC (50/60 Hz)	Plug-in	Grommet	L plug connector	M plug connector	Push type, Tool required	Locking type	Locking type (Manual)
Plug-in	*Series VQ1000* P. 2-4-120	Rubber seal	**VQ□00**	0.72	0.72	●	●	●	●	●	●	●	●	●				●	●	●
		Metal seal	**VQ1□01**	1.0	0.65								(F/L kit only)							
				P. 2-4-128																
	Series VQ2000 P. 2-4-124	Rubber seal	**VQ2□00**	2.6	2.0	●	●	●	●	●	●	●	●	●				●	●	●
		Metal seal	**VQ2□01**	3.2	2.2								(F/L kit only)							
				P. 2-4-128																
Plug lead	*Series VQ0000* P. 2-4-182	Rubber seal	**VQ0□50**	0.44	0.32	●	●	●	●		●	●	●		●	●	●	●	●	
		Metal seal	**VQ0□51**	0.53	0.44															
				P. 2-4-186																
	Series VQ1000 P. 2-4-184	Rubber seal	**VQ1□10**	0.72	0.72	●	●	●	●	●	●					●		●	●	●
		Metal seal	**VQ1□11**	1.0	0.65															
				P. 2-4-186																

	P. 2-4-166	P. 2-4-172	P. 2-4-177	P. 2-4-208	P. 2-4-210	P. 2-4-215
Option						
External pilot	●	●	●			
D-sub connector 15P	●	●	●	●	●	●
Flat ribbon cable 10P 16P 20P	●	●	●	●	●	●
Negative common specifications	For S, G kit, please contact SMC. ●	For S, G kit, please contact SMC. ●	For S, G kit, please contact SMC. ●	For S kit, please contact SMC. ●	For S kit, please contact SMC. ●	For S kit, please contact SMC. ●
One-touch fitting Inch size	●	●	●	●	●	●
For special wiring spec.	Except L kit ●	Except L kit ●	Except L kit ●	Except L kit ●	Except L kit ●	Except L kit ●
Manifold Option						
Blanking plate	●	●	●	●	●	●
Individual SUP/EXH	●	●	●	●	●	●
SUP/EXH passage spacer	●	●	●	●	●	●
Name plate	●	●	●	●	●	●
Back pressure check valve	●	●	●		●	●
DIN rail mounting style	●	●	●	●	Standard ●	●
Built-in silencer	●	●	●	●	●	●
Silencer for EXH port	●	●	●	●	●	●
Elbow fitting for cylinder port	●	●	●		●	●
Two stations matching fittings for double flow rate	●	●	●		●	●
Plug for cylinder port	●	●	●		●	●
Regulator unit	●					
Ejector unit mounted	●					
Double check block	●	●	●	●	●	●

Manifold Variations

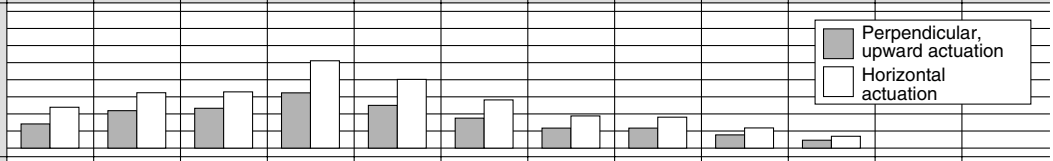
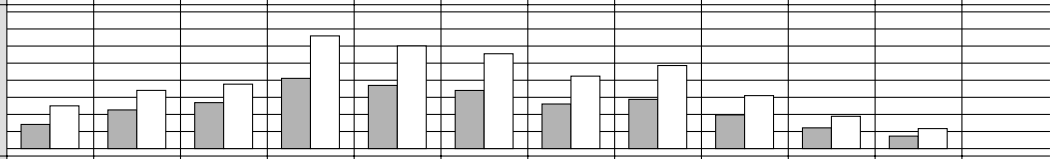
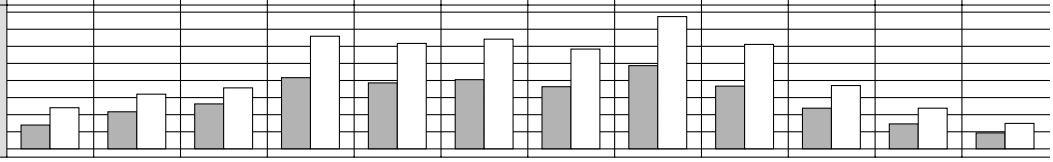
	F kit **D-sub connector** Conforming to MIL D-sub connector	**P** kit **Flat ribbon cable connector (26, 20, 16, 10 pins)** Conforming to MIL flat ribbon cable connector	**J** kit **Flat ribbon cable connector (20 pins)** Conforming to MIL flat ribbon cable connector PC Wiring System compatible	**G** kit **Flat ribbon cable with power supply terminal block** Conforming to MIL flat ribbon cable connector Applicable to OMRON's serial transmission unit PC Wiring System compatible
Plug-in	**Series VQ1000**  P. 2-4-130	 P/J kit P. 2-4-134		 P. 2-4-142
Plug-in	**Series VQ2000**  P. 2-4-130	 P/J kit P. 2-4-134		 P. 2-4-142
Plug Lead	**Series VQ0000**  P. 2-4-188	 P kit only P. 2-4-192		—
Plug Lead	**Series VQ1000**  P. 2-4-188	 P kit only P. 2-4-192		—

Manifold Variations

T kit	L C kit	S kit	M kit
Terminal block box (Terminal block) Terminal blocks are compactly arranged on one side.	**Lead wire** Direct electrical entry type	**Serial transmission unit** Enables single-wire solenoid valve-PLC operation	**Circular connector** IP65 (Dusttight/Low jetproof type)
 Terminal block box P. 2-4-146	L kit  P. 2-4-150	 P. 2-4-154	—
 Enclosure IP65 compliant P. 2-4-146	L kit  Enclosure IP65 compliant P. 2-4-150	Enclosure IP65 compliant  P. 2-4-154	 W type only P. 2-4-158
 Terminal block P. 2-4-196	C kit  P. 2-4-200	 P. 2-4-204	—
 Terminal block P. 2-4-196	C kit  P. 2-4-200	 P. 2-4-204	—

Cylinder Speed Chart

Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

Series	Average speed (mm/s)	Bore size											
		Series CJ2 Pressure 0.5 MPa Load factor 50% Stroke 60 mm			Series CM2 Pressure 0.5 MPa Load factor 50% Stroke 300 mm				Series MB, CA1 Pressure 0.5 MPa Load factor 50% Stroke 500 mm				
		ø6	ø10	ø16	ø20	ø25	ø32	ø40	ø40	ø50	ø63	ø80	ø100
VQ0151 Port size: One-touch fitting for ø4	800 700 600 500 400 300 200 100 0												
VQ1101 Port size: One-touch fitting for ø6	800 700 600 500 400 300 200 100 0												
VQ2101 Port size: One-touch fitting for ø8	800 700 600 500 400 300 200 100 0												

∗ It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
∗ The average velocity of the cylinder is what the stroke is divided by the total stroke time.
∗ Load factor: ((Load weight x 9.8)/Theoretical force) x 100%

Conditions

Series	Conditions	Series CJ2	Series CM2	Series MB, CA1
VQ0151	Tube bore x Length	T0425 x 1 m		
	Speed controller	AS2001F-04		
	Silencer	AN103-X233		
VQ1101	Tube bore x Length	T0604 x 1 m		
	Speed controller	AS3001F-06		
	Silencer	AN103-X233		
VQ2101	Tube bore x Length	T0806 x 1 m		
	Speed controller	AS3001F-08		
	Silencer	AN200-KM8		

Series VQ2000
Base Mounted
Plug-in Unit

How to Order Manifold

VV5Q 2 1 – 08 C6 F U1 □

Series

2	VQ2000

Manifold

1	Plug-in unit

Stations

01	1 station
⋮	⋮

The maximum and minimum number of stations are varied depending on kit. (Refer to the table below.)

Cylinder port

Symbol	Port size
C4	With One-touch fitting for ø4
C6	With One-touch fitting for ø6
C8	With One-touch fitting for ø8
CM	With mixed size/with port plug (1)
L4	W/ elbow One-touch fitting ø4 for top piping
L6	W/ elbow One-touch fitting ø4 for top piping

Kit type

Symbol	Port size
L8	W/ elbow One-touch fitting ø8 for top piping
B4	W/ elbow One-touch fitting ø4 for bottom piping
B6	W/ elbow One-touch fitting ø6 for bottom piping
B8	W/ elbow One-touch fitting ø8 for bottom piping
LM	Mixed size for elbow piping

Note 1) Specify "Mixed size/with port plug" on the manifold specification sheet.
Note 2) Inch-size One-touch fittings are available. For details, refer to page 2-4-179.

Simple specials are available with SMC Simple Specials System.
For details about applicable models, Contact SMC.

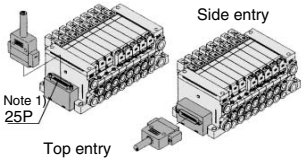
Option

Symbol	Option
Nil	None
B	Back pressure check valve (2)
D	DIN rail mounting style
K	Special wiring specifications (Except double wiring) (3)
N	With name plate
R	External pilot (4)
S	Built-in silencer, direct exhaust
W	Enclosure: Dust tight/splashproof type (IP65) [T, L, S and M kits only]

Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -DNR.
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by manifold specification sheet.
Note 3) Specify the wiring specifications in the manifold specification sheet. (Except L kit)
Note 4) Indicate "R" for the valve with external pilot.

Kit/Electrical entry/Cable length

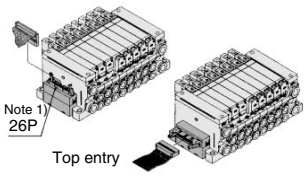
F kit (D-sub connector)



P. 2-4-130

Connector entry direction					
Top entry		Side entry			
Kit F	U0	Kit F	S0	Without cable	(2) 2 to 24 stations
	U1		S1	With cable (1.5 m)	
	U2		S2	With cable (3 m)	
	U3		S3	With cable (5 m)	

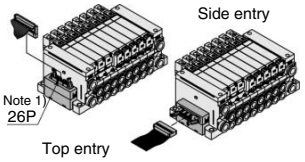
P kit (Flat ribbon cable connector)



P. 2-4-134

Connector entry direction					
Top entry		Side entry			
Kit P	U0	Kit P	S0	Without cable	(2) 2 to24 stations
	U1		S1	With cable (1.5 m)	
	U2		S2	With cable (3 m)	
	U3		S3	With cable (5 m)	

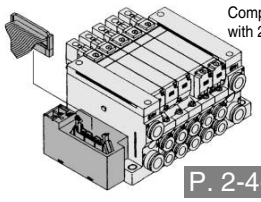
J kit (Flat ribbon cable connector (20P))



P. 2-4-138

Connector entry direction					
Top entry		Side entry			
Kit J	U0	Kit J	S0	Without cable	(2) 2 to16 stations
	U1		S1	With cable (1.5 m)	
	U2		S2	With cable (3 m)	
	U3		S3	With cable (5 m)	

G kit (Flat ribbon cable connector with power supply terminal block)



P. 2-4-142

Kit G	U0	Without cable	(2) 2 to 16 stations
	U1	With cable (1.5 m)	
	U2	With cable (3 m)	
	U3	With cable (5 m)	

How to Order Valves

VQ 2 1 0 0 Y – 5 □ □ □

Series

2	VQ2000

Type of actuation

1		2 position single	Note) A	4 position dual 3 port valve (A)
2	Metal	2 position double	Note) B	4 position dual 3 port valve (B)
	Rubber	2 position double	Note) C	4 position dual 3 port valve (C)
3		3 position closed center		
4		3 position exhaust center		
5		3 position pressure center		

Note) Rubber seal type only.

Note) For sub-plate single unit type, refer to page 2-4-165.

Seal

0	Metal seal
1	Rubber seal

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	Note) ○
H	High pressure type	(1.5 W) ○	–
Y	Low wattage type	(0.5 W) ○	–

Note) For power consumption of AC type, refer to page 2-4-129.

Light/Surge voltage suppressor

Nil	Yes
E Note)	None

Note) Inapplicable to the S kit.

Coil voltage

1	100 VAC (50/60 Hz)
2 Note)	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4 Note)	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

Note) 200/220 VAC models are applicable to F and L kits.

Manual override

Nil: Non-locking push type (tool required)

B: Push-locking slotted type

C: Locking type (Manual)

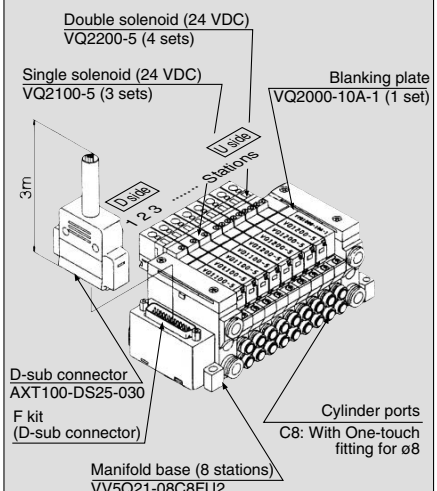
Enclosure

Nil	Dust-protected
W	Dusttight/Low jetproof type (IP65)

Note) For external pilot and negative COM specifications, refer to "Option" on page 2-4-178 to 2-4-179.

How to Order Manifold Assembly

Example

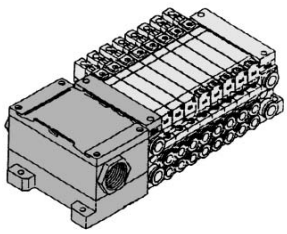


VV5Q21-08C8FU2 ··· 1 set (F kit 8 station manifold base no.)
∗VQ2100-5 ····· 3 sets (Single solenoid part no.)
∗VQ2200-5 ····· 4 sets (Double solenoid part no.)
∗VVQ2000-10A-1 ·· 1 set (Blanking plate part no.)

The asterisk denotes the symbol for assembly.
Prefix it to the part nos. of the solenoid valve, etc.

Specify the part numbers for valves and options together beneath the manifold base part number. Besides, when the arrangement will be complicated, specify them by means of the manifold specification sheet.

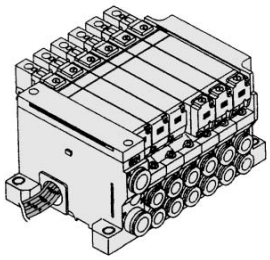
T kit (Terminal box)



Dust tight/Low jetproof type (IP65) available P. 2-4-146

Kit T	O	Terminal block box	2 to 20 stations (2)

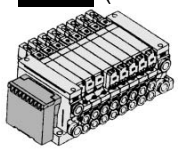
L kit (Lead wire cable)



Dust tight/Low jetproof type (IP65) available P. 2-4-150

Kit L			
	0	With cable (0.6 m)	1 to 8 stations
	1	With cable (1.5 m)	
	2	With cable (3 m)	

S kit (Serial transmission unit) (4)

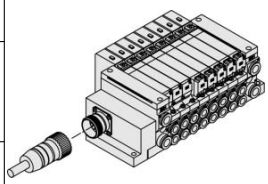


The valve is equipped with an indicator light and surge voltage suppressor, and the voltage is 24 VDC. The dusttight SI unit is available. Refer to page 2-4-154 for details. Dusttight/splashproof type (IP65) is also available. (Except SE and SG.)

P. 2-4-154

Kit S			
	O	Without SI unit	Max.16 (2) stations
	A	With general type SI unit (Series EX300)	
	B	Mitsubishi Electric Corp.: MELSECNET/MINI-S3 Data Link System	
	BB (4)	Mitsubishi Electric Corp.: MELSECNET/MINI-S3 Data Link System(2 power supply lines)	Dust tight/ Low jetproof type Max.16 stations (IP65) only available
	C	OMRON Corp.: SYSBUS Wire System	(2) Max.16 stations
	D	SHARP Corp.: Satellite I/O Link System	
	E	Matsushita Electric Works: MEWNET-F System	
	F1	NKE Corp.: Uni-wire System (16 output points)	
	G	Rockwell Automation: Allen Bradley Remote I/O (RIO) System	
	H	NKE Corp.: Uni-wire H System	
	J1	SUNX Corp.: S-LINK System (16 output points)	
	J2	SUNX Corp.: S-LINK System (8 output points)	Max. 8 stations
	K	Fuji Electric Co.: T-LINK Mini System	Max.16 stations
	Q	DeviceNet, CompoBus/D (OMRON Corp.)	
	R1	OMRON Corp.: CompoBus/S System (16 output points)	
	R2	OMRON Corp.: CompoBus/S System (8 output points)	Max. 8 stations
	V	Mitsubishi Electric Corp.: CC-LINK System	Max. 16 stations

M kit (Multi-connector)



P. 2-4-162

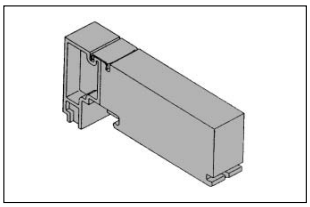
Kit M			
	0	Without cable	(2) 2 to 24 stations
	1	With cable (1.5 m)	
	2	With cable (3 m)	
	3	With cable (5 m)	

Note 1) Besides the above, F and P kits with different number of pins are available. Refer to page 2-4-177 for details.
Note 2) For details, refer to page 2-4-178.
Note 3) Refer to the pages on respective kits for IP65 type. (T, L and S kits)
Note 4) Kits with IP65 enclosure applicable to input/output are also available. Refer to page 2-4-162 for details.

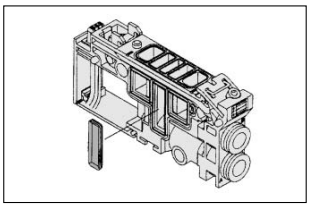
Manifold Option

P. 2-4-210

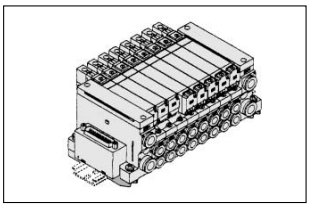
Blanking plate assembly
VVQ2000-10A-1



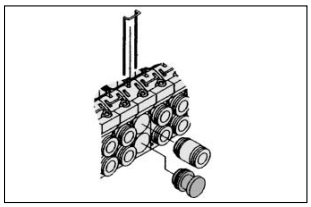
SUP block plate
VVQ2000-16A



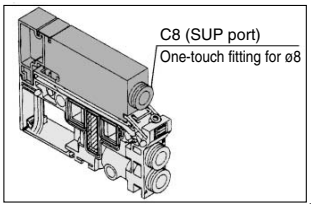
DIN rail mounting bracket [-D]
VVQ2000-57A



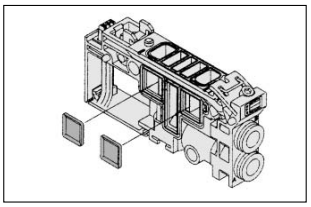
Port plug
VVQ1000-58A



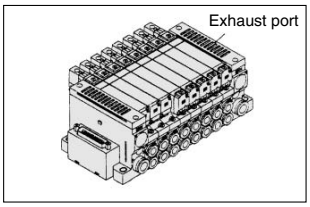
Individual SUP spacer
VVQ2000-P-1-C8



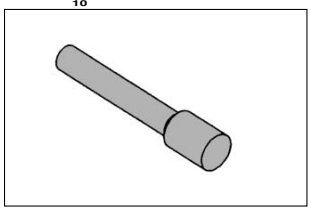
EXH block plate
VVQ2000-19A



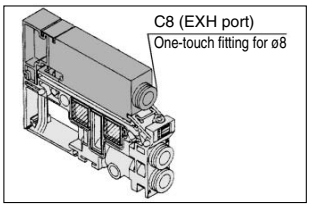
Built-in silencer,
direct exhaust [-S]



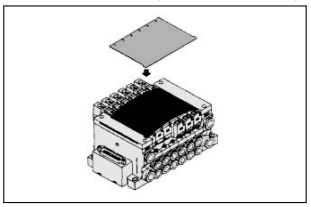
Blanking plate
KQ2P- 04 06 08 10



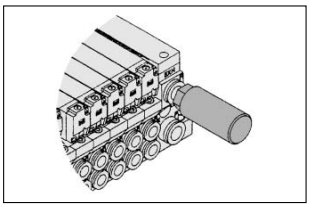
Individual EXH spacer
VVQ2000-R-1-C8



Name plate [-N]
VVQ2000-N-Station (1 to Max. stations)

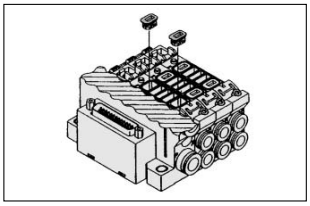


Silencer (For EXH port)
AN200-KM10

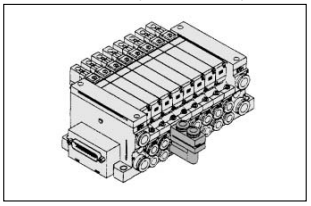


- For cylinder port fittings part no., refer to page 2-4-175.
- For replacement parts, refer to page 2-4-227.

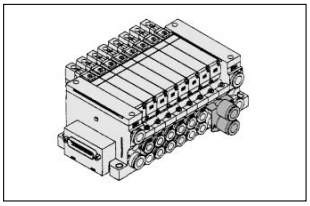
Back pressure check valve assembly [-B]
VVQ2000-18A



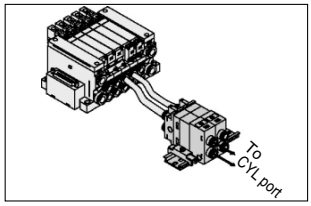
Elbow fitting assembly
VVQ2000-F-L (C4, C6, C8)



2 stations matching fitting assembly
VVQ2000-52A-C10



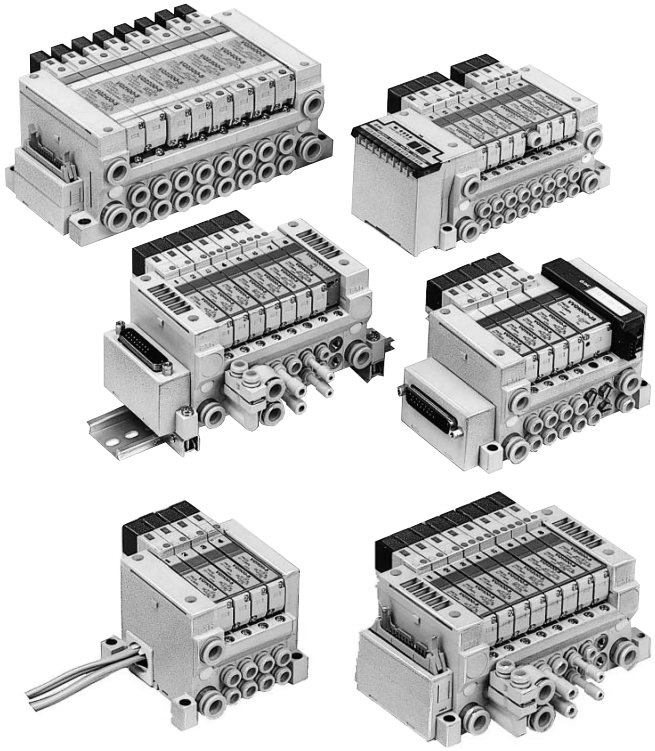
Double check block
VQ2000-FPG-□□



Series VQ1000/2000

Base Mounted

Plug-in Unit



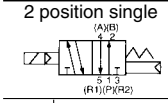
Model

Series	Number of solenoids		Model		Flow characteristics (1)						Response time (ms) (2)			Weight (g)
					1 → 2/4 (P → A/B)			2/4 → 3/5 (A/B → R1/R2)			Standard: 1 W H: 1.5 W	Low wattage: 0.5 W	AC	
					C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv				
VQ1000	2 position	Single	Metal seal	VQ1100	0.70	0.15	0.16	0.72	0.25	0.18	12 or less	15 or less	29 or less	64
			Rubber seal	VQ1101	0.85	0.20	0.21	1.0	0.30	0.25	15 or less	20 or less	34 or less	
		Double	Metal seal	VQ1200	0.70	0.15	0.16	0.72	0.25	0.18	10 or less	13 or less	13 or less	78
			Rubber seal	VQ1201	0.85	0.20	0.21	1.0	0.30	0.25	15 or less	20 or less	20 or less	
	3 position	Closed center	Metal seal	VQ1300	0.68	0.15	0.16	0.72	0.25	0.18	20 or less	26 or less	40 or less	
			Rubber seal	VQ1301	0.70	0.20	0.16	0.65	0.42	0.18	25 or less	33 or less	47 or less	
		Exhaust center	Metal seal	VQ1400	0.68	0.15	0.16	0.72	0.25	0.18	20 or less	26 or less	40 or less	
			Rubber seal	VQ1401	0.70	0.20	0.16	1.0	0.30	0.25	25 or less	33 or less	47 or less	
		Pressure center	Metal seal	VQ1500	0.70	0.15	0.16	0.72	0.25	0.18	20 or less	26 or less	40 or less	
			Rubber seal	VQ1501	0.85	0.20	0.21	0.65	0.42	0.18	25 or less	33 or less	47 or less	
	4 position	Dual 3 port valve	Rubber seal	VQ1A/B/C01	0.70	0.20	0.16	0.70	0.20	0.16	25 or less	33 or less	47 or less	
VQ2000	2 position	Single	Metal seal	VQ2100	2.0	0.15	0.46	2.6	0.15	0.60	22 or less	29 or less	49or less	90
			Rubber seal	VQ2101	2.2	0.28	0.55	3.2	0.30	0.80	24 or less	31 or less	51or less	
		Double	Metal seal	VQ2200	2.0	0.15	0.46	2.6	0.15	0.60	15 or less	20 or less	20 or less	110
			Rubber seal	VQ2201	2.2	0.28	0.55	3.2	0.30	0.80	20 or less	26 or less	26 or less	
	3 position	Closed center	Metal seal	VQ2300	2.0	0.15	0.46	2.0	0.18	0.46	29 or less	38 or less	58 or less	
			Rubber seal	VQ2301	2.0	0.28	0.49	2.2	0.31	0.60	34 or less	44 or less	64 or less	
		Exhaust center	Metal seal	VQ2400	2.0	0.15	0.46	2.6	0.15	0.60	29 or less	38 or less	58 or less	
			Rubber seal	VQ2401	2.0	0.28	0.49	3.2	0.30	0.80	34 or less	44 or less	64 or less	
		Pressure center	Metal seal	VQ2500	2.4	0.17	0.57	2.0	0.18	0.46	29 or less	38 or less	58 or less	
			Rubber seal	VQ2501	3.2	0.28	0.80	2.2	0.31	0.60	34 or less	44 or less	64 or less	
	4 position	Dual 3 port valve	Rubber seal	VQ2A/B/C01	1.8	0.28	0.46	1.8	0.28	0.46	34 or less	44 or less	64 or less	

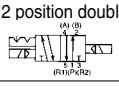
Note 1) Cylinder port size C6: (VQ1000), C8: (VQ2000) without check valve option for prevention of back pressure.
Note 2) As per JIS B 8375-1981 (Supply pressure; 0.5 MPa; with indicator light/surge voltage suppressor; clean air)
The response time is subject to the pressure and quality of the air. The values at the time of ON are given for double types.

JIS Symbol

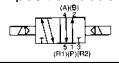
2 position single



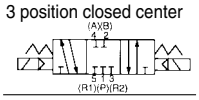
Metal — 2 position double



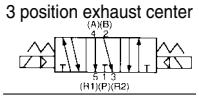
Rubber — 2 position double



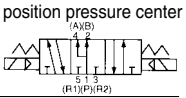
3 position closed center



3 position exhaust center



3 position pressure center



Standard Specifications

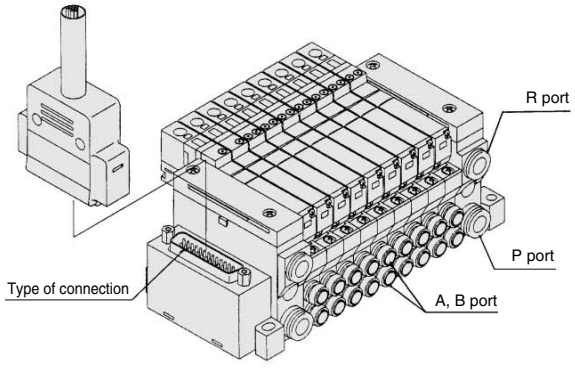
Valve specifications	Valve construction		Metal seal	Rubber seal
	Fluid		Air/Inert gas	Air/Inert gas
	Maximum operating pressure		0.7 MPa (High pressure type: 0.8 MPa)	
	Minimum operating pressure	Single	0.1 MPa	0.15 MPa
		Double	0.1 MPa	0.1 MPa
		3 position	0.1 MPa	0.2 MPa
	Ambient and fluid temperature		–10 to 50°C (1)	
	Lubrication		Not required	
	Manual override		Push type/Locking type (Tool required, Manual type) Option	
	Impact/Vibration resistance (2)		150/30 m/s²	
	Enclosure		Dust-protected, Dust tight/Low jetproof type (IP65) (5)	
Solenoid	Coil rated voltage		12 , 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz)	
	Allowable voltage fluctuation		±10% of rated voltage	
	Coil insulation type		Class B or equivalent	
	Power consumption (Current)	24 VDC	1 W DC (42 mA), 1.5 W DC (63 mA) (3), 0.5 W DC (21 mA) (4)	
		12 VDC	1 W DC (83 mA), 1.5 W DC (125 mA) (3), 0.5 W DC (42 mA) (4)	
		100 VAC	Inrush 1.2 VA (12 mA), Holding 1.2 VA (12 mA)	
		110 VAC	Inrush 1.3 VA (12 mA), Holding 1.3 VA (12 mA)	
		200 VAC	Inrush 2.4 VA (12 mA), Holding 2.4 VA (12 mA)	
		220 VAC	Inrush 2.6 VA (12 mA), Holding 2.6 VA (12 mA)	

Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Impact resistance ··· No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)
Vibration resistance ··· No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)
Note 3) Value for high voltage type (1.5 W)
Note 4) Value for low voltage type (0.5 W)
Note 5) Dusttight/Low jetproof type (IP65) is available on T, L, S and M kits of VQ2000.

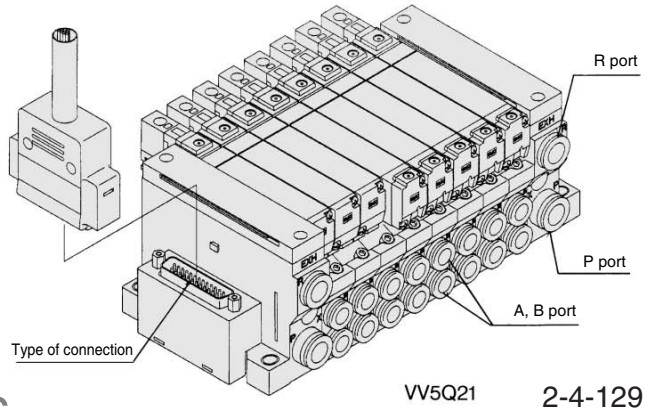
Manifold Specifications

Series	Base model	Type of connection	Porting specifications			Applicable stations (2)	Applicable solenoid valve	5 station weight (g)
			Port location	Port size (1)				
				1(P), 3(R)	4(A), 2(B)			
VQ1000	**VV5Q11-□□□**	■ F kit–D-sub connector ■ P kit–Flat ribbon cable connector ■ J kit–Flat ribbon cable connector (20P) ■ G kit–Flat ribbon cable connector with terminal block ■ T kit–Terminal box ■ L kit–Lead wire cable ■ S kit–Serial transmission unit	Side	C8 (ø8) Option: Built-in silencer, direct exhaust	C3 (ø3.2) C4(ø4) C6 (ø6) M5 (M5 thread)	F, P, T kits: 2 to 24 stations J, G, S kit: 2 to 16 stations L kit: 1 to 8 stations	VQ1□00 VQ1□01	628 (Single) 759 (Double, 3 position)
VQ2000	**VV5Q21-□□□**	■ F kit–D-sub connector ■ P kit–Flat ribbon cable connector ■ J kit–Flat ribbon cable connector (20P) ■ G kit–Flat ribbon cable connector with terminal block ■ T kit–Terminal box ■ L kit–Lead wire cable ■ S kit–Serial transmission unit ■ M kit–Multi-connector	Side	C10 (ø10) Option: Built-in silencer, direct exhaust	C4 (ø4) C6 (ø6) C8 (ø8)	F, P kits: 2 to 24 stations J, G, S kit: 2 to 16 stations L kit: 1 to 8 stations T kit: 2 to 20 stations	VQ2□00 VQ2□01	1051 (Single) 1144 (Double, 3 position)

Note 1) Inch-size One-touch fittings are also available. For details, refer to page 2-4-179.
Note 2) For details, refer to page 2-4-178.

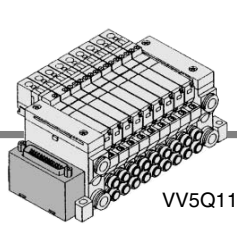


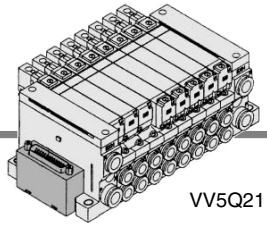
VV5Q11



VV5Q21

F VQ1000/2000 Kit (D-sub connector)


VV5Q11


VV5Q21

- The D-sub connector reduces installation labor for electrical connections.
- Using the D-sub connector (25P), (15P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 24.

Manifold Specifications

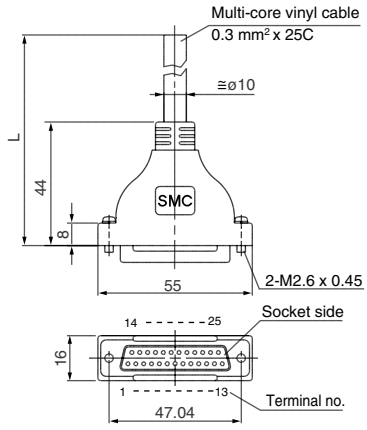
Series	Porting specifications			Applicable stations
	Port locaition	Port size		
		1(P), 3(R)	4(A), 2(B)	
VQ1000	Side	C8	C3, C4, C6, M5	Max. 24 stations
VQ2000	Side	C10	C4, C6, C8	Max. 24 stations

D-sub Connector (25 pins)

Cable Assembly ●

AXT100-DS25- 015 / 030 / 050

(The D-sub connector cable assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.)



D-sub Connector Cable Assembly (Option)

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-DS25-015	Cable 25 core x 24AWG
3 m	AXT100-DS25-030	
5 m	AXT100-DS25-050	

∗ For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.

Connector manufacturers' example
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Hirose Electric Co., Ltd.

Electric Characteristics

Item	Characteristics
Conductor resistance Ω/km, 20°C	65 or less
Voltage limit V, 1 min, AC	1000
Insulation resistance MΩkm, 20°C	5 or more

Note) The min. bending radius of D-sub cable assembly is 20 mm.

Wire Color by Terminal No. of D-sub Connector Cable Assembly

Terminal no.	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Gray	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	None

Note) Types with 15 pin are also available. Refer to page 2-4-177 for details.

How to Order Manifold

VV5Q 1 1 – 08 C6 F U 1 – N

Series

1	VQ1000
2	VQ2000

Manifold

1	Plug-in unit

Stations

02	2 stations
⋮	⋮
24	24 stations

Note) For details, refer to page 2-4-178.

Connector entry direction

U	Top entry
S	Side entry

Cylinder port

Symbol	Port size	VQ1000	VQ2000
C3	With One-touch fitting for ø3.2	●	
C4	With One-touch fitting for ø4	●	●
C6	With One-touch fitting for ø6	●	●
C8	With One-touch fitting for ø8		●
M5	M5 thread	●	
CM	With mixed size/with port plug	●	● (3)

Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type. Example) B6 (Elbow One-touch fittings for ø6, bottom piping.)
Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" in the manifold specification sheet.
Note 4) Inch-size One-touch fittings are available. For details, refer to page 2-4-179.

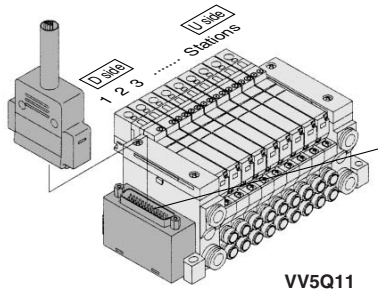
Cable (Length)

0	Without cable
1	With cable (1.5 m)
2	With cable (3 m)
3	With cable (5 m)

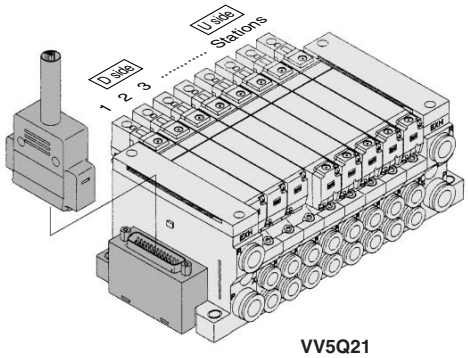
Option

Symbol	Option	VQ1000	VQ2000	Note
Nil	None	●	●	
B	With back pressure check valve	●	●	(2)
D	DIN rail mounting style	●	●	
G1	1 set of regulator unit	●		(3)
G2	2 sets of regulator unit			
G3	3 sets of regulator unit			
J□	With vacuum ejector unit	●		(4)
K	Special wiring specifications (Not double wiring)	●	●	(5)
N	With name plate	●	●	
R	External pilot	●	●	(6)
S	Built-in silencer, direct exhaust	●	●	

Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -BRS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using the manifold specification sheet.
Note 3) Specify the mounting position in the manifold specification sheet.
Note 4) Refer to page 2-4-170 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Specify the wiring by using of the manifold specification sheet.
Note 6) Indicate "R" for the valve with external pilot.



VV5Q11

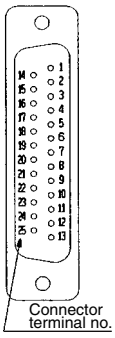


VV5Q21

The total number of stations is tabulated starting from station one on the D side.

Electrical wiring specifications

D-sub connector



As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types.
Mixed single and double wiring is available as an option. For details, refer to page 2-4-178.

D-sub connector assembly
AXT100-DS25-015 / 030 / 050 Wire color

	Terminal no.		Polarity	Lead wire color	Dot marking
1 station	SOL.A 1	(–)	(+)	Black	None
	SOL.B 14	(–)	(+)	Yellow	Black
2 stations	SOL.A 2	(–)	(+)	Brown	None
	SOL.B 15	(–)	(+)	Pink	Black
3 stations	SOL.A 3	(–)	(+)	Red	None
	SOL.B 16	(–)	(+)	Blue	White
4 stations	SOL.A 4	(–)	(+)	Orange	None
	SOL.B 17	(–)	(+)	Purple	None
5 stations	SOL.A 5	(–)	(+)	Yellow	None
	SOL.B 18	(–)	(+)	Gray	None
6 stations	SOL.A 6	(–)	(+)	Pink	None
	SOL.B 19	(–)	(+)	Orange	Black
7 stations	SOL.A 7	(–)	(+)	Blue	None
	SOL.B 20	(–)	(+)	Red	White
8 stations	SOL.A 8	(–)	(+)	Purple	White
	SOL.B 21	(–)	(+)	Brown	White
9 stations	SOL.A 9	(–)	(+)	Gray	Black
	SOL.B 22	(–)	(+)	Pink	Red
10 stations	SOL.A 10	(–)	(+)	White	Black
	SOL.B 23	(–)	(+)	Gray	Red
11 stations	SOL.A 11	(–)	(+)	White	Red
	SOL.B 24	(–)	(+)	Black	White
12 stations	SOL.A 12	(–)	(+)	Yellow	Red
	SOL.B 25	(–)	(+)	White	None
	COM. 13	(+)	(–)	Orange	Red
			Positive common specifications	Negative common specifications Note)	

Note) When using the negative common specifications, use valves for negative common. (Refer to page 2-4-178.)
For details, refer to "Option" on page 2-4-178.

How to Order Valves

VQ 1 1 0 0 Y – 5 ☐ ☐

Series

1	VQ1000
2	VQ2000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Seal

0	Metal seal
1	Rubber seal

Note) For external pilot and negative COM specifications, refer to "Option" on pages 2-4-178 to 2-4-179.

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	Note) ○
H	High pressure type	(1.5 W) ○	—
Y	Low wattage type	(0.5 W) ○	—

Note) For power consumption of AC type, refer to page 2-4-129.

Light/Surge voltage suppressor

Nil	Yes
E	None

Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)
C	Locking type (Manual)

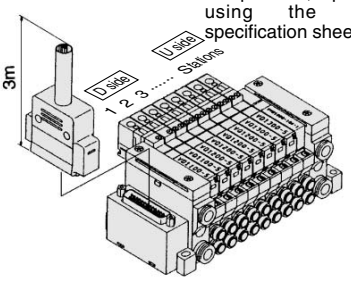
How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>
D-sub connector kit with cable (3 m)
VV5Q11-09C6FU2 ···· 1 set –Manifold base no.
*VQ1100-5 ····· 2 sets–Valve part no. (Stations 1 to 2)
*VQ1200-5 ····· 4 sets–Valve part no. (Stations 3 to 6)
*VQ1300-5 ····· 2 sets–Valve part no. (Stations 7 to 8)
*VVQ1000-10A-1 ····· 1 set–Blanking plate part no. (Station 9)

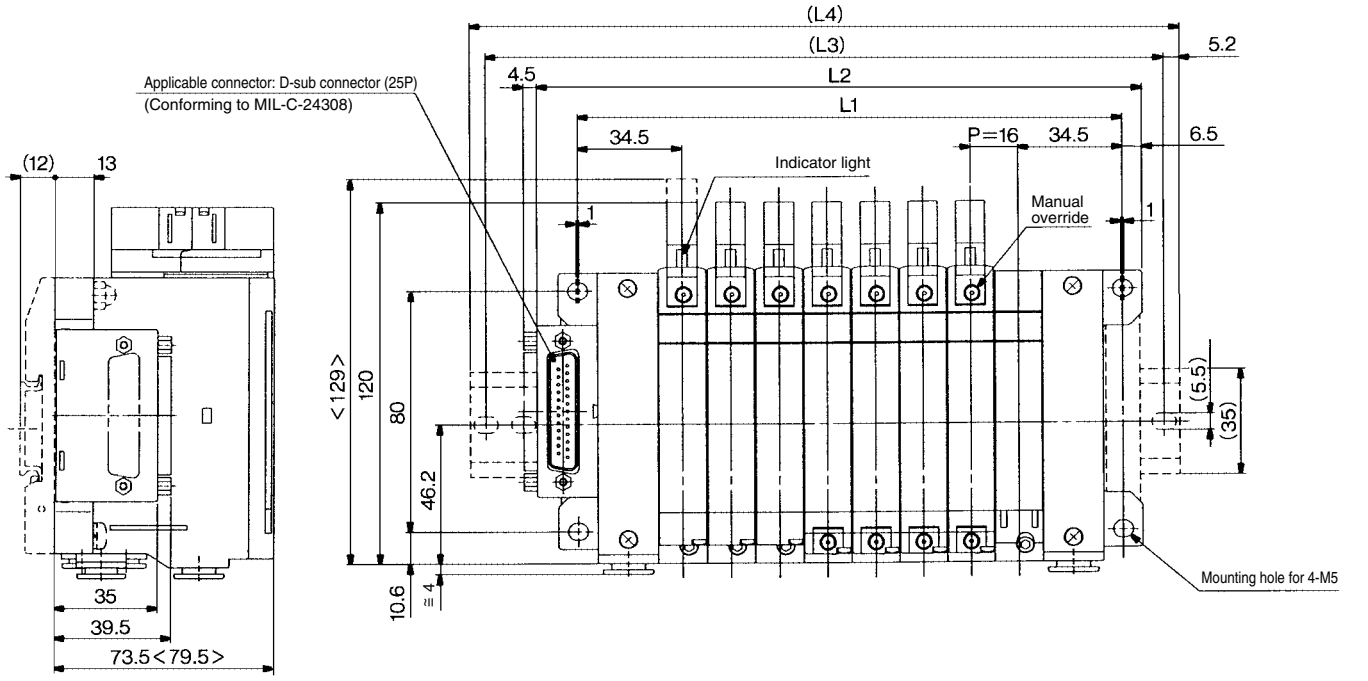
Prefix the asterisk to the part nos. of the solenoid valve, etc.

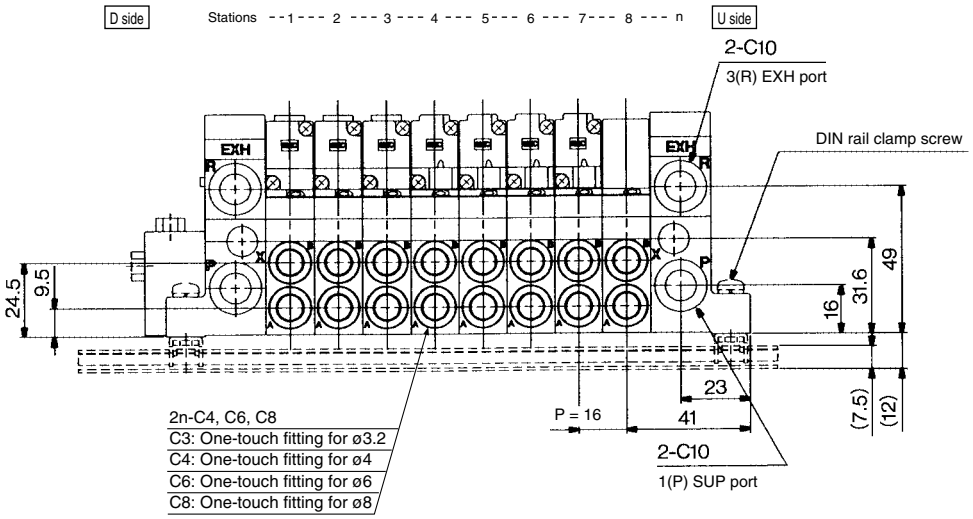
Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specified by using the manifold specification sheet.



VQ2000

The broken lines indicate the DIN rail mounting style [-D] and the side entry connection [-FS].





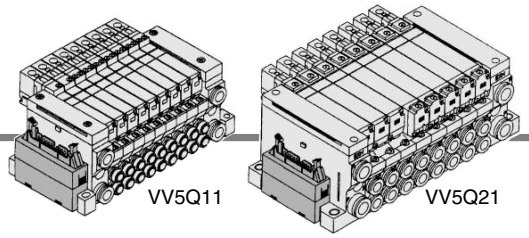
< >: AC

Dimensions

Formula L1 = 16n + 53, L2 = 16n + 73 n: Station (Maximum 24 stations)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341	357	373	389	405	421	437
L2	105	121	137	153	169	185	201	217	233	249	265	281	297	313	329	345	361	377	393	409	425	441	457
(L3)	137.5	150	162.5	187.5	200	212.5	225	250	262.5	275	300	312.5	325	337.5	350	375	387.5	400	412.5	437.5	450	462.5	487.5
(L4)	148	160.5	173	198	210.5	223	235.5	260.5	273	285.5	310.5	323	335.5	348	360.5	385.5	398	410.5	423	448	460.5	473	498

P VQ1000/2000 Kit (Flat ribbon cable connector)



- MIL flat ribbon cable connector reduces installation labor for electrical connection.
- Using the connector for flat ribbon cable (26P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 24.

Manifold Specifications

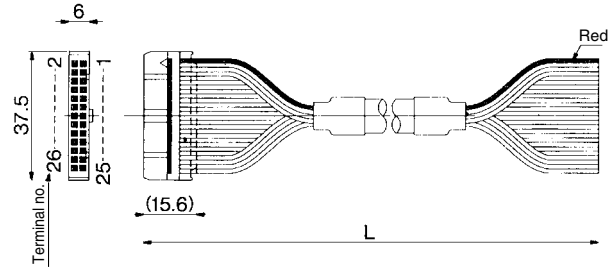
Series	Porting specifications			Applicable stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
VQ1000	Side	C8	C3, C4, C6, M5	Max. 24 stations
VQ2000	Side	C10	C4, C6, C8	Max. 24 stations

Flat Ribbon Cable (26 pins)

Cable assembly

AXT100-FC26-$\frac{1}{3}$

(Flat ribbon cable connector assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.)



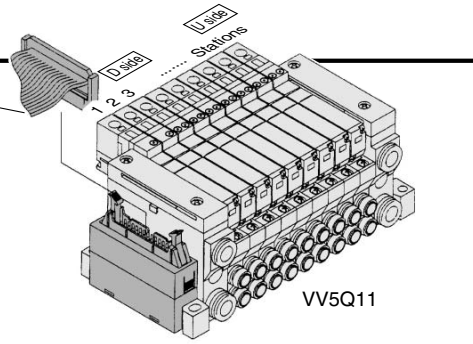
Flat Ribbon Cable Connector Assembly (Option)

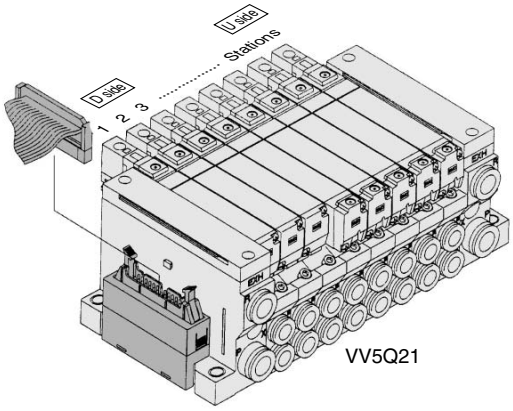
Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-FC26-1	Cable 26 core x 28AWG
3 m	AXT100-FC26-2	
5 m	AXT100-FC26-3	

∗ For other commercial connectors, use a 26 pins type with strain relief conforming to MIL-C-83503.

Connector manufacturers' example

- Hirose Electric Co., Ltd.
- Sumitomo 3M Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.





The total number of stations is tabulated starting from one on the D side.

How to Order Manifold

VV5Q 1 1 – 08 C6 P U 1 – N

Series

1	VQ1000
2	VQ2000

Manifold

1	Plug-in unit

Stations

02	2 stations
⋮	⋮
24	24 stations

Note) For details, refer to page 2-4-178.

Cylinder port

Symbol	Port size	VQ1000	VQ2000
C3	With One-touch fitting for ø3.2	●	
C4	With One-touch fitting for ø4	●	●
C6	With One-touch fitting for ø6	●	●
C8	With One-touch fitting for ø8		●
M5	M5 thread	●	
CM	With mixed size/with port plug	●	●(3)

Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type.
Example) B6 (Elbow One-touch fittings for ø6, bottom piping.)
Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" in the manifold specification sheet.
Note 4) Inch-size One-touch fittings are available. For details, refer to page 2-4-179.

Connector entry direction

U	Top entry
S	Side entry

Cable (Length)

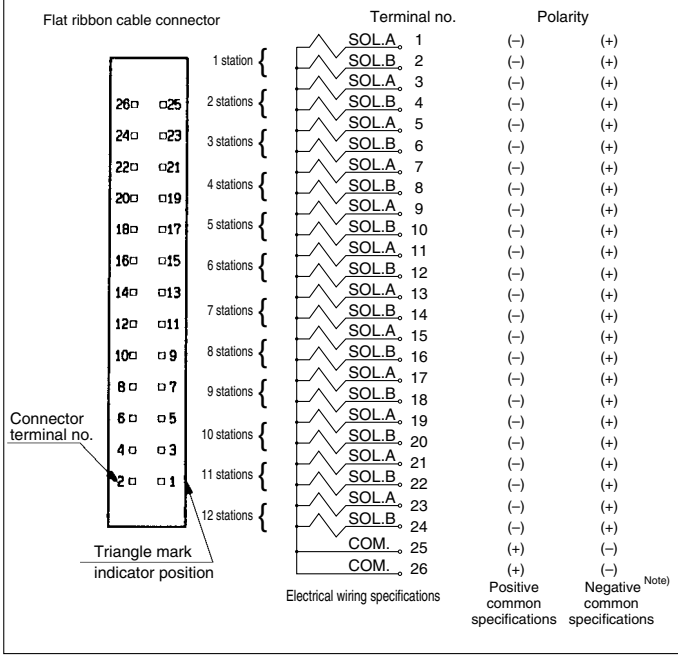
0	Without cable
1	With cable (1.5 m)
2	With cable (3 m)
3	With cable (5 m)

Option

Symbol	Option	VQ1000	VQ2000	Note
Nil	None	●	●	
B	Back pressure check valve	●	●	(2)
D	DIN rail mounting style	●	●	
G1	1 set of regulator unit	●		(3)
G2	2 sets of regulator unit			
G3	3 sets of regulator unit			
J□	With vacuum ejector unit	●		(4)
K	Special Wiring Specifications (Not double wiring)	●	●	(5)
N	With name plate	●	●	
R	External pilot	●	●	(6)
S	Built-in silencer, direct exhaust	●	●	

Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -BRS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using the manifold specification sheet.
Note 3) Specify the mounting position in the manifold specification sheet.
Note 4) Refer to page 2-4-170 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Specify the wiring specifications in the manifold specification sheet.
Note 6) Indicate "R" for the valve with external pilot.

● Electrical wiring specifications



As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option.
For details, refer to page 2-4-178.

Note) When using the negative common specifications, use valves for negative common. (Refer to page 2-4-178.)
For details, refer to "Option" on page 2-4-178.

How to Order Valves

VQ 1 1 0 0 Y — 5 ☐ ☐

Series

1	VQ1000
2	VQ2000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Seal

0	Metal seal
1	Rubber seal

Note) For external pilot and negative COM specifications, refer to "Option" on pages 2-4-178 to 2-4-179.

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	Note) ○
H	High pressure type	(1.5 W) ○	—
Y	Low wattage type	(0.5 W) ○	—

Note) For power consumption of AC type, refer to page 2-4-129.

Light/Surge voltage suppressor

Nil	Yes
E	None

Coil voltage

1	100 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)
C	Locking type (Manual)

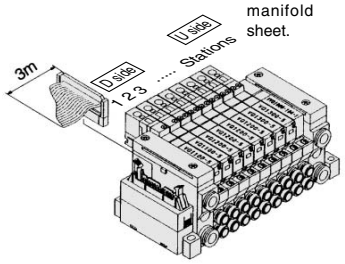
How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>
Flat ribbon cable kit with 3 m cable
VV5Q11-09C6PU2 ···1 set–Manifold base no.
∗VQ1100-5 ·····2 sets–Valve part no. (Stations 1 to 2)
∗VQ1200-5 ·····4 sets–Valve part no. (Stations 3 to 6)
∗VQ1300-5 ·····2 sets–Valve part no. (Stations 7 to 8)
∗VVQ1000-10A-1 ·····1 set–Blanking plate no. (Station 9)

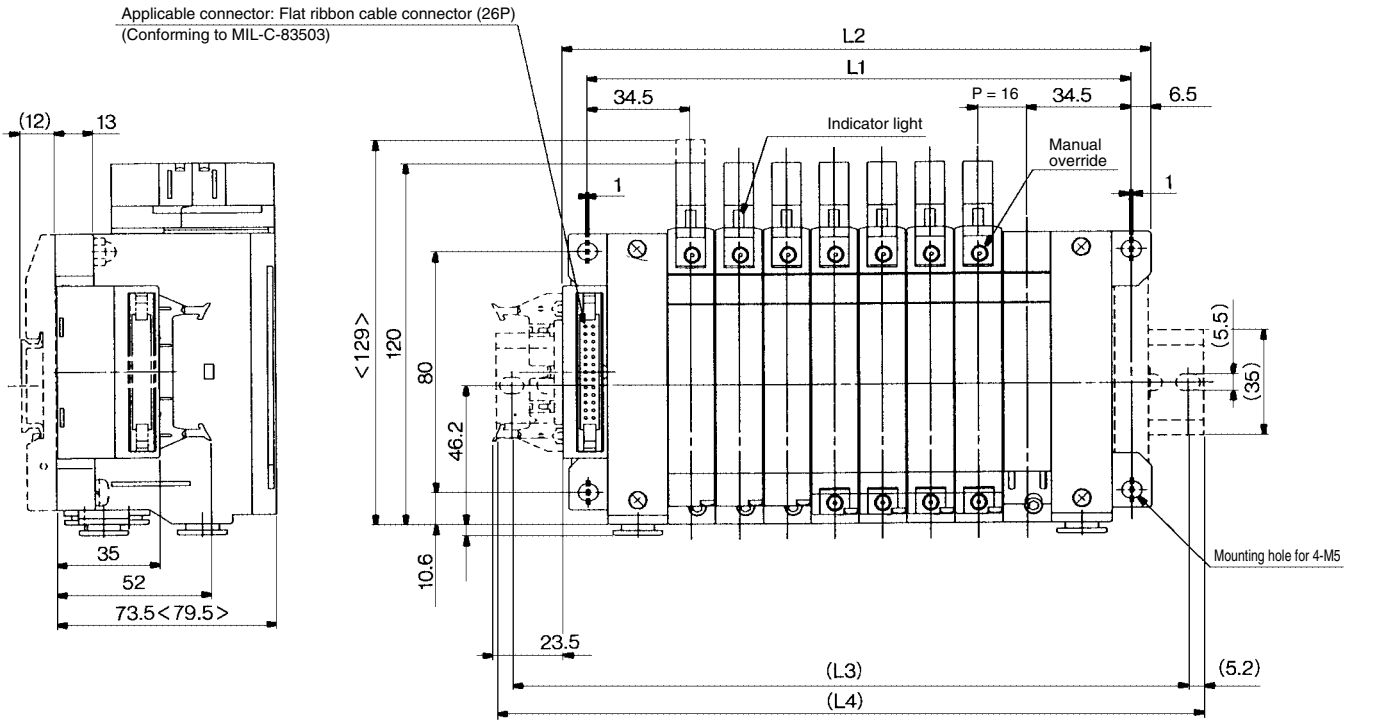
Prefix the asterisk to the part nos. of the solenoid valve, etc.

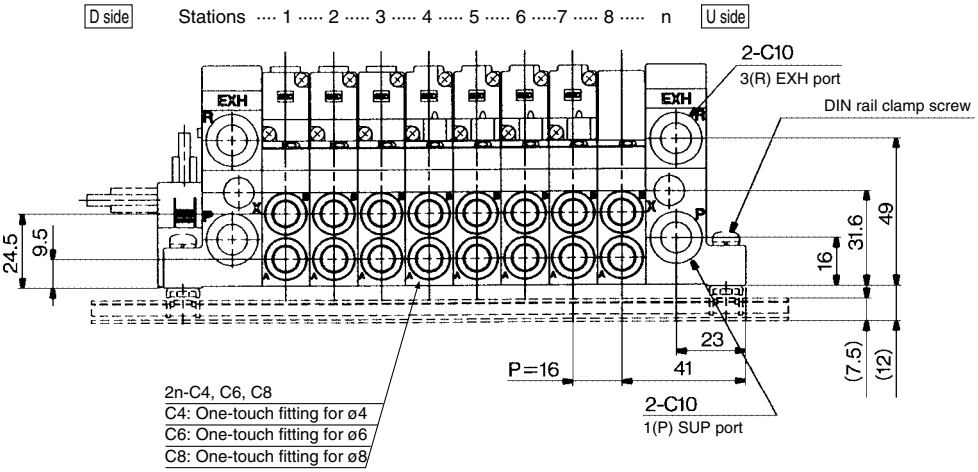
Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specified by using the manifold specification sheet.



VQ2000

The broken lines indicate the DIN rail mounting style [-D] and the side entry connection [-PS].





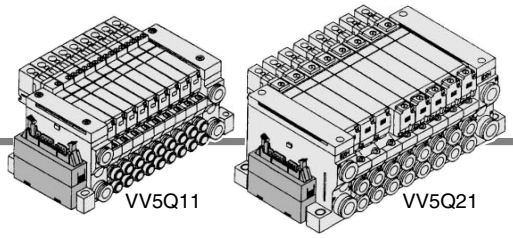
< >: AC

Dimensions

Formula L1 = 16n + 53, L2 = 16n + 68 n: Station (Maximum 24 stations)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309	325	341	357	373	389	405	421	437
L2	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340	356	372	388	404	420	436	452
(L3)	125	150	162.5	175	187.5	212.5	225	237.5	262.5	275	287.5	300	312.5	337.5	350	362.5	387.5	400	412.5	425	450	462.5	475
(L4)	135.5	160.5	173	185.5	198	223	235.5	248	273	285.5	298	310.5	323	348	360.5	373	398	410.5	423	435.5	460.5	473	485.5

J VQ1000/2000 Kit (Flat ribbon cable connector)



- MIL flat ribbon cable connector reduces installation labor for electrical connection.
- The use of flat ribbon cable connectors (20P) conforming to MIL standards provides a wide range of compatibility with conventional connectors.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 16.

Manifold Specifications

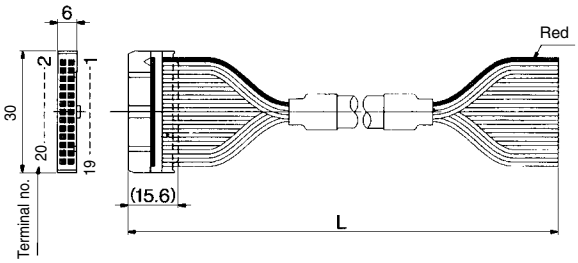
Series	Porting specifications			Applicable stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
VQ1000	Side	C8	C3, C4, C6, M5	Max. 16 stations
VQ2000	Side	C10	C4, C6, C8	Max. 16 stations

Flat Ribbon Cable (26 pins)

Cable assembly

AXT100-FC20-$\frac{1}{3}$

(Flat ribbon cable connector assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.)



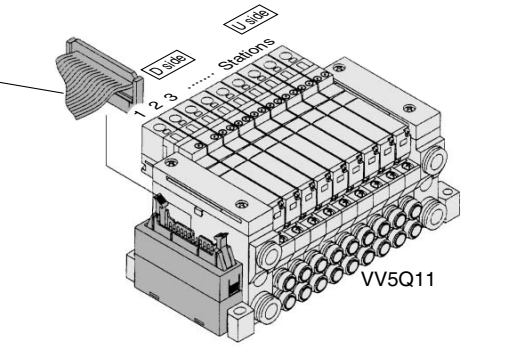
Flat Ribbon Cable Connector Assembly (Option)

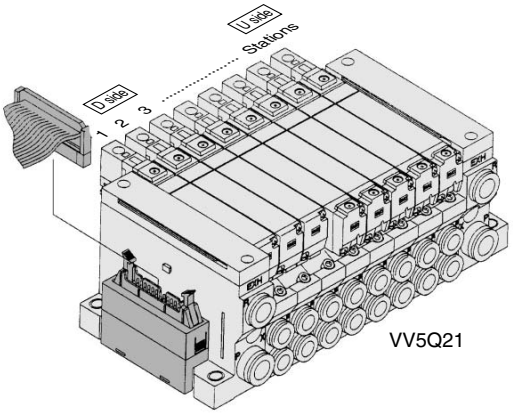
Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-FC20-1	Cable 20 core x 28AWG
3 m	AXT100-FC20-2	
5 m	AXT100-FC20-3	

∗ For other commercial connectors, use a 20 pins with strain relief conforming to MIL-C-83503.

Connector manufacturers' example

- Hirose Electric Co., Ltd.
- Sumitomo 3M Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.





The total number of stations is tabulated starting from one on the D side.

How to Order Manifold

VV5Q 1 1 – 08 C6 J U 1 – N

Series

1	VQ1000
2	VQ2000

Manifold

1	Plug-in unit

Stations

02	2 stations
⋮	⋮
16	16 stations

Note) For details, refer to page 2-4-178.

Connector entry direction

U	Top entry
S	Side entry

Cylinder port

Symbol	Port size	VQ1000	VQ2000
C3	With One-touch fitting for ø3.2	●	
C4	With One-touch fitting for ø4	●	●
C6	With One-touch fitting for ø6	●	●
C8	With One-touch fitting for ø8		●
M5	M5 thread	●	
CM	With mixed size/with port plug	●	● (3)

Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type.
Example) B6 (Elbow One-touch fittings for ø6, bottom piping.)
Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" in the manifold specification sheet.
Note 4) Inch-size One-touch fittings are available. For details, refer to page 2-4-179.

Cable (Length)

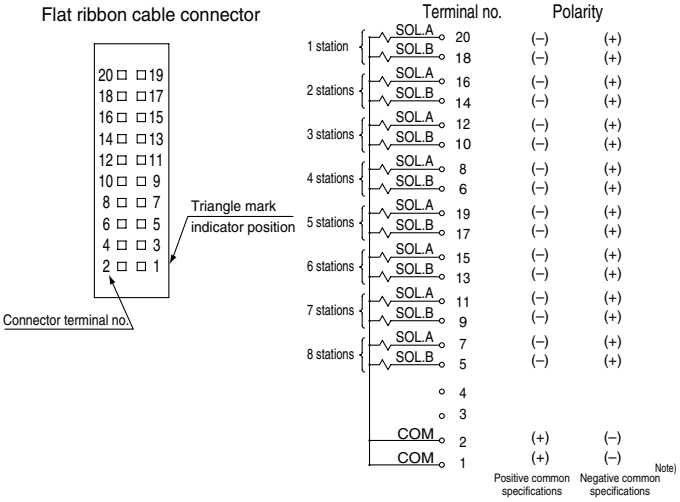
0	Without cable
1	With cable (1.5 m)
2	With cable (3 m)
3	With cable (5 m)

Option

Symbol	Option	VQ1000	VQ2000	Note
Nil	None	●	●	
B	Back pressure check valve	●	●	(2)
D	DIN rail mounting style	●	●	
G1	1 set of regulator unit	●		(3)
G2	2 sets of regulator unit			
G3	3 sets of regulator unit			
J□	With vacuum ejector unit	●		(4)
K	Special Wiring Specifications (Not double wiring)	●	●	(5)
N	With name plate	●	●	
R	External pilot	●	●	(6)
S	Built-in silencer, direct exhaust	●	●	

Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -BRS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using the manifold specification sheet.
Note 3) Specify the mounting position in the manifold specification sheet.
Note 4) Refer to page 2-4-170 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Specify the wiring specifications in the manifold specification sheet.
Note 6) Indicate "R" for the valve with external pilot.

• Electrical wiring specifications



As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types.
Mixed single and double wiring is available as an option.
For details, refer to page 2-4-178.

Note) When using the negative common specifications, use valves for negative common. (Refer to page 2-4-178.)
For details, refer to "Option" on page 2-4-178.

How to Order Valves

VQ 1 1 0 0 Y — 5 ☐ ☐

Series

1	VQ1000
2	VQ2000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Seal

0	Metal seal
1	Rubber seal

Function

Symbol	Specifications	DC
Nil	Standard type	(1.0 W) ○
H	High pressure type	(1.5 W) ○
Y	Low wattage type	(0.5 W) ○

Coil voltage

5	24 VDC

Light/Surge voltage suppressor

Nil	Yes
E	None

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)
C	Locking type (Manual)

Note) For external pilot and negative COM specifications, refer to "Option" on pages 2-4-178 to 2-4-179.

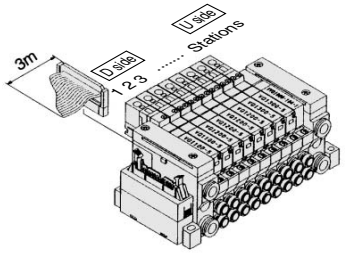
How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>
Flat ribbon cable kit with 3 m cable
VV5Q11-09C6PU2 ··· 1 set–Manifold base no.
∗VQ1100-5 ····· 2 sets–Valve part no. (Stations 1 to 2)
∗VQ1200-5 ····· 4 sets–Valve part no. (Stations 3 to 6)
∗VQ1300-5 ····· 2 sets–Valve part no. (Stations 7 to 8)
∗VVQ1000-10A-1 ···· 1 set–Blanking plate part no. (Station 9)

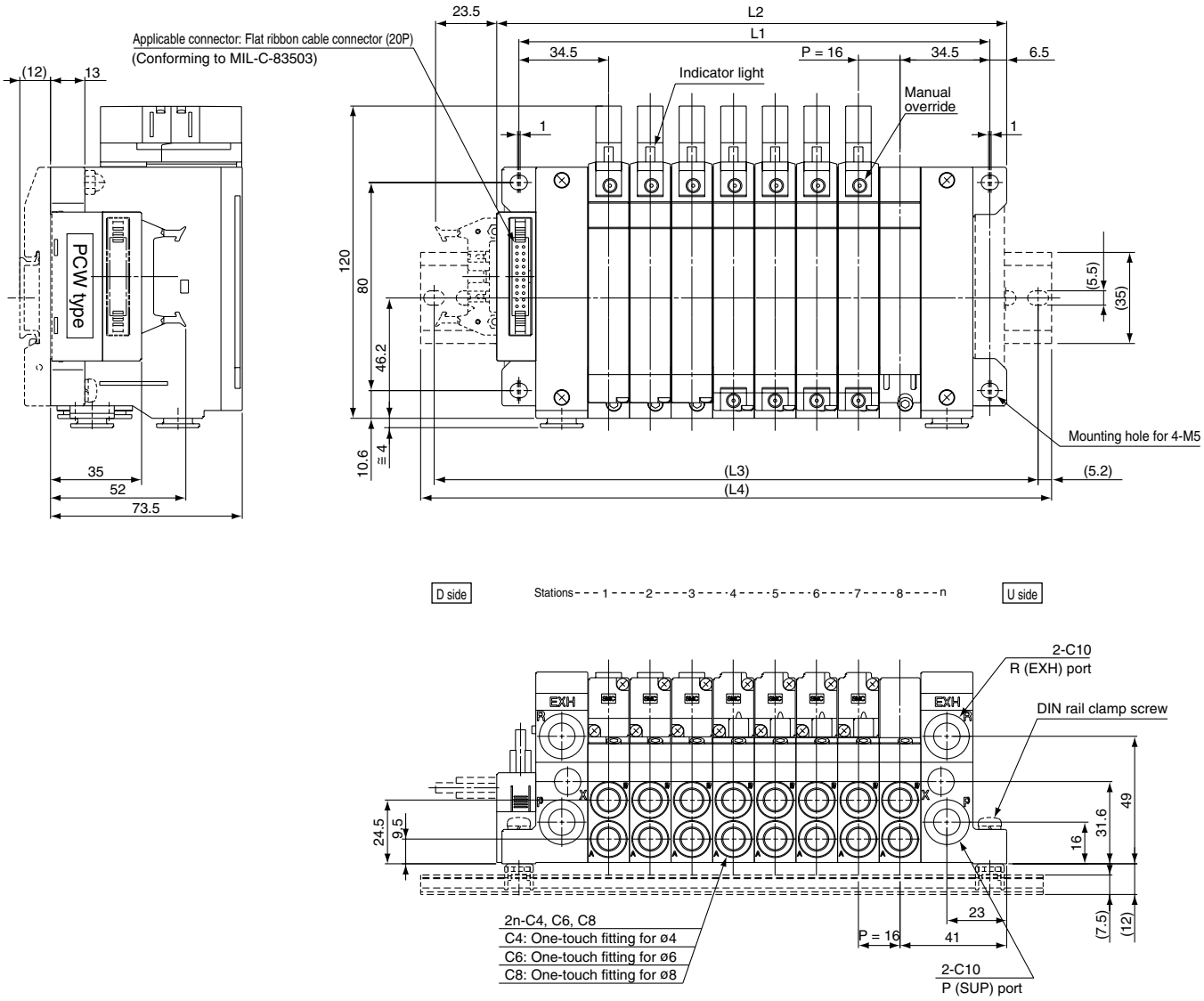
Prefix the asterisk to the part nos. of the solenoid valve, etc.

When ordering, specify the part nos. in order from the 1st. station in the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.



VQ2000

The broken lines indicate the DIN rail mounting style [-D] and the side entry connection [-PS].

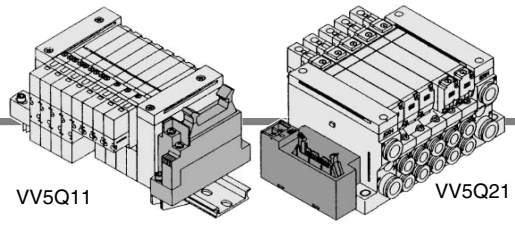


Dimensions

Formula L1 = 16n + 53, L2 = 16n + 68 n: Station (Maximum 16 stations)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309
L2	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324
(L3)	125	150	162.5	175	187.5	212.5	225	237.5	262.5	275	287.5	300	312.5	337.5	350
(L4)	135.5	160.5	173	185.5	198	223	235.5	248	273	285.5	298	310.5	323	348	360.5

G VQ1000/2000
Kit (Flat ribbon cable connector with terminal block)



- Terminal block for power supply equipped with a 20 pins flat cable connection for rationalized connection of valves.
- Solenoid valves and power supply can be connected by the same cable to a specific output unit that requires power supply from the output section to the internal circuit. (SI unit)
- Maximum stations are 16.

Manifold Specifications

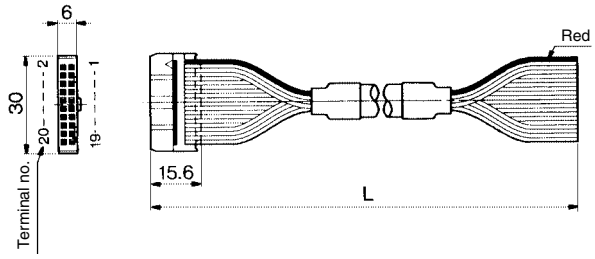
Series	Porting specifications			Applicable stations
	Port licaition	Port size		
		1(P), 3(R)	4(A), 2(B)	
VQ1000	Side	C8	C3, C4, C6, M5	Max. 16 stations
VQ2000	Side	C10	C4, C6, C8	Max. 16 stations

Flat Ribbon Cable (20 pins)

Cable assembly

AXT100-FC20-$\frac{1}{3}$

(Flat ribbon cable connector assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.)



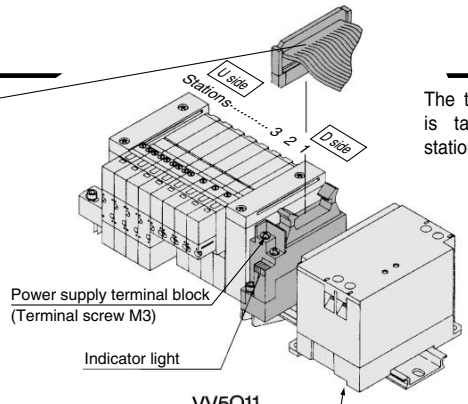
Flat Ribbon Cable Connector Assembly (Option)

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-FC20-1	Cable 20 core x 28AWG
3 m	AXT100-FC20-2	
5 m	AXT100-FC20-3	

∗ For other commercial connectors, use a 20 pins with strain relief conforming to MIL-C-83503.

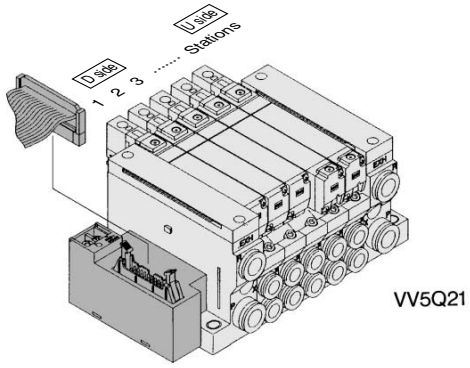
Connector manufacturers' example

- Hirose Electric Co., Ltd.
- Oki Electric Cable Co. Ltd.
- J.S.T. Mfg. Co., Ltd.
- Japan Aviation Electronics Industry, Ltd.
- Sumitomo 3M Limited
- Fujitsu Limited



The total number of stations is tabulated starting from station one on the D side.

SI unit made by OMRON Corp.
Mountable for G71-OD16 (Order separately)



How to Order Manifold

VV5Q 1 1 – 08 C6 G □ □ – N

Series

1	VQ1000
2	VQ2000

Manifold

1	Plug-in unit

Stations

02	2 stations
⋮	⋮
16 Note)	16 stations

Note) For details, refer to page 2-4-178.

Connector entry direction, Top entry

Nil	For VQ1000
U	For VQ2000

Cable (Length)

0	Without cable
1	Cable length 1.5 m
2	Cable length 3 m
3	Cable length 5 m

Cylinder port

Symbol	Port size	VQ1000	VQ2000
C3	With One-touch fitting for ø3.2	●	
C4	With One-touch fitting for ø4	●	●
C6	With One-touch fitting for ø6	●	●
C8	With One-touch fitting for ø8		●
M5	M5 thread	●	
CM	With mixed size/with port plug	●	●

Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type.
Example) B6 (Elbow One-touch fittings for ø6, bottom piping.)
Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" in the manifold specification sheet.
Note 4) Inch-size One-touch fittings are available. For details, refer to page 2-4-179.

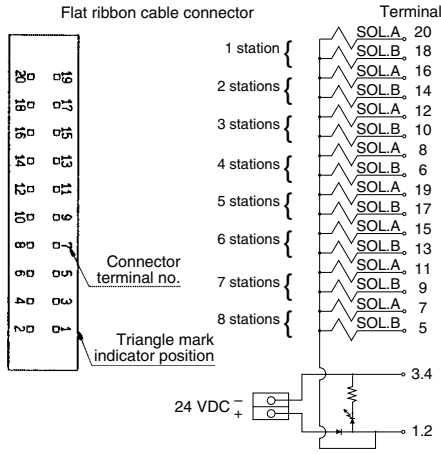
Option

Symbol	Option	VQ1000	VQ2000	Note
Nil	None	●	●	
B	Back pressure check valve	●	●	(2)
D	DIN rail mounting style	●	●	
G1	1 set of regulator unit	●		(3)
G2	2 sets of regulator unit			
G3	3 sets of regulator unit			
J□	With vacuum ejector unit	●		(4)
K	Special Wiring Specifications (Not double wiring)	●	●	(5)
N	With name plate	●	●	
R	External pilot	●	●	(6)
S	Built-in silencer, direct exhaust	●	●	

Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -BRS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using the manifold specification sheet.
Note 3) Specify the mounting position in the manifold specification sheet.
Note 4) Refer to page 2-4-170 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Specify the wiring specifications in the manifold specification sheet.
Note 6) Indicate "R" for the valve with external pilot.

● Connector assembly

Electric circuit diagram (Below wiring is the case of all double solenoid connections.)



As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-178.

How to Order Valves

VQ 1 1 0 0 Y – 5 ☐ ☐

Series

1	VQ1000
2	VQ2000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Seal

0	Metal seal
1	Rubber seal

Function

Symbol	Specifications	DC
Nil	Standard type	(1.0 W) ○
H	High pressure type	(1.5 W) ○
Y	Low wattage type	(0.5 W) ○

Coil voltage

5	24 VDC

Light/Surge voltage suppressor

Nil	Yes
E	None

Manual override

Nil	Non-locking push type (Tool required)
B	Lockking type (Tool required)
C	Locking type (Manual)

Note) For external pilot specifications, refer to "Option" on page 2-4-179.

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>

Flat ribbon cable with power supply terminal block and 3 m cable

VV5Q11-08C6G2 ··· 1 set–Manifold base no.

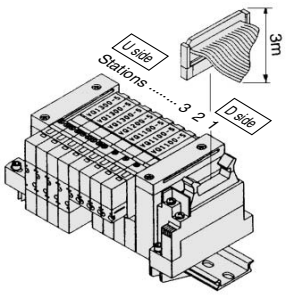
∗VQ1100-5 ····· 4 sets–Valve part no. (Stations 1 to 4)

∗VQ1200-5 ····· 1 set–Valve part no. (Station 5)

∗VQ1300-5 ····· 3 sets–Valve part no. (Stations 6 to 8)

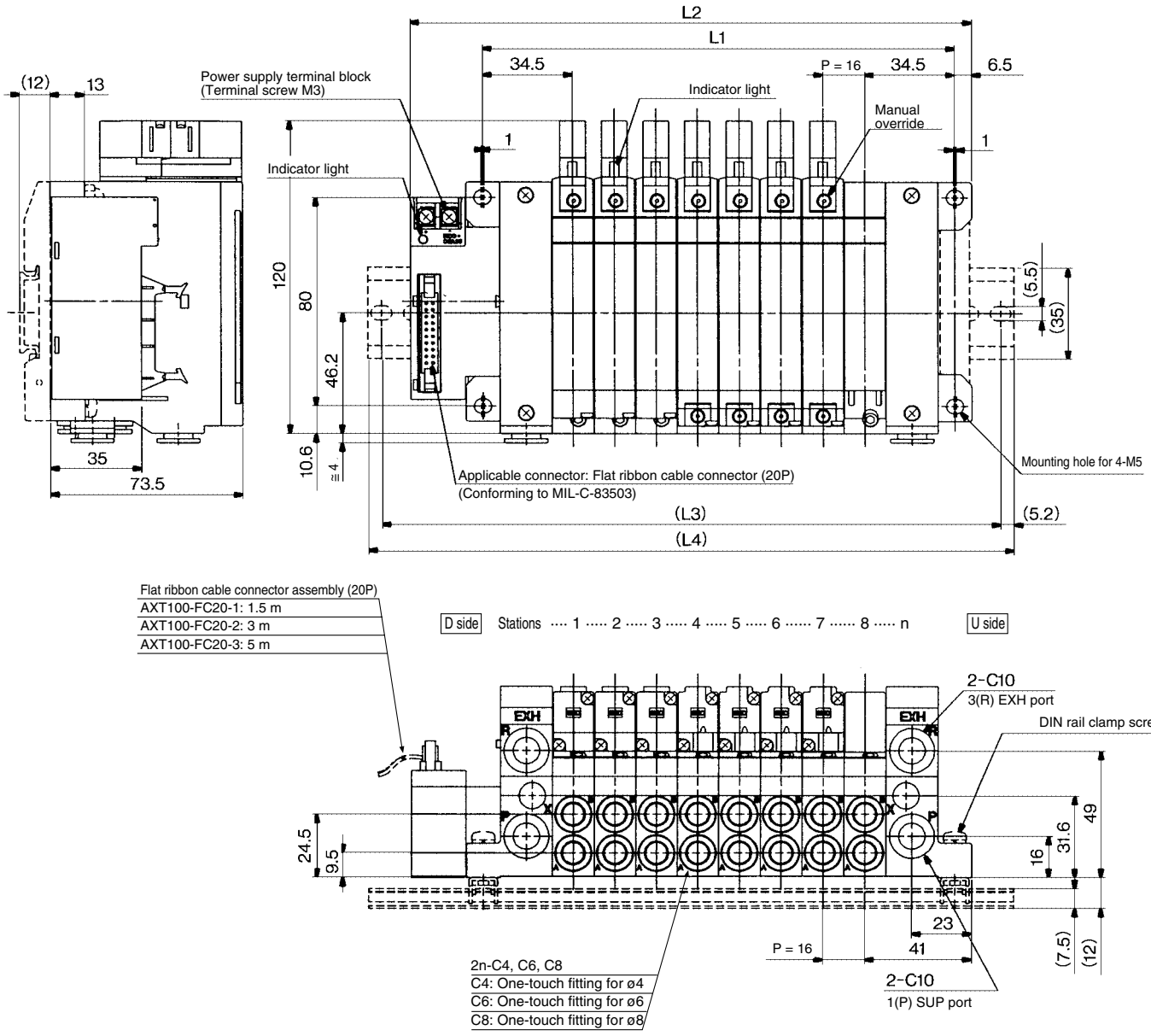
Prefix the asterisk to the part nos. of the solenoid valve, etc.

Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.



VQ2000

The broken lines indicate the DIN rail mounting style [-D].



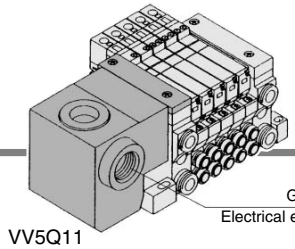
Dimensions

Formula L1 = 16n + 53, L2 = 16n + 87 n: Station (Maximum 16 stations)

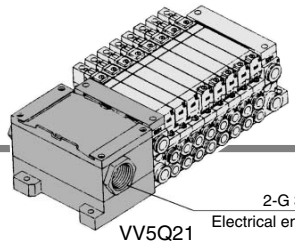
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309
L2	119	135	151	167	183	199	215	231	247	263	279	295	311	327	343
(L3)	150	162.5	175	187.5	212.5	225	237.5	262.5	275	287.5	300	325	337.5	350	362.5
(L4)	160.5	173	185.5	198	223	235.5	248	273	285.5	298	310.5	335.5	348	360.5	373

Vacuum ejector unit style: Formula L1 = 10.5n + 29.7 + (Number of ejector units x 26.7)
L2 = 10. 5n + 46.8 + (Number of ejector units x 26.7)
L4 is L2 plus about 30.

T VQ1000/2000 Kit (Terminal block box kit)



VV5Q11



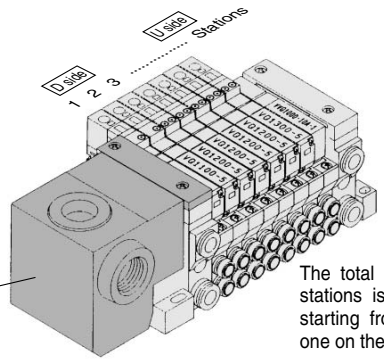
VV5Q21

IP65 compliant

- This kit has a small terminal box inside a junction box. The electrical entry port {VQ1000: G 1/2, VQ2000: G 3/4} permits connection of conduit fittings.
- Maximum stations are 24.
- Enclosure: Dusttight/Low jetproof type (IP65) compliant (Series VQ2000)

Manifold Specifications

Series	Porting specifications			Applicable stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
VQ1000	Side	C8	C3, C4, C6, M5	Max. 24 stations
VQ2000	Side	C10	C4, C6, C8	Max. 20 stations



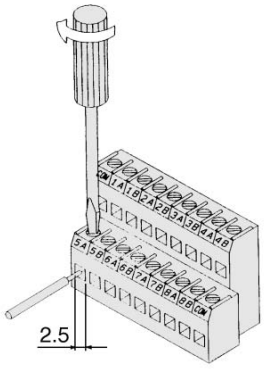
The total number of stations is tabulated starting from station one on the D side.

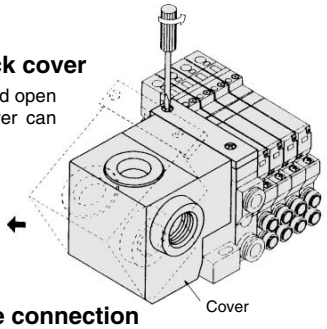
Terminal block connection

Open the terminal block cover to connect the wires to the terminal block.

Step 1. How to remove terminal block cover

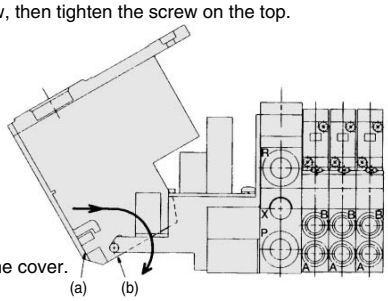
Loosen the screws on the terminal block cover and open it in the direction shown by the arrow. The cover can then be removed from the terminal block.





Step 2. Wire connection

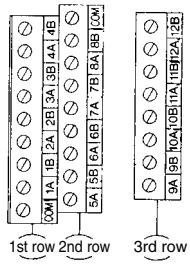
The diagram on the left shows the terminal block wiring schematic. All stations are provided with double solenoid wiring. Insert each lead wire into the terminal opening and tighten the screw directly above.
How to connect is inserting the lead wire into the terminal window, then tighten the screw on the top.



Step 3. How to replace terminal block cover

Hook groove (a) on shaft (b) and close the cover. Then tighten the screws.

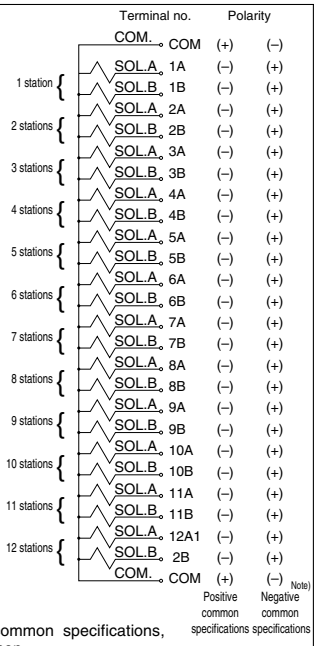
● Electrical wiring specifications: VQ1000



The quantity of terminal blocks used depends on the number of manifold stations:

Manifold	Terminal blocks
2 to 8 stations	2 rows
9 to 12 stations	3 rows

As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types.
Mixed single and double wiring is available as an option. For details, refer to page 2-4-178.



Note) When using the negative common specifications, use valves for negative common.
For details, refer to "Option" on page 2-4-178.

How to Order Manifold

VV5Q 1 1 – 08 C6 T 0 – N

Series

1	VQ1000
2	VQ2000

Manifold

1	Plug-in unit

Stations

02	2 stations
⋮	⋮
24 Note)	24 stations

Note) VQ2000: Max. 20 stations
For details, refer to page 2-4-178.

For negative common specifications, refer to "Option" on page 2-4-178.

Cylinder port

Symbol	Port size	VQ1000	VQ2000
C3	With One-touch fitting for ø3.2	●	
C4	With One-touch fitting for ø4	●	●
C6	With One-touch fitting for ø6	●	●
C8	With One-touch fitting for ø8		●
M5	M5 thread	●	
CM	With mixed size/with port plug	●	● (3)

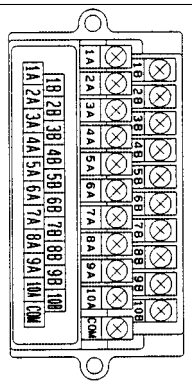
Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type.
Example) B6 (Elbow One-touch fittings for ø6, bottom piping.)
Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" in the manifold specification sheet.
Note 4) For One-touch fittings in inch size, refer to "Option" on page 2-4-179.

Option

Symbol	Option	VQ1000	VQ2000	Note
Nil	None	●	●	
B	With back pressure check valve	●	●	(2)
D	DIN rail mounting style	●	●	
G1	1 set of regulator unit	●		(3)
G2	2 sets of regulator unit			
G3	3 sets of regulator unit			
J□	With vacuum ejector unit	●		(4)
K	Special wiring specifications (Not double wiring)	●	●	(5)
N	With name plate	●	●	
R	External pilot	●	●	(6)
S	Built-in silencer, direct exhaust	●	●	
W	Enclosure: Dusttight/Low jetproof type (IP65)		●	

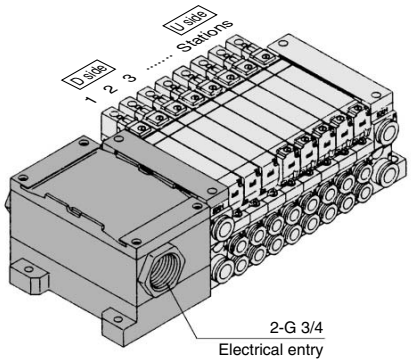
Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -BRS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using the manifold specification sheet.
Note 3) Specify the mounting position in the manifold specification sheet.
Note 4) Refer to page 2-4-170 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Specify the wiring specifications in the manifold specification sheet.
Note 6) Indicate "R" for the valve with external pilot.

● Special wiring specifications: VQ2000

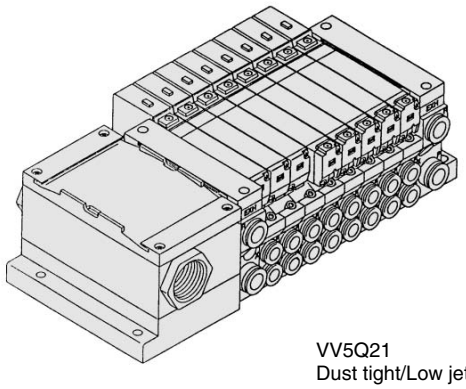


		Terminal no.	Polarity	
1 station	SOL.A	1A	(–)	(+)
	SOL.B	1B	(–)	(+)
2 stations	SOL.A	2A	(–)	(+)
	SOL.B	2B	(–)	(+)
3 stations	SOL.A	3A	(–)	(+)
	SOL.B	3B	(–)	(+)
4 stations	SOL.A	4A	(–)	(+)
	SOL.B	4B	(–)	(+)
5 stations	SOL.A	5A	(–)	(+)
	SOL.B	5B	(–)	(+)
6 stations	SOL.A	6A	(–)	(+)
	SOL.B	6B	(–)	(+)
7 stations	SOL.A	7A	(–)	(+)
	SOL.B	7B	(–)	(+)
8 stations	SOL.A	8A	(–)	(+)
	SOL.B	8B	(–)	(+)
9 stations	SOL.A	9A	(–)	(+)
	SOL.B	9B	(–)	(+)
10 stations	SOL.A	10A	(–)	(+)
	SOL.B	10B	(–)	(+)
	COM.		(+)	(–) Note)
			Positive common specifications	Negative common specifications

Irrespective of the valves or options, the internal wiring is made double (connected to SOL.A and SOL.B) for respective stations of the manifold.
Mixed single and double wiring is available as an option. For details, refer to page 2-4-178.
Note) When using the negative common specifications, use valves for negative common.
For details, refer to "Option" on page 2-4-178.



The total number of stations is tabulated starting from station one on the D side.



VV5Q21
Dust tight/Low jetproof type

How to Order Valves

VQ 1 1 0 0 Y – 5 ☐ ☐ ☐

Series

1	VQ1000
2	VQ2000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Seal

0	Metal seal
1	Rubber seal

Note) For external pilot and negative COM specifications, refer to "Option" on pages 2-4-178 to 2-4-179.

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	Note) ○
H	High pressure type	(1.5 W) ○	—
Y	Low wattage type	(0.5 W) ○	—

Coil voltage

1	100 VAC (50/60 Hz)
3	100 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

Note) For power consumption of AC type, refer to page 2-4-179.

Light/Surge voltage suppressor

Nil	Yes
E	None

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)
C	Locking type (Manual)

Enclosure

Nil	Dust-protected
W	Dusttight/Low jetproof type (IP65) Note)

Note) VQ2000 only.

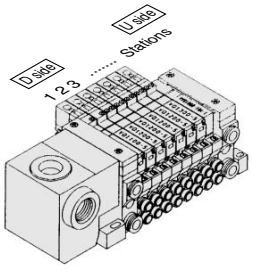
How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>
Terminal block box kit
VV5Q11-08C6T0 ··· 1 set–Manifold base no.
∗VQ1100-5 ····· 2 sets–Valve part no. (Stations 1 to 2)
∗VQ1200-5 ····· 4 sets–Valve part no. (Stations 3 to 6)
∗VQ1300-5 ····· 1 set–Valve part no. (Station 7)
∗VVQ1000-10A-1 ··· 1 set–Blanking plate part no. (Station 8)

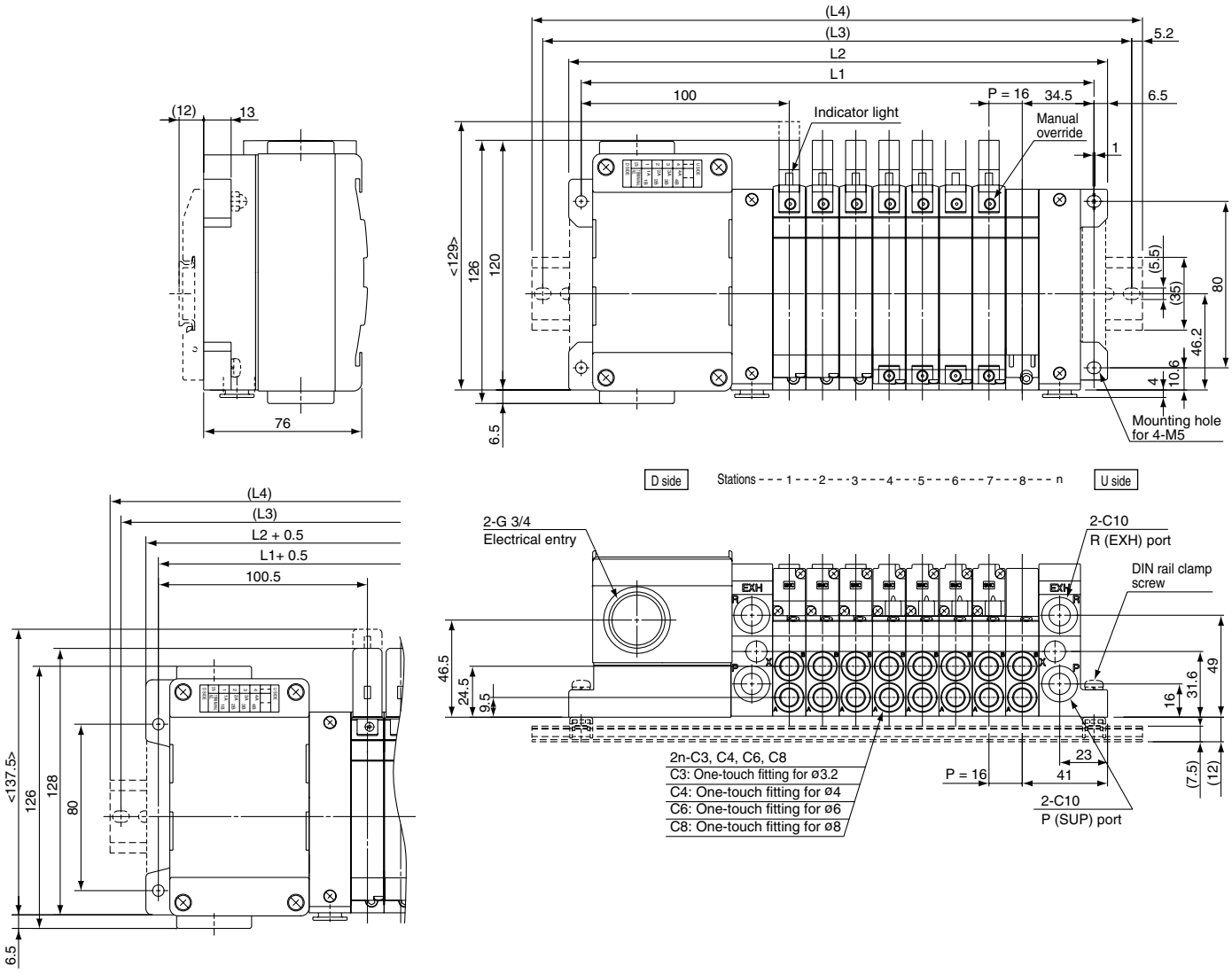
Prefix the asterisk to the part nos. of the solenoid valve, etc.

Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.



VQ2000

The broken lines and dimensions in parentheses indicate DIN rail mounting style [-D].



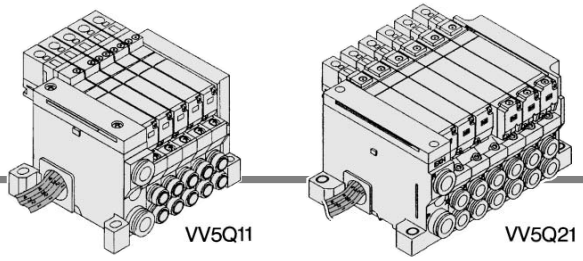
< >: AC

Dimensions

Formula L1 = 16n + 118.5, L2 = 16n + 131 n: Station (Maximum 10 stations)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	150.5	166.5	182.5	198.5	214.5	230.5	246.5	262.5	278.5	294.5	310.5	326.5	342.5	358.5	374.5	390.5	406.5	422.5	438.5
L2	163	179	195	211	227	243	259	275	291	307	323	339	355	371	387	403	419	435	451
(L3)	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5	375	400	412.5	425	450	462.5	475
(L4)	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373	385.5	410.5	423	435.5	460.5	473	485.5

L VQ1000/2000 Kit (Lead wire cable)

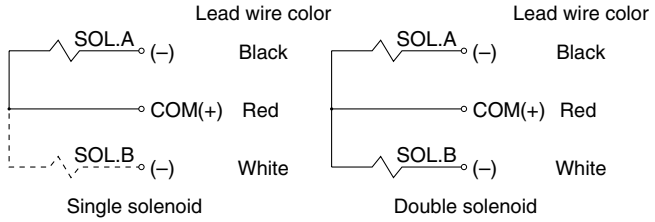


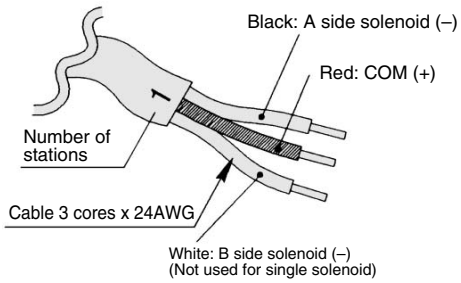
IP65 compliant

- Direct electrical entry. Models with one or more stations are available.
- (SUP) and R (EXH) ports are provided on one side for further space savings.
- Maximum stations are 8.
- Enclosure: Dusttight/Low jetproof type (IP65) compliant (Series VQ2000)

Wiring specifications: Positive COM ●

Three lead wires are attached to each station regardless of the type of valve which is mounted.
The red wire is for COM connection.





Use any of the following cable lead wire assembly to change the lead wire length:

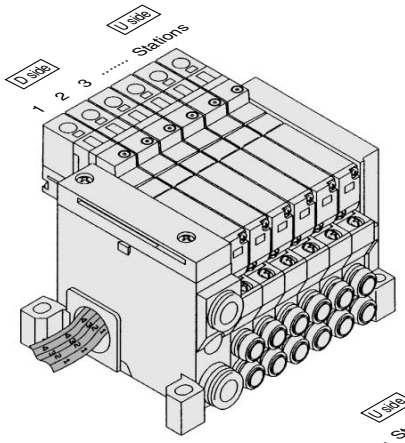
Lead Wire Assembly with Connector

Lead wire length	Part no.
0.6 m	**VVQ1000-84A-6-**∗
1.5 m	**VVQ1000-84A-15-**∗
3 m	**VVQ1000-84A-30-**∗

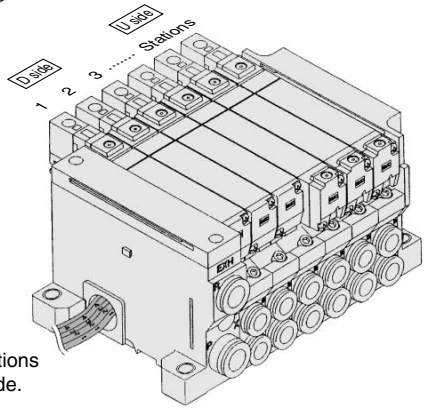
∗ No. of stations 1 to 8

Manifold Specifications

Series	Porting specifications			Applicable stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
VQ1000	Side	C8	C3, C4, C6, M5	Max. 8 stations
VQ2000	Side	C10	C6, C8	Max. 8 stations



VV5Q11



The total number of stations is tabulated on the D side.

VV5Q21

How to Order Manifold

VV5Q 1 1 – 06 C6 L 1 – N

Series

1	VQ1000
2	VQ2000

Manifold

1	Plug-in unit

Stations

01	1 station
⋮	⋮
08	8 stations

Note) For negative common specifications, refer to "Option" on page 2-4-178.

Cylinder port

Symbol	Port size	VQ1000	VQ2000
C3	With One-touch fitting for ø3.2	●	
C4	With One-touch fitting for ø4	●	●
C6	With One-touch fitting for ø6	●	●
C8	With One-touch fitting for ø8		●
M5	M5 thread	●	
CM	With mixed size/with port plug	●	● (3)

Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type. (VQ1000 only)
Example) B6 (Elbow One-touch fittings for ø6, bottom piping.)
Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" in the manifold specification sheet.
Note 4) Inch-size One-touch fittings are available. For details, refer to page 2-4-179.

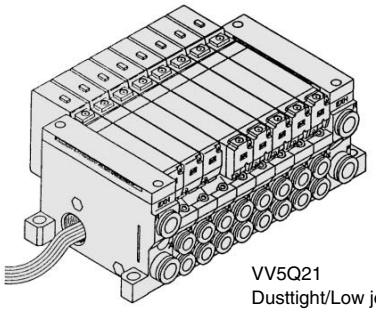
Cable (Length)

0	Cable length 0.6 m
1	Cable length 1.5 m
2	Cable length 3 m

Option

Symbol	Option	VQ1000	VQ2000	Note
Nil	None	●	●	
B	With back pressure check valve	●	●	(2)
D	DIN rail mounting style	●	●	
G1	1 set of regulator unit	●		(3)
G2	2 sets of regulator units	●		(3)
G3	3 sets of regulator units	●		(3)
J□	With vacuum ejector unit	●		(4)
N	With name plate	●	●	
R	External pilot	●	●	(5)
S	Built-in silencer, direct exhaust	●	●	
W	Enclosure: Dusttight/Low jetproof type (IP65)		●	

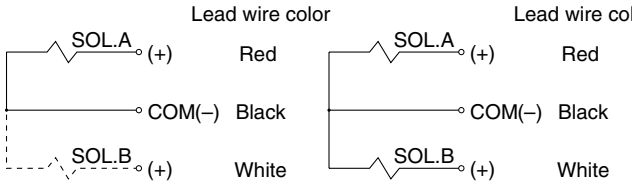
Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -BRS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by the manifold specification sheet.
Note 3) Specify the mounting position in the manifold specification sheet.
Note 4) Refer to page 2-4-170 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Indicate "R" for the valve with external pilot.

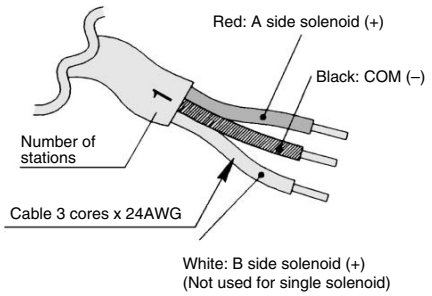


VV5Q21
Dusttight/Low jetproof type

● Wiring specifications: Negative COM (Option)

Three lead wires are attached to each station regardless of the type of valve which is mounted.
The black wire is for COM connection.





Lead Wire Assembly with Connector

Lead wire length	Part no.
0.6 m	**VVQ1000-84AN-6-**∗
1.5 m	**VVQ1000-84AN-15-**∗
3 m	**VVQ1000-84AN-30-**∗

∗ No. of stations 1 to 8

Note) When using the negative common specifications, use valves for negative common. For negative common specifications, refer to "Option" on page 2-4-178.

How to Order Valves

VQ 1 1 0 0 Y — 5 ☐ ☐ ☐

Series

1	VQ1000
2	VQ2000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Seal

0	Metal seal
1	Rubber seal

Note) For external pilot and negative COM specifications, refer to "Option" on 2-4-178 to 2-4-179.

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	○ Note)
H	High pressure type	(1.5 W) ○	—
Y	Low wattage type	(0.5 W) ○	—

Note) For power consumption of AC type, refer to page 2-4-129.

Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

Light/Surge voltage suppressor

Nil	Yes
E	None

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)
C	Locking type (Manual)

Enclosure

Nil	Dusttight
W	Dusttight/Low jetproof Note) type (IP65)

Note) VQ2000 only.

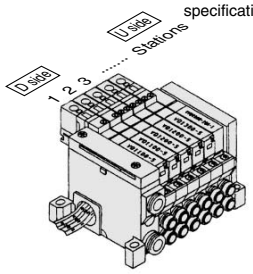
How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>
Lead wire kit with cable (3 m)
VV5Q11-06C6L2 ···· 1 set–Manifold base no.
∗VQ1100-5 ····· 2 sets–Valve part no. (Stations 1 to 2)
∗VQ1200-5 ····· 2 sets–Valve part no. (Stations 3 to 4)
∗VQ1300-5 ····· 1 set–Valve part no. (Station 5)
∗VVQ1000-10A-1 ··· 1 set–Blanking plate part no. (Station 6)

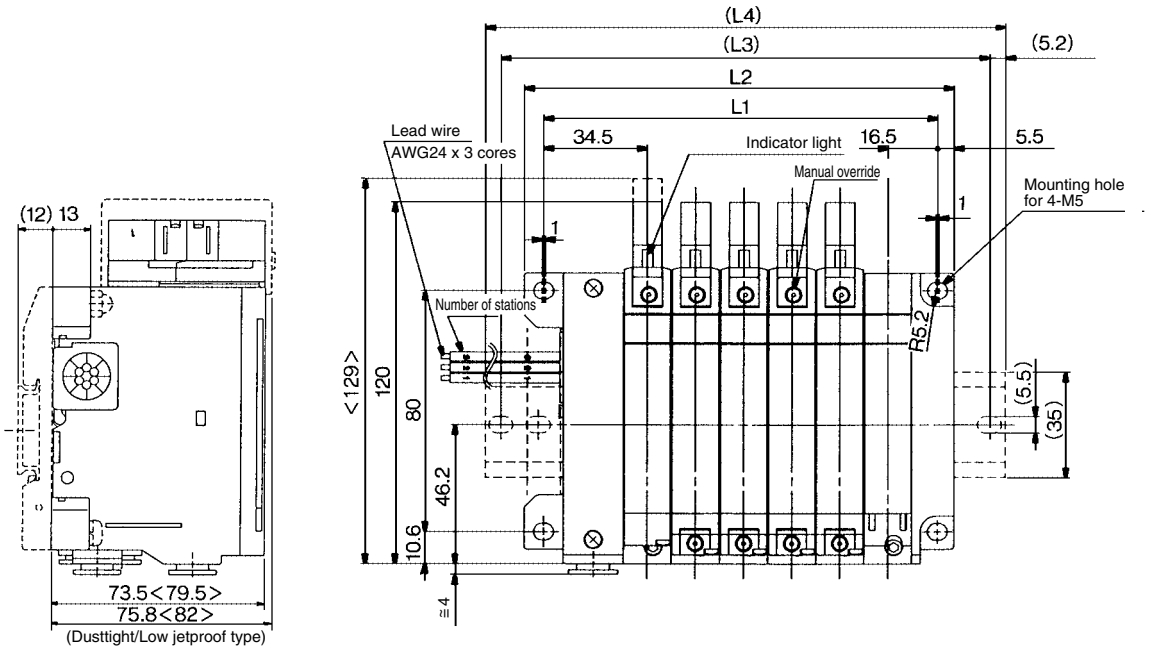
Prefix the asterisk to the part nos. of the solenoid valve, etc.

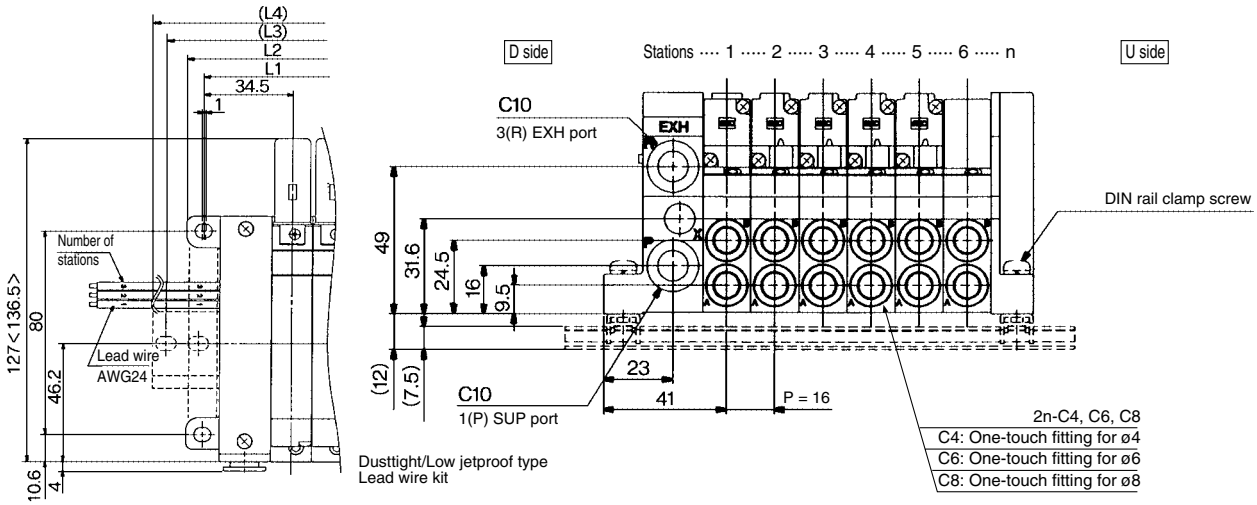
Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.



VQ2000

The broken lines indicate the DIN rail mounting style [-D].





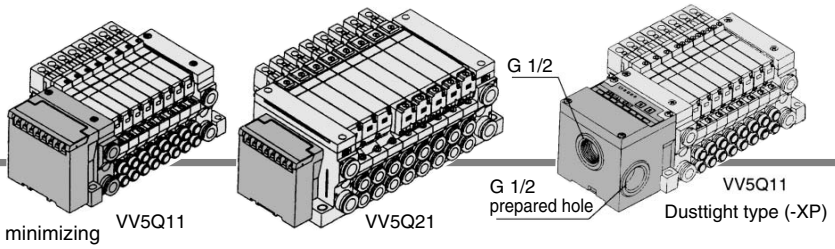
< >: AC

Dimensions

Formula L1 = 16n + 35, L2 = 16n + 47 n: Station (Maximum 8 stations)

L \ n	1	2	3	4	5	6	7	8
L1	51	67	83	99	115	131	147	163
L2	63	79	95	111	127	143	159	175
(L3)	87.5	100	125	137.5	150	162.5	184.5	200
(L4)	98	110.5	135.5	148	160.5	173	198	210.5

S VQ1000/2000 Kit (Serial transmission unit)

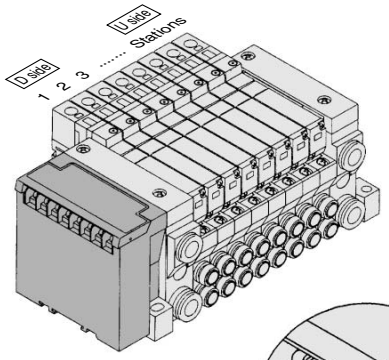


IP65 compliant

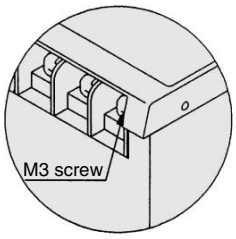
- The serial transmission system reduces wiring work, while minimizing wiring and saving space.
- The system comes in type SA (generic for small scale systems) for equipment with a small number of I/O points, or 32 points max., type SB (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., type SC (applicable to OMRON models), type SD (applicable to SHARP models: 504 points max.), type SF (applicable to NKE models: 128 points max.), type SJ (applicable to SUNX models), type SK (applicable to Fuji Electric models), type SQ (applicable to OMRON's Compo Bus/D), and type SR (applicable to OMRON's Compo Bus/S).
- Max. 16 stations. (Specify a model with 9 to 16 stations by using the manifold specification sheet.)
- Enclosure: Dusttight, Low jetproof type (IP65) compliant (Series VQ2000)

Manifold Specifications

Series	Porting specifications			Applicable stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
VQ1000	Side	C8	C3, C4, C6, M5	Max. 16 stations
VQ2000	Side	C10	C4, C6, C8	Max. 16 stations



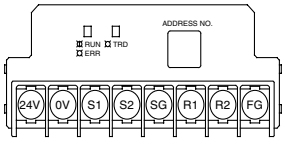
- Stations are counted from station 1 on the D side.
- Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. The optional specification permits the mixture of single and double wiring. For details, refer to page 2-4-178.



Item	Specifications
External power supply	24 VDC +10%, –5%
Current consumption (Internal unit)	SA, SB, SBB, SD, SE, SF1, SH, SG, SJ½, SK, SQ, SR½, SU, SV: 0.1A SC: 0.3A

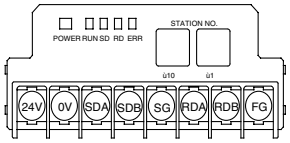
Name of terminal block (LED)

Type SA
With general type SI unit (Series EX300)



LED	Description
TRD	Lighting during data reception
RUN/ERR	Blinking when received data is normal; Lighting when data reception

Type SB
Mitsubishi Electric Corporation MELSECNET/MINI-S3 Data Link System



LED	Description
POWER	Lighting when power is turned ON
RUN	Lighting when data transmission with the master station is normal
RD	Lighting during data reception
SD	Lighting during data transmission
ERR.	Lighting when reception data error occurs. Light turns off when the error is corrected.

Note

- T unit
  Can be connected with PLC I/O card for serial transmission.
  EX300-TMB1···For models of Mitsubishi Electric Corporation
  EX300-TTA1···For models of OMRON Corporation
  EX300-TFU1···For models of Fuji Electri Co., Ltd.
  EX300-TOO1··· For general models
- ∗ Up to 32 points per unit.
- No. of output points, 16 points

- Master station:
  PLC made by Mitsubishi Electric Corporation
  Series MELSEC-A
  AJ71PT32-S3, AJ71T32-S3
  A1SJ71PT32-S3
- ∗ Max. 64 stations, connected to remote I/O stations (Max. 512 points).
- No. of output points, 16 points. No. of sta. occupied, 2 stations

∗ For details on specifications and handling, refer to the separate technical instruction manual.

How to Order Manifold

VV5Q 1 1 – 08 C6 S A – N – XP

Series

1	VQ1000
2	VQ2000

Manifold

1	Plug-in unit

Stations

02	2 stations
⋮	⋮
16 Note	16 stations

Note) For details, refer to page 2-4-178.

Cylinder port

Symbol	Port size	VQ1000	VQ2000
C3	With One-touch fitting for ø3.2	●	
C4	With One-touch fitting for ø4	●	●
C6	With One-touch fitting for ø6	●	●
C8	With One-touch fitting for ø8		●
M5	M5 thread	●	
CM	With mixed size/with port plug	●	● (3)

Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type. (VQ1000 only).
Example) B6 (Elbow One-touch fittings for ø6, bottom piping.)
Note 2) Specify as "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" in the manifold specification sheet.
Note 4) For inch-size One-touch fittings, refer to "Option" on page 2-4-179.

Model

O	Without SI unit	Max.16 stations
A	With general type SI unit (Series EX300)	
B (2)	Mitsubishi Electric Corp.: MELSECNET/MINI-S3 Data Link System	
BB	Mitsubishi Electric Corp.: MELSECNET/MINI-S3 Data Link System (2 power supply lines)	
C	OMRON Corp.: SYSBUS Wire System	
D	SHARP Corp.: Satellite I/O Link System	
E	Matsushita Electric Works: MEWNET-F System	
F1	NKE Corp.: Uni-wire System (16 output points)	
G	Rockwell Automation: Allen Bradley Remote I/O (RIO) System	
H	NKE Corp.: Uni-wire H System	
J1	SUNX Corp.: S-LINK System (16 output points)	
J2	SUNX Corp.: S-LINK System (8 output points)	Max. 8 stations
K	Fuji Electric Co.: T-LINK Mini System	Max.16 stations
Q	DeviceNet, CompoBus/D (OMRON Corp.)	
R1	OMRON Corp.: CompoBus/S System (16 output points)	
R2	OMRON Corp.: CompoBus/S System (8 output points)	Max. 8 stations
U	JEMANET (JPCN-1)	Max. 16 stations
V	Mitsubishi Electric Corp.: CC-LINK System	Max. 16 stations

Note 1) The general type requires a transmission unit on CPU side.
Note 2) SBB kit is usable only for VQ2000 dusttight/low jetproof type (IP65).

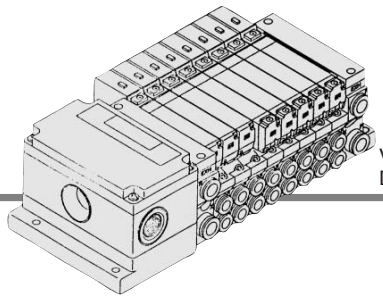
Dust-protected type (-XP)

Suffix "-XP" for the dust-protected type SI units. (Except SE and SQ)

Option

Symbol	Option	VQ1000	VQ2000	Note
Nil	None	●	●	
B	With back pressure check valve	●	●	(2)
D	DIN rail mounting style	●	●	
G1	1 set of regulator unit	●		(3)
G2	2 sets of regulator unit			
G3	3 sets of regulator unit			
J□	With vacuum ejector unit	●		(4)
K	Special wiring specifications (Not double wiring)	●	●	(5)
N	With name plate	●	●	
R	with external pilot	●	●	(6)
S	Built-in silencer, direct exhaust	●	●	
W	Enclosure: Dust tight/Low jetproof type (IP65) (Except SE)		●	(8)

Note 1) When two or more symbols are specified, indicate them alphabetically.
Example) -BRS.
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by manifold specification sheet.
Note 3) Specify the mounting position in the manifold specification sheet.
Note 4) Refer to page 2-4-170 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Specify the wiring specifications in the manifold specification sheet.
Note 6) Indicate "R" for the valve with external pilot.
Note 7) A combination of "W" and "XP" is unavailable.
Note 8) Refer to "Dimensions" on page 2-4-157 for SI unit and valve, in case of W (dusttight/low jetproof type).



VV5Q21
Dust tight Low jetproof type (-W)

● SI unit output and coil numbering

<Wiring example 1>

SI unit output no. ····· 0 1 2 3 4 5 6 7 8 9

	A	B	A	B	A	Un-used	A	Un-used	A	B
SI unit	Double		Double		Single		Single		Single	
Stations	1		2		3		4		5	

Double wiring (Standard)

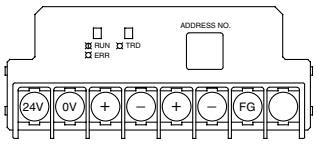
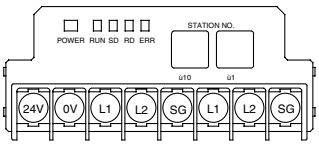
Mixed wiring is available as an option.
Use the manifold specification sheet to specify.

<Wiring example 2>

SI unit output no. ····· 0 1 2 3 4 5 6 7

	A	B	A	B	A	A	A	B
SI unit	Double		Double		Single	Single	Single	
Stations	1		2		3	4	5	

Single/Double mixed wiring (Option)

	Type SC OMRON Corporation SYSBUS Wire System	Type SD SHARP Corporation Satellite I/O Link System
Name of terminal block (LED)		
	LED: RUN — Lights when transmission is normal and PLC is in operation mode LED: T/R ERR — Blinks during data transmission/reception ON when transmission is abnormal.	LED: POWER — ON when power supply is ON LED: RUN — Lights when power is ON and slave stations are operating normally LED: ERROR — Lights when slave station switch setting is abnormal, communication is abnormal, PLC stopped and defective slave unit LED: R.SET HOLD — ON for master unit control input
Note	• Master station unit: OMRON PLC SYSMAC C (CV) series Types C500-RM201 and C200H-RM201 ∗ 32 units max., transmission terminal connection (512 points max.) • No. of output points, 16 points	• Master station unit: SHARP's PLC New Satellite Series W ZW-31LM New Satellite Series JW JW-23LM, JW 31LM ∗ Max. 31 units, I/O slave stations connected (504 points max.) • No. of output points, 16 points

How to Order Valves

VQ 1 1 0 0 Y — 5 ☐ ☐

Series

1	VQ1000
2	VQ2000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Seal

0	Metal seal
1	Rubber seal

Note) For external pilot and negative COM specifications, refer to "Option" on pages 2-4-178 to 2-4-179.

Function

Symbol	Specifications	DC
Nil	Standard type	(1.0 W) ○
H	High pressure type	(1.5 W) ○
Y	Low wattage type	(0.5 W) ○

Coil voltage

5	24 VDC; With indicator light/surge voltage suppressor

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)
C	Locking type (Manual)

Enclosure

Nil	Dust-protected
W	Dust tight/Low jetproof type (IP65) Note)

Note) VQ2000 only.

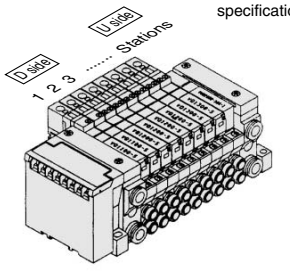
How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

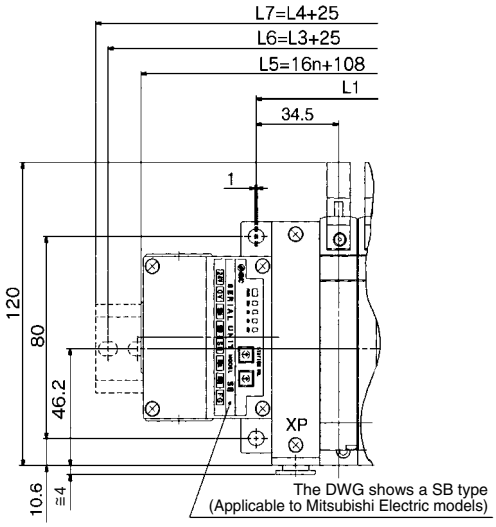
<Example>
Serial transmission kit
VV5Q11-08C6SA ··· 1 set–Manifold base no.
∗VQ1100-5 ····· 2 sets–Valve part no. (Stations 1 to 2)
∗VQ1200-5 ····· 4 sets–Valve part no. (Stations 3 to 6)
∗VQ1300-5 ····· 1 set–Valve part no. (Station 7)
∗VVQ1000-10A-1 ··· 1 set–Blanking plate part no. (Station 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

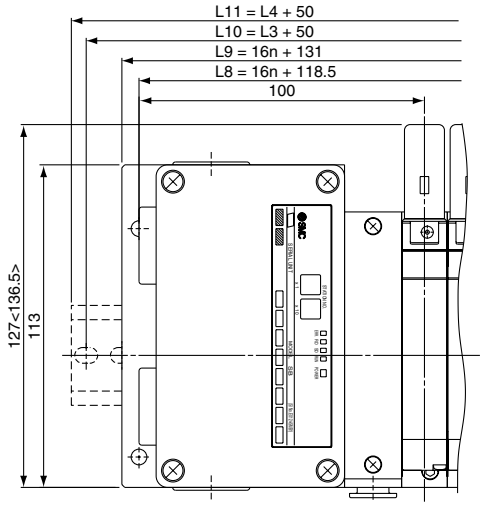
Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.



VQ2000

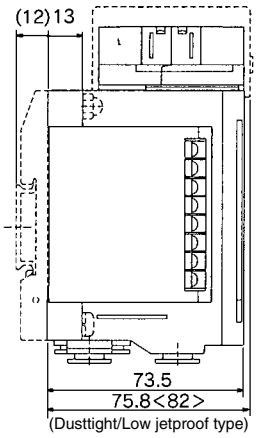


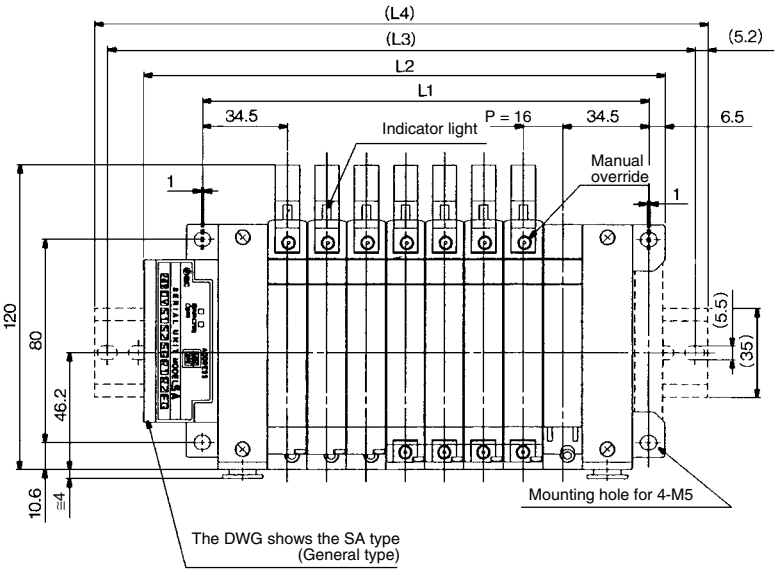
Dusttight SI unit



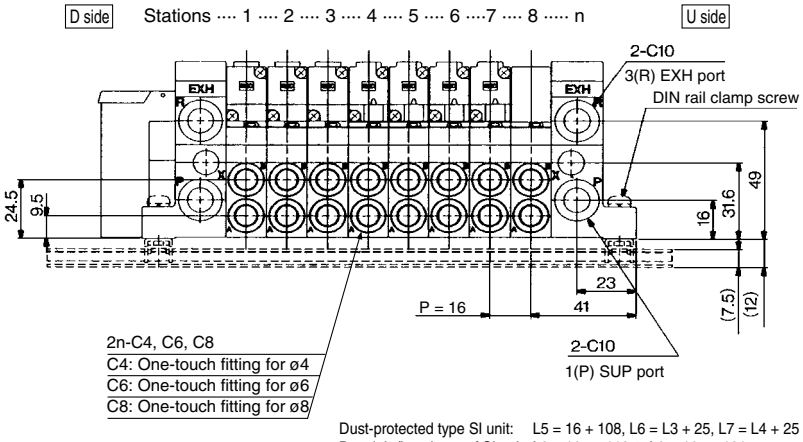
The broken lines indicate the DIN rail mounting style [-D].

Dust tight/Low jetproof type (IP65) SI unit





< >: AC



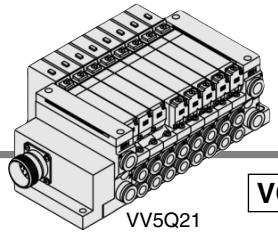
Dust-protected type SI unit: L5 = 16 + 108, L6 = L3 + 25, L7 = L4 + 25
Dusttight/Low jetproof SI unit: L8 = 16n + 118.5, L9 = 16n + 131
L10 = L3 + 50, L11 = L4 + 50
Formula : L1 = 16n + 53, L2 = 16n + 83 n: Stations (Maximum 16 stations)

Dimensions

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	85	101	117	133	149	165	181	197	213	229	245	261	277	293	309
L2	115	131	147	163	179	195	211	227	243	259	275	291	307	323	339
(**L3**)	137.5	162.5	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5
(**L4**)	148	173	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373

Note) Manifolds with SI unit for Matsushita Electric Works' MEWNET FP and Rockwell Automation's model are the same with L5, L6 and L7 dimensions of dustproof SI unit.

M VQ2000
Kit (Flat ribbon cable connector)


VV5Q21

VQ2000 only

- MIL flat cable connector reduces installation labor for electrical connection.
- Manifold and connectors, both compliant with the IP65 rating (dusttight, low jetproof), provide a high degree of protection for the electrical parts.
- Maximum stations are 24.

Manifold Specifications

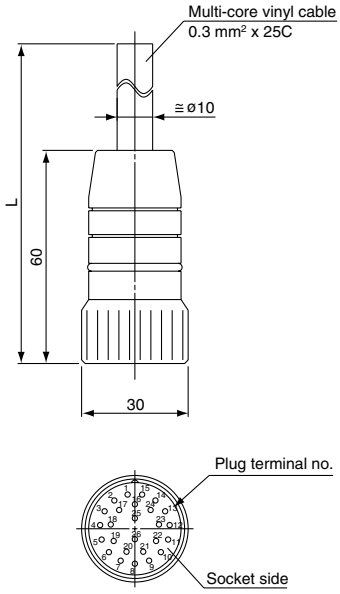
Series	Porting specifications			Applicable stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
VQ2000	Side	C10	C4, C6, M8	Max. 24 stations

Circular Connector (26 pins)

Cable assembly ●

AXT100-MC26- 015 / 030 / 050

(Circular connector assembly included in a specific manifold model no. specific manifold model no. Refer to How to Order Manifold.)



Circular Connector Cable Assembly (Option)

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-MC26-015	Cable 25 core x 24AWG
3 m	AXT100-MC26-030	
5 m	AXT100-MC26-050	

Electric Characteristics

Item	Characteristics
Conductor resistance Ω/km, 20°C	65 or less
Voltage limit V, 1 min, AC	1000
Insulation resistance MΩkm, 20°C	5 or more

Note) The minimum bending radius of circular connector cable is 20 mm.

Circular Connector Cable Assembly Terminal No.

Terminal no.	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Gray	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	None
26	White	None

How to Order Manifold

VV5Q 2 1 – 08 C6 M 1 – N W

Enclosure
IP65 (Dust tight/Low jetproof type)

Series

2	VQ2000

Manifold

1	Plug-in unit

Stations

02	2 stations
⋮	⋮
24	24 stations

Note) For details, refer to page 2-4-178.

Cable (Length)

0	Without cable
1	With cable (1.5 m)
2	With cable (3 m)
3	With cable (5 m)

Cylinder port

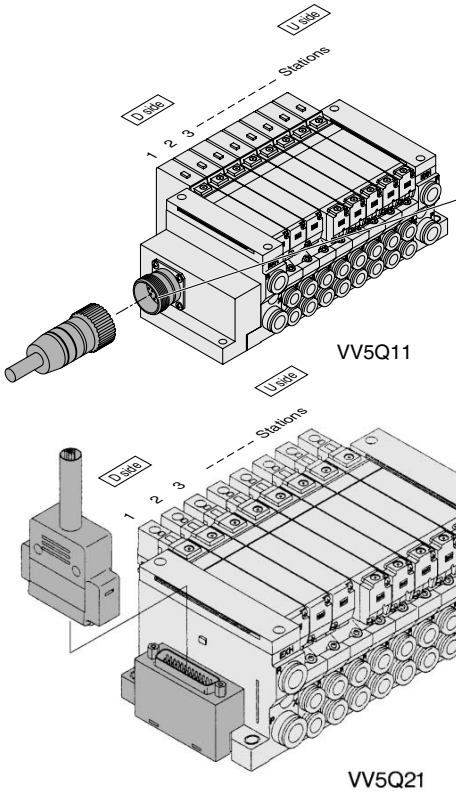
Symbol	Port size
C4	With One-touch fitting for ø4
C6	With One-touch fitting for ø6
C8	With One-touch fitting for ø8
CM	With mixed size/with port plug

Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type.
Example) B6 (Elbow One-touch fittings for ø6, bottom piping.)
Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" in the manifold specification sheet.
Note 4) Inch-size One-touch fittings are available. For details, refer to page 2-7-179.

Option

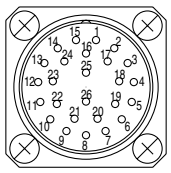
Symbol	Option	Note
Nil	None	
B	With back pressure check valve	(2)
D	DIN rail mounting	
K	Special wiring specifications (Not double wiring)	(3)
N	With name plate	
R	External pilot	(4)

Note 1) When two or more symbols are specified, indicate them alphabetically.
Example) -BKR
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations.
Note 3) If not all stations need this check valve, specify the stations where check valves are installed by using the manifold specification sheet.
Note 4) Specify the wiring by using of the manifold specification sheet.
Indicate "R" for the valve with external pilot.



The total number of stations is tabulated starting from station one on the D side.

● Electrical wiring specifications



As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types.
Mixed single and double wiring is available as an option. For details, refer to page 2-7-178.

Circular connector cable assembly

AXT100-MC26-$^{015}_{030}_{050}$ Wire Color

	Terminal no.		Polarity	Lead wire color	Dot marking
1 station {	SOL.A	1	(–) (+)	Black	None
	SOL.B	2	(–) (+)	Brown	None
2 stations {	SOL.A	3	(–) (+)	Red	None
	SOL.B	4	(–) (+)	Orange	None
3 stations {	SOL.A	5	(–) (+)	Yellow	None
	SOL.B	6	(–) (+)	Pink	None
4 stations {	SOL.A	7	(–) (+)	Blue	None
	SOL.B	8	(–) (+)	Purple	White
5 stations {	SOL.A	9	(–) (+)	Gray	Black
	SOL.B	10	(–) (+)	White	Black
6 stations {	SOL.A	11	(–) (+)	White	Red
	SOL.B	12	(–) (+)	Yellow	Red
7 stations {	SOL.A	13	(–) (+)	Orange	Red
	SOL.B	14	(–) (+)	Yellow	Black
8 stations {	SOL.A	15	(–) (+)	Pink	Black
	SOL.B	16	(–) (+)	Blue	White
9 stations {	SOL.A	17	(–) (+)	Purple	None
	SOL.B	18	(–) (+)	Gray	None
10 stations {	SOL.A	19	(–) (+)	Orange	Black
	SOL.B	20	(–) (+)	Red	White
11 stations {	SOL.A	21	(–) (+)	Brown	White
	SOL.B	22	(–) (+)	Pink	Red
12 stations {	SOL.A	23	(–) (+)	Gray	Red
	SOL.B	24	(–) (+)	Black	White
(Max.)	COM.	25	(+) (–)	White	None
	COM.	26	(+) (–)	White	None

Positive common specifications

Negative common specifications Note)

Note) When using the negative common specifications, use valves for negative common. (Refer to page 2-4-178.)
For details, refer to "Option" on page 2-4-178.

How to Order Valves

VQ 2 1 0 0 Y — 5 W

Enclosure
IP (Dusttight/ Low jetproof type)

Series

2	VQ2000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Seal

0	Metal seal
1	Rubber seal

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	○ Note)
H	High pressure type	(1.5 W) ○	—
Y	Low wattage type	(0.5 W) ○	—

Note) For power consumption of AC type, refer to page 2-4-129.

Coil voltage

1	100 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

Light/Surge voltage suppressor

Nil	Yes
E	None

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)
C	Locking type (Manual)

Note) For external pilot and negative COM specifications, refer to "Option" on 2-4-178 to 2-4-179.

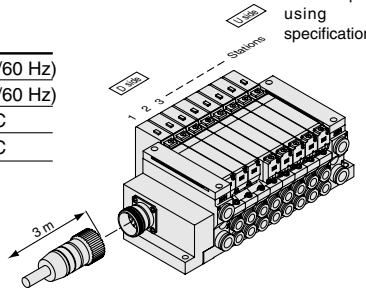
How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>
Flat ribbon cable kit with 3 m cable
VV5Q21-09C6M2-W··· 1 set–Manifold base no.
∗VQ2100-5w ····· 2 sets–Valve part no. (Stations 1 to 2)
∗VQ2200-5w····· 4 sets–Valve part no. (Stations 3 to 6)
∗VQ2300-5w····· 2 sets–Valve part no. (Stations 7 to 8)
∗VVQ2000-10A-1····· 1 set–Blanking plate part no. (Station 9)

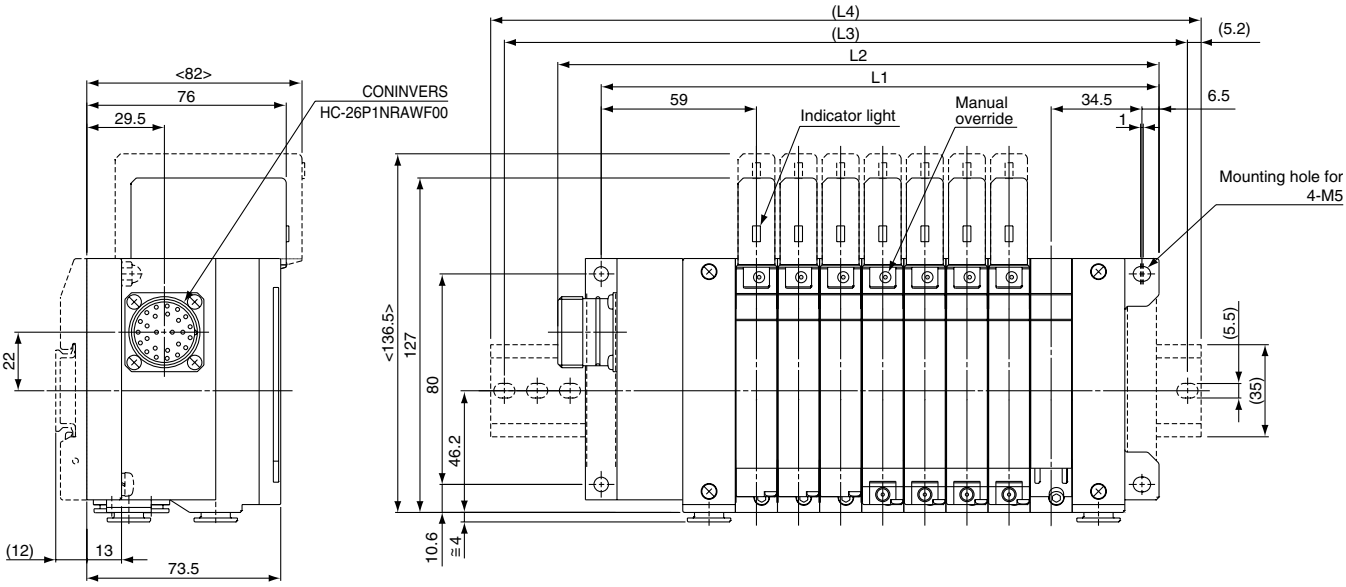
Prefix the asterisk to the part nos. of the solenoid valve, etc.

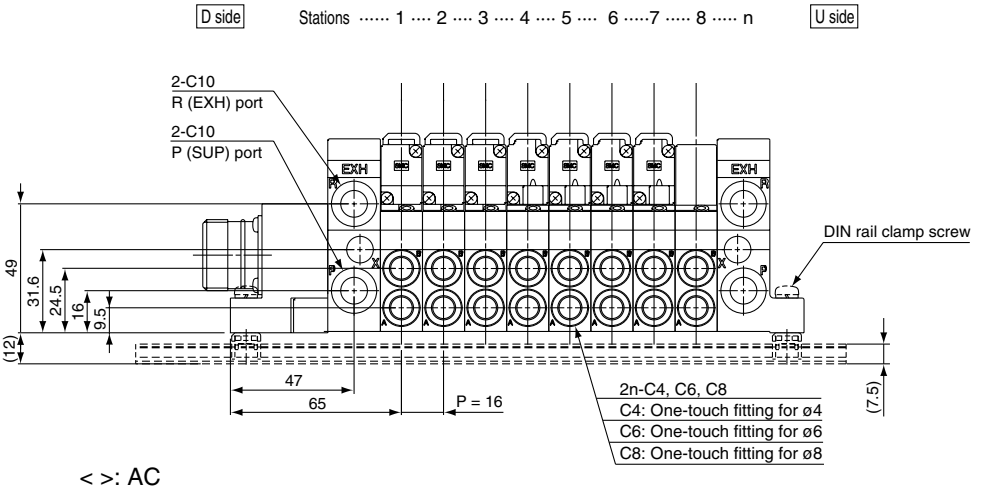
When ordering, specify the part nos. in order from the 1st station in the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.



VQ2000

The broken lines indicate the DIN rail mounting style [-D] and the side entry connection [-FS].





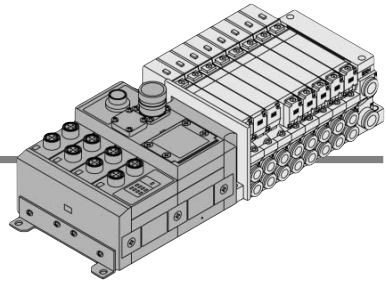
< >: AC

Dimensions

Formula L1 = 16n + 77.5, L2 = 16n + 100.5 n: Station (Maximum 12 stations)

L \ n	2	3	4	5	6	7	8	9	10	11	12
L1	109.5	125.5	141.5	157.5	173.5	189.5	205.5	221.5	237.5	253.5	269.5
L2	132.5	148.5	164.5	180.5	196.5	212.5	228.5	244.5	260.5	276.5	292.5
(L3)	162.5	175	187.5	200	225	237.5	250	275	287.5	300	312.5
(L4)	173	185.5	198	210.5	235.5	248	260.5	285.5	298	310.5	323

S VQ2000
Kit (Serial transmission kit) for I/O IP65 compliant



VQ2000 only

Applicable network **DeviceNet/PROFIBUS-DP**

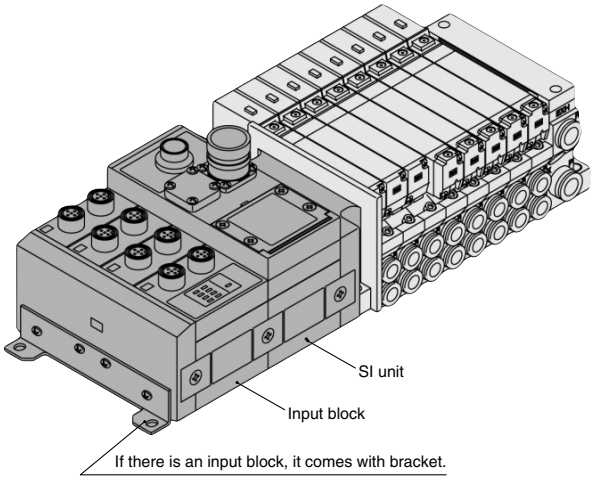
- **The serial transmission system reduces wiring work, while minimizing wiring and saving space.**

SI unit for DeviceNet/PROFIBUS

As a slave for DeviceNet/PROFIBUS, it is possible to control ON/OFF of a solenoid valve with the maximum of 32 points. Furthermore, by connecting a discrete input block, it is possible to input the sensor signal for 32 points at the maximum.

Input block

Meaning of an expansion block, connecting with SI unit, for sensor-inputting for auto switches, etc. Sensor-input is available up to 8 per one input block. By the NPN/PNP switch, it is able to adjust COM to sensor.



VQ2000 IP65, Applicable to Input/Output, Serial Transmission Type

How to Order Manifold

VV5Q21 — 08 C6 S D QW 1 [ ] — N W

VQ2000 Plug-in series

Stations

01	1 station
⋮	⋮
16	16 stations

Cylinder port

Symbol	Port size
C4	With One-touch fitting for ø4
C6	With One-touch fitting for ø6
C8	With One-touch fitting for ø8
CM	With mixed size/with port plug

SI unit mounting
D: D side mounting

Model

0W	Without SI unit	
QW	DeviceNet	+COM
NWN	PROFIBUS-DP	–COM

Note) Only +COM is available for DeviceNet. Order a mounting valve with +COM.
Since PROFIBUS is –COM only, order –COM for valves to be mounted.

Input block COM

Nil	PNP(+) or SI/Input block: None
N	NPN (–)

Input block

Nil	SI unit/Input block: None
0	Input block: None
1	Input block 1 pc.
2	Input block 2 pcs.
3	Input block 3 pcs.
4	Input block 4 pcs.

Option

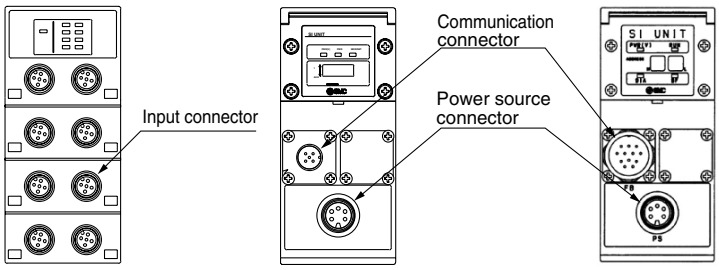
Symbol	Option
Nil	None
B	With back pressure check valve
D	DIN rail mounting style
K	Special wiring specifications (Not double wiring)
N	With name plate
R	External pilot

Note) When two or more symbols are specified, indicate them alphabetically.
Example: -DNR

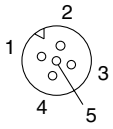
Enclosure
IP65 (Dust tight/Low jetproof type)

Details in Connector

Input block **SI Unit (DeviceNet)** **SI Unit (PROFIBUS-DP)**

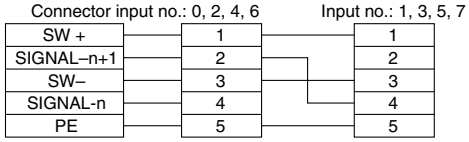


● **Input connector: M12 5 pins (XS2F compatible made by OMRON Corp.) x 8 pcs.**
Cable side connector example: XS2G made by OMRON Corp.



Number	Description	Function
1	SW+	Sensor power supply +
2	N.C.	Open *
3	SW–	Sensor power supply –
4	SIGNAL	Sensor input signal
5	PE	Protective sensor ground

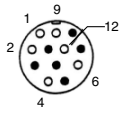
* No. 2 pin of the input no. 0, 2, 4, 6 connector (connectors aligned in the right side on the input block) is connected internally with no. 4 pin (sensor input no.) of the input no. 1, 3, 5, 7 respectively. Thereby, it is possible to directly input 2 points which is bundled into 1 cable by the cluster connector, etc.



⚠ Caution

When an enclosure equivalent to IP65 is required, place a waterproof cover on the unused input connector. As for waterproof cover, order it separately.
Example: OMRON Corp. XS2Z-12

● **Communication connector (PROFIBUS-DP): Made by CONINVERS GmbH RC-2RS1N12 12 pins**
Cable side connector example: Made by Siemens AG 6ES5 760-2CB11

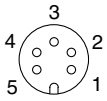


Number	Description	Function
1	M5V	GND Terminal
2	A	Signal-N
4	B	Signal-P
6	+5V	Terminal +5 V
9	SIELD	Shield ground
12	RTS	Optical fiber (Reserve)

Pin no. 3, 5, 7, 8, 10 and 11 marked with ● are open.

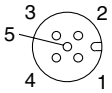
* Connector's shape and pin assignment is interchangeable with ET200C made by Siemens AG.

● **Power source connector: Series 723 (made by Franz Binder GmbH) 5 pins (72309-0115-80-05)**
Cable side connector example: Franz Binder GmbH 72309-0114-70-15, etc.
* Din type 5 pins.



Number	Description	Function
1	SV24V	For solenoid valve +24 V
2	SV0V	For solenoid valve 0 V
3	PE	Protective ground
4	SW24V	<DeviceNet> For input block +24 V, <Profibus or Interbus> For input unit and SI unit +24 V
5	SW0V	<DeviceNet> For input block 0 V, <Profibus or Interbus> For input unit and SI unit 0 V

● **Communication connector (DeviceNet): M12 5 pins (for DeviceNet compliant)**
Example of corresponding cable assemblies with connector: OMRON Corporation: DCA1-5CN05F1 Karl Lumberg GmbH & Co. KG: RKT5-56

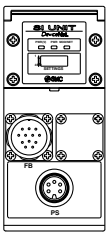


Number	Description	Function
1	Drain	Drain/Shield
2	V+	Circuit power supply +
3	V–	Circuit power supply –
4	CAN_H	Signal H
5	CAN_L	Signal L

Item conforming to Micro Style connector in DeviceNet specifications.

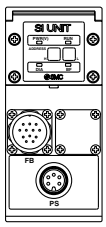
Indicator Unit (LED) Descriptions and Functions

■ SI Unit (DeviceNet)



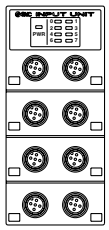
Description	Function
PWR(V)	ON when solenoid valve power supply is turned ON
PWR	ON when DeviceNet circuit power supply input is turned ON
MOD/NET	OFF: Power supply off, off line, or when checking duplication of MAC_ID
	Green blinking: Waiting for connection (On line)
	Green ON: Connection established (On line)
	Red blinking: Connection time out (Minor communication abnormality occurs)
	Red ON: MAC_ID duplication error, or BUSOFF error (Major communication abnormality occurs)

■ SI Unit (PROFIBUS-DP)



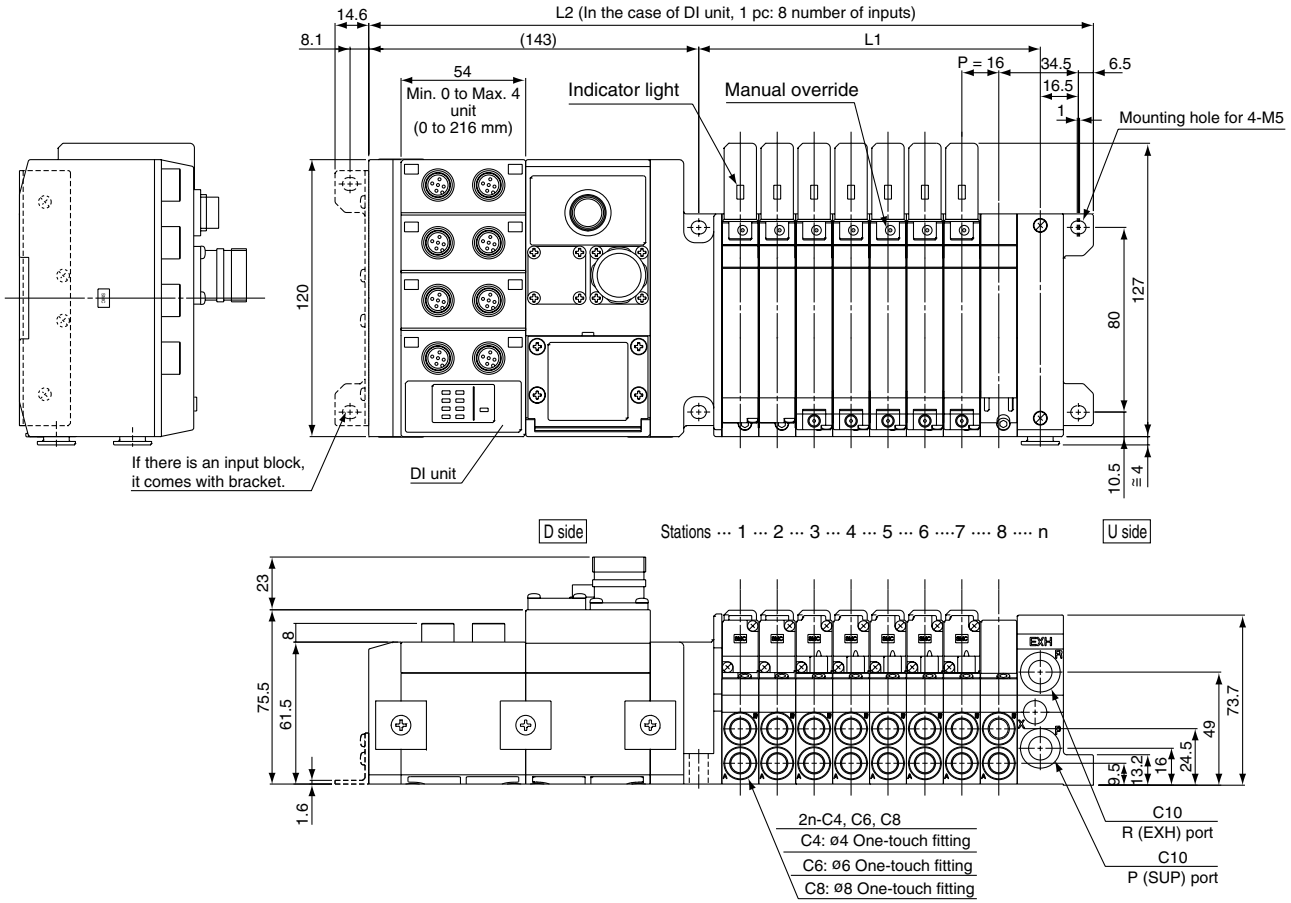
Description	Function
PWR	ON when solenoid valve power supply is turned ON OFF when the power supply voltage is less than 19 V
RUN	ON when operating (SI unit power supply is ON)
DIA	ON when self-diagnosis device detects abnormality
BF	ON for BUS abnormality

■ Input block



Description	Function
PWR	ON when sensor power is turned ON OFF when short circuit protection is working
0 to 7	ON when each sensor input goes ON

VV5Q21S kit
(Serial transmission kit: EX240)



Dimensions

Formula L1 = 16n + 36.5, L2 = 16n + 186 (In the case of 1 pc. DI unit, 54 mm will be added for increasing every 1 pcs.) n: Station

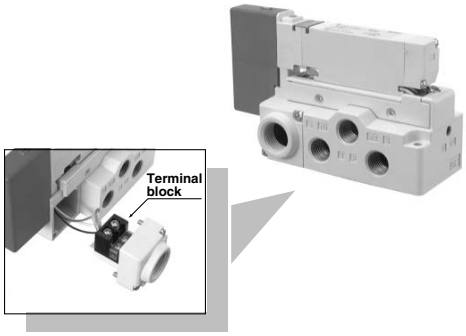
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	68.5	84.5	100.5	116.5	132.5	148.5	164.5	180.5	196.5	212.5	228.5	244.5	260.5	276.5	292.5
L2	218	234	250	266	282	298	314	330	346	362	378	394	410	426	442

VQ2000 Only

Sub-plate Single Unit

Conforming to IP65 in standard specifications

Easy-to-use terminal block



How to Order

Valve + Sub-plate

VQ2 1 0 0 – 5 W – 02

Entry is the same as standard products.

Enclosure

Nil	Dust tight
W Note)	IP65 (Dust tight/Low jetproof type)

Note) Valves are IP65 specifications.

Thread type

Nil	Rc
N	NPT
T	NPTF
F	G

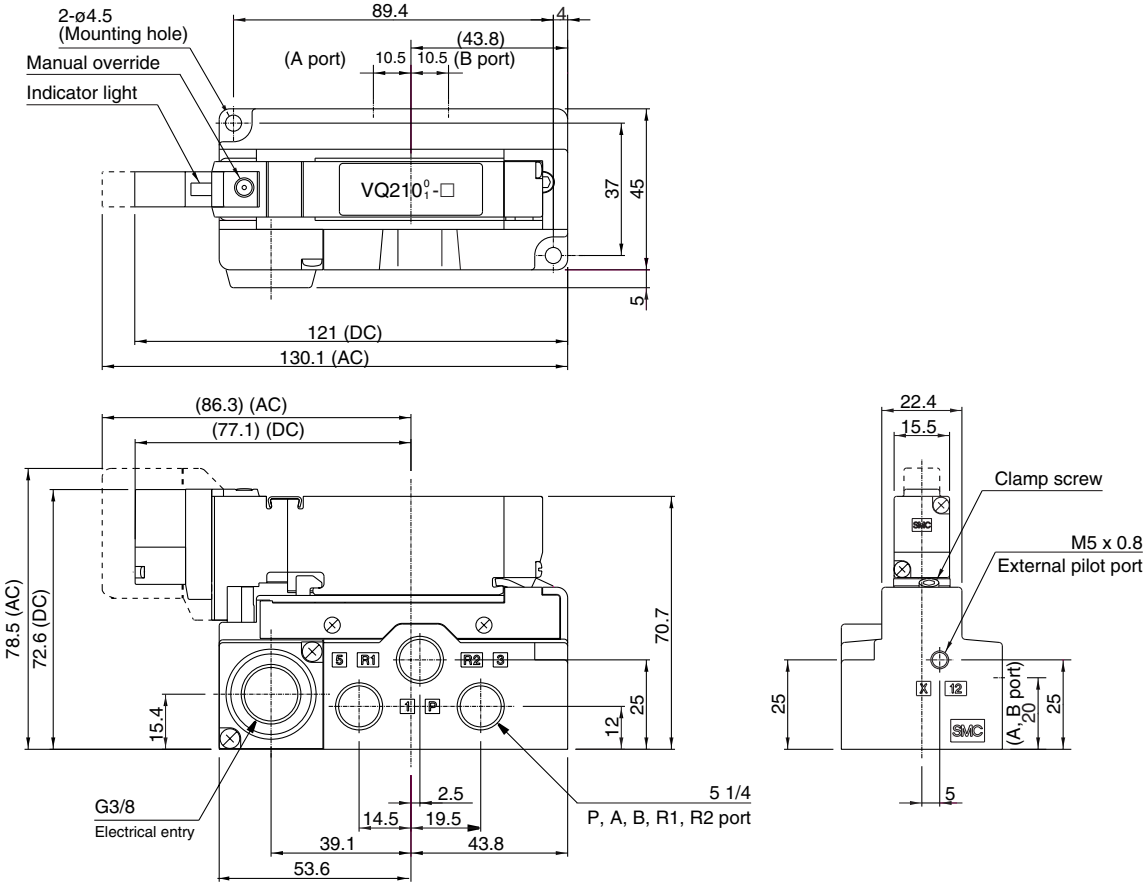
With and without sub-plate

Nil	Without sub-plate
02	With sub-plate (Port size: 1/4)

In the case of sub-plate alone

VQ2000 – PW – 02

Dimensions

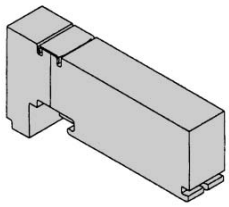


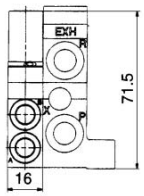
Manifold Option Parts for VQ2000

Blanking plate assembly
VVQ2000-10A-1

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

JIS Symbol

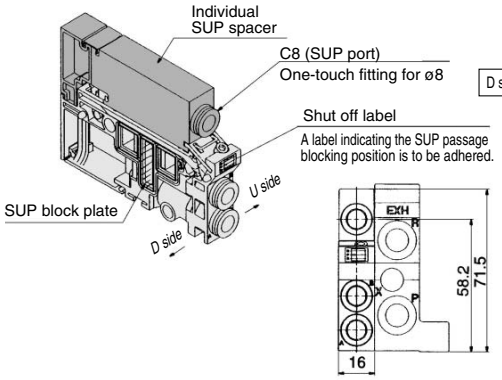


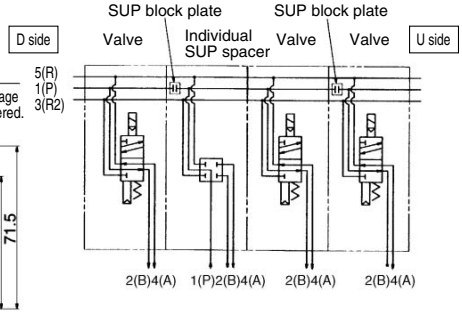


Individual SUP spacer
VVQ2000-P-1-C8

When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.)
Block both sides of the station, for which the supply pressure from the individual SUP spacer is used, with SUP block plates. (Refer to the application ex.)

* Specify the spacer mounting position and SUP block plate position on the manifold specification sheet. The block plate are used in two places for one set. (Two SUP block plates for blocking SUP station are attached to the individual SUP spacer.)
* Electric wiring is connected to the position of the manifold station where the individual SUP spacer is mounted.

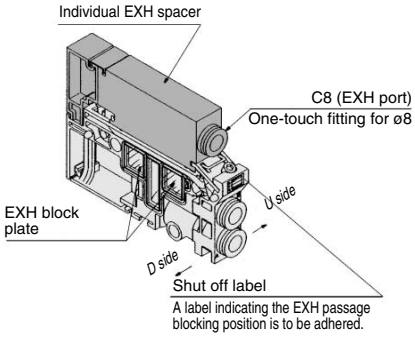


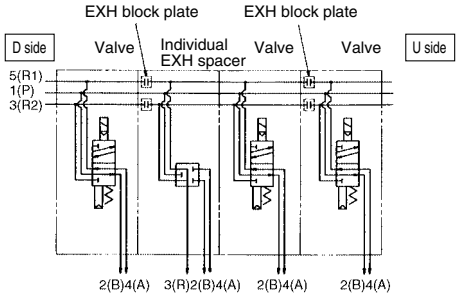


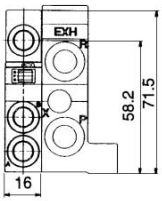
Individual EXH spacer
VVQ2000-R-1-C8

When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (One station space is occupied.)
Block both sides of the individual valve EXH station. (See example)

* Specify the mounting position, as well as the EXH block base or EXH block plate position on the manifold specification sheet. The block plates are used in two places for one set. (Two EXH block plates for blocking EXH station are attached to the individual EXH spacer.)
* Electric wiring is connected to the position of the manifold station where the individual EXH spacer is mounted.





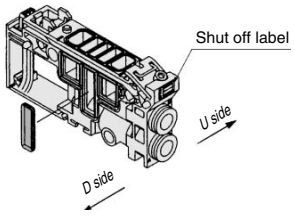


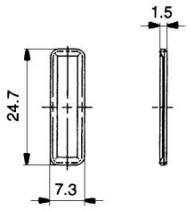
SUP block plate
VVQ2000-16A

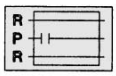
When different pressures, high and low, are supplied to one manifold, a SUP block plate is inserted between the stations under different pressures.

* Specify the number of stations on the manifold specification sheet.

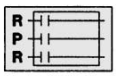
<Blocking indication label>
When using block plates for SUP passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)







SUP passage blocked



SUP/EXH passage blocked

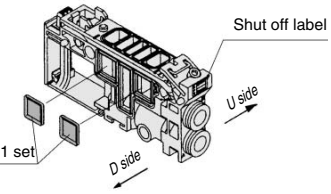
* When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.

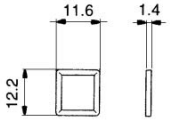
EXH block plate
VVQ2000-19A

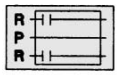
The EXH block plate is used between stations for which exhaust is desired to be divided when valve exhaust affects other stations due to the circuit configuration. It is also used in combination with an individual EXH spacer for individual exhaust.

* Specify the number of stations on the manifold specification sheet.

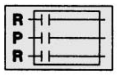
<Blocking indication label>
When blocking the EXH passage with an EXH block plate, an indication label for confirmation of the blocking position from outside is attached. (One label for each)







EXH passage blocked



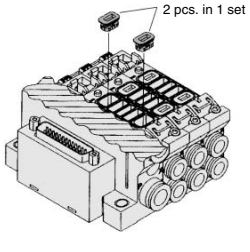
SUP/EXH passage blocked

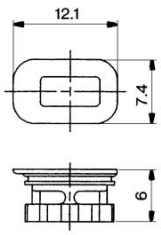
* When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.

Back pressure check valve assembly [-B]
VVQ2000-18A

It prevents cylinder malfunction caused by other valve exhaust. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single action cylinder is used or an exhaust center type solenoid valve is used.

Note) When a check valve for back pressure prevention is desired, and is to be installed only in certain manifold stations, write clearly the part no. and specify the number of stations by using the manifold specification sheet.





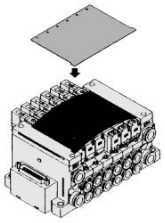
* When ordering assemblies incorporated with a manifold, add suffix "-B" to the manifold no.

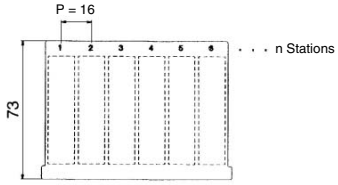
(Precautions)

1. The back pressure check valve assembly is assembly parts with a check valve structure. However, as slight air leakage is allowed for the back pressure, take care the exhaust air will not be throttled at the exhaust port.
2. When a back pressure check valve is mounted, the effective area of the valve will decrease, by about 20%.

Name plate [-N]
VVQ2000-N-Station (1 to Max. stations)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.
Insert it into the groove on the side of the end plate and bend it as shown in the figure.
• Suffix "N" to the manifold part no.

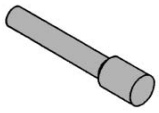


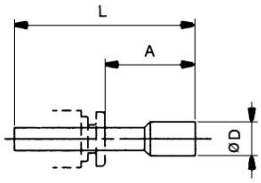


* When ordering assemblies incorporated with a manifold, add suffix "-N" to the manifold no.

Blanking plug (For One-touch fittings)
KQ2P-$^{04}_{06}_{08}$

It is inserted into an unused cylinder port and SUP/EXH ports.
Purchasing order is available in units of 10 pieces.



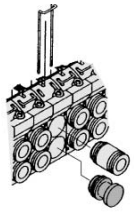


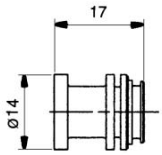
Dimensions

Applicable fittings size ød	Model	A	L	D
4	**KQ2P-04**	16	32	6
6	**KQ2P-06**	18	35	8
8	**KQ2P-08**	20.5	39	10

Port plug
VVQ1000-58A

The plug is used to block the cylinder port when using a 4 port valve as a 3 port valve.

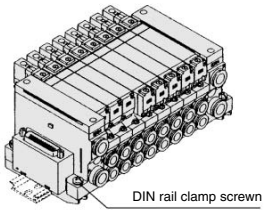


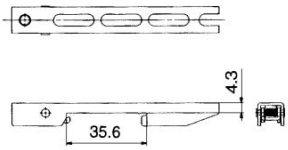


* When ordering a plug incorporated with a manifold, indicate "CM" for the port size in the manifold no., as well as, the mounting position and number of stations and cylinder port mounting positions, A and B, in the manifold specification sheet.

DIN rail mounting bracket
VVQ2000-57A

It is used for mounting a manifold on a DIN rail. The DIN rail mounted bracket is fixed to the manifold end plate. (The specification is the same as that for the option "-D".) 1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).



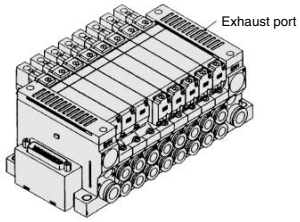


* When ordering assemblies incorporated with a manifold, add suffix "-D" to the manifold no.

Built-in silencer, Direct exhaust [-S]

This is a type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Silencing effect: 30 dB)

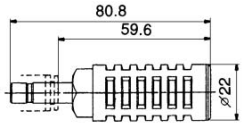
Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.
● For maintenance, refer to page 2-4-176.



* When ordering assemblies incorporated with a manifold, add suffix "-S" to the manifold no.

Silencer (For EXH port)

This silencer is to be inserted into the EXH port (One-touch fittings) of the common exhaust type.

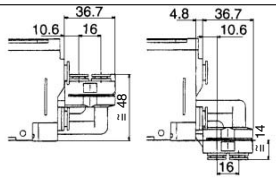


Dimensions

Series	Applicable fittings size ød	Model	A	L	D	Effective area (mm^2) (Cv factor)	Noise reduction (dB)
VQ2000	10	**AN200-KM10**	59.6	80.8	22	26 (1.4)	30

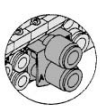
Elbow fitting assembly
VVQ2000-F-L (C4, C6, C8)

It is used for piping that extends upward or downward from the manifold.
When installing it in part of the manifold stations, specify the assembly no. and the mounting position and number of stations by using the manifold specification sheet.

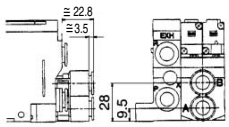


2 stations matching fitting assembly
VVQ2000-52A-C10

For driving a cylinder with a large bore, valves for two stations are operated to double the flow rate. This assembly for the cylinder port is used in that case.
This assembly for the cylinder port is used in that case.



* The bore for the manifold no. is "CM". Clearly indicate the 2 station matching fitting assembly no., and specify the number of stations and positions in the manifold specification sheet.

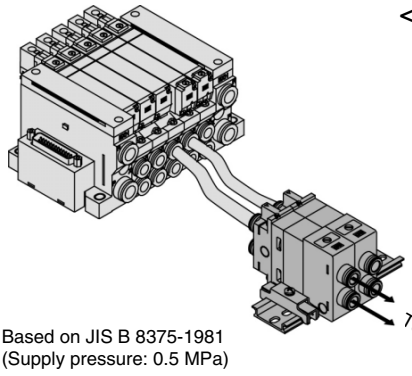


Manifold Option

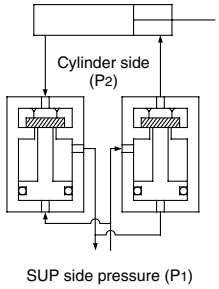
Double check block (Separated type)

VQ2000-FPG-□□-□

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the double check block with a built-in pilot type double check valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time.
The combination with a 2 position single/double solenoid valve will prevent the dropping at the cylinder stroke end when the SUP residual pressure is released.



<Check valve operation principle>



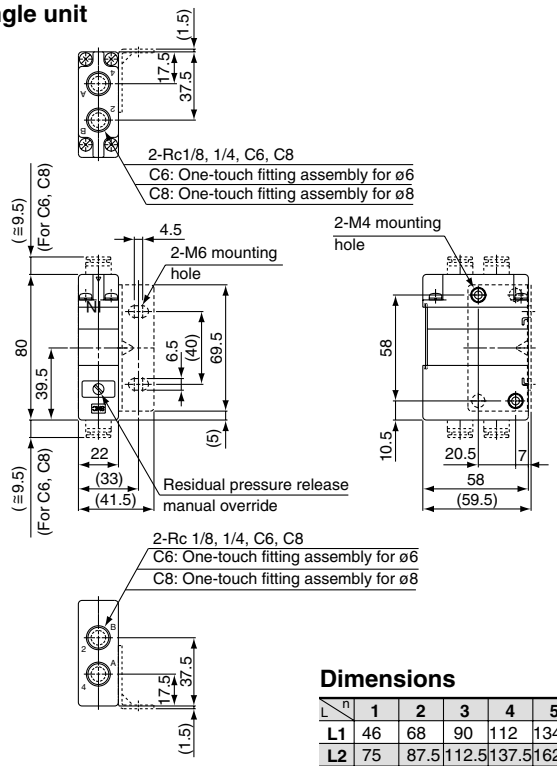
Specifications

Max. operating pressure	0.8 MPa
Min. operating pressure	0.15 MPa
Ambient and fluid temp.	–5 to 50°C
Flow characteristics: C	–3.0 dm³/(s·bar)
Max. operating frequency	180 c.p.m

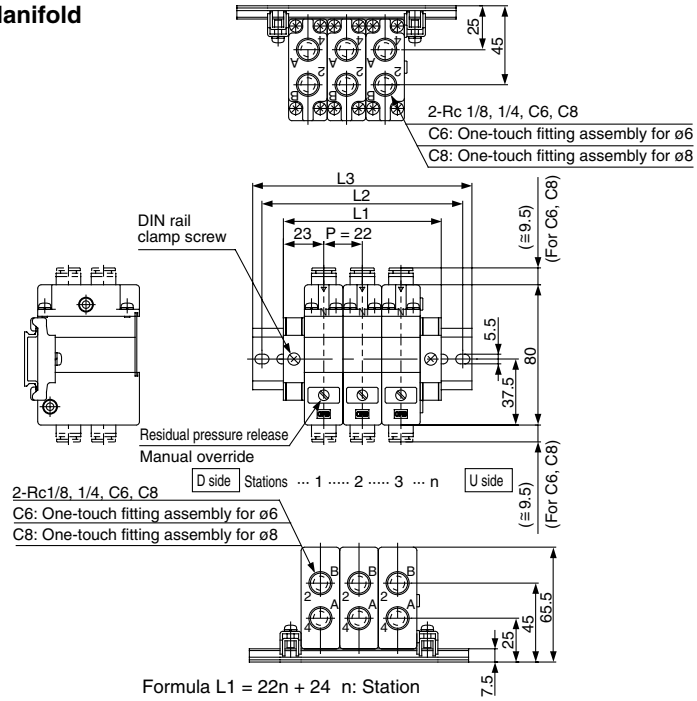
Note) Based on JIS B 8375-1981
(Supply pressure: 0.5 MPa)

Dimensions

Single unit



Manifold



Dimensions

Formula L1 = 22n + 24 n: Station

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	46	68	90	112	134	156	178	200	222	244	266	288	310	332	354	376
L2	75	87.5	112.5	137.5	162.5	175	200	225	250	262.5	287.5	312.5	337.5	362.5	375	400
L3	85.5	98	123	148	173	185.5	210.5	235.5	260.5	273	298	323	348	373	385.5	410.5

How to Order

Double check block

VQ2000-FPG- 01 01 F

IN side port size

01	Rc 1/8
02	Rc 1/4
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8

OUT side port size

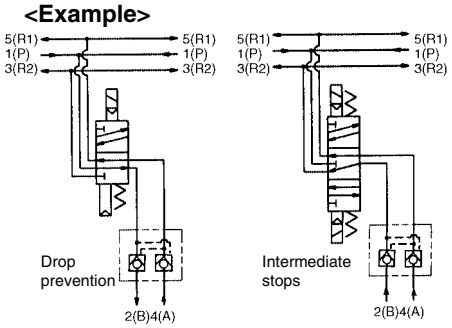
01	Rc 1/8
02	Rc 1/4
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8

Option

Nil	None
D	DIN rail mounting style (For manifold)
F	With bracket
N	Name plate

Note) When two or more symbols are specified, indicate them alphabetically.

<Example>



Manifold

VVQ2000-FPG- 06

Stations

01	1 station
⋮	⋮
16	16 stations

<Ordering Example>
VVQ2000-FPG-06····6 stations manifold
∗VQ2000-FPG-C6C6-D: 3 sets
∗VQ2000-FPG-C8C8-D: 3 sets
} Double check block

Bracket Assembly

Part no.	Tightening torque
VQ2000-FPG-FB	0.8 to 1.0 N·m

⚠ Caution

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap.
  Also check the cylinder's tube gasket, piston packing and rod packing for air leakage.
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- Combining double check block with 3 position closed center or pressure center solenoid valve will not work.
- M5 fitting assembly is attached, not incorporated into the double check block. After screwing in the M5 fittings, mount the assembly on the double check block.
  [Tightening torque: 0.8 to 1.2 N·m]

Connection threads	Proper tightening torque (N·m)
Rc 1/8	7 to 9
Rc 1/4	12 to 14

- If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop intermediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

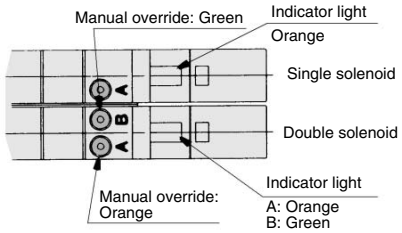
⚠ Precautions 1

Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 2-9-2.

Light/Surge Voltage Suppressor

⚠ Caution

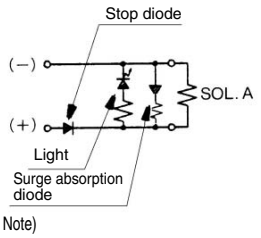
The lighting positions are concentrated on one side for both single solenoid type and double solenoid type. In the double solenoid type, A side and B side energization are indicated by two colors which match the colors of the manual overrides.



(DWG shows a VQ1000 case.)

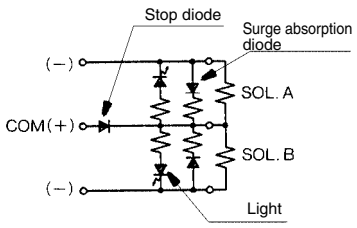
DC circuit diagram

Single solenoid



Note)
A side energization: A light (orange) illuminates.
B side energization: B light (green) illuminates.

Double solenoid



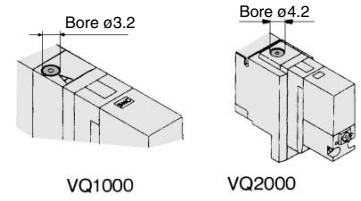
With wrong wiring preventing ability (stop dieode).
Equipped with a surge absorption
(surge absorption diode) mechanism.

Manual Override

⚠ Warning

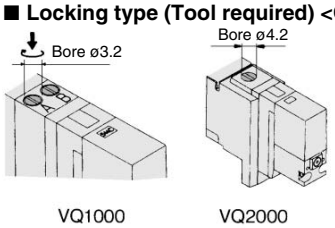
Without an electric signal for the solenoid valve the manual override is used for switching the main valve.
Push type is standard. (Tool required)
Option: Locking type (Tool required/Manual)

■ Push type (Tool required)



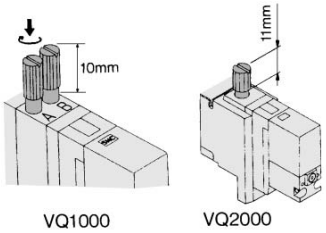
Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

■ Locking type (Tool required) <Option>



Push down on the manual override button with a small screwdriver or with your fingers until it stops. Turn clockwise by 90° to lock it. Turn it counterclockwise to release it.

■ Locking type (Manual) <Option>



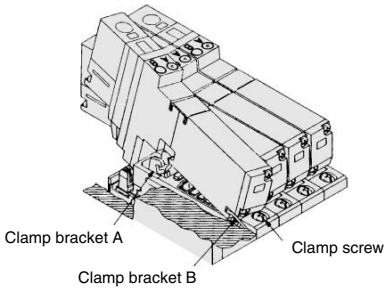
Push down on the manual override button with a small screwdriver or with your fingers until it stops. Turn clockwise by 90° to lock it. Turn it counterclockwise to release it.

⚠ Caution

Do not apply excessive torque when turning the locking type manual override.
(0.1 N·m or less)

How to Mount/Remove Solenoid Valve

⚠ Caution



Removing

1. Loosen the clamp screw until it turns freely. (The screw is captive.)
2. Lift the coil side of the valve body while pressing down slightly on the screw head and remove it from the clamp bracket B. When the screw head cannot be pressed easily, gently press the area near the manual override of the valve.

Mounting

1. Press down on the clamp screw. → Clamp bracket A opens. Diagonally insert the hook on the valve end plate side into clamp B.
2. Press the valve body downward. (When the screw is released, it will be locked by clamp bracket A.)
3. Tighten the clamp screw. (Proper tightening torque: VQ1000, 0.25 to 0.35 N·m; VQ2000, 0.5 to 0.7 N·m.)

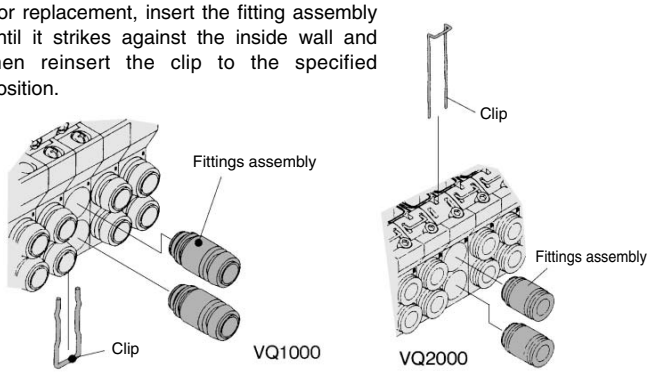
⚠ Caution

Dust on the sealing surface of the gasket or solenoid valve can cause air leakage.

Replacement of Cylinder Port Fittings

⚠ Caution

The cylinder port fittings are a cassette for easy replacement.
The fittings are blocked by a clip inserted from the top of manifold. Remove the clip with a screwdriver to remove fittings.
For replacement, insert the fitting assembly until it strikes against the inside wall and then reinsert the clip to the specified position.



Applicable tubing O.D.	Fitting assembly part no.	
	VQ1000	**VQ2000**
Applicable tubing ø3.2	VVQ1000-50A-C3	—
Applicable tubing ø4	VVQ1000-50A-C4	VVQ1000-51A-C4
Applicable tubing ø6	VVQ1000-50A-C6	VVQ1000-51A-C6
Applicable tubing ø8	—	VVQ1000-51A-C8
M5	VVQ1000-50A-M5	—

∗ Refer to "Option" on pages 2-4-172 to 2-4-173 for other types of fittings.

⚠ Caution

1. Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.
2. After screwing in the fittings, mount the M5 fitting assembly on the manifold base. {Tightening torque: 0.8 to 1.2 N·m}
3. Purchasing order is available in units of 10 pieces.

⚠ Precautions 2

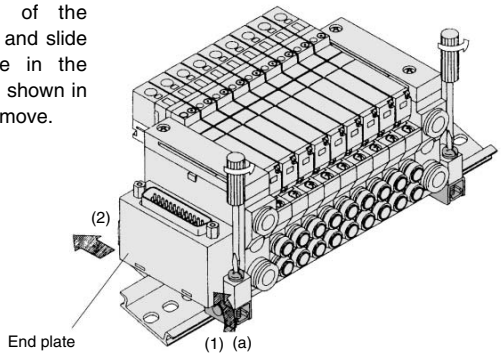
Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 2-9-2.

Mounting/Removing from the DIN Rail

⚠ Caution

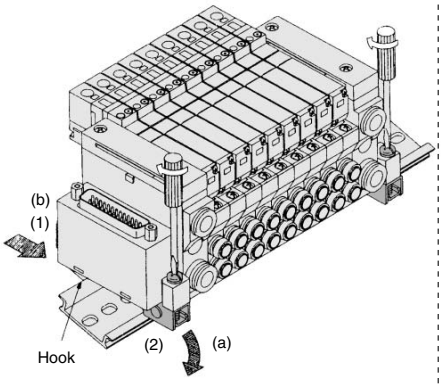
Removing

1. Loosen the clamp screw on side (a) of the end plate on both sides.
2. Lift side (a) of the manifold base and slide the end plate in the direction of (2) shown in the figure to remove.



Mounting

1. Hook side (b) of the manifold base on the DIN rail.
2. Press down side (a) and mount the end plate on the DIN rail.
   Tighten the clamp screw on side (a) of the end plate.
   The proper tightening torque for screws is 0.4 to 0.6 N·m.



Enclosure IP65

⚠ Caution

Wires, cables, connectors, etc. used for models conforming to IP65 should also have enclosures equivalent to or of stricter than IP65.

Built-in Silencer Replacement Element

⚠ Caution

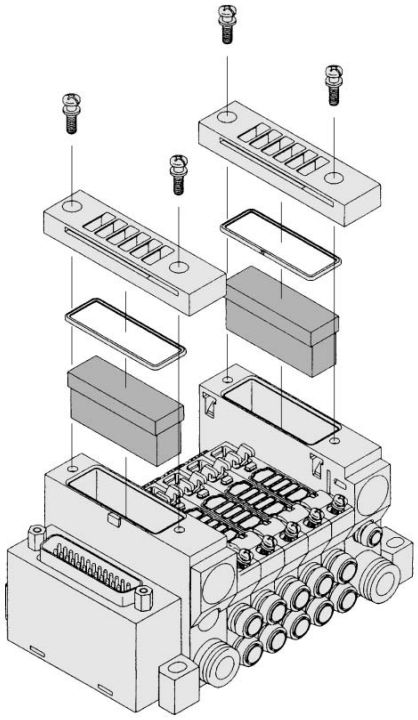
A silencer element is incorporated in the end plate on both sides of the A dirty and choked element may reduce cylinder speed or cause malfunction. Clean or replace the dirty element.

Element Part No.

Type	Element part no.	
	VQ1000	**VQ2000**
Built-in silencer, direct exhaust	VVQ1000-82A-1	VVQ2000-82A-1

∗ The minimum order quantity is 10 pcs.

Remove the cover from the top of the end plate and remove the old element with a screwdriver, etc.



How to Calculate the Flow Rate

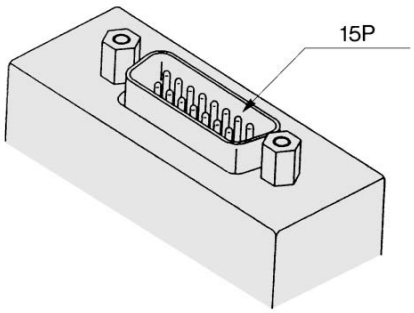
For obtaining the flow rate, refer to pages 2-1-8 to 2-1-11.

Option

Different Number of Connector Pins

F and P kits with the following number of pins are available besides the standard number (F = 25; P = 26). Select the desired number of pins and cable length from the cable assembly list.
Place an order for the cable assembly separately.

F kit (D-sub connector) 15 pins



How to order manifold

VV5Q11 — 06 C6 F SA — N

- 06: Stations
- C6: Cylinder port
- SA: Kit/Electrical entry
- N: Option

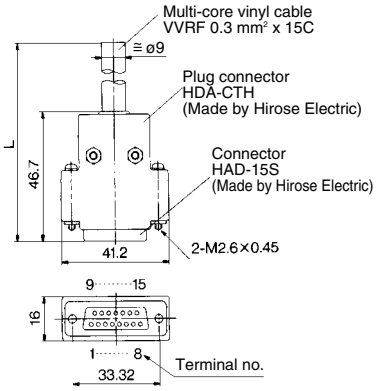
How to Order
D-sub connector, 15 pins
Connector location–Side (horizontal)
Without cable

Kit/Electrical entry

Pins \ Location	Top entry		Side entry	
15P (Max. 7 stations)	Kit F	UA	Kit F	SA

Wiring Specifications

* In the same way as the 25-pin models (standard), the terminal no. 1 is for SOL.A at the 1st station, the terminal no. 9 for SOL.B at the 1st station, and the terminal no. 8 for COM.



Wire Color Table by Terminal No. of D-sub Connector Cable Assembly

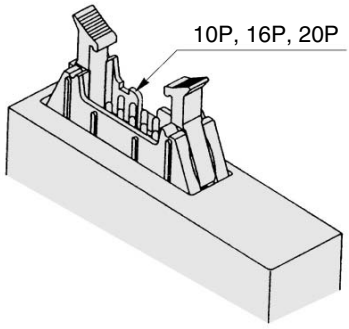
Terminal no.	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black

D-sub Connector Cable Assembly

Cable length (L) \ Pins	15P
1.5 m	AXT100-DS15-1
3 m	AXT100-DS15-2
5 m	AXT100-DS15-3

* For other commercial connectors, use a type conforming to MIL-C-24308.

P kit (Flat ribbon cable connector) 10 pins, 16 pins, 20 pins



How to order manifold

VV5Q11 — 06 C6 P SC — N

- 06: Stations
- C6: Cylinder port
- SC: Kit/Electrical entry
- N: Option

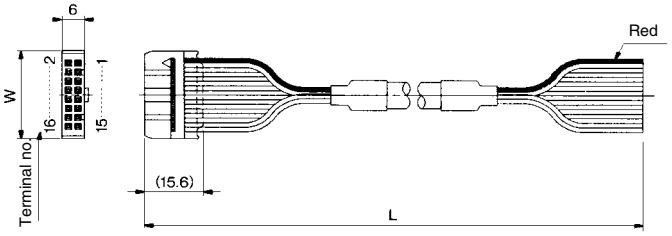
How to Order
Flat ribbon cable, 20 pins
Connector location–Side (Horizontal)
Without cable

Kit/Electrical entry

Pins \ Location	Top entry		Side entry	
10P (Max. 4 stations)	Kit P	UA	Kit P	SA
16P (Max. 7 stations)		UB		SB
20P (Max. 9 stations)		UC		SC

Wiring Specifications

* In the same way as the 26-pin models (standard), the terminal no. 1 is for SOL.A at the 1st station, the terminal no. 2 for SOL.B at the 1st station, and two pins from the max. terminal numbers are for COM.



Flat Ribbon Cable Assembly

Cable length (L) \ Pins	10P	16P	20P
1.5 m	AXT100-FC10-1	AXT100-FC16-1	AXT100-FC20-1
3 m	AXT100-FC10-2	AXT100-FC16-2	AXT100-FC20-2
5 m	AXT100-FC10-3	AXT100-FC16-3	AXT100-FC20-3
Connector width (W)	17.2	24.8	30

* For other commercial connectors, use a type with strain relief conforming to MIL-C-83503.

Option

Special Wiring Specifications

In the internal wiring of F kit, P kit, J kit, G kit, T kit and S kit, double wiring (connected to SOL. A and SOL. B) is adopted for each station regardless of the valve and option types.
Mixed single and double wiring is available as an option.

1. How to Order

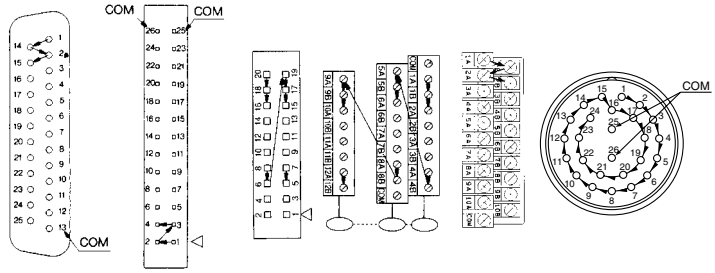
Indicate an option symbol "-K", for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification sheet.

Example) **VV5Q11-08C6FU1-D K S**

Others, option symbols: to be indicated alphabetically.

2. Wiring specifications

With the A side solenoid of the 1st station as no.1 (meaning, to be connected to no.1 terminal), without making any terminals vacant.



F kit D-sub connector (25P) | **P kit** Flat ribbon cable connector (26P) | **J/G kit** | **T kit** Terminal block (VQ1000, 24 termials) | **T kit** Terminal block (VQ2000) | **M kit**

3. Max. number of stations

The maximum number of stations depends upon the number of solenoids. Assuming one for a single and two for a double, determine the number of stations so that the total number is not more than the max. number given in the following table.

Kit	F kit (D-sub connector)		P kit (Flat ribbon cable connector)				J kit (Flat ribbon cable connector)	G kit (Flat ribbon cable with terminal block)
Type	F$^{U}_{S}$□ 25P	F$^{U}_{S}$A 15P	P$^{U}_{S}$□ 26P	P$^{U}_{S}$C 20P	P$^{U}_{S}$B 16P	P$^{U}_{S}$A 10P	J$^{U}_{S}$□ 20P	G
Max. points	24	14	24	18	14	8	16	16

Kit	T kit (Terminal block)			S kit (Serial transmission)	M kit (Circular connector)
Type	VQ1000	2 rows of terminal blocks	3 rows of terminal blocks	S□	M□
		16	24		
Max. points	VQ2000	20		16	24

Negative Common Specifications

Specify the valve model no. as shown below for negative COM specification. The manifold no. shown below is for the T and L kits. For other kits the standard manifold can be used. For negative COM S or G kit, please contact SMC.

VQ1100 N − 5

Negative common specifications

How to order negative COM manifold

T kit:

VV5Q11 − 06 C6 T N − N

Option
Negative common specifications
Cylinder port
Stations

L kit:

VV5Q11 − 06 C6 L N 1 − N

Stations
Cylinder port
Negative common specifications
Option
Electrical entry
Cable length

0	With cable (0.6 m)
1	With cable (1.5 m)
2	With cable (3 m)

External Pilot Specifications

When the supply air pressure is lower than the required minimum operating pressure (0.1 to 0.2 MPa) for the solenoid valve (or when the valve is used for vacuum), specify an external pilot model. Order a manifold or valve by suffixing the external pilot specification, "R".
The X-port of the manifold base is equipped with One-touch fittings for external pilot.
VQ1000: C4 (One-touch fitting for ø4)
VQ2000: C6 (One-touch fitting for ø6)

How to order manifold

VV5Q11-08C6FU1-R S

Others, option symbols: to be indicated alphabetically.

How to order valves

VQ1100 R – 5

External pilot specifications

Note 1) When low wattage type is also desired, specify as "RY".
Note 2) In this valve pilot exhaust is connected to the EA passage of the manifold. Therefore, it is not possible to supply air from EXH port, nor vacuum from ports other than SUP port.

Inch-size One-touch Fittings

The valve with inch-size One-touch fittings is shown below.

VV5Q11 – 06 N7 PS0 – N

Stations
Option
Kit/Electrical entry
Cylinder port

Symbol		N1	N3	N7	N9	M5T	NM
Applicable tubing O.D. (Inch)		ø1/8"	ø5/32"	ø1/4"	ø5/16"	10-32UNF (M5 thread)	Mixed
4(A), 2(B) port	VQ1000	●	●	●	—	●	●
	VQ2000	—	●	●	●	—	●

Note) When inch-size fittings are selected for the cylinder port, use inch size fittings for both P and R port.

1(P), 3(R) port size
VQ1000 ····· ø5/16" (N9)
VQ2000 ····· ø3/8" (N11)

Option

DIN Rail Mounting

Each manifold can be mounted on a DIN rail. Order it by indicating a DIN rail mounting option symbol, "-D". In this case, a DIN rail which is approx. 30 mm longer than the manifold with the specified number of stations is attached.

● **When DIN rail is unnecessary**
(DIN rail mounting brackets only are attached.)
Indicate the option symbol, -DO, for the manifold no.

Example)

VV5Q11-08C6FU1-D0S

Others, option symbols: to be indicated alphabetically.

● **When using DIN rail longer than the manifold with specified number of stations**
Clearly indicate the necessary number of stations next to the option symbol "-D" for the manifold no.

Example)

VV5Q11-08C6FU1-D09S

DIN rail for 9 stations

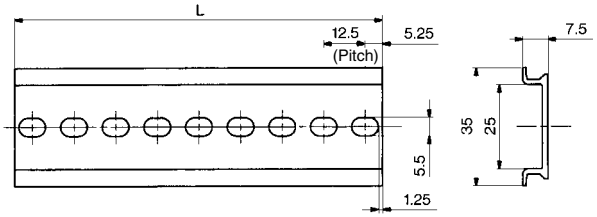
Others, option symbols: to be indicated alphabetically.

● **When changing the manifold style into a DIN rail mounting style.**
Order brackets for mounting a DIN rail. (Refer to "Option" on pages 2-4-168 and 2-4-173.)

No. VVQ1000-57A (For VQ1000)
VVQ2000-57A (For VQ2000)
2 pcs. per one set.

● **When ordering DIN rail only**
DIN rail no.: AXT100-DR-□

As for □, specify the number from the DIN rail table.
For L dimension, refer to the dimensions of each kit.



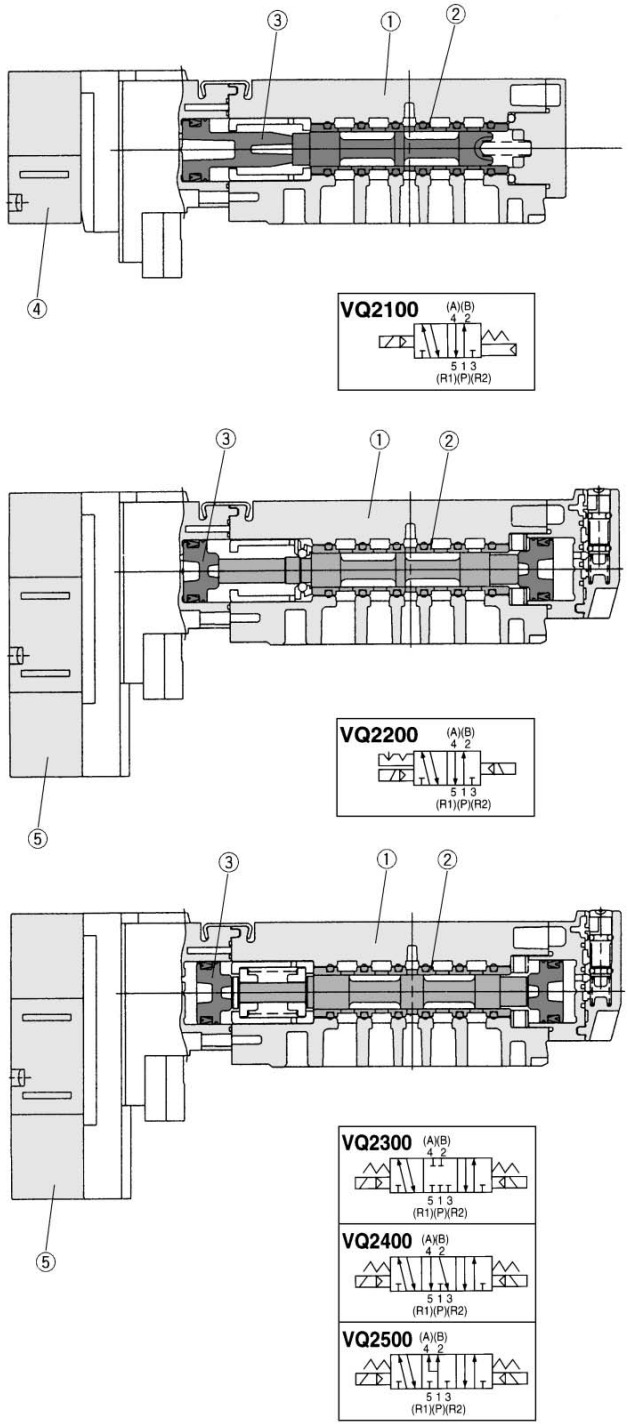
L Dimension

L = 12.5 x n + 10.5

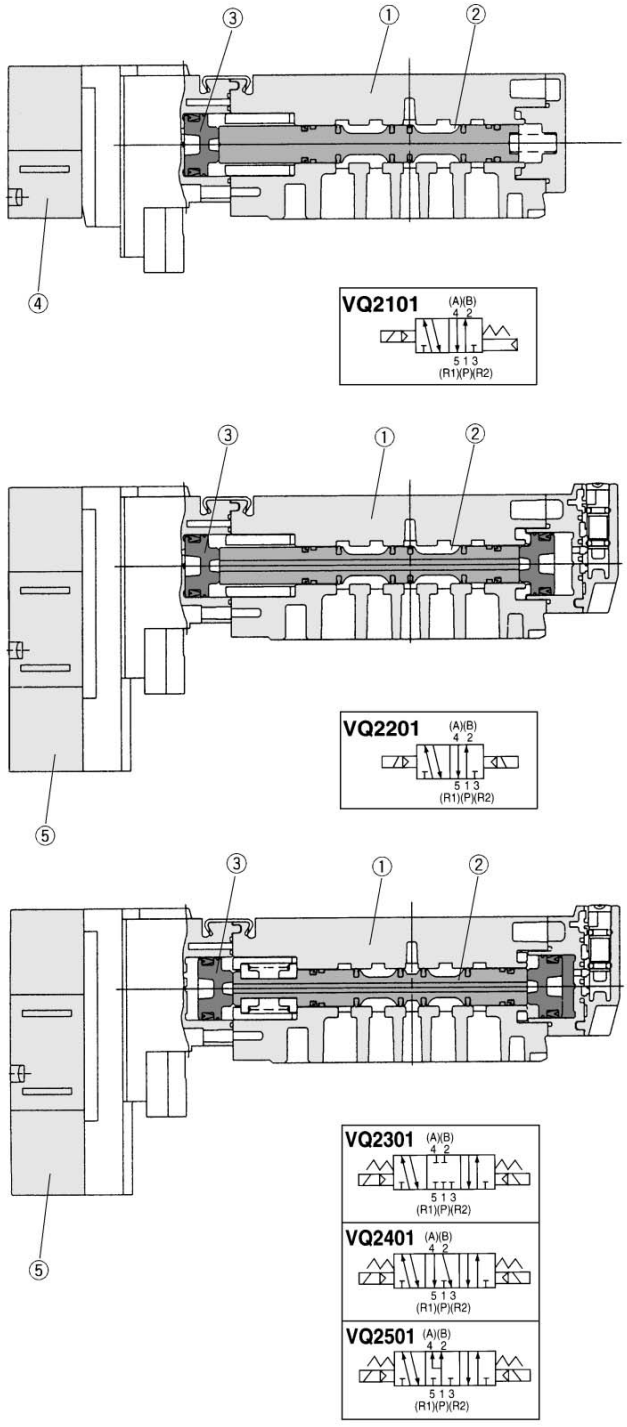
No.	1	2	3	4	5	6	7	8	9	10
L dimension	23	35.5	48	60.5	73	85.5	98	110.5	123	135.5
No.	11	12	13	14	15	16	17	18	19	20
L dimension	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5
No.	21	22	23	24	25	26	27	28	29	30
L dimension	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5
No.	31	32	33	34	35	36	37	38	39	40
L dimension	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

Construction: VQ2000/Plug-in Unit

Metal seal



Rubber seal type



Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted	
②	Spool/Sleeve	Stainless steel	
③	Piston	Resin	

Replacement Parts

④	Pilot valve assembly	VQ111$^{(H)}_{(Y)}$-□-1 Note) Voltage1 to 6	Single
⑤	Pilot valve assembly	VQ131$^{(H)}_{(Y)}$-□-1 Note) Voltage1 to 6	Double/3 position

Note) (H): 1.5 W, (Y): 0.5 W

Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted	
②	Spool valve	Aluminum/HNBR	
③	Piston	Resin	

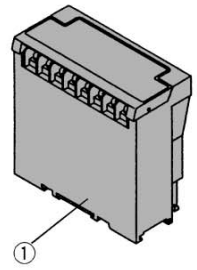
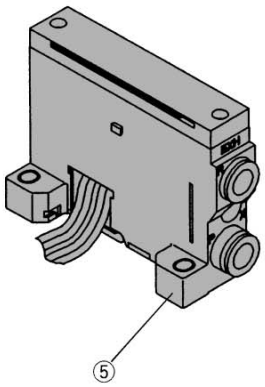
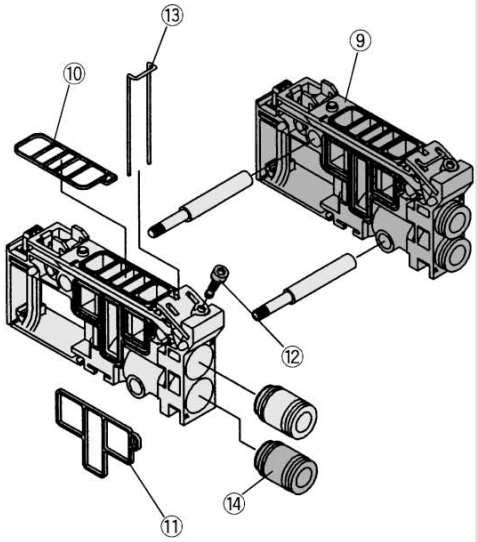
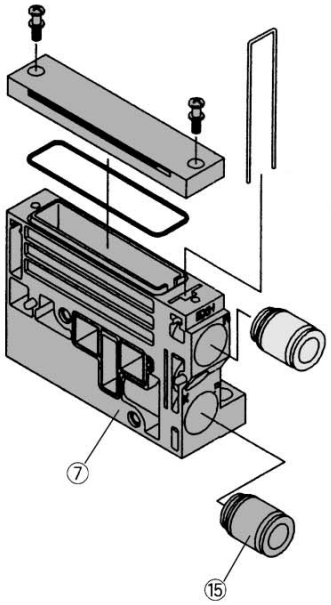
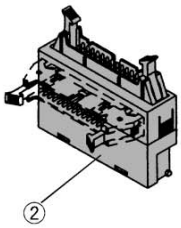
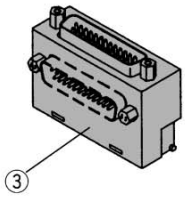
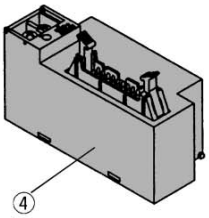
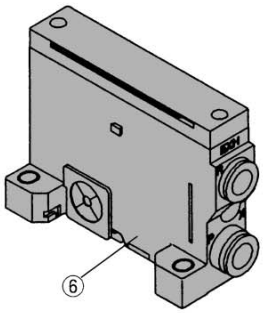
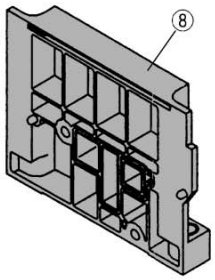
Replacement Parts

④	Pilot valve assembly	VQ111$^{(H)}_{(Y)}$-□-1 Note) Voltage1 to 6	Single
⑤	Pilot valve assembly	VQ131$^{(H)}_{(Y)}$-□-1 Note) Voltage1 to 6	Double/3 position

Note) (H): 1.5 W, (Y): 0.5 W

Exploded View: VQ2000/Plug-in Unit

(F, P, J, L, G, S kit)

	Housing assembly and SI unit	D side end plate assembly	Manifold block assembly	U side end plate assembly
S kit				
P/J kit				
F kit				
G kit				
L kit				

<Housing Assembly and SI Unit>

Housing assembly and SI unit no.

No.	Manifold	Part no.	Description
①	(SA kit)	EX320-S001(-XP)(1) [EX323-S001] (2)	General type SI unit (Series EX300)
	(SB kit)	EX120-SMB1(-XP)(1) [EX123-SMB1] (2)	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)
	(SBB kit)	[EX124-SMB1] (3)	SI unit for MELSECNET/MINI-S3 Data Link System (2 power supply lines) (Mitsubishi Electric Corp.)
	(SC kit)	EX120-STA1(-XP)(1) [EX123-STA1] (2)	SI unit for SYSBUS Wire System (OMRON Corporation)
	(SD kit)	EX120-SSH1(-XP)(1) [EX123-SSH1](2)	SI unit for Satellite I/O Link System (SHARP Corporation)
	(SE kit)	EX120-SPA1	SI unit for MEWNET-F System (Matsushita Electric Works, Ltd.)
	(SF1kit)	EX120-SUW1(-XP)(1) [EX123-SUW1] (2)	SI unit for 16 point Uni-wire System (NKE Corporation)
	(SG kit)	EX120-SAB1	SI unit for Allen Bradley Remote I/O (RIO) System (Rockwell Automation, Inc.)
	(SH kit)	EX120-SUH1(-XP)(1) [EX123-SUH1] (2)	SI unit for 16 point Uni-wire H System (NKE Corporation)
	(SJ1 kit)	EX120-SSL1(-XP)(1) [EX123-SSL1] (2)	16 point S-LINK System (SUNX Corporation)
	(SJ2 kit)	EX120-SSL2(-XP)(1) [EX123-SSL2] (2)	8 point S-LINK System (SUNX Corporation)
	(SK kit)	EX120-SFU1(-XP)(1) [EX123-SFU1] (2)	T-LINK Mini System (Fuji Electric Co., Ltd.)
	(SQ kit)	EX120-SDN1 [EX124-SDN1] (2)	SI unit for DeviceNet, CompoBus/D (OMRON Corporation)
	(SR1 kit)	EX120-SCS1(-XP)(1) [EX124-SCS1] (2)	SI unit for 16 point Compo Bus/S System (OMRON)
	(SR2 kit)	EX120-SCS2(-XP)(1) [EX124-SCS2] (2)	SI unit for 8 point Compo Bus/S System (OMRON)
	(SV kit)	EX120-SMJ1(-XP)(1) [EX124-SMJ1] (2)	SI unit for CC-LINK System (2 power supply systems) (Mitsubishi Electric Corporation)
②	P^{U}_{S}kit	AXT100-1-P^{U}_{S}□ (4)	Flat ribbon cable housing assembly □ = Number of pins: 26, 20, 16, 10
	J^{U}_{S}kit	AXT100-1-J^{U}_{S}□ (4)	Flat ribbon cable housing assembly
③	G kit	AXT100-1-GU20	Flat ribbon cable housing assembly with terminal block
④	F^{U}_{S}kit	AXT100-1-F^{U}_{S}□ (4)	D-sub connector housing assembly □ = Number of pins: 25, 15

Note 1) Suffix "-XP" for dust-protected type SI unit.
Note 2) Dusttight/Low jetproof type (IP65)
Note 3) SBB kit is usable only for dust tight/low jetproof type (IP65).
Note 4) Top entry connector for FU and PU while side entry connector for FS and PS.

<D Side End Plate Assembly>

⑤⑥D side end plate assembly no.

VVQ2000-3A-1-□-□

Electrical entry

F	For F kit
P	For P kit
J	For J kit
L	For L kit
G	For G kit
S	For S kit

Option

Nil	Common EXH
R (1)	External pilot
S (1)	Built-in silencer, direct exhaust

Note 1) When both options are specified, indicate as RS.
Note 2) The housing assembly and SI unit of F/P/J/G/S kit are not included.
Note 3) Separately place an order for ①, ②, ③, and ④.
For Dusttight/Low jetproof type (IP65), please consult with SMC.

<U Side End Plate Assembly>

⑦ U side end plate assembly no. (For F/P/G/S kits)

VVQ2000-2A-1-□

Option

Nil	Common EXH
R	External pilot
S	Built-in silencer, direct exhaust

Note 1) The ⑮'s fitting assembly is included.
Note 2) The housing assembly and SI unit of F/P/J/G/S kit are not included.
Note 3) Separately place an order for ①, ②, ③, and ④.
For Dusttight/Low jetproof type (IP65), please consult with SMC.

⑧ U side end plate assembly no. (For L kit)

VVQ2000-2A-1-L

<Manifold Block Assembly>

Tie-rod (2 pcs.) and lead wire assembly for extensions are attached

⑨ Manifold block assembly no.

VVQ2000-1A-□-□-□

Electrical entry

F1	F kit for 2 to 12 stations/Double wiring
F2	F kit for 13 to 24 stations/Double wiring
F3	F kit for 2 to 24 stations/Single wiring
P1	P, J, G, S kit for 2 to 12 stations/Double wiring
P2	P, J, G, S kit for 13 to 24 stations/Double wiring
P3	P, J, G, S kit for 2 to 24 stations/Single wiring
L0□	L0 kit □ Stations (1 to 8)
L1□	L1 kit □ Stations (1 to 8)
L2□	L2 kit □ Stations (1 to 8)
T1	T kit for 2 to 20 stations/Double wiring
T3	T kit for 2 to 20 stations/Single wiring
M1	M kit for 2 to 12 stations/Double wiring
M2	M kit for 13 to 24 stations/Double wiring
M3	M kit for 2 to 24 stations/Single wiring

Port size

C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8

Enclosure

Nil	Dusttight
W	Dusttight/Low jetproof type (IP65)

Note) F, P, J, G kits are available with "Nil" only.
M kit is available with [W] only.
S, L, T kits are selectable, depending upon the manifold type.

<Fitting Assembly>

⑭ Fitting assembly part no. (For cylinder port)

VVQ1000-51A-□

Port size

C4	Applicable tubing ø4
C6	Applicable tubing ø6
C8	Applicable tubing ø8

Note) Purchasing order is available in units of 10 pieces.

⑮ Fitting assembly part no. (For P, R ports)

VVQ2000-51A-C10

Applicable tubing ø10

Note) Purchasing order is available in units of 10 pieces.

Note) A set of parts containing 12 pcs. each is enclosed.

<Replacement Parts for Manifold Block>

Replacement Parts

No.	Part no.	Description	Material	Number
⑩	VVQ2000-80A-1	Gasket	HNBR	12
⑪	VVQ2000-80A-2	Packing	HNBR	12
⑫	VVQ2000-80A-3	Clamp screw	Carbon steel	12
⑬	VVQ2000-80A-4	Clip	Stainless steel	12