

Series VQ0000

Base Mounted

Plug Lead Unit

How to Order Manifold

VV5Q 05 - 08 C4 F U1 - D

Series/Manifold
05 VQ0000

Kit type

Option

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.

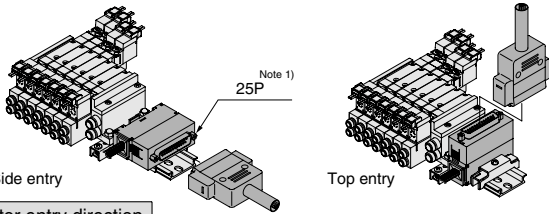
Symbol	Option
Nil	None
D	DIN rail mounting style ⁽²⁾
K	Special wiring specifications (Not double wiring) ⁽³⁾
N	With name plate
S	Built-in silencer, direct exhaust

- 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)

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

Kit/Electrical entry: Cable length

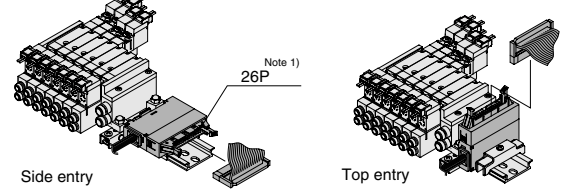
F kit
(D-sub connector)



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

P. 2-4-188

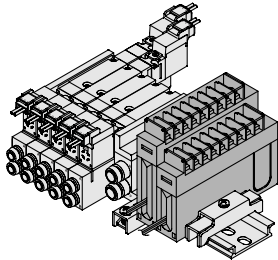
P kit
(Flat ribbon cable connector)



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

P. 2-4-192

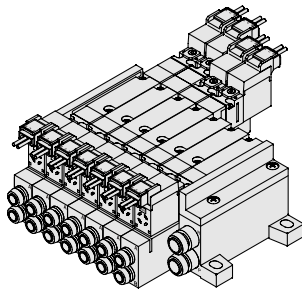
T kit
(Terminal block)



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

P. 2-4-196

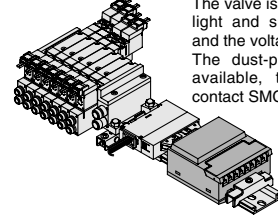
C kit
(Connector)



C	Connector kit	Max. 16 stations
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P. 2-4-200

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.

Kit		Without SI unit	Max. 16 ⁽²⁾ stations
0	A	With general type SI unit (Series EX300)	
3)	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	

P. 2-4-204

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 (A/B) (R1/P1/R2)

2 2 position double (A/B) (R1/P1/R2)

3 3 position closed center (A/B) (R1/P1/R2)

4 3 position exhaust center (A/B) (R1/P1/R2)

Body type
5 VQ0000

Seal
0 Metal seal
1 Rubber seal

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 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	

Function

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

Coil voltage

Symbol	Specifications
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) 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

Closed center (24 VDC) VQ0350-5MO
 Double solenoid (24 VDC) VQ0250-5MO
 Single solenoid (24 VDC) VQ0150-5MO

Stations: 1, 2, 3, 4, 5, 6, 7

3 m

VVQ05-07C4FS2-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

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.

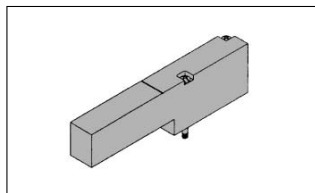
Note) For power consumption of AC type, refer to page 2-4-186.

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

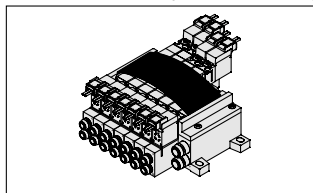
Manifold Option

P. 2-4-208

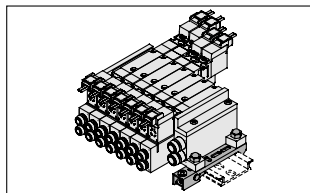
Blanking plate assembly
VVQ0000-10A-5



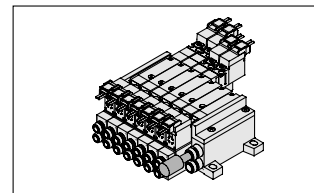
Name plate [-N*]
VVQ0000-N5-Station (1 to Max. stations)



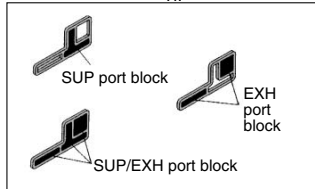
DIN rail mounting bracket [-D]
VVQ0000-57A-5



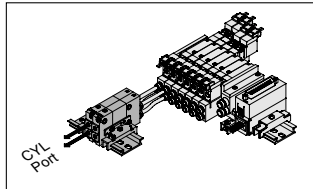
Silencer
AN103-X233



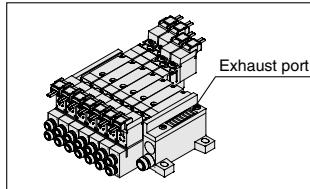
SUP/EXH block plate
VVQ0000-16A-5-^R_{PR}



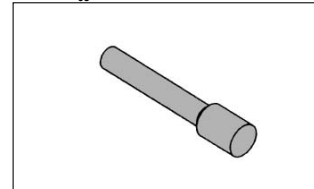
Double check block
VQ1000-FPG-□□



Built-in silencer, direct exhaust [-S]

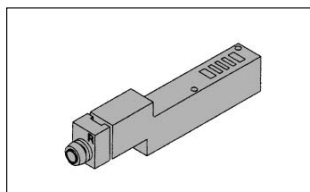


Blanking plug
KQ2P-^R_{BEACH}

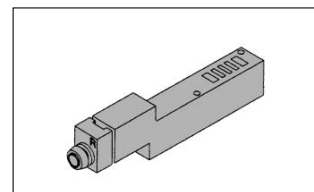


- For cylinder port fittings part no., refer to page 2-4-213.
- For replacement parts, refer to page 2-4-231.

Individual SUP spacer
VVQ0000-P-5-C4



Individual EXH spacer
VVQ0000-R-5-C4



Plug Lead Unit Series VQ0000/1000

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⁾					
VQ0000	VV5Q05-□□□	<ul style="list-style-type: none"> ■ F kit—D-sub connector ■ P kit—Flat ribbon cable connector ■ T kit—Terminal block ■ C kit—Individual connector ■ S kit—Serial transmission 	Side	1(P), 3(R)	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)
				4(A), 2(B)					
VQ1000	VV5Q12-□□□	<ul style="list-style-type: none"> ■ F kit—D-sub connector ■ P kit—Flat ribbon cable connector ■ T kit—Terminal block ■ C kit—Individual connector ■ S kit—Serial transmission 	Side	1(P), 3(R)	C8 (ø8) Option (Built-in silencer, 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)
				4(A), 2(B)					



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.

VQC

SQ

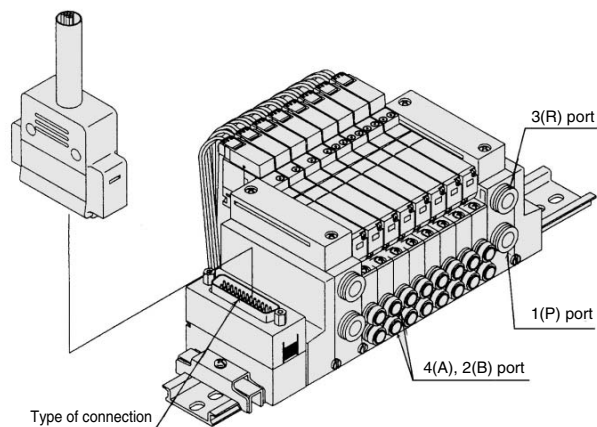
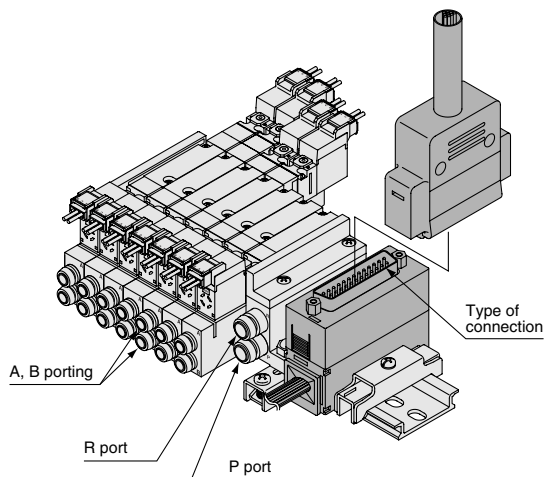
VQ0

VQ4

VQ5

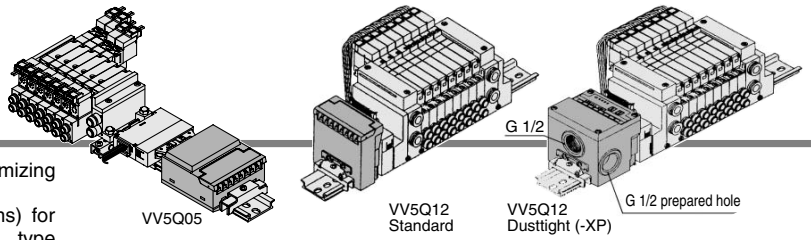
VQZ

VQD



VV5Q12

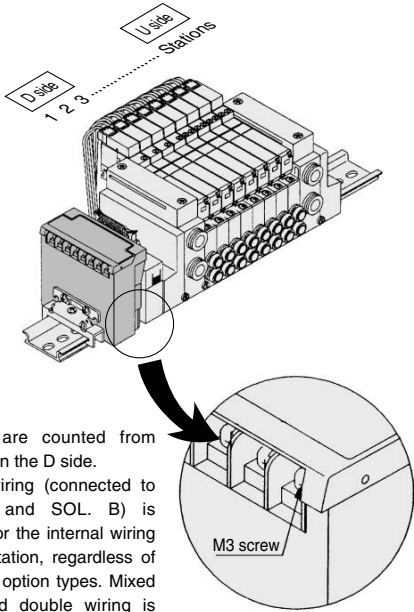
S VQ0000/1000 Kit (Serial transmission unit)



- 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	Port location	Porting specifications		Applicable stations
		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.

	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)	<table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>TRD</td> <td>Lighting during data reception</td> </tr> <tr> <td>RUN/ERR</td> <td>Blinking when received data is normal; Lighting when data reception</td> </tr> </tbody> </table>	LED	Description	TRD	Lighting during data reception	RUN/ERR	Blinking when received data is normal; Lighting when data reception	<table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lighting when power is turned ON</td> </tr> <tr> <td>RUN</td> <td>Lighting when data transmission with the master station is normal</td> </tr> <tr> <td>RD</td> <td>Lighting during data reception</td> </tr> <tr> <td>SD</td> <td>Lighting during data transmission</td> </tr> <tr> <td>ERR.</td> <td>Lighting when reception data error occurs Light turns off when the error is corrected</td> </tr> </tbody> </table>	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
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SD	Lighting during data transmission																			
ERR.	Lighting when reception data error occurs Light turns off when the error is corrected																			
Note	<ul style="list-style-type: none"> ● 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 	<ul style="list-style-type: none"> ● 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.

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

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)

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	●	●

Model

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	●	●	

Model List:

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

Notes:

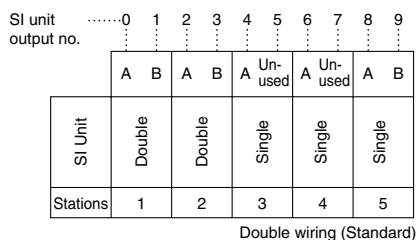
- Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -BNS
- Note 2) Models with a suffix "-B" have the back pressure check valve at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using the 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.

Additional Notes:

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

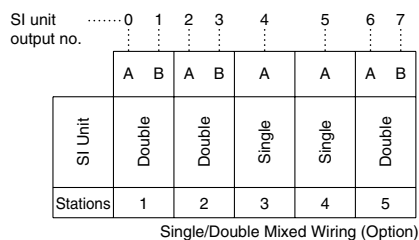
● SI unit output and coil numbering

<Wiring example 1>



<Wiring example 2>

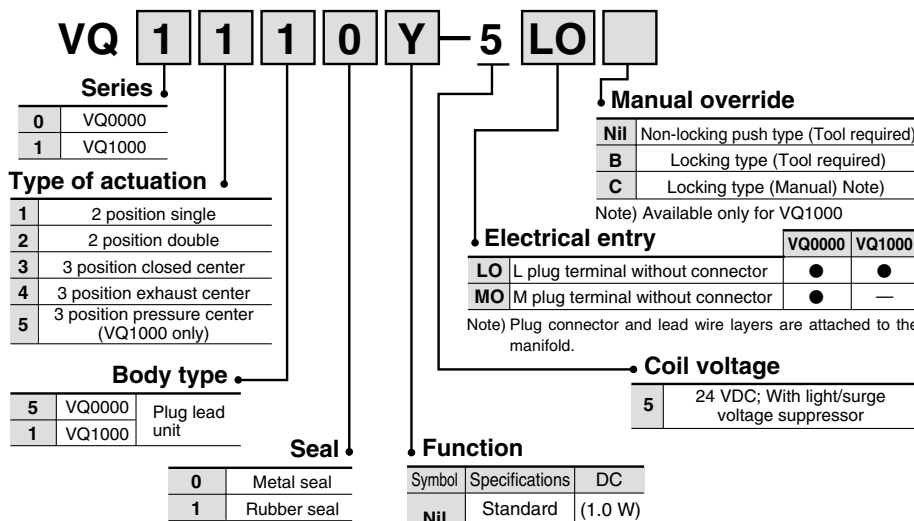
Mixed wiring is available as an option. Use the manifold specification sheet to specify.



- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD

	Type SC OMRON Corporation SYSBUS Wire System	Type SD SHARP Corporation Satellite I/O Link System															
Name of terminal block (LED)																	
	<table border="1"> <tr><th>LED</th><th>Description</th></tr> <tr><td>RUN</td><td>Lights when transmission is normal and PLC is in operation mode</td></tr> <tr><td>T/R ERR</td><td>Blinks during data transmission/reception ON when transmission is abnormal</td></tr> </table>	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	<table border="1"> <tr><th>LED</th><th>Description</th></tr> <tr><td>POWER</td><td>ON when power supply is ON</td></tr> <tr><td>RUN</td><td>Lights when power is ON and slave stations are operating normally</td></tr> <tr><td>ERROR</td><td>Lights when slave station switch setting is abnormal, communication is abnormal, PLC stopped and defective slave unit</td></tr> <tr><td>R.SET HOLD</td><td>ON for master unit control input</td></tr> </table>	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
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R.SET HOLD	ON for master unit control input																
Note	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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



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

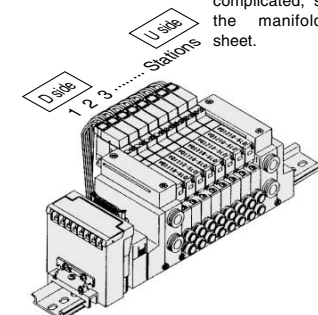
How to Order Manifold Assembly

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

<Example>

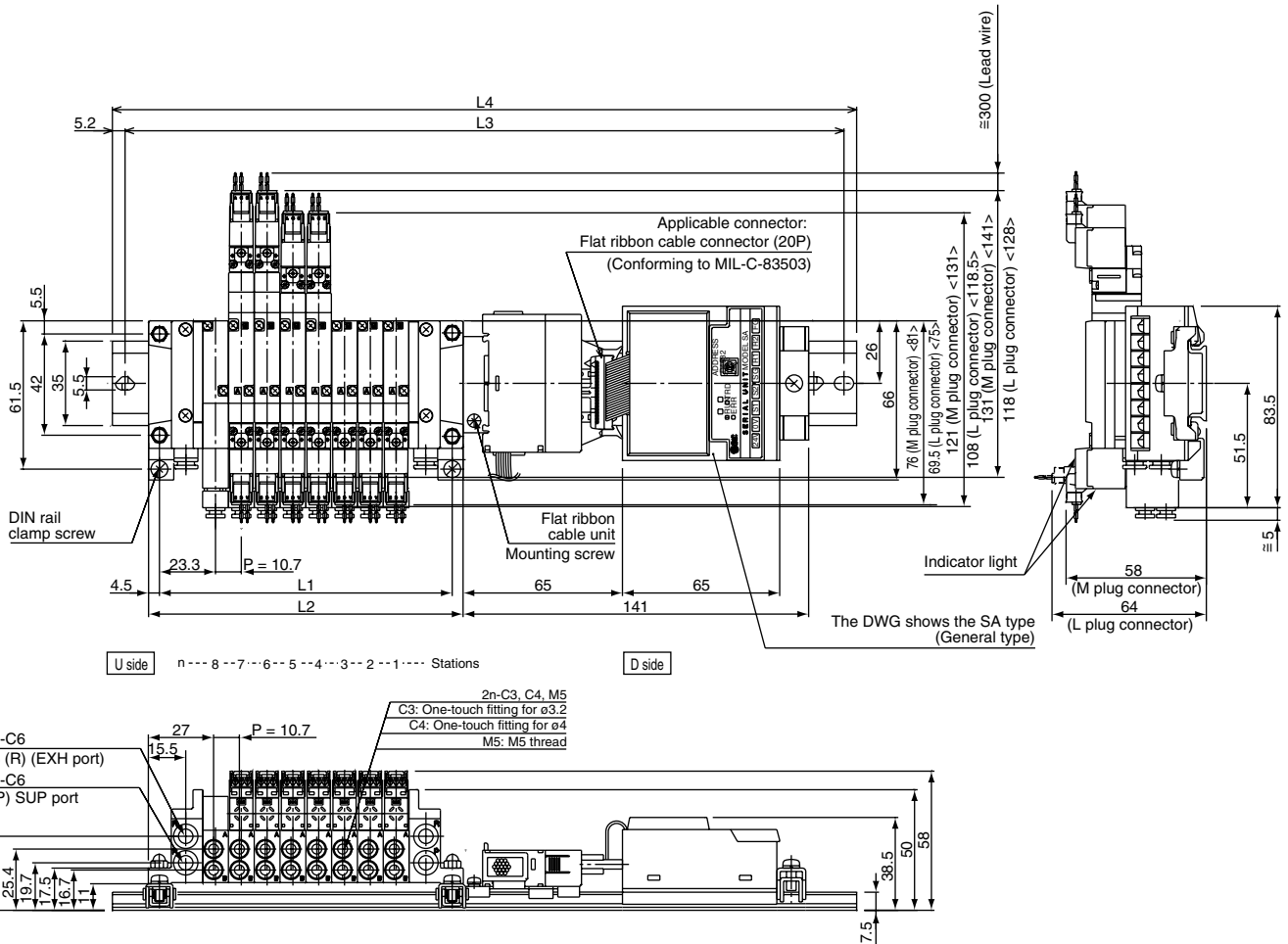
Serial transmission kit
 VV5Q12-08C6SA-D 1 set-Manifold base no.
 *VQ1110-5LO 4 sets-Valve part no. (Stations 1 to 4)
 *VQ1210-5LO 3 sets-Valve part no. (Stations 5 to 8)

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.



S VQ0000/1000 Kit (Serial transmission unit)

VQ0000



Dimensions

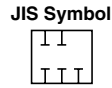
Formula $L1 = 10.7n + 36$, $L2 = 10.7n + 45$ n: Station (Maximum 16 stations)

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

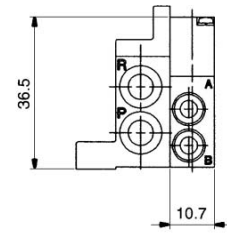
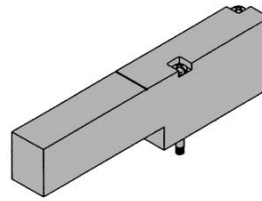
Series VQ0000

Manifold Option Parts for VQ0000

Blanking plate assembly VVQ0000-10A-5

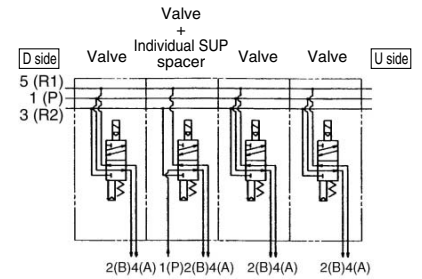
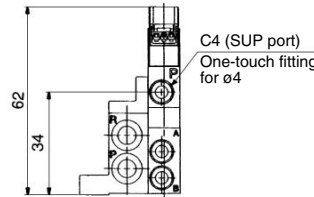
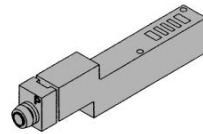


It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.



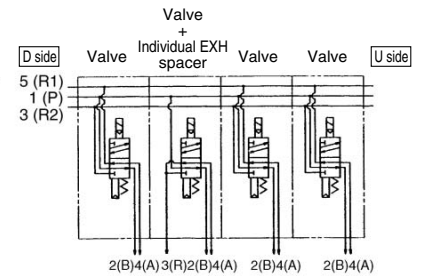
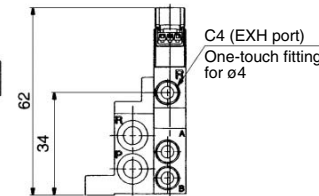
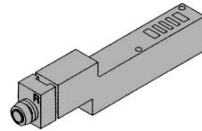
Individual SUP spacer VVQ0000-P-5-C4

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.

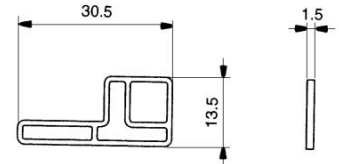
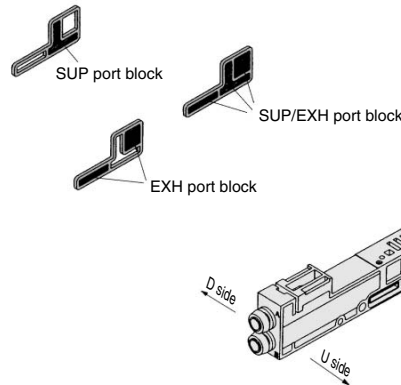
3(R) (For EXH)

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.

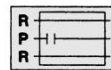
* Specify the number of stations on the manifold specification sheet.



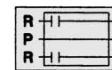
<Blocking indication label>

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)

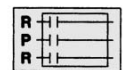
* When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.



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



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

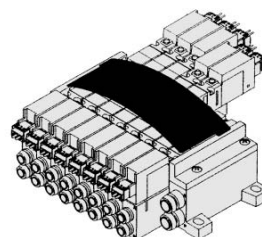


SUP/EXH passage blocked
(VVQ0000-16A-5-PR)

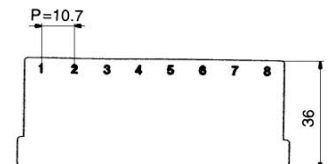
Name plate [-N*]

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.



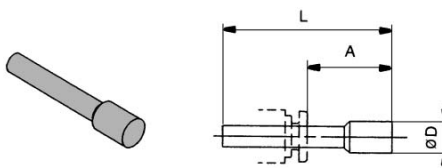
* When ordering assemblies incorporated with a manifold, add suffix "N" to the manifold no.



Blanking plug (For One-touch fittings)

KQ2P-²³₀₄₀₆

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



Dimensions

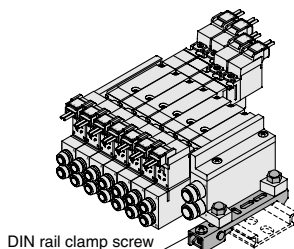
Applicable fitting size ϕ d	Model	A	L	D
3.2	KQ2P-23	16	31.5	3.2
4	KQP-04	16	32	6
6	KQP-06	18	35	8

DIN rail mounting bracket [-D]

VVQ0000-57A-5 (VQ0000)

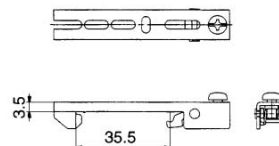
It is used for mounting a VV5Q05 type manifold on a DIN rail. The DIN rail mounting bracket is fixed to the manifold end plate. (The specification is the same as that for the option "-D".)

1 set of DIN rail mounting bracket is used for 1 set of manifold (2 DIN rail mounting brackets).



DIN rail clamp screw

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



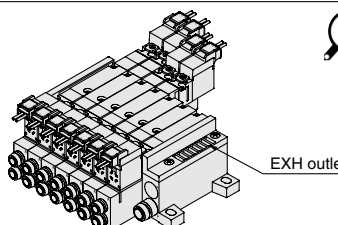
Built-in silencer, Direct exhaust [-S]

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.



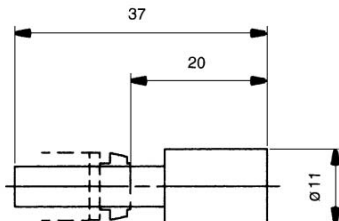
EXH outlet



* 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 ϕ d	Model	A	L	D	Effective area (mm ²)	Noise reduction (dB)
VQ0000	6	AN103-X233	20	37	11	7	25

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

⚠ Precautions 1

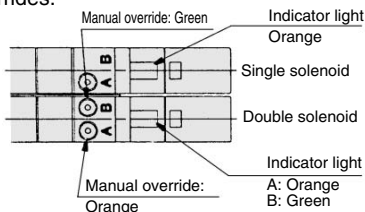
Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 2-9-2.

Light/Surge Voltage Suppressor

⚠ Caution

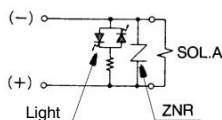
In the case of VQ1000, the standard model is equipped with an indicator light and surge voltage suppressor. The lighting positions are concentrated on one side for both single solenoid type and double solenoid type.

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.

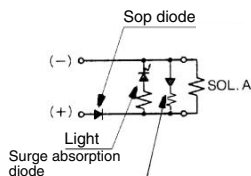
DC circuit diagram VQ0000



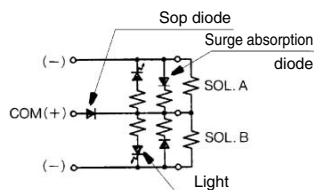
* In the case of VQ0000, solenoid and manual override on both sides.

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

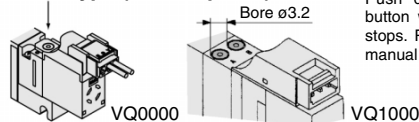
⚠ Warning

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)

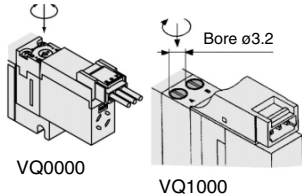


Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

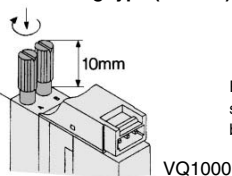
■ Locking type (Tool required) <Option>

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



■ Locking type (Manual) <Option>



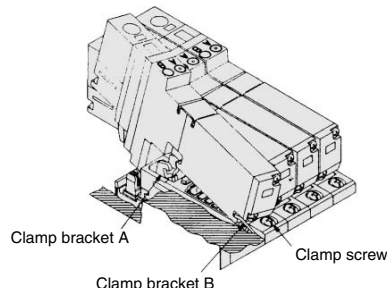
Push down on the manual override button with a small screwdriver or with your fingers until it stops. Turn clockwise by 90° to lock it. Turn it counterclockwise to release it.

⚠ 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)

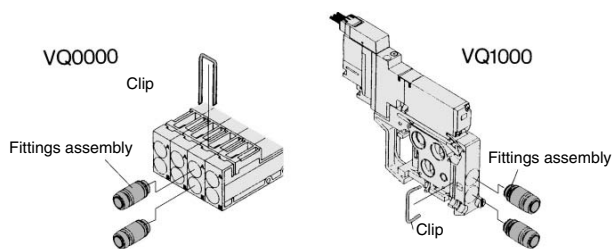
Mounting

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 wall and 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.

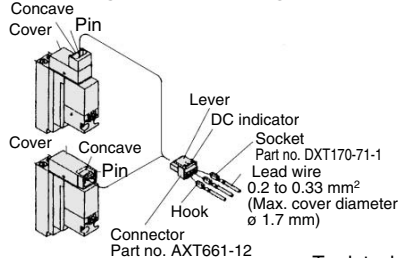
⚠ Precautions 2

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

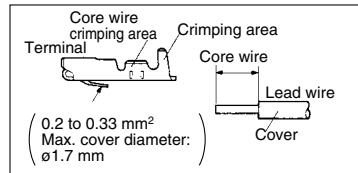


To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.

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.



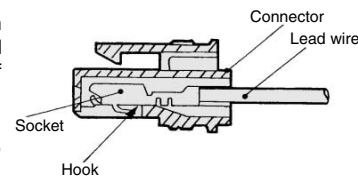
Attaching and detaching lead wires with sockets

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.

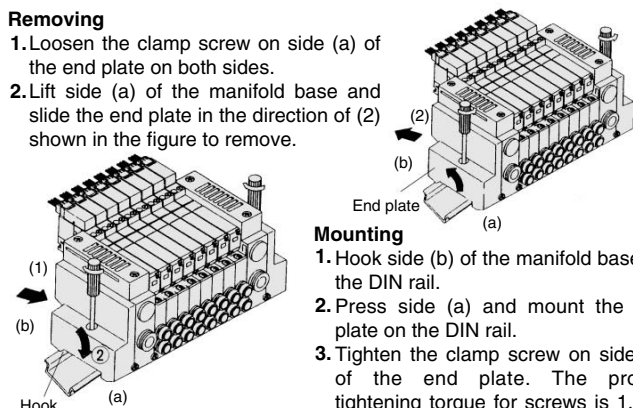


Mounting/Removing from the DIN Rail (VQ1000)

⚠ Caution

Removing

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



Mounting

- Hook side (b) of the manifold base on the DIN rail.
- Press 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 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.

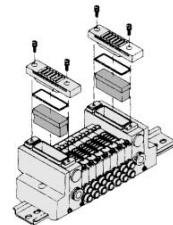
How to Calculate the Flow Rate

⚠ 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.

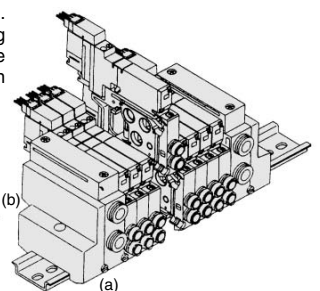
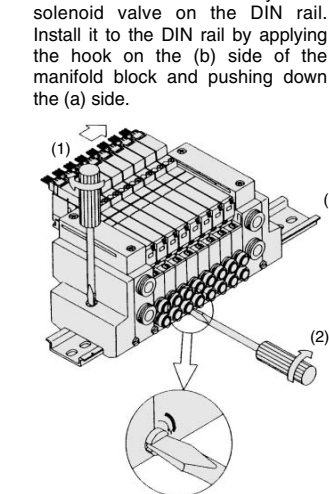
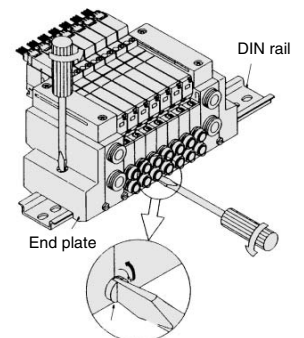
Type	Element part no.	
	VQ0000	VQ1000
Built-in silencer, direct exhaust (-S)	VVQ0000-82A-1	VVQ1000-82A-1

* The minimum order quantity is 10 pcs.

Manifold Base Station Increasing Procedure (VQ1000)

⚠ Caution

- Loosen the clamp screw on the top surface of the end plate on one side.
- Turn the manual override between the manifold blocks with a regular screwdriver, etc. in a counterclockwise direction.
- Slide the manifold base to the side where the screw is loosened. Make a clearance of 15 mm or more.
- 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.



- Slide the manifold bases with a slight clearance in-between and lock them by turning the manual override between the manifold blocks clockwise.
- 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

Series VQ0000/1000

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

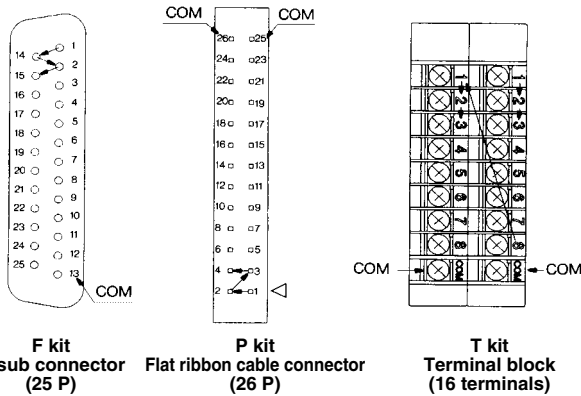
Indicate an option symbol "-K", for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification sheet.

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.



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)	
	F _S ^U 25P	F _S ^U 15P	P _S ^U 26P	P _S ^U 20P	P _S ^U 16P	P _S ^U 10P	T1		T2
Type									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

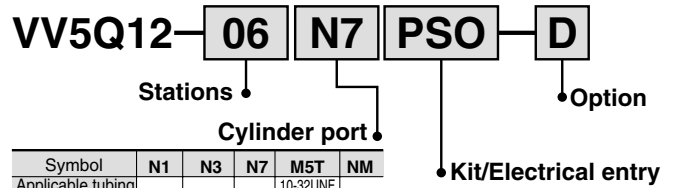
VQ1110 N - 5M

• 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.



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	○	○	—	○	○
	○	○	○	○	○

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
 VQ0000ø1/4"
 VQ1000ø5/16"

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: "AXT661-13A(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)**

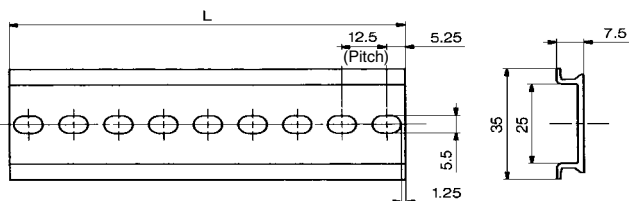
Order brackets for mounting a DIN rail. (Refer to "Option" on page 2-4-209.)

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

$L = 12.5 \times n + 10.5$

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

VQC

SQ

VQ0

VQ4

VQ5

VQZ

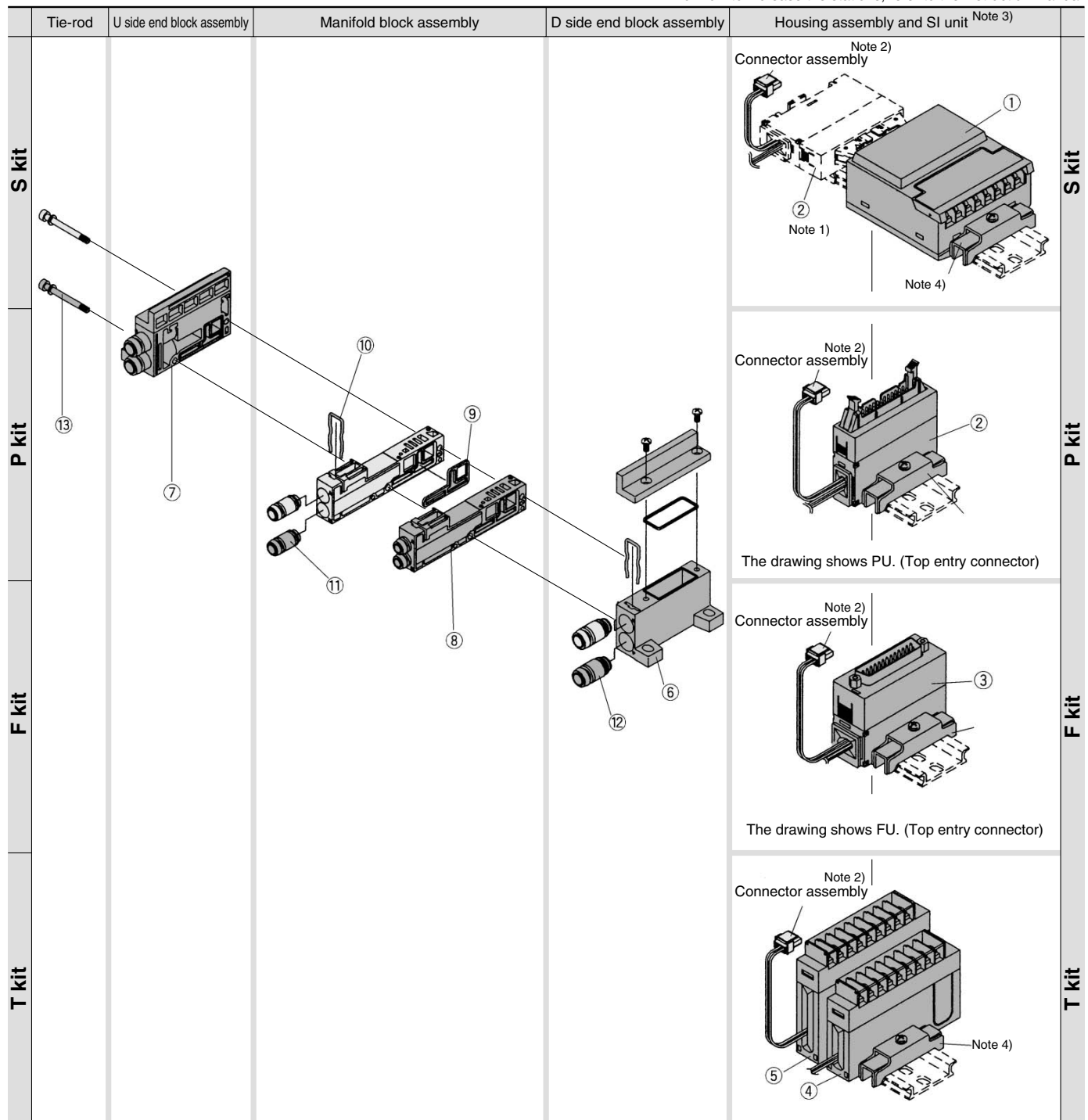
VQD

Series VQ

Exploded View: VQ0000/Plug Lead Unit

(F, P, C, S kit)

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



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	(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 _S ^U kit	AXT100-2-P _S ^U □ ⁽²⁾	Flat ribbon cable housing assembly I = Number of pins: 26, 20, 16, 10
③	F _S ^U kit	AXT100-2-F _S ^U □ ⁽²⁾	D-sub connector housing assembly I = 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)

① 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.

③ 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 wiring, ④ is for 1 to ⑤ stations and t is for 5 to 8 stations.

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

<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

⑫ 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

⑩ 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

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

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

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

⑬ Note) 2 bolts per one set.