Body Ported
Metal Seal/Rubber Seal
Series VQ

Thin compact design with large flow capacity

(Flip type)

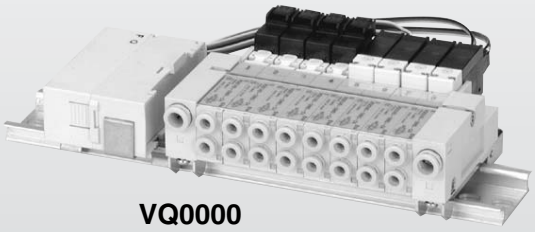
Model	Manifold pitch (mm)	Flow characteristics		Cylinder size
		Metal seal	Rubber seal	
		C [dm³/(s·bar)]	C [dm³/(s·bar)]	
VQ0000	10.5	0.50	0.59	Up to ø40
VQ1000	11	0.84	1.0	Up to ø50
VQ2000	16	2.3	2.7	Up to ø80

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

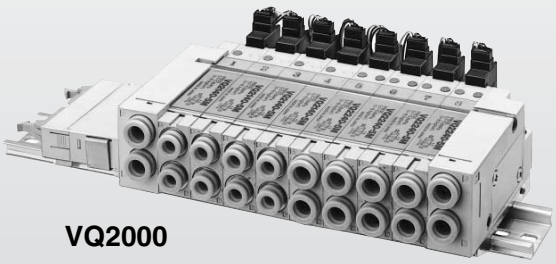
A variety of product groups meet all FA needs.

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

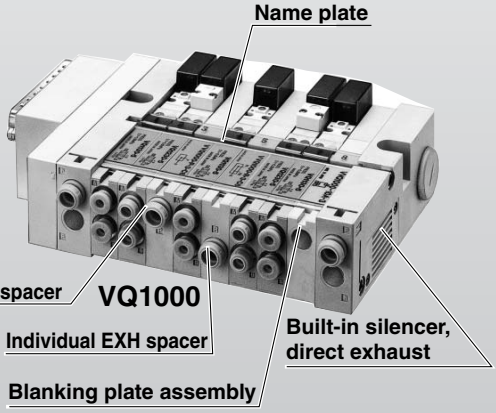
Flip type



VQ0000

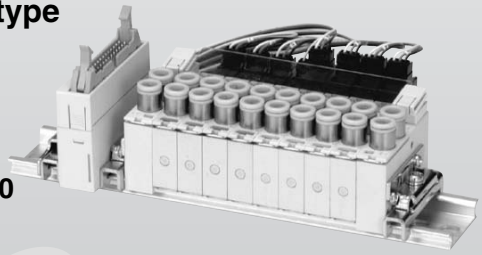


VQ2000



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

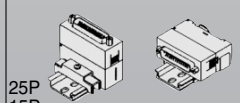
Innovative mounting methods

A valve can be changed without entirely disassembling the manifold.

Built-in One-touch fittings for easier piping.

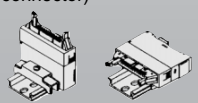
A variety of common wiring methods are standardized.

F kit (D-sub connector)



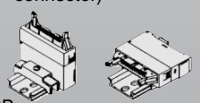
25P
15P

P kit (Flat ribbon cable connector)



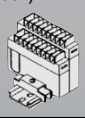
26P
20P
16P
10P

J kit (Flat ribbon cable connector)

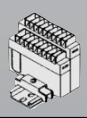


20P

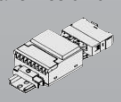
T kit (Terminal block)



L kit (Lead wire)



S kit (Serial transmission unit)



Valve Specifications

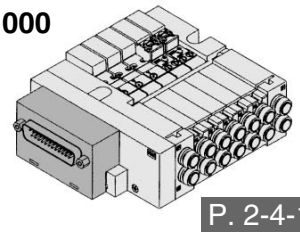
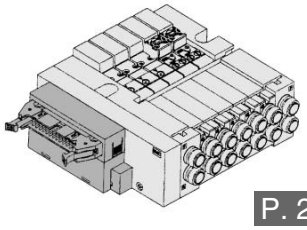
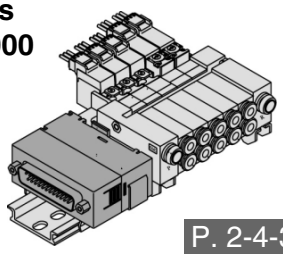
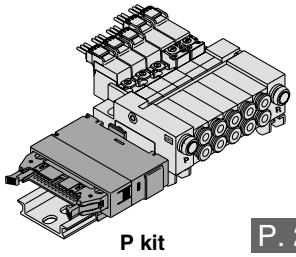
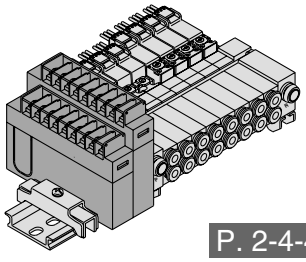
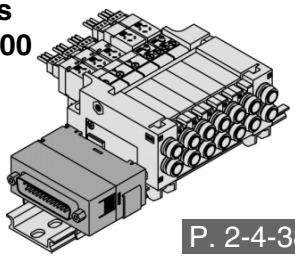
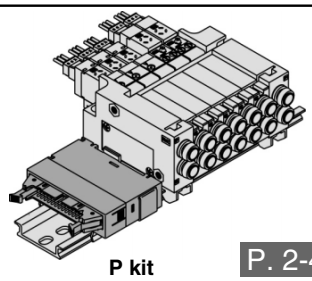
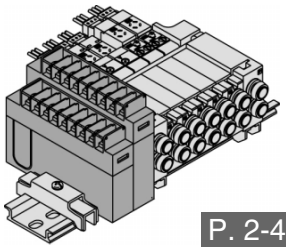
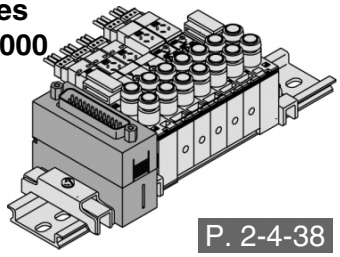
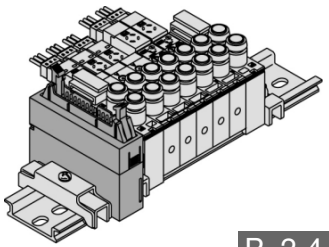
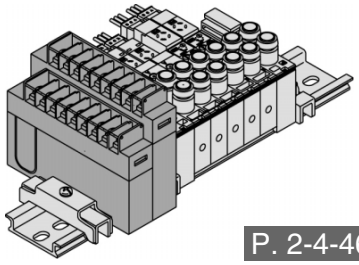
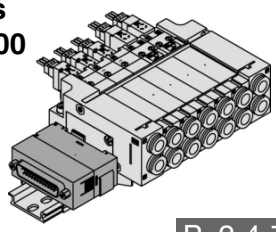
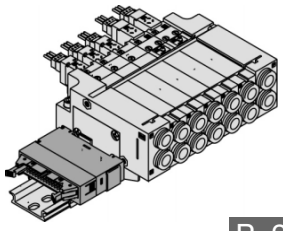
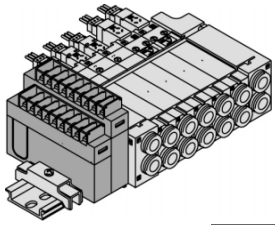
Body Ported

				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																

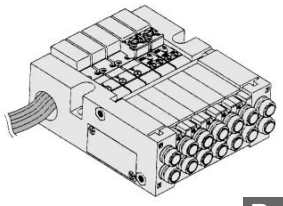
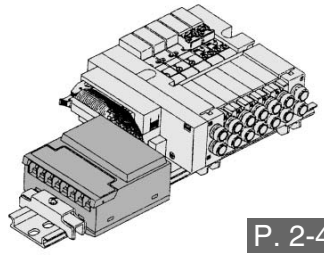
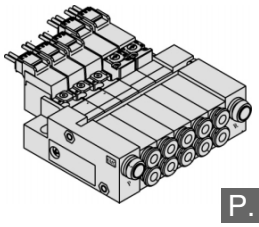
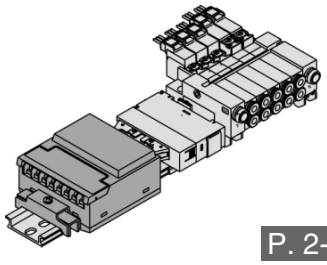
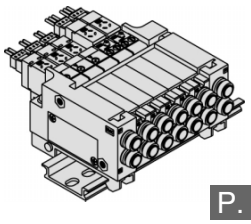
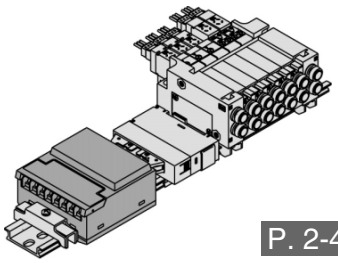
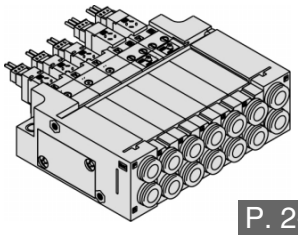
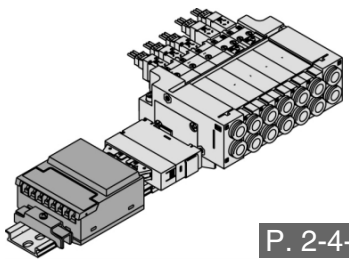
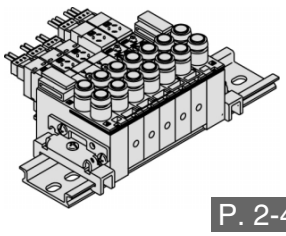
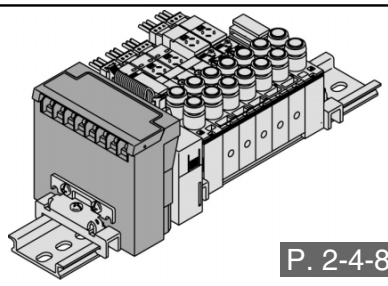
Option						
D-sub connector 15P	●	●	●	●	●	●
Flat ribbon cable 10P, 16P, 20P	●	●	●	●	●	●
Negative common specifications	● Except S kit	● Except S kit	● Except S kit	● Except S kit	● Except S kit	●
One-touch fitting Inch size	●	●	●	●	●	●
For special wiring spec.	● Except L kit	● Except L kit	● Except 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

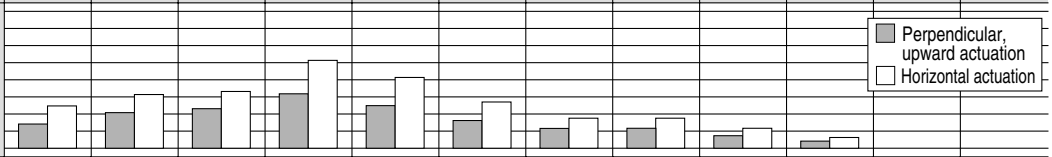
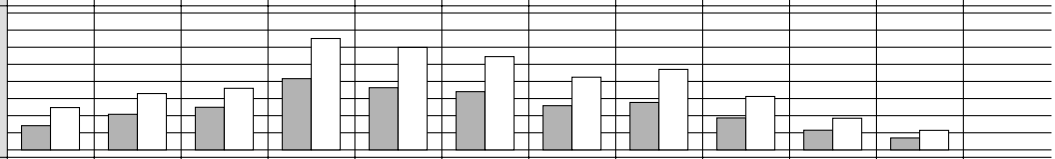
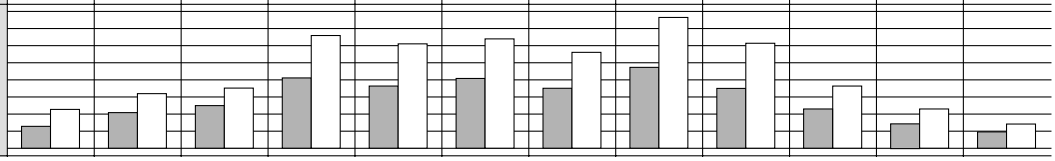
	F kit D-sub connector Conforming to MIL D-sub connector	P kit Flat ribbon cable connector (26, 20, 16, 10 pins) Conforming to MIL flat ribbon cable connector	J kit Flat ribbon cable connector (20 pins) Conforming to MIL flat. ribbon cable connector PC Wiring System compatible	T kit Terminal block Two 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		

Series VQ0000
Body Ported
Plug Lead Unit: Flip Type

How to Order Manifold

VV5Q 0 4 – 08 F S1 – D

Series

0	VQ0000

Manifold

4	Plug lead unit/Flip

Stations

01	1 station
⋮	⋮

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

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

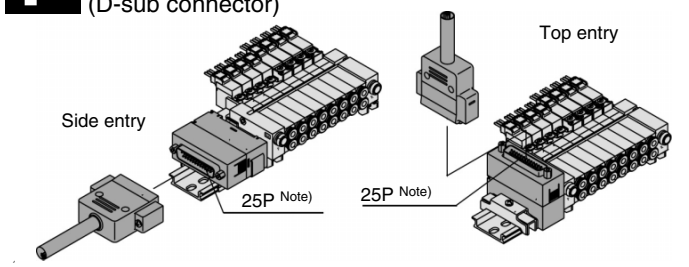
Option

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 DIN rail in mounting styles, so include suffix -D.
Note 3) Specify the wiring specifications on 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

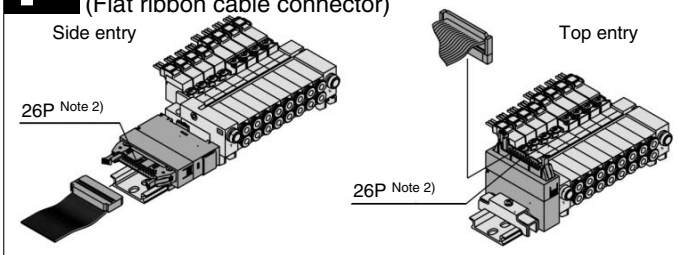
F kit (D-sub connector)



P. 2-4-38

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)	

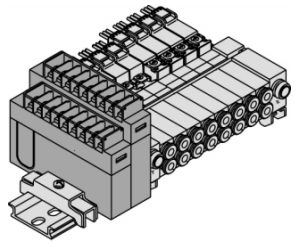
P kit (Flat ribbon cable connector)



P. 2-4-42

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)	

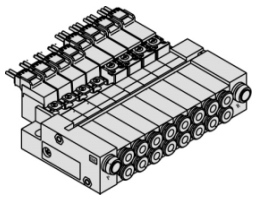
T kit (Terminal block)



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)

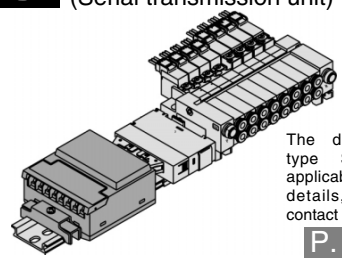


P. 2-4-50

C	Connector kit	Max. 16

S kit (Serial transmission unit)

The valve is equipped with an indicator light and surge voltage suppressor.



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.

How to Order Valves

VQ 0 1 4 0 Y 5 L – C4

Series

0	VQ0000

Type of actuation

1	2 position single
2	2 position double (Latching) Metal seal / Rubber seal
3 Note)	3 position closed center
4 Note)	3 position exhaust center

Note) 3 position occupies two stations.

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 kit 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).

Seal

0	Metal seal
1	Rubber seal

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 model no., refer to "Option" on page 2-4-69.

Electrical entry

	VQ0000
G: Grommet C kit single only. 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, Tkits. The plug connector and lead wire are attached to the manifold.

Cylinder port

Symbol	Port size
C3	With One-touch fitting for ø3.2
C4	With One-touch fitting for ø4
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)

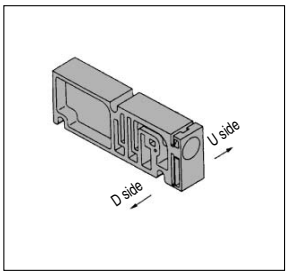
B: Locking type (Tool required) Available to single/3 position

Note) Except double (latching) type is push type only though, it can keep the switching position. (Refer to page 2-4-66.)

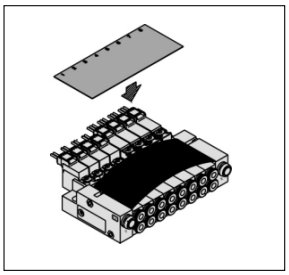
Manifold Option

P. 2-4-59

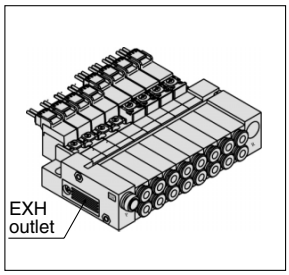
Blanking plate assembly
VVQ0000-10A-4



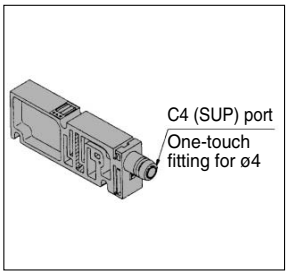
Name plate [-N4]
VVQ0000-N4-Station (1 to Max. stations)



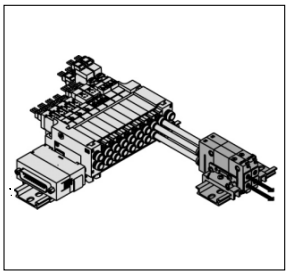
Built-in silencer, Direct exhaust [-S]



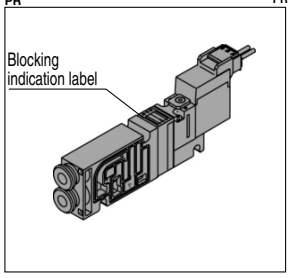
Individual SUP spacer
VVQ0000-P-4-C4



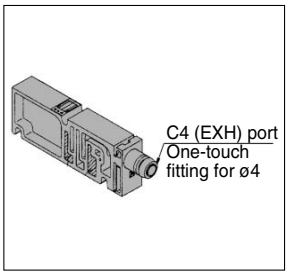
Double Check block
VQ1000-FPG-□□



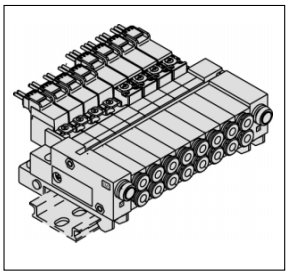
P, R, PR Block valve VQ0[1,2]4[0,1]-□-□□-P, R, PR



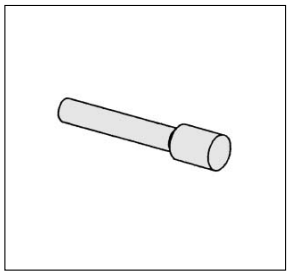
Individual EXH spacer
VVQ0000-R-4-C4



DIN rail mounting bracket
VVQ0000-57A-4

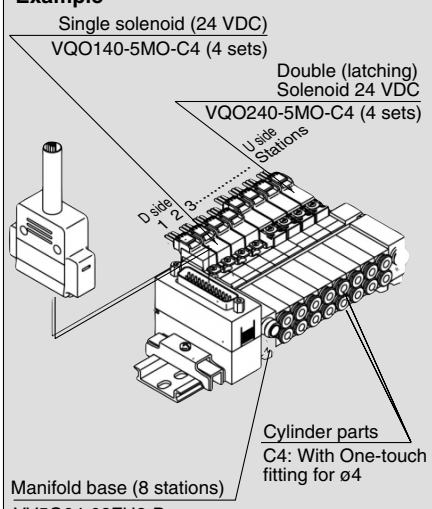


Blanking plug KQ2P-[23,04,06]



How to Order Manifold Assembly

Example



VV5Q04-08FU2-D ····· 1 set (F kit 8 station manifold base no.)
∗VQ0140-5MO-C4 ····· 4 sets (Single solenoid part no.)
∗VQ0240-5MO-C4 ····· 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 2-4-105.

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

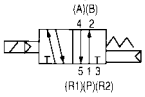
Model

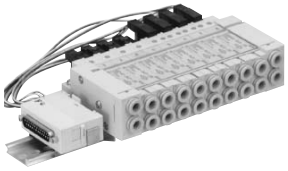
Series	Number of solenoids		Model		Flow characteristics: 1 → 4/2 (P → A/B) C [dm³/(s·bar)]	b	Cv	Flow characteristics: 4/2 → 5/3 (A/B → R1/R2) C [dm³/(s·bar)]	b	Cv	Response time (2) (ms): Standard: 1 W H: 1.5 W	Low wattage: 0.5 W	AC	Weight (g)
VQ0000	2 position	Single	Metal seal	VQ0140	0.43	0.20	0.10	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.

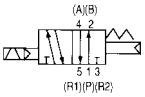
JIS Symbol

2 position single

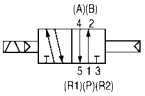




2 position double (Latching)

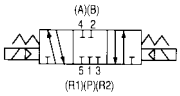


Metal seal

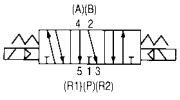


Rubber seal

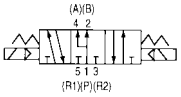
3 position closed center



3 position exhaust center



3 position pressure center



Standard Specifications

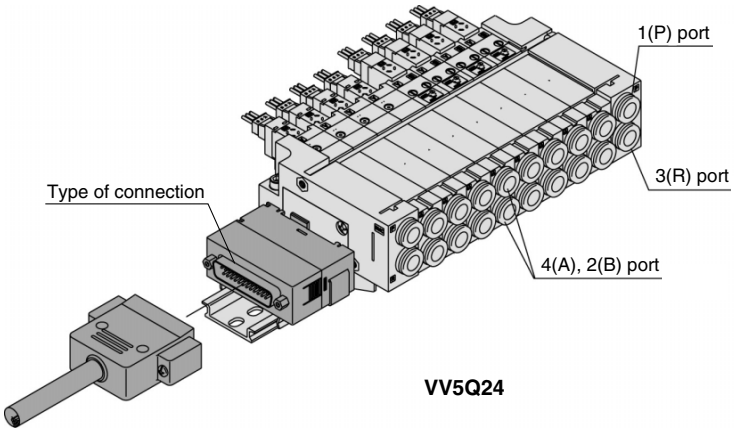
			Metal seal	Rubber seal
Valve specifications	Valve construction		Metal seal	Rubber seal
	Fluid		Air/Inert gas	Air/Inert gas
	Maximum operating pressure		0.7 MPa (High pressure type: 0.8 MPa) (3)	
	Min. operating pressure	Single	0.1 MPa	0.15 MPa
		Double (Latching)	0.1 MPa	0.15 MPa
		3 position	0.15 MPa	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.

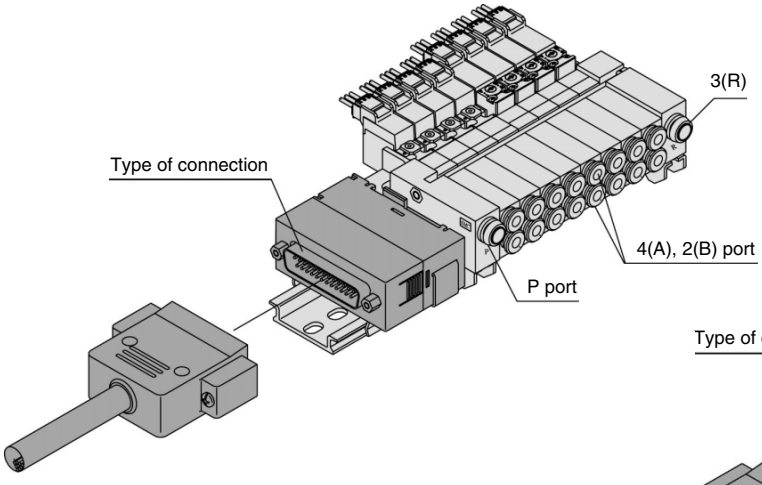
Manifold Specifications

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

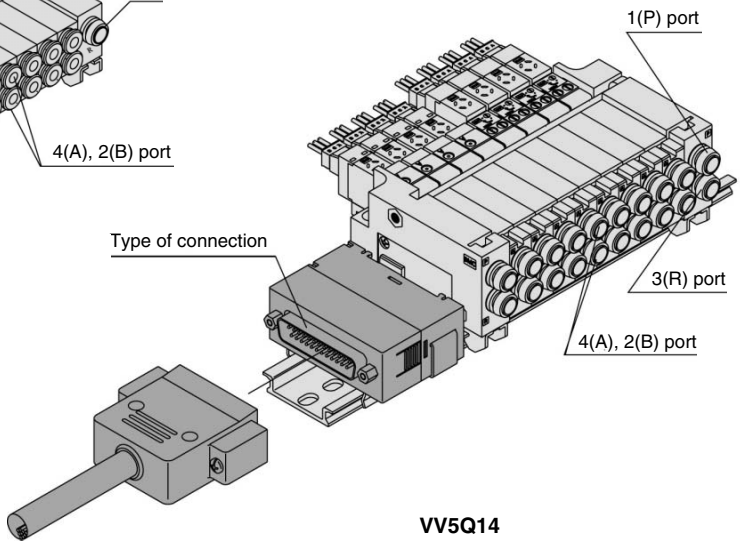
Note 1) Inch-size One-touch fittings are also available. For details, refer to page 2-4-69.
Note 2) See page 2-4-69 for details.



VV5Q24

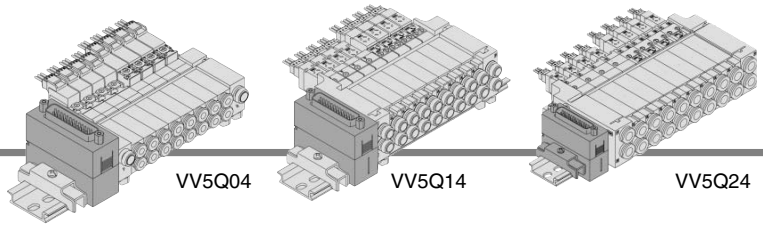


VV5Q04



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.

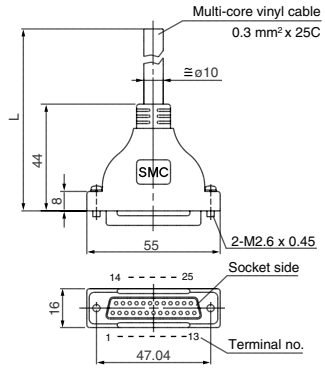
Manifold Specifications VV5Q14

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

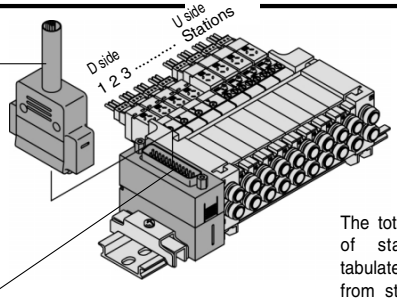
Note) The minimum bending radius of D-sub cable assembly is 20 mm.

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.

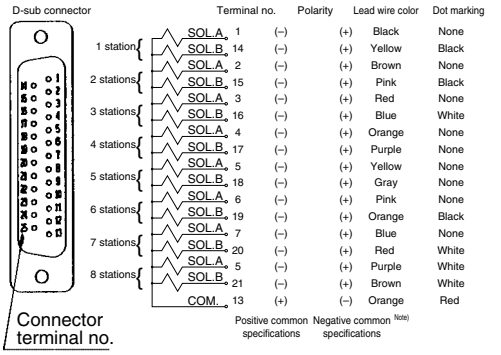
Cable assembly



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

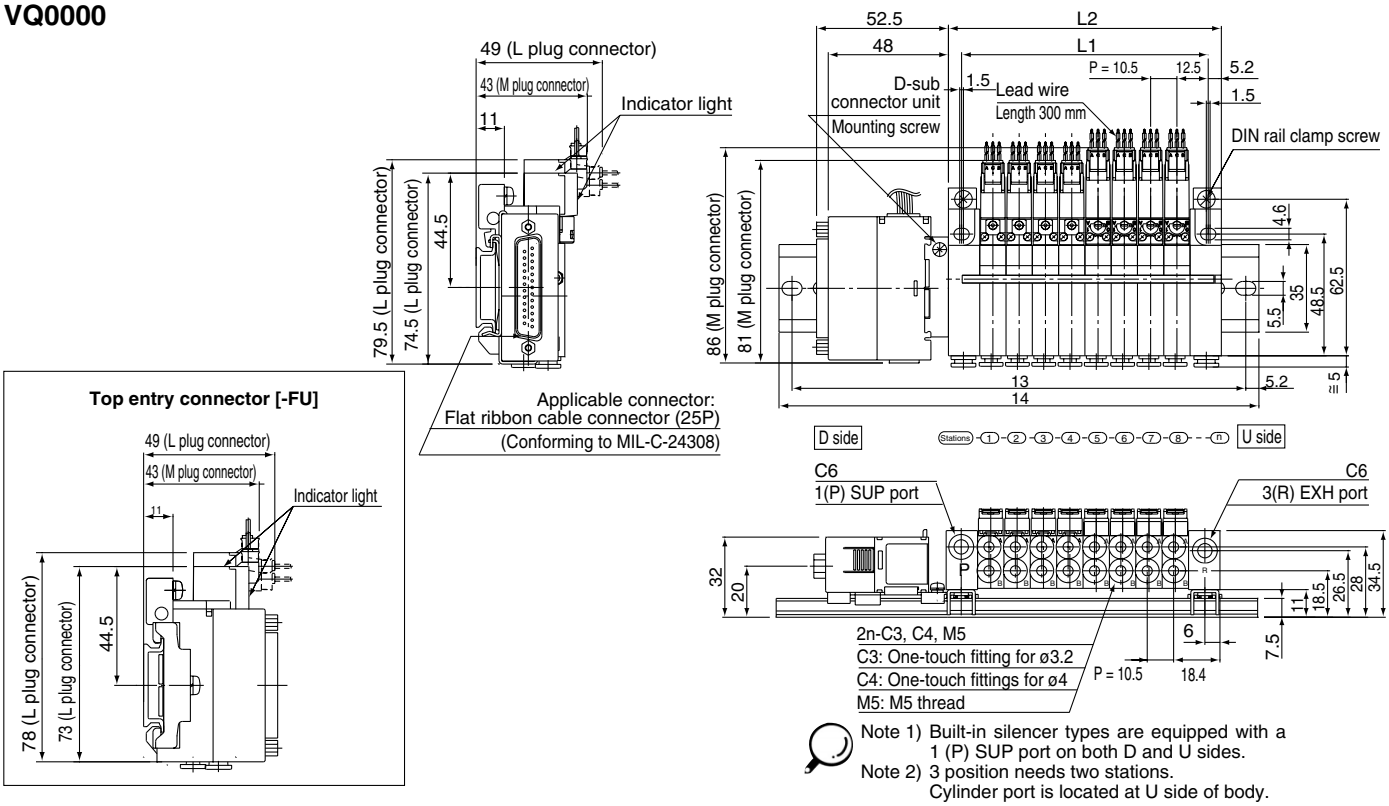
D (2)	DIN rail mounting style
K (3)	Special wiring specifications (Except double wiring)
N	With name plate
S	Built-in silencer, direct exhaust (U side only)

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)

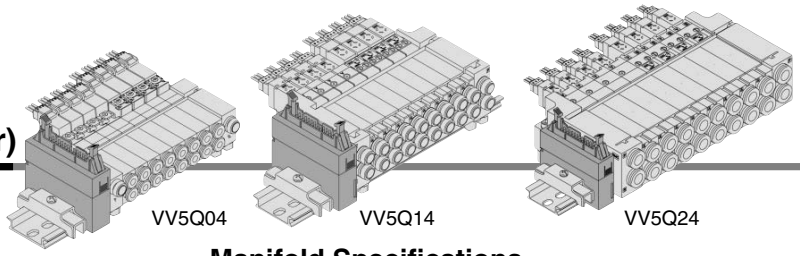
Note 1) All double latching valves of VQ0000 are non-locking push type. (Refer to page 2-4-66.)
Note 2) A manual override for pilot valve is provided to the standard model for double type.

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.

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

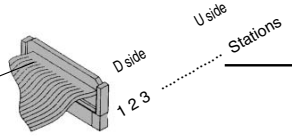


- MIL flat ribbon cable connector reduces installation labor savings for electrical connection.
- Using the connector for flat ribbon cable (26P), (10P, 16P, 20P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side 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

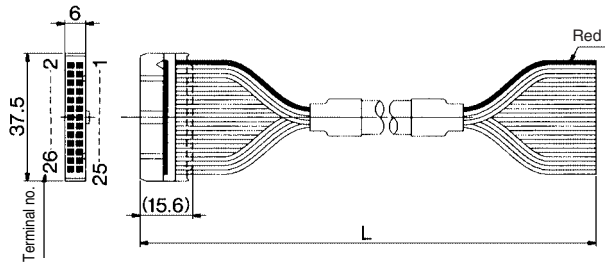
Flat Ribbon Cable (26 pins)



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

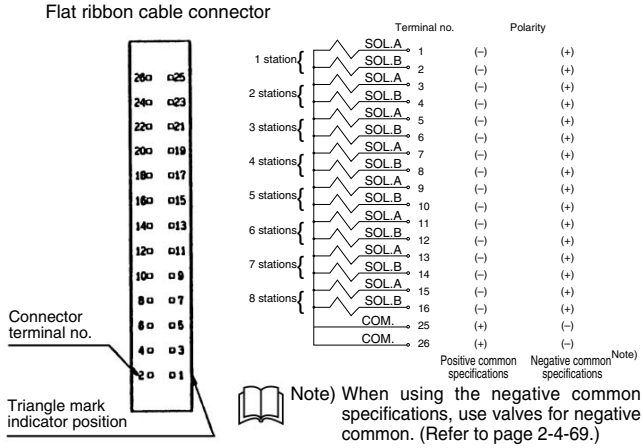
- Hirose Electric Co., Ltd.
- Japan Aviation Electronics Industry, Ltd.
- Sumitomo 3M Limited
- J.S.T. Mfg. Co., Ltd.
- Fujitsu Limited
- Oki Electric Cable Co., Ltd.

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)

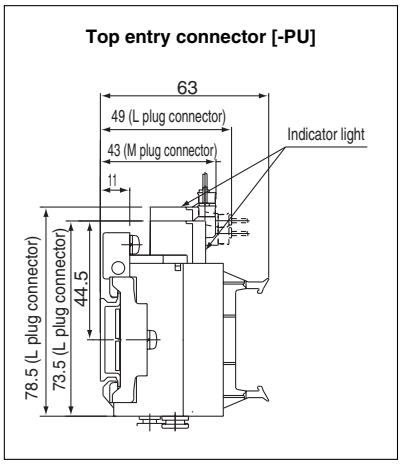
0	Without cable
1	With cable (1.5 m)
2	With cable (3 m)
3	With cable (5 m)

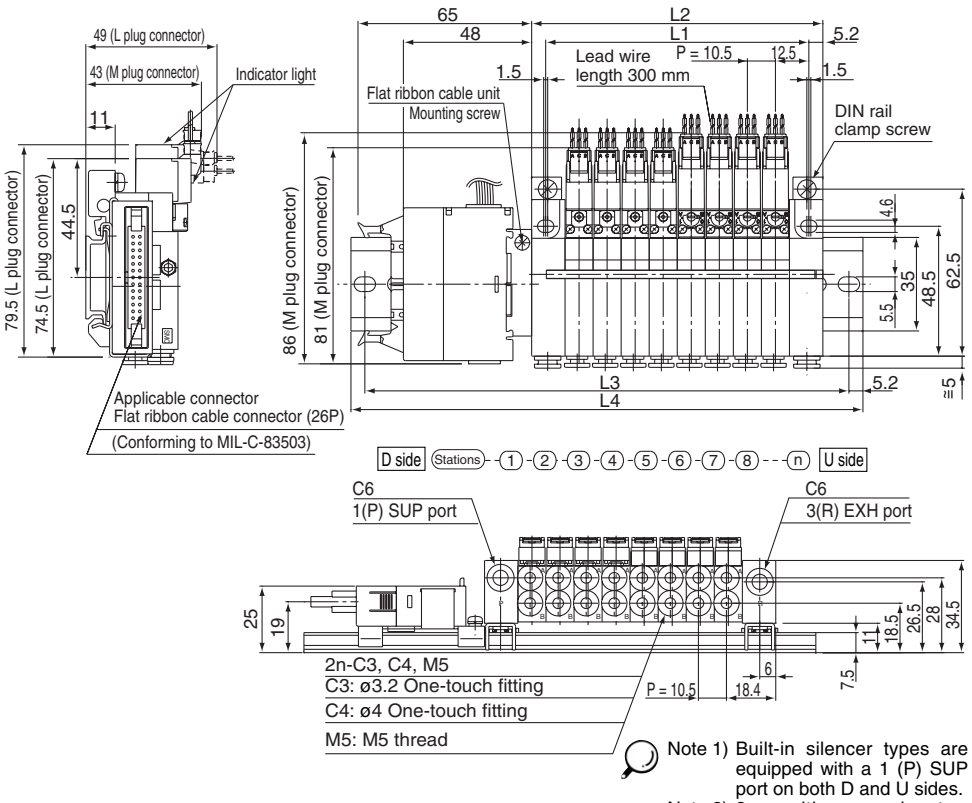
Option

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)

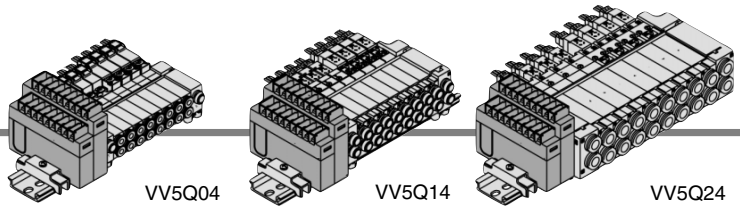
Note 1) All double latching valves of VQ0000 are non-locking push type.
Note 2) A manual override for pilot valve is provided to the standard model for double type.

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.

T VQ0000/1000/2000 Kit (Terminal block)

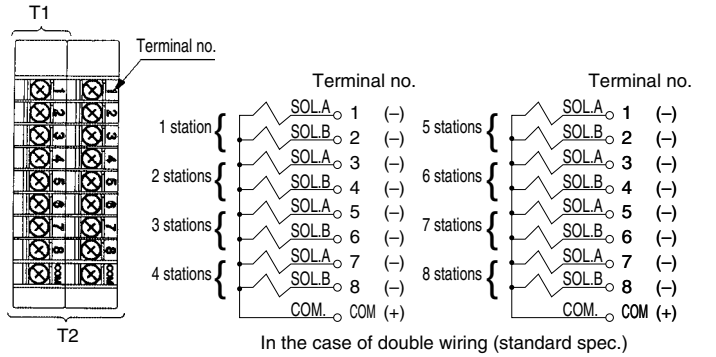


- It is a standard terminal block type.
- Two quantities of terminals can be selected in accordance with the number of stations.
  (8 terminals/16 terminals)
- Maximum stations are 16.

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



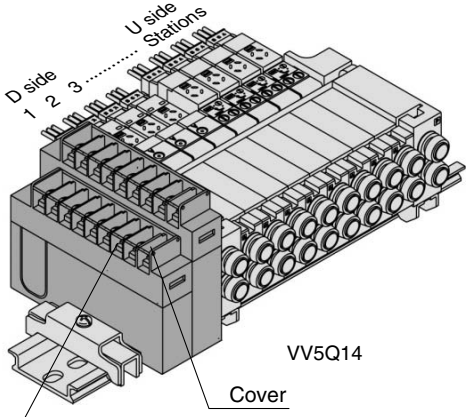
In the case of double wiring (standard spec.)
T1 (Terminal block of 1 row): 1 to 4 stations
T2 (Terminal block of 2 rows): 5 to 8 stations
T1 and T2 can be optionally chosen by adopting the combinations of single and double wiring (optional spec.), etc.

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)

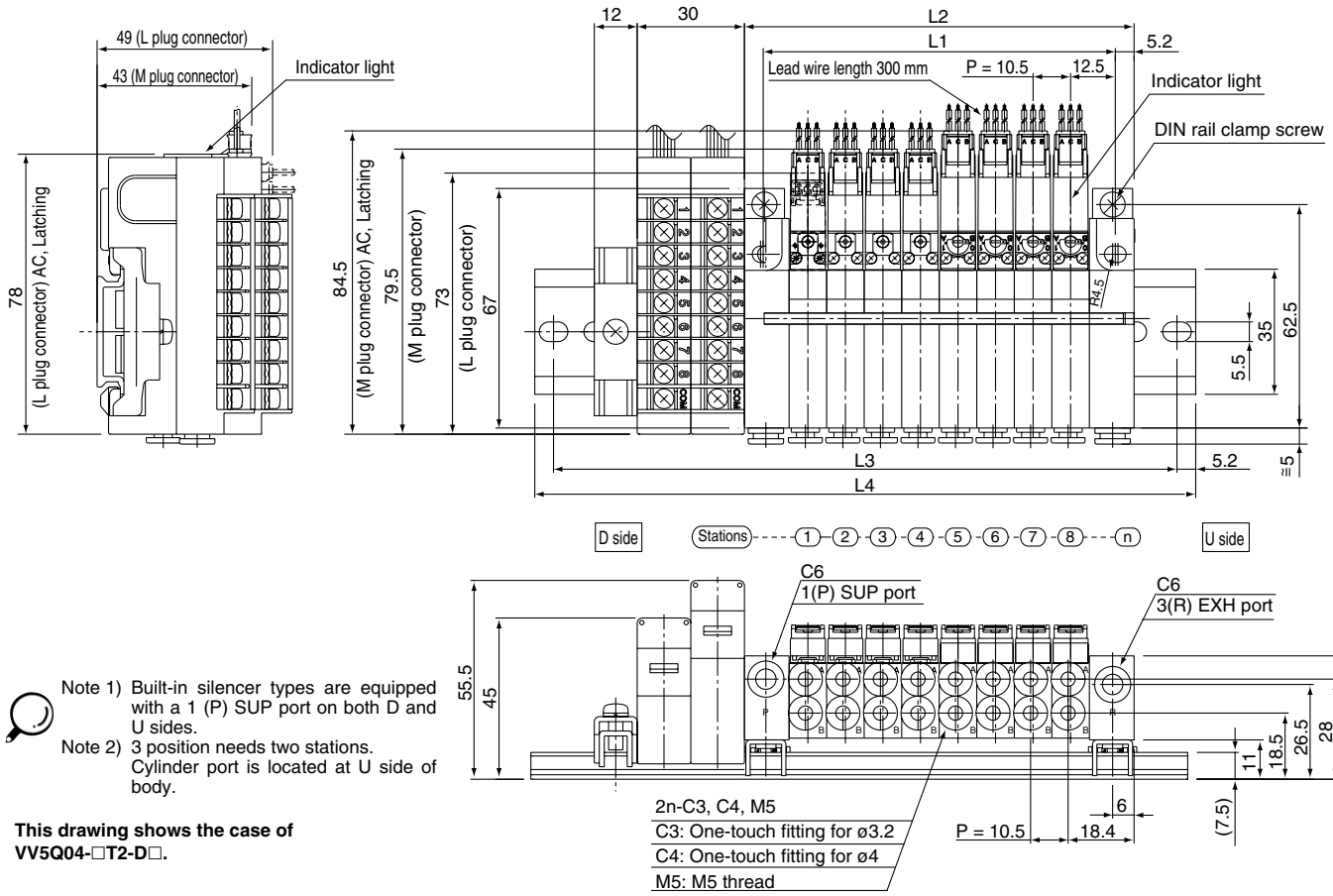
Note 1) When two or more symbols are specified, indicate them alphabetically.
Example) -DNS
Note 2) T kits are DIN rail mounted type, so include suffix -D.
Note 3) Specify the wiring specifications in the manifold specification sheet.

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	●	●	—

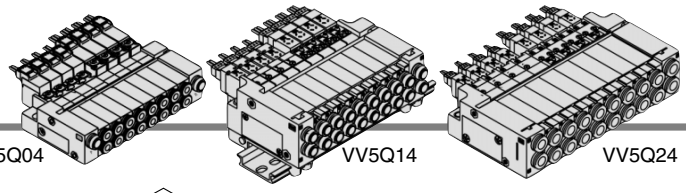
Note) For inch-size One-touch fittings, refer to "Option" on page 2-4-69.

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.

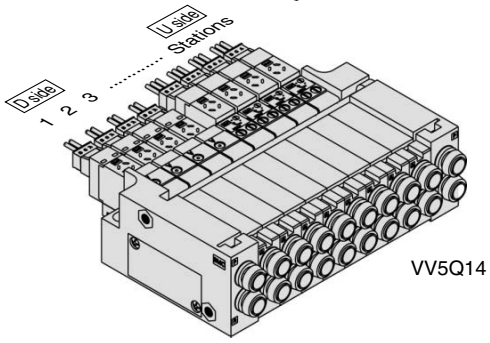
C VQ0000/1000/2000 Kit (Connector)



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

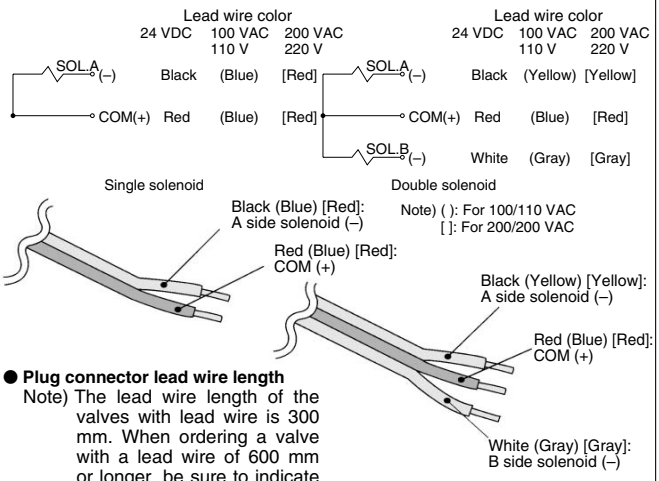
Manifold Specifications

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.

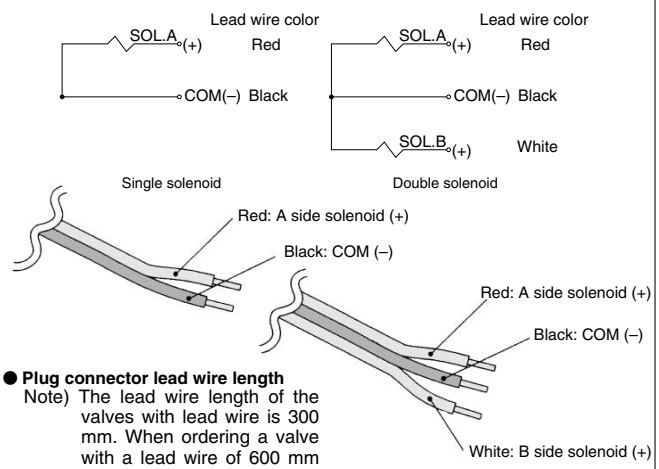
Connector Assembly Part No. (For DC)

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

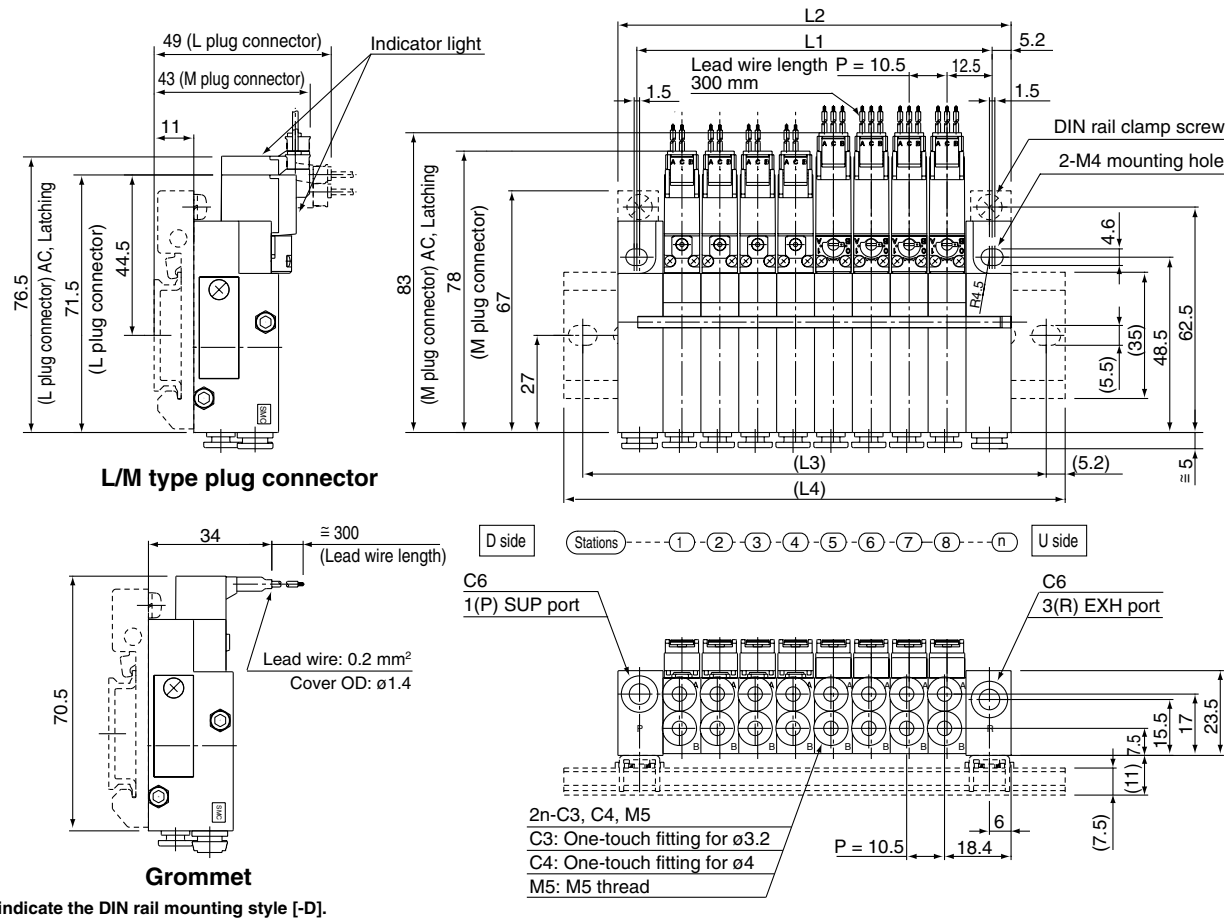
01	1 station
⋮	⋮
16	16 stations

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)

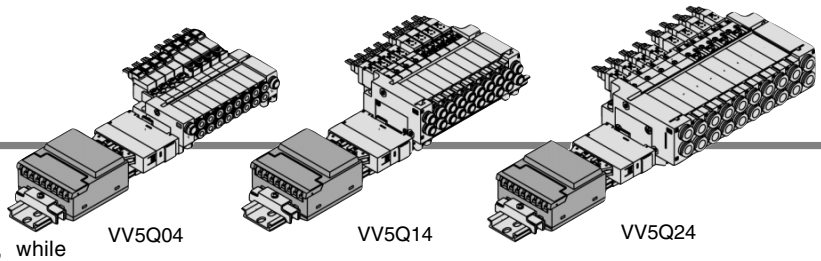
Note 1) All double latching valves of VQ0000 are non-locking push type.

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

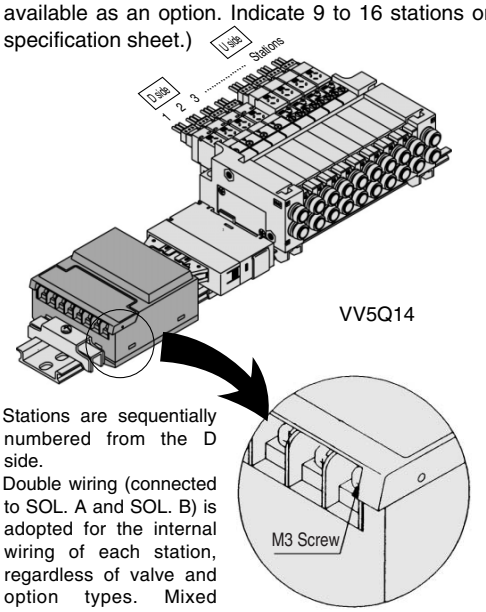
Electrical entry

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

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.)

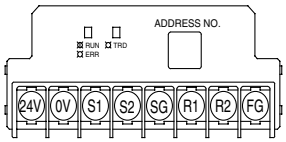
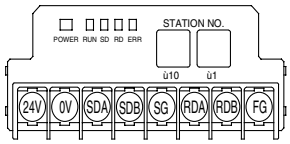


- Stations are sequentially numbered from the D side.
- Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-69.

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)

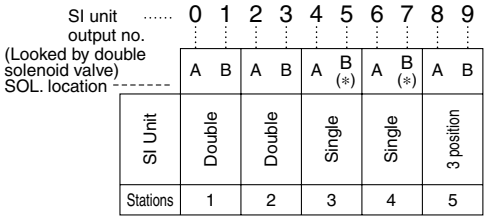
Note 1) When two or more symbols are specified, indicate them alphabetically.
Example) -DNS

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

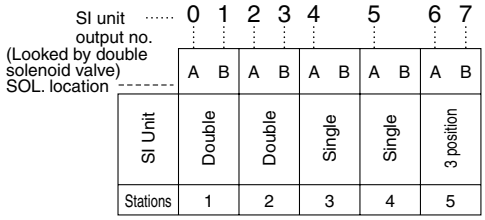
Note 3) Specify the wiring specifications in the manifold specification sheet.

● SI unit output and coil numbering

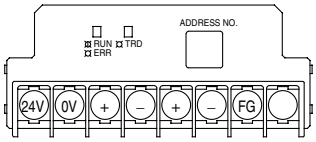
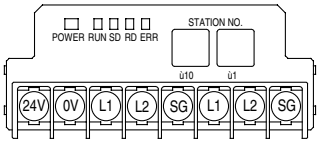
<Wiring example 1> Double wiring (Standard)



<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

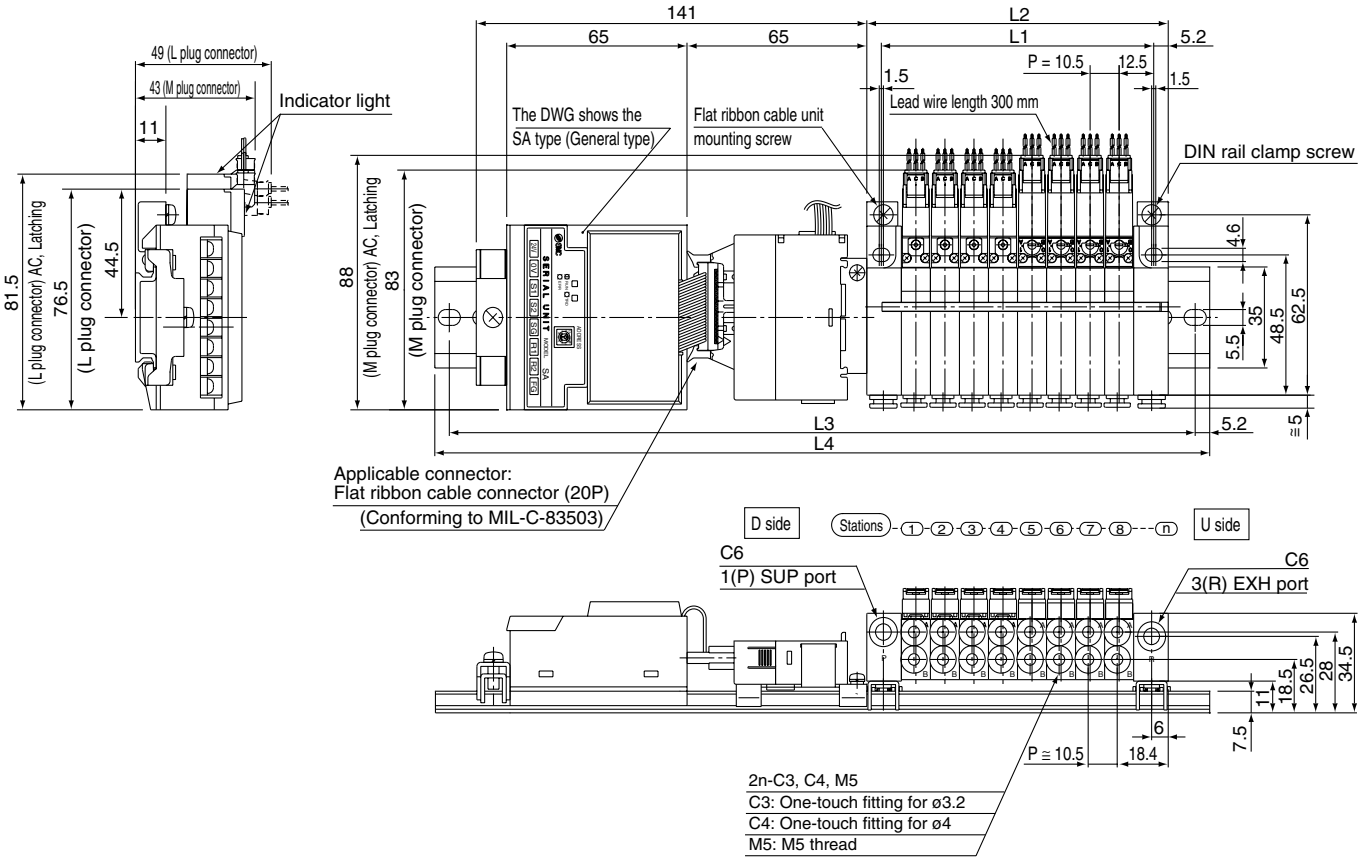
LO	L plug connector without connector
MO	M plug connector without connector

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.

VQ0000



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

Dimensions

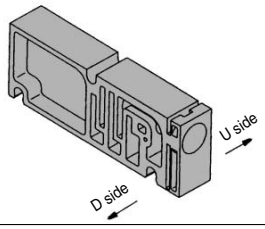
Formula L1 = 10.5n + 14.5, L2 = 10.5n + 25 n: Station (Maximum 16 stations)

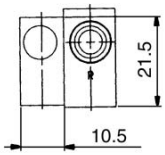
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	25	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5
L2	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5	193
L3	200	212.5	225	237.5	250	250	262.5	275	287.5	300	312.5	312.5	325	337.5	350	362.5
L4	210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.5	323	323	335.5	348	360.5	373

Manifold Option Parts for VQ0000

Blanking plate assembly
VVQ0000-10A-4

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

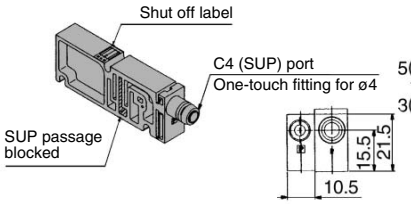




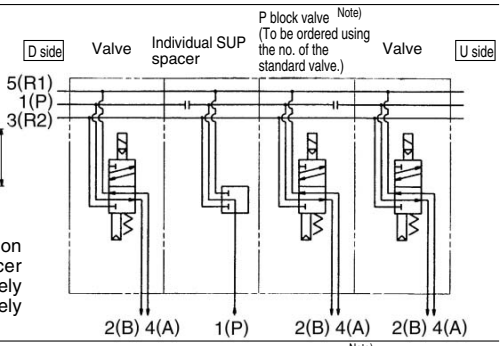
Individual SUP spacer
VVQ0000-P-4-C4

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 of the valve for individual supply while blocking the valve's U side. (See the application ex.)

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



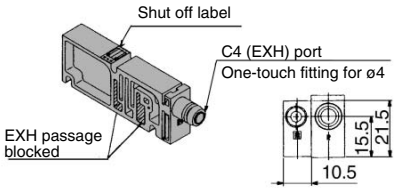
Note) P block valve is mounted in the blocking position when ordering an individual SUP spacer incorporated with a manifold. When separately ordering an individual SUP spacer, separately order a P block valve.



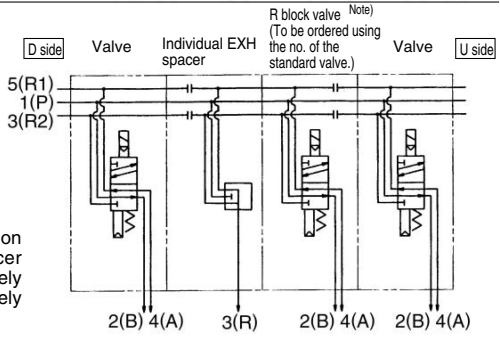
Individual EXH spacer
VVQ0000-R-4-C4

When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (One 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 valve's U side. (See the application ex.)

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



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
VQ0$\frac{1}{2}$4$\frac{0}{1}$-□-□□ - P/R/PR

Valve no.

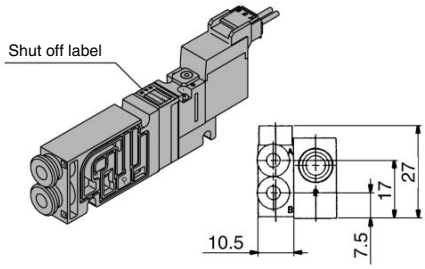
For a flip plug-in unit, block plate is built in the valve for blocking SUP and EXH passages. Since the no. is classified by the passage to be blocked, specify it by attaching the option no. to the valve no. The block valve is constructed so that U sides of SUP and EXH passages are blocked.

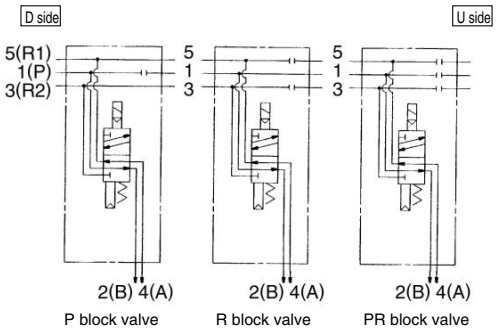
* Specify the number of stations on the manifold specification sheet.

<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
  For manifold other than C kit which is silencer built-in, there's no exhaust port on the D side end plate. Install a spacer for individual EXH on the 1st station separately.





For SUP passage block

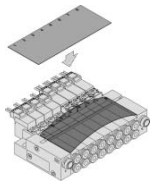
For EXH passage block

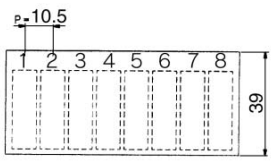
For SUP/EXH passage block

For SUP passage block	VQ0$\frac{1}{2}$4$\frac{0}{1}$-□-□□-P
For EXH passage block	VQ0$\frac{1}{2}$4$\frac{0}{1}$-□-□□-R
For SUP/EXH passage block	VQ0$\frac{1}{2}$4$\frac{0}{1}$-□-□□-PR

Name plate [-N4]
VVQ0000-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.

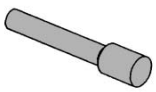


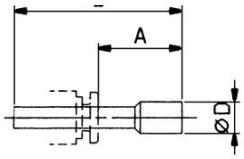


* When ordering assemblies incorporated with a manifold, suffix -N to the manifold no.

Blanking plug
KQ2P-$\frac{23}{04}$
$\frac{}{06}$

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





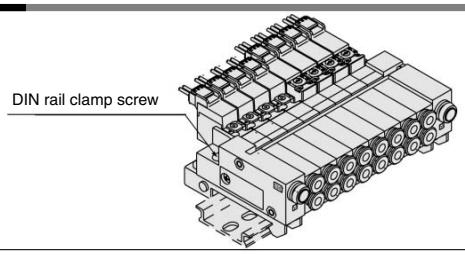
Dimensions

Applicable fittings size ød	Model	A	L	D
3.2	**KQP-23**	16	31.5	3.2
4	**KQP-04**	16	32	6
6	**KQ2P-06**	18	35	8

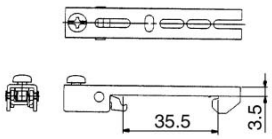
Manifold Option Parts for VQ0000

DIN rail mounting bracket
VVQ0000-57A-4

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).



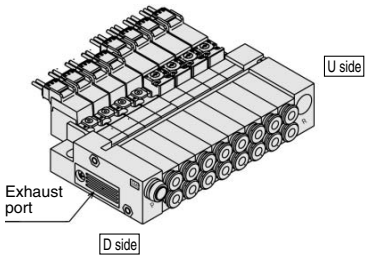
∗ When ordering assemblies incorporated with a manifold, add suffix -D to the manifold no.



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.
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.

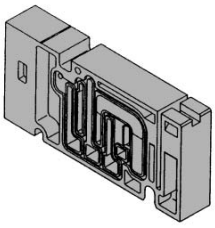


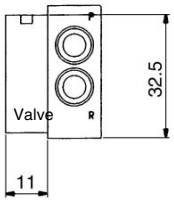
∗ When ordering assemblies incorporated with a manifold, add suffix -S to the manifold no.

Manifold Option Parts for VQ1000

Blanking plate assembly
VVQ1000-10A-4

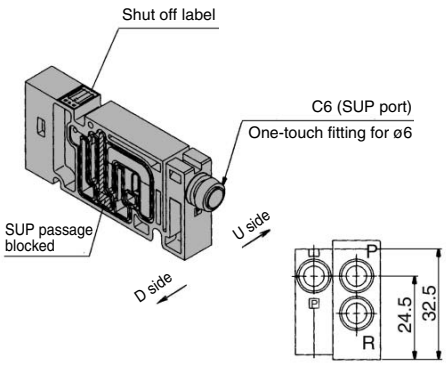
It is used when a blanking plate is mounted to a manifold in advance for possible valve mounting, etc.

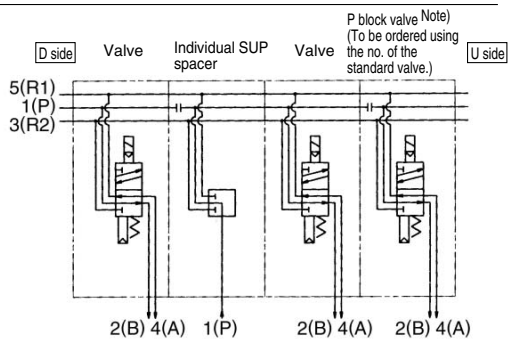




Individual SUP spacer
VVQ1000-P-4-C6

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 of the valve for individual supply while blocking the valve's U side. (See the application ex.)
∗ Specify the spacer mounting position and SUP block plate mounting position on the manifold specification sheet.

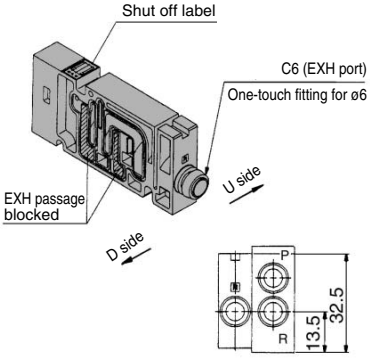


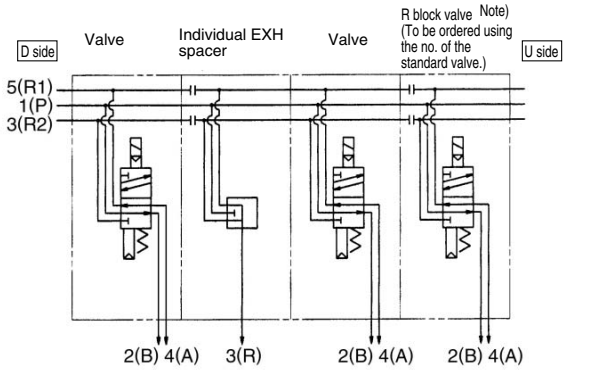


Note) P block valve is mounted in the blocking position when ordering an individual SUP spacer incorporated with a manifold.
When separately ordering an individual SUP spacer, separately order a P block valve.

Individual EXH spacer
VVQ1000-R-4-C6

When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (One 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 valve's 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, install a spacer for individual EXH on the 1st station.





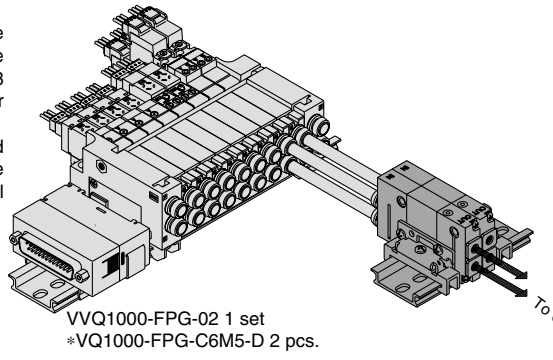
Note) R block valve is mounted in the blocking position when ordering an individual EXH spacer incorporated with a manifold.
When separately ordering an individual EXH spacer, separately order an R block valve.

Manifold Option Parts

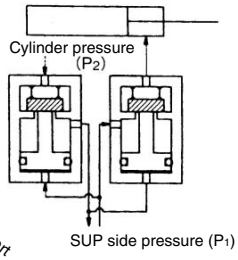
Double check block (Separated type): For VQ0000/1000

VQ1000-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 two position single/double solenoid valve will permit this block to be used for preventing the dropping at the cylinder stroke end when the SUP residual pressure is released.



VVQ1000-FPG-02 1 set
∗VQ1000-FPG-C6M5-D 2 pcs.

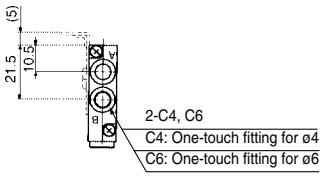


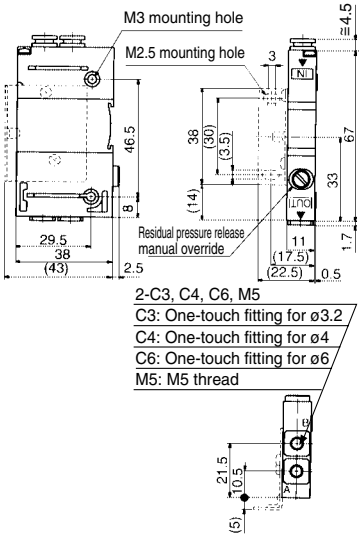
Specifications

Max. operating pressure	0.8 MPa
Min. operating pressure	0.15 MPa
Ambient and fluid temperature	–5 to 50° C
Flow characteristics: C	0.60 dm³/(s·bar)
Max. operating frequency	180 CPM

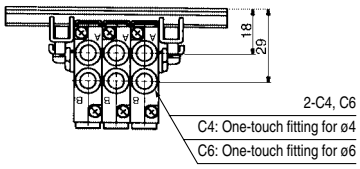
Note) Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa)

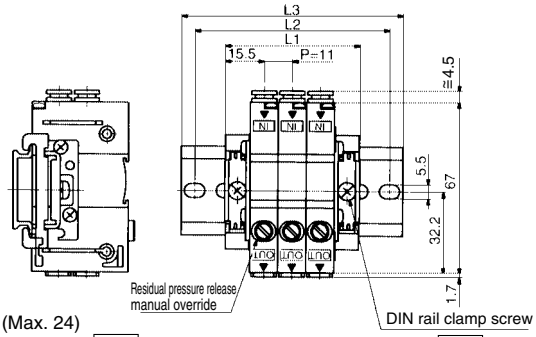
Dimensions





Manifold



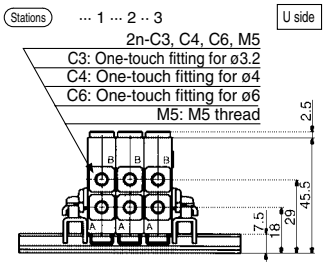


Dimensions Formula L1 = 11n + 20 n: Station (Max. 24)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12
L1	31	42	53	64	75	86	97	108	119	130	141	152
L2	50	62.5	75	87.5	100	112.5	125	125	137.5	150	162.5	175
L3	60.5	73	85.5	98	110.5	123	135.5	135.5	148	160.5	173	185.5

L \ n	13	14	15	16	17	18	19	20	21	22	23	24
L1	163	174	185	196	207	218	229	240	251	262	273	284
L2	187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5	300
L3	198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.5

D side Stations ··· 1 ·· 2 ·· 3 U side



How to Order

Double check block

VQ1000-FPG- C4 M5 F

IN side port size

C4	One-touch fitting for ø4
C6	One-touch fitting for ø6

OUT side port size

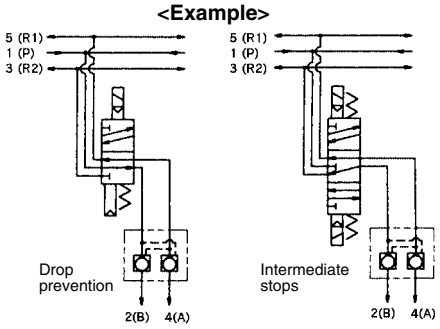
M5	M5 thread
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6

Option

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

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

<Example>



Manifold

VVQ1000-FPG- 06

Stations

01	1 station
⋮	⋮
16	16 stations

<Example>
VVQ1000-FPG-06····6 types of manifold
∗VQ1000-FPG-C4M5-D, 3 sets
∗VQ1000-FPG-C6M5-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.
- 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}
- 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.

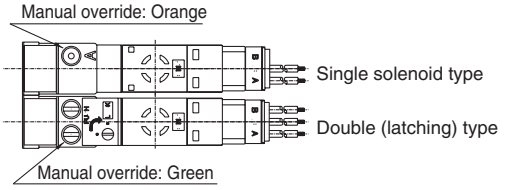
⚠ Precautions

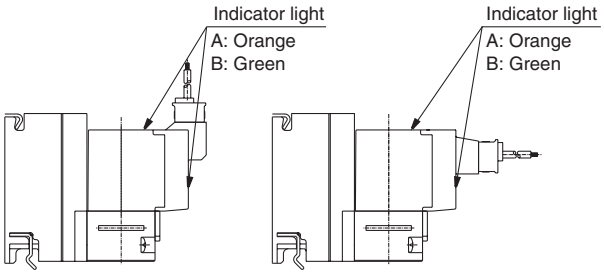
Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 2-9-2.

Light/Surge Voltage Suppressor

⚠ Caution

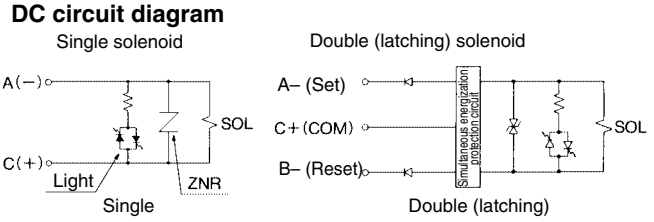
The lighting positions are concentrated on one side for both single solenoid and double (latching) type. In the double (latching) type, A side and B side energization are indicated by two colors which match the colors of the manual overrides.





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

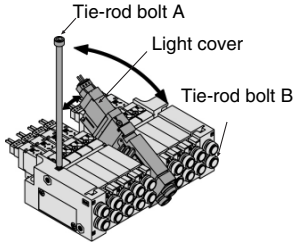
Different from the conventional double solenoid, the double type uses a latching (self-holding system) solenoid. Although the appearance is the same as the single solenoid, it is constructed so that the movable iron core in the solenoid is held in the ON position on A and B sides by instantaneous energization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

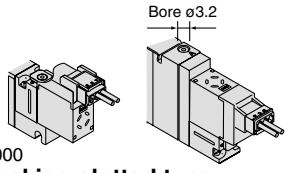
Note) Be careful not to push on the light cover while mounting/removing the valve.

Double (Latching solenoid) Type

⚠ Warning

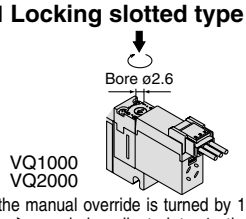
Without an electric signal for the solenoid valve the manual override is used for switching the main valve.

■ Push type (Tool required)

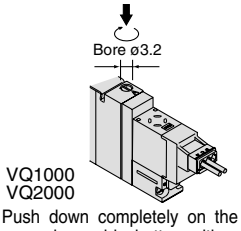


Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

■ Locking slotted type

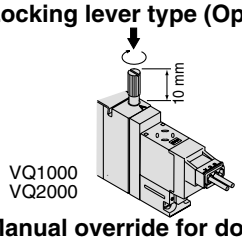


If the manual override is turned by 180° clockwise and the ▶ mark is adjusted to 1, then pushed in the direction of an arrow (↓), it will be locked in the ON state. If the manual override is turned by 180° counterclockwise and ▶ mark is adjusted to 0, locking will be released and the manual override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

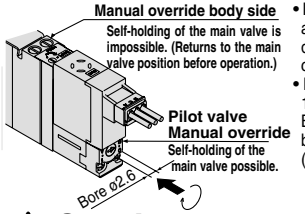
■ Locking lever type (Option)



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.)

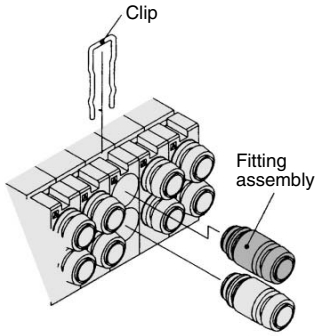
⚠ Caution

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

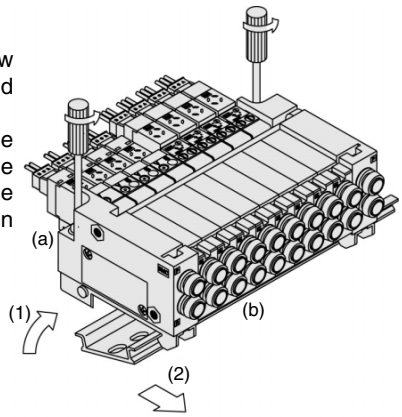
Mounting/Removing from the DIN Rail

⚠ Caution

<Procedure>

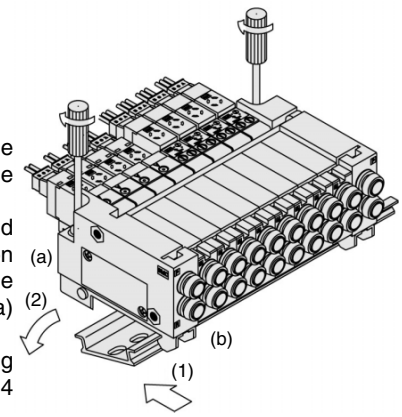
How to Remove

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

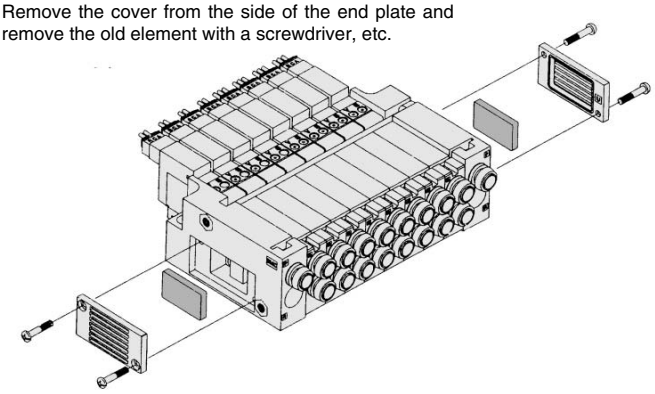
A silencer element is incorporated in the end plate on both sides of the manifold base. A dirty and choked element may reduce cylinder speed or cause malfunction. Clean or replace the dirty element.

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.

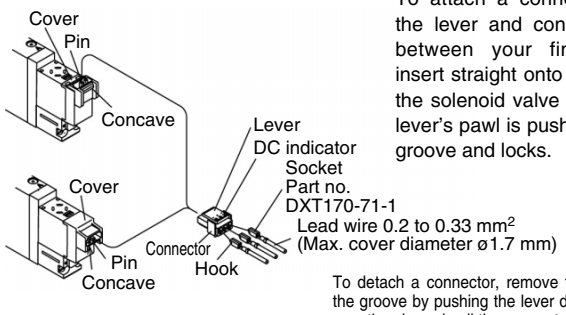
Remove the cover from the side of the end plate and remove the old element with a screwdriver, etc.



How to Use Plug Connector

⚠ Caution

Attaching and detaching connectors

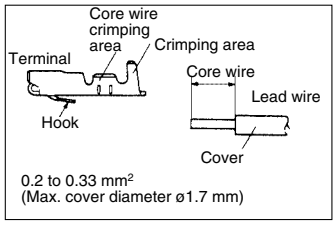


To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.

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.



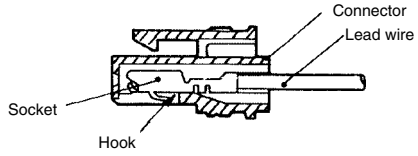
Attaching and detaching lead wires with sockets

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.

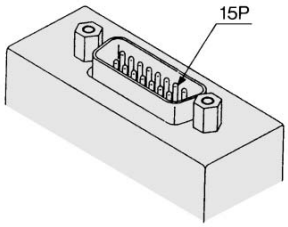


Option

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

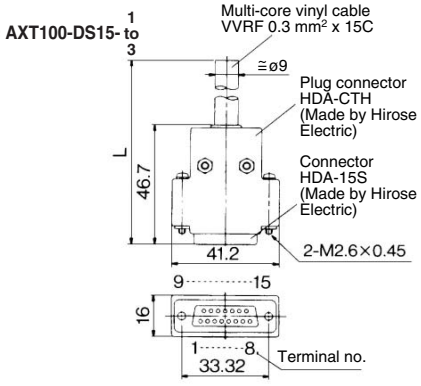
How to Order
D-sub connector, 15 pins
Connector location–Side (horizontal)
Without cable

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

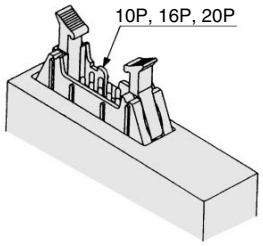
Terminal no.	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black

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

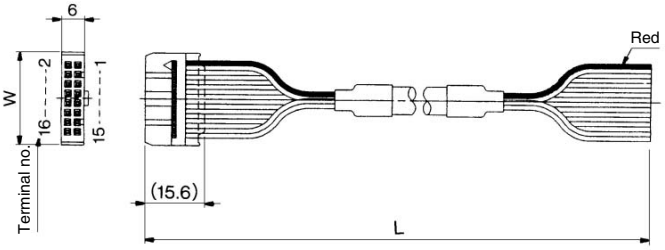
How to Order
Flat ribbon cable, 20 pins
Connector location–Side (Horizontal)
Without cable

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.

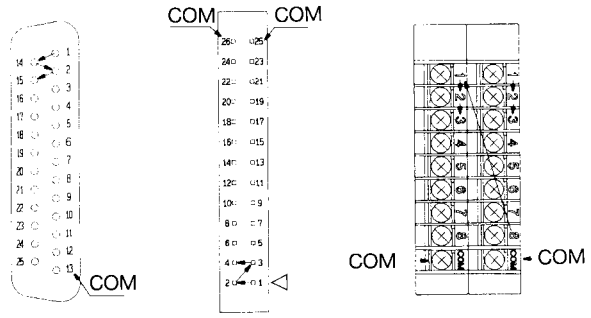
Example)

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

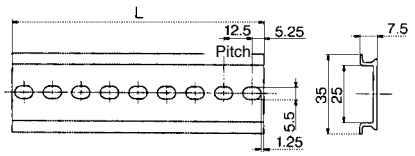
Others, option symbols: to be indicated alphabetically.

● **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.



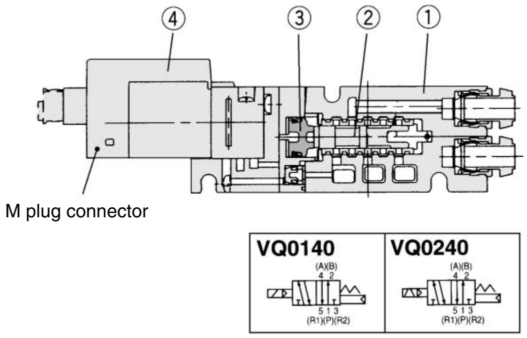
L Dimension

L = 12.5 x n + 10.5

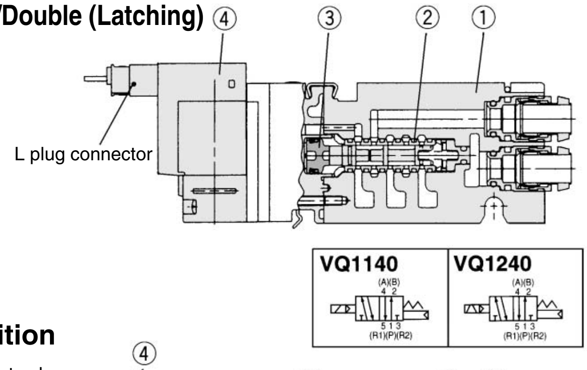
No.	1	2	3	4	5	6	7	8	9	10
L dimension	23	35.5	48	60.5	73	85.5	98	110.5	123	135.5
No.	11	12	13	14	15	16	17	18	19	20
L dimension	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5
No.	21	22	23	24	25	26	27	28	29	30
L dimension	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5
No.	31	32	33	34	35	36	37	38	39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

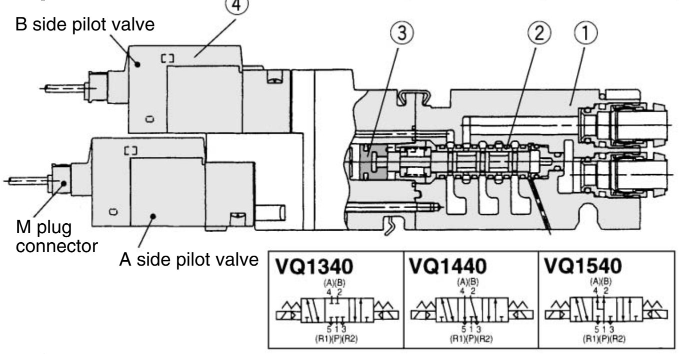
Metal seal
VQ0000



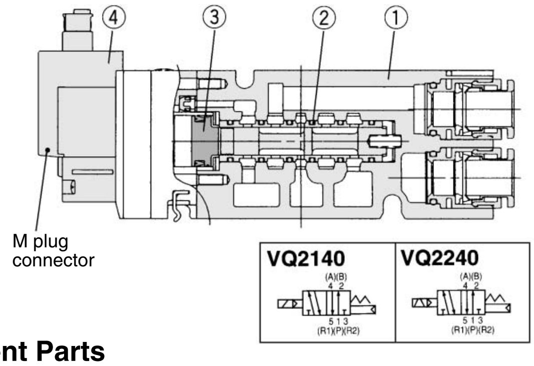
VQ1000
Single/Double (Latching)



3 position



VQ2000



Component Parts

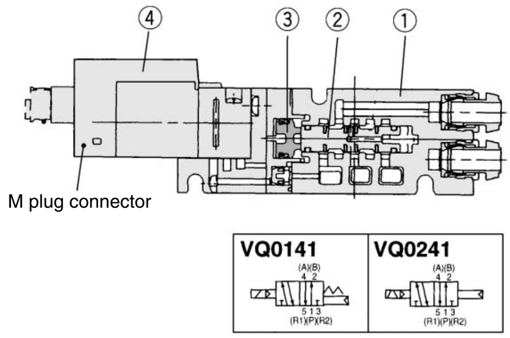
No.	Description	Material	Note
①	Body	Aluminum die-casted	
②	Spool/Sleeve	Stainless steel	
③	Piston	Resin	

④ Pilot valve assembly

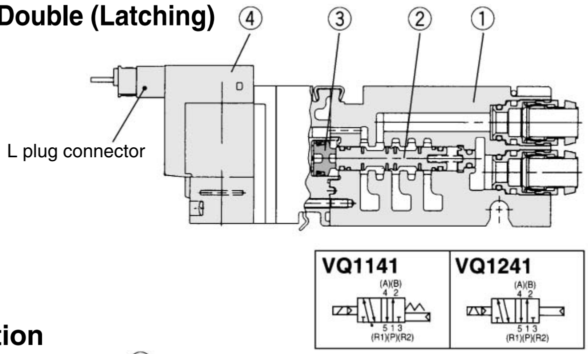
Single 3 position (VQ1000)	VQ111 (H)(Y) Note) - □ L Nil (VQ0000), M -2 (VQ1000), G 3 (VQ2000); 0: VQ0000, 1: VQ1000, VQ2000; Voltage 1 to 6	
Double (Latching)	VQ110L - □ L Nil (VQ0000), M -2 (VQ1000), 3 (VQ2000); Voltage 1 to 6	
3 position (VQ1000)	VQ111 (H)(Y) Note) - □ L M G - X18 {A side (Bottom side)}, 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

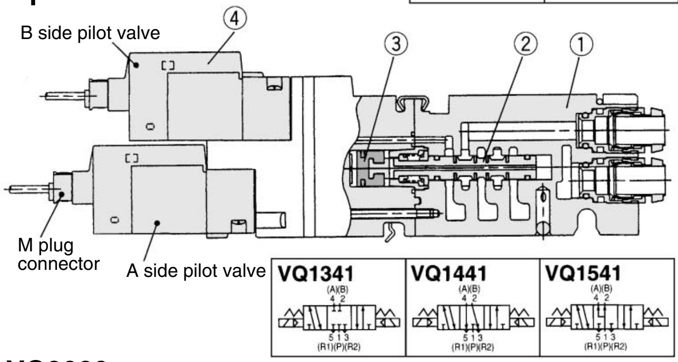
Rubber seal
VQ0000



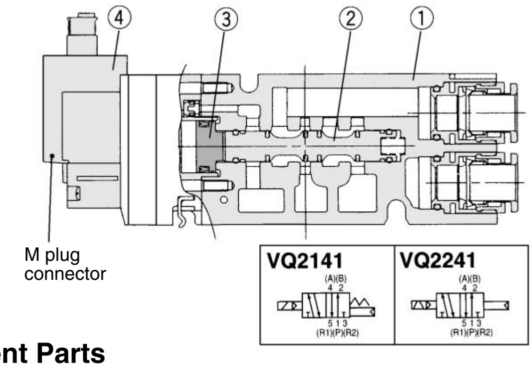
VQ1000
Single/Double (Latching)



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 Nil (VQ0000), M -2 (VQ1000), G 3 (VQ2000); 0: VQ0000, 1: VQ1000, VQ2000; Voltage 1 to 6	
Double (Latching)	VQ110L - □ L Nil (VQ0000), M -2 (VQ1000), 3 (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.

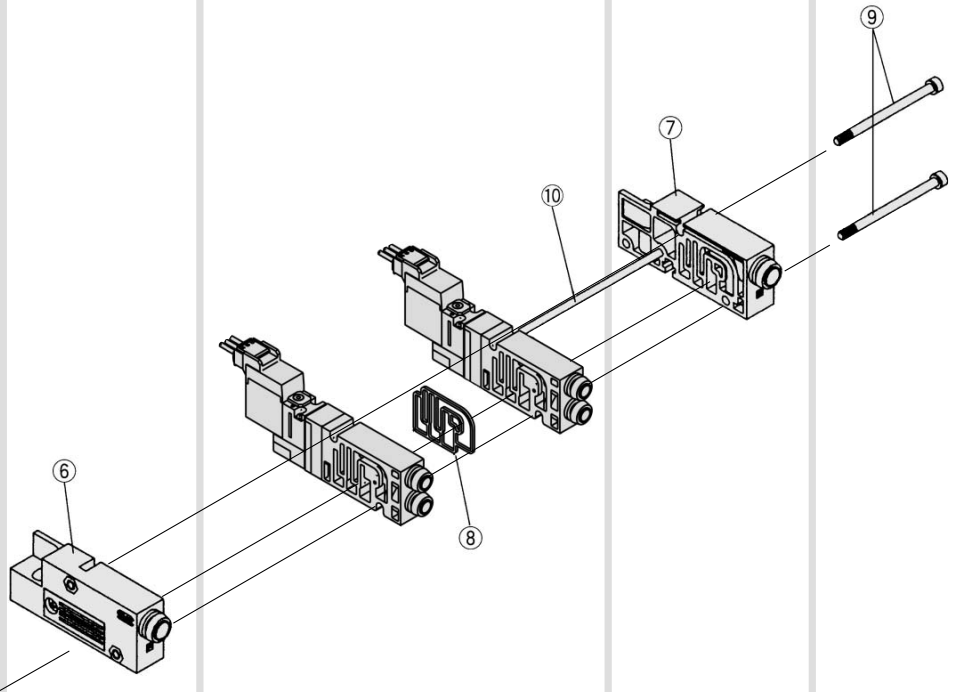
Note 1) (H): 1.5 W, (Y): 0.5 W, G type: DC only

VQ0000 (VV5Q04)/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	Connector assembly Note 2) Note 1) Note 4)				
P kit	Connector assembly Note 2) Note 4) PS (Side entry)				
F kit	Connector assembly Note 2) Note 4) FS (Side entry)				
T kit	Connector assembly Note 2) Note 4)				



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_S^U kit	AXT100-2-P_S^U□[2]	Flat ribbon cable housing assembly □ = Number of pins: 26, 20, 16, 10
③	F_S^U kit	AXT100-2-F_S^U□[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) In the case of standard specifications and double wiring, ④ is for 1 to 4 stations and ⑤ is for 5 to 8 stations.

Since no connector assembly is included, order it separately. (Refer to page 2-4-69.)

<D Side End Plate Assembly>

⑥ D side end plate assembly no.

VVQ0000-3A-4-□

Option
S: Built-in silencer, direct exhaust
P: Exclusively for SUP

The end plate style is subject to the kit. The combination as standard is as follows.

Kit	Part no.	U side end plate assembly	D side end plateassembly
F, P, S kit	Common exhaust type	VVQ0000-3A-4-P	VVQ0000-2A-4-R
	Built-in silencer, direct exhaust	VVQ0000-3A-4-P	VVQ0000-2A-4-S
C kit	Common exhaust type	VVQ0000-3A-4-P	VVQ0000-2A-4-R
	Built-in silencer, direct exhaust	VVQ0000-3A-4-S	VVQ0000-2A-4-S

<U Side End Plate Assembly No.>

⑦ U side end plate assembly no.

VVQ0000-2A-4-□

Option
S: Built-in silencer, direct exhaust
R: Exclusively for EXH (Common exhaust type)

<Replacement Parts>

No.	Part no.	Description	Material	Number
⑧	VVQ0000-80A-4-2	Seal	HNBR	12

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

<Station Increase Parts>

No.[3]	Part no.	Description	Material	Number[1]
⑨	VVQ0000-105A-4-□[2]	Tie-rod bolt	Carbon steel	2
⑩		Guide rod	Stainless steel	1

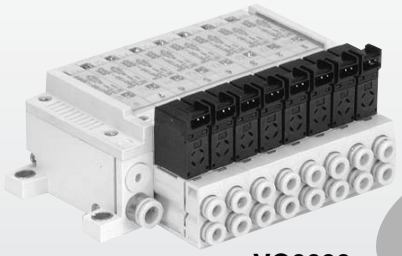
Note 1) Each number of replacement parts are included in one set.
Note 2) □: Number of stations (01 to 16)
Note 3) ⑨ and ⑩ are in one set.

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)

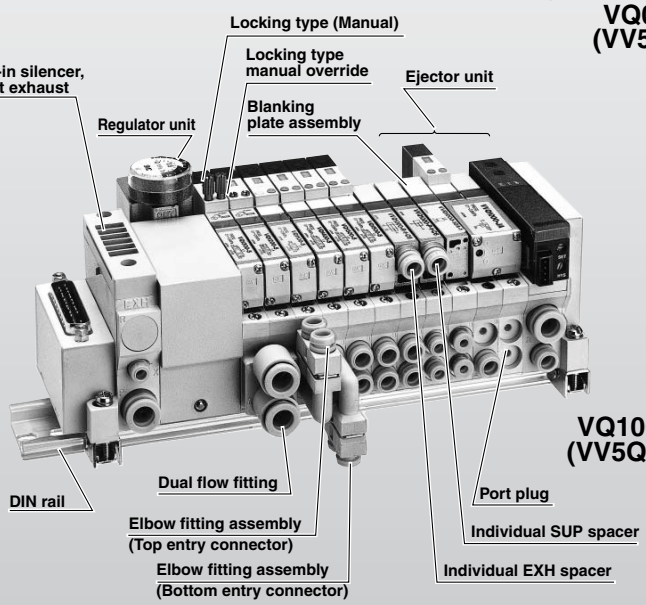
VQ0000	10 ms	200 million cycles
VQ1000	10 ms	
VQ2000	20 ms	

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

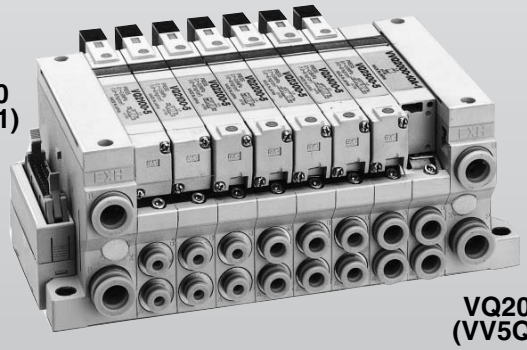
∗ Flow characteristics: 4/2 → 5/3 (A/B → R1/R2)



∗ The photo does not show an actual use example.

A variety of options

VQ1000 (VV5Q11)



VQ2000 (VV5Q21)

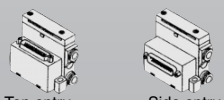
Innovative mounting methods

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

Built-in One-touch fittings for easy piping.

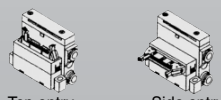
A variety of common wiring methods are standardized.

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

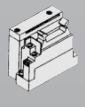


Top entry Side entry

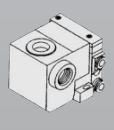
J kit (Flat ribbon cable connector)
Number of pins: 20
(PC Wiring System compliant)

Top entry Side entry

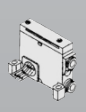
G kit (Flat ribbon cable with terminal block)
Number of pins: 20



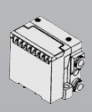
T kit (Terminal box)



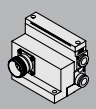
L kit (Lead wire)



S kit (Serial transmission unit)



M kit (Multi-connector kit)



(VQ2000 only)

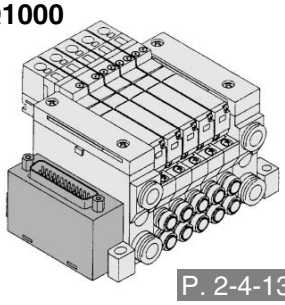
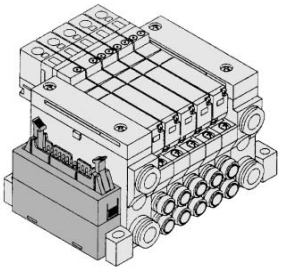
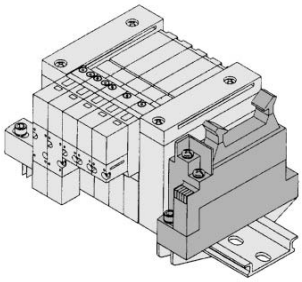
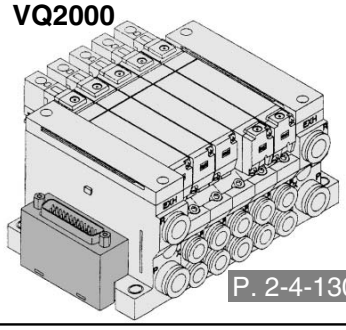
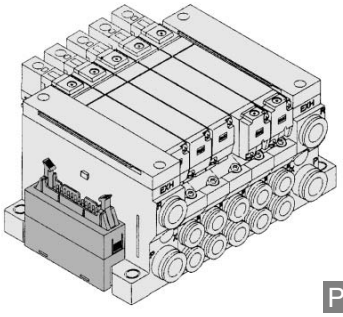
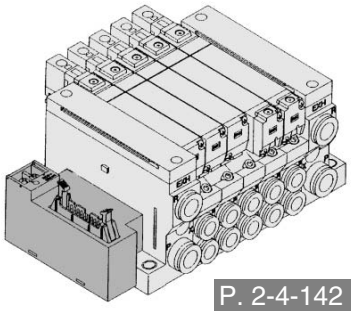
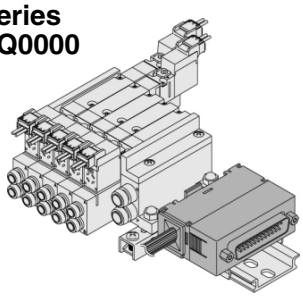
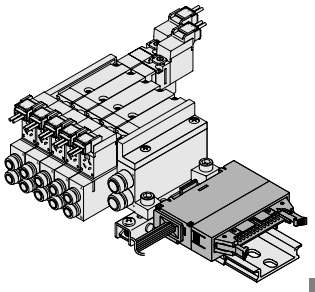
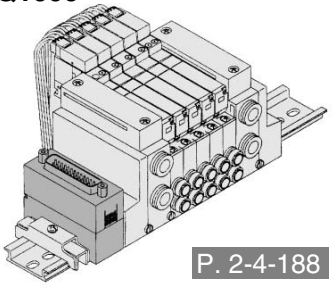
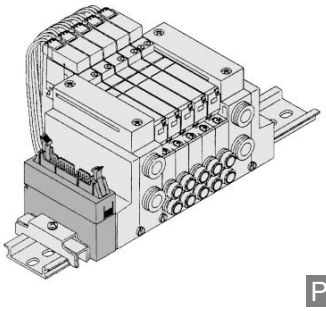
Valve Specifications

Base Mounted

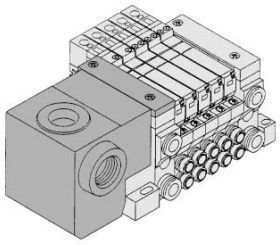
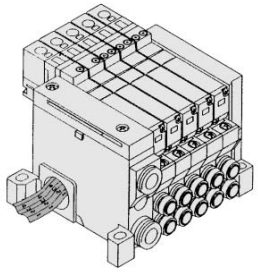
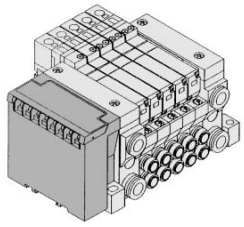
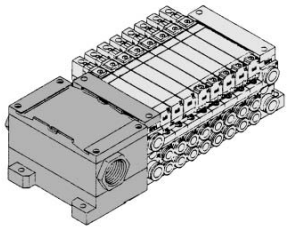
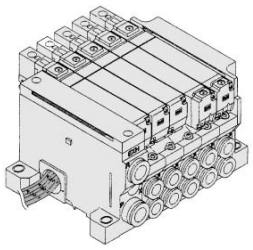
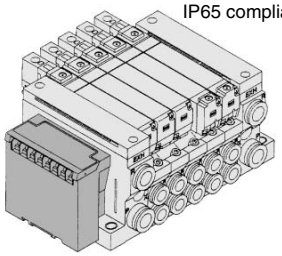
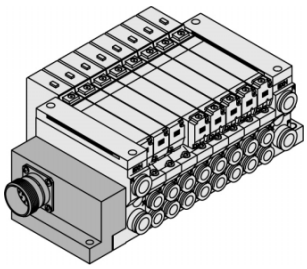
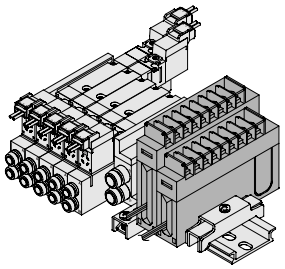
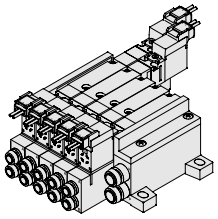
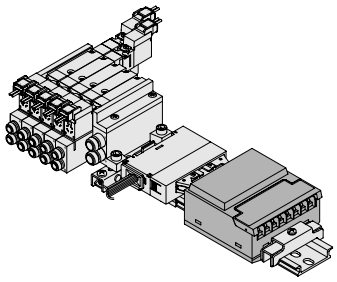
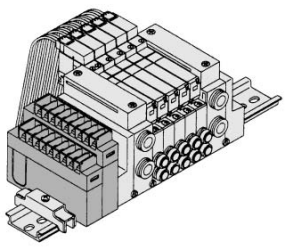
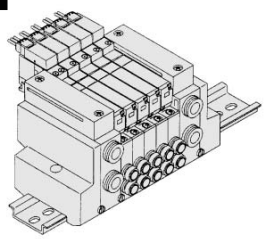
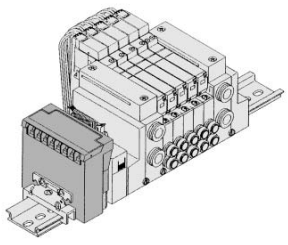
				Sonic conductance C [dm³/(s·bar)] 4/2 → 5/3 (A/B → R1/R2)		Type of actuation					Voltage			Electrical entry				Manual override		
				Double Single	3 position Closed center	Single	Double	Closed center	Exhaust center	Pressure center	12 V 24 V DC	100 V 110 V AC (50/60 Hz)	200 V 220 V AC (50/60 Hz)	Plug-in	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

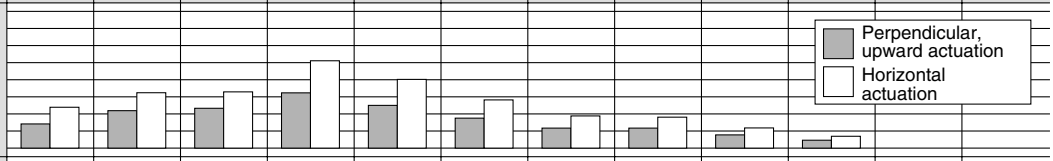
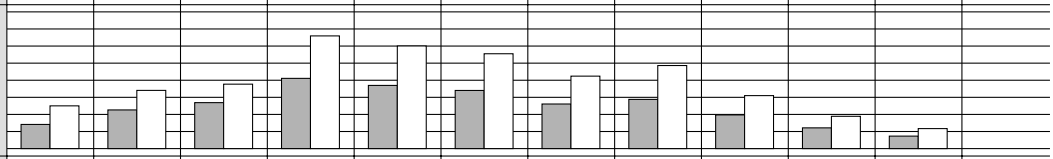
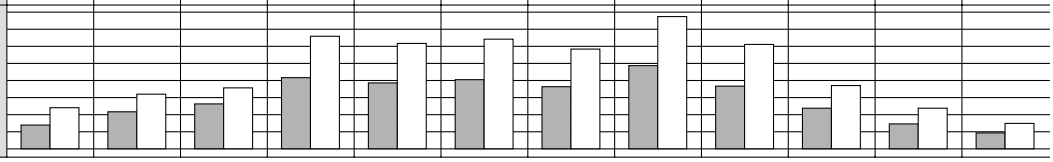
	F kit **D-sub connector** Conforming to MIL D-sub connector	**P** kit **Flat ribbon cable connector (26, 20, 16, 10 pins)** Conforming to MIL flat ribbon cable connector	**J** kit **Flat ribbon cable connector (20 pins)** Conforming to MIL flat ribbon cable connector PC Wiring System compatible	**G** 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 VQ0000
Base Mounted
Plug Lead Unit

How to Order Manifold

VV5Q 05 – 08 C4 F U1 – D

Series/Manifold

05	VQ0000

Stations

01	1 station
⋮	⋮

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

Cylinder port

Symbol	Port size
C3	With One-touch fitting for ø3.2
C4	With One-touch fitting for ø4
M5	M5 thread
CM	With mixed size/with port plug Note)

Note 1) Specify "Mixed size/with port plug" on the manifold specification sheet.
Note 2) For inch-size One-touch fittings, refer to "Option" on page 2-4-216.
Note 3) M5 fittings for M5 thread are attached without being incorporated.

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

Kit type

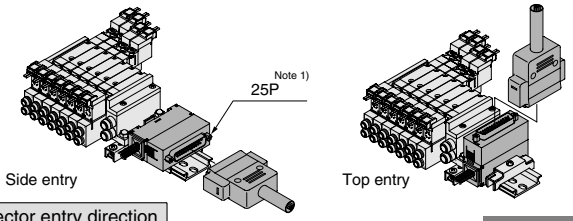
Option

Symbol	Option
Nil	None
D	DIN rail mounting style (2)
K	Special wiring specifications (Not double wiring) (3)
N	With name plate
S	Built-in silencer, direct exhaust

Note 1) When two or more symbols are specified, indicate them alphabetically.
Example) -DNS
Note 2) F, P, S, and T kits for VQ0000 are all equipped with a DIN rail, so include suffix "-D."
Note 3) Specify the wiring specifications on the manifold specification sheet. (Except C kit)

Kit/Electrical entry: Cable length

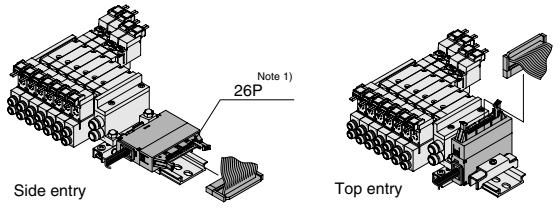
F kit (D-sub connector)



P. 2-4-188

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

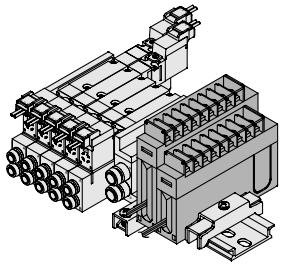
P kit (Flat ribbon cable connector)



P. 2-4-192

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

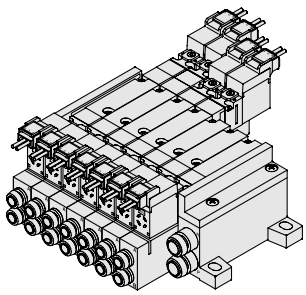
T kit (Terminal block)



P. 2-4-196

Kit T	1	Number of terminals: 8, 1 row	Applicable stations 1 to 8 stations
	2	Number of terminals: 16, 2 rows	Applicable stations 5 to 16 stations

C kit (Connector)

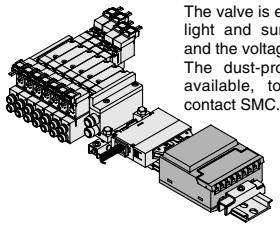


P. 2-4-200

C	Connector kit	Max. 16 stations

S kit (Serial transmission unit)

The valve is equipped with an indicator light and surge voltage suppressor, and the voltage is 24 VDC.
The dust-protected type SI unit is available, too. For details, please contact SMC.



P. 2-4-204

Kit S (3)	0	Without SI unit	Max. 16 stations (2)
	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. Refer to page 2-4-215 for details.
Note 2) For details, refer to page 2-4-216.
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.

How to Order Valves

VQ 0 1 5 0 Y – 5 LO

Series

0	VQ0000

Type of actuation

1		2 position single
2	Metal	2 position double
	Rubber	2 position double
3		3 position closed center
4		3 position exhaust center

Body type

5	VQ0000

Seal

0	Metal seal
1	Rubber seal

Note 1) For negative common specifications, refer to "Option" on page 2-4-216.
Note 2) F, P, T and S kits requires connector assembly when increasing valve stations. Refer to "Option" on page 2-4-216 for parts nos.

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 2-4-186.

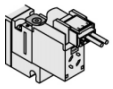
Coil voltage

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

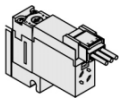
Note) The C kits are applicable to 200/220 VAC. Please contact SMC for other kits.

Manual override

Nil: Non-locking push type (Tool required)



B: Locking type (Tool required)



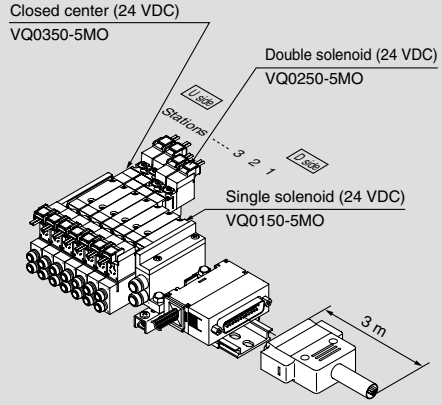
Electrical entry

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

Note 1) LO or MO type valve is used for F, P, T, and S kits. The plug connector and lead wire are attached to the manifold.
Note 2) In cases of L and M type the connector direction is based on the pilot valve.

How to Order Valve Manifold Assembly

Example



VV5Q05-07C4FS2-D··· 1 set (F kit 7 station manifold base no.)
* VQ0150-5MO··· 3 sets (Single solenoid part no.)
* VQ0250-5MO··· 2 sets (Double solenoid part no.)
* VQ0350-5MO··· 2 sets (3 position solenoid part no.)

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

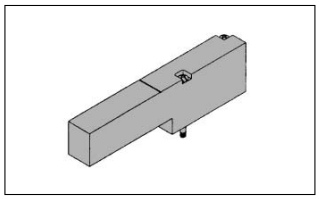
Specify the part numbers for valves and options together beneath the manifold base part number. Besides, when the arrangement will be complicated, specify them by means of the manifold specification sheet.

VQC
SQ
VQ0
VQ4
VQ5
VQZ
VQD

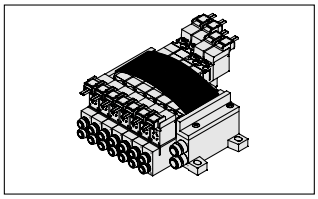
Manifold Option

P. 2-4-208

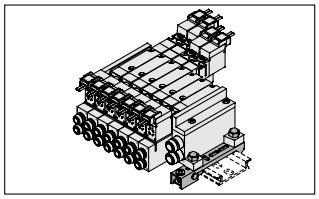
Blanking plate assembly
VVQ0000-10A-5



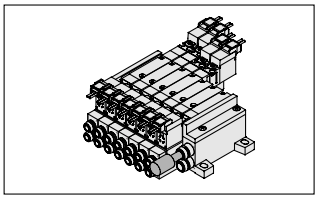
Name plate [-N*]
VVQ0000-N5-Station (1 to Max. stations)



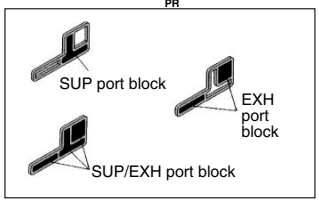
DIN rail mounting bracket [-D]
VVQ0000-57A-5



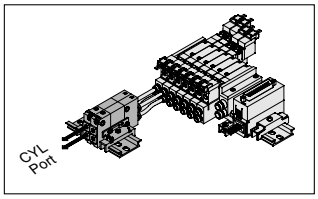
Silencer
AN103-X233



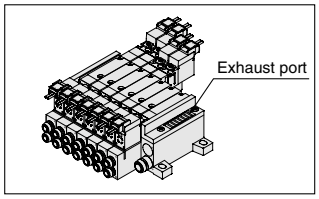
SUP/EXH block plate
VVQ0000-16A-5- P R PR



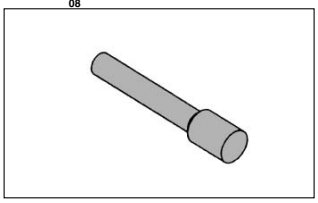
Double check block
VQ1000-FPG-□□



Built-in silencer, direct exhaust [-S]

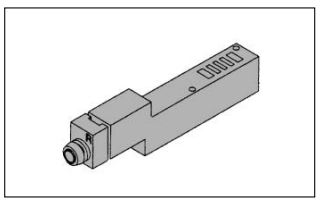


Blanking plug
KQ2P- 23 01 06 08

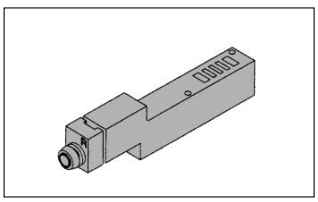


- For cylinder port fittings part no., refer to page 2-4-213.
- For replacement parts, refer to page 2-4-231.

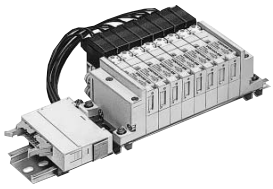
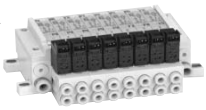
Individual SUP spacer
VVQ0000-P-5-C4



Individual EXH spacer
VVQ0000-R-5-C4



Series VQ0000/1000
Base Mounted
Plug Lead Unit

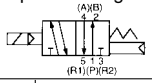

Model

Series	Number of solenoids		Model		Flow characteristic (1) 1 → 4/2 (P → A/B) C [dm³/(s·bar)]	b	Cv	Flow characteristic (1) 4/2 → 5/3 (A/B → R1/R2) C [dm³/(s·bar)]	b	Cv	Response time (ms) (2) Standard: 1 W H: 1.5 W	Low wattage: (3) 0.5 W	AC (3)	Weight (g)
VQ0000	2 position	Single	Metal seal	VQ0150	0.41	0.20	0.10	0.44	0.26	0.11	12 or less	15 or less	29 or less	36
			Rubber seal	VQ0151	0.53	0.20	0.12	0.53	0.22	0.13	15 or less	20 or less	34 or less	
		Double	Metal seal	VQ0250	0.41	0.20	0.10	0.44	0.26	0.11	10 or less	13 or less	13 or less	50
			Rubber seal	VQ0251	0.53	0.20	0.12	0.53	0.22	0.13	15 or less	20 or less	20 or less	
	3 position	Closed center	Metal seal	VQ0350	0.32	0.10	0.07	0.32	0.20	0.07	20 or less	26 or less	40 or less	
			Rubber seal	VQ0351	0.43	0.21	0.10	0.44	0.24	0.11	25 or less	33 or less	47 or less	
		Exhaust center	Metal seal	VQ0450	0.32	0.10	0.07	0.44	0.26	0.11	20 or less	26 or less	40 or less	
			Rubber seal	VQ0451	0.43	0.21	0.10	0.53	0.22	0.13	25 or less	33 or less	47 or less	
VQ1000	2 position	Single	Metal seal	VQ1110	0.70	0.15	0.16	0.72	0.25	0.18	12 or less	15 or less	29 or less	
			Rubber seal	VQ1111	0.85	0.20	0.21	1.0	0.30	0.25	15 or less	20 or less	34 or less	
		Double	Metal seal	VQ1210	0.70	0.15	0.16	0.72	0.25	0.18	10 or less	13 or less	13 or less	64
			Rubber seal	VQ1211	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	VQ1310	0.68	0.15	0.16	0.72	0.25	0.18	20 or less	26 or less	40 or less	78
			Rubber seal	VQ1311	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	VQ1410	0.68	0.15	0.16	0.72	0.25	0.18	20 or less	26 or less	40 or less	
			Rubber seal	VQ1411	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	VQ1510	0.70	0.15	0.16	0.72	0.25	0.18	20 or less	26 or less	40 or less	
			Rubber seal	VQ1511	0.85	0.20	0.21	0.65	0.42	0.18	25 or less	33 or less	47 or less	

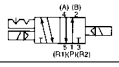
Note 1) Cylinder port size C4: (VQ0000), C6: (VQ1000) without check valve option for prevention of back pressure. As per JIS B 8375-1981 (Supply pressure: 0.5 MPa; with indicator light/surge voltage suppressor; clean air)
Note 2) The response time is subject to the pressure and quality of the air. The values at the time of ON are given for double types.
Note 3) AC type is only for VQ0000.

JIS Symbol

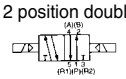
2 position single



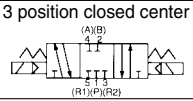
Metal — 2 position double



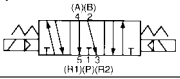
Rubber — 2 position double



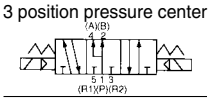
3 position closed center



3 position exhaust center



3 position pressure center



Standard Specifications

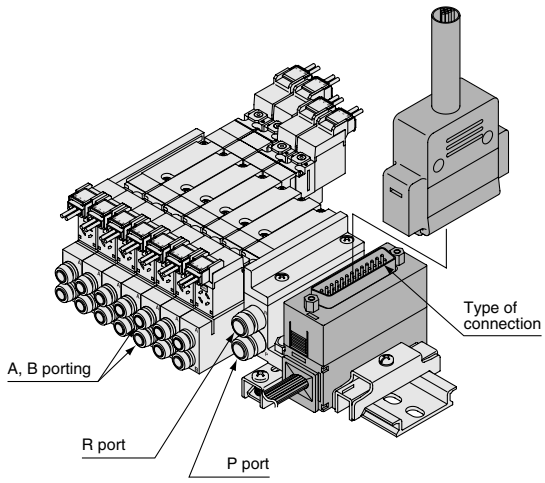
Valve specifications	Valve construction		Metal seal	Rubber seal
	Fluid		Air/Inert gas	
	Maximum operating pressure		0.7 MPa (High pressure type: 0.8 MPa)	
	Min. operating pressure	Single	0.1 MPa	0.15 MPa
		Double	0.1 MPa	
		3 position	0.1 MPa	0.2 MPa
	Ambient and fluid temperature		–10 to 50°C (1)	
	Lubrication		Not required	
	Manual override		Non-locking push type/Locking type (Tool required, Manually operated) Option	
	Impact/Vibration resistance (2)		150/30 m/s²	
	Enclosure		Dust tight	
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		Equivalent to class B	
	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	VQ0000	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)

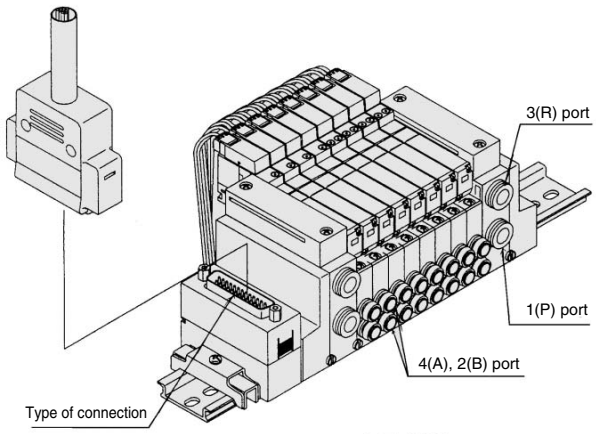
Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for 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) Value for high pressure type (1.5 W)
Note 4) Value for low pressure type (0.5 W)
Note 5) AC type is available only on VQ0000.

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)			
VQ0000	**VV5Q05-□□□**	■ F kit– D-sub connector ■ P kit–Flat ribbon cable connector ■ T kit–Terminal block ■ C kit–Individual connector ■ S kit–Serial transmission	Side	C6 (ø6) Option (Built-in silencer, direct exhaust)	C3 (ø3.2) C4 (ø4) M5 (M5 thread)	1 to 16 stations	VQ0□50 VQ0□51	330 (Single) 400 (Double, 3 position)
VQ1000	**VV5Q12-□□□**	■ F kit–D-sub connector ■ P kit–Flat ribbon cable connector ■ T kit–Terminal block ■ C kit–Individual connector ■ S kit–Serial transmission	Side	C8 (ø8) Option (Built-insilencer, direct exhaust)	C3 (ø3.2) C4 (ø4)C6 (ø6) M5 (M5 thread)	1 to 16 stations	VQ1□10 VQ1□11	818 (Single) 885 (Double, 3 position)

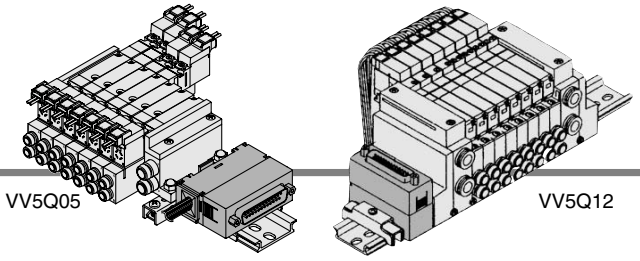
Note 1) Inch-size One-touch fittings are also available. For details, refer to page 2-4-216.
Note 2) For details, refer to page 2-4-216.





VV5Q12

F VQ0000/1000 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 connector receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 16.

Manifold Specifications

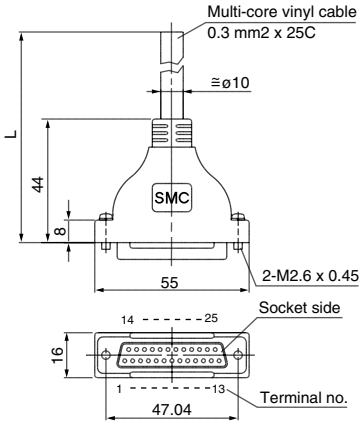
Series	Porting specifications			Applicable stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
VQ0000	Side	C6	C3, C4, M5	Max. 16 stations
VQ1000	Side	C8	C3, C4, C6, M5	Max. 16 stations

D-sub Connector (25 pins)

Cable assembly ●

AXT100-DS25- 015 / 030 / 050

(The D-sub connector cable assembly can be ordered individually or included with manifold. 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
Insulation resistance V, 1 min, AC	1000
Insulation resistance MΩD, 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.	Dot marking	Lead wire color
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 2-4-215 for details.

How to Order Manifold

VV5Q 12 – 08 C6 F U 1 – D

Series/Manifold

05	VQ0000	Plug lead unit
12	VQ1000	

Stations

01	1 station
⋮	⋮
08	8 stations Note)

Note) As option, the maximum number of stations can be increased by special wiring specifications. For details, refer to page 2-4-216.

Cylinder port

Symbol	Port size	VQ0000	VQ1000
C3	With One-touch fitting for ø3.2	●	●
C4	With One-touch fitting for ø4	●	●
C6	With One-touch fitting for ø6		●
M5	M5 thread	●	●
CM	With mixed size/with port plug	●	●

Note 1) Specify "Mixed size/with port plug" on the manifold specification sheet.
Note 2) For inch-size One-touch fittings, refer to "Option" on page 2-4-216.

Connector entry direction

U	Top entry
S	Side entry

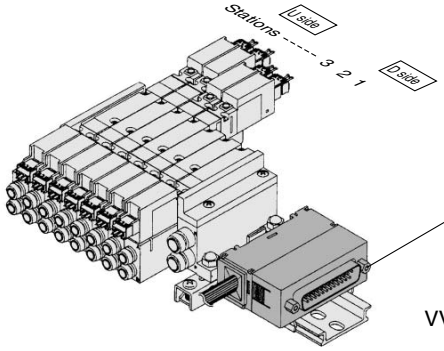
Cable (Length)

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

Option

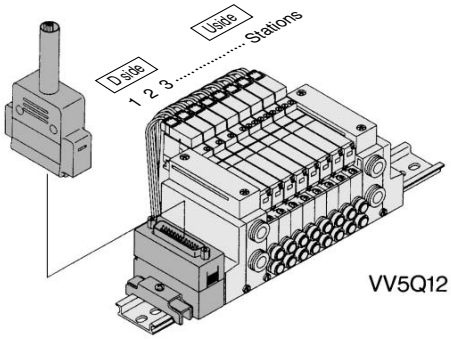
Symbol	Option	VQ0000	VQ1000
B	With back pussure check valve		● (2)
D	DIN rail mounting style	●	● (3)
K	Special wiring specifications (Not double wiring)	●	● (4)
N	With name plate	●	●
S	Built-in silencer, direct exhaust	●	●

Note 1) When two or more symbols are specified, indicate them alphabetically.
Example) -BNS
Note 2) Models with a suffix "-B" have the back pressure check valve 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) F kit of VQ0000 and all of VQ1000 are equipped with a DIN rail, so indicate suffix "D".
Note 4) Specify the wiring specifications on the manifold specification sheet.



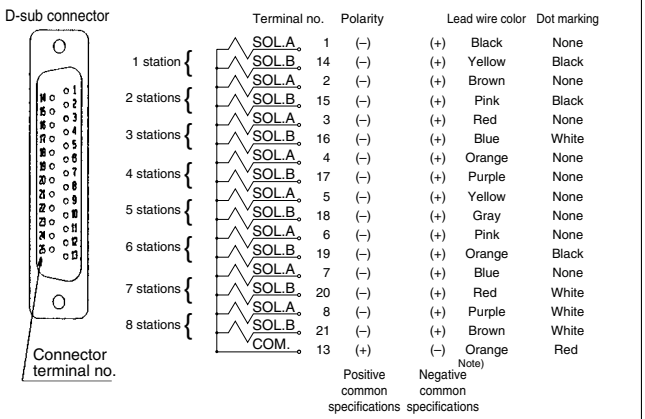
VV5Q05

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



VV5Q12

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 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 2-4-216.

Note) When using the negative common specifications, use valves for negative common. (Refer to page 2-4-216.)

How to Order Valves

VQ [1] [1] [1] [0] [Y] – [5] [LO] [ ]

Series

0	VQ0000
1	VQ1000

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 (VQ1000 only)

Body type

5	VQ0000	Plug lead unit
1	VQ1000	

Seal

0	Metal seal
1	Rubber seal

Note 1) For negative common specifications, refer to "Option" on page 2-4-216.
Note 2) Connector assembly will be required when the F kits add a valve. For part nos., refer to "Option" on page 2-4-216.

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 2-4-186.

Manual override

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

Note) VQ1000 only.

Electrical entry

		VQ0000	VQ1000
LO	L plug connector without connector	●	●
MO	M plug terminal without connector	●	—

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

Coil voltage

		VQ0000	VQ1000
1	100 VAC (50/60 Hz)	●	—
3	110 VAC (50/60 Hz)	●	—
5	24 VDC	●	●
6	12 VDC	●	●

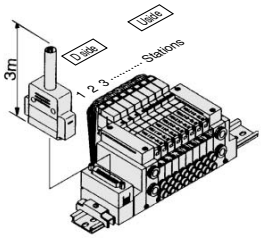
How to Order Manifold Assembly

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

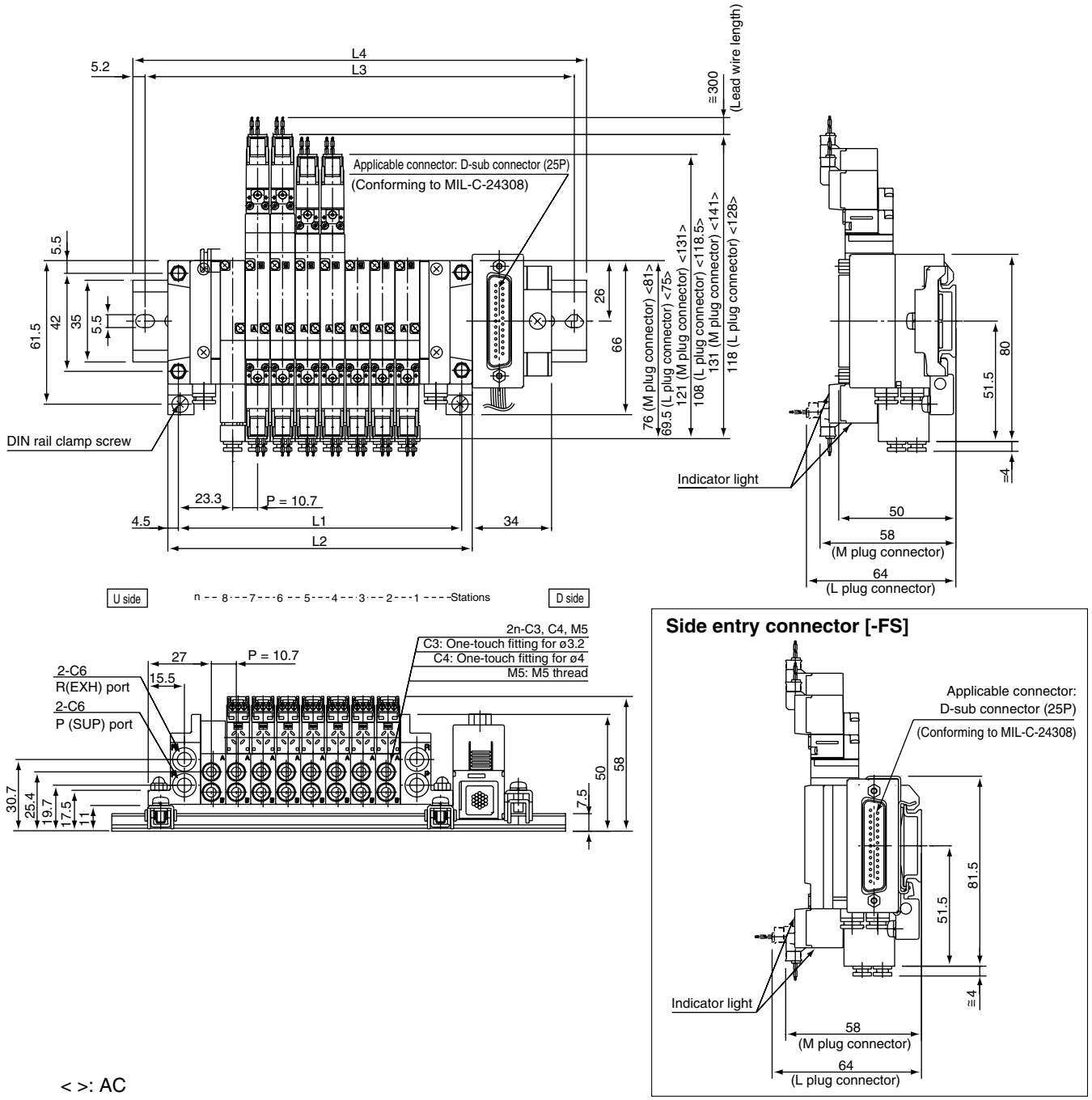
<Example>
D-sub connector kit with cable (3 m)
VV5Q12-08C6FU2-D ··· 1 set–Manifold base no.
∗VQ1110-5LO ····· 4 sets–Valve part no. (Stations 1 to 4)
∗VQ1210-5LO ····· 4 sets–Valve part no. (Stations 5 to 8)
∗VQ1310-5LO ····· 2 sets–Valve part no. (Stations 7 to 8)
∗VVQ1000-10A-1 ···· 1 set–Blanking 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.



VQ0000



Side entry connector [-FS]

< >: AC

Dimensions: Top Entry Connector [-FU]

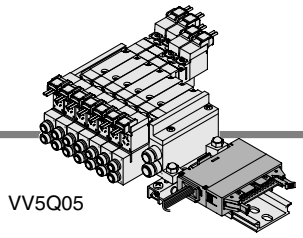
Formula L1 = 10.7n + 36, L2 = 10.7n + 45
n: Station (Maximum 16 stations)

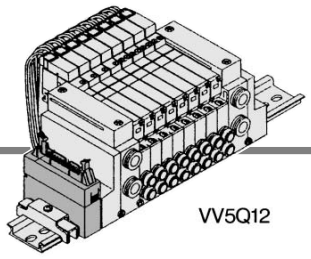
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	46.5	57.4	68.1	78.8	89.5	100.2	110.9	121.6	132.3	143	153.7	164.4	175.1	185.8	196.5	207.2
L2	55.7	66.4	77.1	87.8	98.5	109.2	119.9	130.6	141.3	152	162.7	173.4	184.1	194.8	205.5	216.2
L3	112.5	125	137.5	150	162.5	175	175	187.5	200	212.5	225	237.5	250	250	262.5	275
L4	123	135.5	148	160.5	173	185.5	185.5	198	210.5	223	235.5	248	260.5	260.5	273	285.5

Dimensions: Side Entry Connector [-FS]

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L3	137.5	150	150	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5	275	287.5	300
L4	148	160.5	160.5	173	185.5	198	210.5	223	235.5	235.5	248	260.5	273	285.5	298	310.5

P VQ0000/1000 Kit (Flat ribbon cable connector)


VV5Q05


VV5Q12

- 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

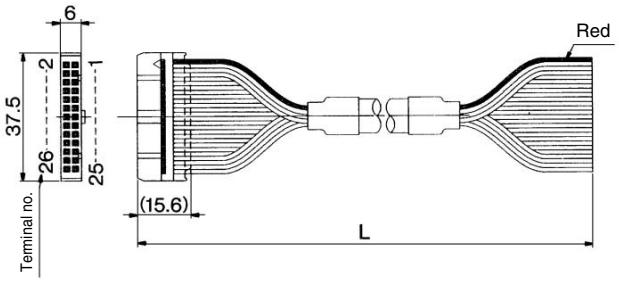
Series	Porting specifications			Applicable stations
	Port location	Port size		
		1(P), 3(R)	4(A), 2(B)	
VQ0000	Side	C6	C3, C4, M5	Max.16 stations
VQ1000	Side	C8	C3, C4, C6, M5	Max.16 stations

Flat Ribbon Cable (26 pins)

Cable assembly ●

AXT100-FC26-$\frac{1}{3}^{\frac{1}{8}}$

(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)

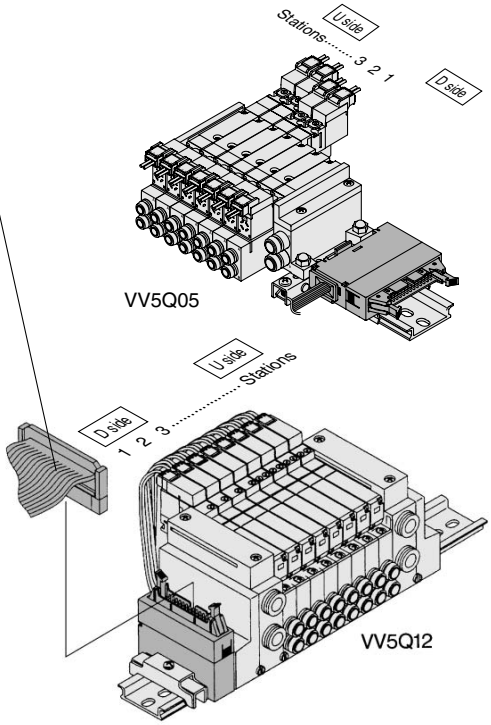
Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-FC26-1	Cable 26 cores x 28AWG
3 m	AXT100-FC26-2	
5 m	AXT100-FC26-3	

∗ 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.

Note) Types with 10, 16, or 20 pin are also available. Refer to page 2-4-215 for details.



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

How to Order Manifold

VV5Q **12** — **08** **C6** **P** **U** **1** — **D** ☐

Series/Manifold

05	VQ0000	Plug lead unit
12	VQ1000	

Stations

01	1 station
⋮	⋮
16	16 stations Note)

Note) As an option, the maximum number of stations can be increased by special wiring specifications. For details, refer to page 2-4-216.

Connector entry direction

U	Top (Vertical)
S	Side (Horizontal)

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	VQ0000	VQ1000
C3	With One-touch fitting for ø3.2	●	●
C4	With One-touch fitting for ø4	●	●
C6	With One-touch fitting for ø6		●
M5	M5 thread	●	●
CM	With mixed size/with port plug	●	●

Note 1) Specify "Mixed size/with port plug" on the manifold specification sheet.
Note 2) For inch-size One-touch fittings, refer to "Option" on page 2-4-216.

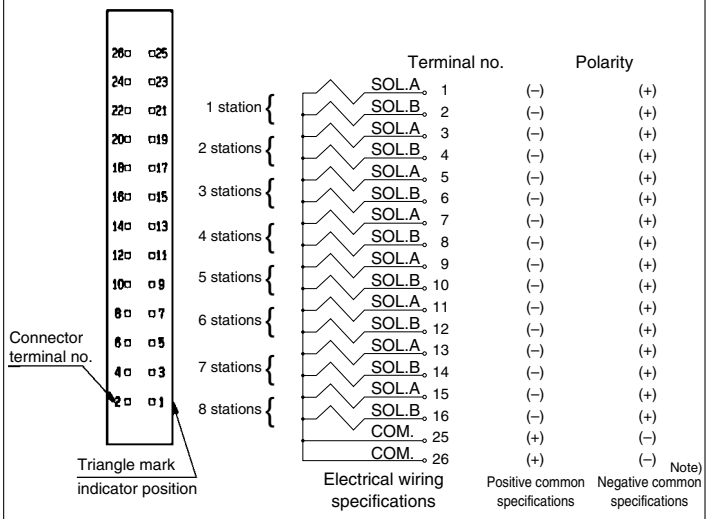
Option

Symbol	Option	VQ0000	VQ1000
B	With back pressure check valve		● (2)
D	DIN rail mounting style	●	● (3)
K	Special wiring specification (Not double wiring)	●	● (4)
N	With name plate	●	●
S	Built-in silencer (Direct exhaust)	●	●

Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -BNS
Note 2) Models with a suffix "-B" have the back pressure check valve 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) P kit of VQ0000 and all of VQ1000 are equipped with a DIN rail, so indicate suffix "D".
Note 4) Specify the wiring specifications on the manifold specification sheet.

● Electrical wiring specifications

Flat ribbon cable 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 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 2-4-216.

Note) When using the negative commons specifications, use valves for negative common. (Refer to page 2-4-216.)

How to Order Valves

VQ 1 1 1 0 Y – 5 LO

Series

0	VQ0000
1	VQ1000

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 (VQ1000 only)

Body type

5	VQ0000	Plug lead unit
1	VQ1000	

Seal

0	Metal seal
1	Rubber seal

Note 1) For negative common specifications, refer to "Option" on page 2-4-126.
Note 2) Connector assembly will be required when the P kits add a valve. For part nos., refer to "Option" on page 2-4-126.

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 2-4-186.

Coil voltage

		VQ0000	VQ1000
1	100 VAC (50/60 Hz)	●	—
3	110 VAC (50/60 Hz)	●	—
5	24 VDC	●	●
6	12 VDC	●	●

Electrical entry

		VQ0000	VQ1000
LO	L plug connector without connector	●	●
MO	M plug terminal without connector	●	—

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

Manual override

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

Note) VQ1000 only.

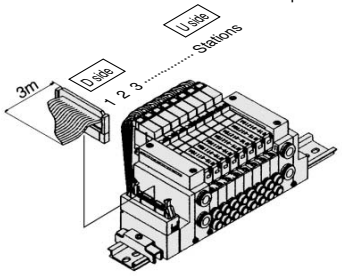
How to Order Manifold Assembly

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

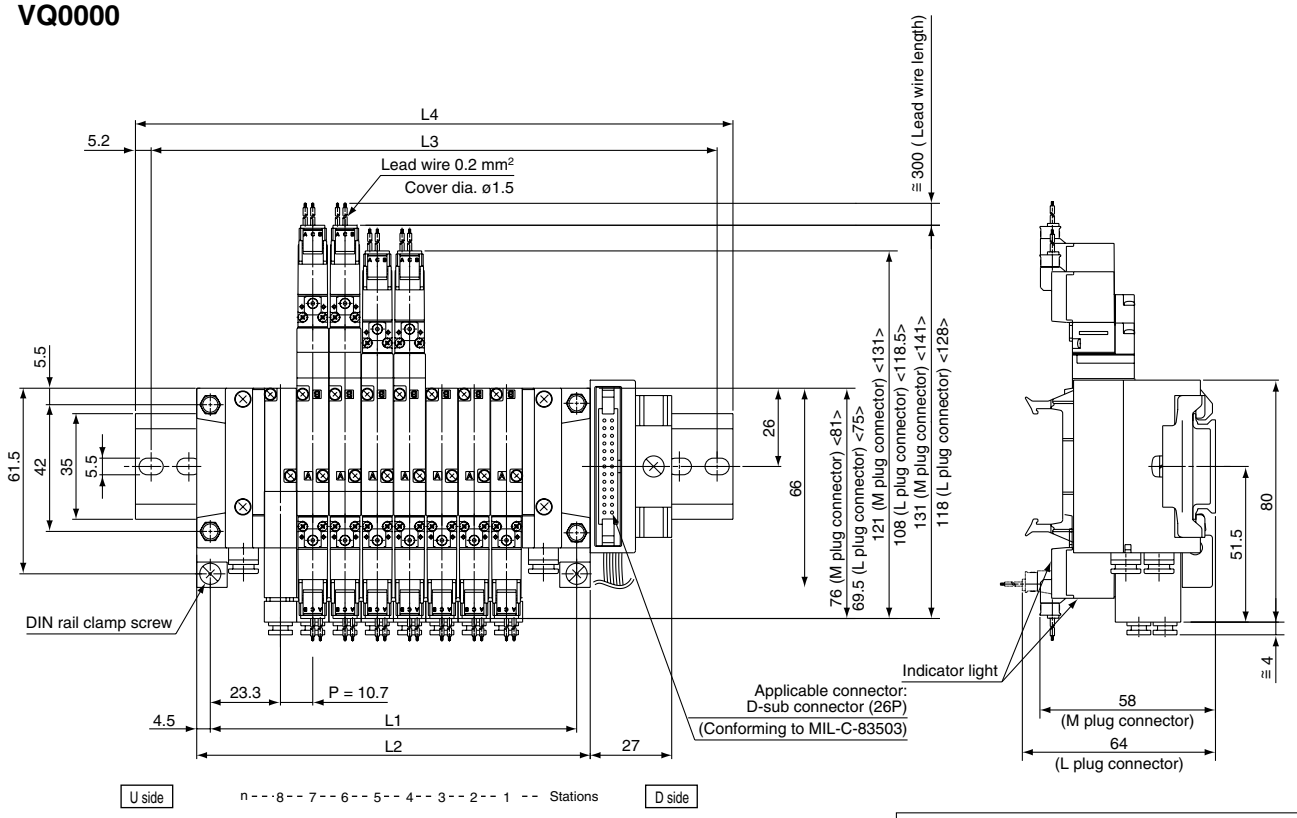
<Example>
Flat ribbon cable kit with 3 m cable
VV5Q12-08C6PU1-D ···1 set–Manifold base no.
∗VQ1110-5LO ·····4 sets–Valve part no. (Stations 1 to 4)
∗VQ1210-5LO ·····3 sets–Valve part no. (Stations 5 to 8)

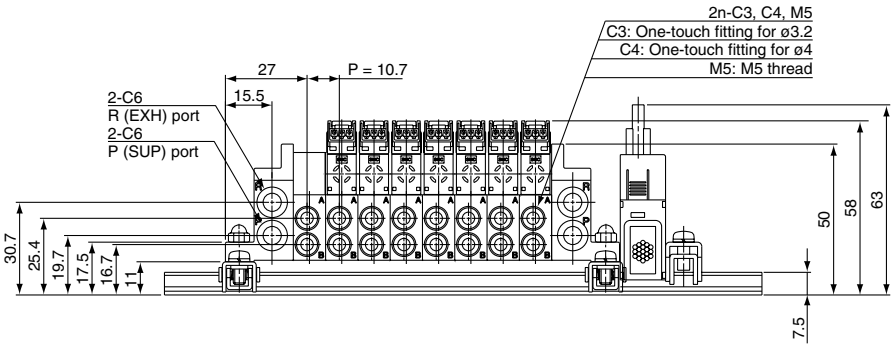
Prefix the asterisk to the part nos. of the solenoid valve, etc.

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



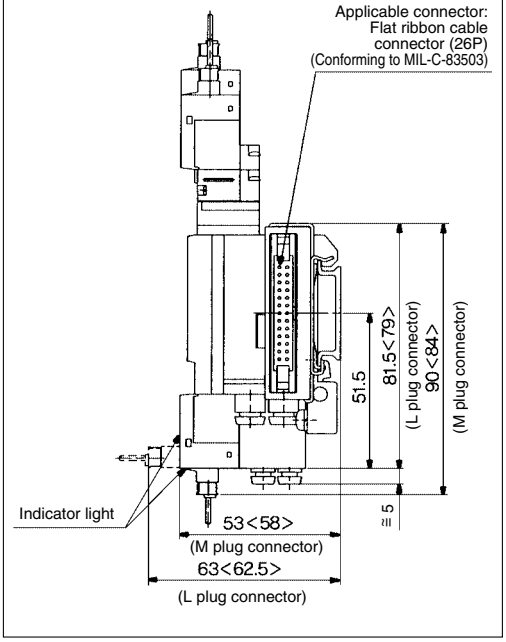
VQ0000





< >: AC

Side entry connector [-PS]



Formula L1 = 10.7n + 36, L2 = 10.7n + 45
n: Station (Maximum 16 stations)

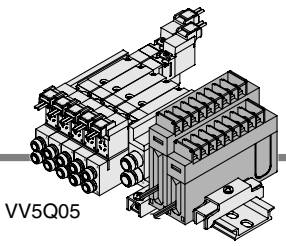
Dimensions: Top Entry Connector [-PU]

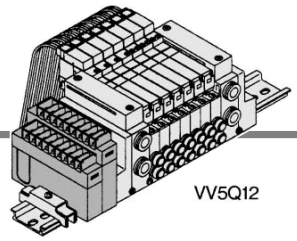
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	46.7	57.4	68.1	78.8	89.5	100.2	110.9	121.6	132.3	143	153.7	164.4	175.1	185.8	196.5	207.2
L2	55.7	66.4	77.1	87.8	98.5	109.2	119.9	130.6	141.3	152	162.7	173.4	184.1	194.8	205.5	216.2
L3	112.5	125	125	137.5	150	162.5	175	187.5	200	200	212.5	225	237.5	250	262.5	275
L4	123	135.5	135.5	148	160.5	173	185.5	198	210.5	210.5	223	235.5	248	260.5	273	285.5

Dimensions: Side Entry Connector [-PS]

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L3	137.5	150	150	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5	275	287.5	300
L4	148	160.5	160.5	173	185.5	198	210.5	223	235.5	235.5	248	260.5	273	285.5	298	310.5

T VQ0000/1000 Kit (Terminal block)


VV5Q05

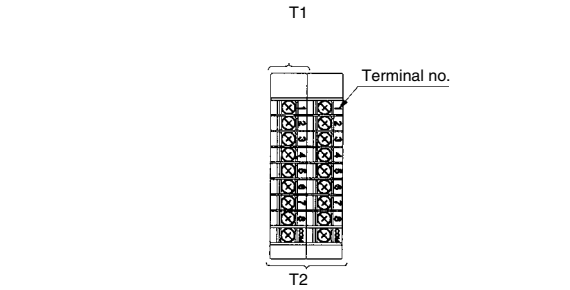

VV5Q12

- 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 8. (16 stations as an option)

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

● Electrical wiring specifications



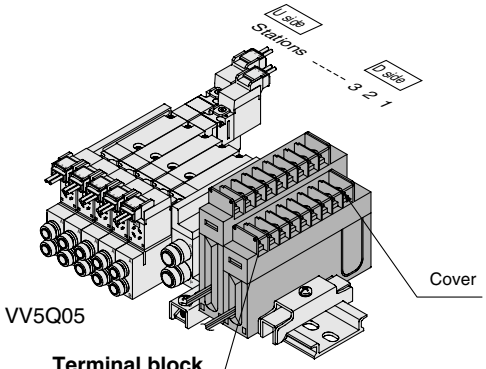
In the case of double wiring (standard spec.)
T1 (Terminal block of 1 row): 1-4 stations
T2 (Terminal block of 2 rows): 5-8 stations
T1 and T2 can be optionally chosen by adopting the combinations of single and double wiring (option spec.) etc.

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

Manifold	Terminal blocks
1 to 4 stations	1 row
5 to 8 stations	2 rows

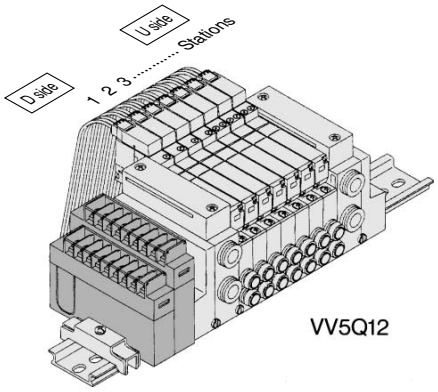
Note) Wiring other than those above is possible. For details, refer to page 2-4-216.

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 2-4-216.



Terminal block connections

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



How to Order Manifold

VV5Q | **12** | **08** | **C6** | **T** | **2** | **D** | _____ (Option)

Series/Manifold

05	VQ0000	Plug lead unit
12	VQ1000	

Stations

01	1 station
⋮	⋮
16	16 stations Note)

Note) Refer to page 2-4-216 for details.

Cylinder ports

Symbol	Port size
C3	With One-touch fitting for ø3.2
C4	With One-touch fitting for ø4
C6	With One-touch fitting for ø6
M5	M5 thread
CM	With mixed size/with port plug Note)

Note 1) Specify "Mixed size/with port plug" on the manifold specification sheet.
Note 2) For inch-size One-touch fittings, refer to "Option" on page 2-4-216.

Number of terminals

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

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

Option

Symbol	Option	VQ0000	VQ1000
B	With back pressure check valve		● (2)
D	DIN rail mounting style	●	● (3)
K	Special wiring specifications (Not double wiring)	●	● (4)
N	With name plate	●	●
S	Built-in silencer, direct exhaust	●	●

Note 1) When two or more symbols are specified, indicate them alphabetically.
Example) -BNS
Note 2) Models with a suffix "-B" have the back pressure check valve 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) T kit of VQ0000 and all of VQ1000 are equipped with a DIN rail, so indicate suffix "-D".
Note 4) Specify the wiring specifications on the manifold specification sheet.

How to Order Valves

VQ | 1 | 1 | 1 | 0 | Y | – | 5 | | |

Series

0	VQ0000
1	VQ1000

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 (VQ1000 only)

Body type

5	VQ0000	Plug lead unit
1	VQ1000	

Seal

0	Metal seal
1	Rubber seal

Note 1) For negative common specifications, refer to "Option" on page 2-4-216.

Note 2) Connector assembly will be required when the T kits add a valve.
For part nos., refer to "Option" on page 2-4-216.

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 2-4-186.

Electrical entry

		VQ0000	VQ1000
LO	L plug connector without connector	●	●
MO	M plug connector without connector	●	—

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

Manual override

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

Note) Available only for VQ1000

Coil voltage

		VQ0000	VQ1000
1	100 VAC (50/60 Hz)	●	—
3	110 VAC (50/60 Hz)	●	—
5	24 VDC	●	●
6	12 VDC	●	●

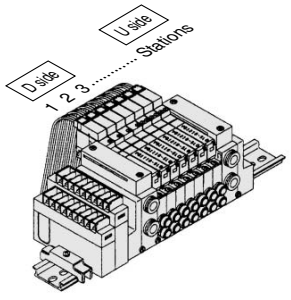
How to Order Manifold Assembly

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

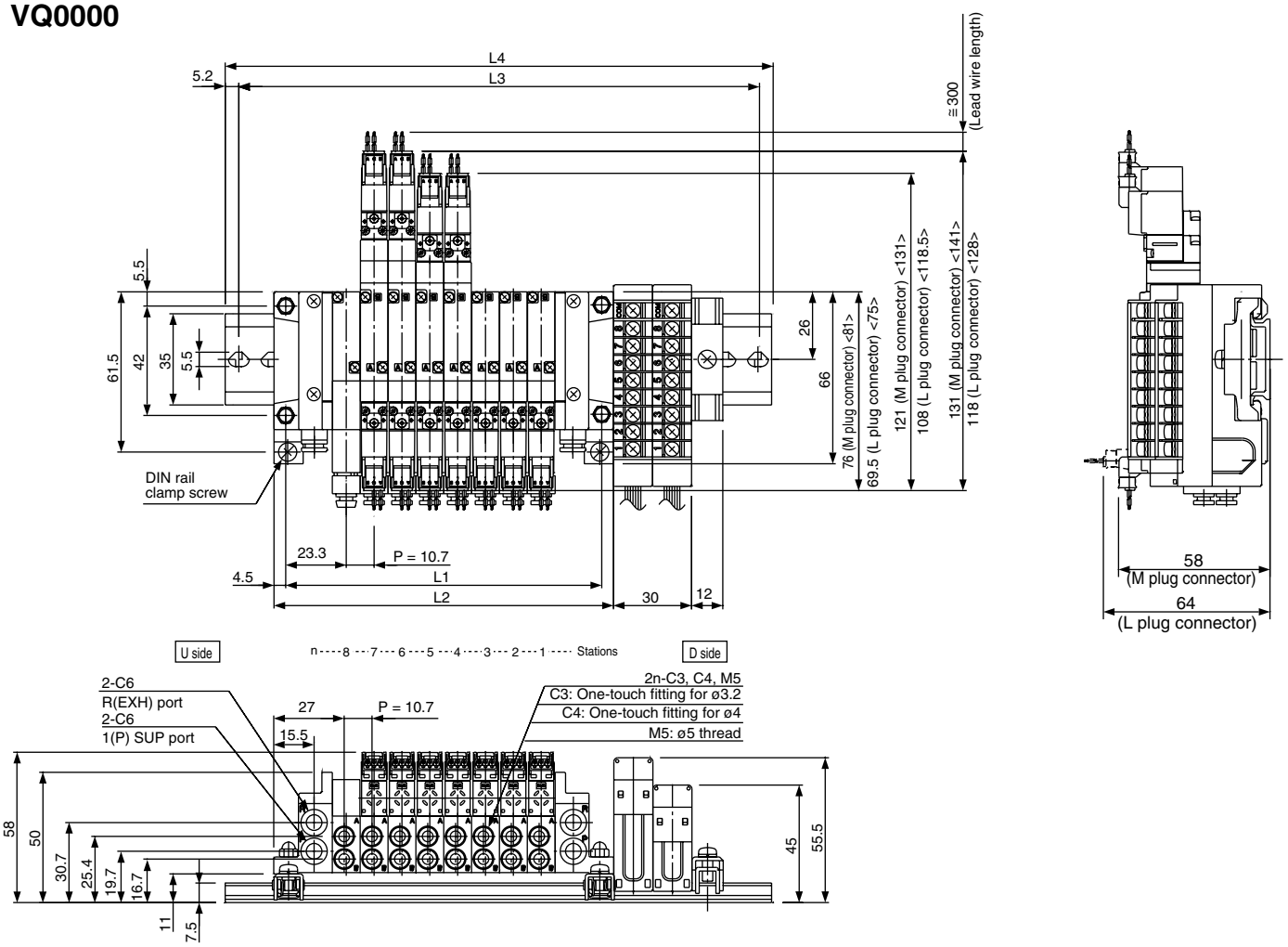
<Example>
Flat ribbon cable kit with 3 m cable
VV5Q12-07C6T2-D ··· 1 set–Manifold base no.
∗VQ1110-5LO ····· 4 sets–Valve part no. (Stations 1 to 4)
∗VQ1210-5LO ····· 3 sets–Valve part no. (Stations 5 to 8)

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.



VQ0000



This drawing shows the case of VV5Q05-□□T2-D□.

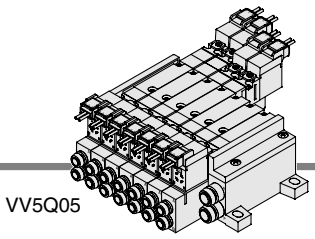
< >: AC

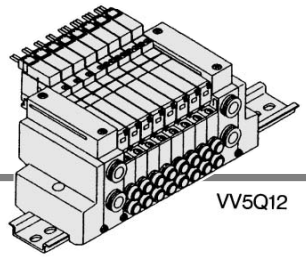
Dimensions

Formula L1 = 10.7n + 36, L2 = 10.7n + 45 n: Station (Maximum16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	46.7	57.4	68.1	78.8	89.5	100.2	110.9	121.6	132.3	143	153.7	164.4	175.1	185.8	196.5	207.2
L2	55.7	66.4	77.1	87.8	98.5	109.2	119.9	130.6	141.3	152	162.7	173.4	184.1	194.8	205.5	216.2
L3	125	137.5	150	150	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5	275	287.5
L4	135.5	148	160.5	160.5	173	185.5	198	210.5	223	235.5	235.5	248	260.5	273	285.5	298

C VQ0000/1000 Kit (Connector)

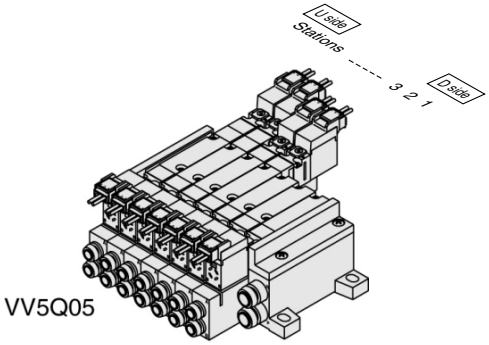

VV5Q05


VV5Q12

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

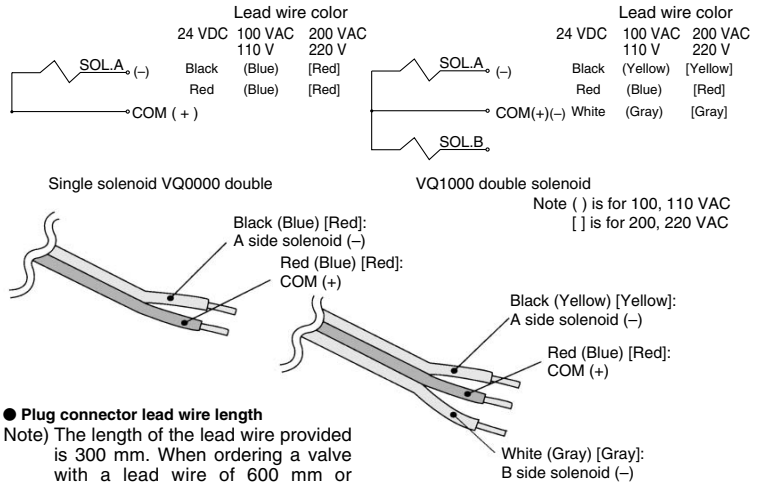
Manifold Specifications

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
VQ1000	Side	C8	C3, C4, C6, M5	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**

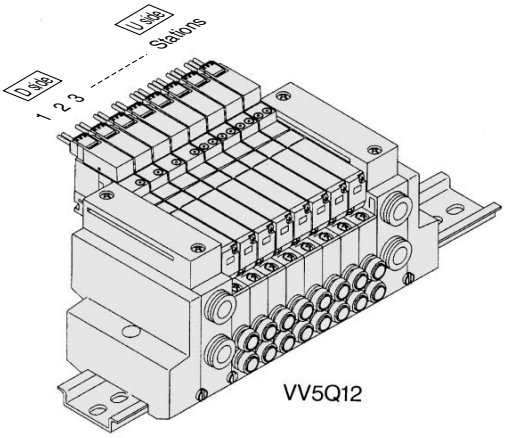
Note) The length of the lead wire provided is 300 mm. When ordering a valve with a lead wire of 600 mm or longer, be sure to indicate the model number of the valve without connector and connector assembly.

Example) Lead wire length 1000 mm
VQ1110-5LO····· 3 pcs.
AXT661-14A-10 ····· 3 pcs.

Connector Assembly (For DC)

Lead wire length	Part no. for single & VQ0000 double	Part no. for VQ1000 double
Socket (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) 100/110 VAC for single: AXT661-31A-□; for double: AXT661-32A-□
200/220 VAC for single: AXT661-34A-□; for double: AXT661-35A-□



How to Order Manifold

VV5Q **12** — **08** **C6** **C** – **N**

Series/Manifold

05	VQ0000	Plug lead unit
12	VQ1000	

Stations

01	1 station
⋮	⋮
16	16 stations

Cylinder port

Symbol	Port size	VQ0000	VQ1000
C3	With One-touch fitting for ø3.2	●	●
C4	With One-touch fitting for ø4	●	●
C6	With One-touch fitting for ø6	—	●
M5	M5 thread	●	●
CM	With mixed size/with port plug	●	● Note)

Note 1) Specify "Mixed size/with port plug" on the manifold specification sheet.
Note 2) For One-touch fittings in inch sizes, refer to "Option" on page 2-4-216.

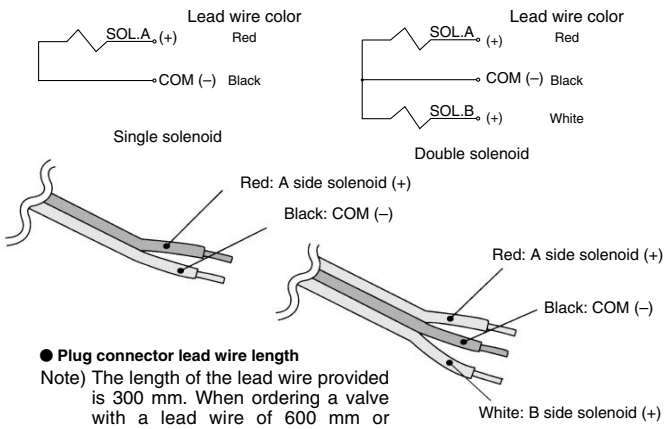
Option

Symbol	Option	VQ0000	VQ1000
Nil	None	●	—
B	With back pressure check valve	—	● (2)
D	DIN rail mounting style	●	● (3)
N	With name plate	●	●
S	Built-in silencer, direct exhaust	●	●

Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -BNS
Note 2) Models with a suffix "-B" have the back pressure check valve 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) VQ1000 are all equipped with a DIN rail, so indicate suffix "-D".

● Wiring specifications: Negative COM (Option) for VQ1000

● 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 length of the lead wire provided 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
VQ1110N-5LO·····3 pcs.
AXT661-14AN-10·····3 pcs.

Connector Assembly Part No.

Lead wire length	Single	Double solenoid part no.
Socket (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) When using the negative common specifications, use valves for negative common.

(Series VQ0□50 has no polarity, so the negative common is applicable to standard models.)

How to Order Valves

VQ 1 1 1 0 Y – 5 L □

Series

0	VQ0000
1	VQ1000

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 (VQ1000 only)

Body type

5	VQ0000	Plug lead unit
1	VQ1000	

Seal

0	Metal seal
1	Rubber seal

Note 1) For negative common specifications, refer to "Option" on page 2-4-216.

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 2-4-186.

Manual override

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

Note) Available only for VQ1000.

Electrical entry

		VQ0000	VQ1000
G	Grommet (Except AC)	●	—
L	L plug connector with lead wire	●	●
LO	L plug connector without connector	●	●
M	M plug connector with lead wire	●	—
MO	M plug terminal without connector	●	—

Coil voltage

		VQ0000	VQ1000
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	●	●

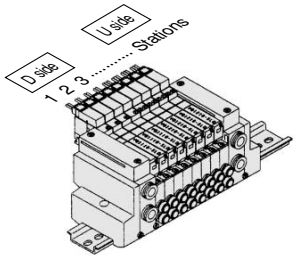
How to Order Manifold Assembly

Please indicate manifold base type, corresponding valve, and option parts.

<Example>
Connector kit
VV5Q12-08C6C-D ····1 set–Manifold base no.
∗VQ1110-5 ·····3 sets–Valve part no. (Stations 1 to 3)
∗VQ1210-5 ·····4 sets–Valve part no. (Stations 4 to 7)
∗VVQ1000-10A-1···1 set–Blanking plate part no. (stations 8)

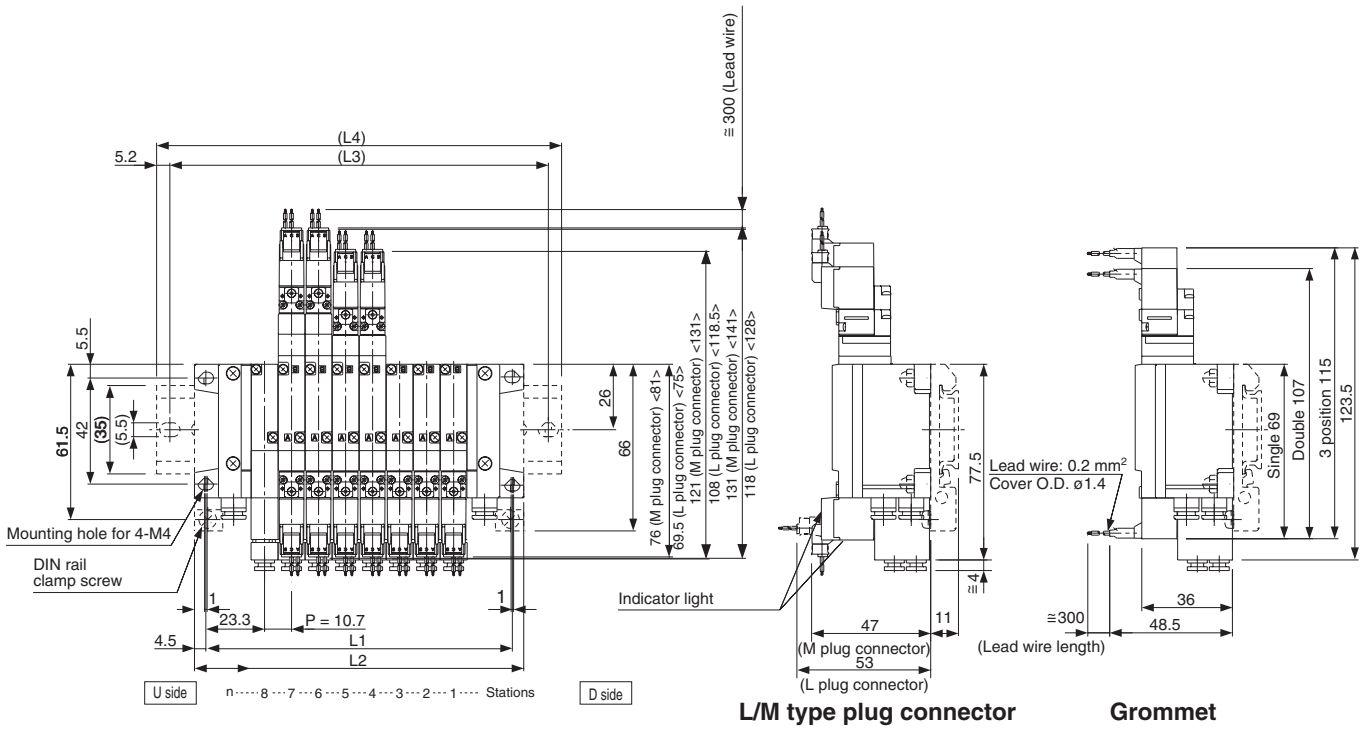
Prefix the asterisk to the part nos. of the solenoid valve, etc.

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

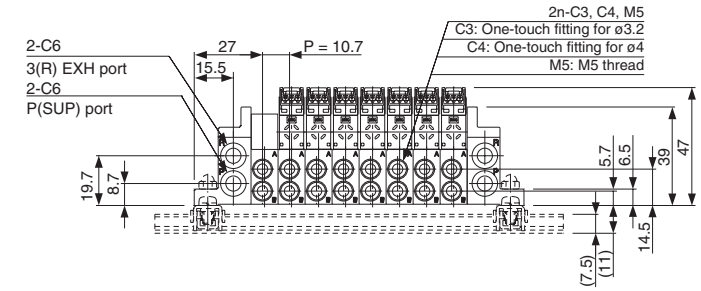


VQ0000

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



L/M type plug connector **Grommet**



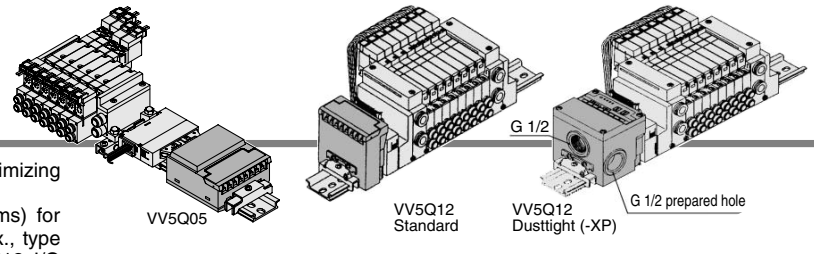
< >: AC

Dimensions

Formula L1 = 10.7n + 36, L2 = 10.7n + 45 n: Station (Maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	46.7	57.4	68.1	78.8	89.5	100.2	110.9	121.6	132.3	143	153.7	164.4	175.1	185.8	196.5	207.2
L2	55.7	66.4	77.1	87.8	98.5	109.2	119.9	130.6	141.3	152	162.7	173.4	184.1	194.8	205.5	216.2
(L3)	87.5	87.5	100	112.5	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	225	237.5
(L4)	98	98	110.5	123	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	235.5	248

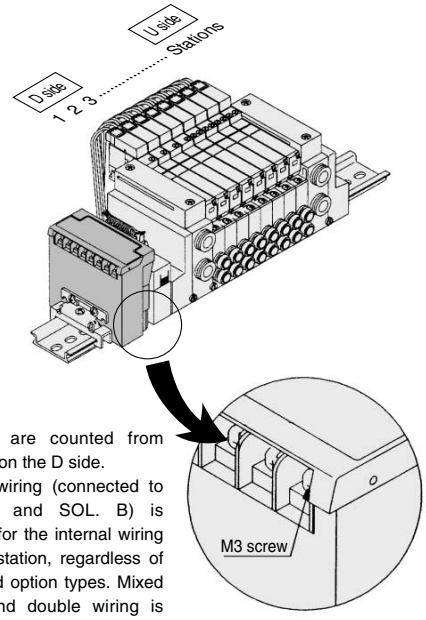
S VQ0000/1000 Kit (Serial transmission unit)



- 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. 8 stations. (Specify a option model with 9 to 16 stations by using the manifold specification sheet.)

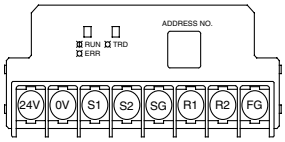
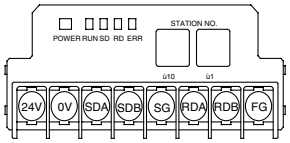
Manifold Specifications

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	C8	C3, C4, C6, M5	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. Mixed single and double wiring is available as an option. For details, refer to page 2-4-216.

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

	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: TRD — Lighting during data reception LED: RUN/ERR — Blinking when received data is normal; Lighting when data reception	 LED: POWER — Lighting when power is turned ON LED: RUN — Lighting when data transmission with the master station is normal LED: RD — Lighting during data reception LED: SD — Lighting during data transmission LED: 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 point	• 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 12 – 08 C6 S A – D – XP

Dust-protected type (-XP) (VQ1000 only)
Suffix "-XP" for the dust-protected type SI unit.
(Except SE and SQ.)

Series/Manifold

05	VQ0000	Plug lead unit
12	VQ1000	

Stations

01	1 station
⋮	⋮
16	16 stations Note)

Note) For details, refer to page 2-4-216.

Cylinder port

Symbol	Port size	VQ0000	VQ1000
C3	With One-touch fittings for ø3.2	●	●
C4	With One-touch fitting for ø4	●	●
C6	With One-touch fitting for ø6	—	●
M5	M5 thread	●	●
CM	With mixed size/with port plug	●	●

Note 1) Specify "Mixed size/with port plug" on the manifold specification sheet.
Note 2) For inch-size One-touch fittings, refer to "Option" on page 2-4-216.

Model

0	Without SI unit		
Note 1) **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		Max.16 stations
Note 2) **E**	Matsushita Electric Works: MEWNET-F System		
F1	NKE Corp.: Uni-wire System (16 output points)		
Note 2) **G**	Rockwell Automation: Allen Bradley Remote I/O (RIO) System		
H	NKE Corp.: Uni-wire H System		
Note 2) **J1**	SUNX Corp.: S-LINK System (16 output points)		
Note 2) **J2**	SUNX Corp.: S-LINK System (8 output points)	Max. 8 stations	
Note 2) **K**	Fuji Electric Co.: T-LINK Mini System		
Note 2) **Q**	DeviceNet, CompoBus/D (OMRON Corp.)		Max.16 stations
Note 2) **R1**	OMRON Corp.: CompoBus/S System (16 output points)		
Note 2) **R2**	OMRON Corp.: CompoBus/S System (8 output points)	Max. 8 stations	
Note 2) **V**	Mitsubishi Electric Corp.: CC-LINK System	Max. 16 stations	

Note 1) The general type requires a transmission unit on CPU side.
Note 2) Usable only for VQ1000

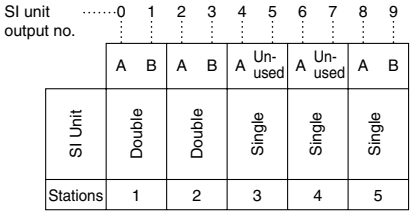
Option

Symbol	Option	VQ0000	VQ1000	Note
B	With back pressure check valve	—	●	(2)
D	DIN rail mounting	●	●	(3)
K	Special wiring specifications (Not double wiring)	●	●	(4)
N	With name plate	●	●	
S	Built-in silencer, direct exhaust	●	●	

Note 1) When two or more symbols are specified, indicate them alphabetically.
Example) -BNS
Note 2) Models with a suffix "-B" have the back pressure check valve 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) S kit of VQ0000 and all of VQ1000 are equipped with a DIN rail, so indicate suffix "-D".
Note 4) Specify the wiring specifications on the manifold specification sheet.

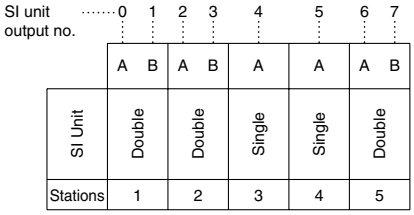
● SI unit output and coil numbering

<Wiring example 1>

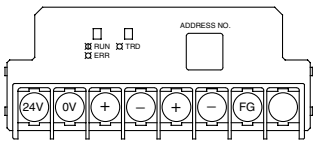
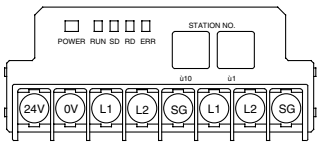


Double wiring (Standard)

<Wiring example 2> Mixed wiring is available as an option.
Use the manifold specification sheet to specify.



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 / 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 1 0 Y — 5 LO

Series

0	VQ0000
1	VQ1000

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 (VQ1000 only)

Body type

5	VQ0000	Plug lead unit
1	VQ1000	

Seal

0	Metal seal
1	Rubber seal

Note) Connector assembly will be required when the S kits add a valve.
For part nos., refer to "Option" on page 2-4-216.

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 light/surge voltage suppressor

Electrical entry

		VQ0000	VQ1000
LO	L plug terminal without connector	●	●
MO	M plug terminal without connector	●	—

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

Manual override

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

Note) Available only for VQ1000

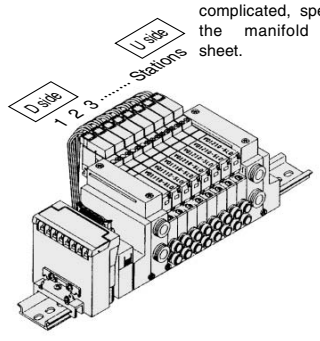
How to Order Manifold Assembly

Please indicate manifold base type, corresponding valve, and option parts.

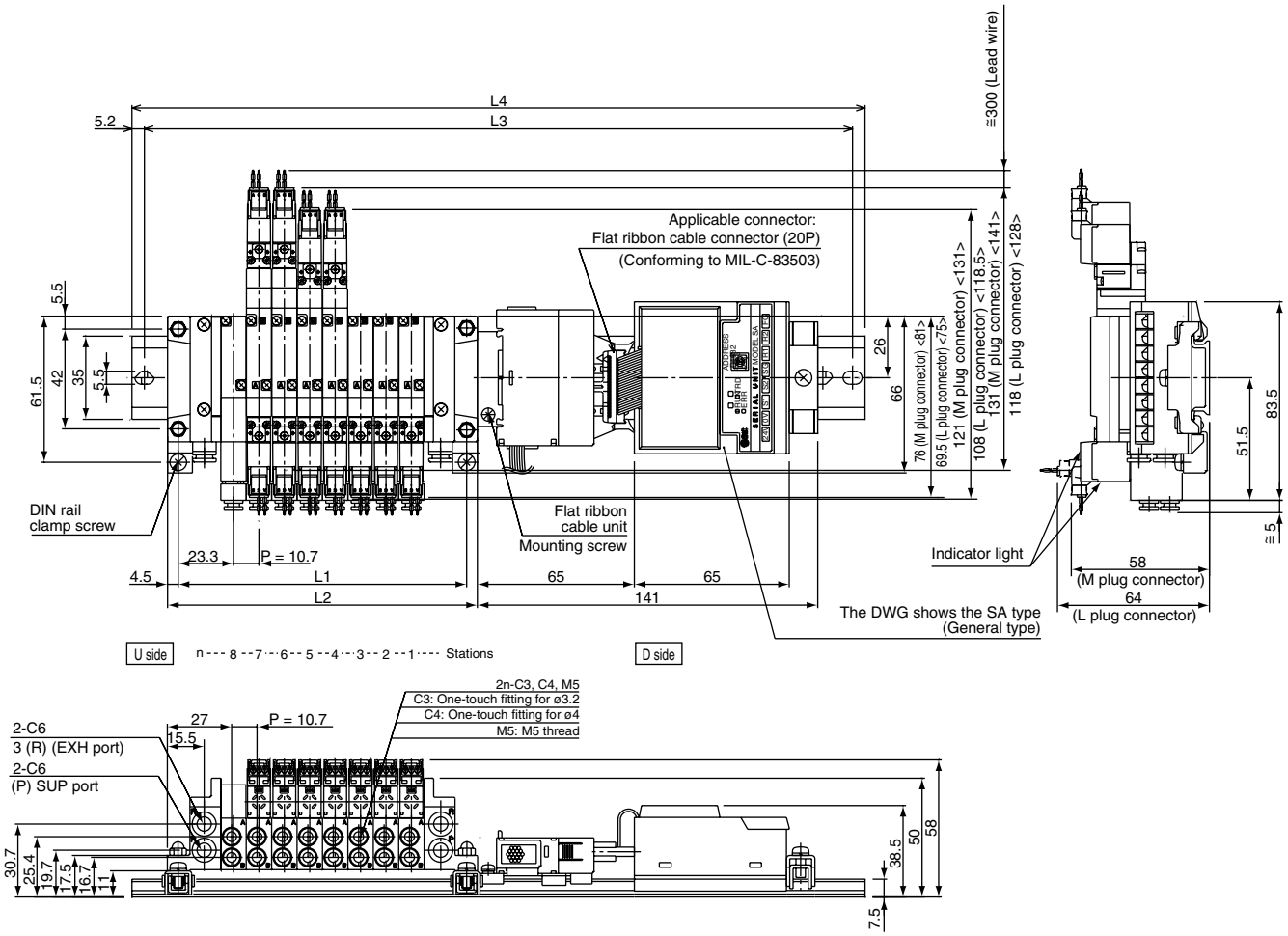
<Example>
Serial transmission kit
VV5Q12-08C6SA-D ····1 set-Manifold base no.
∗VQ1110-5LO ·····4 sets-Valve part no. (Stations 1 to 4)
∗VQ1210-5LO ·····3 sets-Valve part no. (Stations 5 to 8)

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.



VQ0000



Dimensions

Formula L1 = 10.7n + 36, L2= 10.7n + 45 n: Station (Maximum 16 stations)

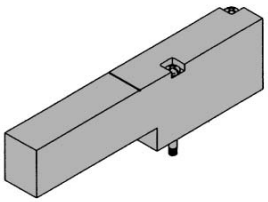
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	46.7	57.4	68.1	78.8	89.5	100.2	110.9	121.6	132.3	143	153.7	164.4	175.1	185.8	196.5	207.2
L2	55.7	66.4	77.1	87.8	98.5	109.2	119.9	130.6	141.3	152	162.7	173.4	184.1	194.8	205.5	216.2
L3	225	237.5	250	250	262.5	275	287.5	300	312.5	325	325	337.5	350	362.5	375	387.5
L4	235.5	248	260.5	260.5	273	285.5	298	310.5	323	335.5	335.5	348	360.5	373	385.5	398

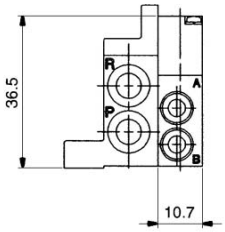
Manifold Option Parts for VQ0000

Blanking plate assembly
VVQ0000-10A-5

JIS Symbol

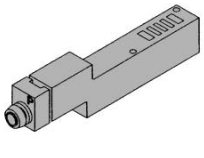
It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

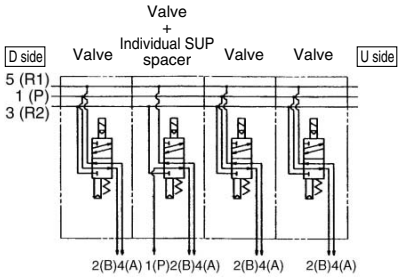




Individual SUP spacer
VVQ0000-P-5-C4

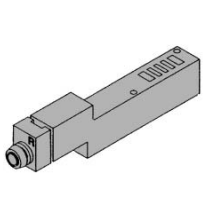
When the same manifold is to be used for different pressures, this spacer is mounted under the valve to equip each valve with an individual supply port.

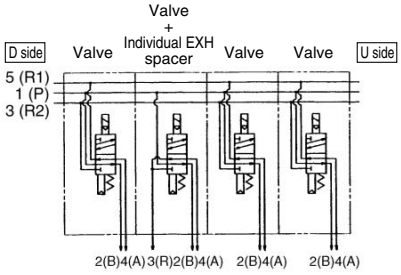




Individual EXH spacer
VVQ0000-R-5-C4

When a valve exhaust affects other stations due to the circuit configuration, this spacer is mounted under the valve to equip each valve with an individual valve exhaust.





SUP/EXH block plate
VVQ0000-16A-5- P (SUP) R (EXH) PR (SUP/EXH)

1(P) (For SUP)

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

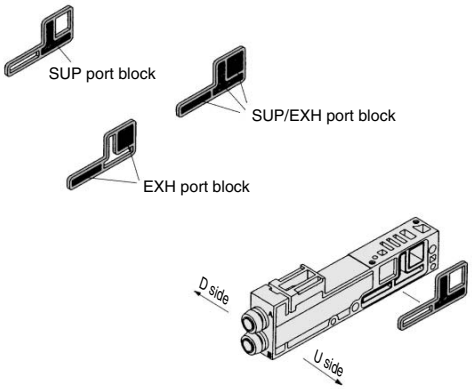
3(R) (For EXH)

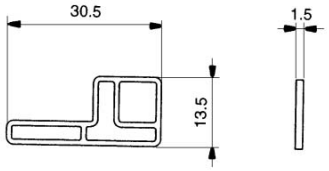
When a valve exhaust affects other stations due to the circuit configuration, this plate is used between the stations where exhaust should be separated.

1(P), 3(R) (For SUP/EXH)

When blocking SUP and EXH simultaneously, SUP/EXH block plate (PR) is used.

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

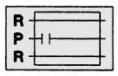




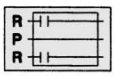
<Blocking indication label>

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

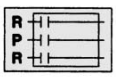
* When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.



SUP passage blocked
(VVQ0000-16A-5-P)



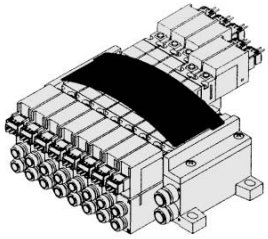
EXH passage blocked
(VVQ0000-16A-5-R)



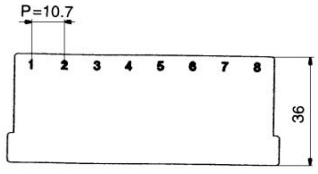
SUP/EXH passage blocked
(VVQ0000-16A-5-PR)

Name plate [-N*]
VVQ0000-N5-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.



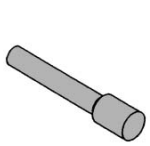
* When ordering assemblies incorporated with a manifold, add suffix "N" to the manifold no.

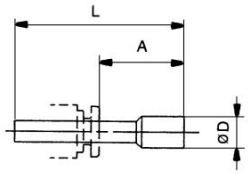


Blanking plug (For One-touch fittings)

KQ2P- $^{23}_{04}$ $_{06}$

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





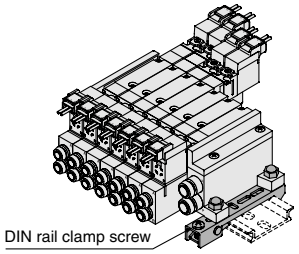
Dimensions

Applicable fitting size ød	Model	A	L	D
3.2	**KQ2P-23**	16	31.5	3.2
4	**KQP-04**	16	32	6
6	**KQP-06**	18	35	8

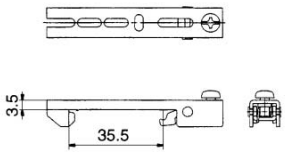
DIN rail mounting bracket [-D]

VVQ0000-57A-5 (VQ0000)

It is used for mounting a VV5Q05 type 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 set of manifold (2 DIN rail mounting brackets).



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

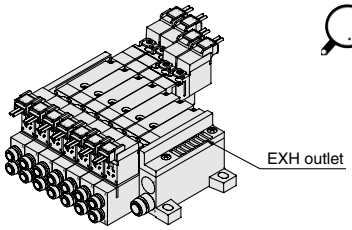


Built-in silencer, Direct exhaust [-S]

This is an exhaust port on the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Silencing effect: 20 dB)

Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

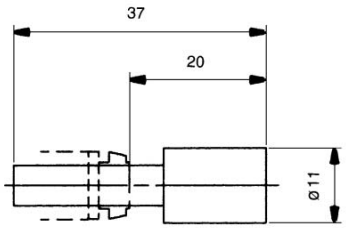
● For maintenance, refer to page 2-4-214.



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

Silencer (For EXH port)

This is inserted into the centralized type EXH port (One-touch fitting).



Dimensions

Series	Applicable fitting size ød	Model	A	L	D	Effective area (mm²)	Noise reduction (dB)
VQ0000	6	AN103-X233	20	37	11	7	25

Manifold Option Parts for VQ0000/VQ1000

Double check block (Separated type)

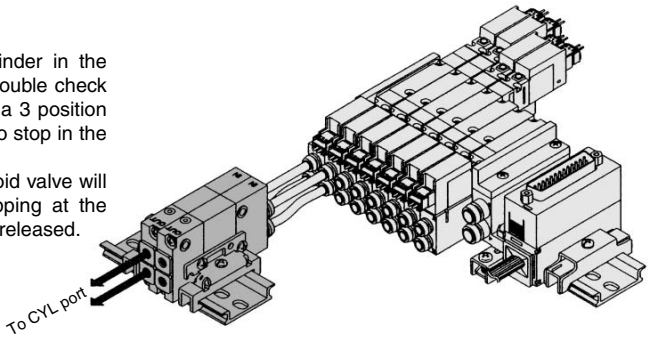
VQ1000-FPG-□□

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 permit this block to be used for preventing the dropping at the cylinder stroke end when the SUP residual pressure is released.

Specifications

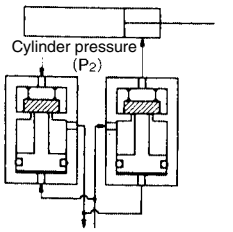
Max. operating pressure	0.8 MPa
Min. operating pressure	0.15 MPa
Ambient and fluid temperature	–5 to 50°C
Flow characteristics: C	0.60 dm³/(s·bar)
Max. operating frequency	180 CPM



VVQ1000-FPG-02 1 set
∗VQ1000-FPG-C6M5-D 2 pcs.

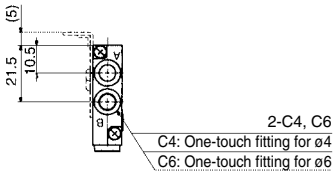
Note) Based on JIS B 8375-1981
(Supply pressure: 0.5 MPa)

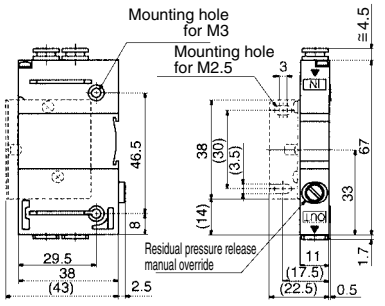
<Check valve operation principle>



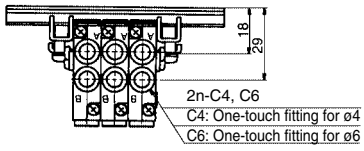
Dimensions

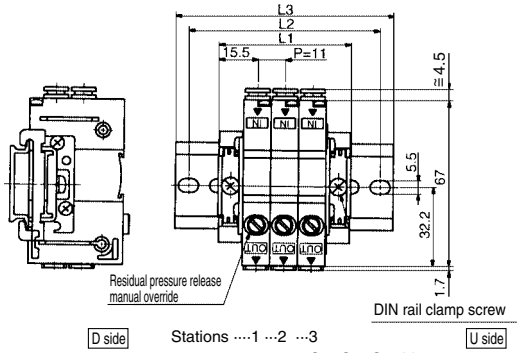
Single unit





Manifold





Dimensions

Formula L1=11n+20 n: Station (Maximum 24 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12
L1	31	42	53	64	75	86	97	108	119	130	141	152
L2	50	62.5	75	87.5	100	112.5	125	125	137.5	150	162.5	175
L3	60.5	73	85.5	98	110.5	123	135.5	135.5	148	160.5	173	185.5

L \ n	13	14	15	16	17	18	19	20	21	22	23	24
L1	163	174	185	196	207	218	229	240	251	262	273	284
L2	187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5	300
L3	198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.5

How to Order

Double check block

VQ1000-FPG- C4 M5 — F

IN side port size

C4	One-touch fitting for ø4
C6	One-touch fitting for ø6

OUT side port size

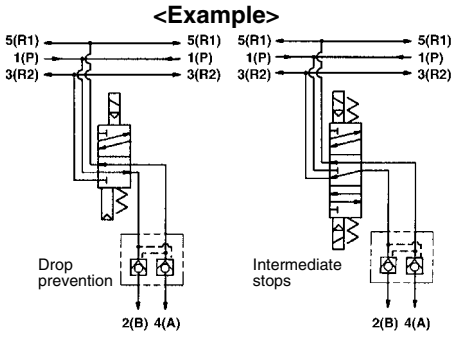
M5	M5 thread
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6

Option

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

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

<Example>



Manifold

VVQ1000-FPG- 06

Stations

01	1 station
⋮	⋮
16	16 stations

<Example>

VVQ1000-FPG-06 ··· 6 types of manifold
∗VQ1000-FPG-C4M5-D, 3 sets
∗VQ1000-FPG-C6M5-D, 3 sets
} Doublecheck block

Bracket Assembly

Part no.	Tightening torque
VQ1000-FPG-FB	0.22 to 0.25 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}
- 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

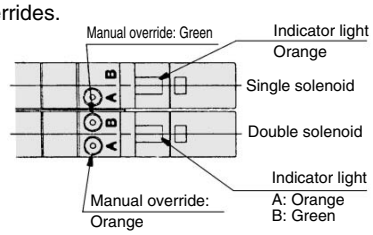
Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 2-9-2.

Light/Surge Voltage Suppressor

⚠ Caution

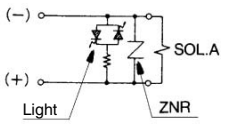
In the case of VQ1000, the standard model is equipped with an indicator light and surge voltage suppressor. The lighting positions are concentrated on one side for both single solenoid type and double solenoid type.

For the double solenoid type, A side and B side energization are indicated by two colors which match the colors of the manual overrides.



∗ In the case of VQ0000, solenoid and manual override on both sides.

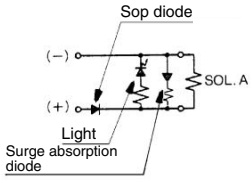
DC circuit diagram
VQ0000



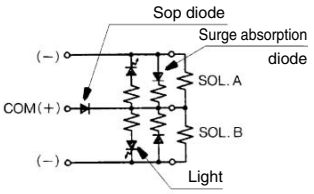
∗ In the case of VQ0000, solenoid and manual override on both sides.

Note) A side energization:
A light (orange) illuminates.
With wrong wiring preventing ability (stop diode)
B side energization:
B light (green) illuminates.
Equipped with a surge absorption (surge absorption diode) mechanism.

VQ1000 (DC)/Single solenoid



VQ1000/Double solenoid



Manual Override

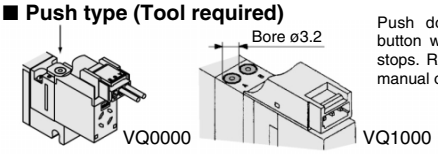
⚠ Warning

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)

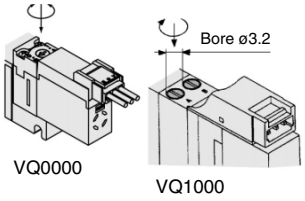


Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

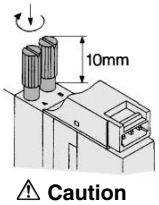
■ Locking type (Tool required) <Option>

If the manual override is turned by 180° clockwise and the ▶ mark is adjusted to 1, it will be locked in the ON state.
If the manual override is turned by 180° counterclockwise and the ▶ mark is adjusted to 0, locking will be released and the manual override will return.

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



■ Locking type (Manual) <Option>



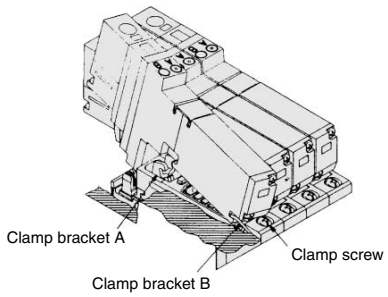
Push down on the manual override button with a small screwdriver or with your fingers until it stops. Turn clockwise by 90° to lock it. Turn it counterclockwise to release it.

⚠ 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



How to Remove

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.

How to Remove

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: 0.25 to 0.35 N·m)

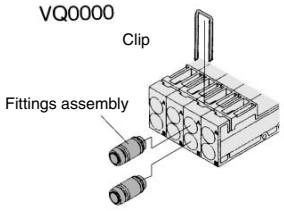
Mounting

1. Dust on the sealing surface of the gasket or solenoid valve can cause air leakage.
2. In the case of VQ0000, valve mounting screw clamping torque is 0.18 to 0.25 N·m.

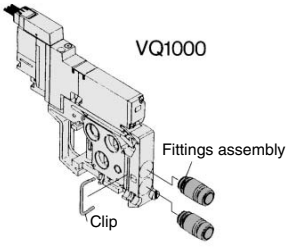
Replacement of Cylinder Port Fittings

⚠ 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 walland then re-insert the clip to specified position.



Take off the valve and remove the clip.



Remove the clip after taking off the manifold.

Applicable tubing O.D.	Fitting assembly part no.	
	VQ0000	**VQ1000**
Applicable tubing ø3.2	VVQ1000-51A-C3	VVQ1000-50A-C3
Applicable tubing ø4	VVQ1000-51A-C4	VVQ1000-50A-C4
Applicable tubing ø6	—	VVQ1000-50A-C6
M5	—	VVQ1000-50A-M5

∗ Refer to “Option” on pages 2-4-208 to 2-4-211 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.

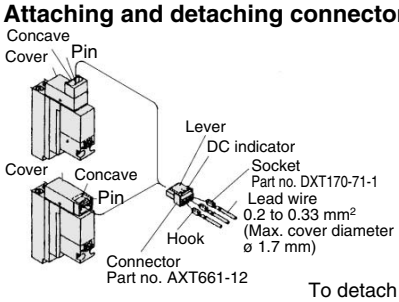
⚠ Precautions 2

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

How to Use Plug Connector

⚠ Caution

Attaching and detaching connectors

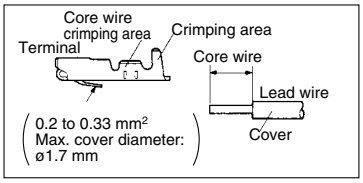


To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.

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, neatly into a socket 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.



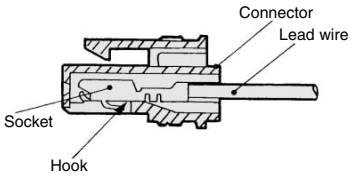
Attaching and detaching lead wires with sockets

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

For pulling-out the socket from the connector, pull out the lead wire while pushing the hook of the socket with a fine point (ca.1 mm) tool.
If the socket is to be re-used, spread the hook to the outside.

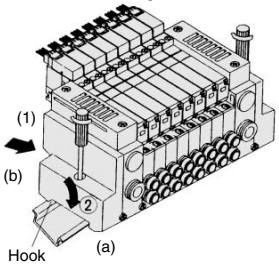


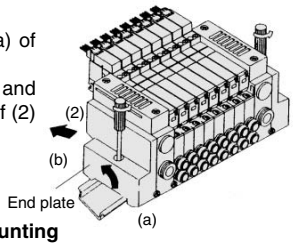
Mounting/Removing from the DIN Rail (VQ1000)

⚠ 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 side (a) and mount the end plate on the DIN rail.
3. Tighten the clamp screw on side (a) of the end plate. The proper tightening torque for screws is 1.2 to 1.6 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.

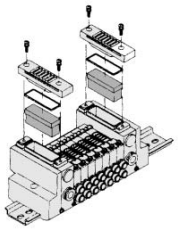
How to Calculate the Flow Rate

⚠ Caution

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

Built-in Silencer Replacement

⚠ 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 and cause malfunction. Clean or replace the dirty element.

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

Element part no.

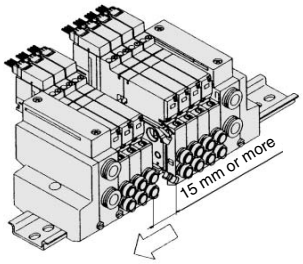
Type	Element part no.	
	VQ0000	**VQ1000**
Built-in silencer, direct exhaust (-S)	VVQ0000-82A-1	VVQ1000-82A-1

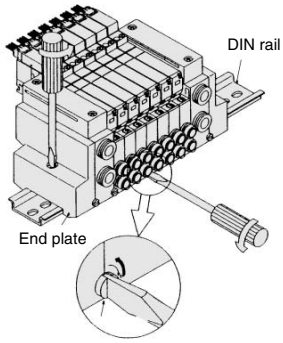
∗ The minimum order quantity is 10 pcs.

Manifold Base Station Increasing Procedure (VQ1000)

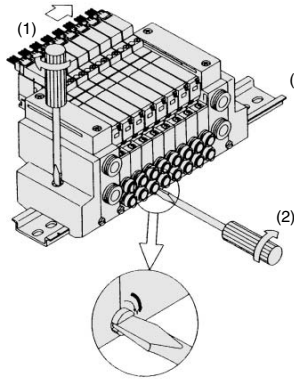
⚠ Caution

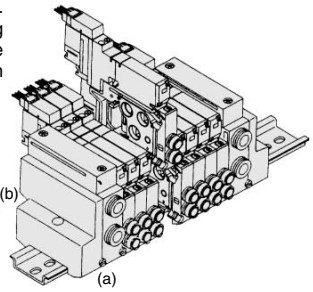
1. Loosen the clamp screw on the top surface of the end plate on one side.
2. Turn the manual override between the manifold blocks with a regular screwdriver, etc. in a couterclockwise direction.





3. Slide the manifold base to the side where the screw is loosened. Make a clearance of 15 mm or more.
4. Mount the station increasing manifold block assembly and solenoid valve on the DIN rail. Install it to the DIN rail by applying the hook on the (b) side of the manifold block and pushing down the (a) side.





5. Slide the manifold bases with a slight clearance in-between and lock them by turning the manual override between the manifold blocks clockwise.
6. Tighten the screw on the top surface of the end plate, and the station has been added.
(Proper tightening torque 1.2 to 1.6 N·m)

Manifold Block Assembly

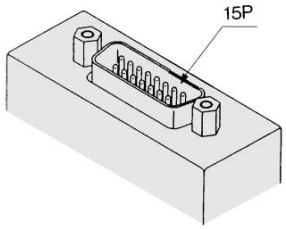
VQ1000	Port size
VVQ1000-1A-2-C3	With One-touch fitting for ø3.2
VVQ1000-1A-2-C4	With One-touch fitting for ø4
VVQ1000-1A-2-C6	With One-touch fitting for ø6
VVQ1000-1A-2-M5	M5 thread

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

VV5Q12 – 06 | F | SA – D

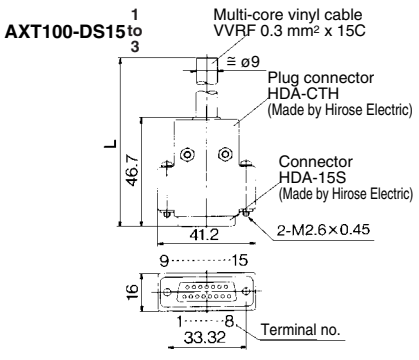
- 06 → Stations
- SA → Kit/Electrical entry
- D → Option

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

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), terminal no. 1 for is SOL.A at the 1st station, terminal no. 9 for SOL.B at the 1st station, and terminal no. 8 for COM.



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

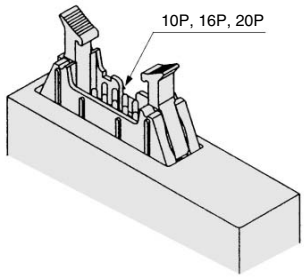
Terminal no.	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black

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

VV5Q12 – 06 | P | SC – D

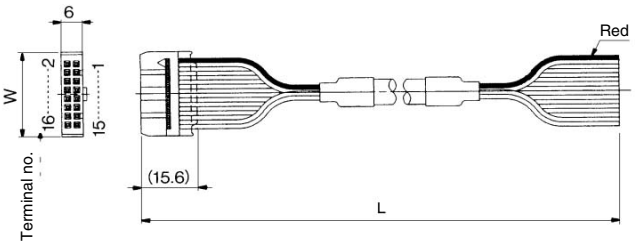
- 06 → Stations
- SC → Kit/Electrical entry
- D → Option

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

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), terminal no. 1 is SOL.A at the 1st station, terminal no. 2 for SOL.B at the 1st station, and two pins from the max.



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, 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

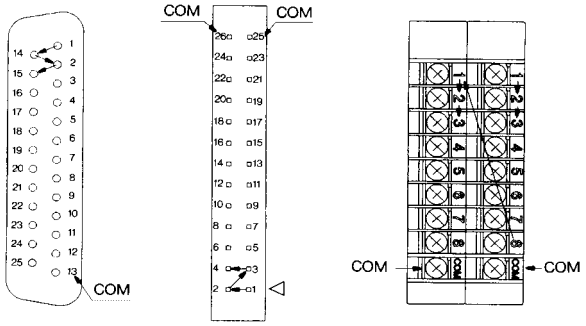
Indicate an option symbol "-K", for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification sheet.

Example) **VV5Q05-08C4FU1-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 (25 P)

P kit
Flat ribbon cable connector (26 P)

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 max. 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 transmission)
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	T1	T2	S□
Max. points	16 Note)	14	16 Note)	16 Note)	14	8	8	16	16

Note) Due to the limitation of internal wiring.

Negative Common Specifications [Series VQ1□10]

The following valve part numbers are for negative COM specifications. Manifold model no. is the same as the standard products.

How to order negative COM valves

VQ1110 N − 5M

Negative common specifications

∗ Series VQ0□50 has no polarity, so the negative common is applicable to standard models.

Inch-size One-touch Fittings

Valve with inch-size One-touch fittings is shown below.

VV5Q12 − 06 N7 PSO − D

Stations **Cylinder port** **Kit/Electrical entry** **Option**

Symbol		N1	N3	N7	M5T	NM
Applicable tubing O.D. (Inch)		ø1/8"	ø5/32"	ø1/4"	10-32UNF (M5 thread)	Mixed
A, B port	VQ0000	○	○	—	○	○
	VQ1000	○	○	○	○	○

Note) When inch size fittings are selected for a cylinder port, use inch size fittings for both P and R port, too.

1(P), 3(R) port size
VQ0000 ·····ø1/4"
VQ1000 ·····ø5/16"

Plug Connector Assembly Model

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

Connector Assembly Part No.

Specifications		Part no.
Single VQ0000 (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
The part numbers above are applicable to 2 to 10 stations. 11 to 16 stations: "AXT661-$^{13}_{14}$A(N)-F-425".

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. Other than this, it is applicable for the following cases.

● **When DIN rail is unnecessary (C kit VQ0000 only)**
Indicate the option symbol, -DO, for the manifold no.

Example)

VV5Q05-08C4C-DOS

Others, option symbols: to be indicated alphabetically.

● **When using DIN rail longer than the manifold with specified number of stations (VQ0000/VQ1000)**
Clearly indicate the necessary number of stations next to the option symbol. "D" for the manifold no.

Example)

VV5Q05-08C4FU1-D09S

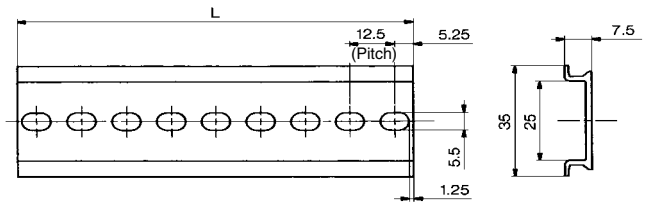
DIN rail for 9 stations

Others, option symbols: to be indicated alphabetically.

● **When changing the manifold style into a DIN rail mounting style (VQ0000 only)**
Order brackets for mounting a DIN rail. (Refer to "Option" on page 2-4-209.)
No. VVQ0000-57A-5 2 pcs. per one set.

● **When ordering DIN rail only (VQ0000 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

Series VQ
Single Unit

Model

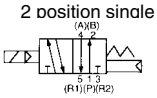
Series		Number of solenoid		Model		Flow characteristic (1)						Response time (ms) (2)			Weight (g)
						1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → R1/R2)			Standard: 1W H: 1.5W	Low wattage: 0.5 W	AC	
						C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv				
Base mounted	VQ0000 Plug lead	2 position	Single	Metal seal	**VQ0150**	0.41	0.20	0.10	0.44	0.26	0.11	12 or less	15 or less	29 or less	50 (3)
				Rubber seal	**VQ0151**	0.53	0.20	0.12	0.53	0.22	0.13	15 or less	20 or less	34 or less	
			Double	Metal seal	**VQ0250**	0.41	0.20	0.10	0.44	0.26	0.11	10 or less	13 or less	13 or less	
				Rubber seal	**VQ0251**	0.53	0.20	0.12	0.53	0.22	0.13	15 or less	20 or less	20 or less	
		3 position	Closed center	Metal seal	**VQ0350**	0.32	0.10	0.07	0.32	0.20	0.07	20 or less	26 or less	40 or less	65 (3)
				Rubber seal	**VQ0351**	0.43	0.21	0.10	0.44	0.24	0.11	25 or less	33 or less	47 or less	
			Exhaust center	Metal seal	**VQ0450**	0.32	0.10	0.07	0.44	0.26	0.11	20 or less	26 or less	40 or less	
				Rubber seal	**VQ0451**	0.43	0.21	0.10	0.53	0.22	0.13	25 or less	33 or less	47 or less	

Note 1) Cylinder port size C4: (VQ0000)
Note 2) Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa; with indicator light and surge voltage suppressor; clean air) The response time is subject to the pressure and quality of the air. The valves at the time of ON are given for double types.
Note3) Weight including sub-plate.

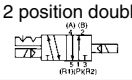
For individual use of a single valve.

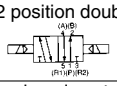
JIS Symbol

2 position single

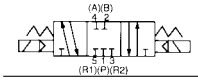


Metal / Rubber: 2 position double

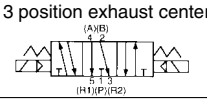




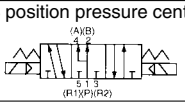
3 position closed center



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)	
	Min. 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 tight	
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 for high pressure type (1.5 W)
Note 4) Values for low wattage type (0.5 W)

How to Order Valves

VQ0 1 5 0 Y – 5 L – C4

Series VQ0000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust 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 2-4-218.

Coil rated 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

Electrical entry

G	Grommet (Except AC)
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

Manual override

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

* Option

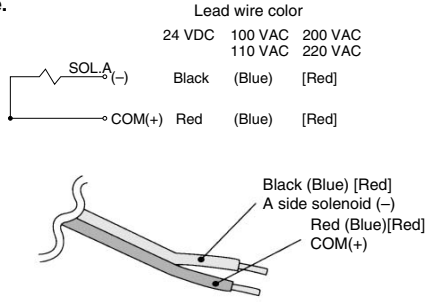
Sub-plate
SUP, Cylinder port

Nil	Without sub-plate
C3	With One-touch fitting for ø3.2
C4	With One-touch fitting for ø4
M5	M5 thread

Note) EXH port: M5 thread

Wiring Specifications

● **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 length of the lead wire provided 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
VQ0150-5LO ····· 3 pcs.
AXT661-14A-10 ····· 3 pcs.

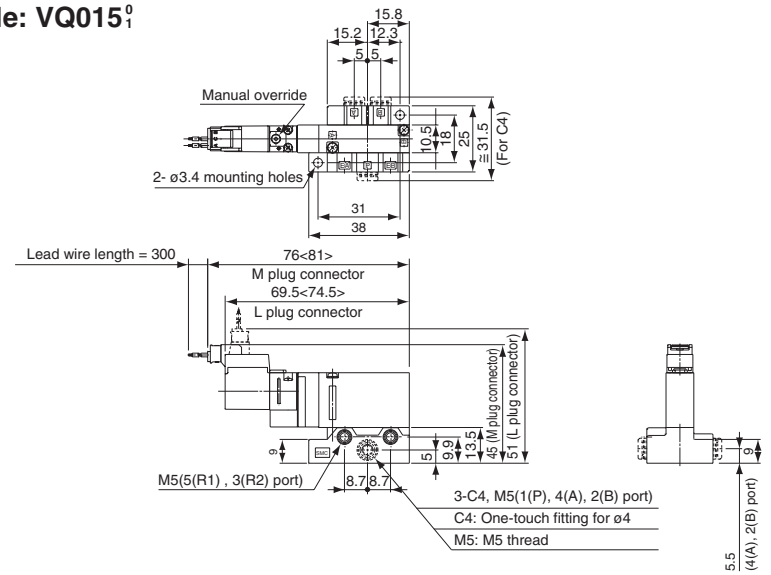
Connector Assembly Part No. (For DC)

Lead wire length	Part no.
Socket (3 pcs.)	AXT661-12A
300 mm	AXT661-14A
600 mm	AXT661-14A-6
1000 mm	AXT661-14A-10
2000 mm	AXT661-14A-20
3000 mm	AXT661-14A-30

Note)AXT661-31A-□, for 100/110 VAC.
AXT661-34A-□, for 200/220 VAC.

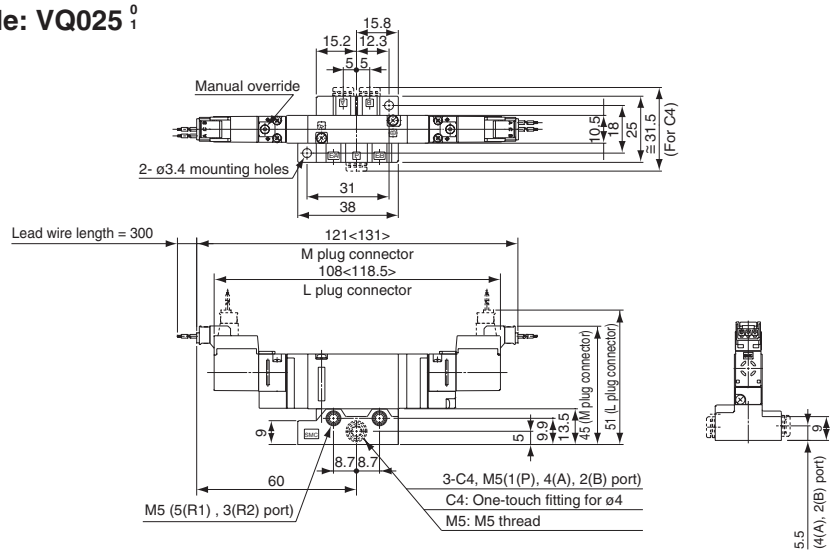
Dimensions

2 position single: VQ015$^{0}_{1}$



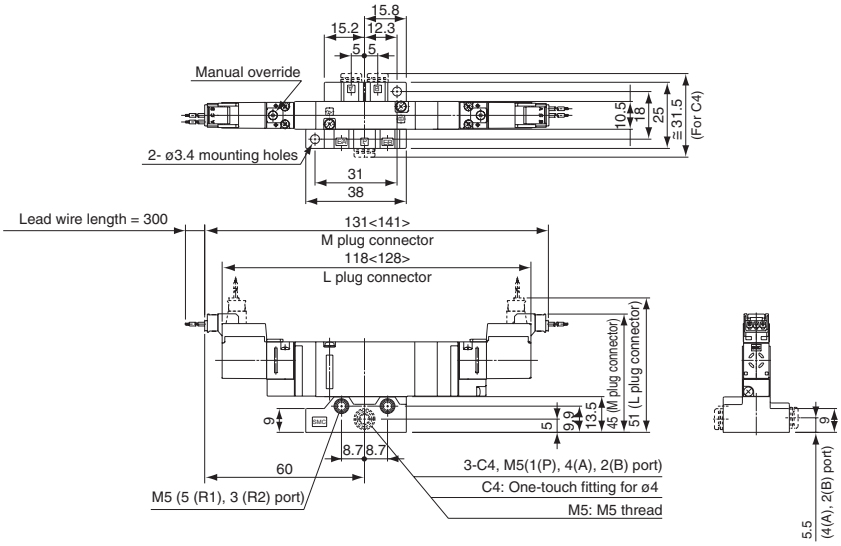
< >: AC

2 position double: VQ025$^{0}_{1}$



< >: AC

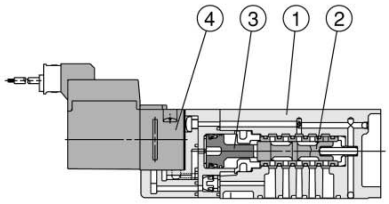
3 position exhaust center: VQ0$^{3}_{4}$5$^{0}_{1}$

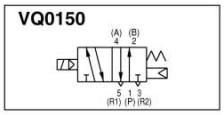


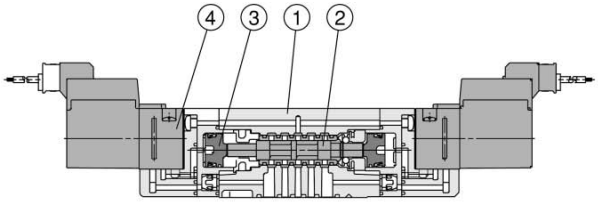
< >: AC

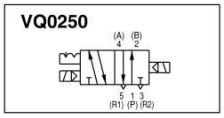
Construction: VQ0000/Plug Lead Unit

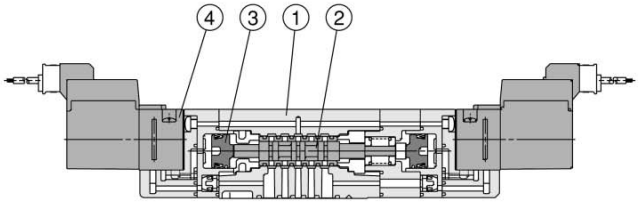
Metal seal

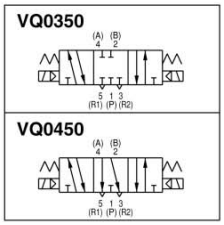




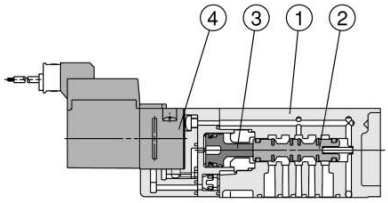


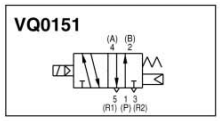


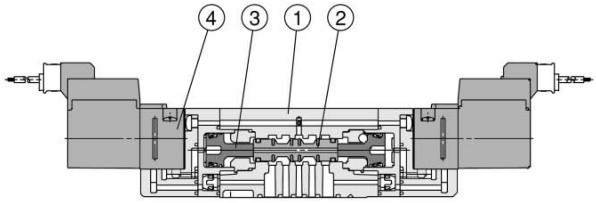


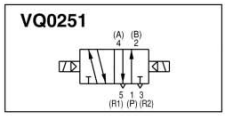


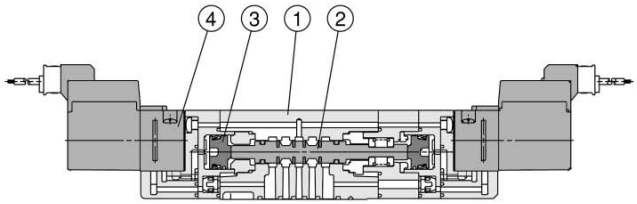
Rubber seal type

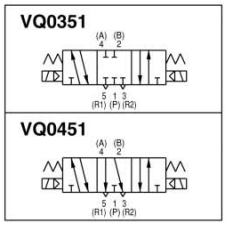












Component Parts

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

Replacement Parts

④	Pilot valve assembly	VQ110 (H)(Y)-□ L M G Note) Voltage1 to 6	

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

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	VQ110 (H)(Y)-□ L M G Note) Voltage1 to 6	

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

Exploded View: VQ0000/Plug Lead Unit

(F, P, C, S kit)

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

	Tie-rod	U side end block assembly	Manifold block assembly	D side end block assembly	Housing assembly and SI unit Note 3)	
S kit					Note 2) Connector assembly ① ② Note 1) Note 4)	S kit
P kit	⑬	⑦	⑩ ⑨ ⑪ ⑧	⑥ ⑫	Note 2) Connector assembly ② The drawing shows PU. (Top entry connector)	P kit
F kit					Note 2) Connector assembly ③ The drawing shows FU. (Top entry connector)	F kit
T kit					Note 2) Connector assembly ⑤ ④ Note 4)	T kit

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).
Note 2) Since no connector assembly is included, order it separately. (Refer to page 2-4-216.)
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 Corp.)
	(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	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 l = Number of pins: 26, 20, 16, 10
③	F^{U}_{S} kit	AXT100-2-F^{U}_{S} □ [(2)]	D-sub connector housing assembly l = Number of pins: 25, 15
④	T kit	AXT100-2-TB1 [(4)]	Terminal block assembly (8 terminals)
⑤	T kit	AXT100-2-TB2 [(4)]	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 2-4-216.)
Note 4) In the case of standard specifications and double wring, ④ is for 1 to ⑤ stations and t is for 5 to 8 stations.

<D Side End Plate Assembly>

⑥ D side end plate assembly no.

VVQ0000-3A-5-□

Option

Nil	Common exhaust type
S	Built-in silencer, direct exhaust

Note) The ⑫'s fitting assembly is included.

<U Side End Plate Assembly>

⑦ U side end plate assembly no.

VVQ0000-2A-5-□

Option

Nil	Common exhaust type
S	Built-in silencer, direct exhaust

<Manifold Block Assembly>

⑧ manifold block assembly no.

VVQ0000-1A-5-□

Port size

C3	With One-touch fitting for ø3.2
C4	With One-touch fitting for ø4
M5	M5 thread

<Replacement Parts for Manifold Block>

Replaceable Parts

No.	Part no.	Description	Material	Number
⑨	VVQ0000-80A-5-2	Seal	HNBR	12
⑩	VVQ0000-80A-5-4	Clip	HNBR	12

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

<Fitting Assembly>

⑪ Fittings assembly part no. (For cylinder port)

VVQ0000-50A-□

Port size

C3	With One-touch fitting for ø3.2
C4	With One-touch fitting for ø4

Note) Purchasing order is available in units of 10 pieces.

⑫ Fitting assembly part no. (For P, R port)

VVQ1000-50A-C6

Applicable tubing ø6

Note) Purchasing order is available in units of 10 pieces.

<Tie-rod Bolt>

⑬ Tie-rod bolt

VVQ0000-103A-5-□

Stations

1	For 1 station
2	For 2 station
⋮	⋮
16	For 16 station

Note) 2 bolts per one set.