Metal Seal/Rubber Seal
Body Ported
Series VQ

A variety of product groups meet all Factory Automation needs.

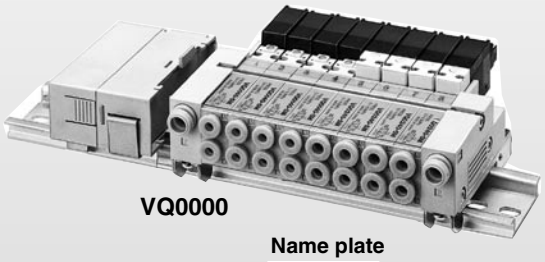
■**Flip style demonstrates spacesaving effect.**

■**Cassette style enables flexible, speedy station increasing/decreasing**

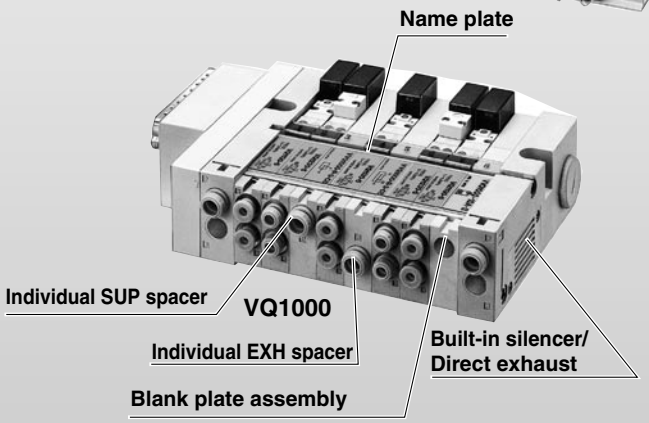
Thin compact design with large flow capacity (Flip style)

Model	Manifold pitch (mm)	(N*l*/min)		Cylinder size
		Metal seal	Rubber seal	
VQ0000	10.5	147.23	196.3	up to ø40
VQ1000	11	245.38	343.53	up to ø50
VQ2000	16	795.02	883.35	up to ø80

Flip Style

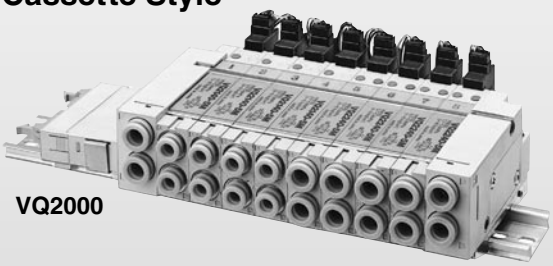


VQ0000

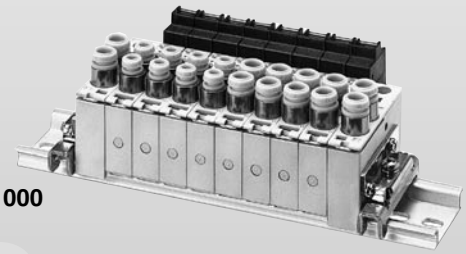


A variety of options

Cassette Style



VQ2000



VQ1000

Unprecedented high speed response and long service life

(In-house comparison)

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

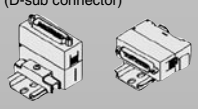
VQ0000	10ms (7ms)	200 million cycles
VQ1000	10ms (7ms)	
VQ2000	20ms (13ms)	
Dispersion accuracy	± 2ms	

Innovative mounting methods

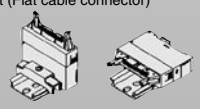
A valve can be changed without entirely disassembling the manifold

A variety of common wiring methods are standardized.

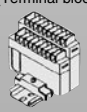
F kit (D-sub connector)



P kit (Flat cable connector)

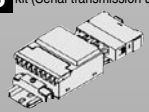


T kit (Terminal block)



L kit (Lead wire)

S kit (Serial transmission unit)



Built-in One-touch fittings for easy piping

Body Ported

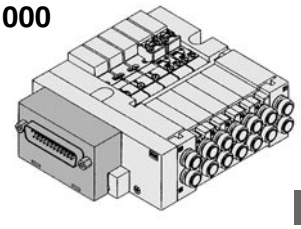
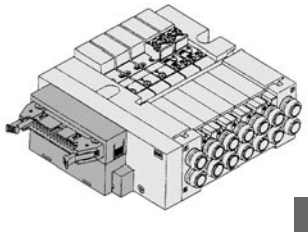
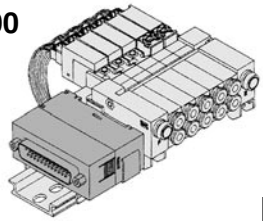
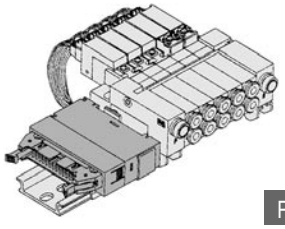
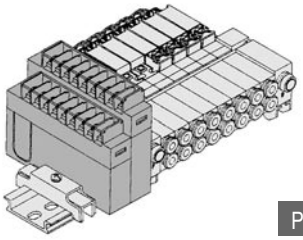
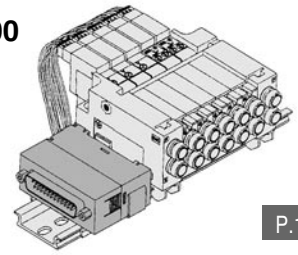
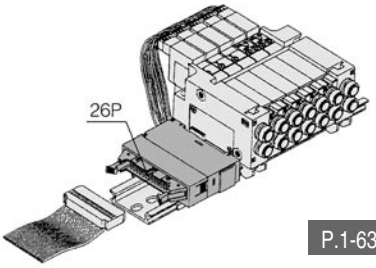
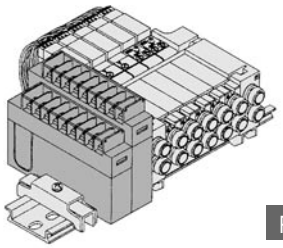
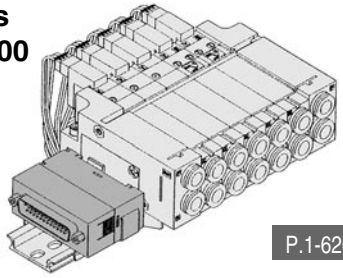
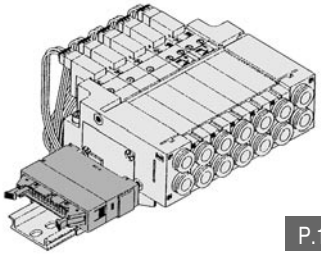
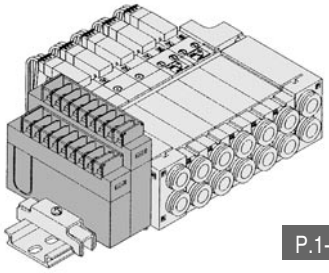
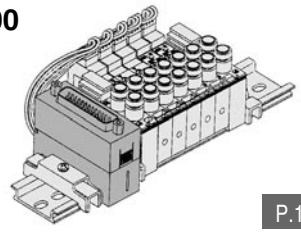
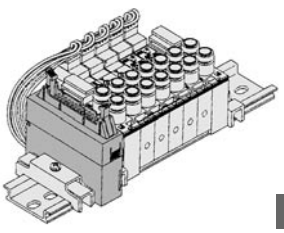
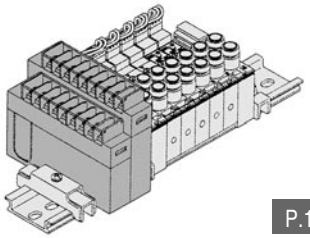
Valve Specifications

				Effective area (mm²) (Nℓ/min)		Configuration					Voltage	Electrical entry				Manual override		
				Single Double	3 position	Single	Double	Closed centre	Exhaust centre	Pressure centre	12V 24V DC	Plug-in	Grommet	L plug connector	M plug connector	Non-locking push style	Push-locking slotted style	Push-locking lever style
Plug-in	Series VQ1000 P.1-598	Metal seal	VQ1□30	4.5 (245.38)	4.5 (245.38)	●	●	●	●	●	●	●				●	●	●
		Rubber seal	VQ1□31	6.3 (343.53)	6.3 (343.53)		Latching											
				P.1-600														
Plug lead	Series VQ0000 P.1-618	Metal seal	VQ0□40	2.7 (147.23)	1.9 (107.97)	●	●	●	●		●		Single, 3 position only	●	●	●	●	
		Rubber seal	VQ0□41	3.6 (196.3)	2.7 (147.23)		Latching											
				P.1-624														
	Series VQ1000 P.1-620	Metal seal	VQ1□40	4.5 (245.38)	4.5 (245.38)	●	●	●	●	●	●		Single, 3 position only	●	●	●	●	●
		Rubber seal	VQ1□41	6.3 (343.53)	6.3 (343.53)		Latching											
				P.1-624														
	Series VQ2000 P.1-622	Metal seal	VQ2□40	14.6 (795.02)	—	●	●				●		Single, 3 position only	●	●	●	●	●
		Rubber seal	VQ2□41	16.2 (883.35)	—		Latching											
				P.1-624														
Cassette	Series VQ1000 P.1-660	Metal seal	VQ1□70	3.6 (196.3)	3.6 (196.3)	●	●	●	●	●	●		Single, 3 position only	●	●	●	●	●
		Rubber seal	VQ1□71	5.4 (274.82)	5.4 (274.82)		Latching											
				P.1-662														

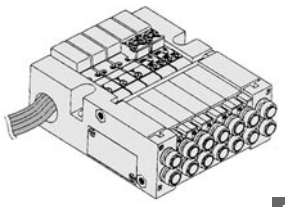
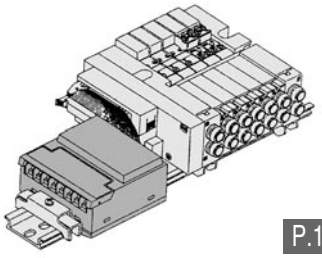
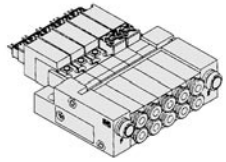
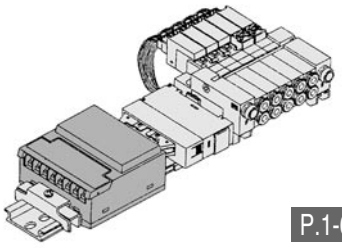
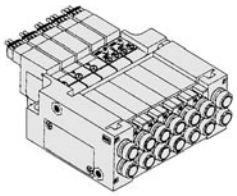
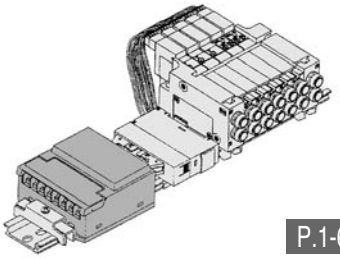
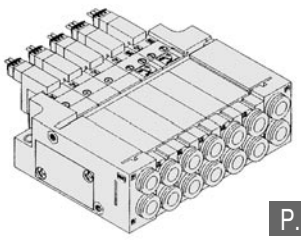
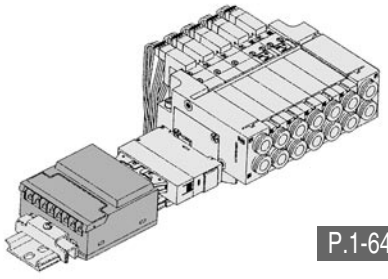
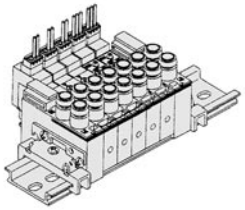
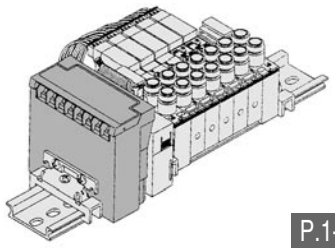
Options					Manifold Options									
D-sub connector 15 pin	Flat cable 10 pin, 16 pin, 20 pin	Negative COM specifications	One-touch fitting/Inch size	For special wiring spec.	Blank plate	Individual SUP/EXH	SUP/EXH passage spacer	Name plate	DIN rail mounting	Built-in silencer	Silencer for EXH port	Elbow fitting for cylinder port	Plug for cylinder port	Double check block
●	●	● Except for S kit	●	● Except for L kit	●	●	●	●	●	●	●		●	●
P.1-616					P.1-611									
●	●	● Except for S kit	●	● Except for C kit	●	●	●	●	●	●	●			●
P.1-656					P.1-647									
●	●	● Except for S kit	●	● Except for C kit	●	●	●	●	●	●	●		●	●
P.1-656					P.1-647									
●	●	● Except for S kit	●	● Except for C kit	●	●	●	●	●	●	●		●	●
P.1-656					P.1-647									
●	●	● Except for S kit	●	● Except for C kit		●	●	●	● Standard		●	●	●	●
P.1-680					P.1-675									

Series VQ/Body Ported: Variations

Manifold Variations

	F kit **D-sub connector** Conforming to MIL D-sub connector	P kit **Flat cable connector** Conforming to MIL flat cable connector	T kit **Terminal block** Two quantities of terminals. can be selected in accordance with the number of stations.
Plug-in	**Series VQ1000**  P.1-602	 P.1-604	—
Plug lead	**Series VQ0000**  P.1-626	 P.1-630	 P.1-634
	Series VQ1000  P.1-626	 26P P.1-630	 P.1-634
	Series VQ2000  P.1-626	 P.1-630	 P.1-634
Cassette	**Series VQ1000**  P.1-664	 P.1-666	 P.1-668

Manifold Variations

L C kit **Lead wire** Direct electrical entry style	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.1-606	 P.1-608	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.1-638	 P.1-642	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.1-638	 P.1-642	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.1-638	 P.1-642	C8 (ø8) N9 (ø5/16") <Option> Built-in silencer	C6 (ø6) C8 (ø8) N7 (ø1/4") N9 (ø5/16")
C kit  P.1-670	 P.1-672	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

Series VQ0000

Model	Fitting (One-touch fitting) Effective area (mm^2)(Nℓ/min)	Cylinder Speed (mm/s)	Cylinder bore size (mm)											
			Series CJ2 Pressure 0.5MPa Load factor 25% Piping length 2m Speed controller: AS2000F-06 (S=4.5mm^2) Cylinder stroke 50mm			Series CM2 Pressure 0.5MPa Load factor 50% Piping length 5m Speed controller: AS2000F-06 (S=4.5mm^2) Cylinder stroke 100mm				Series CA1 Pressure 0.5MPa Load factor 50% Piping length 5m Speed controller: AS2000F-06 (S=4.5mm^2) Cylinder stroke 300mm				
			ø6	ø10	ø16	ø20	ø25	ø32	ø40	ø40	ø50	ø63	ø80	ø100
VQ0000 (Metal seal)	ø4 2.7 (147.23)	150												
		300												
		450												
		600												
		750												
VQ0001 (Rubber seal)	ø4 3.6 (196.3)	150												
		300												
		450												
		600												
		750												

Series VQ1000

Model	Fitting (One-touch fitting) Effective area (mm^2)(Nℓ/min)	Cylinder Speed (mm/s)	Cylinder bore size (mm)											
			Series CJ2 Pressure 0.5MPa Load factor 25% Piping length 2m Speed controller: AS3000F-06 (S=6.5mm^2) Cylinder stroke 50mm			Series CM2 Pressure 0.5MPa Load factor 50% Piping length 5m Speed controller: AS3000F-06 (S=6.5mm^2) Cylinder stroke 100mm				Series CA1 Pressure 0.5MPa Load factor 50% Piping length 5m Speed controller: AS3000F-06 (S=6.5mm^2) Cylinder stroke 300mm				
			ø6	ø10	ø16	ø20	ø25	ø32	ø40	ø40	ø50	ø63	ø80	ø100
VQ1000 (Metal seal)	ø6 4.5 (245.38)	150												
		300												
		450												
		600												
		750												
VQ1001 (Rubber seal)	ø6 6.3 (343.53)	150												
		300												
		450												
		600												
		750												

Series VQ2000

Model	Fitting (One-touch fitting) Effective area (mm^2)(Nℓ/min)	Cylinder Speed (mm/s)	Cylinder bore size (mm)											
			Series CJ2 Pressure 0.5MPa Load factor 25% Piping length 2m Speed controller: AS3000F-08 (S=10mm^2) Cylinder stroke 50mm			Series CM2 Pressure 0.5MPa Load factor 50% Piping length 5m Speed controller: AS3000F-08 (S=10mm^2) Cylinder stroke 100mm				Series CA1 Pressure 0.5MPa Load factor 50% Piping length 5m Speed controller: AS3000F-08 (S=10mm^2) Cylinder stroke 300mm				
			ø6	ø10	ø16	ø20	ø25	ø32	ø40	ø40	ø50	ø63	ø80	ø100
VQ2000 (Metal seal)	ø8 14.6 (795.02)	150												
		300												
		450												
		600												
		750												
VQ2001 (Rubber seal)	ø8 16.2 (883.35)	150												
		300												
		450												
		600												
		750												

VQ1000

Body Ported

Plug-in Unit/Flip Style

How to Order Manifold

VV5Q1 3 – 08 F S1 – N – Q

Series VQ1000

Manifold

3	Plug-in unit/Flip

Stations

01	1 station
⋮	⋮

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

Kit

Option

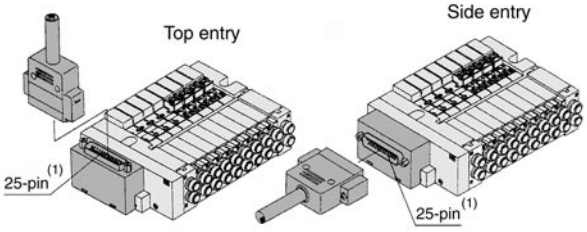
–	None
D (2)	DIN rail mounting
K (3)	Special wiring specification (Not double wiring)
N	With name plate
S (4)	Built-in silencer (Direct exhaust)

–	One-touch fitting for ø6 P, R port
00T	One-touch fitting for ø1/4" P, R port

Note 1) When specifying more than one option, please list alphabetically.
Example) -DNS
Note 2) All S kits are DIN rail mounting styles, so include suffix " D".
Note 3) Specify the wring specifications by means of the manifold specification form. (Except for L kit.)
Note 4) F, P and S kits are provided with an exhaust on one side, while L kits are with an exhaust on both sides.

Kit/Electrical entry/Cable length

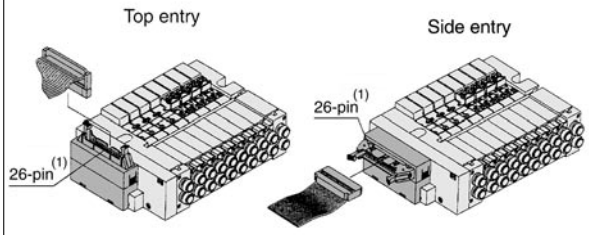
F Kit (D-sub connector)



P.1-602

Connector location					
Top (vertical)		Side (horizontal)			
F kit	U0	F kit	S0	Without cable	Max.16 (2) stations
	U1		S1	With cable (1.5m)	
	U2		S2	With cable (3m)	
	U3		S3	With cable (5m)	

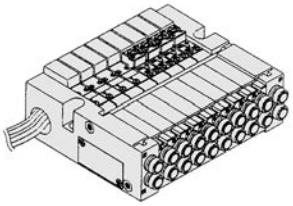
P Kit (Flat cable connector)



P.1-604

Connector location					
Top (vertical)		Side (horizontal)			
P kit	U0	P kit	S0	Without cable	Max.16 (2) stations
	U1		S1	With cable (1.5m)	
	U2		S2	With cable (3m)	
	U3		S3	With cable (5m)	

L Kit (Lead wire cable)

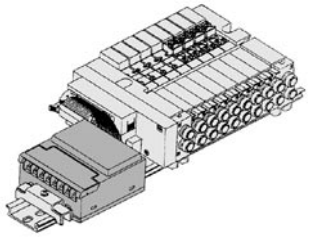


P.1-606

	Lead wire entry direction		Cable length		Max. stations
	Symbol	Direction	Symbol	Cable length	
L kit	D	Entry on D side	0	With cable (0.6m)	Max.16 stations
			1	With cable (1.5m)	
	U	Entry on U side	2	With cable (3m)	

S Kit (Serial transmission unit)

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



P.1-608

S (3) Kit	B	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)	Max. (2) 16 stations
	C	SI unit for SYSBUS Wire System (OMRON)	
	N	SI unit for Profibus DP (4)	
	P	SI unit for Interbus (4)	
	Q	SI unit for Device Net and CompoBus/D (OMRON)	
	Y	SI unit for Can Open (4)	
	T2	SI unit for ASI (yellow+black wires) (4)	Max. 8
	T4	SI unit for ASI (yellow+black wires) (4)	Max. 4
	T5	SI unit for ASI (yellow wires) (4)	

Note 1) Besides the above, F and P kits with different number of pins are available. See p.1-656 for details.
Note 2) See p.1-657 for details.
Note 3) Consult SMC for the following serial transmission kits; Matsushita Electric Works Ltd., Allen-Bradley Co., Sunx, Fuji Electric Company Ltd., OMRON Corp..
Note 4) Available with EX121 kit.

SMC

How to Order Valve

VQ1 1 3 0 Y 5 □ □ C6 Q

Series VQ1000

Configuration

1	2 position single
2	2 position double (latching) — Metal seal / Rubber seal
3 (1)	3 position closed centre
4 (1)	3 position exhaust centre
5 (1)	3 position pressure centre

Note 1) 3 position need two stations

Seal

0	Metal
1	Rubber

Function

Symbol	Specification
—	1.0W(0.7MPa Max. operating pressure
H	1.5W(0.8MPa Max. operating pressure
K (1)	1.0W(1.0MPa Max. operating pressure
Y	0.5W(0.7MPa Max. operating pressure
N	Negative common

* Only the following combination is possible.
HN, KN, YN
Note 1) Available only to metal seal type.

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Indicater light and surge voltage suppresor

—	Yes
E	No

Manual override

– Non-locking push style	B Push-locking slotted style	C Push-locking lever style

Manual override on body side / Manual override for pilot valve

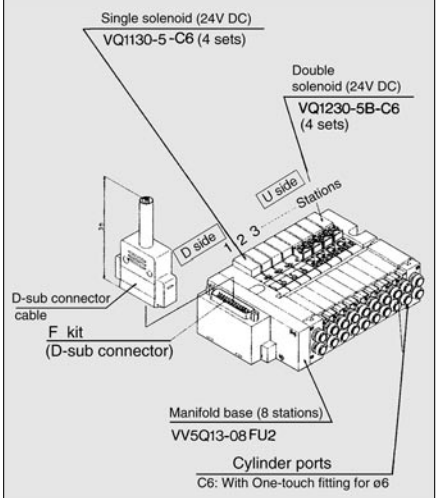
Note) A manual override for pilot valve is provided to the standard model for double type.

Cylinder ports

C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
M5	M5 thread
N1	One-touch fitting for ø1/8"
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4"
M5T	10-32 UNF thread

How to Order Manifold Ass'y (Example)

Ordering example



VV5Q13-08FU2-Q····1 set (F kit 8 station manifold base No.)
VQ1130-5-C6-Q·····4 sets (Single solenoid No.)
VQ1230-5B-C6-Q··· 4 sets (Double latching solenoid No.)

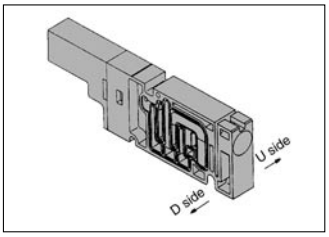
Specity valve and option nos. below the monifold base No. When arrangement is complicated, specity the nos.by using a manifold specification form.

Protective class class III (Mark:⏚)

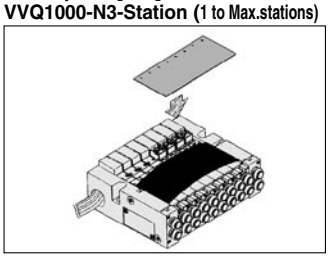
Manifold Options

P.1-611

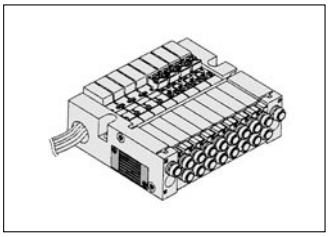
Blank plate assembly
VVQ1000-10A-3



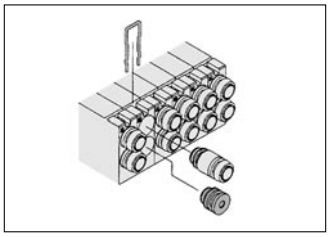
Name plate [-N3]
VVQ1000-N3-Station (1 to Max.stations)



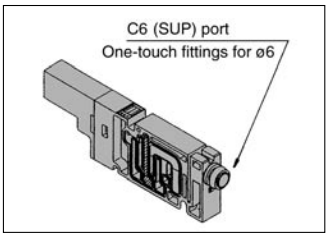
Built-in silencer, Direct exhaust [-S]



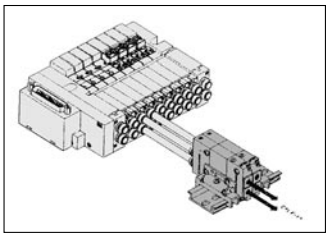
Port plug
VVQ0000-58A



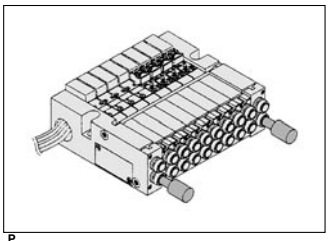
Individual SUP spacer
VVQ1000-P-3-C6



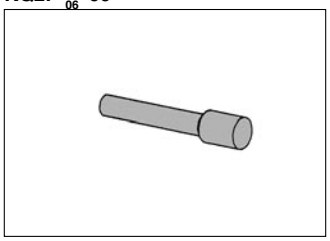
Double check block
VQ1000-FPG-□□



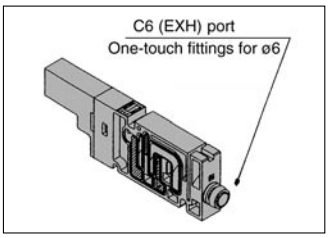
Silencer
AN103-X233



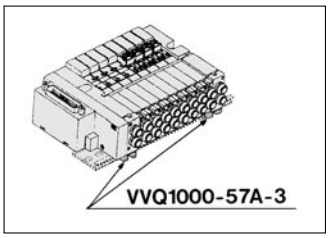
Blank plug
KQ2P-$^{23}_{04}$-00



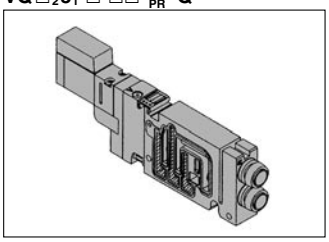
Individual EXH spacer
VVQ1000-R-3-C6



DIN rail mounting bracket [-D]
VVQ1000-57A-3



$^{P}_{PR}$ Block valve
VQ□$^{1}_{2}$3$^{0}_{1}$-□-□□-$^{P}_{PR}$-Q



- **See p.1-615 for cylinder port fitting.**
- **See p.1-691 for replacement parts.**

VQ1000 Body Ported
Plug-in Unit/Flip Style

Model

Series	Configuration		Model		Effective area [1] (mm^2)(Nℓ/min)	Response time [2] (ms) Standerd: 1W H: 1.5W	Weight (g)
VQ1000	2 position	Single	Metal seal	VQ1130	4.5 (245.38)	12 or less	57
			Rubber seal	VQ1131	6.3 (343.53)	15 or less	
		Double (latching)	Metal seal	VQ1230	4.5 (245.38)	12 or less	
			Rubber seal	VQ1231	6.3 (343.53)	15 or less	
	3 position	Closed centre	Metal seal	VQ1330	4.5 (245.38)	20 or less	
			Rubber seal	VQ1331	6.3 (343.53)	25 or less	
		Exaust centre	Metal seal	VQ1430	4.5 (245.38)	20 or less	
			Rubber seal	VQ1431	6.3 (343.53)	25 or less	
		Pressure centre	Metal seal	VQ1530	4.5 (245.38)	20 or less	
			Rubber seal	VQ1531	6.3 (343.53)	25 or less	

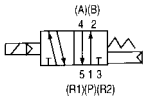
Note 1) Cylinder port size C6
Note 2) As per JISB8375-1981 (supply pressure: 0.5MPa; with indicator light and surge voltage suppressor; clean air) Subject to the pressure and air quarlty.

Standard Specifications

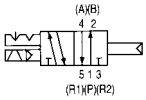
Valve	Seal		Metal seal	Rubber seal
	Fluid		Air/Inert gas	Air/Inert gas
	Max. operating pressure [3]		0.7MPa (High pressure style: 0.8MPa)	
	Min.operating pressure	Single	0.1MPa	0.15MPa
		Double (latching)	0.18MPa	0.18MPa
		3 position	0.1MPa	0.2MPa
	Ambient and fluid temperature		–10 to 50°C [1]	
	Lubrication		Not required	
	Manual override		Non-lokcing push/Push-locking slotted or lever styles (Option)	
	Impact/Vibration resistance [2]		150/30m/s²	
	Protection structure		Dust proof	
Solenoid	Coil rated voltage		12, 24V DC	
	Allowable voltage		±10% of rated voltage	
	Coil insulation		Class B or equivalent	
	Power consumption (Current value)	24V DC	1W DC (42mA), 1.5W DC (63mA) [3], 0.5W DC (21mA) [4]	
		12V DC	1W DC (83mA), 1.5W DC (125mA) [3], 0.5W DC (42mA) [4]	

Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test wasperformed on the axis and right angle directions of the main valve and armature, for both energized and de-energized states.
Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz.Test was performed at both energized and de-energized states to the axis and right angle directions of the main valve and armature. (Value in the initial stage.)
Note 3) Value for high-pressure (1.5W) specifications.
Note 4) Value for low wattage (0.5W) specifications.

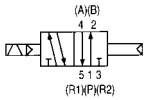
2 position single



2 position double (latching)

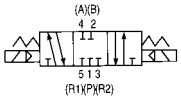


Metal seal

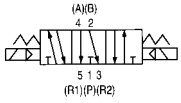


Rubber seal

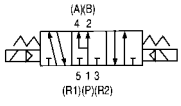
3 position closed centre



3 position exhaust centre



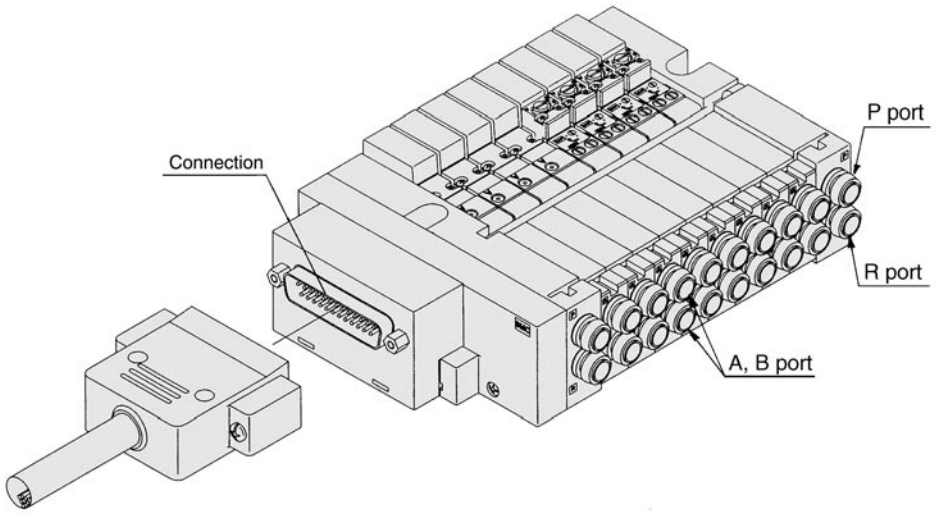
3 position pressure centre



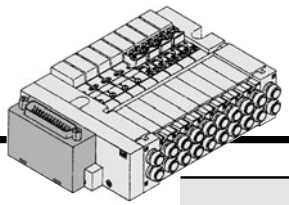
Manifold Specifications

Series	Base model	Electrical connection	Porting specifications			Applicable[2] stations	Applicable solenoid valve	5 station weight (g)
			Port location	One-touch fitting/Port size [1]				
				P, R	A, B			
VQ1000	**VV5Q13-□□□**	■ **F kit: D-sub connector** ■ **P kit: Flat cable connector** ■ **L kit: Lead wire cable** ■ **S kit: Serial transmission unit**	Side	C6 (ø6) Option: built-in silencer direct exhaust	C3 (ø3.2) C4 (ø4) C6 (ø6) M5 (M5 thread)	1 to 16 stations	VQ1□30 VQ1□31	424

Note 1) Inch-size One-touch fittings are also applicable. Refer to p.1-617 details.
Note 2) See p.1-617 for details.



F VQ1000
Kit (D-sub Connector)



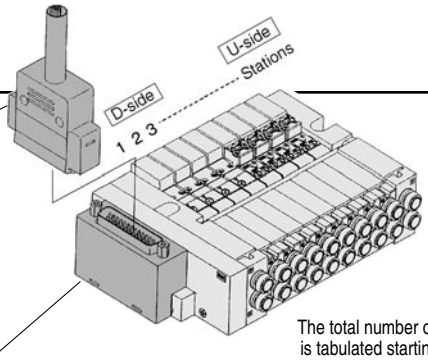
Series	Porting specifications			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ1000	Side	C6	C3, C4, C6, M5	Max.16

- The D-sub connector reduces installation labor for electrical connections.
- The D-sub connector (25 pin std., 15 pin option) conforming with MIL permits use of commercial connectors with wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Max.16 stations.

D-sub connector (25 pin)

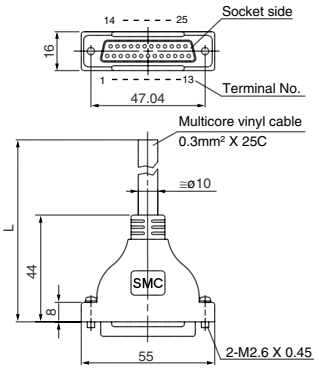
AXT100-DS25-$^{015}_{030}$ $^{}_{050}$

Cable Assembly



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

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 ass'y (Option)

Cable Length (L)	Ass'y No.
1m	GVVZS3000-21A-1
3m	GVVZS3000-21A-2
5m	GVVZS3000-21A-3
8m	GVVZS3000-21A-4
20m	GVVZS3000-21A-5S

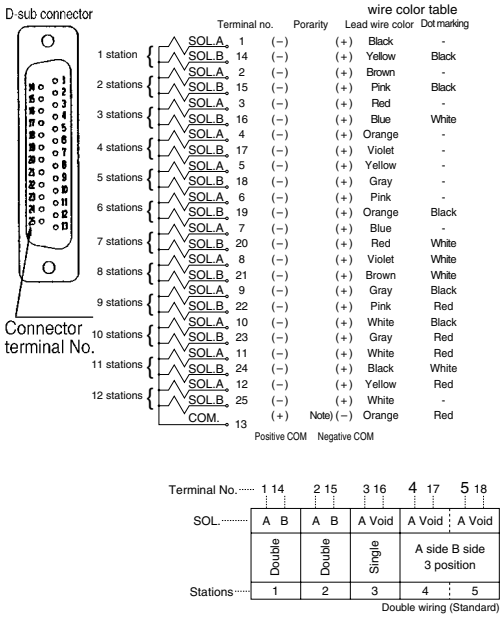
Electric characteristics

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

Wire colour table by terminal number of D-sub connector cable assembly

Terminal No.	Lead wire color	Dot marking
1	Black	–
2	Brown	–
3	Red	–
4	Orange	–
5	Yellow	–
6	Pink	–
7	Blue	–
8	Violet	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	Violet	–
18	Gray	–
19	Orange	Black
20	Red	White
21	Blown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	–

Electrical Wiring Specifications



Irrespective of the valves or options, the internal wiring is made double (connected to SOL.A and SOL.B) for respective stations of the manifold. The optional specification permits mixture of single and double wiring. See p.1-617 for details.
3 position uses two stations. The A-side solenoid of a 3-position valve is connected to SOL.A at the station with the smaller number in the above figure and the B-side solenoid to SOL.A at the next station.

Note) Use negative COM valves for negative COM specification manifolds. (See p.1-617)

How to Order Manifold

VV5Q1 3 – 08 F S 1 – N – Q

Series VQ1000

Manifold

3	Plug-in unit/Flip

Stations

01	1station
⋮	⋮
16	16stations

Note) See p.1-617 for details.

Connector location

U	Top (vertical)
S	Side (horizontal)

Cable (length)

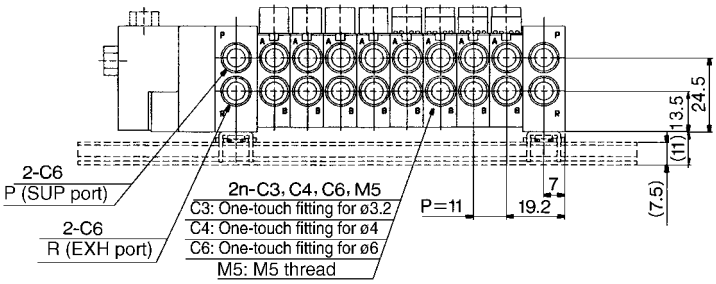
0	Without cable
1	With cable (1.5m)
2	With cable (3m)
3	With cable (5m)

Option

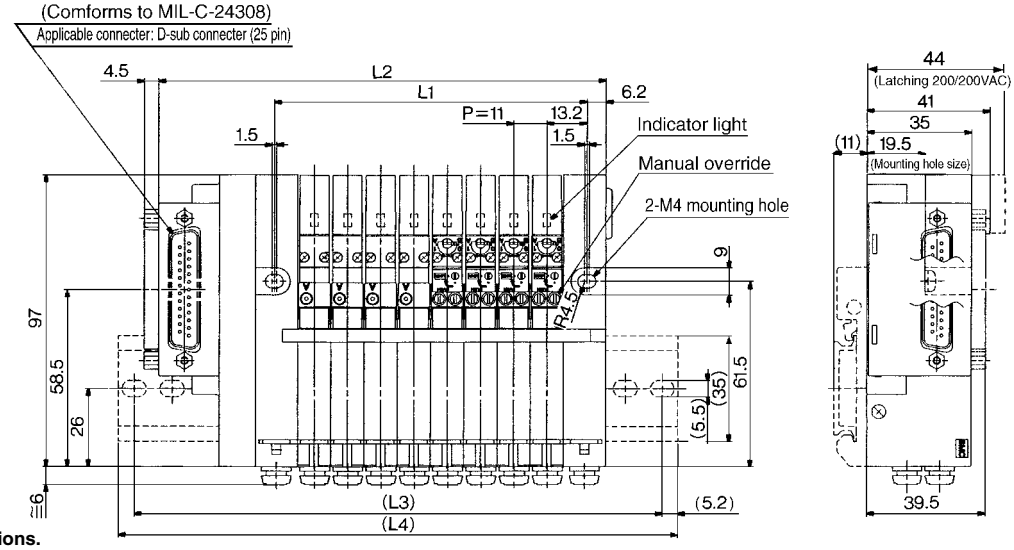
Symbol	Option
—	None
D	DIN rail mounting
K (2)	Special wiring specification (Not double wiring)
N	With name plate
S	Built-in silencer {Direct exhaust (U side only)}

Note 1) When specifying more than one option, please list alphabetically.
Example) -DNS
Note 2) Specify the wiring specifications by means of the manifold specification form.

SMC



D side Stations - - - 1 - - 2 - - 3 - - 4 - - 5 - - 6 - - 7 - - 8 - - - n U side



The broken lines indicate DIN rail mounting style [-D] and top entry connector [-FU]

∗ 3 position styles need two stations. Cylinder port is located at U side of body.

Dimensions (mm)

Equation L1=11n+15.5, L2=11n+60 n: Station (Max.16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	26.5	37.5	48.5	59.5	70.5	81.5	92.5	103.5	114.5	125.5	136.5	147.5	158.5	169.5	180.5	191.5
L2	71	82	93	104	115	126	137	148	159	170	181	192	203	214	225	236
(L3)	100	100	112.5	125	137.5	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5
(L4)	110.5	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273

How to Order Valve

VQ1 1 3 0 Y 5 – C6 – Q

Series VQ1000

Configuration

1	2 position single
2	2 position double (latching)
3(1)	3 position closed centre
4(1)	3 position exhaust centre
5(1)	3 position pressure centre

Note 1) 3 position styles need two stations.

Seal

0	Metal
1	Rubber

Note) See "Options" on p.1-617 for negative COM specifications

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H(2)	High pressure	(1.5W) ○
Y(2)	Low wattage	(0.5W) ○

Note 2) Except for double (latching).

Coil voltage

5	24V DC
6	12V DC
9	(Less than 50VDC)

Indicator light and surge voltage suppressor

—	Yes
E	No

Cylinder ports

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

Note) See "Options" on p.1-617 for inch-size One-touch fittings.

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

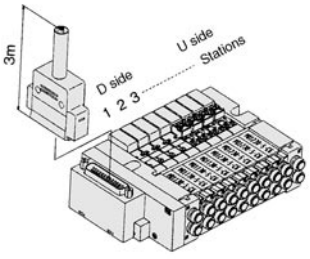
Note) A manual override for pilot valve is provided to the standard model for double style.

How to Order Manifold Ass'y

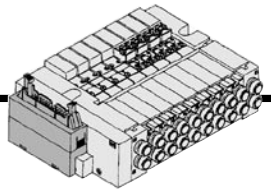
Specify valve and option nos. below the manifold base No.

(Example)
D-sub connector kit with 3m cable
VV5Q13-08FU2-Q · · 1 set–Manifold base No.
VQ1130-5-C6-Q · · · · 4 sets–Valve No. (Stations 1 to 4)
VQ1230-5B-C6-Q · · 4 sets–Valve No. (Stations 5 to 8)

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



P VQ1000
Kit (Flat Cable Connector)

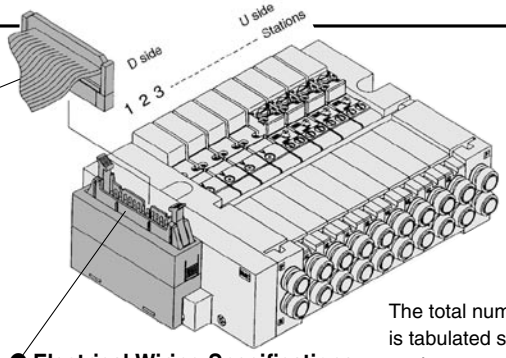


- MIL flat cable connector reduces installation labor for electrical connection.
- The connector (26 pin; 10, 16, and 20 pin optional) conforms with MIL spec. permitting use of widely interchangeable commercial connectors.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Max.16 stations.

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

Flat cable (26 pin)

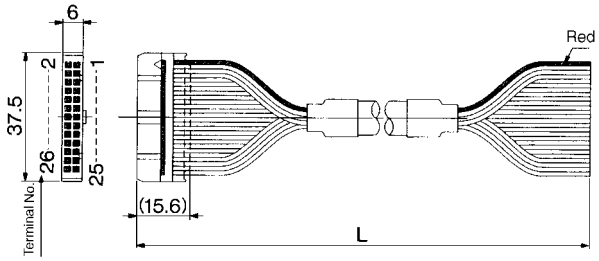
Cable Assembly



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

AXT100–FC26–1 to 3

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



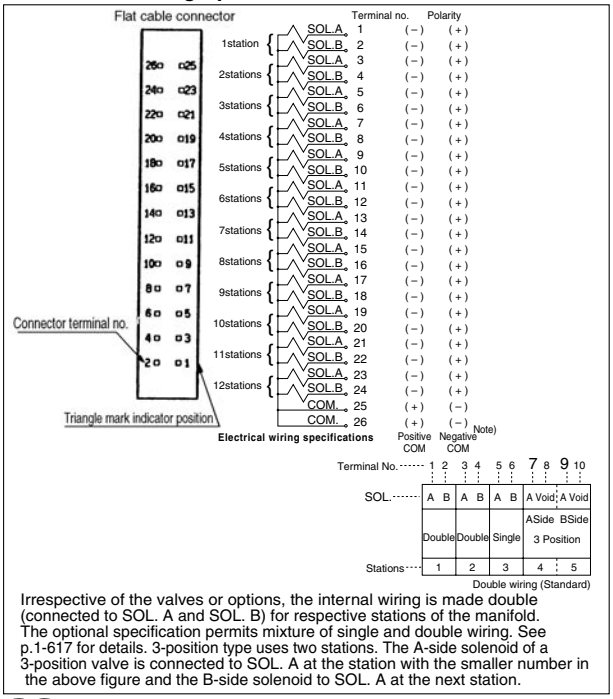
Flat cable connector assembly (Options)

Cable length (L)	Ass'y No.	Note
1.5m	AXT100-FC26-1	Cable 26 core X 28AWG
3m	AXT100-FC26-2	
5m	AXT100-FC26-3	

∗ For other commercial connectors, use a 26 pin with strain relief made in conformity with MIL-C-83503.

Note) Types with 10, 16, or 20 pin are also available. See p.1-616 for details.

Electrical Wiring Specifications



Irrespective of the valves or options, the internal wiring is made double (connected to SOL. A and SOL. B) for respective stations of the manifold. The optional specification permits mixture of single and double wiring. See p.1-617 for details. 3-position type uses two stations. The A-side solenoid of a 3-position valve is connected to SOL. A at the station with the smaller number in the above figure and the B-side solenoid to SOL. A at the next station.

Note) Use negative COM valves for negative COM specification manifolds. (See p.1-617)

How to Order Manifold

VV5Q1 3 – 08 P S 1 – N -Q

Series VQ1000

Manifold

3	Plug-in unit/flip

Stations

01	1 station
⋮	⋮
16	16 stations

Note) See p.1-616 for details.

Connector location

U	Top (vertical)
S	Side (horizontal)

Cable (length)

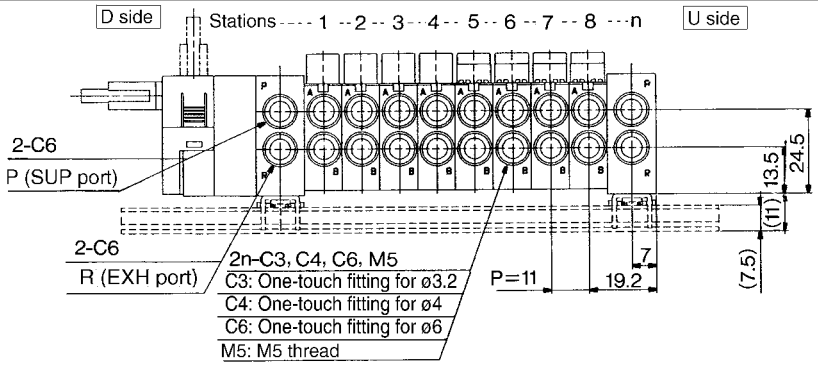
0	Without cable
1	With cable (1.5m)
2	With cable (3m)
3	With cable (5m)

Option

—	None
D	DIN rail mounting
K (2)	Special wiring specification (Not double wiring)
N	With name plate
S	Built-in silencer {Direct exhaust (U side only)}

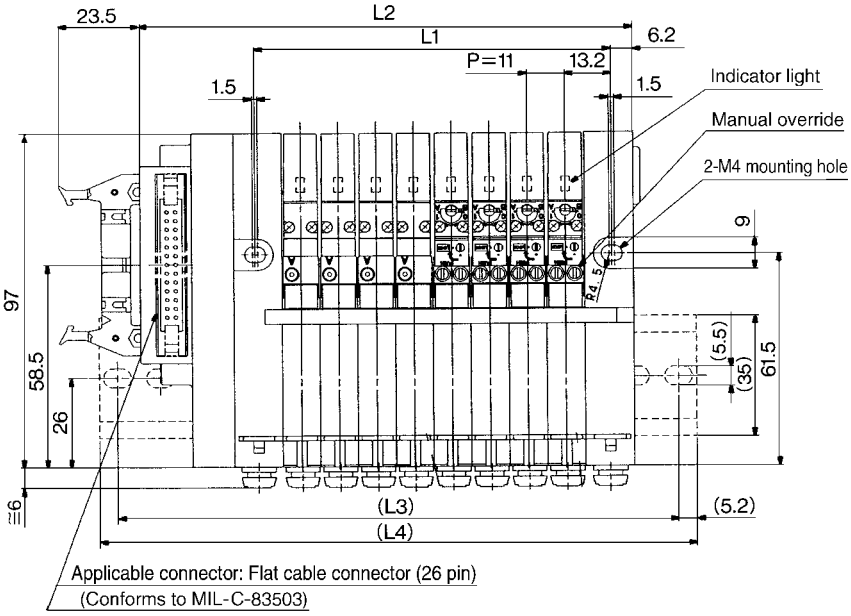
Note 1) When specifying more than one option, please list alphabetically.
Example) -DNS
Note 2) Specify the wiring specifications by means of the manifold specification form.

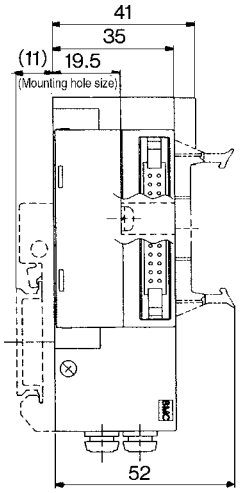
SMC



The broken lines indicate DIN rail mounting [-D] and top entry connector [-PU].

∗**3 position styles need two stations.**
Cylinder port is located at U side of body.





Dimentions (mm)

Equation L1=11n+15.5, L2=11n+55 n: Station (Max.16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	26.5	37.5	48.5	59.5	70.5	81.5	92.5	103.5	114.5	125.5	136.5	147.5	158.5	169.5	180.5	191.5
L2	66	77	88	99	110	121	132	143	154	165	176	187	198	209	220	231
(L3)	87.5	100	112.5	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	237.5	250	262.5
(L4)	98	110.5	123	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	248	260.5	273

How to Order Valve

VQ1 1 3 0 Y 5 C6 -Q

Series VQ1000

Configuration

1	2 position single
2	2 position double (latching)
3(1)	3 position closed centre
4(1)	3 position exhaust centre
5(1)	3 position pressure centre

Note) 3 position styles need two stations.

Seal

0	Metal
1	Rubber

Note) See "Options" on p.1-617 for negative COM specifications

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H (1)	High pressure	(1.5W) ○
Y (1)	Low wattage	(0.5W) ○

Note 1) Except for double (latching).

Coil voltage

5	24V DC
6	12V DC
9	(Less than 50VDC)

Indicator light and surge voltage suppressor

—	Yes
E	No

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

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

Cylinder ports

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

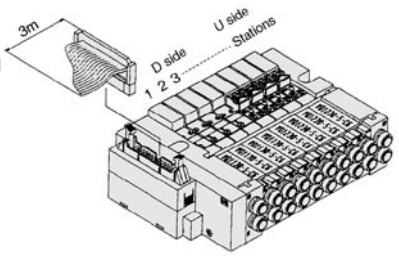
Note) See "Options" p.1-617 for inch-size One-touch fittings.

How to Order Manifold Ass'y

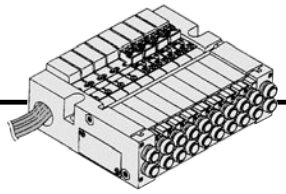
Specify valve and option nos. below the manifold base No.

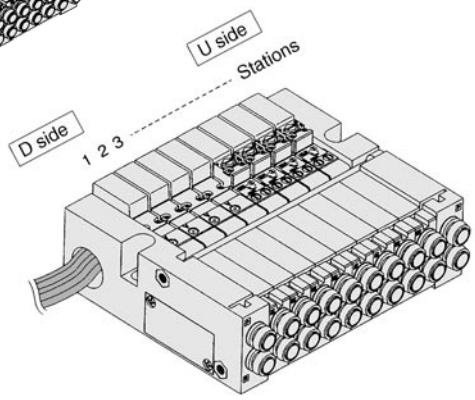
(Example)
Flat cable kit with 3m cable
VV5Q13-08PU2-Q··· 1 set – Manifold base No.
VQ1130-5-C6-Q····· 4 sets – Valve No. (Stations1 to 4)
VQ1230-5B-C6-Q··· 4 sets – Valve No. (Stations5 to 8)

Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specification form.



L VQ1000
Kit (Lead Wire Cable)





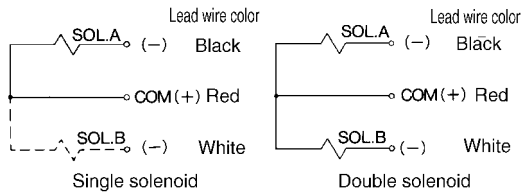
- **Direct electrical entry. Models with one or more stations are available.**
- **Max. 16 stations.**

Manifold Specifications

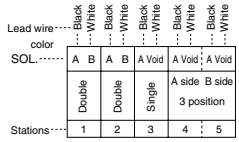
Series	Porting specification			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ1000	Side	C6	C3, C4, C6, M5	Max. 16

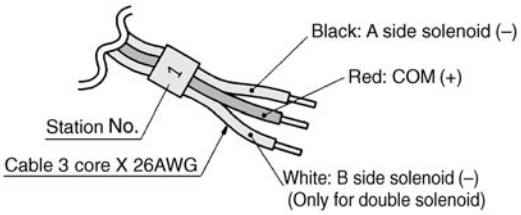
Wiring Specifications/Positive COM ●

Irrespective of the valve mounted, three lead wires are attached to each station. The red wire is for COM connection.



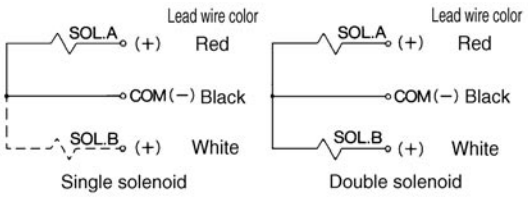
3-position uses two stations. The A-side solenoid of a 3 position valve is connected to SOL. A at the stastion with the smaller number in the above figure and the B-side solenoid to SOL. A at the next station.



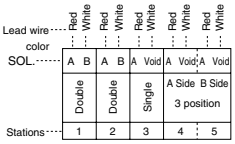


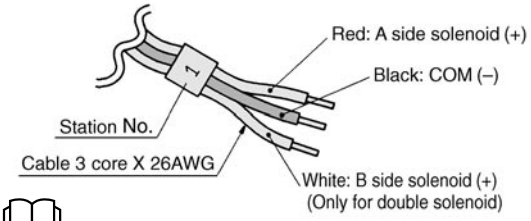
Wiring Specifications/Negative COM (Option) ●

Irrespective of the valve mounted, three lead wires are attached to each station. The black wire is for COM connection.



3-position uses two stations. The A-side solenoid of a 3 position valve is connected to SOL. A at the station with the smaller number in the above figure and the B-side solenoid to SOL. A at the next station.





Note) Use negative COM valves for negative COM specification manifold.

How to Order Manifold

VV5Q1 3 – 06 L D 1 – N -Q

Series VQ1000

Manifold

3	Plug-in unit/flip

Stations

01	1 station
⋮	⋮
16	16 stations

Lead wire entry direction

D	Entry on D side	Max. 8 stations
U	Entry on U side	
B	Entry on both side	Max. 16 stations

Cable (length)

0	With cable (0.6m)
1	With cable (1.5m)
2	With cable (3m)

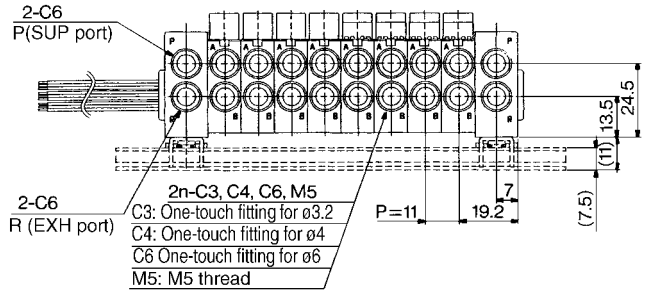
Option

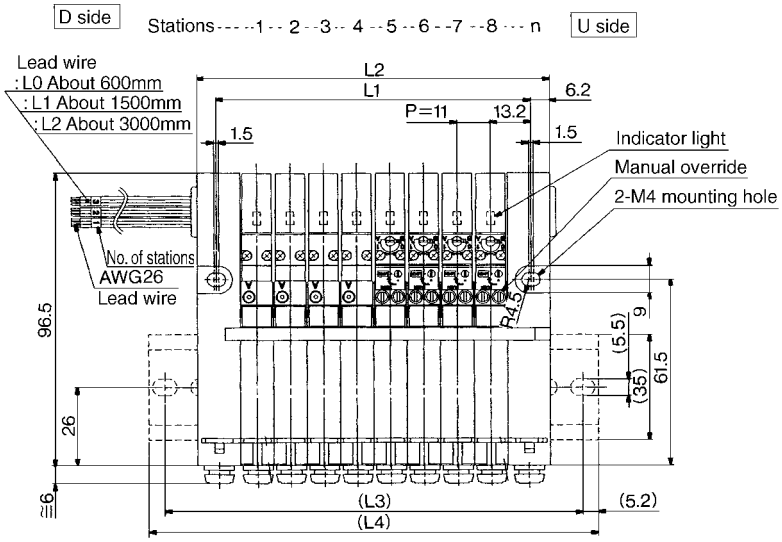
—	None
D	DIN rail mounting
N	With name plate
S	Built-in silencer (Direct exhaust)

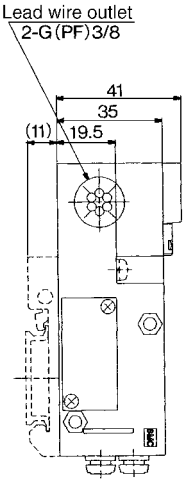
Note) When specifying more than one option, please list alphabetically.
Example) -DNS

The broken lines indicate DIN rail mounting [-D]. The lead wire entry is on D side (LD□) in this case.

3 position styles need two stations. Cylinder port is located at U side of body.







Dimensions (mm)

Equation L1=11n+15.5 L2=11n+28 n: Station (Max. 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	26.5	37.5	48.5	59.5	70.5	81.5	92.5	103.5	114.5	125.5	136.5	147.5	158.5	169.5	180.5	191.5
L2	39	50	61	72	83	94	105	116	127	138	149	160	171	182	193	204
(L3)	62.5	75	87.5	100	112.5	125	125	137.5	150	162.5	175	187.5	200	212.5	212.5	225
(L4)	73	85.5	98	110.5	123	135.5	135.5	148	160.5	173	185.5	198	210.5	223	223	235.5

How to Order Valve

VQ1 1 3 0 Y – 5 – C6 -Q

Series VQ1000

Configuration

1	2 position single
2	2 position double (latching)
3(1)	3 position closed centre
4(1)	3 position exhaust centre
5(1)	3 position pressure centre

Note 1) 3 position styles need two stations

Seal

0	Metal
1	Rubber

Note) See "Options" on p.1-617 for negative COM specifications.

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H	High pressure	(1.5W) ○
Y(1)	Low wattage	(0.5W) ○

Note 1) Except for double (latching) type.

Coil voltage

5	24V DC
6	12V DC
9	(Less than 50VDC)

Indicator light and surge voltage suppressor

—	Yes
E	No

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

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

Cylinder ports

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

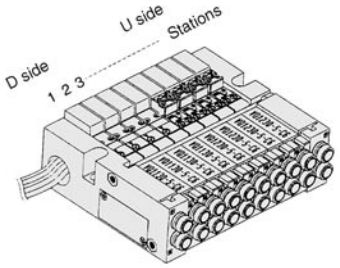
Note) See "Options" on p.1-617 for inch-size One-touch fittings.

How to Order Manifold Ass'y

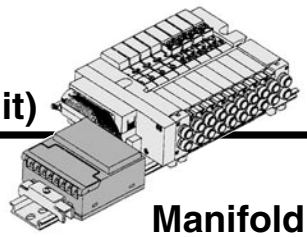
Specify valve and option nos. below the manifold base No.

(Example)
Lead wire kit
VV5Q13-08LD2-Q…1 set – Manifold base No.
VQ1130-5-C6-Q …4 sets – Valve No. (Stations 1 to 4)
VQ1230-5B-C6-Q …4 sets – Valve No. (Stations 5 to 8)

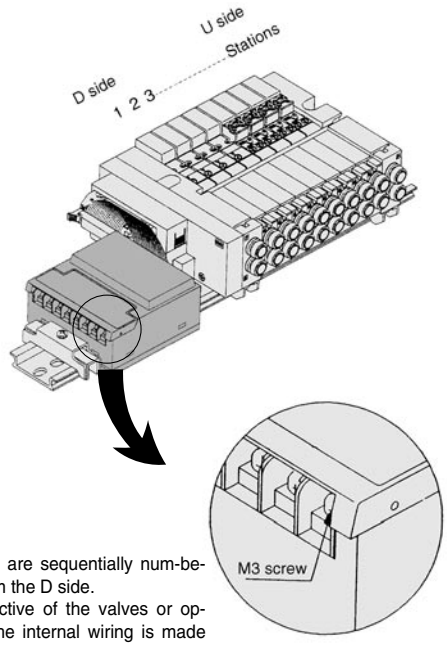
Write sequentially from the 1st station on the D side. When part nos. witten collectively are complicated, specify by using a manifold specification form.



S VQ1000
Kit (Serial Transmission Unit)



- The serial transmission system minimizes wire mass and wire connection labour and promotes space-savings.
- The system comes in an SA (generic for small scale system) for equipment with a small number of I/O points, or 32 points max., SB (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., SC (applicable to OMRON models), and SD (applicable to Sharp models; 504 points max.).
- 16 stations max. (Specify a model with 9 to 16 stations by using a manifold specification form.)

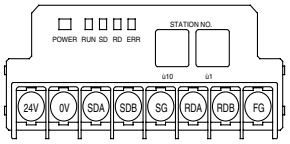


- Stations are sequentially num-bered from the D side.
- Irrespective of the valves or options, the internal wiring is made double (connected to SOL. A and SOL. B) for respectlve stations on the manifold. The optional specification permits mixture of single and double wiring. See p.1-617 for details.

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

Manifold Specifications

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

	SB applicable to MELSECNET/MINI-S3 Data Link (Mitsubishi Electric.)
Name of terminal block (LED)	

LED name	Details
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

- Master station:
PLC made by Mitsubishi Electric Corp.
Series MELSEC-A
AJ71PT32-S3, AJ71T32-S3
A1SJ71PT32-S3
∗ Max. 64 stations, connected to remote I/O stations (Max. 512 points).
- 16 outputs, 2 stations occupied.

How to Order Manifold

VV5Q1 3 – 08 S B – D – Q

Series VQ1000

Manifold

3	Plug-in unit/Flip

Stations

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

Note 1) As option, the max. number of stations can be increased based on special wiring specifications. See p.1-617 for details.

Style

B	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)
C	SI unit for SYSBUS Wire System (OMRON)
N	SI unit for Profibus DP
P	SI unit for Interbus
Q	SI unit for Device Net and CompoBus/D (OMRON)
Y	SI unit for Can Open
T2	SI unit for ASI (yellow+black wires) Max.8 stations
T4	SI unit for ASI (yellow+black wires) Max.4 stations
T5	SI unit for ASI (yellow wires) Max.4 stations

Option

D (2)	DIN rail mounting
K (3)	Special wiring specification (Not double wiring)
N	With name plate
S	Built-in silencer {Direct exhaust (U side only)}

Note 1) When specifying more than one option, please list alphabetically.
Example) -DNS
Note 2) S kits are DIN rail mounting styles, so include suffix " D "
Note 3) Specify the wiring specifications by means of a manifold specification form.

● SI unit output and coil numbering

<Wiring example 1>

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

	A B	A B	A Void	A Void	A Void
SI unit	**Double**	**Double**	**Single**	A side / **3-position**	B side
Stations	1	2	3	4	5

Double wiring (Standard)

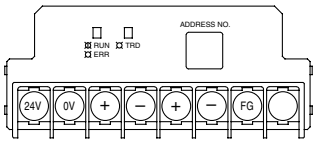
3 position uses two stations for wiring. The A-side solenoid of 3 position valve is connected to A at the station with the smaller number in the above figure.

<Wiring example 2> Mixed wiring is optional. Use the manifold specification form to specify.

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

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

Single/Double mixed wiring (Option)

	SC applicable to SYSBUS Wire System (OMRON)
Name of terminal block (LED)	
Note	● Master station unit: OMRON's PLC SYSMAC Series C (CV) C500-RM201, C200H-RM201 ∗ Max. 32 units, transmission terminal connected (Max. 512 points) ● 16 outputs

LED name	Details
RUN	It lights when transmission is normal and PLC is in the operation mode.
T/R ERR	It blinks when transmission is normal. It lights when transmission is abnormal

How to Order Valve

VQ1 [1] 3 [0] [Y] – 5 [ ] – [C6] -Q

Series VQ1000

Configuration

1	2 position single
2	2 position double (latching)
3(1)	3 position closed centre
4(1)	3 position exhaust centre
5(1)	3 position pressure centre

Note 1) 3 position styles need two stations

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification	DC
—	1W (Standard)	(1.0W) ○
H(1)	1.5W (High pressure)	(1.5W) ○
Y(1)	0.5W (Low wattage)	(0.5W) ○

Note 1) Except for double (latching)

Coil voltage

5	24V DC/With indicator light and surge voltage suppressor

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

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

Cylinder ports

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

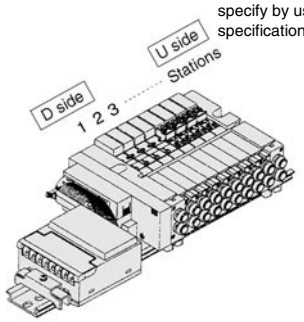
Note) See "Options" for inch-size One-touch fittings.

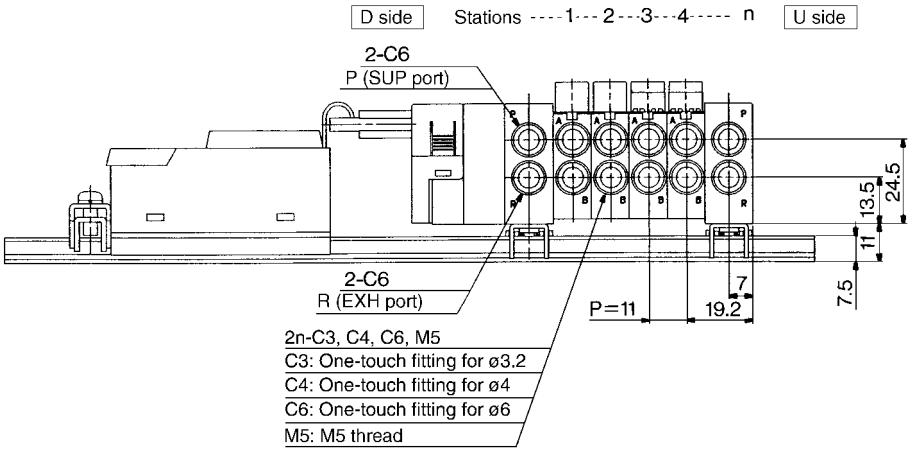
How to Order Manifold Ass'y

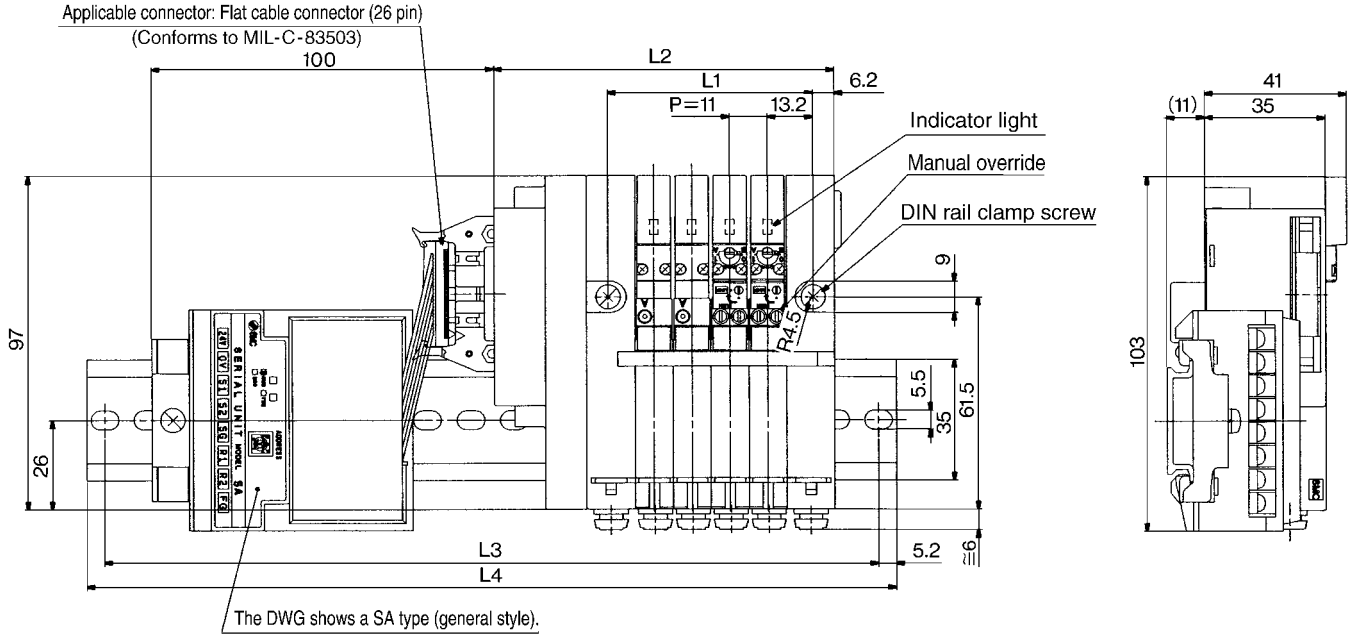
Specify valve and option nos. below the manifold base No.

(Example)
Serial transmission unit kit
VV5Q13-08SA-D-Q·····1 set – Manifold base No.
VQ1130-5-C6-Q····· 4 sets – Valve No. (Stations 1 to 4)
VQ1230-5B-C6-Q ··· 4 sets – Valve No. (Stations 5 to 8)

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







3 position styles need two stations.
Cylinder port is located at U side of body.

Dimensions (mm)

Equation L1=11n+15.5, L2=11n+55 n: Station (Max. 8 stations)

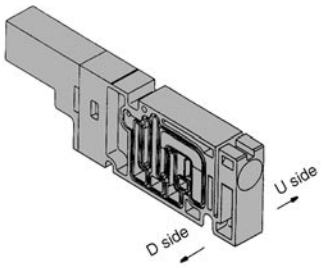
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	26.5	37.5	48.5	59.5	70.5	81.5	92.5	103.5	114.5	125.5	136.5	147.5	158.5	169.5	180.5	191.5
L2	66	77	88	99	110	121	132	143	154	165	176	187	198	209	220	231
L3	187.5	200	212.5	225	237.5	250	262.5	275	275	287.5	300	312.5	325	337.5	350	362.5
L4	198	210.5	223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	360.5	373

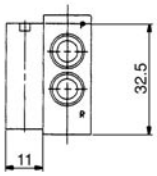
Manifold Options

Blank plate assembly

VVQ1000-10A-3

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

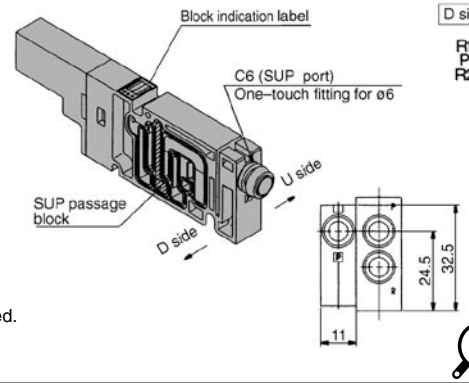


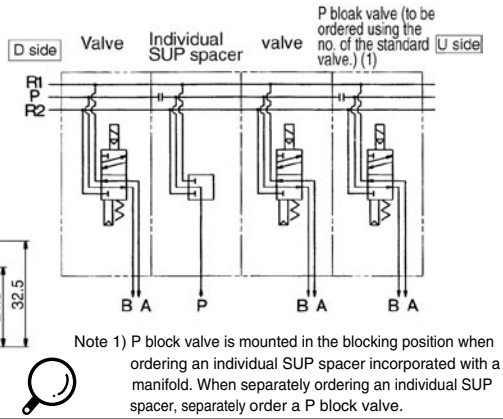


Individual SUP spacer
VVQ1000-P-3-C6

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 by means of the manifold spcification form.
* Electric wiring is connected to the position of the manifold where the individual SUP spacer is mounted.



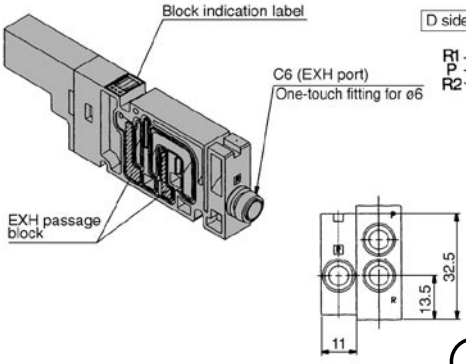


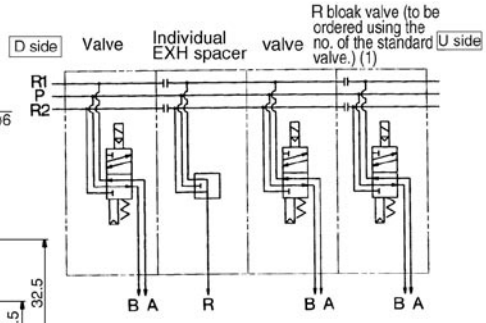
Note 1) P block valve is mounted in the blocking position when ordering an individual SUP spacer incorporated with a manifold. When separately ordering an individual SUP spacer, separately order a P block valve.

Individual EXH spacer
VVQ1000-R-3-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. (See the application ex.)

* Specify the spacer mounting position and EXH block plate mounting position by means of the manifold specification form.
* Electric wiring is connected to the position of the manifold station where the individual EXH spacer is mounted.





Note 1) R block valve is mounted in the blocking position wher 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
VQ1$1_2$3$^0_1$-□-□□-P/R/PR-Q

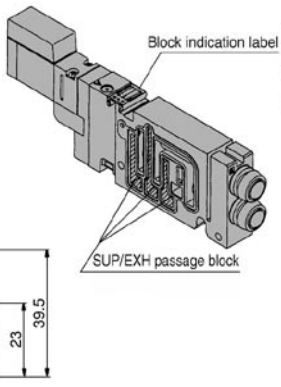
For a flip plug–in unit, block plate is built in the valve for blocking SUP and EXH passages. Since the No. is classified by the passage to be blocked, specify it by attaching the option No. to the valve No.
The block valve is constructed so that D sides of SUP and EXH passages are blocked.

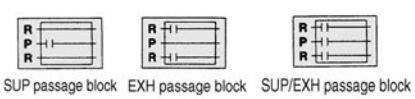
* Specify the number of stations by using a manifold specification form.

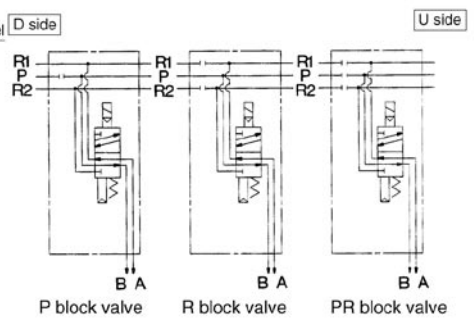
<Blocking indication label>

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, a block indication label is attached to the manifold.





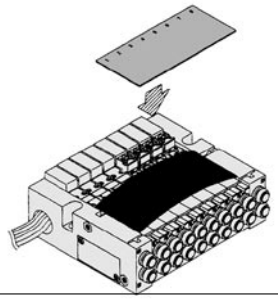


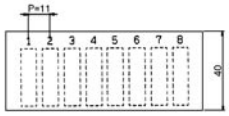
For SUP passage block	VQ1$1_2$3$^0_1$–□–□□–P-Q
For EXH passage block	VQ1$1_2$3$^0_1$–□–□□–R-Q
For SUP/EXH passage block	VQ1$1_2$3$^0_1$–□–□□–PR-Q

Manifold Options

Name plate [-N3]
VVQ1000-N3-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.



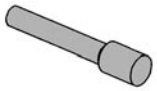


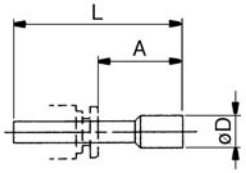
* When ordering assemblies incorporated with a manifold, add suffix "–N" to the manifold No.

Blank plug

KQ2P- 23 / 04 / 06 **-00**
Colour: White

It is inserted into an unused cylinder port and SUP/EXH ports.
The minimum order quantity is 10 pcs.



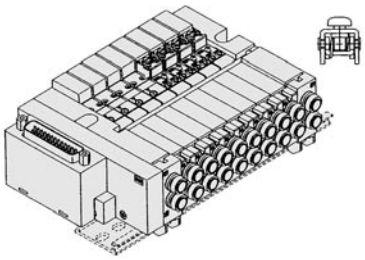


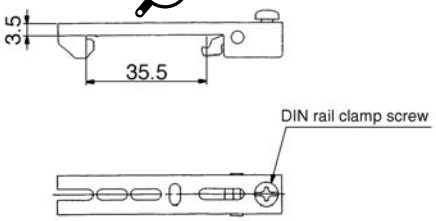
Dimensions

Fittings size ød	Model	A	L	D
3.2	**KQ2P-23-00**	16	31.5	5
4	**KQ2P-04-00**	16	32	6
6	**KQ2P-06-00**	18	35	8

DIN rail mounting bracket
VVQ1000-57A-3

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



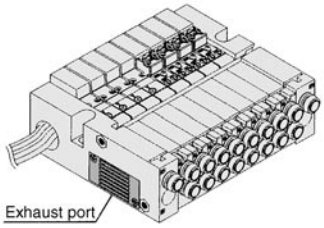


* When ordering assemblies incorporated with a manifold, add suffix "-D" to the manifold No.

Built-in silencer, Direct exhaust [-S]

This is an exhaust port on top of the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect.
F, P and S kits are provided with single exhaust on one side.

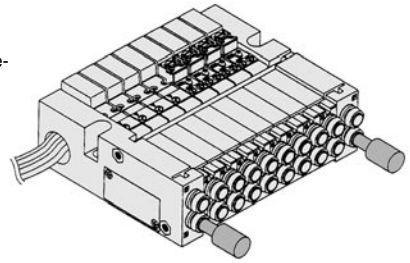
Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.
● See p.1-615 for maintenance.

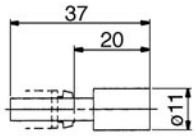


* When ordering assemblies incorporated with a manifold, add suffix "S" to the manifold No.

Silencer
AN103-X233

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





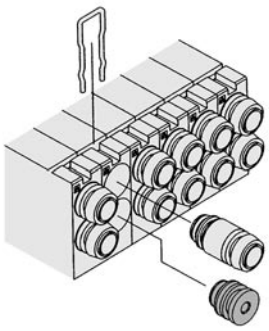
Dimensions

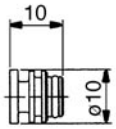
Series	Fitting size ød	Model	A	L	D	Effe. area (mm^2)(N ℓ/min)	Silencing effect (dB)
VQ1000	6	AN103-X233	20	37	11	7 (392.6)	25

Port plug
VVQ0000-58A

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

Example) **VQ1130-5L-C6-A**
A port, Plug





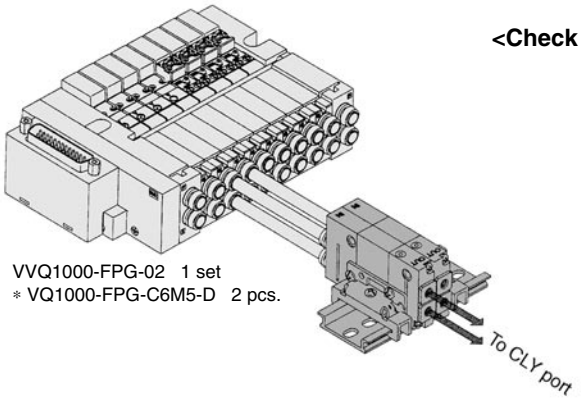
Double check block (Separate style) VQ1000–FPG–□□

It is used on the way of the secondary side piping to keep the cylinder in the intermediate position for a long time. Combining a double check block with a built-in pilot double check valve and a two-position EXH centre solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time. The combinaton 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.

Specifications

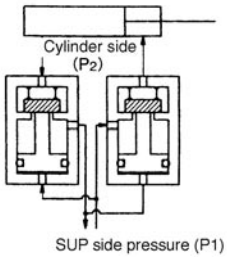
Proof pressure	1.5MPa
Max. operating pressure	0.8MPa
Min. operating pressure	0.1MPa
Ambient and fluid temp.	−5 to 50˚C
Effective area(1) (Nℓ/min)	2.7mm² (147.23)
Max. operating freq	180CPM

Note 1) As per JISB8375-1981 (Supply pressure: 0.5MPa)



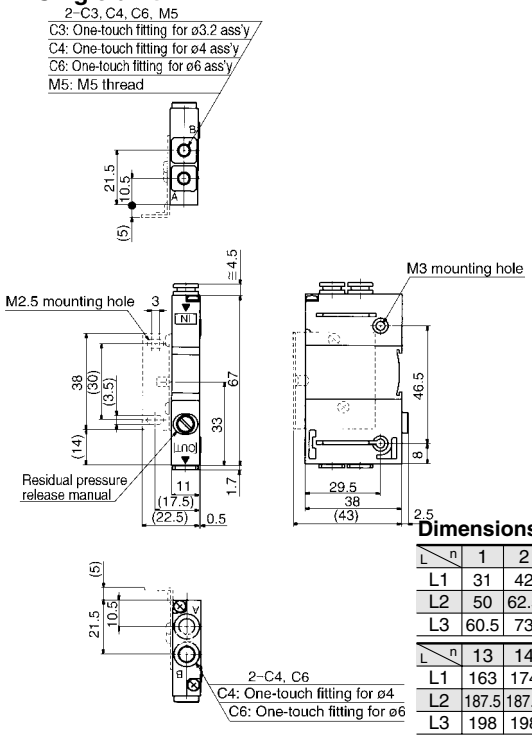
VVQ1000-FPG-02 1 set
∗ VQ1000-FPG-C6M5-D 2 pcs.

<Check Valve Operation Principle>

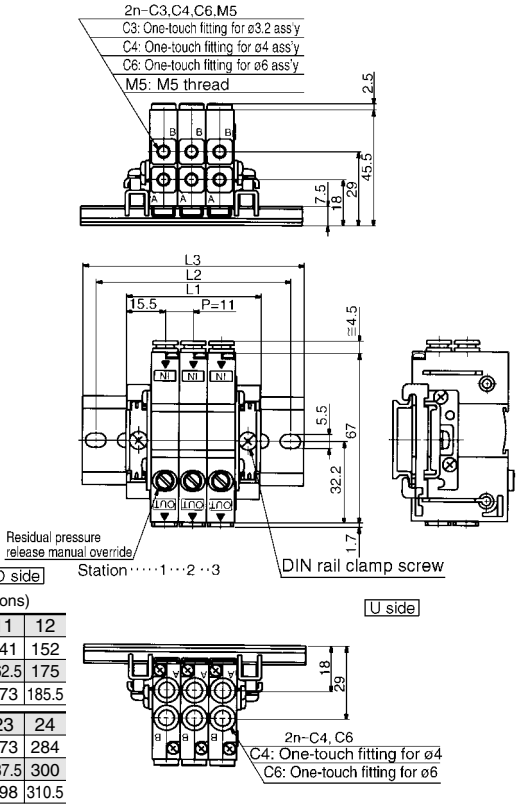


Dimentions

Single unit



Manifold



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

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

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

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

OUT side port size

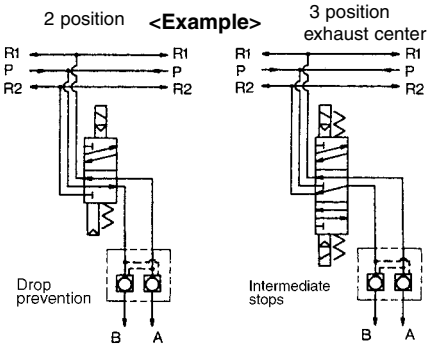
Symbol	Port size
M5	M5 thread
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6

Option

—	None
F	With bracket
D	DIN rail mounting (for manifold)
N	Name plate

Note) When specifying more than one option, please list alphabetically. Example) -DN

<Example>



Manifold

VVQ1000–FPG– 06

Stations

01	1 station
⋮	⋮
16	16 stations

<Example>
VVQ1000-FPG-06··· 6 stations manifold
∗ VQ1000-FPG-C4M5-D, 3 sets } Double check block
∗ VQ1000-FPG-C6M5-D, 3 sets }

⚠ Caution

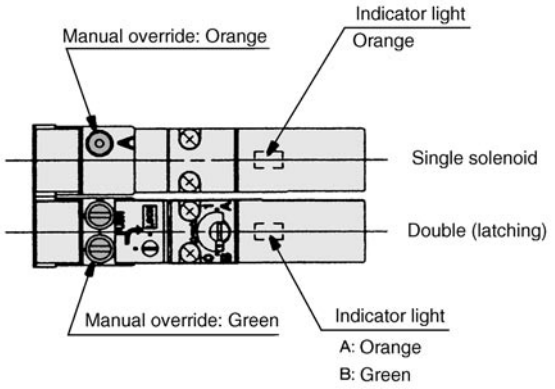
- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap. Also, check the cylinder's tube gasket, piston packing and rod packing for leakage.
- 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 centre or pressure centre 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 ass'y on the double check block. {Tightening torque: 0.8 to 1.2N·m}
- If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop intenmediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

⚠ Precautions

⚠ Caution

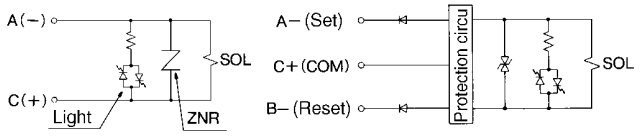
Indicator Light and Surge Voltage Suppressor

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 and double (latching) style. In the double (laching) style, A-side and B-side energization are indicated by two colours which match the colours of the manual overrides.



DC Type Circuit Diagram

Single solenoid (DC) Double (latching) solenoid (DC)



Single **Double (latching)**

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) mechanism.
Note 2) Applicable to negative COM specification models
Note 3) In case of double (latching), the electromagnetic valve channel is, A-(set): P→A, B→R B-(reset): P→B, A→R

⚠ Caution

Double (Latching Solenoid) Style

Different from the conventional double solenoid, the double 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 (20ms or more). The usage and function is the same as the double solenoid.

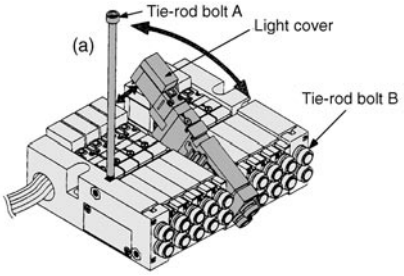
<Special Cautions for Latching Solenoid>

1. Select the circuit in which ON and OFF signals are not energized simultaneously.
2. 20ms energization time is necessary for self-holding.
3. Avoid using in a place with high vibration (5G or more) or a high magnetic field.
4. When shipped, the movable iron core is held in the ON position (reset) on the B side. Check to be sure it is held in the ON position by energization before use.
5. After manual operation, the main valve will return to its original position.
6. Contact SMC for long-term energization applications.

⚠ Caution

How to Mount/Remove Solenoid Valve

<Procedures>



How to remove

1 Loosen tie-rod bolt B.
2 After fully loosening the tie-rod bolt, take off bolt A upward as shown above.
3 Slide the valves aside to make a 1mm 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.)

How to mount

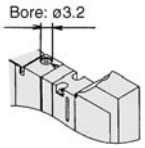
Reverse the sequence of steps above to remount. Torque applied to tie rod bolt should be 1.0 to 1.4 Nm. Tighten evenly.
Note) Be careful not to push on the light cover while mounting/removing the valve.

⚠ Warning

Manual Override

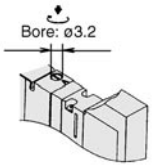
Without an electric signal for the solenoid valve the manual override is used for switching the main valve.

■Non-locking push style



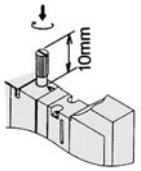
Push down the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

■Push-locking slotted style



Push down on the manual override button with a small screwdriver until it stops. While down, turn clockwise by 90˚ to lock it. Turn it counterclockwise to release it.

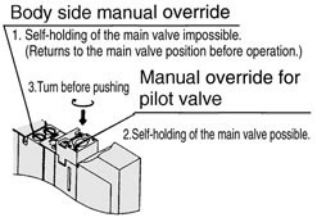
■Push-locking lever style



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.

■Manual override for double (latching) style

In case of a double (latching) style, a manual override is provided not only on the body side but to the pilot as a standard.
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.



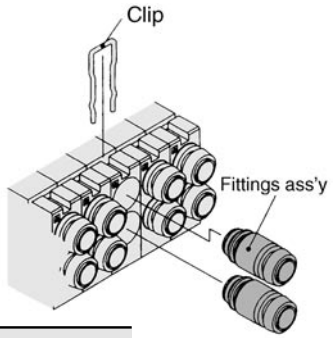
- **Turn the manual override clockwise by 180˚ to the ▶ mark to A and press it in the direction indicated by the arrow. It will be locked set in a (Passage: P → A) state.**
- **Turn the manual override counterclockwise by 180˚ to set the ▶ mark to B and press it in the direction indicated by the arrow. It will be reset in a (Passage: P → B) state. (It is reset when shipped.)**

⚠ Caution

Do not apply too much torque when turning the lock style manual override. (0.1Nm or less)

⚠ Caution
Replacement of Cylinder Port Fittings

The cylinder port fittings are in a cassette for easy replacement. 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 reinsert the clip to the specified position.



Applicable tube O.D	Fitting Ass'y No.
	VQ1000
Applicable tube ø3.2	VVQ1000–50A–C3
Applicable tube ø4	VVQ1000–50A–C4
Applicable tube ø6	VVQ1000–50A–C6

∗ The minimum order quantity is 10 pcs.

Precautions

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.

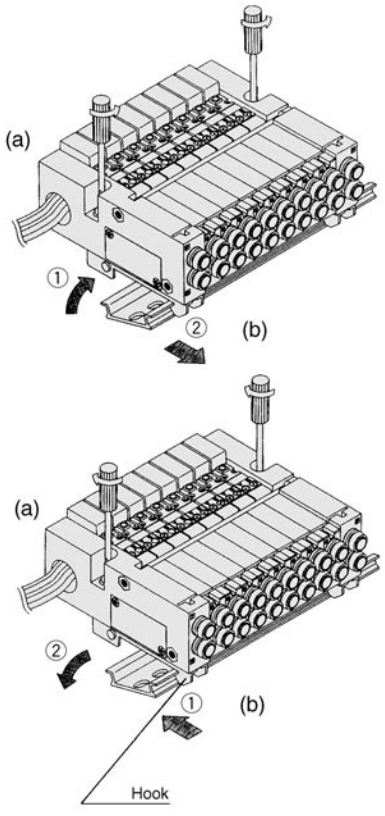
⚠ Caution
Mouting/Removing from the DIN Rail

Removing

1) Loosen the clamp screw 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 appropriate tightening torque is 0.8 to 1.2N·m.



⚠ Caution
Built-in Silencer Replacement Element

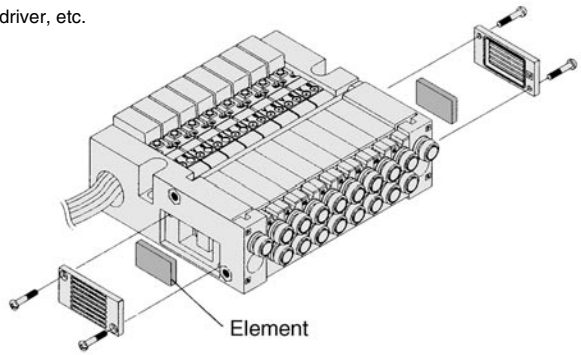
A silencer element is incorporated in the end plate on both sides of the manifold base. A dirty and choked element may reduce cylinder speed or cause manifunction. Clean or replace the dirty element.

Element part No.

Model	Element part No.
	VQ1000
Built-in silencer Direct exhaust (-S)	VVQ1000-82A-3

∗ 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.

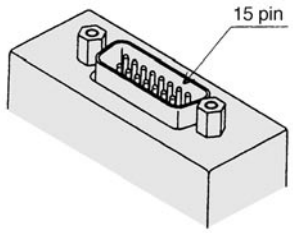


Options

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 pin**



How to Order Manifold

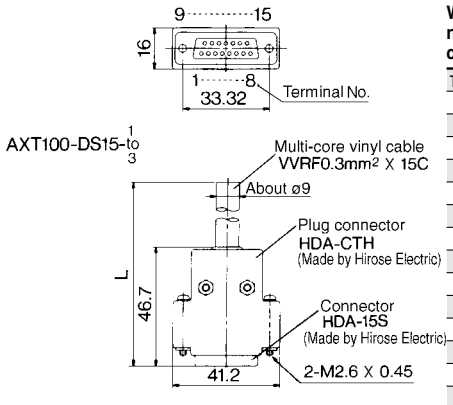
VV5Q13 – 06 F SA – N -Q

- 06: Stations
- SA: Kit, Electrical entry
- N: Option

How to order
D-sub connector, 15 pin
Connector location
–Side (horizonal)
Without cable

Kit, Electrical entry

Pins \ Location	Top (vertical)		Side (horizotnal)	
15 pin (Max.7 stations)	Kit F	suffix: UA	Kit F	suffix: SA



Wire color table by terminal number of D-sub connector cable assembly

Terminal No.	Lead wire color	Dot marking
1	Black	–
2	Brown	–
3	Red	–
4	Orange	–
5	Yellow	–
6	Pink	–
7	Blue	–
8	Violet	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black

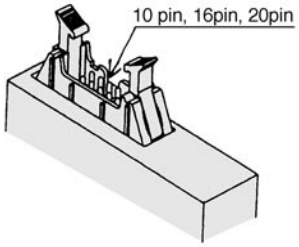
∗ As in the case of 25 pin models (standard), terminal No.1 is the first station SOL.A and the terminal No.8 is COM.

D-sub connector cable assembly

Length (L) \ Pins	15 pin
1.5m	AXT100-DS15-1
3m	AXT100-DS15-2
5m	AXT100-DS15-3

∗ When using other commercially available connectors, select models that conform to MIL-C-24308.

P **Kit (Flat cable connector) 10 pin, 16 pin, 20 pin**



How to Order Manifold

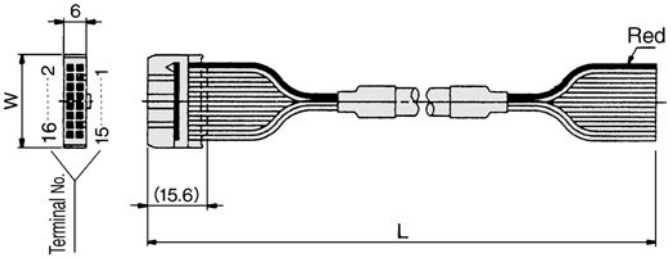
VV5Q13 – 06 P SC – N -Q

- 06: Stations
- SC: Kit, Electrical entry
- N: Option

How to order
Flat cable, 20 pin
Connector location
–Side (horizonal)
Without cable

Kit, Electrical entry

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



∗ As in the case of 25-pin models (standard), terminal No.1 is the first station SOL.A and the last two tenminal numbers are used for COM.

Flat cable assembly

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

When using other commercially available connectors, select models with strain relief that comform to MIL-C-83503.

Options

Special Wiring Specifications

Regardless of the valve or option, the standard internal wiring for double solenoid capability is provided to each station of F/P/S kit.
As optional specifications, combinations of single and double wiring (connected to SOL. A, B) are available.

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 form.

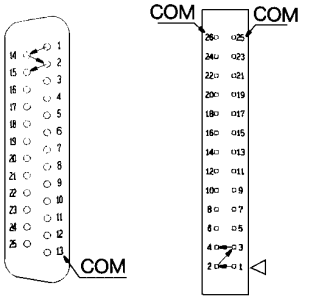
How to order manifold

VV5Q13–09FS0–D K S -Q

List option symbols in alphabetical order

2. Wiring specification

With the A side solenoid of the 1st station as No.1 (meaning, to be connected to No.1 terminal) , wires are connected in the order indicated by the arrow in the DWG without making any terminal vacant.



F kit
D-sub connector
(25 pin)

P kit
Flat cable connector
(26 pin)

3. Max. number of stations

The max. 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 cable connector)				S kit (Serial transmission)
Model	FS□ 25P	FSA 15P	PS□ 26P	PSC 20P	PSB 16P	PSA 10P	S□
Max. number	24 (< 16 stations)	14	24 (< 16 stations)	18 (< 16 stations)	14	8	16

Negative COM Specifications

Specifiy the valve model no. as shown below for negative COM specification. The manifold No. shown below is for the L kits. For other kits the standard manifold can be used. Contact for negative COM S kit.

How to Order Negative COM Valve

VQ1130 N–5–C6 -Q

Negative COM specification

How to Order Negative COM Manifold

L kit:

VV5Q13 – 08 L N D 1 – N -Q

Stations
Negative COM specification
Lead wire entry on D side
Cable length
Option

Inch-size One–touch Fittings

The valve with inch-size One-touch fittings is shown below.

How to order manifold

VV5Q13–08FSO–DN–00T -Q

P, R Port size: ø1/4

How to order valve

VQ1130–5– N7 -Q

Cylinder ports

Symbol	N1	N3	N7
Tube O.D (Inch)	ø1/8"	ø5/32"	ø1/4"

DIN Rail Mounting Style

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. 30mm longer than the manifold with the specified number of stations is attached.

● When DIN rail is unnecessary (Except for S kit) (DIN rail mounting brackets only are attached.)

Indicate the option symbol,"**-DO**," for the manifold no.

Example)

VV5Q13–08LD1–DOS -Q

List option symbols in alphabetical order

● 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)

VV5Q13–08FS1–D09S -Q

DIN rail for 9 stations
List option symbols in alphabetical order

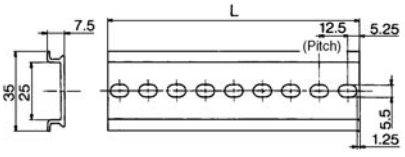
● When changing the manifold style into a DIN rail mounting

Order brackets for mounting a DIN rail. (See "Options" on p.1-612)

No. VVQ1000–57A–3 2 pcs. per one set.

● When ordering DIN rail only
DIN rail No.: AXT100–DR–n

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



L dimensional L=12.5 X n+10.5

No.	1	2	3	4	5	6	7	8	9	10
L	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	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	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	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

VQ0000

Body Ported

Plug Lead Unit/Flip Style

How to Order Manifold

VV5Q 0 4 – 08 F S1 – D – -Q

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.)

Option

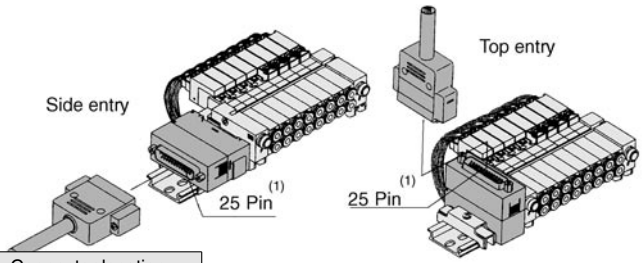
–	None (C kit only)
D (2)	DIN rail mounting
K (3)	Special wiring specification (Not double wiring)
N	With name plate
S (4)	Built-in silencer (Direct exhaust)

Note 1) When specifying more than one option, please list alphabetically.
Example) -DNS
Note 2) F, P, T, and S kits are DIN rail mounting styles, so include suffix "-D".
Note 3) Specify the wiring speifications by means of the manifold specification form. (Except for 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.

–	One-touch fitting for ø6 P, R port
00T	One-touch fitting for ø1/4" P, R port

Kit/Electrical entry/Cable length

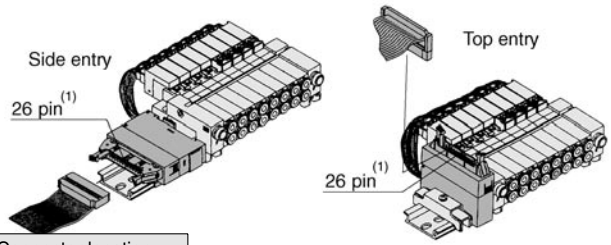
F Kit (D–sub connector)



P.1-626

Connector location					
Top (vertical)		Side (horizontal)			
F kit	U0	F kit	S0	Without cable	Max.16 (2) stations
	U1		S1	With cable (1.5m)	
	U2		S2	With cable (3m)	
	U3		S3	With cable (5m)	

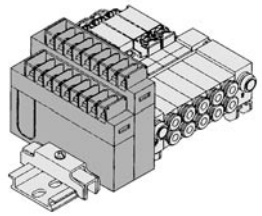
P Kit (Flat cable connector)



P.1-630

Connector location					
Top (vertical)		Side (horizontal)			
P kit	U0	P kit	S0	Without cable	Max.16 (2) stations
	U1		S1	With cable (1.5m)	
	U2		S2	With cable (3m)	
	U3		S3	With cable (5m)	

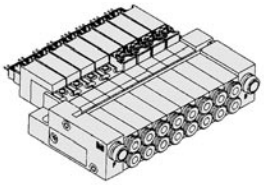
T Kit (Terminal block)



P. 1-634

T kit	1	Number of terminals: 8, 1 row	Applicable stations: 1 to 4 stations
	2	Number of terminals: 16, 2 rows	Applicable stations: 5 to 8 stations

C Kit (Connector)

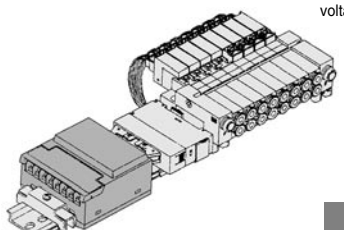


P.1-638

C	Connector	Max.16 stations

S Kit (Serial transmission unit)

The valve is equipped with an indicator light/ surge voltage suppr-essor and the voltage is 24V DC.



P.1-642

S (3) Kit	B	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)	Max. (2) 16 stations
	C	SI unit for SYSBUS Wire System (OMRON)	
	N	SI unit for Profibus DP (4)	
	P	SI unit for Interbus (4)	
	Q	SI unit for Device Net and CompoBus/D (OMRON)	
	Y	SI unit for Can Open (4)	
	T2	SI unit for ASI (yellow+black wires) (4)	Max. 8
	T4	SI unit for ASI (yellow+black wires) (4)	Max. 4
	T5	SI unit for ASI (yellow wires) (4)	

Note 1) Besides the above, F and P kits with different number of pins are available. See p.1-636 for details.
Note 2) See p.1-657 for details.
Note 3) Consult SMC for the following serial transmission kits; Matsushita Electric Works Ltd., Allen-Bradley Co., Sunx, Fuji Electric Company Ltd., OMRON Corp..
Note 4) Available with EX121 kit.

SMC

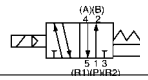
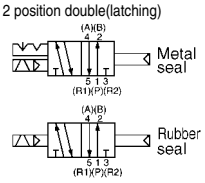
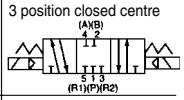
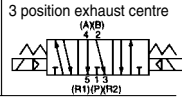
How to Order Valve

VQ 00 [1] 4 [0] [Y] [5] [L] [ ] [C4] -Q

Series

0	VQ0000

Configuration

1	2 position single 
2	2 position double(latching)  Metal seal / Rubber seal
3 (1)	3 position closed centre 
4 (1)	3 position exhaust centre 

Note 1) 3 position requires two stations.

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Function

Symbol	Specification
—	1.0W(0.7MPa Max. operating pressure
H	1.5W(0.8MPa Max. operating pressure
K (1)	1.0W(1.0MPa Max. operating pressure
Y	0.5W(0.7MPa Max. operating pressure
N	Negative common

* Only the following combination is possible.
HN, KN, YN
Note 1) Available only to metal seal type.

Seal

0	Metal
1	Rubber

Note 1) F, P, T and S Kits need conector ass'y when adding the valve stations.

Electrical entry

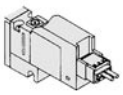
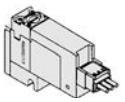
	VQ0000
G: Grommet C kit single only. (Except for AC.)	
L: L plug connector with lead wire	 With indicator light and surge suppressor
LO: L plug connector without connector	 With indicator light and surge suppressor
M: M plug connector with lead wire	 With indicator light and surge suppressor
MO: M plug connector without connector	 With indicator light and surge suppressor

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

Cylinder ports

C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
M5	M5 thread
N1	One-touch fitting for ø1/8"
N3	One-touch fitting for ø5/32"
M5T	10-32 UNF thread

Manual override

— Non-locking push style	**B** (1) Push-locking slotted style
	

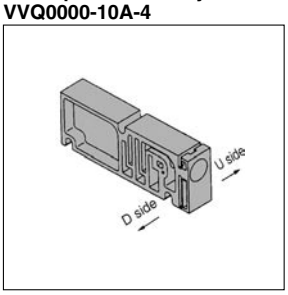
Note) Double (latching) valves are non-locking push style. However, main spool positions are held corresponding to manual override position.

Protective class class III (Mark: ⏚)

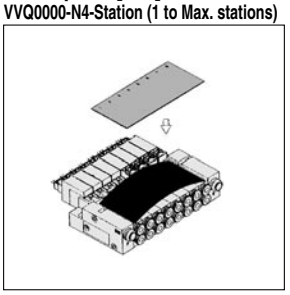
Manifold Options

P.1-647

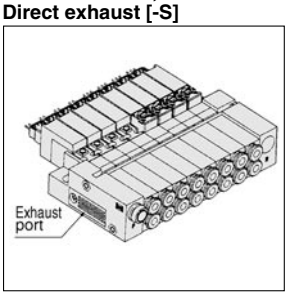
Blank plate assembly
VVQ0000-10A-4



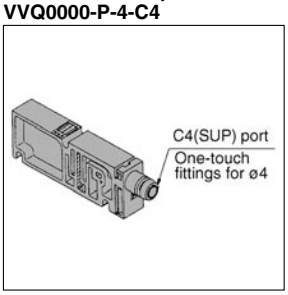
Name plate [-N4]
VVQ0000-N4-Station (1 to Max. stations)



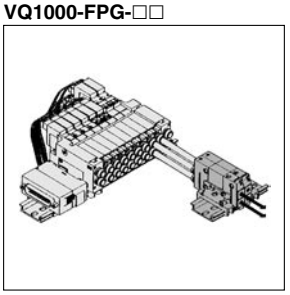
Built-in silencer, Direct exhaust [-S]



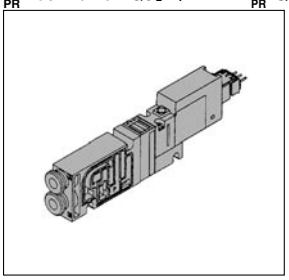
Individual SUP spacer
VVQ0000-P-4-C4



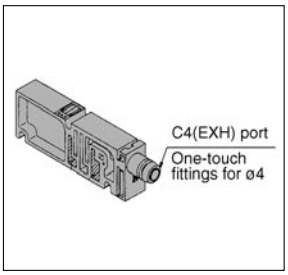
Double check block
VQ1000-FPG-□□



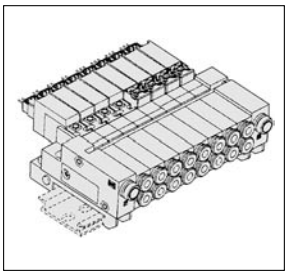
$^{P}_{R}$Block valve VQ0$^{1}_{2}$4$^{0}_{1}$-□-□□-$^{P}_{R}$-Q



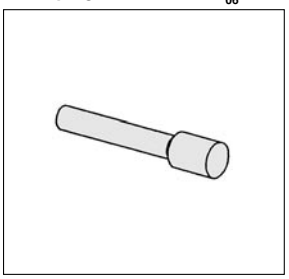
Individual EXH spacer
VVQ0000-R-4-C4



DIN rail mounting bracket
VVQ0000-57A-4

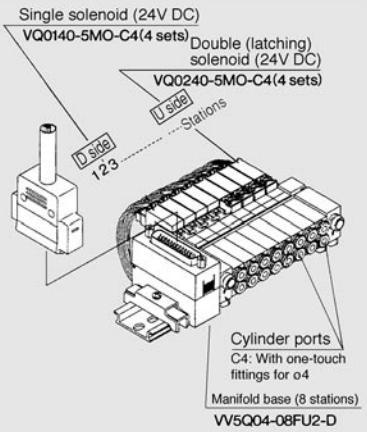


Blank plug **KQ2P-$^{23}_{04}_{06}$-00**



How to Order Manifold Ass'y (Example)

Ordering example



VV5Q04-08FU2-D-Q…1 set (F kit 8 station manifold base No.)
VQ0140-5MO-C4-Q···4 sets (Single solenoid No.)
VQ0240-5MO-C4-Q···4 sets (Double solenoid No.)

Specify valve and option nos. below the manifold base No. When arrangement is complicated, specify the nos. by using a manifold specification form.

● See p.1-693 for replacement parts.

VQ1000

Body Ported

Plug Lead Unit/Flip Style

How to Order Manifold

VV5Q 1 4 — 08 F S1 — D — -Q

Series

1	VQ1000

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.)

Option

—	None (C kit only)
D (2)	DIN rail mounting
K (3)	Special wiring specification (Not double wiring)
N	With name plate
S (4)	Built-in silencer (Direct exhaust)

Note 1) When specifying more than one option, please list alphabetically. Example)-DNS

Note 2) F, P, T, and S kits are DIN rail mounting styles, so include suffix "-D".

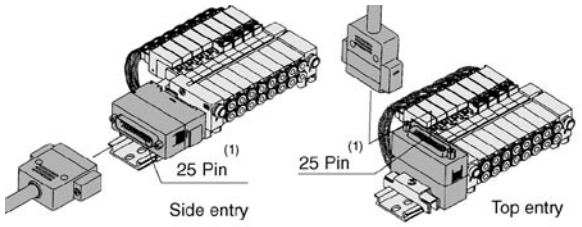
Note 3) Specify the wiring speifications by means of the manifold specification form. (Except for C kit.)

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.

—	One-touch fitting for ø6 P, R port
00T	One-touch fitting for ø1/4" P, R port

Kit/Electrical entry/Cable length

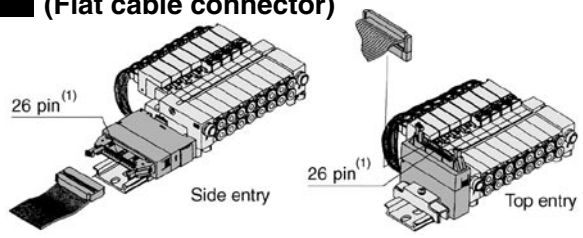
F Kit (D-sub connector)



P. 1-626

Connector location					
Top (vertical)		Side (horizontal)			
F kit	U0	F kit	S0	Without cable	Max.16 (2) stations
	U1		S1	With cable (1.5m)	
	U2		S2	With cable (3m)	
	U3		S3	With cable (5m)	

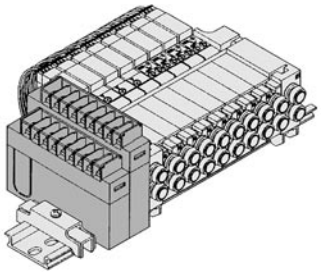
P Kit (Flat cable connector)



P. 1-630

Connector location					
Top (vertical)		Side (horizontal)			
P kit	U0	P kit	S0	Without cable	Max.16 (2) stations
	U1		S1	With cable (1.5m)	
	U2		S2	With cable (3m)	
	U3		S3	With cable (5m)	

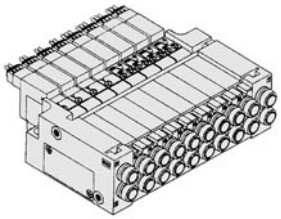
T Kit (Terminal block)



P.1-634

T kit	1	Number of terminals: 8, 1 row	Applicable stations: 1 to 4 stations
	2	Number of terminals: 16, 2 row	Applicable stations: 5 to 8 stations

C Kit (Connector)

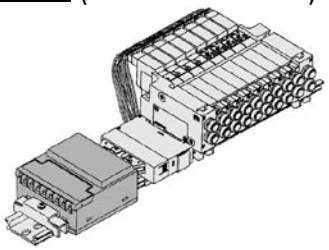


P.1-638

C	Connector	Max.16 stations

S Kit (Serial transmission unit)

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



P.1-642

S (3) Kit	B	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)	Max. (2) 16 stations
	C	SI unit for SYSBUS Wire System (OMRON)	
	N	SI unit for Profibus DP (4)	
	P	SI unit for Interbus (4)	
	Q	SI unit for Device Net and CompoBus/D (OMRON)	
	Y	SI unit for Can Open (4)	
	T2	SI unit for ASI (yellow+black wires) (4)	Max. 8
	T4	SI unit for ASI (yellow+black wires) (4)	Max. 4
	T5	SI unit for ASI (yellow wires) (4)	

Note 1) Besides the above, F and P kits with different number of pins are available. See p.1-656 for details.

Note 2) See p.1-657 for details.

Note 3) Consult SMC for the following serial transmission kits; Matsushita Electric Works Ltd., Allen-Bradley Co., Sunx, Fuji Electric Company Ltd., OMRON Corp..

Note 4) Available with EX121 kit.

How to Order Valve

VQ 1 [1] 4 [0] [Y] – [5] [L] [ ] – [C6] -Q

Series

1	VQ1000

Configuration

1	2 position single
2	2 position double(latching)
3 (1)	3 position closed centre
4 (1)	3 position exhaust centre
5 (1)	3 position pressure centre

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less
Order Made	Contact SMC for other voltages (9)

Function

Symbol	Specification
—	1.0W(0.7MPa Max. operating pressure
H	1.5W(0.8MPa Max. operating pressure
K (1)	1.0W(1.0MPa Max. operating pressure
Y	0.5W(0.7MPa Max. operating pressure
N	Negative common

* Only the following combination is possible.
HN, KN, YN
Note 1) Available only to metal seal type.

Seal

0	Metal
1	Rubber

See "Options" on p.1-657 for negative COM specifications.
F, P, T and S kits need connector ass'y when increasing the valve stations.
See "Options" on p.1-657.

Electrical entry

	VQ1000
G: Grommet C kit single only. (Except for AC.)	
L: L plug connector with lead wire	With indicator light and surge suppressor
LO: L plug connector without connector	With indicator light and surge suppressor
M: M plug connector with lead wire	With indicator light and surge suppressor
MO: M plug connector without connector	With indicator light and surge suppressor

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

Protective class
class III (Mark: ◈)

Cylinder ports

C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
M5	M5 thread
N1	One-touch fitting for ø1/8"
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4"
M5T	10-32 UNF thread

Manual override

—	B (1)	C
Non-locking push style	Push-locking slotted style	Push-locking lever style

A manual override for pilot valve is provided to the standard model for double style.

Manual override body side
Manual override for pilot valve

Manifold Options

P.1-649

Blank plate ass'y
VVQ1000-10A-4

Double check block
VQ1000-FPG-□□

P, R, PR Block valve VQ1[1,2,4][0,1]-□-□□-P, R, PR -Q

Individual SUP spacer
VVQ1000-P-4-C6

C6(SUP port)
One-touch fittings for ø6

DIN rail mounting bracket
VVQ1000-57A-4

Port plug
VVQ0000-58A

Individual EXH spacer
VVQ1000-R-4-C6

C6(EXH port)
One-touch fittings for ø6

Built-in silencer, Direct exhaust [-S]

Exhaust port

Blank plug KQ2P-[23][04,06]-00

Name plate [-N4]
VVQ1000-N4-Station (1 to Max. stations)

Silencer (EXH port)
AN103-X233

How to Order Manifold Ass'y (Example)

Ordering example

Single solenoid (24V DC)
VQ1140-5LO-C6(4 sets)
Double solenoid (24V DC)
VQ1240-5LOB-C6(4 sets)
U side
Stations
D side
1 2 3
3m
D-sub connector cable
F kit (D-sub connector)
Cylinder ports
C6: With one-touch fitting for ø6
Manifold base (8 stations)
VV5Q14-08FU2-D

VV5Q14-08FU2-D-Q···1 set (F kit 8 station manifold base No.)
VQ1140-LO-C6-Q··· 4 sets (Single solenoid No.)
VQ1240-5LOB-C6-Q···4 sets (Double solenoid No.)

Specify valve and option nos. below the manifold base No. When arrangement is complicated, specify the nos. by using a manifold specification form.

● **See p1-695 for replacement parts.**

VQ2000

Body Ported

Plug Lead Unit/Flip Style

How to Order Manifold

VV5Q 2 4 — 08 F S1 — D — -Q

Series

2	VQ2000

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.)

Option

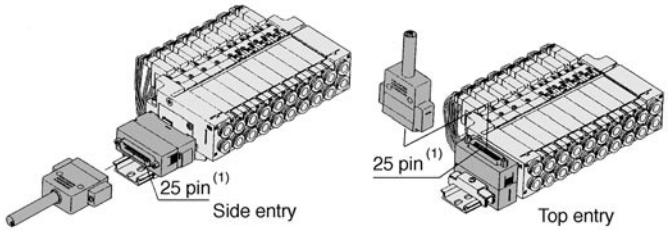
—	None (C kit only)
D (2)	DIN rail mounting
K (3)	Special wiring specification (Not double wiring)
N	With name plate
S (4)	Built-in silencer (Direct exhaust)

Note 1) When specifying more than one option, please list alphabetically. Example)-DNS
Note 2) F, P, T, and S kits are DIN rail mounting styles, so include suffix "-D".
Note 3) Specify the wiring speifications by means of the manifold specification form. (Except for 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.

—	One-touch fitting for ø6 P, R port
00T	One-touch fitting for ø1/4" P, R port

Kit/Electrical entry/Cable length

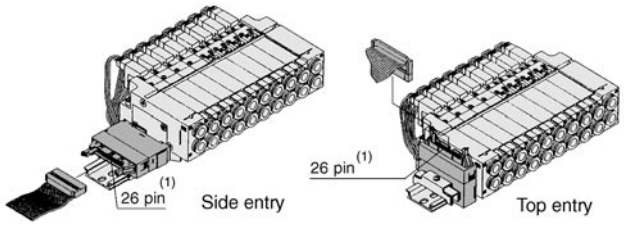
F Kit (D-sub connector)



P.1-626

Connector location					
Top (vertical)		Side (horizontal)			
F kit	U0	F kit	S0	Without cable	Max.16 (2) stations
	U1		S1	With cable (1.5m)	
	U2		S2	With cable (3m)	
	U3		S3	With cable (5m)	

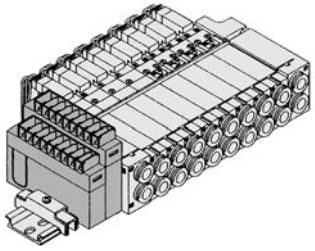
P Kit (Flat cable connector)



P. 1-630

Connector location					
Top (vertical)		Side (horizontal)			
P kit	U0	P kit	S0	Without cable	Max.16 (2) stations
	U1		S1	With cable (1.5m)	
	U2		S2	With cable (3m)	
	U3		S3	With cable (5m)	

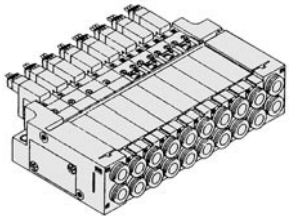
T Kit (Terminal block)



P.1-634

T kit	1	Number of terminals: 8, 1 row	Applicable stations: 1 to 4 stations
	2	Number of terminals: 16, 2 row	Applicable stations: 5 to 8 stations

C Kit (Connector)

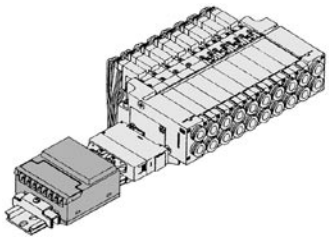


P. 1-638

C	Connector	Max. 16 stations

S Kit (Serial transmission unit)

The valve is equipped with a light/surge voltage suppressor and the voltage is 24V DC.



P. 1-642

S (3) Kit	B	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)	Max. (2) 16 stations
	C	SI unit for SYSBUS Wire System (OMRON)	
	N	SI unit for Profibus DP (4)	
	P	SI unit for Interbus (4)	
	Q	SI unit for Device Net and CompoBus/D (OMRON)	
	Y	SI unit for Can Open (4)	
	T2	SI unit for ASI (yellow+black wires) (4)	Max. 8
	T4	SI unit for ASI (yellow+black wires) (4)	Max. 4
	T5	SI unit for ASI (yellow wires) (4)	

Note 1) Besides the above, F and P kits with different number of pins are available. See p.1-656 for details.
Note 2) See p.1-657 for details.
Note 3) Consult SMC for the following serial transmission kits; Matsushita Electric Works Ltd., Allen-Bradley Co., Sunx, Fuji Electric Company Ltd., OMRON Corp..
Note 4) Available with EX121 kit.

How to Order Valve

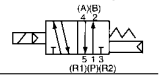
VQ 2 1 4 0 Y 5 L C6

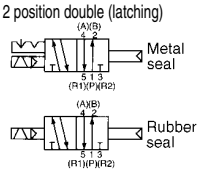
Series

2	VQ2000

Configuration

1	2 position single
2	2 position double (latching)





Seal

0	Metal
1	Rubber

Note 1) F, P, T and S kits need conector ass'y when adding the valve station.

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Function

Symbol	Specification
—	1.0W(0.7MPa Max. operating pressure
H	1.5W(0.8MPa Max. operating pressure
K (1)	1.0W(1.0MPa Max. operating pressure
Y	0.5W(0.7MPa Max. operating pressure
N	Negative common

* Only the following combination is possible.
HN, KN, YN
Note 1) Available only to metal seal type.

Electrical entry

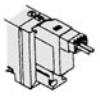
	VQ2000	
G: Grommet C kit single only. (Except for 100VAC.)		
L: L plug connector with lead wire		With indicator light and surge suppressor
LO: L plug connector without connector		With indicator light and surge suppressor
M: M plug connector with lead wire		With indicator light and surge suppressor
MO: M plug connector without connector		With indicator light and surge suppressor

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

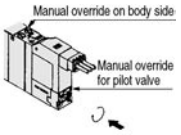
Cylinder ports

C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"

Manual override

—	B	C
Non-locking push style	Push-locking slotted style	Push-locking lever style
		

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

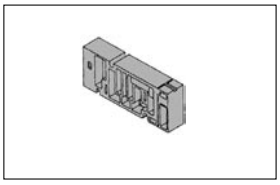


Protective class class III (Mark:⟨⟩)

Manifold Options

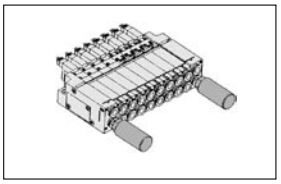
P.1-651

Blank plate ass'y
VVQ2000-10A-4

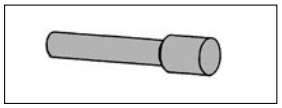


Name plate [-N4]
VVQ2000-N4-Station (1 to Max. stations)

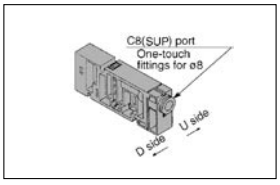
Silencer (EXH port)
AN200-KM8



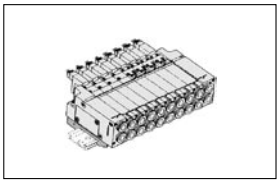
Blank plate KQ2P-$^{06}_{08}$-00



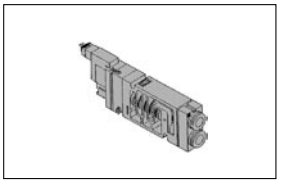
Individual SUP spacer
VVQ2000-P-4-C8



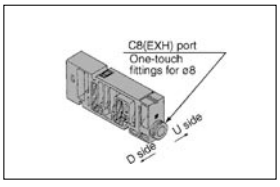
DIN rail mounting bracket
VVQ2000-57A-4



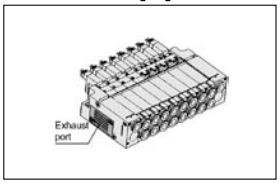
P R PR Block valve VQ2$^{1}_{2}$4$^{0}_{1}$-□-□□-$^{P}_{R}$$_{PR}$-Q



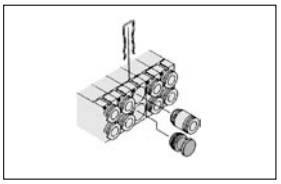
Individual EXH spacer
VVQ2000-R-4-C8



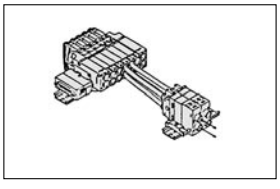
Built-in silencer,
Direct exhaust [-S]



Port plug
VVQ1000-58A



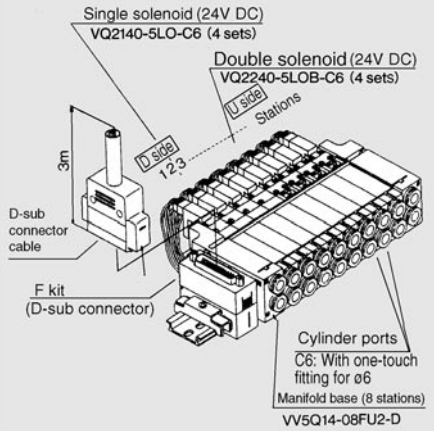
Double check block
VQ2000-FPG-□□



● **See p.1-697 for replacement parts.**

How to Order Manifold Ass'y (Example)

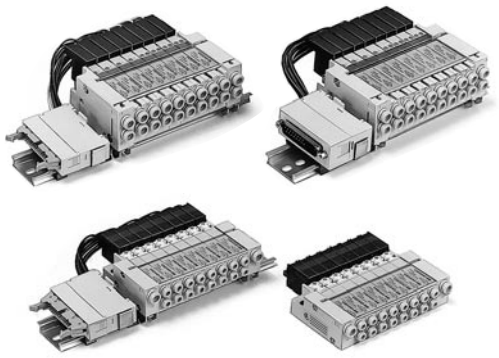
Ordering example



VV5Q24-08FU2-D ····· 1 set (F kit 8 station manifold base No.)
VQ2140-5LO-C6 ····· 4 sets (Single solenoid No.)
VQ2240-5LOB-C6 ··· 4 sets (Double solenoid No.)

Specify valve and option nos. below the manifold base No. When arrangement is complicated, specify the nos. by using a manifold specification form.

VQ0000 /1000 /2000 Body Ported
Plug Lead Unit/Flip Style



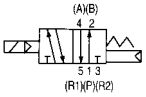
Model

Series	Conflguration		Model		Effective area (1) (mm²) (Nℓ/min)	Response time (2) ms Standard: 1W H: 1.5W	Weight (g)
VQ0000	2 position	Single	Metal seal	VQ0140	2.7 (147.23)	12 or less	35
			Rubber seal	VQ0141	3.6 (196.3)	15 or less	
		Double (latching)	Metal seal	VQ0240	2.7 (147.23)	12 or less	
			Rubber seal	VQ0241	3.6 (196.3)	15 or less	
	3 position	Closed centre	Metal seal	VQ0340	1.9 (107.97)	20 or less	105
			Rubber seal	VQ0341	2.7 (147.23)	25 or less	
		Exhaust centre	Metal seal	VQ0440	1.9 (107.97)	20 or less	
			Rubber seal	VQ0441	2.7 (147.23)	25 or less	
VQ1000	2 position	Single	Metal seal	VQ1140	4.5 (245.38)	12 or less	57
			Rubber seal	VQ1141	6.3 (343.53)	15 or less	
		Double (latching)	Metal seal	VQ1240	4.5 (245.38)	12 or less	
			Rubber seal	VQ1241	6.3 (343.53)	15 or less	
	3 position	Closed centre	Metal seal	VQ1340	4.5 (245.38)	20 or less	
			Rubber seal	VQ1341	6.3 (343.53)	25 or less	
		Exhaust centre	Metal seal	VQ1440	4.5 (245.38)	20 or less	
			Rubber seal	VQ1441	6.3 (343.53)	25 or less	
		Pressure centre	Metal seal	VQ1540	4.5 (245.38)	20 or less	
			Rubber seal	VQ1541	6.3 (343.53)	25 or less	
VQ2000	2 position	Single	Metal seal	VQ2140	14.6 (795.02)	22 or less	103
			Rubber seal	VQ2141	16.2 (883.35)	24 or less	
		Double (latching)	Metal seal	VQ2240	14.6 (795.02)	22 or less	
			Rubber seal	VQ2241	16.2 (883.35)	24 or less	

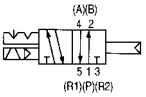
Note 1) Cylinder port size C4: (VQ0000), C6: (VQ1000), C8: (VQ2000)
Note 2) As per JISB8375-1981 (supply pressure: 0.5MPa; with indicator light and surge voltage suppressor; clean air) Subject to the pressure and air quality.

JIS Symbol

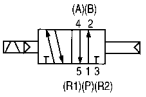
2 position single



2 position double (latching)

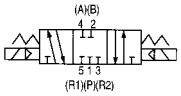


Metal seal

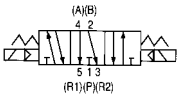


Rubber seal

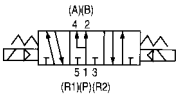
3 position closed centre



3 position exhaust centre



3 position pressure centre



Standard Specifications

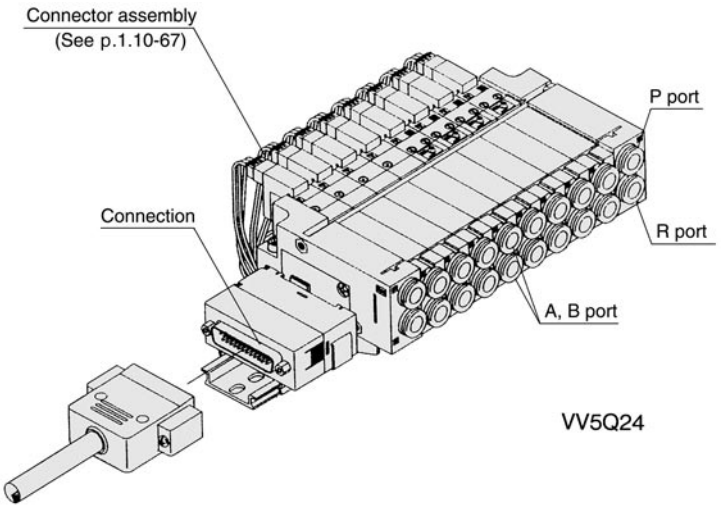
Valve	Seal		Metal seal	Rubber seal
	Fluid		Air/Inert gas	Air/inert gas
	Max. operating pressure		0.7MPa (High pressure: 0.8MPa) (3)	
	Min. operating pressure	Single	0.1MPa	0.15MPa
		Double (Latching)	0.18MPa	0.18MPa
		3 position	0.15MPa	0.2MPa
	Ambient and fluid temperatue		–10 to 50˚C (1)	
	Lubrication		Not required	
	Manual override		Non-locking push style/Push-locking slotted, lever styles (option)	
	Impact/Vibration resistance (2)		150/30m/s²	
	Protection structure		Dust proof	
Solenoid	Coil rated voltage		12V, 24V DC	
	Allowable voltage		±10% of rated voltage	
	Coil insulation		Class B or equivalent	
	Power consumption (Current value)	24V DC	1WDC (42mA) 1.5WDC (63mA) (3), 0.5WDC (21mA) (4)	
		12V DC	1WDC (83mA), 1.5WDC (125mA) (3), 0.5WDC (42mA) (4)	

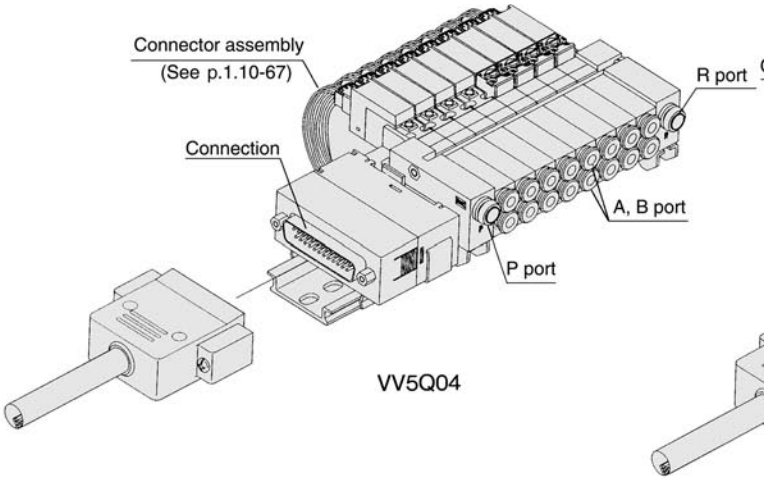
Note 1) Use dry air to prevent condensation when operationg at low temperatures.
Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, for both energized states.
Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz. Test was performed at both energized and de-energized states to the axis and right angle directions of the main valve and armature. (Valve in the initial stage.)
Note 3) Values in case of high pressure style (1.5W).
Note 4) Values in case of low wattage (0.5W) specification.

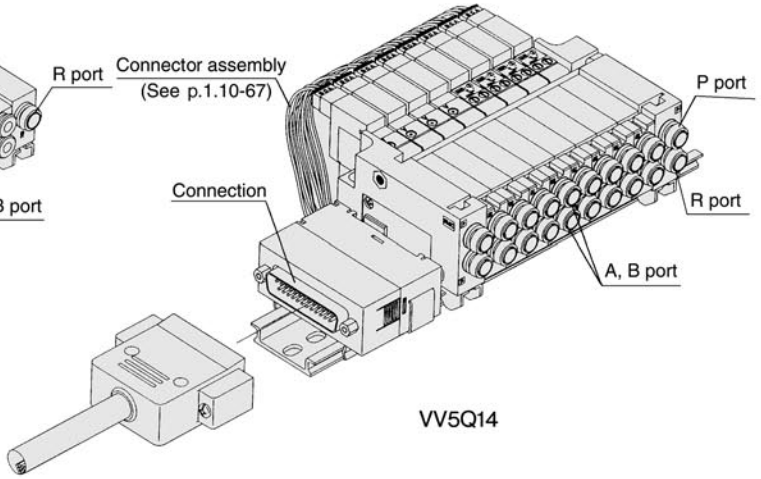
Manifold Specifications

Series	Base model	Electrical connection	Porting specifications			Applicable stations (2)	Applicable solenoid valve	5 station weight (g)
			Port location	One-touch fitting/Port size (1)				
				P, R	A, 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

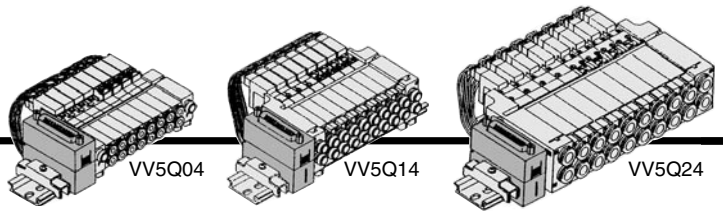
Note 1) Inch-size One-touch fittings are also applicable. See p.1-657 for details.
Note 2) See p.1-657 for details.







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



- The D-sub connector reduces installation labour for electrical connection.
- The D-sub connector (25 pin std., 15 pin option) conforms with MIL permitting use of commercial connectors with wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Max. 16 stations.

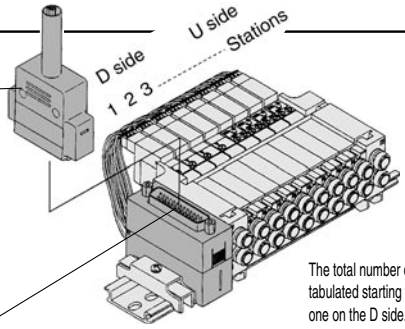
Manifold Specifications VV5Q14

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

D-sub connector (25 pin)

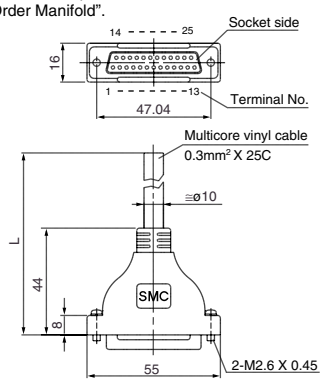
AXT100-DS25-$^{015}_{030}$ $^{}_{050}$

Cable Assembly



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

(The D-sub connector cable ass'y can be ordered individually or included in a specific manifold model No. Refer to "How to Order Manifold".)



D-sub connector cable ass'y (Option)

Cable Length (L)	Ass'y No.
1m	GVVZS3000-21A-1
3m	GVVZS3000-21A-2
5m	GVVZS3000-21A-3
8m	GVVZS3000-21A-4
20m	GVVZS3000-21A-5S

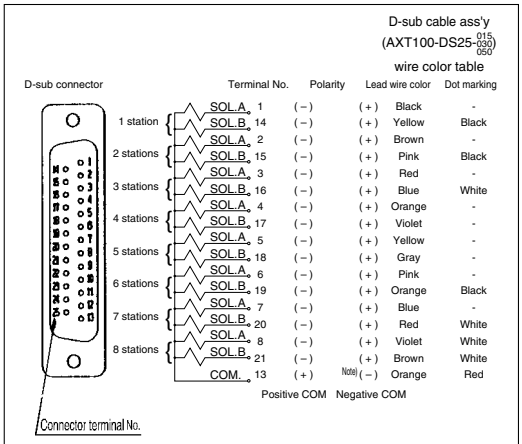
Electric characteristics

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

Wire colour table by terminal number of D-sub connector cable assembly:

Terminal No.	Lead wire colour	Dot marking
1	Black	–
2	Brown	–
3	Red	–
4	Orange	–
5	Yellow	–
6	Pink	–
7	Blue	–
8	Violet	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	Violet	–
18	Gray	–
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	–

Electrical Wiring Specifications



Irrespective of the valves or options, the internal wiring is made double (connected to SOL. A and SOL. B) for respective stations of the manifold. The optional specification permits mixture of single and double wiring. See p.1-657 for datails.

Note) Use negative COM valves for negative COM specification manifolds. (See p.1-657)

How to Order Manifold

VV5Q 1 4 – 08 F S 1 – D – Q

Series

0	VQ0000
1	VQ1000
2	VQ2000

Manifold

4	Plug lead unit/Flip

Stations

01	1 station
⋮	⋮
16	16 stations

See p.1-657 for details.

Cable (length)

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

Connector location

U	Top (vertical)
S	Side (horizontal)

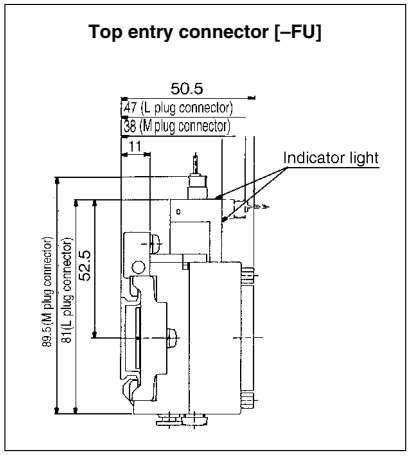
Option

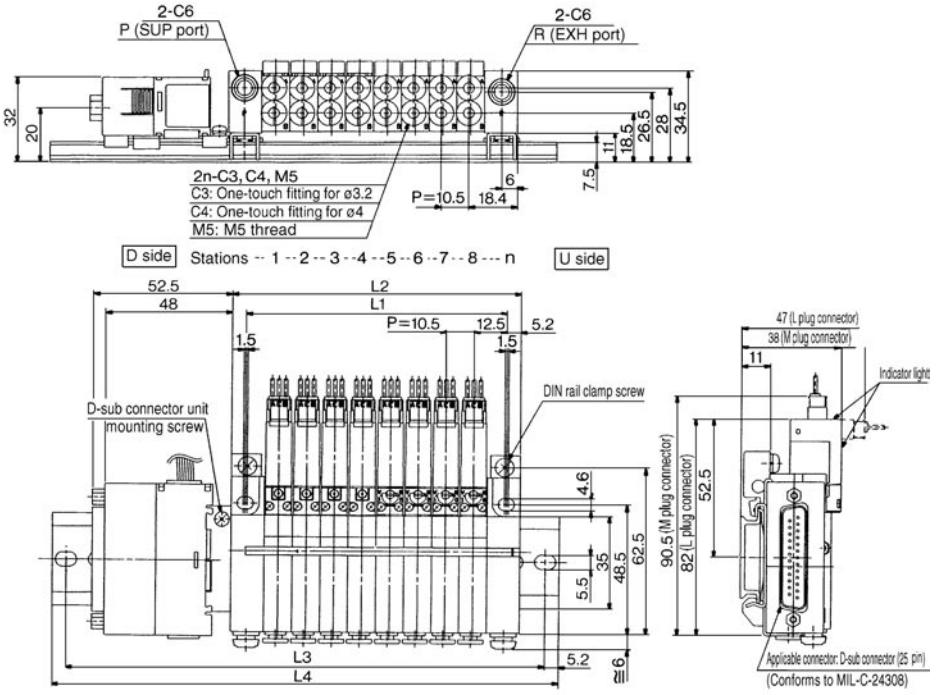
Symbol	Option
D (2)	DIN rail mounting
K	Special wiring specification (Not double wiring)
N	With name plate
S	Built-in silencer {Direct exhaust (U side only)}

Note 1) When specifying more than one option, please list alphabetically. Example) -DNS

Note 2) Specify the wiring specifications by means of the manifold specification form.

VQ0000





Note 1) Built-in silencers are equipped with a 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

n: Station
Max. 16 stations

Dimensions/Side entry connector [–FS] (mm)

Equation= L1=10.5n+14.5, L2=10.5n+25

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] (mm)

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 Valve

VQ 1 1 4 0 Y – 5 LO [ ] – C6 -Q

Series

0	VQ0000
1	VQ1000
2	VQ2000

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification	DC
–	Standard	(1.0W) ○
H(1)	High pressure	(1.5W) ○
Y(1)	Low wattage	(0.5W) ○

Note 1) Except for double (latching).

Configuration

		VQ0000	VQ1000	VQ2000
1	2 position single	●	●	●
2	2 position double (latching)	●	●	●
3	3 position closed centre	●(1)	●	–
4	3 position exhaust centre	●(1)	●	–
5	3 position pressure centre	–	●	–

Note 1) Two stations required.

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Cylinder ports

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

Note) See "Options" on p.1-657 for inch-size One-touch fittings.

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

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

Electrical entry

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

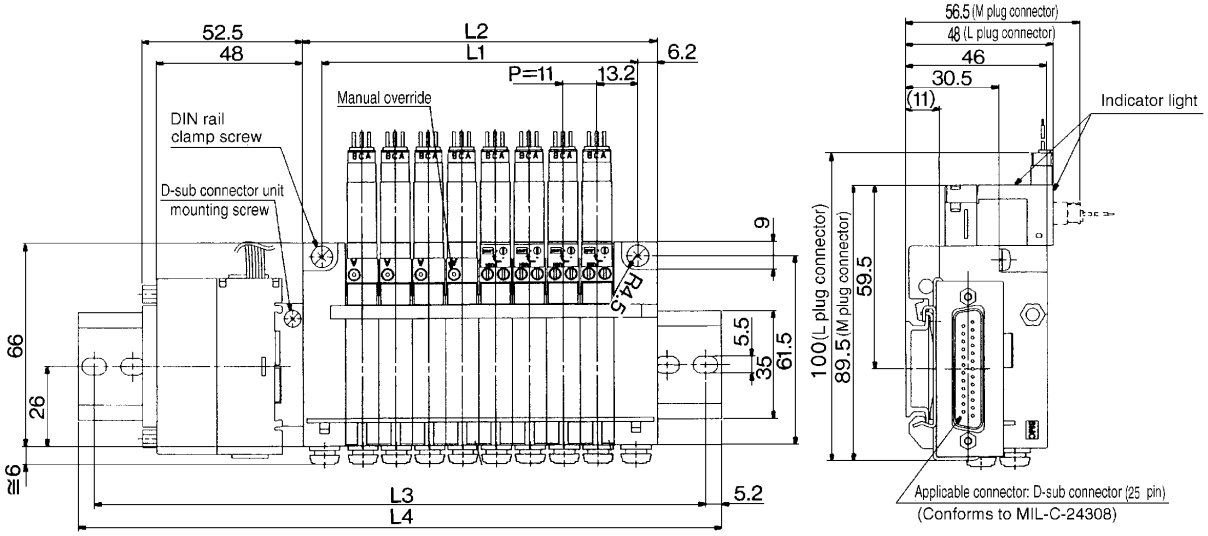
Plug connector and lead wire layers are attached to the manifold.

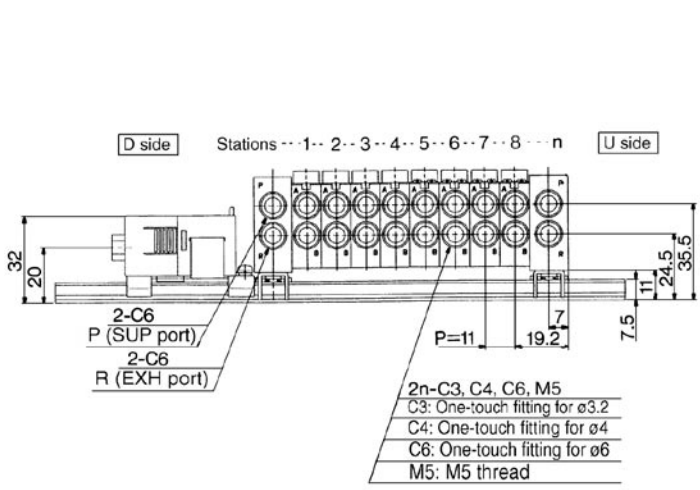
How to Order Manifold Ass'y

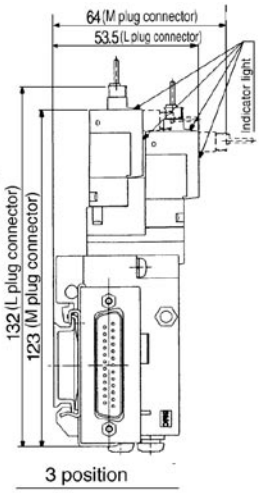
Specify valve and option nos. below the manifold base No.

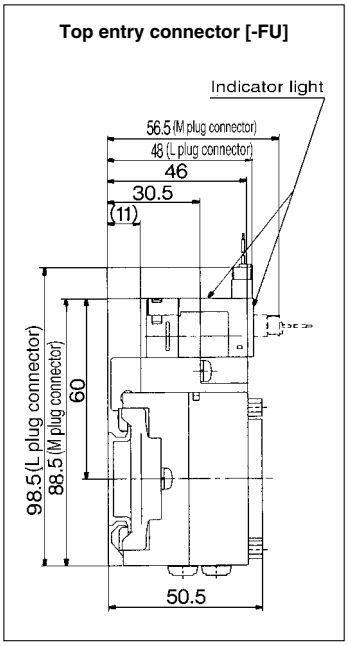
Note 1) See "Options" on p.1-657 for negative COM specification.
Note 2) Connector ass'y is necessary for F kits when increasing the valve station. See "Options" on p.1-657 for parts nos.

VQ1000









Dimensions/Side entry connector [–FS] (mm)

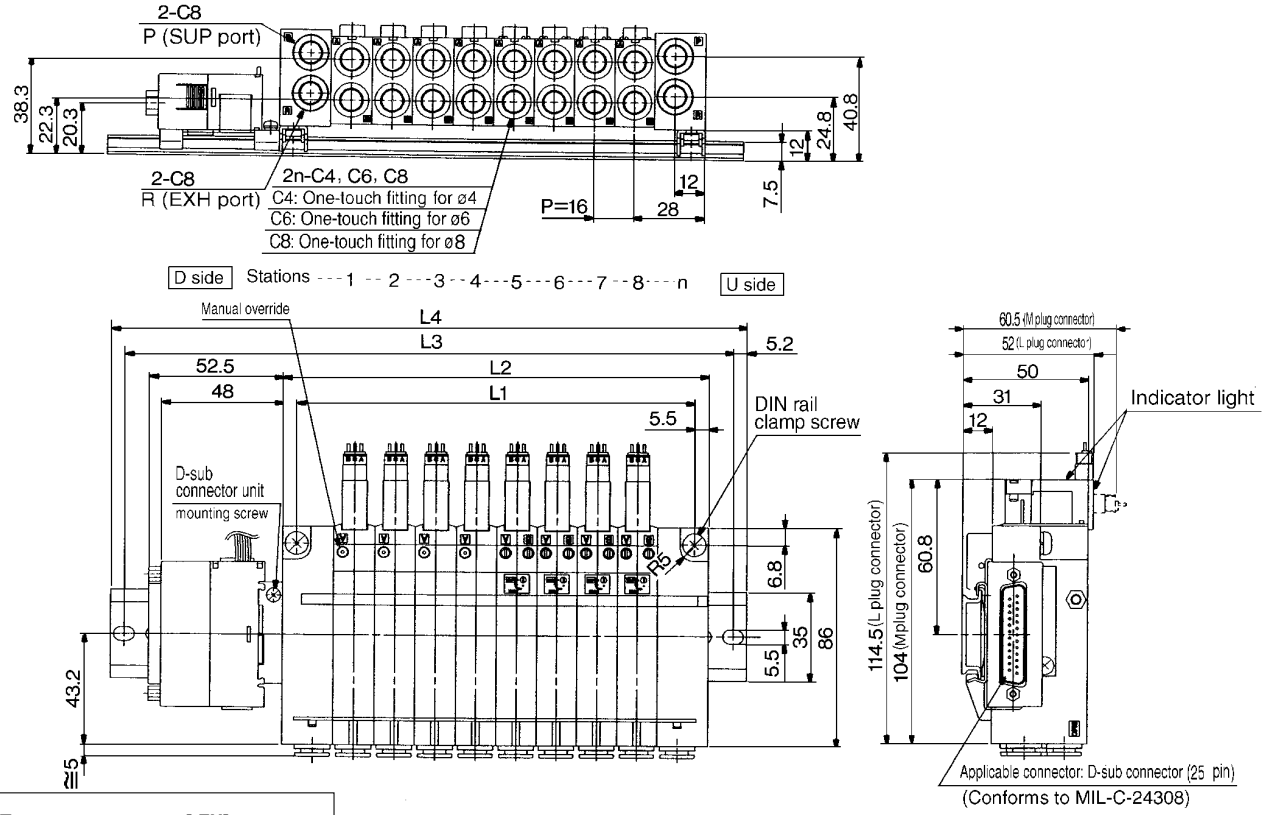
Equation= $\frac{L1=11n+15.5}{L2=11n+28}$ n: Station (Max. 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	26.5	37.5	48.5	59.5	70.5	81.5	92.5	103.5	114.5	125.5	136.5	147.5	158.5	169.5	180.5	191.5
L2	39	50	61	72	83	94	105	116	127	138	149	160	171	182	193	204
L3	112.5	125	137.5	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	262.5	275	287.5
L4	123	135.5	148	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5	273	285.5	298

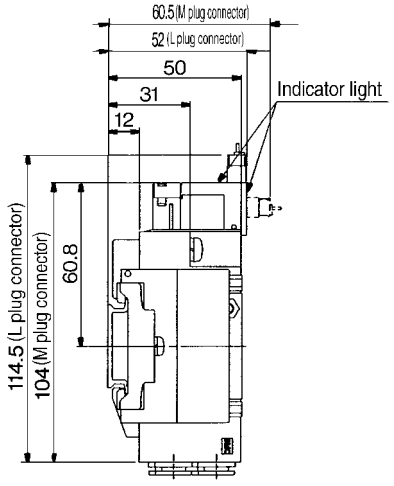
Dimensions/Top entry connector [–FU] (mm)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L3	100	112.5	125	137.5	137.5	150	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5
L4	110.5	123	135.5	148	148	160.5	173	185.5	198	210.5	223	235.5	235.5	248	260.5	273

VQ2000



Top entry connector [-FU]



Dimensions/Side entry connector [–FS] (mm)

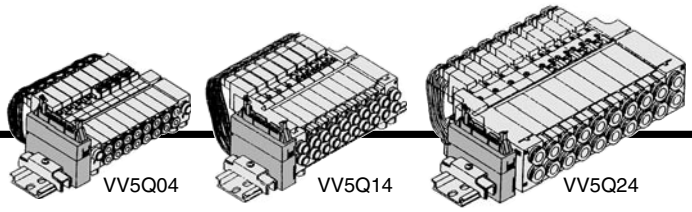
Equation= L1=16n+29, L2=16n+40 n: Station (Max. 16 stations)

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

Dimensions/Top entry connector [–FU] (mm)

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

P VQ0000/1000/2000
Kit (Flat Cable Connector)



- MIL flat cable connector reduces installation labour for electrical connection.
- The connector (26 pin; 10, 16, and 20 pin option) comforms with MIL spec. permitting use of widely interchangeable commercial connectors.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Max. 16 stations.

Manifold Specifications

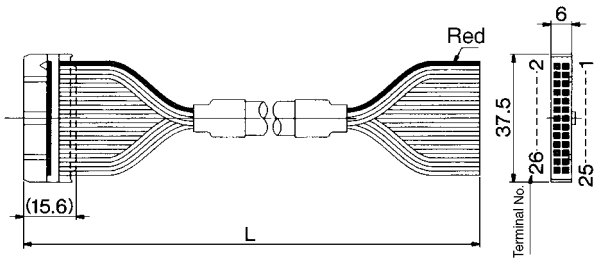
Series	Porting specifications			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ0000	Side	C6	C3, C4, M5	Max. 16
VQ1000	Side	C6	C3, C4, C6, M5	Max. 16
VQ2000	Side	C8	C4, C6, C8	Max. 16

Flat cable (26 pin)

Cable Assembly

AXT100–FC26–1 to 3

(Flat cable connector ass'y can be ordered individually or included in a specific manifold model no. refer to "How to Order Manifold".)

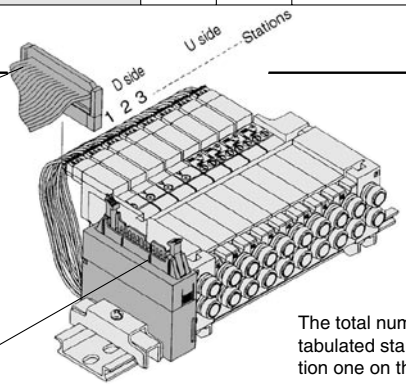


Flat cable connector assembly (Option)

Cable length (L)	Ass'y parts No.	Note
1.5m	AXT100-FC26-1	Cable 26 core X 28AWG
3m	AXT100-FC26-2	
5m	AXT100-FC26-3	

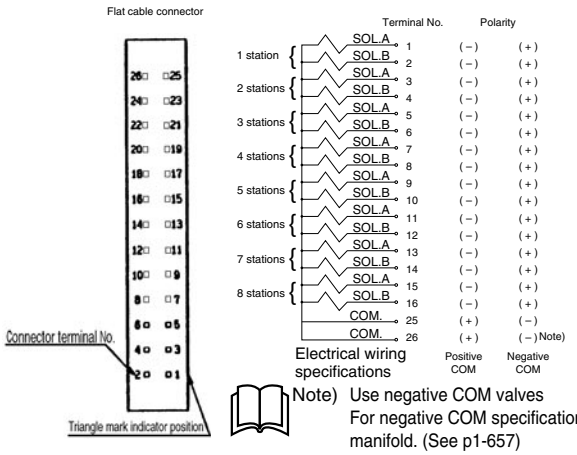
* For other commercial connectors, use 26 pin with strain relief made in conformity with MIL-C-83503.

Note) Types with 10, 16, or 20 pins are also available. See p.1-657 for details.



VV5Q14
The total number of stations is tabulated starting from one station one on the D side.

Electrical Wiring Specifications



Note) Use negative COM valves For negative COM specification manifold. (See p1-657)

Irrespective of the valves or options, the internal wiring is made double (connected to SOL. A and SOL.B) for respective stations of the manifold. The optional specification permits mixture of single and double wiring. See p1-657 for details.

How to Order Manifold

VV5Q 1 4 – 08 P S 1 – D – Q

Series

0	VQ0000
1	VQ1000
2	VQ2000

Manifold

4	Plug lead unit/Flip

Station

01	1 station
⋮	⋮
16	16 stations

Note) See p.1-657 for details.

Connector location

U	Top (vertical)
S	Side (horizontal)

Cable (length)

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

Option

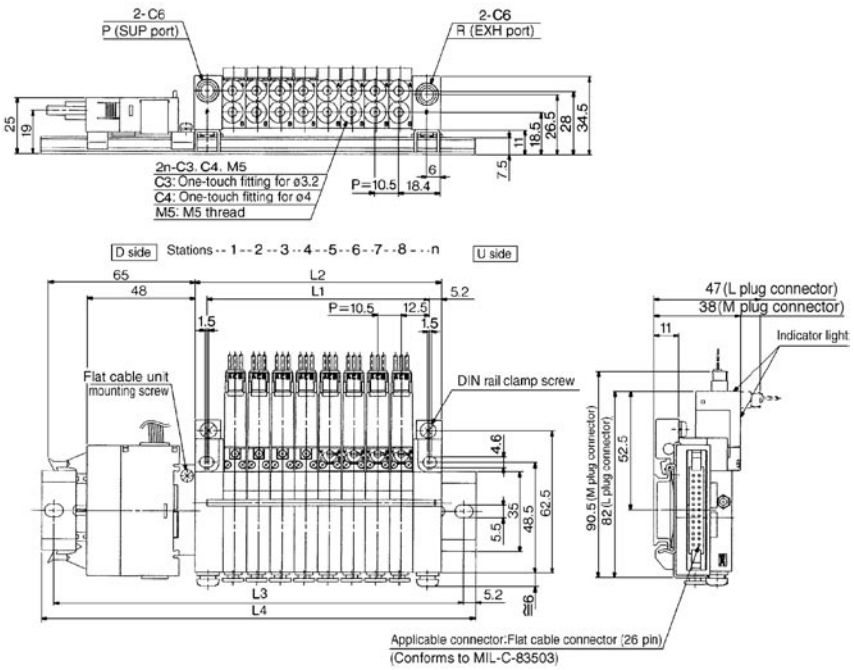
D(2)	DIN rail mounting
K(3)	Special wiring specification (Not double wiring)
N	With name plate
S	Built-in silencer {Direct exhaust (U side only)}

Note 1) When specifying more than one option, please list alphabetically. Example) -DNS

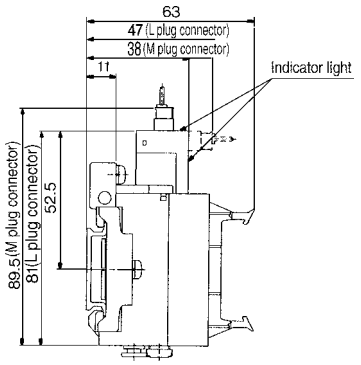
Note 2) P kits are DIN rail mounting styles, so include suffix "-D"

Note 3) Specify the wiring specifications by means of the manifold specification form.

VQ0000



Top entry connector [-PU]



Note 1) Built-in silencer styles are equipped with a 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] (mm)

Equation= L1=10.5n+14.5, L2=10.5n+25 (n: Station, Max. 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] (mm)

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 Valve

VQ 1 1 4 0 Y – 5 LO ☐ – C6 -Q

Series

0	VQ0000
1	VQ1000
2	VQ2000

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H (1)	High pressure	(1.5W) ○
Y (1)	Low wattage	(0.5W) ○

Note 1) Except for double (latching).

Configuration

		VQ0000	VQ1000	VQ2000
1	2 position single	●	●	●
2	2 position double (latching)	●	●	●
3	3 position closed centre	● (1)	●	–
4	3 position exhaust centre	● (1)	●	–
5	3 position pressure centre	–	●	–

Note 1) Two stations required.

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made: Contact SMC for other voltages (9)

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 ports

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

Note) See "Options" on p.1-657 for inch-size One-touch fittings.

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

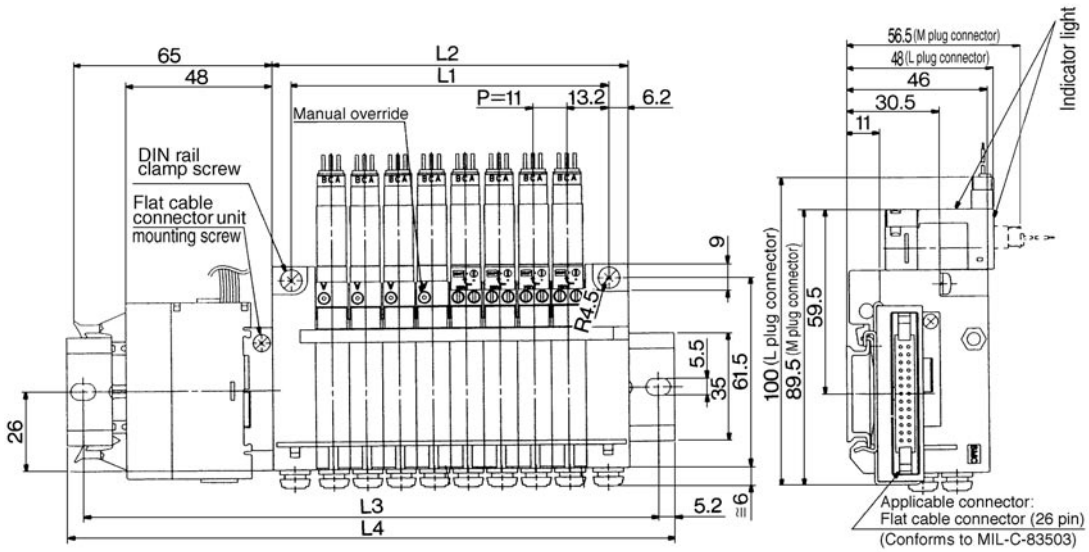
Note 1) All double latching valves of VQ0000 are non-locking push style.
Note 2) A manual override for pilot valve is provided to the standard model for double style.

How to Order Manifold Ass'y

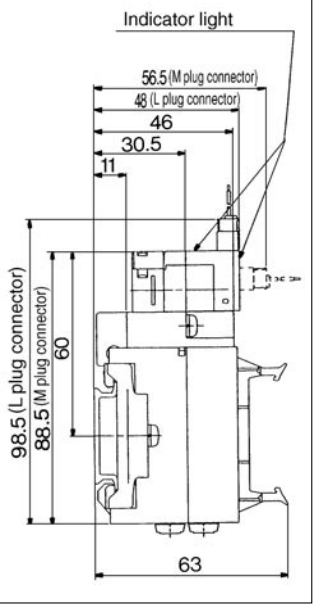
Specify valve and option nos. below the manifold base No.

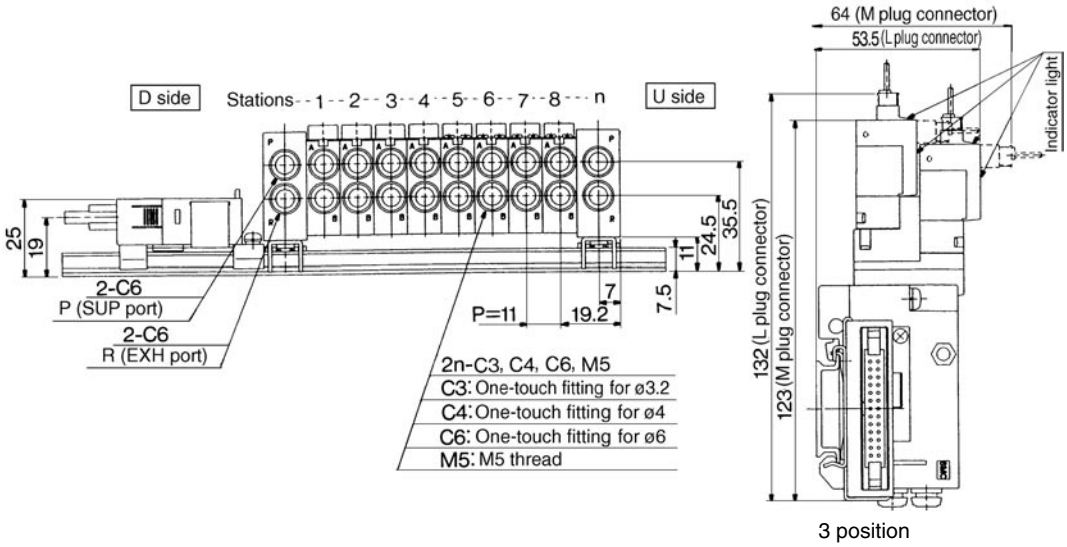
Note 1) See "Options" on p.1-657 for negative COM specification.
Note 2) Connector ass'y is necessary for P kit when increasing the valve station. See "Options" on p.1-657 for parts nos.

VQ1000



Top entry connector [–PU]





3 position

Dimensions/Side entry connector [–PS] (mm)

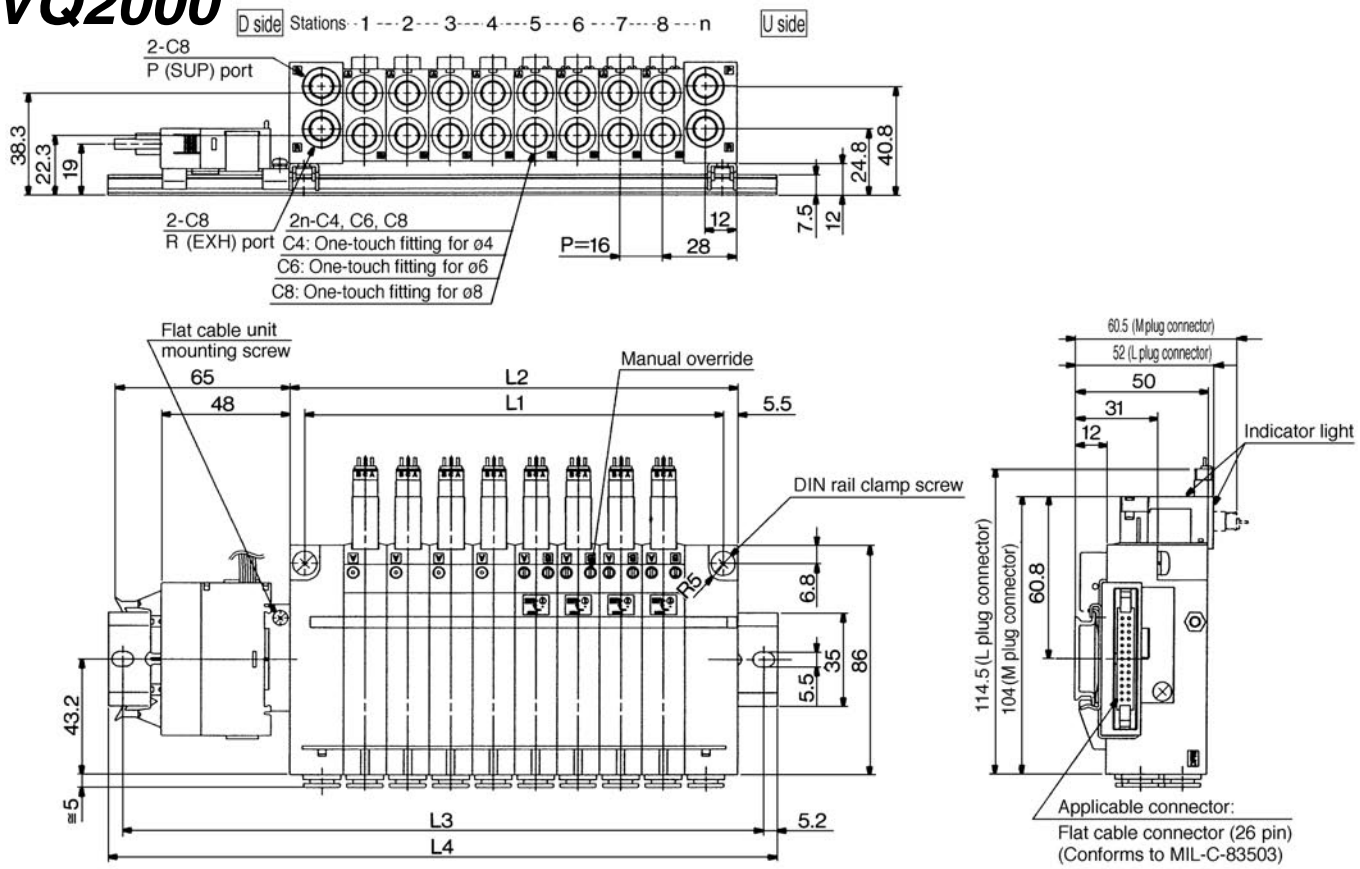
Equation= L1=11n+15.5, L2=11n+28 n: Station (Max. 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	26.5	37.5	48.5	59.5	70.5	81.5	92.5	103.5	114.5	125.5	136.5	147.5	158.5	169.5	180.5	191.5
L2	39	50	61	72	83	94	105	116	127	138	149	160	171	182	193	204
L3	112.5	125	137.5	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	262.5	275	287.5
L4	123	135.5	148	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5	273	285.5	298

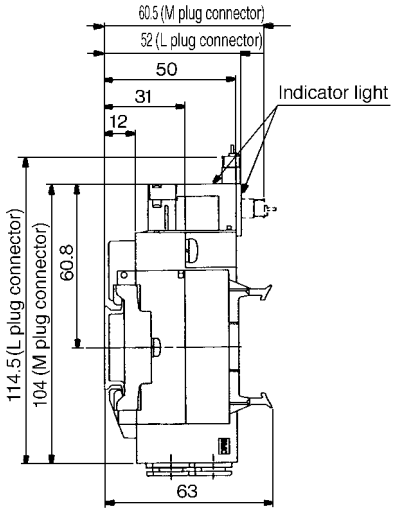
Dimensions/Top entry connector [–PU] (mm)

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	137.5	150	162.5	162.5	175	187.5	200	212.5	225	237.5	250	262.5
L4	98	110.5	123	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	248	260.5	273

VQ2000



Top entry connector [–PU]



Dimensions/Side entry connector [-PS] (mm)

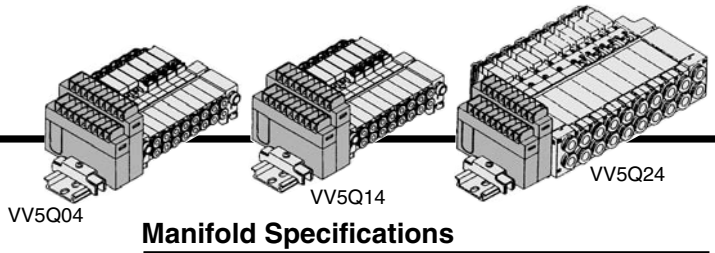
Equation L1=16n+29 L2=16n+40 n: Station (Max. 16)

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

Dimensions/Side entry connector [-PU] (mm)

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

T VQ0000/1000/2000
Kit (Terminal Block)

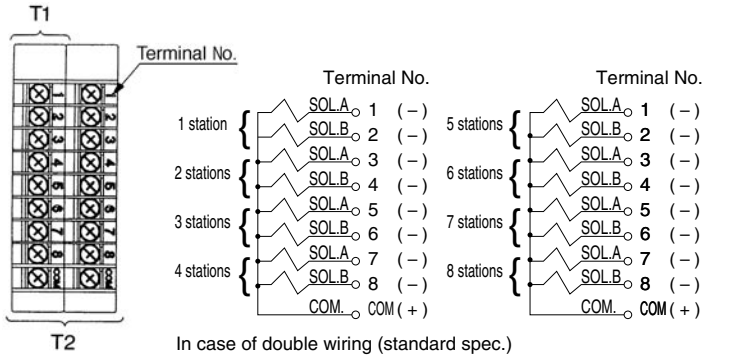


- It is a standerd terminal block style.
- Two quantities of terminals can be selected in accordance with the number of stations. (8 terminals/16 terminals)
- Max. 16 stations

Manifold Specifications

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

● Electrical Wiring Specifications



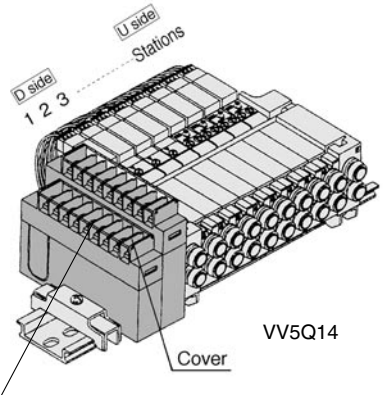
In case of double wiring (standard spec.)
T1 (Terminal block of 1 row): 1 to 4 stations
T2 (Terminal block of 2 rows): 5 to 8 stations
T1 and T2 can be optionally chosen by adopting the combinations of single and double wiring (optional spec.), etc.

The quanitity 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. See p.1-657 for details.

Irrespective of the valves or options, the internal wiring is made double (connected to SOL. A and SOL. B) for respective stations of the manifold. The optional specification permits mixture of single and double wiring. See p.1-657 for details.



● How to connect wires to terminal block

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

How to Order Manifold

VV5Q 1 4 – 08 T 2 – D – Q

Series

0	VQ0000
1	VQ1000
2	VQ2000

Manifold

4	Plig lead unit/Flip

Stations

01	1 station
⋮	⋮
16	16 stations

Note 1) See "Options" on p.1-657 for negative COM specifications.
Note 2) As option, the max.number of stations can be increased based on specialwiring specifications. See p.1-657 for details.

Option

D (2)	DIN rail mounting
K (3)	Special wiring specification (Not double wiring)
N	With name plate
S	Built-in silencer {Direct exhaust (U side only)}

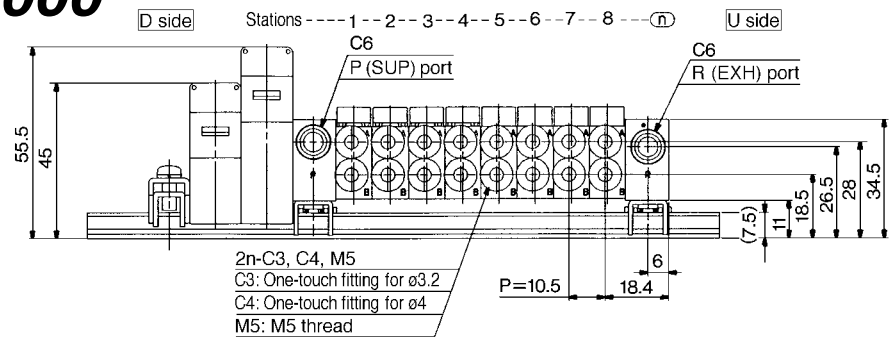
Note 1) When specifying more than one option, please list alphabetically.
Example) -DNS
Note 2) T kits are DIN rail mounted type, so include suffix "–D"
Note 3) Specify the wiring specifications by means of the manifold specification form.

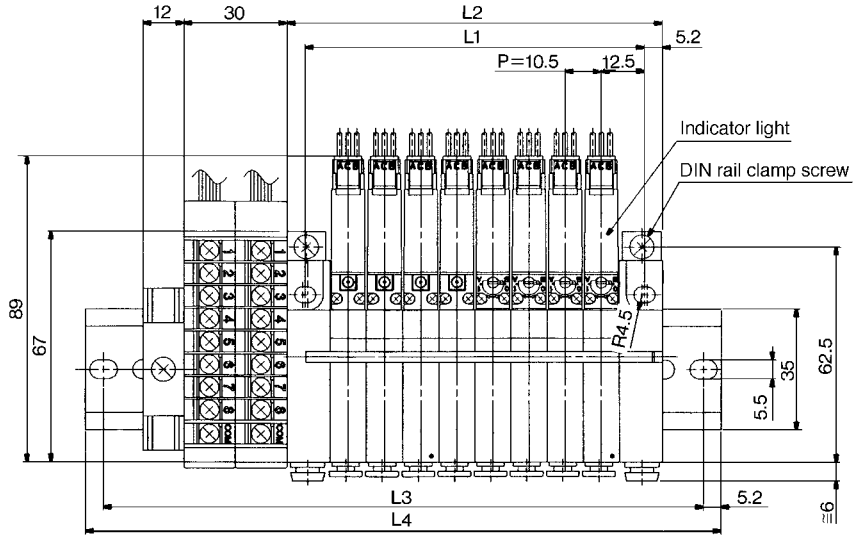
Number of terminals

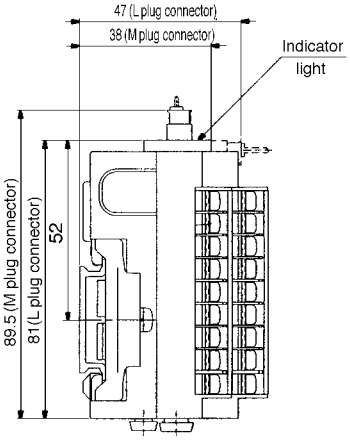
1	8 terminals in 1 row	1 to 4 stations (double), 8 stations (single)
2	16 terminals in 2 rows	5 to 8 stations (double), 16 stations (single)

Note) The number of terminal blocks can be chosen regard-less of station qty. Suffix the option symbol, "K", whenthe wiring specification is special.

VQ0000







This DWG shows the case of VV5Q04–□T2–D□.

Note 1) Built-in silencer styles are equipped with a 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 (mm)

Equation L1=10.5n+14.5 L2=10.5n+25 n: Station (Max. 16)

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 Valve

VQ 1 1 4 0 Y – 5 LO □ – C6 -Q

Series

0	VQ0000
1	VQ1000
2	VQ2000

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H (2)	High pressure	(1.5W) ○
Y (2)	Low wattage	(0.5W) ○

Note 2) Except for double (latching).

Configuration

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

Note 1) Two stations required.

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Cylinder ports

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

Note) See "options" on p.1-657 for inch size One-touch fittings.

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

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

Electrical entry

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

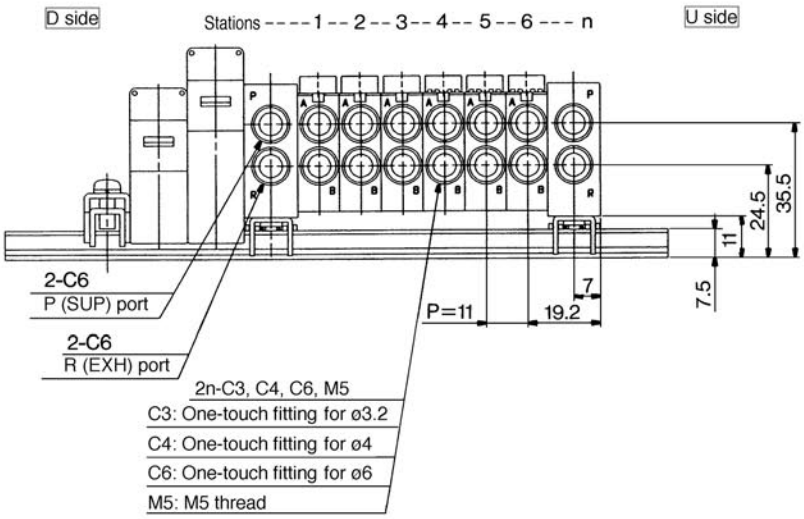
Note) Plug connector and lead wire layers are attached to the manifold.

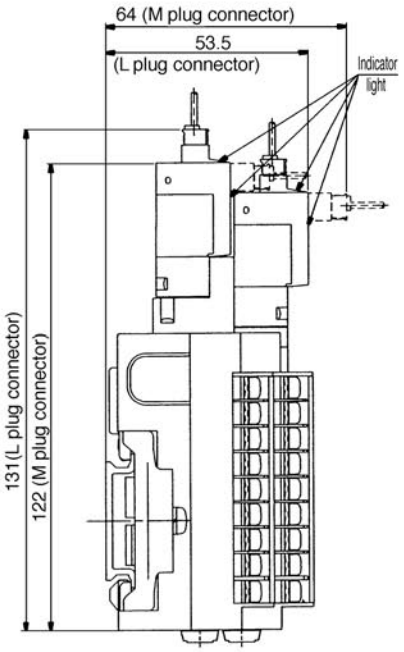
How to Order Manifold Ass'y

Specify valve and option nos. below the manifold base No.

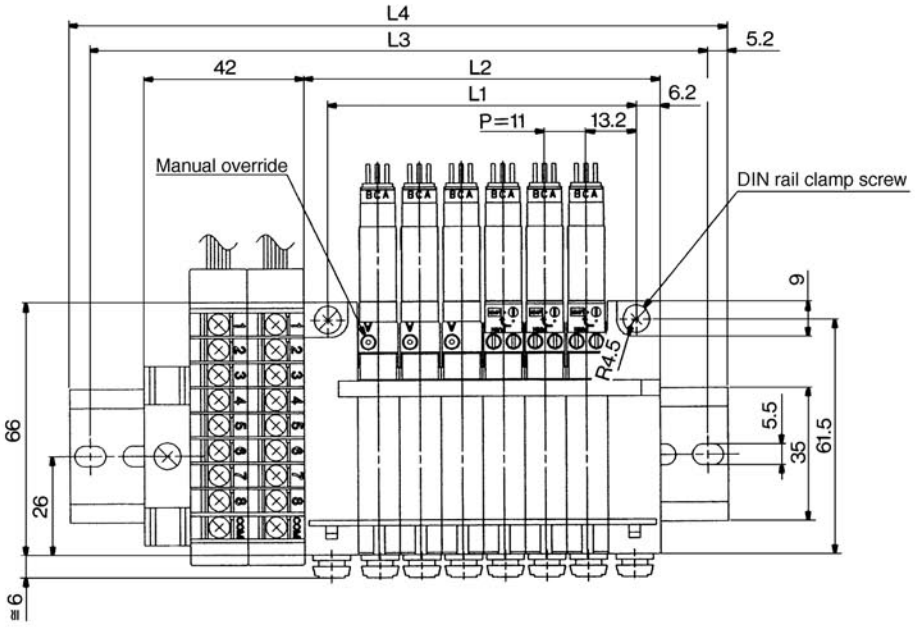
Note 1) See "Options" on p.1-657 for negative COM specification.
Note 2) Connecter ass'y is necessary for T kits when increasing the valve station. See "Options" on p.1-657 for parts nos.

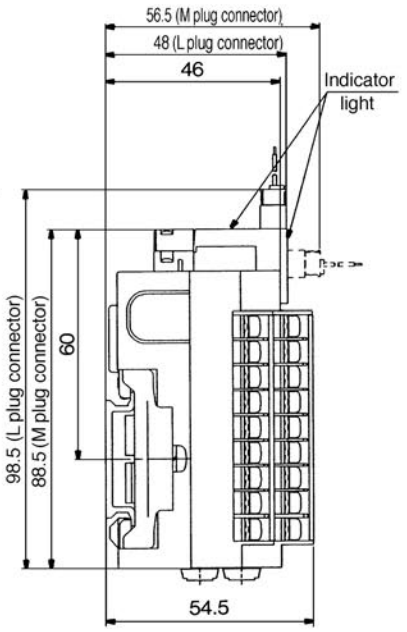
VQ1000





3 position





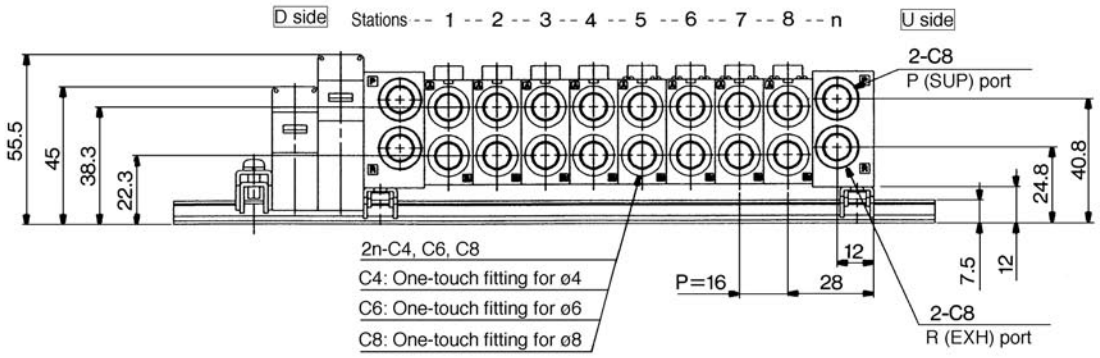
The DWG shows the case of VV5Q14–□T2–D□.

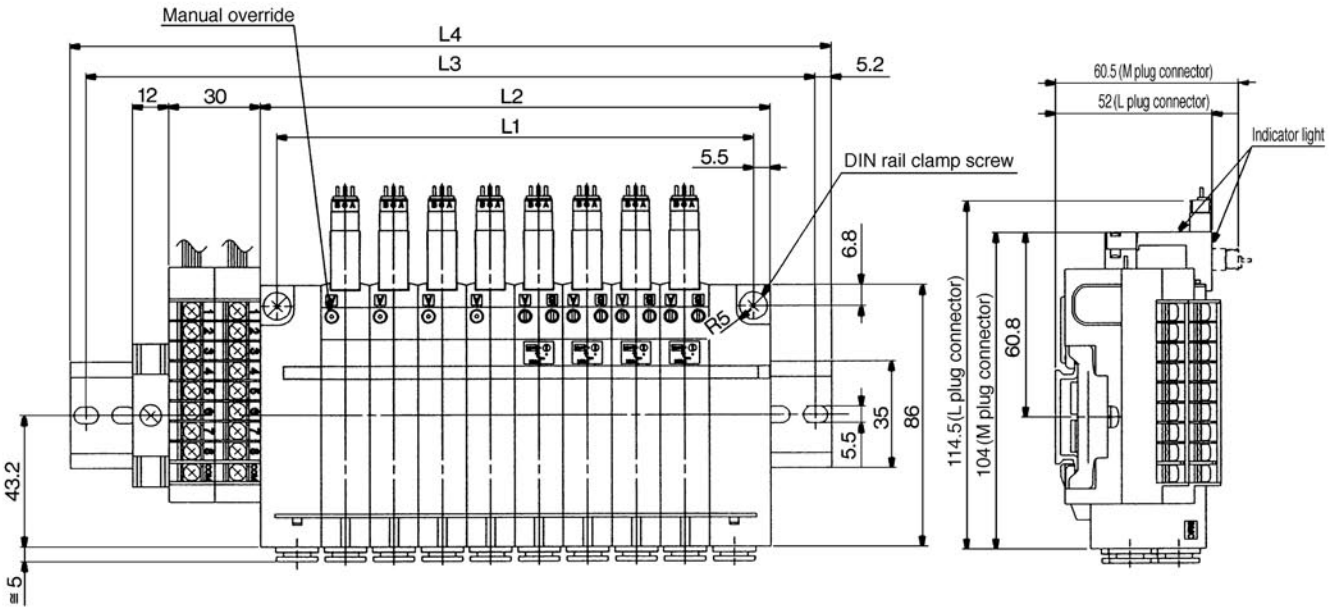
Dimensions (mm)

Equation L1=11n+15.5 L2=11n+28 n: Station (Max. 16)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	26.5	37.5	48.5	59.5	70.5	81.5	92.5	103.5	114.5	125.5	136.5	147.5	158.5	169.5	180.5	191.5
L2	39	50	61	72	83	94	105	116	127	138	149	160	171	182	193	204
L3	112.5	112.5	125	137.5	150	162.5	175	187.5	200	200	212.5	225	237.5	250	262.5	275
L4	123	123	135.5	148	160.5	173	185.5	198	210.5	210.5	223	235.5	248	260.5	273	285.5

VQ2000



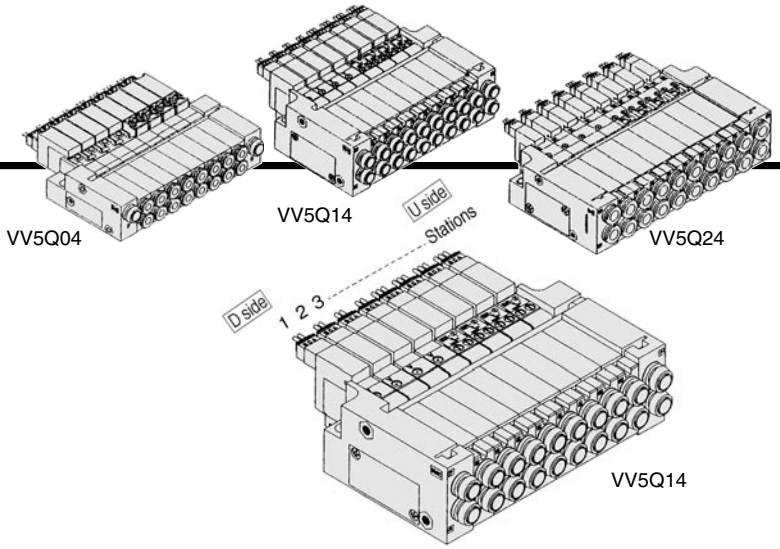


The DWG shows the case of VV5Q24–□T2.

Dimensions (mm) Equation L1=16n+29 L2=16n+40 n: Station (Max. 16)

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

C VQ0000/1000/2000
Kit (Connector)



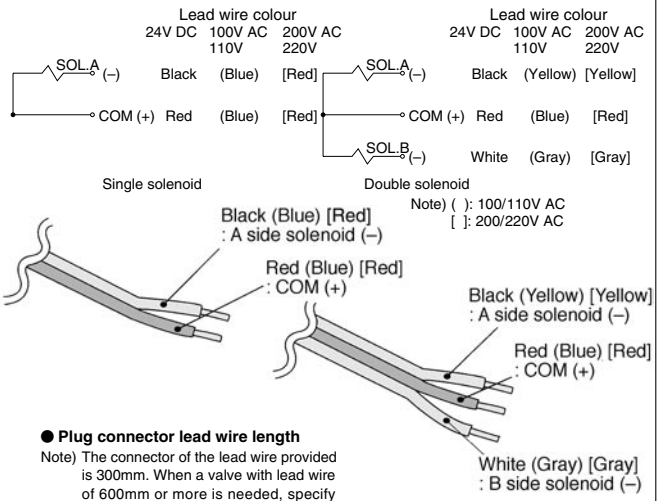
- Standard with lead wires connected to each valve individually.
- Max. 16 stations.

Manifold Specifications

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

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 connector of the lead wire provided is 300mm. When a valve with lead wire of 600mm or more is needed, specify both the valve without connector and the longer connector ass'y no.

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

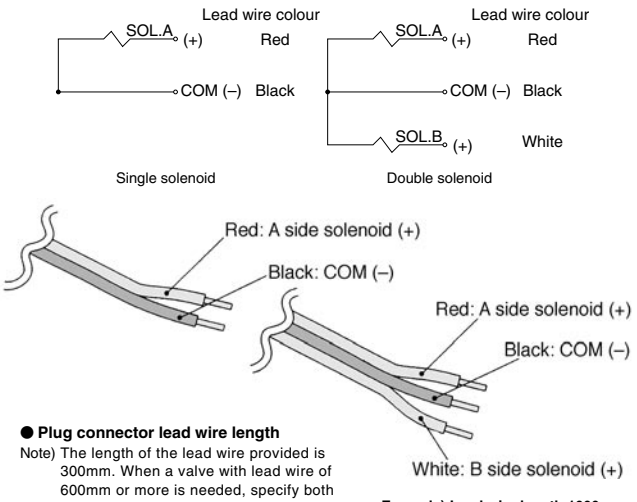
Connector ass'y No. (DC)

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

Note) 100/110V AC for single: AXT661-31A-∗; for double: AXT661-32A-∗
200/220V AC for single: AXT661-34A-∗; for double: AXT661-35A-∗
∗ are in accordance with the above table

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 length of the lead wire provided is 300mm. When a valve with lead wire of 600mm or more is needed, specify both the valve without connector and the longer connector ass'y no.

Example) Lead wire length 1000mm
VQ1140N–5LO–C6·····3 pcs
AXT661–14AN–10·····3 pcs

Connector ass'y No.

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

Note) Use negative COM valves for negative COM specification manifolds.

How to Order Manifold

VV5Q 1 4 – 08 C – N -Q

Series

0	VQ0000
1	VQ1000
2	VQ2000

Manifold

4	Plug lead unit/Flip

Stations

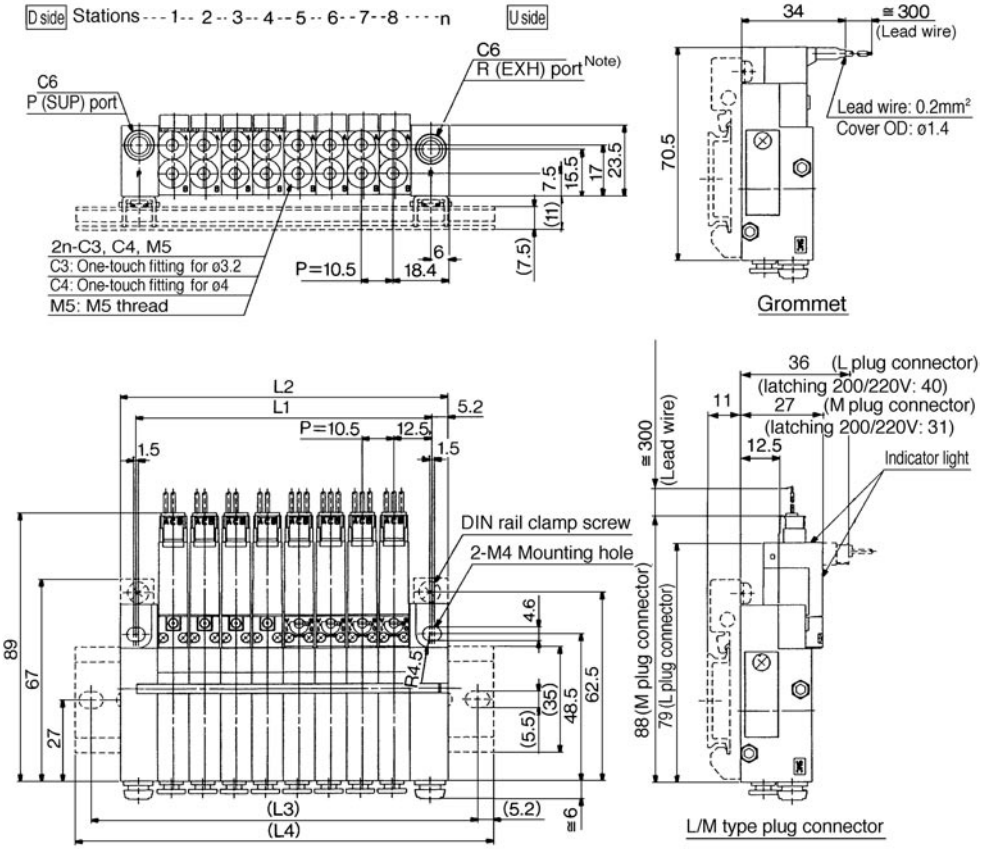
01	1 station
⋮	⋮
16	16 stations

Option

—	None
D	DIN rail mounting
N	With name plate
S	Built-in silencer (Direct exhaust)

Note 1) When specifying more than one option, please list alphabetically.
Example) –DNS

VQ0000



The broken lines indicate DIN rail mounting style [–D]

Note 1) Built-in silencer styles are equipped with a 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 (mm)

Equation L1=10.5n+14.5 L2=10.5n+25 n: Station (Max. 16)

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 Valve

VQ 1 1 4 0 Y – 5 L [ ] – C6 -Q

Series

0	VQ0000
1	VQ1000
2	VQ2000

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification	DC
–	Standard	(1.0W) ○
H (1)	High pressure	(1.5W) ○
Y (1)	Low wattage	(0.5W) ○

Note 1) Except for double (latching).

Configuration

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

Note 1) Two stations required.

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Electrical entry

G	Grommet (Except for double (latching))
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

Cylinder ports

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

Note) See "Options" on p.1-657 for inch-size One-touch fittings.

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

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

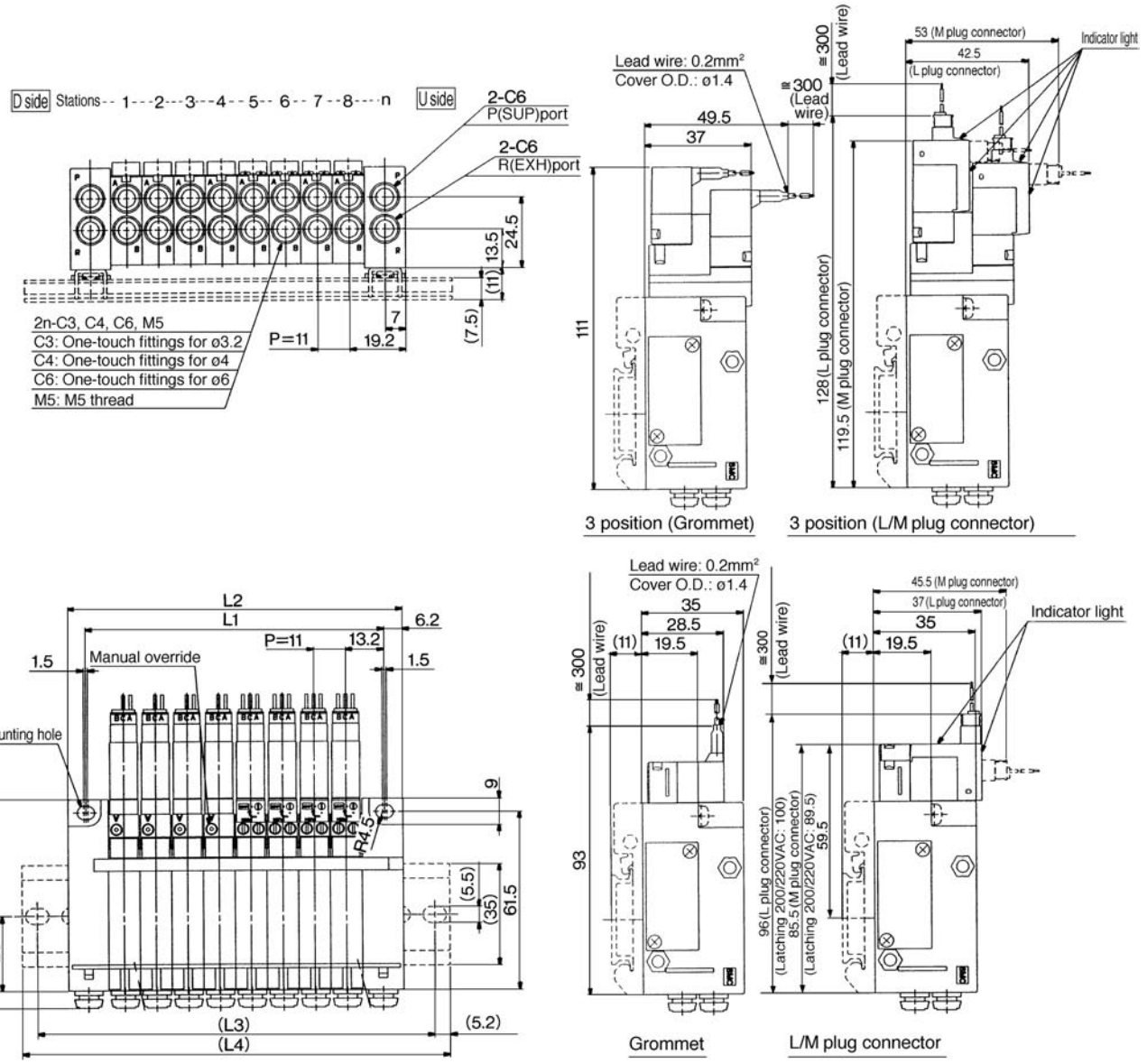
Note 2) A manual override for pilot valve is provided to the standard model for double style.

How to Order Manifold Ass'y

Specify valve and option nos. below the manifold base no.

Note) See "Options" on p.1-657 for negative COM specification.

VQ1000



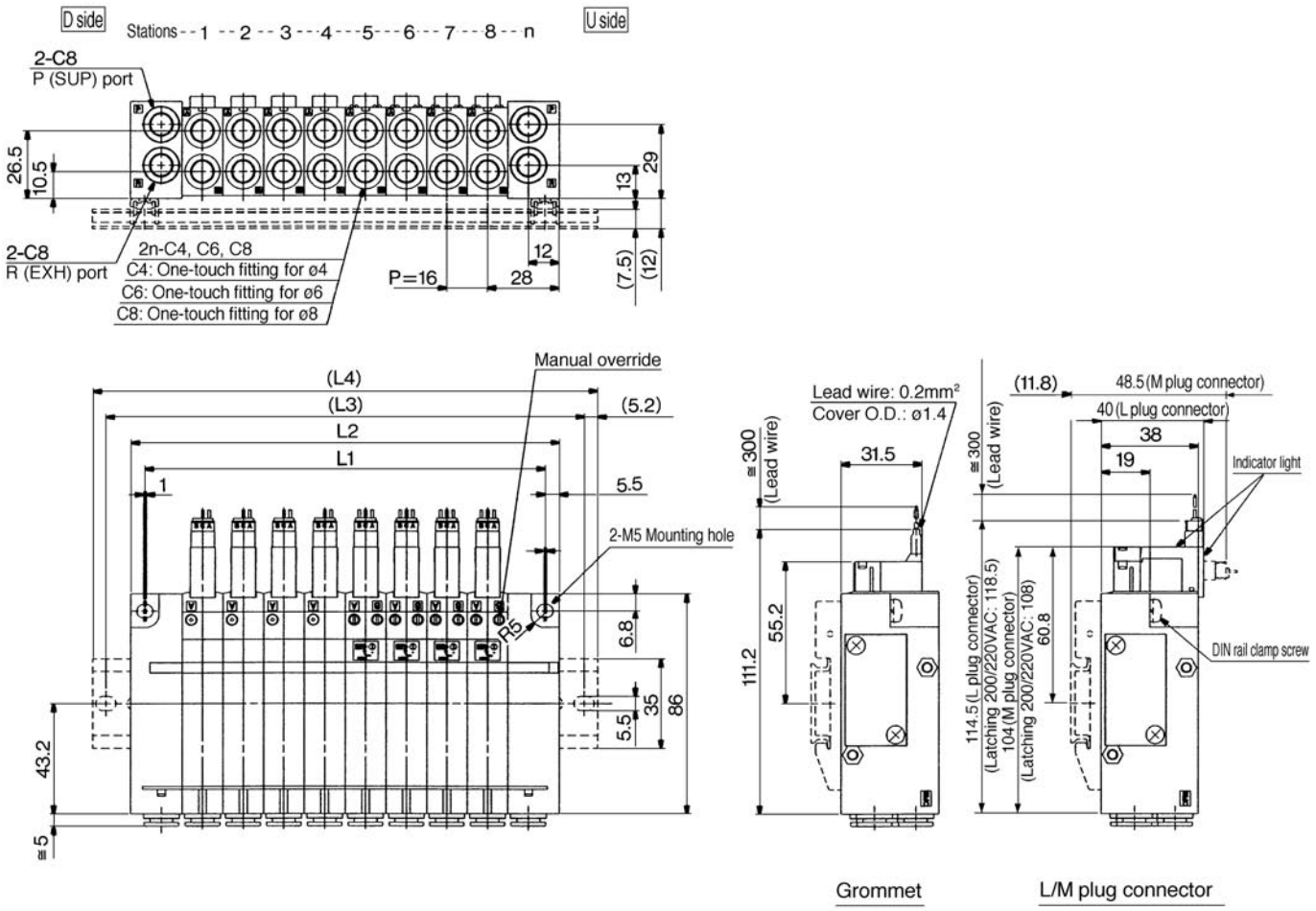
The broken lines indicate DIN rail mounting style [–D]

Dimensions (mm)

Equation L1=11n+15.5 L2=11n+28 n: Station (Max. 16)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	26.5	37.5	48.5	59.5	70.5	81.5	92.5	103.5	114.5	125.5	136.5	147.5	158.5	169.5	180.5	191.5
L2	39	50	61	72	83	94	105	116	127	138	149	160	171	182	193	204
(L3)	62.5	75	87.5	100	112.5	125	125	137.5	150	162.5	175	187.5	200	212.5	212.5	225
(L4)	73	85.5	98	110.5	123	135.5	135.5	148	160.5	173	185.5	198	210.5	223	223	235.5

VQ2000

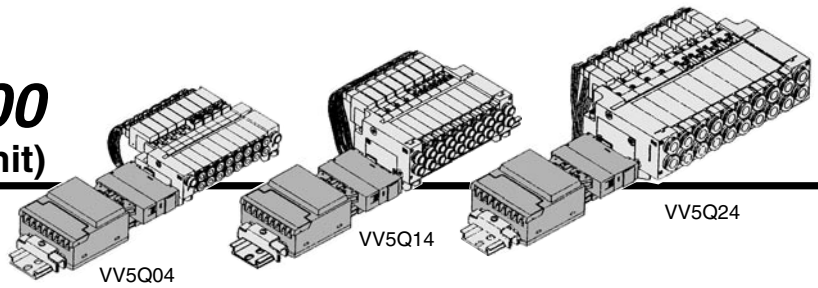


Dimensions (mm)

Equation L1=16n+29 L2=16n+40 n: Station (Max. 16)

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

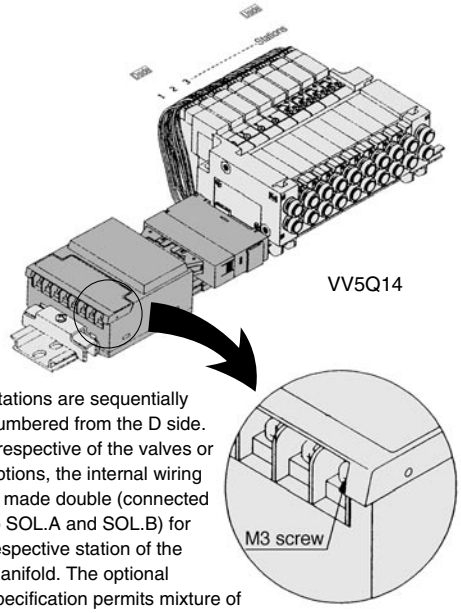
S VQ0000/1000/2000
Kit (Serial Transmission Unit)



- The serial transmission system minimizes wire mass and wire connection labour and promotes space-savings.
- The system comes in an SA (generic for small scale systems) for equipment with a small number of I/O points, or 32 points Max., SB (applicable to Mitsubishi Electric models), for controlling 512 I/O points Max., SC (applicable to OMRON models), and SD (applicable to Sharp models; 504 points Max.).
- 8 stations Max. Optional 16 stations possible. (Specify a model with 9 to 16 stations by using a manifold specification form.)

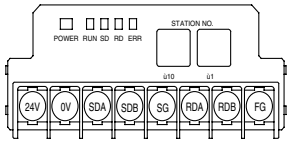
Manifold Specifications

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



- Stations are sequentially numbered from the D side.
- Irrespective of the valves or options, the internal wiring is made double (connected to SOL.A and SOL.B) for respective station of the manifold. The optional specification permits mixture of single and double wiring. See p.1-657 for details.

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

	SB applicable to MELSECNET/MINI–S3 Data Link (Mitsubishi Electric.)
Name of terminal block (LED)	

LED name	Details
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
ERROR	Lighting when reception data error occurs. Lighting turns off when the error is corrected

Note

●Master station:
PLC made by Mitsubishi Electric Corp.
Series MELSEC-A
AJ71PT32-S3, AJ71T32-S3
A1SJ71PT32-S3
∗ Max. 64 stations, connected to remote I/O stations (Max. 512 points).
●16 outputs, 2 stations occupied.

How to Order Manifold

VV5Q 1 4 – 08 S B – D -Q

Series

0	VQ0000
1	VQ1000
2	VQ2000

Manifold

4	Plug Lead unit/flip

Stations

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

Note 1) As "Option", the max. number of stations can be increased based on special wiring specifications. See p.1-657

Style

B	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)
C	SI unit for SYSBUS Wire System (OMRON)
N	SI unit for Profibus DP
P	SI unit for Interbus
Q	SI unit for Device Net and CompoBus/D (OMRON)
Y	SI unit for Can Open
T2	SI unit for ASI (yellow+black wires) Max.8 stations
T4	SI unit for ASI (yellow+black wires) Max.4 stations
T5	SI unit for ASI (yellow wires) Max.4 stations

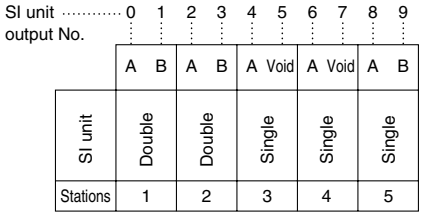
Option

D (2)	DIN rail mounting
K (3)	Special wiring specification (Not double wiring)
N	With name plate
S	Built-in silencer {Direct exhaust (U side only)}

Note 1) When specifying more than one option, please list alphabetically.
Example) -DNS
Note 2) S kits are DIN rail mounting styles, so include suffix "-D"
Note 3) Specify the wiring specifications by means of the manifold specification form.

● SI unit output and coil numbering

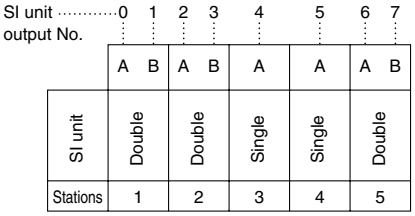
<Wiring example 1>



Double wiring (Standard)

<Wiring example 2>

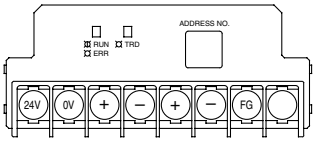
Mixed wiring is optional. Use the manifold specification from to specify.



Single/Double mixed wiring (Option)

SC applicable to SYSBUS Wire System (OMRON)

Name of terminal block (LED)



LED name	Details
RUN	It lights when transmission is normal and PLC is in the cperation mode.
T/R ERR	It blinks when transmission is normal. It lights when transmission is abnormal.

Note

- Master station unit:
  OMRON's PLC
  SYSMAC Series C (CV)
  C500-RM201, C200H-RM201
  Max. 32 units*, transmission terminal connected (Max. 512 points)
- 16 outputs

How to Order Valve

VQ 1 1 4 0 Y – 5 LO – C6 -Q

Series

0	VQ0000
1	VQ1000
2	VQ2000

Seal

0	Metal
1	Rubber

Pilot valve

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

Note 1) Except for double (latching).

Configuration

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

Note 1) Two stations required

Coil voltage

5	24V DC/With indicator light and surge suppressor

Note) Connector ass'y is necessary for S kits when increasing the valve station. See "Options" on p.1-657 for parts nos.

Cylinder ports

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

Note) See "Options" on p.1-657 for inch-size One-touch fittings.

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

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

Electrical entry

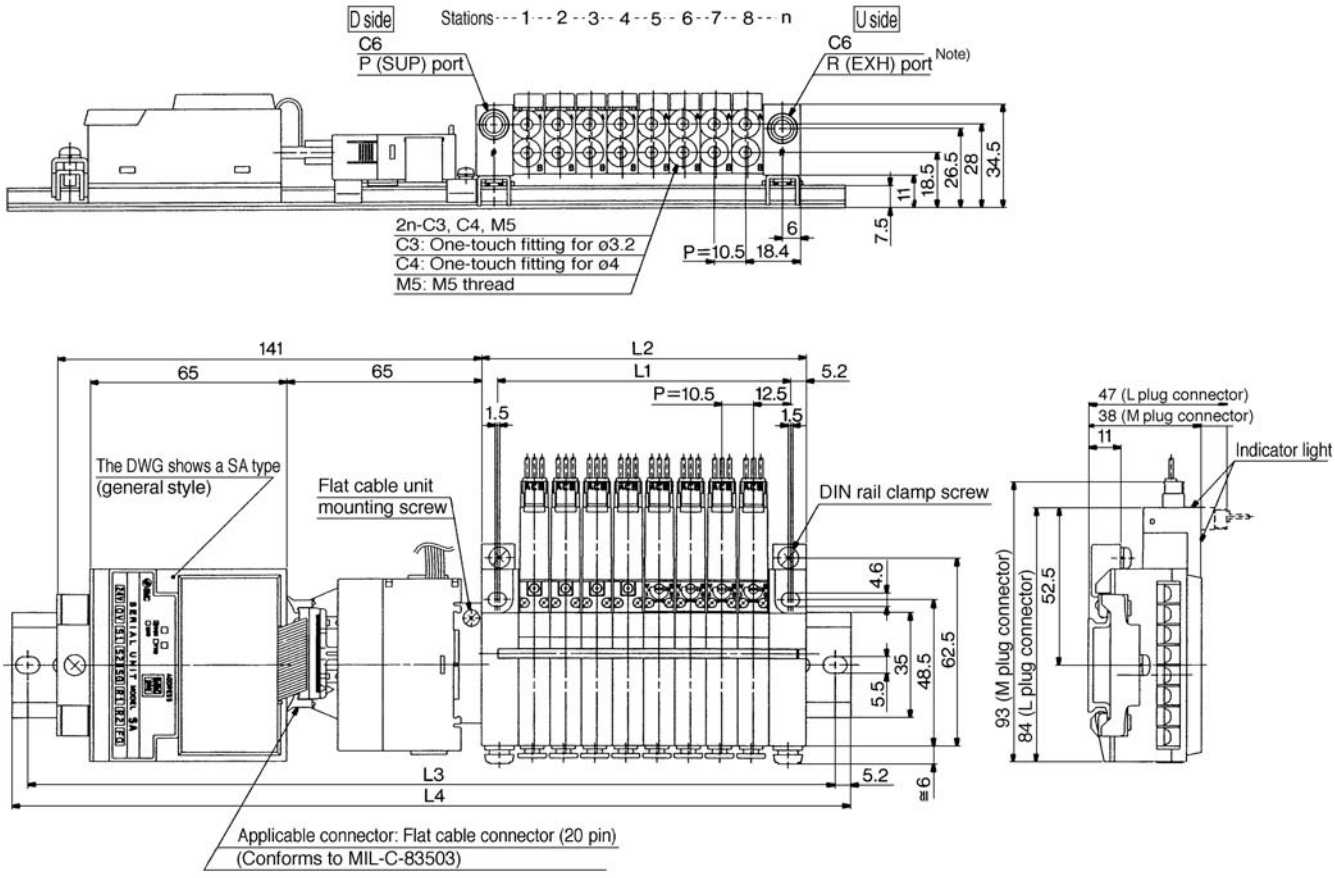
LO	L plug connector without connector
MO	M plug connector without connector

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

How to Order Manifold Ass'y

Specify valve and option nos. below the manifold base No.

VQ0000



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

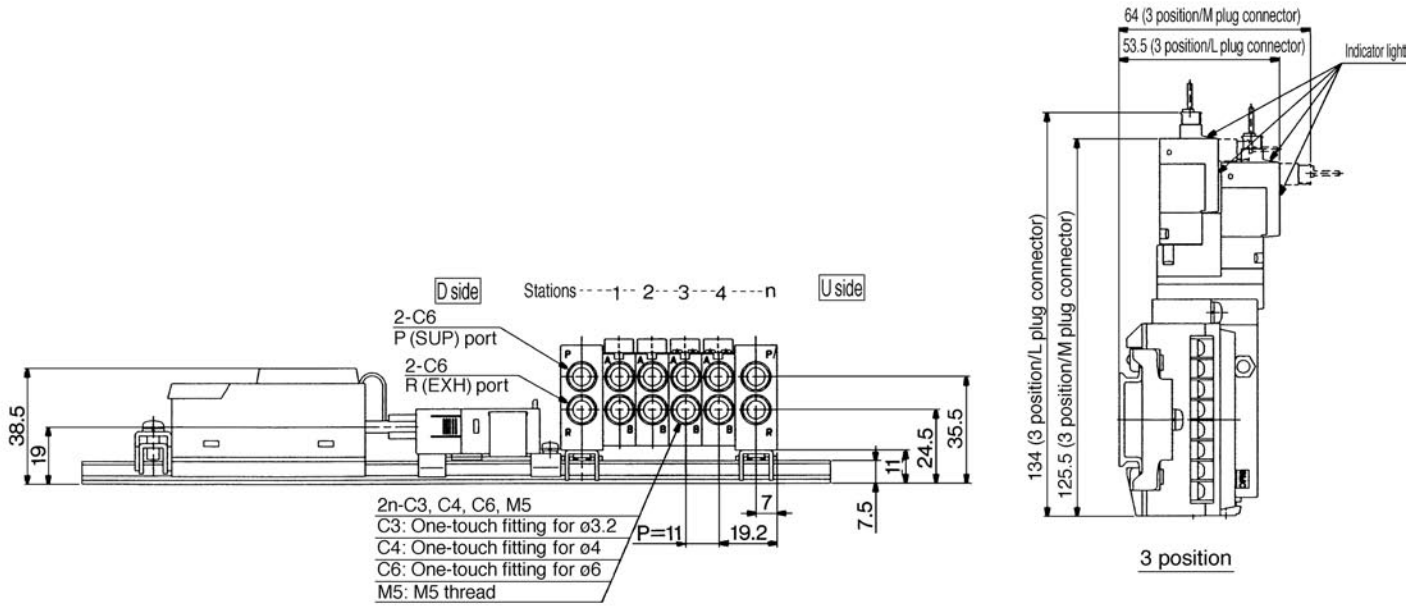
Note 2) 3 position needs two stations.
Cylinder port is located U side of body.

Dimensions (mm)

Equation L1=10.5n+14.5, L2=10.5n+25 n: Station (Max.16)

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

VQ1000

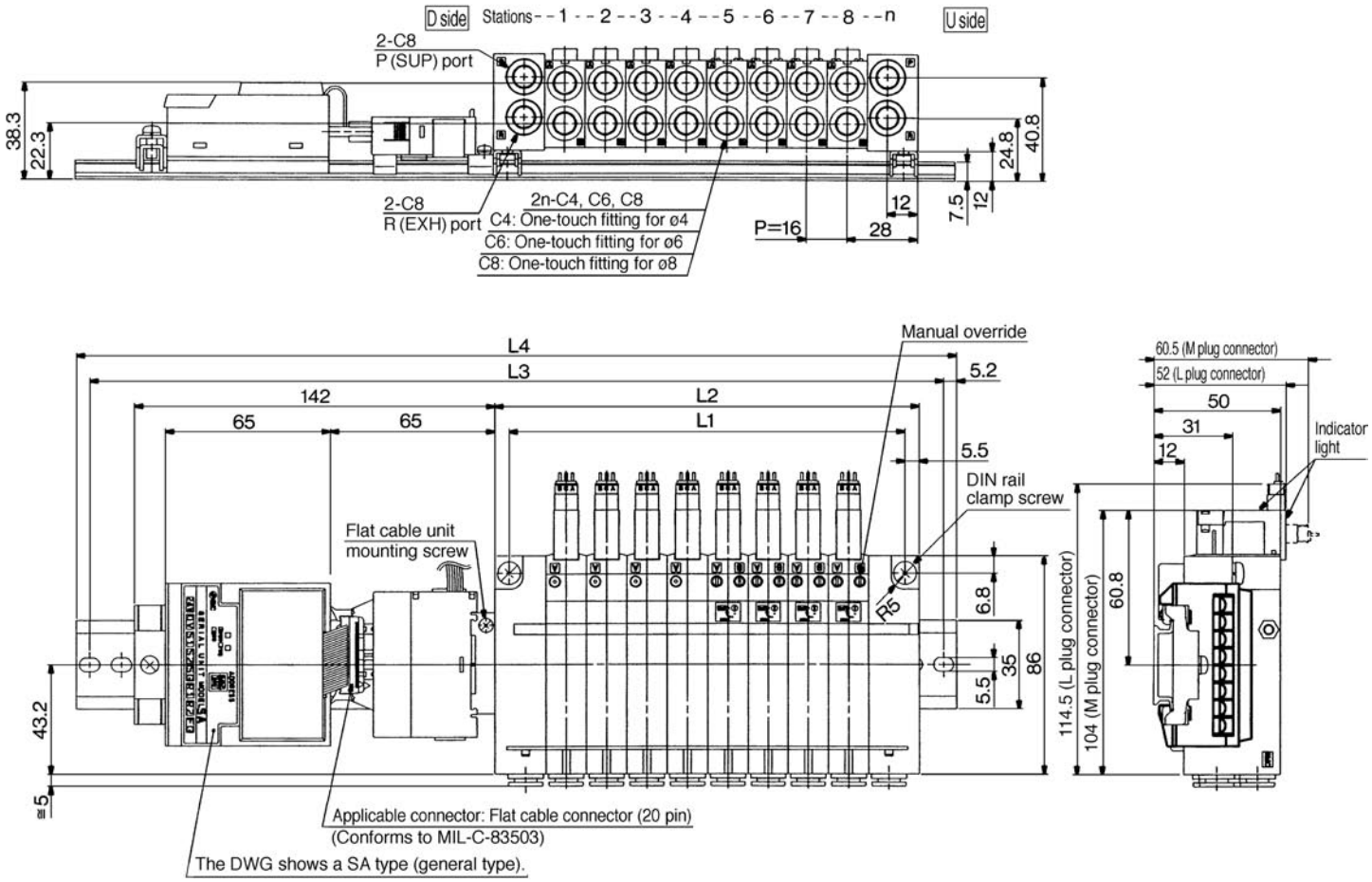


Dimensions (mm)

Equation L1=11n+15.5 L2=11n+28 n: Station (Max.16)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	26.5	37.5	48.5	59.5	70.5	81.5	92.5	103.5	114.5	125.5	136.5	147.5	158.5	169.5	180.5	191.5
L2	39	50	61	72	83	94	105	116	127	138	149	160	171	182	193	204
L3	212.5	212.5	225	237.5	250	262.5	275	287.5	300	300	312.5	325	337.5	350	362.5	375
L4	223	223	235.5	248	260.5	273	285.5	298	310.5	310.5	323	335.5	348	360.5	373	385.5

VQ2000



Dimensions (mm)

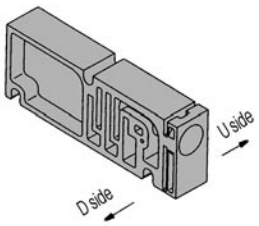
Equation L1=16n+29 L2=16n+40 n: Station (Max. 16)

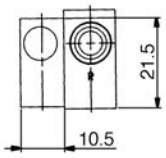
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	45	61	77	93	109	125	141	157	173	189	205	221	237	253	269	285
L2	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296
L3	225	237.5	250	275	287.5	300	325	337.5	350	362.5	387.5	400	412.5	437.5	450	462.5
L4	235.5	248	260.5	285.5	298	310.5	335.5	348	360.5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

Manifold Options/For VQ0000

Blank plate assembly
VVQ0000-10A-4

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

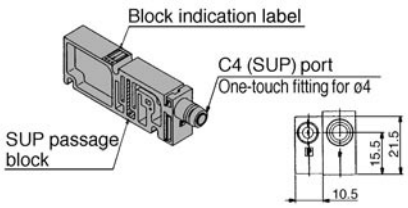




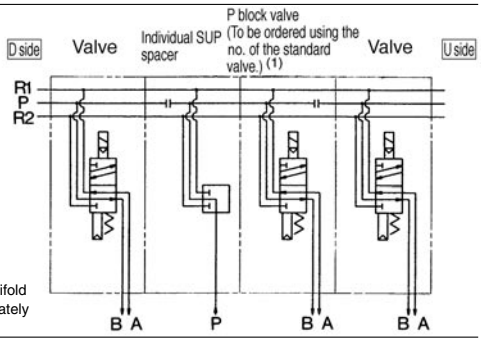
Individual SUP spacer
VVQ0000-P-4-C4

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 by means of the manifold spcification form.



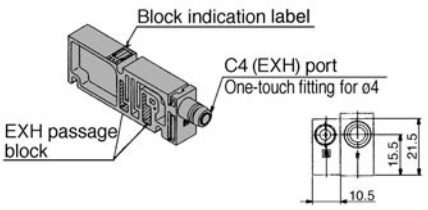
Note) P block valve is mounted in the blocking position when ordering an individual SUP spacer incorporated with a manifold When separately ordering an individual SUP spacer, separately order a P block valve.



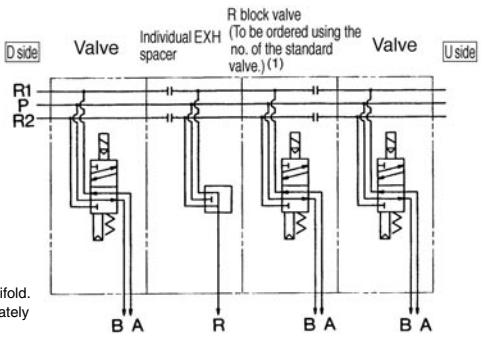
Individual EXH spacer
VVQ0000-R-4-C4

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 by means of the manifold specification form.
* Electric wiring is connected to the position of the manifold station where the individual EXH spacer is mounted.



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
VQ□ 1 2 4 0 1 -□-□□- P R PR -Q

Valve No.

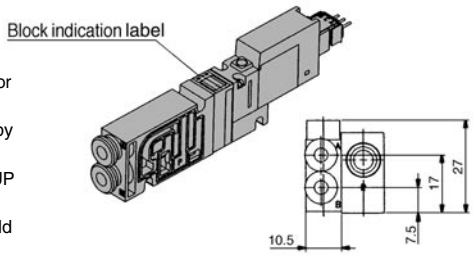
For a filp plug-in unit, block plate is built in the valve for blocking SUP and EXH passages.Since the No. is classified by the passage to be blocked, specify it by attaching the option No. to the valve No.
The block valve is constructed so that U sides of SUP and EXH passages are blocked.

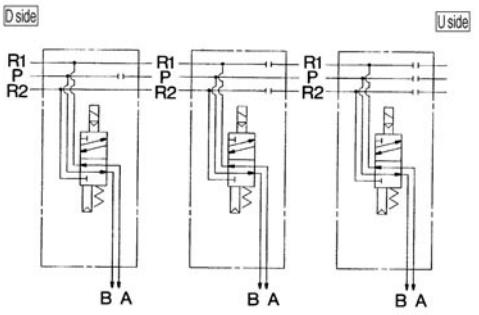
* Specify the number of stations by using a manifold specification form.

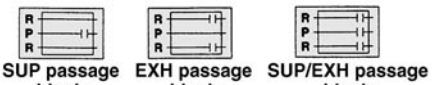
<Blocking indication label>

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.



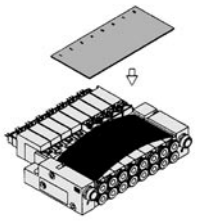


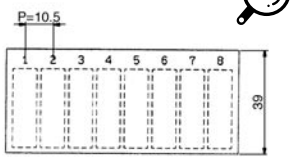


For SUP passage block	VQ0 1 2 4 1 0 -□-□□-P-Q
For EXH passage block	VQ0 1 2 4 1 0 -□-□□-R-Q
For SUP/EXH passage block	VQ0 1 2 4 1 0 -□-□□-PR-Q

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.



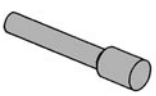


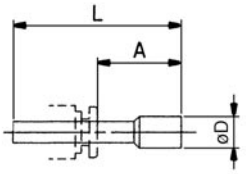
* When ordering assemblies incorporated with a manifold, suffix "–N" to the manifold No.

Blank plug
KQ2P- 23 04 06 -00

Color: White

It is inserted into an unused cylinder port and SUP/EXH ports.
The minimum order quantity is 10 pcs.





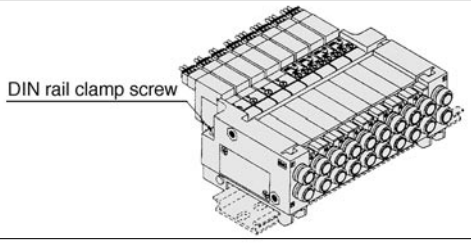
Dimensions

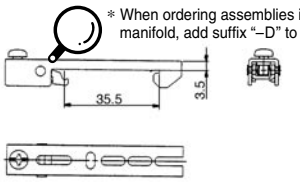
Fittings size ød	Model	A	L	D
3.2	**KQ2P-23-00**	16	31.5	5.2
4	**KQ2P-04-00**	16	32	6
6	**KQ2P-06-00**	18	35	8

Manifold Options/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).



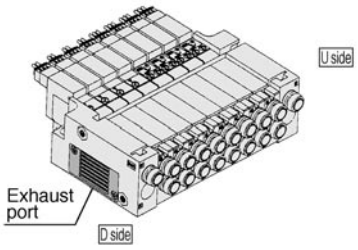


∗ When ordering assemblies incorporated with a manifold, add suffix "–D" to the manifold No.

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 resu'ts in exhaust of air together with drainage.
●See p.1-655 for maintenance.

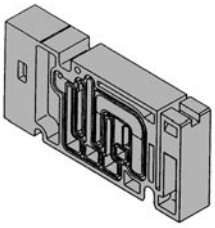


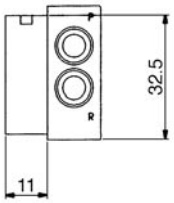
∗ When ordering assemblies incorporated with a manifold, add suffix "–S" to the manifold No.

Manifold Option Parts/For VQ1000

Blank plate assembly
VVQ1000-10A-4

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

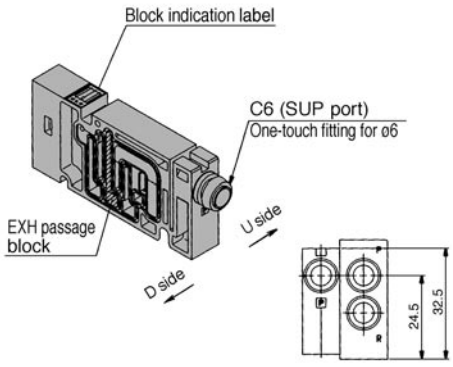


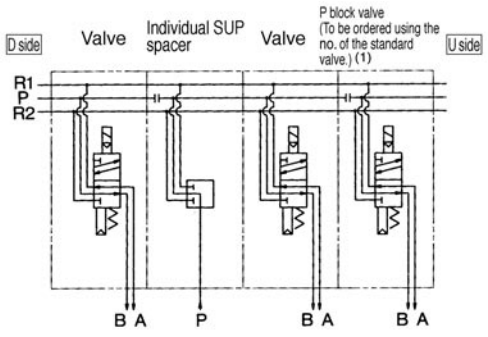


Individual SUP spacer
VVQ1000-P-4-C6

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 blocked in advance, it is mounted on the D side of the valve for individual suppy while blocking the valve's U side. (See the application ex.)

∗ Specify the spacer mounting position and SUP block plate mounting position by means of the manifold spcification form.



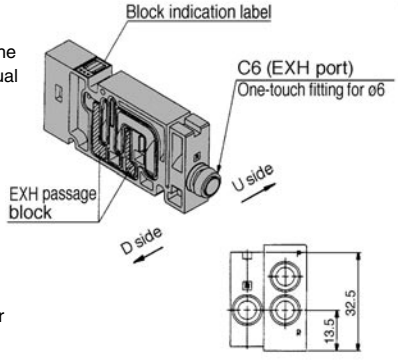


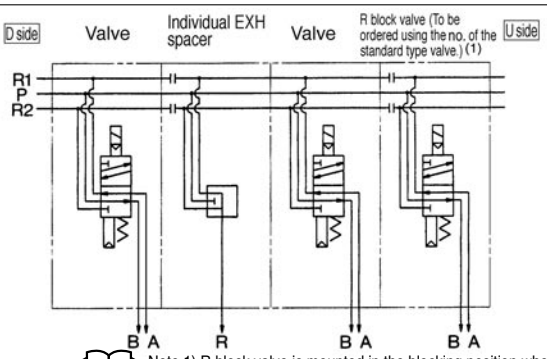
Note 1) P block valve is mounted in the blocking position when ordering an individual SUP spacer incorporated with a manifold. When separately ordering an individual SUP spacer, separately order a P block valve.

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. (See the application ex.)

∗ Specify the spacer mounting position and EXH block plate mounting position by means of the manifold specification form.
∗ Electric wiring is connected to the position of the manifold station where the individual EXH spacer is mounted.





Note 1) 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.

Manifold Options/For VQ1000

P, R, PR Block valve

VQ1$\frac{1}{2}$4$\frac{0}{1}$-□-□□-P, R, PR-Q

Valve No.

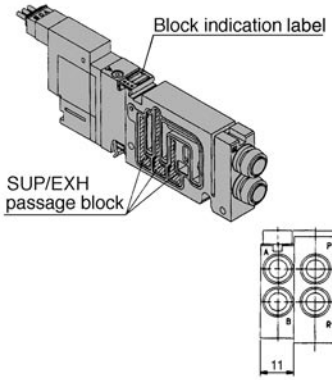
For a flip plug-in unit, block plate is built in the valve for blocking SUP and EXH passages. Since the No. is classified by the passage to be blocked, specify it by attaching the option No. to the valve No.
The block valve is constructed so that D sides of SUP and EXH passages are blocked.

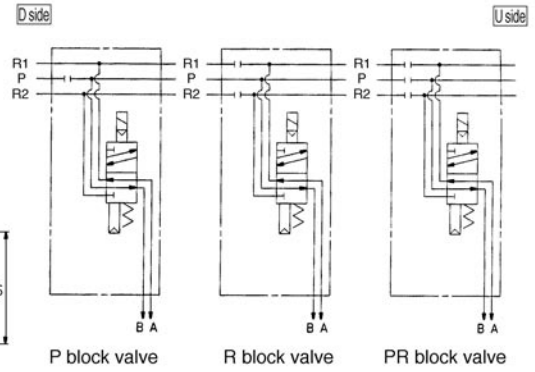
* Specify the number of stations by using manifold specification form.

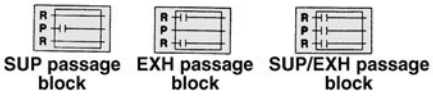
<Blocking indication label>

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.



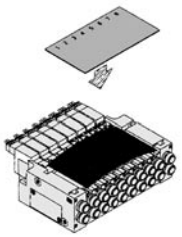


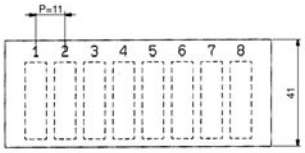


For SUP passage block	VQ1$\frac{1}{2}$4$\frac{0}{1}$-□-□□-P-Q
For EXH passage block	VQ1$\frac{1}{2}$4$\frac{0}{1}$-□-□□-R-Q
For SUP/EXH passage block	VQ1$\frac{1}{2}$4$\frac{0}{1}$-□-□□-PR-Q

Name plate [-N4]
VVQ1000-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.





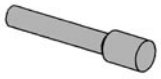
* When ordering assemblies incorporated with a manifold, suffix [-N] to the manifold No.

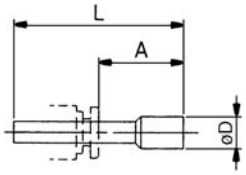
Blank plug

KQ2P-$\frac{23}{04}$-00

●Color: White

It is inserted into an unused cylinder port and SUP/EXH ports.
The minimum order quantity is 10 pcs.



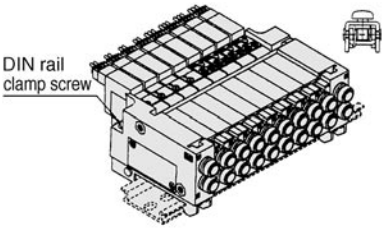


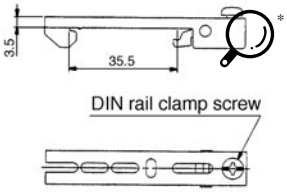
Dimensions (mm)

Fitting size ød	Model	A	L	D
3.2	**KQ2P-23-00**	16	31.5	5
4	**KQ2P-04-00**	16	32	6
6	**KQ2P-06-00**	18	35	8

DIN rail mounting bracket
VVQ1000-57A-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).





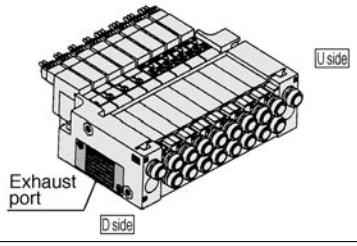
* When ordering assemblies incorporated with a manifold, add suffix "–D" to the manifold No.

Built-in silencer, Direct exhaust [-S]

This is an exhaust port on top of 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 togeter with drainage.

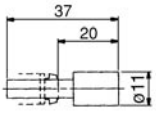
● See p.1-655 for maintenance.

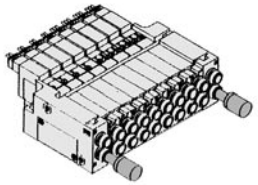


* When ordering assemblies incorporated with a manifold, add suffix "–S" to the manifold No.

Silencer (For EXH port)

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





Dimensions (mm)

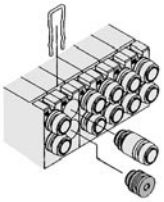
Series	Fitting size ød	Model	A	L	D	Effe area (mm²)(Nℓ/min)	Silencing effect dB
VQ1000	6	AN103-X233	20	37	11	7 (392.6)	25

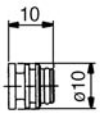
Port plug
VVQ0000-58A

The plug is used to block the cylinder port when using directional valve as a 3 directional valve.
When ordering it incorporated with a manifold, add suffix "A" or "B," the symbol of the plug port, to the valve No.

Example) **VQ1140-5L-C6-A**

●**A port, Plug**





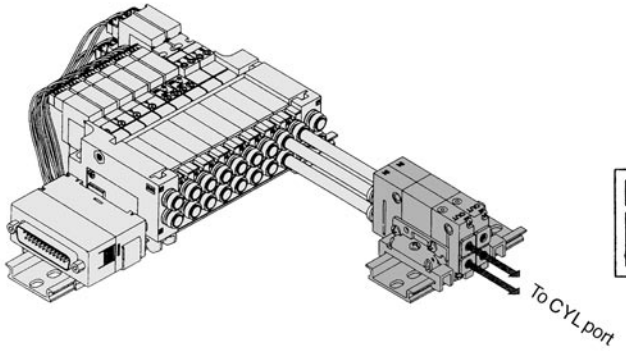
Manifold Options

Double check block (Separate style): For VQ0000/1000
VQ1000-FPG-□□

It is used on the way of the secondary side piping to keep the cylinder in the middle position for a long time. Combining a double check block with a built-in pilot type double check valve and a two-position EXH 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.

Specifications

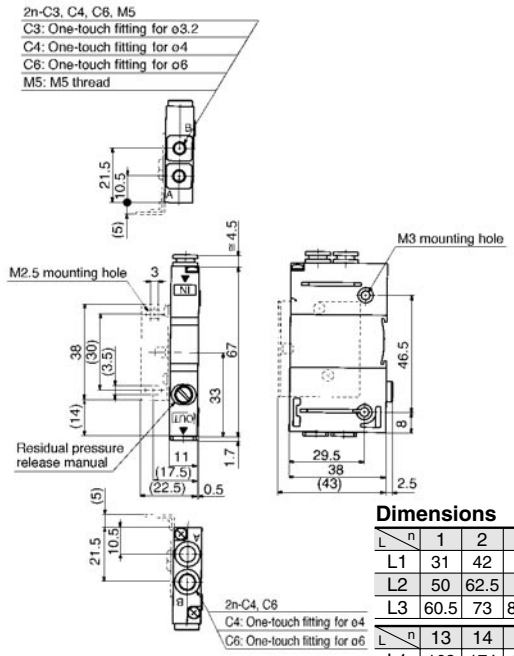
Max. operating pressure	0.8MPa
Min. operating pressure	0.15MPa
Ambient and fluid temperature	−5 to 50˚C
Effective area (Nℓ/min) (1)	2.7mm² (147.23)
Max. operating frequency	180CPM



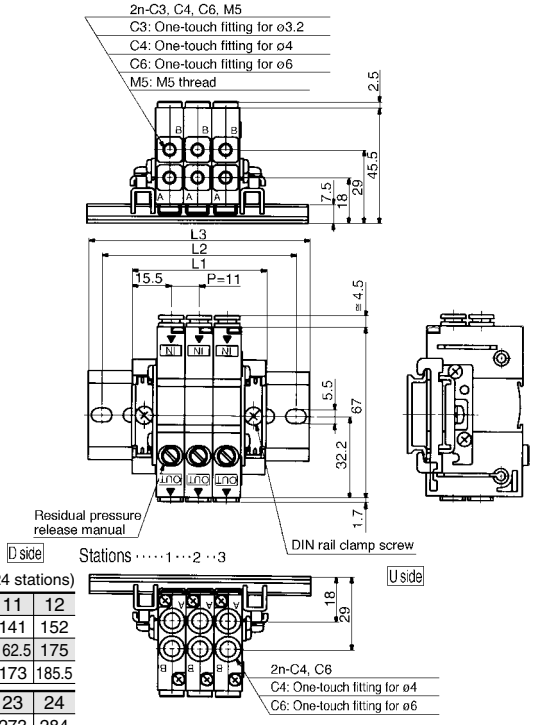
Note 1) As per JISB8375−1981
(Supply pressure: 0.5MPa)

Dimensions

Single unit



Manifold



Dimensions Equation L1=11n+20 n: Station (Max. 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

Symbol	Port size
C4	One-touch fitting for Ø4
C6	One-touch fitting for Ø6

OUT side port size

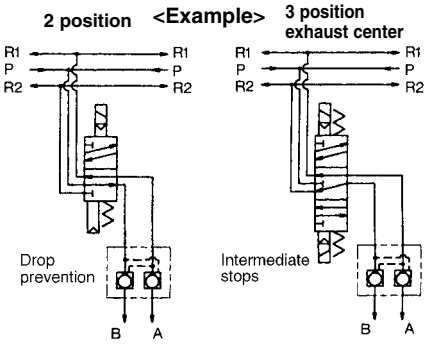
Symbol	Port size
M5	M5 thread
C3	One-touch fitting for Ø3.2
C4	One-touch fitting for Ø4
C6	One-touch fitting for Ø6

Option

—	None
F	With bracket
D	DIN rail mounting (for manifold)
N	Name plate

Note) When specifiying more than one option, please list alphabetically.
Ex.) –DN

<Example>



Manifold

VVQ1000–FPG– 06

Stations

01	1 station
⋮	⋮
16	16 stations

<Example>
VVQ1000–FPG–06···6 stations of manifold
∗ VQ1000–FPG–C4M5–D, 3 sets
∗ VQ1000–FPG–C6M5–D, 3 sets } Double check block

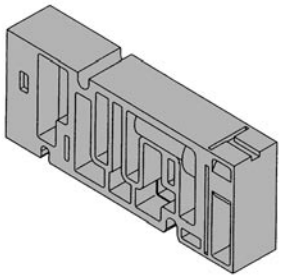
⚠ Caution

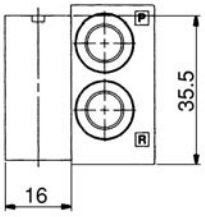
- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap. Also, check the cylinder's tube gasket, piston packing and rod packing for leakage.
- 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 ass'y on the double check block.
  {Tightening torque: 0.8 to 1.2Nm}
- If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may notstop intermediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

Manifold Options/For VQ2000

Blank plate assembly
VVQ2000-10A-4

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

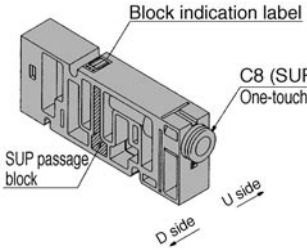


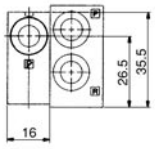


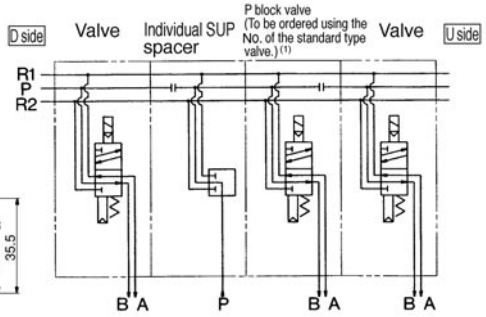
Individual SUP spacer
VVQ2000-P-4-C8

When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.)Since the SUP passage on the spacer's D side is blocked in advance, it is mounted on the D side 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 by means of the manifold spcification form.





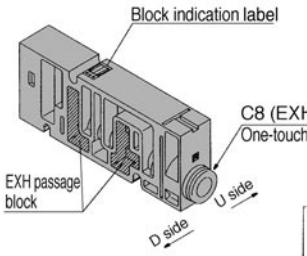


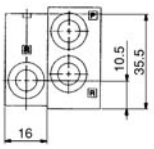
Note 1) P block valve is mounted in the blocking position when ordering an individual SUP spacer incorporated with a manifold. When separately ordering an individual SUP spacer, separately order a P block valve.

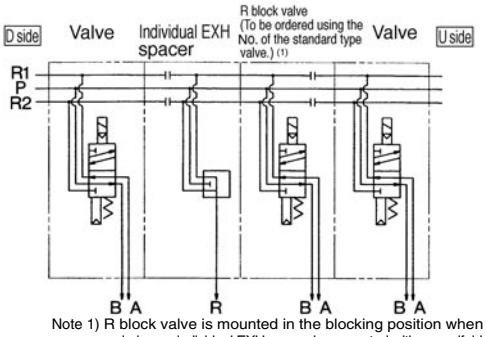
Individual EXH spacer
VVQ2000-R-4-C8

When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (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 by means of the manifold specification form.
* Electric wiring is connected to the position of the manifold station where the individual EXH spacer is mounted.







Note 1) R block valve is mounted in the blocking position when ordering an individual EXH spacer incorporated with a manifold. When separately ordering an individual EXH spacer, separately order a R block valve.

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

Valve No.

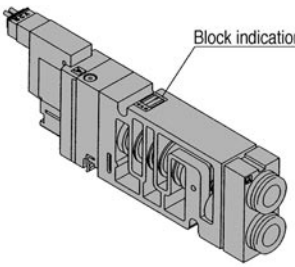
For a flip plug-in unit, block plate is built in the valve for blocking SUP and EXH passages. Since the No. is classified by the passage to be blocked, specify it by attaching the option No. to the valve No.
The block valve is constructed so that U sides of SUP and EXH passages are blocked.

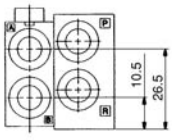
* Specify the number of stations by using a manifold specification form.

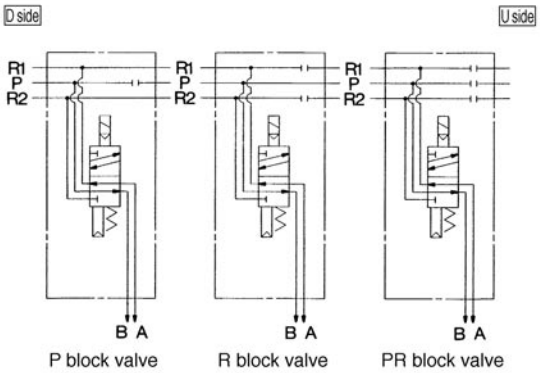
<Blocking indication label>

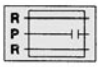
When using block plates for SUP, EXH passage, indication label for confirmation of the blocking position from outside is attached. (one label for each)

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

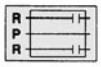




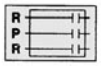




SUP passage block



EXH passage block



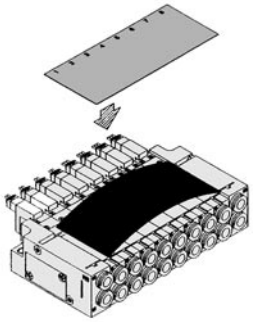
SUP/EXH passage block

For SUP passage block	VQ2$^{1}_{2}$4$^{0}_{1}$-□-□□-P-Q
For EXH passage block	VQ2$^{1}_{2}$4$^{0}_{1}$-□-□□-R-Q
For SUP/EXH passage block	VQ2$^{1}_{2}$4$^{0}_{1}$-□-□□-PR-Q

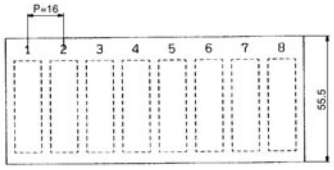
Manifold Options/For VQ2000

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

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



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

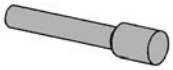


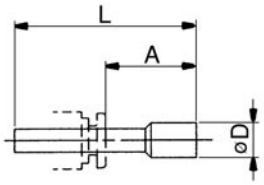
Blank plug

KQ2P-$^{04}_{06}_{08}$-00

●White color spec.

It is inserted into an unused cylinder port and SUP/EXH ports.
The minimum order quantity is 10 pcs.



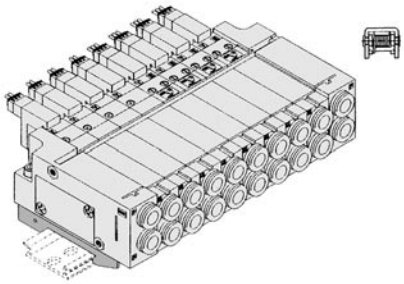


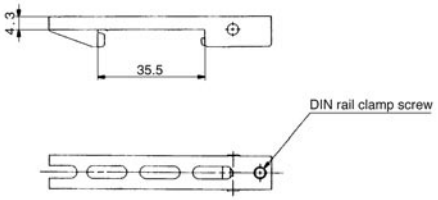
Dimensions (mm)

Fittings size ød	Model	A	L	D
4	**KQ2P-04-00**	16	32	6
6	**KQ2P-06-00**	18	35	8
8	**KQ2P-08-00**	20.5	39	10

DIN rail mounting bracket
VVQ2000-57A-4

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





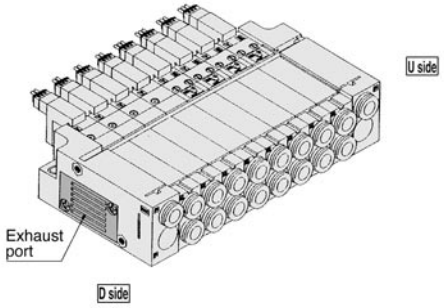
* When ordering assemblies incorporated with a manifold, add suffix "–D" to the manifold No.

Built-in silencer, Direct exhaust [–S]

This is 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 porvided with exhaust on one side.

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

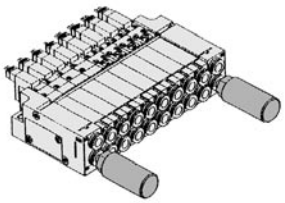
● See P.1-655 for maintenance.

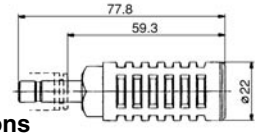


* When ordering assemblies incorporated with a manifold, add suffix "–S" to the manifold No.

Silencer (For EXH port)

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





Dimensions (mm)

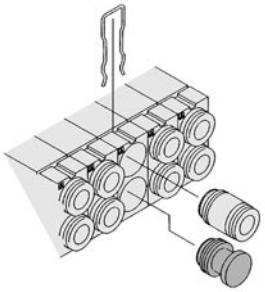
Series	Fittings size ød	Model	A	L	D	Effe. area (mm^2)(N ℓ/min)	Silencing effect (dB)
VQ2000	8	AN200-KM8	59.3	77.8	22	20 (1079.65)	30

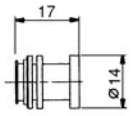
Port plug
VVQ1000-58A

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

Example) **VQ2140-5L-C8-A**

└●**A port, Plug**





Manifold Options

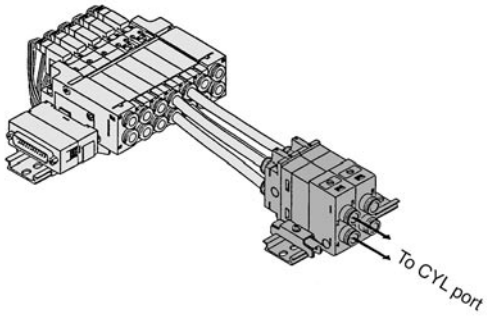
Double check block (Separate style)
VQ2000-FPG-□□-□

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

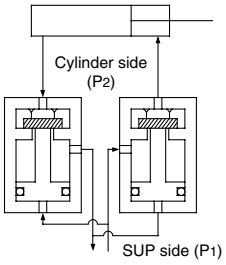
Specifications

Max. operating pressure	0.8MPa
Min. operating pressure	0.15MPa
Ambient and fluid temperature	–5 to 50˚C
Effective area (Nℓ/min) (1)	18mm² (981.5)
Max. operating frequency	180 c.p.m

Note 1) As per JISB8375-1981 (Supply pressure: 0.5MPa)

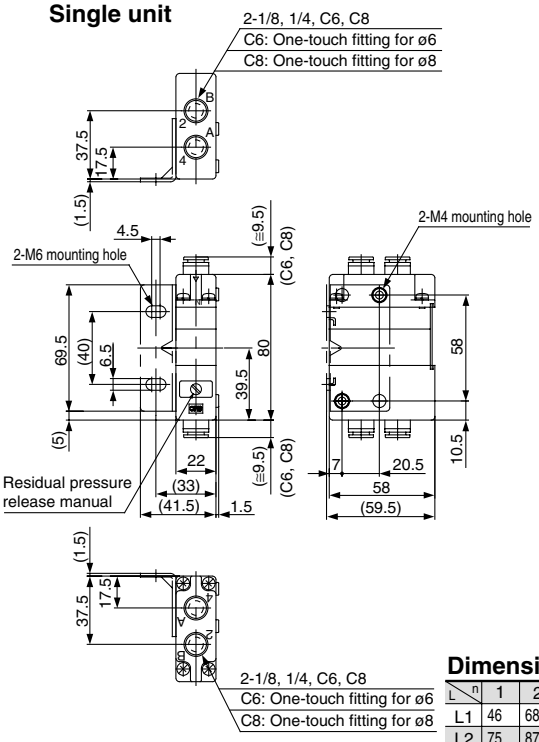


<Check Valve Operation Principle>

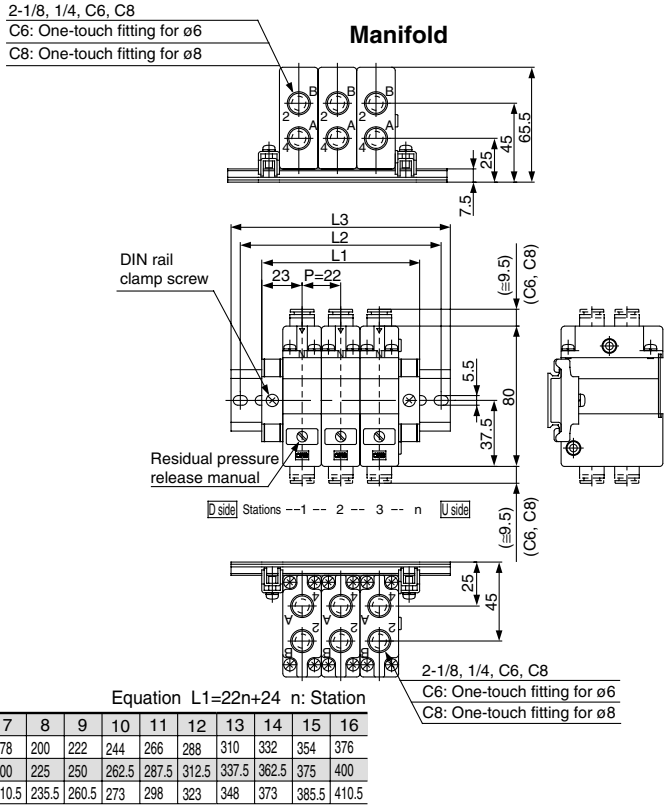


Dimensions

Single unit



Manifold



Dimensions Equation L1=22n+24 n: Station

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

How to Order

Double Check Block

VQ2000–FPG– 01□ 01□ **F**

IN side port size

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

OUT side port size

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

Thread

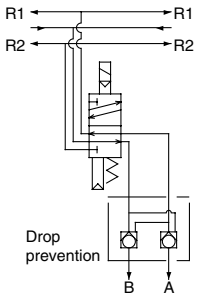
—	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

Option

—	None
D	DIN rail mounting (for manifold)
F	With bracket
N	Nameplate

Note) If specifying more than one symbol, list alphabetically.

<Example>



Manifold

VVQ2000–FPG– 06

Stations

01	1 station
⋮	⋮
16	16 stations

<Ordering Example>
VVQ2000–FPG–06···6 stations manifold
* VQ2000–FPG–C6C6–D: 3 set (Double check block)
* VQ2000–FPG–C8C8–D: 3 set (Double check block)

⚠ Caution

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

Thread	Applicable tightening torque Nm
1/8	7 to 9
1/4	12 to 14

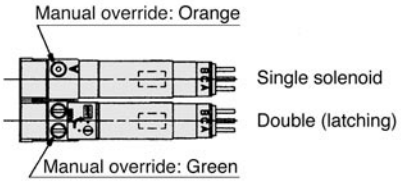
- If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop intermediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

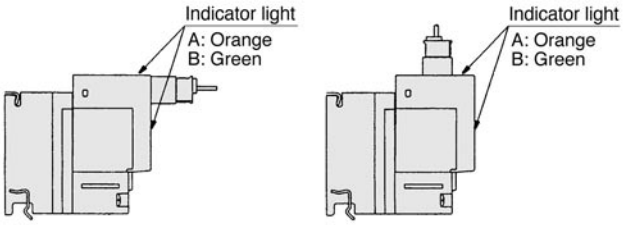
⚠ Precautions

⚠ Caution

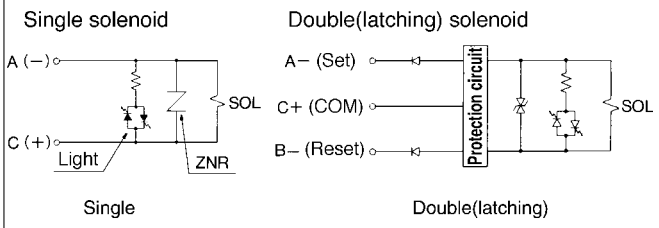
Indicator Light and Surge Voltage Suppressor

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 and double (latching). In the double (latching) style, A-side and B-side energization are indicated by two colors which match the colors of the manual overrides.





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) machanism and a surge absorption (ZNR/surge absorption diode) machanism.
Note 2) Applicable to negative COM specification models
Note 3) In case of double (latching), the electromagnetic valve channel is, A- (set): P→A, B→R B- (reset): P→B, A→R

⚠ Caution

Double (Latching Solenoid) Style

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 (20ms or more). The usage and function is the same as the double solenoid.

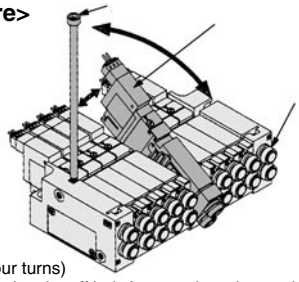
<Special Cautions for Latching Solenoid>

1. Select the circuit in which ON and OFF signals are not energized simultaneously.
2. 20ms energization time is necessary for self-holding.
3. Avoid using in a place with high vibration (5G or more) or a high magnetic field.
4. When shipped, the movable iron core is held in the ON position (reset) on the B side. Check to be sure it is held in the ON position by energization before use.
5. After manual operation, the main valve will return to its original position.
6. Contact SMC for long-term energization applications.

⚠ Caution

How to Mount/Remove Solenoid Valve

<Sequence of procedure>



How to move

① Loosen tie-rod bolt B. (Two to four turns)
② After fully loosening the tie-rod boit, take off bolt A upward as shown above.
③ Slide the valves aside to make a 1mm 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.)

How to mount

Reverse the sequence of steps above to remount. Torque applied to tie rod bolt should be 1.0 to 1.4Nm.
Tighten evenly.
Note) Be careful not to push on the light cover while mounting/removing the valve.

Torque applied to tie rod bolt

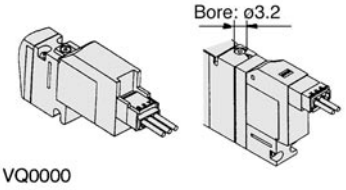
VQ0000	0.5 to 0.7Nm
VQ1000	1.0 to 1.4Nm
VQ2000	1.0 to 1.4Nm

⚠ Caution

Manual Override

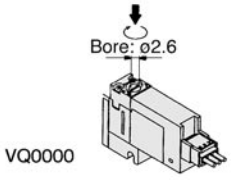
Without an electric signal for the solenoid valve the manual override is used for switching the main valve.

■ Non-locking push style

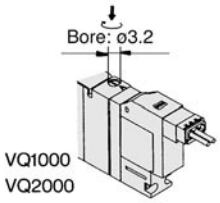


Push down on the manual override button with a small screwdriver until it stops. Release the screwdrever and the manual override will return.

■ Push-locking slotted style

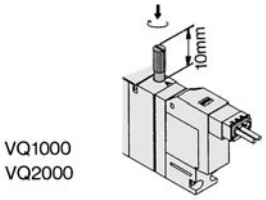


Turn the manual clockwise by 180˚ to set the ▶ mark to 1 and press it in the direction indicated by the arrow (↓). It will by locked in ON state. Turn the manual conter-clockwise by 180˚ to set the ▶ mark to 0. It will by released the lock and the manual override will return.



Push down on the manual override button with a small screwdriver until it stops. While down, turn clockwise by 90˚ to lock it. Turn it counterclockwise to release it.

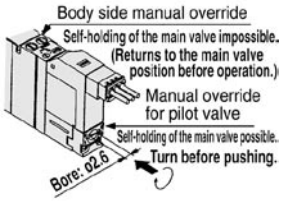
■ Push-locking lever style



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.

■ Manual override for double (latching) style

In case of a double (latching) style, 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.



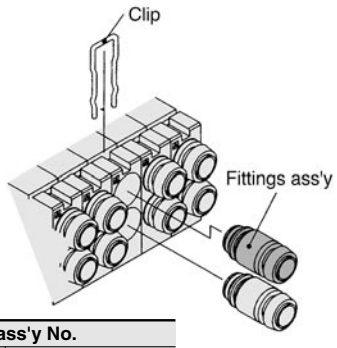
- Turn the manual override clockwise by 180˚ to set the ▶ mark to A and press it in the direction indecated by the arrow. It will be locked set in a (Passage: P → A) state.
- Turn the manual override counterclockwise by 180˚ to set the ▶ mark to B and press it in the direction indicated by the arrow. It will be reset in a (Passage: P → B) state. (It is reset when shipped.)

⚠ Caution

Do not apply too much torque when turning the locking manual override. (0.1Nm or less)

⚠ Caution
Replacement of Cylinder Port Fittings

The cylinder port fittings are in a cassette for easy replacement. (Except for VQ0000) 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 ass'y until it strikes against the inside wall and then re-insert the clip to the specified position.



Applicable tube O.D	Fitting ass'y No.	
	VQ1000	VQ2000
ø3.2	VVQ1000-50A-C3	–
ø4	VVQ1000-50A-C4	VVQ1000-51A-C4
ø6	VVQ1000-50A-C6	VVQ1000-51A-C6
ø8	–	VVQ1000-51A-C8

∗ The minimum order quantity is 10 pcs.

Precautions

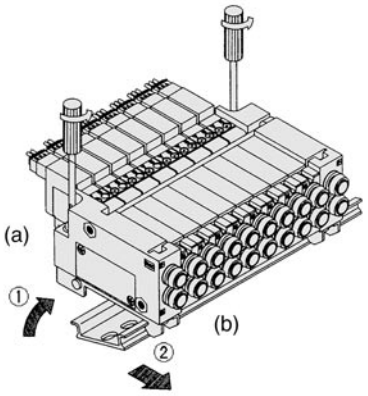
1) Protect O rings from scratches and dust to prevent air leakage.
2) The tightening torque for inserting fittings to the M5 thread assembly should be 0.8 to 1.4 Nm.

⚠ Caution
Mounting/Removing from the DIN Rail

<Sequence of procedure>

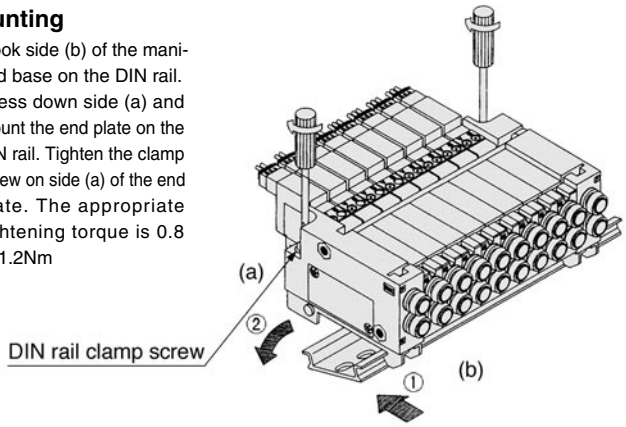
Removing

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



Mounting

1) Hook side (b) of the manifold base on the DIN rail.
2) Press down side (a) and mount the end plate on the DIN rail. Tighten the clamp screw on side (a) of the end plate. The appropriate tightening torque is 0.8 to 1.2Nm



⚠ Caution
Built-in Silencer Replacement Element

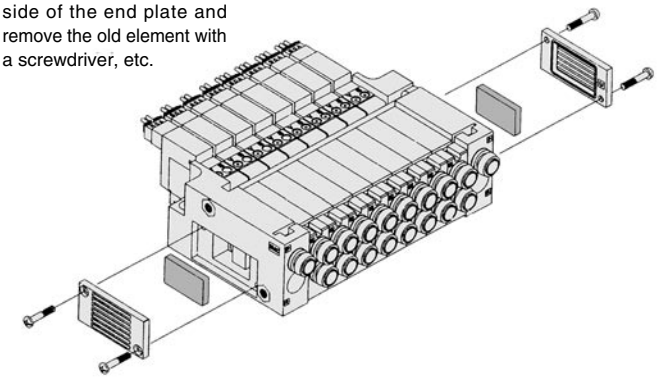
A silencer element is incorporated in the end plate on both sides of the manifold base. A dirty and choked element may reduce cylinder speed or cause malfunction. Clean or replace the dirty element.

Element part No.

Model	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.

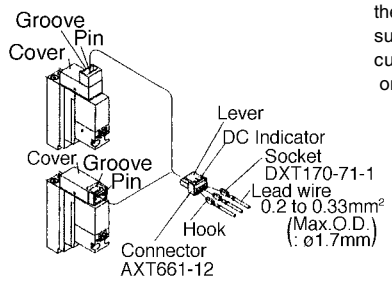
Remove the cover from the side of the end plate and remove the old element with a screwdriver, etc.



⚠ Caution
How to Use Plug Connector

Connection/Disconnection of Plug

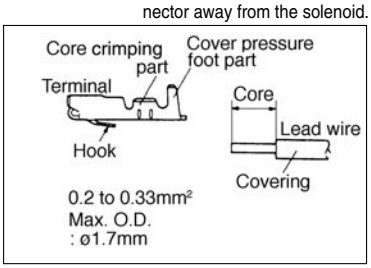
Push the connector straight onto the pins of the solenoid, making sure the lip of the lever is securely positioned in the groove on the solenoid cover.



Crimping the Lead Wire and Socket

Peel 3.2 to 3.7mm of the tip of lead wire, enter the core wires neatly into a socket and press contact it by a press tool. Be careful so that the cover of lead wire does noto enter into the core press contacting part.

Crimp the lever against the connector and pull the connector away from the solenoid.



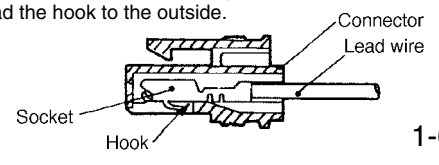
Connection/Disconnection of Socket with Lead Wire

Connection

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.

Disconnection

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

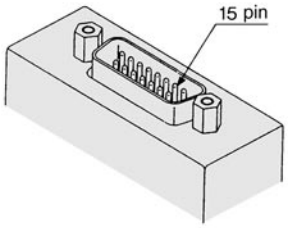


Options

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 pin**



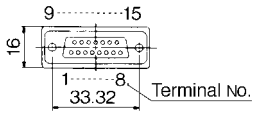
How to Order Manifold

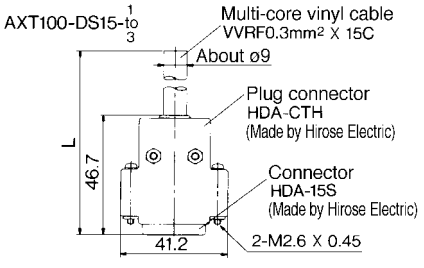
Ex.) **VV5Q14 — 06 F SA — D □ -Q**

- 06: Stations
- SA: How to order — D-sub connector, 15 pin; Connector location –Side (horizontal); Without cable
- D□: Option

Kit, Eectrical entry

Pins \ Location	Top (vertical)		Side (horizontal)	
15 pin (Max.7 stations)	Kit F	suffix: UA	Kit F	suffix: SA





Wire color table by teuminal number of D-sub connector cable ass'y

Terminal No.	Lead wire colour	Dot marking
1	Black	–
2	Brown	–
3	Red	–
4	Orange	–
5	Yellow	–
6	Pink	–
7	Blue	–
8	Violet	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black

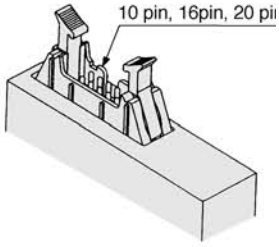
∗ As in the case of 25 pin models (standard), terminal No.1 is the first station SOL.A and the terminal No.8 is COM.

D-sub connector cable assembly

Length (L) \ Pins	15 pin
1.5m	AXT100-DS15-1
3m	AXT100-DS15-2
5m	AXT100-DS15-3

∗ When using other commercially available connectors, select models that conform to MIL-C-24308.

P **Kit (Flat cable connector) 10 pin, 16 pin, 20 pin**



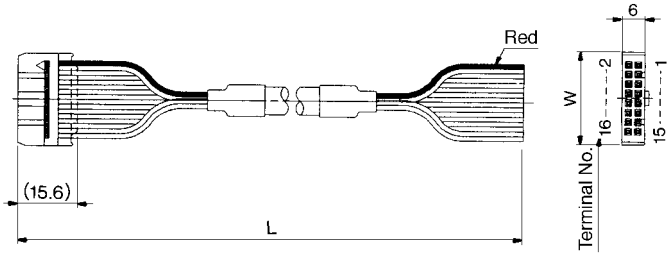
How to Order Manifold

Ex.) **VV5Q14 — 06 P SC — D □ -Q**

- 06: Stations
- SC: How to order — Flat cable, 20 pin; Connector location –Side (horizontal); Without cable
- D□: Option

Kit, Electrical entry

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



∗ As in the case of 26 pin models (standard), terminal No.1 is the first station SOL.A and the last two terminal numbers are used for COM.

Flat cable assembly

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

∗ When using other commercially available connectors, select models with strain relief that conform to MIL-C-83503.

Special Wiring Specifications

Regardless of the valve or option, the standard internal wiring for double solenoid capability is provided to each station of F/P/T/S kit. As option, combinations of single and double wiring (connected to SOL.A, B) are available.

1. How to Order

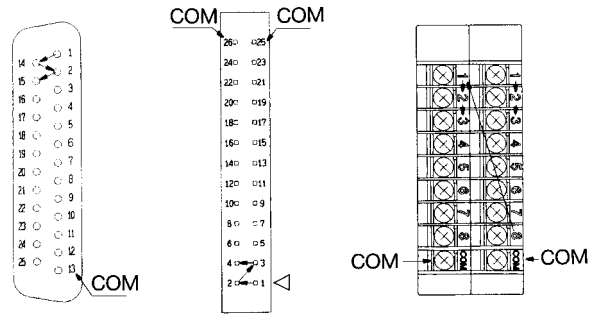
Indicate an option symbol, "–K," for the manifold No. and be sure to specify the mounting position and number of stations of the single and double wiring by means of a manifold specification form.

How to order manifold **VV5Q14–09FS0–D K S -Q**

Others, option symbol in alphabetical order

2. Wiring specification

With the A side solenoid of the 1st station as No.1 (meaning, to be connected to No.1 terminal), wires are connected in the order indicated by the arrow in the DWG without making any terminals vacant.



F kit
D-sub connector
(25 pin)

P kit
Flat cable connector
(26 pin)

T kit
Terminal block
(16 terminals)

3. Max. number of stations

The max. 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 cable connector)				T kit (Terminal block)		S kit (Serial transmission)
Model	F$^{U}_{S}$□ 25 pin	F$^{U}_{S}$A 15 pin	P$^{U}_{S}$□ 26 pin	P$^{U}_{S}$C 20 pin	P$^{U}_{S}$B 16 pin	P$^{U}_{S}$A 10 pin	T1	T2	S□
Max. number	16(1)	14	16(1)	16(1)	14	8	8	16	16

Note 1) Due to the limitation of internal wiring.

Negative COM Specifications

Specifiy the valve model No. as shown below for negative COM specification. The standard manifold No. can be used. Contact SMC for negative COM S kit.

How to Order Negative COM Manifold

VQ1140 N – 5LO–C6 -Q

Negative COM specification

Inch-size One-touch Fittings

The valve with inch-size One-touch fittings is shown below.

How to order manifold

VV5Q14 – 08FS0 – DN – 00T -Q

P, R port size

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

How to order valve

VQ1140 – 5M – N7 -Q

Cylinder ports

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

Plug Connector Assembly Model

F, P, T and S kits need connector assembly when adding a valve station. Specify the style of valve and connector assembly .

Connector ass'y No.

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

Note) Lead wire length: 300mm

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–$^{13}_{14}$A (N)–F–425".

Options

DIN Rail Mounting Style

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. 30mm longer than the manifold with the specified number of stations is attached.

● **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–D0S-Q

List option symbols in alphabetical order

● **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-Q

List option symbols in alphabetical order

DIN rail for 9 stations

● **When changing the manifold style into a DIN rail mounting**

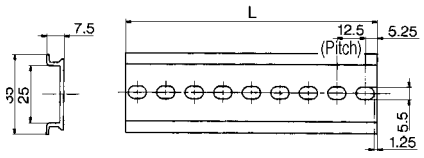
Order brackets for mounting a DIN rail. (See Options on p.1-648 and 1-649 and 1-652)

No. VQ0000–57A–4 (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 determing <.



L dimension L=12.5 X n+10.5

No.	1	2	3	4	5	6	7	8	9	10
L	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	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	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	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

VQ1000

Body Ported

Plug Lead Unit/Cassette Style

How to Order Manifold

VV5Q1 7 – 08 F U1 – D – -Q

Series VQ1000

Manifold

7	Plug lead unit/Cassette

Stations

01	1 station
⋮	⋮

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

Option

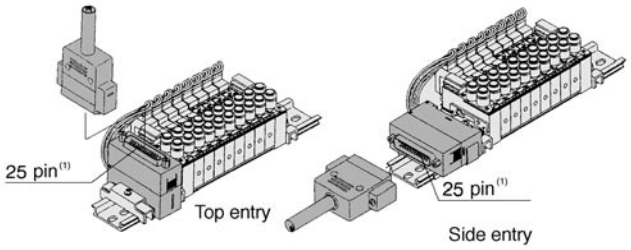
D (1)	DIN rail mounting
K (2)	Special wiring specification (Not double wiring)
N (3)	With name plate

Note 1) Manifold is a DIN rail mounting style, and so suffix "–D" shoud be indicated.
Note 2) Specify the wiring specifications by means of the manifold specification form. (Except for C kit.)
Note 3) Unmountable when the valve's manual is a locking lever style.
Note 4) When specifying more than one option, please list alphabetically.

–	One-touch fitting for ø6 P, R port
00T	One-touch fitting for ø1/4" P, R port

Kit/Electrical entry/Cable length

F Kit (D-sub connector)

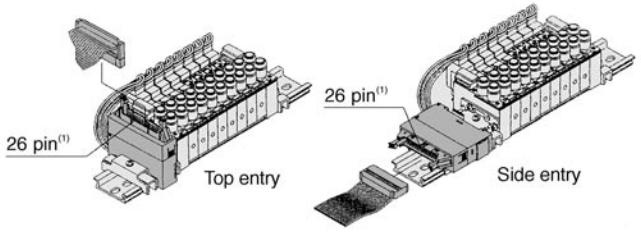


Connector location				
Top (vertical)		Side (horizontal)		
F Kit	U0	F Kit	S0	Without cable
	U1		S1	With cable (1.5m)
	U2		S2	With cable (3m)
	U3		S3	With cable (5m)

Max.16 (2) stations

P.1-664

P Kit (Flat cable connector)

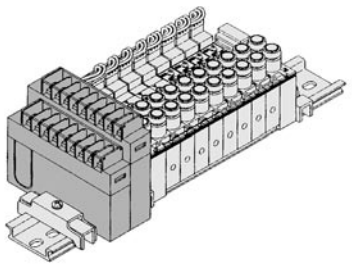


Connector location				
Top (vertical)		Side (horizontal)		
P Kit	U0	P Kit	S0	Without cable
	U1		S1	With cable (1.5m)
	U2		S2	With cable (3m)
	U3		S3	With cable (5m)

Max.16 (2) stations

P.1-666

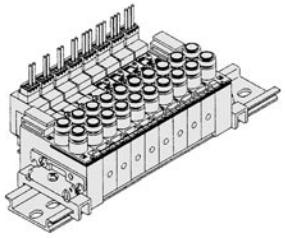
T Kit (Terminal block)



T Kit			
	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

P.1-668

C Kit (Connector)

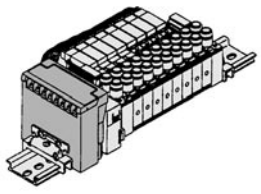


C	Connector	Max.16 stations

P.1-670

S Kit (Serial transmission unit)

The valve is equipped with an indicator light/ surge voltage suppuressor, and the voltage is 24V DC.



S Kit			
	B	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)	Max. (2) 16 stations
	C	SI unit for SYSBUS Wire System (OMRON)	
	N	SI unit for Profibus DP	
	P	SI unit for Interbus	
	Q	SI unit for Device Net and CompoBus/D (OMRON)	
	Y	SI unit for Can Open	
	T2	SI unit for ASI (yellow+black wires)	Max. 8
	T4	SI unit for ASI (yellow+black wires)	Max. 4
	T5	SI unit for ASI (yellow wires)	

P.1-672

Note 1) Besides the above, F and P kits with different number of pins are available. See p.1-680 for details.
Note 2) See p.1-681 for details.

How to Order Valve

VQ 1 [1] 7 [0] [Y] – [5] [M] [ ] – [C6] -Q

Series VQ1000

Configuration

1	2 position single
2	2 position double (latching)
2	Metal seal
2	Rubber seal
3	3 position closed centre
4	3 position exhaust centre
5	3 position pressure centre

Protective class class III (Mark:◈)

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Function

Symbol	Specification
—	1.0W(0.7MPa Max. operating pressure)
H	1.5W(0.8MPa Max. operating pressure)
K (1)	1.0W(1.0MPa Max. operating pressure)
Y	0.5W(0.7MPa Max. operating pressure)
N	Negative common

* Only the following combination is possible. HN, KN, YN

Note 1) Available only to metal seal type.

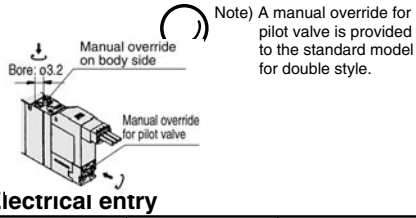
Seal

0	Metal
1	Rubber

Note 1) F, P, T and S kits need conector ass'y when adding the valve station.

Manual override

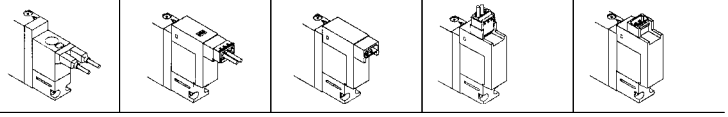
—	B	C
Non-locking push style	Push-locking slotted style	Push-locking lever style



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

Electrical entry

G: Grommet (C kit only. Except for latching style and 100V 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
	With indicator light and surge suppressor	With indicator light and surge suppressor	With indicator light and surge suppressor	With indicator light and surge suppressor



Note 1) LO and MO valves are used for F, P, T, and S kits. Plug connector and lead wire layers are attached to the manifold.

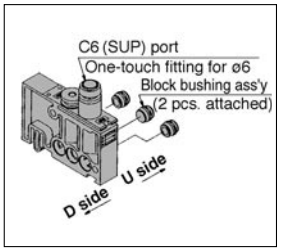
Cylinder ports

C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
M5	M5 thread
N1	One-touch fitting for ø1/8"
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4"
M5T	10-32 UNF thread
L3	Elbow with one-touch fitting for ø3.2
L4	Elbow with one-touch fitting for ø4
L6	Elbow with one-touch fitting for ø6
LM5	Elbow with one-touch fitting for M5 thread
LN1	Elbow with One-touch fitting for ø1/8"
LN3	Elbow with One-touch fitting for ø5/32"
LN7	Elbow with One-touch fitting for ø1/4"
LM5T	Elbow with One-touch fitting for 10-32 UNF thread

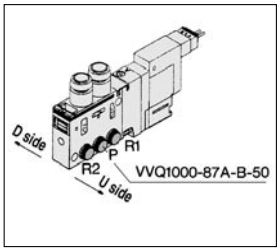
Manifold Options

P.1-675

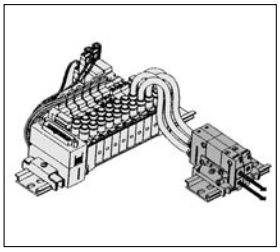
Individual SUP spacer
VVQ1000–P–7–C6



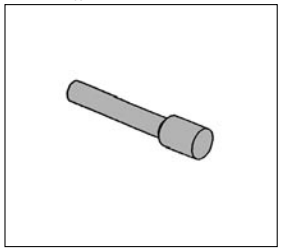
SUP/EXH block bushing assembly
VVQ1000–87A–B–50



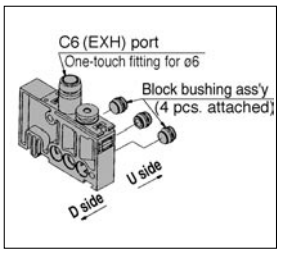
Double check block
VQ1000–FPG–□□



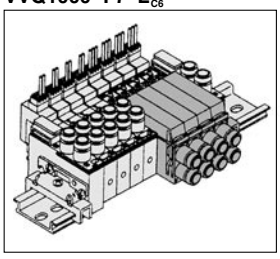
Blank plug
KQ2P–$^{23}_{06}$–00



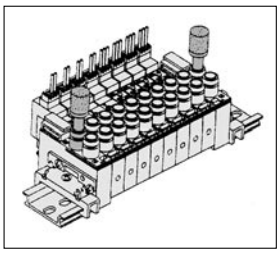
Individual EXH spacer
VVQ1000–R–7–C6



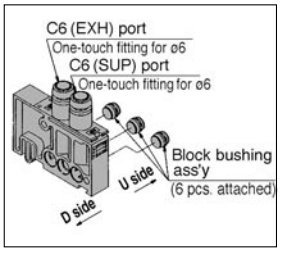
Elbow fittings assembly
VVQ1000–F7–L$^{C3}_{C4}$^{C6}



Silencer
AN103–X233

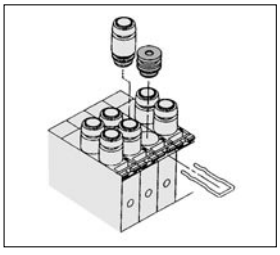


Individual SUP/EXH spacer
VVQ1000–PR–7–C6



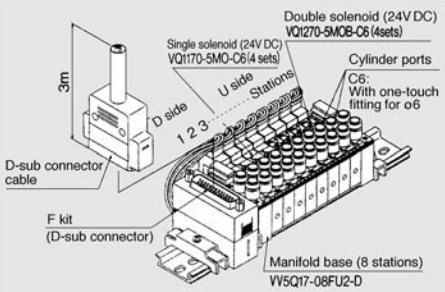
Name plate [–N7]
VVQ1000–N7–station (1 to Max. stations)

Port plug
VVQ0000–58A



How to Order Manifold Ass'y (Example)

Ordering example



VV5Q17–08FU2–D-Q····· 1 set (F kit 8 station manifold base No.)
VQ1170–5MO–C6-Q····· 4 sets (Single solenoid No.)
VQ1270–5MOB–C6-Q··· 4 sets (Double {latching} solenoid No.)

Specify valve and option nos. Below the manifold base No. When arrangement is complicated, specify the nos. by using a manifold specification form.

- **See p.1-679 for cylinder port fittings.**
- **See p.1-699 for replacement parts.**

VQ1000 Body Ported
Plug Lead Unit/Cassette Style

Model

Series	Configuration		Model		Effective area (1) (mm^2)(N ℓ/min)	Response time (2) (ms) Standard 1W	Weight (g)
VQ1000	2 position	Single	Metal seal	VQ1170	3.6 (196.3)	12 or less	67
			Rubber seal	VQ1171	5.1 (274.82)	15 or less	
		Double (latching)	Metal seal	VQ1270	3.6 (196.3)	12 or less	
			Rubber seal	VQ1271	5.1 (274.82)	15 or less	
	3 position	Closed centre	Metal seal	VQ1370	3.6 (196.3)	20 or less	
			Rubber seal	VQ1371	5.1 (274.82)	25 or less	
		Exhaust centre	Metal seal	VQ1470	3.6 (196.3)	20 or less	
			Rubber seal	VQ1471	5.1 (274.82)	25 or less	
		Pressure centre	Metal seal	VQ1570	3.6 (196.3)	20 or less	
			Rubber seal	VQ1571	5.1 (274.82)	25 or less	

Note 1) Cylinder port size C6
Note 2) As per JISB8375-1981 (supply pressure: 0.5MPa; with indicator light and surge voltage suppressor; clean air). Subject to the pressure and air quality.

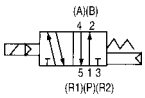
Standard Specifications

Valve	Seal		Metal seal	Rubber seal
	Fluid		Air/Inert gas	Air/Inert gas
	Max. operating pressure		0.7MPa (High pressure type: 0.8MPa) (3)	
	Min. operating pressure	Single	0.1MPa	0.15MPa
		Double (latching)	0.18MPa	0.18MPa
		3 position	0.15MPa	0.2MPa
	Proof pressure		1.5MPa	
	Ambient and fluid temperature		–10 to 50°C (1)	
	Lubrication		Not required	
	Manual override		Non-locking push style/Push-locking slotted, lever styles (option)	
	Impact/Vibration resistance (2)		150/30m/s²	
	Protection structure		Dust proof	
Solenoid	Coil rated voltage		12, 24VDC	
	Allowable voltage		±10% of rated voltage	
	Coil insulation		Class B or equivalent	
	Power consumption (Current value)	24V DC	1W DC (42mA), 1.5W DC (63mA) (3), 0.5W DC (21mA) (4)	
		12V DC	1W DC (83mA), 1.5W DC (125mA) (3), 0.5W DC (42mA) (4)	

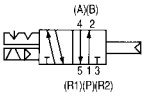
Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, for both energized and de-energized states.
Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz. Test was performed at both energized and de-energized states to the axis and right angle directions of the main valve and armature. (Value in the initial stage.)
Note 3) Values in case of high pressure style (1.5W).
Note 4) Values in case of low wattage (0.5W) specification.

JIS Symbol

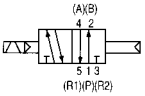
2 position single



2 position double (latching)

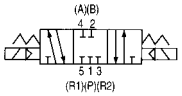


Metal seal

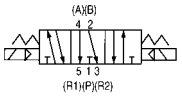


Rubber seal

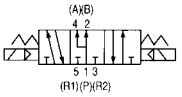
3 position closed centre



3 position exhaust centre



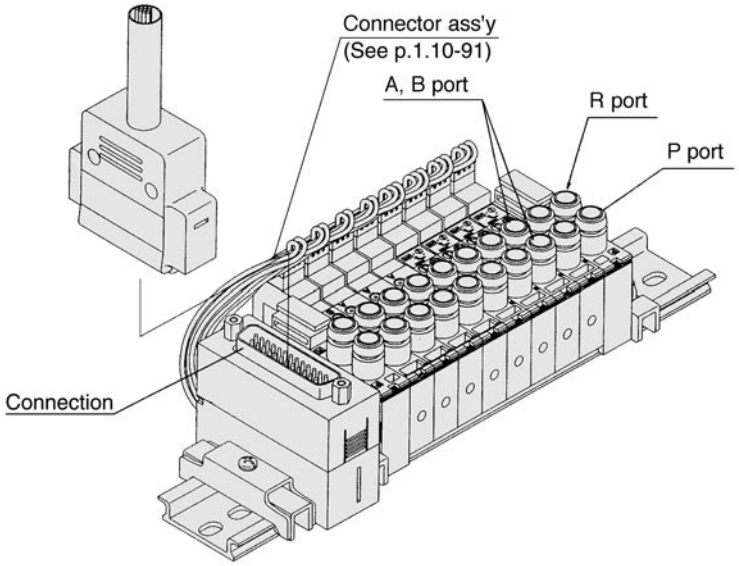
3 position pressure centre



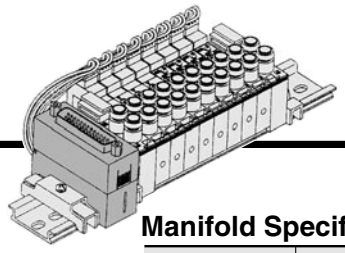
Manifold Specifications

Series	Base model	Electrical connection	Porting specifications			Applicable stations (2)	Applicable solenoid valve	5 station weight (g)
			Port location	One-touch fitting/Port size (1)				
				P, R	A, B			
VQ1000	**VV5Q17-□□□-D**	■ **F kit: D-sub connector** ■ **P kit: Flat cable connector** ■ **T kit: Terminal block** ■ **C kit: Individual connector** ■ **S kit: Serial transmission unit**	Top	C6 (ø6)	C3 (ø3.2) C4 (ø4) C6 (ø6) M5(M5 thread)	1 to 16 stations	VQ1□70 VQ1□71	405

Note 1) Inch-size One-touch fittings are also applicable. See p.1-681 for details.
Note 2) See p.1-681 for details.



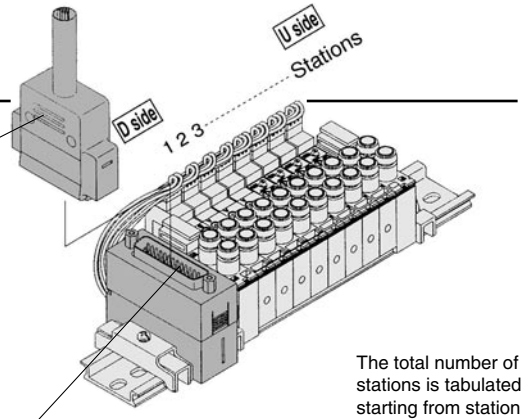
F VQ1000
Kit (D-sub Connector)



- The D-sub connector reduces and installation labor for electrical connections.
- The D-sub connector (25 pin std., 15 pin option) conforms with MIL permitting use of commercial connectors with wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Max. 16 stations.

Manifold Specifications

Series	Porting specifications			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ1000	Top	C6	C3, C4, C6, M5	Max. 16



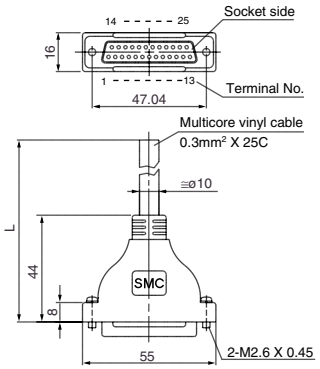
The total number of stations is tabulated starting from station one on the D side.

D-sub connector (25 pin)

AXT100-DS25- $^{015}_{030}$ $_{050}$

Cable Assembly

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



D-sub connector cable ass'y (Option)

Cable Length (L)	Ass'y No.
1m	GVVZS3000-21A-1
3m	GVVZS3000-21A-2
5m	GVVZS3000-21A-3
8m	GVVZS3000-21A-4
20m	GVVZS3000-21A-5

Electric characteristics

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

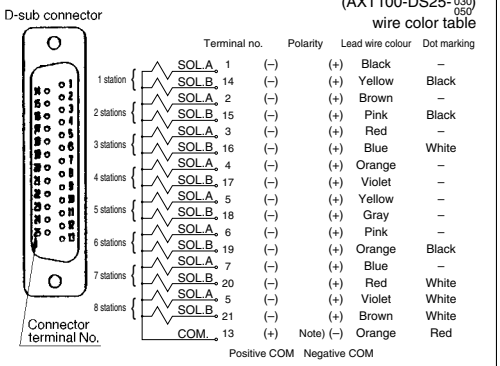
Note) The min. bending redius of D-sub cable is 20 mm.

Wire color table by terminal number of D-sub connector cable assembly

Terminal No.	Lead wire colour	Dot marking
1	Black	–
2	Brown	–
3	Red	–
4	Orange	–
5	Yellow	–
6	Pink	–
7	Blue	–
8	Violet	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	Violet	–
18	Gray	–
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	–

Electrical Wiring Specifications

D-sub cable ass'y (AXT100-DS25-$^{015}_{030}$ $_{050}$) wire color table



Irrespective of the valves or options, the internal wiring is made double (connected to SOL. A and SOL. B) for respective stations of the manifold. The optional specification permits mixture of single and double wiring. See p.1-681 for details.

Note) Use negative COM valves for negative COM specification manifolds. (See p1-681)

How to Order Manifold

VV5Q1 7 – 08 F U 1 – D – Q

Series VQ1000

Manifold

7	Plug lead unit/Cassette

Stations

01	1 station
⋮	⋮
16	16 stations

Note) See p.1-681 for details.

Connector location

U	Top (vertical)
S	Side (horizontal)

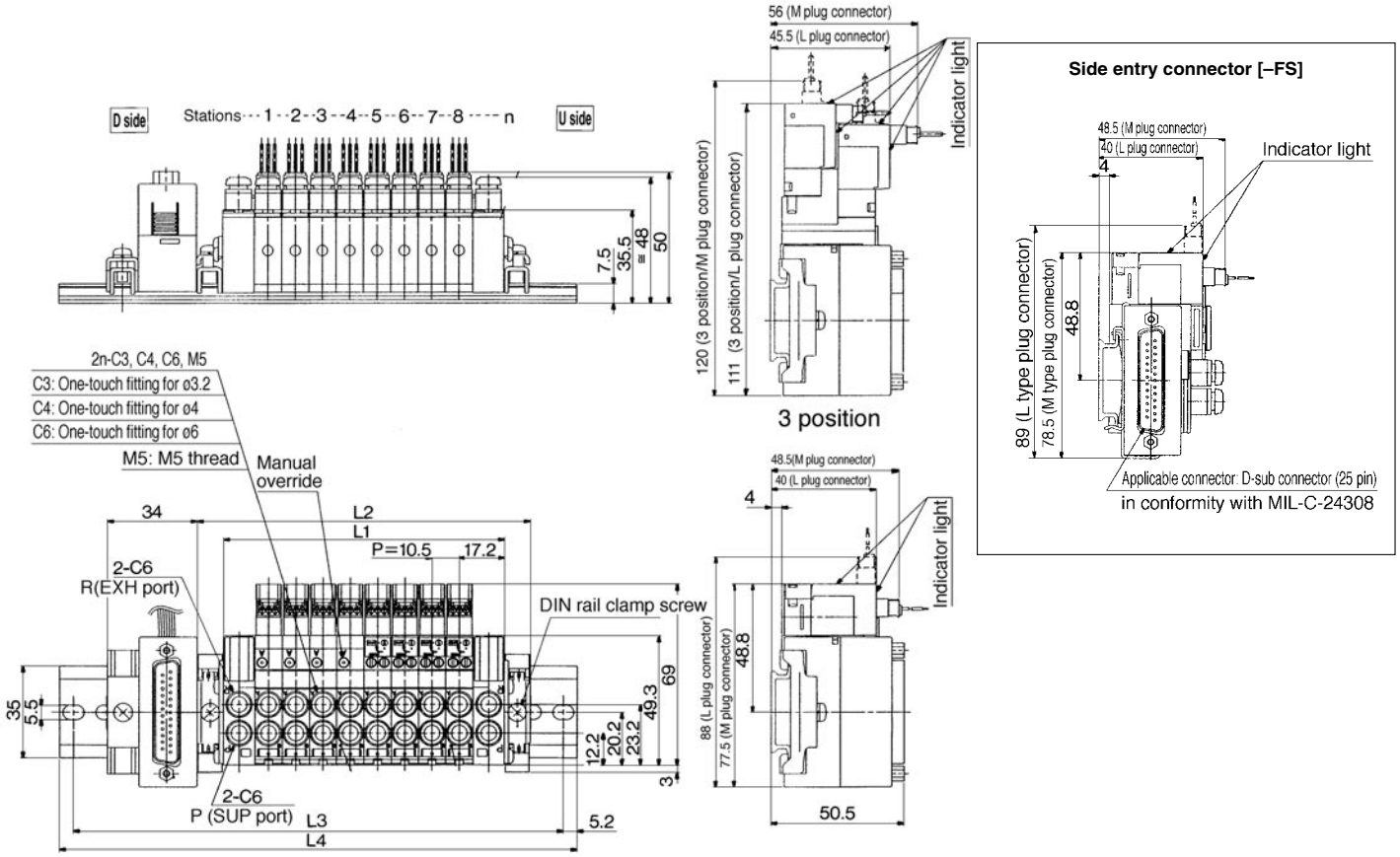
Cable (length)

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

Option

D (1)	DIN rail mounting
K (2)	Special wiring specification(Not double wiring)
N (3)	With name plate

Note 1) Manifold is of a DIN rail mounted type, and so suffix "-D" should be indicated.
Note 2) Specify the wiring specifications by means of the manifold specification form.
Note 3) Unmountable when the valve's manual is a locking lever style.
Note 4) When specifying more than one option, please list alphabetically.



Dimensions/Top entry connector [–FU] (mm)

L1=10.5n+24, L2=10.5n+44, n: Station (Max. 16)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	34.5	45	55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192
L2	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212
L3	112.5	125	137.5	150	150	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5	275
L4	123	135.5	148	160.5	160.5	173	185.5	198	210.5	223	232.5	235.5	248	260.5	273	285.5

Dimensions/Side entry connector [–FS] (mm)

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

How to Order Valve

VQ1 [1] 7 [0] [Y] – [5] [MO] [ ] – [C6] -Q

Series VQ1000

Configuration

1	2 position single
2	2 position double (latching)
3	3 position closed centre
4	3 position exhaust centre
5	3 position pressure centre

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification	DC
–	Standard	(1.0W) ○
H (1)	High pressure	(1.5W) ○
Y (1)	Low wattage	(0.5W) ○

Note 1) Except for double (latching) style.

Note 1) See "Options" on p.1-681 for negative COM specifications.
Note 2) Connector ass'y is necessary for F kits when increasing the valve station. See "Options" on p.1-681 for parts nos.

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

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

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.

Cylinder ports

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

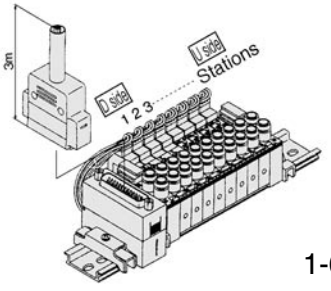
Note 1) The code is L for elbow piping for all manifold stations.
Example) L6: Elbow with One-touch fittings for ø6
Note 2) See "Options" on p.1-681 for One-touch fittings in inch sizes.

How to Order Manifold Ass'y

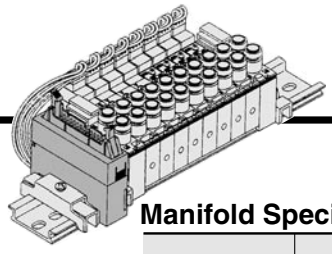
Specify valve and option nos. below the manifold base no.

<Example>
D-sub connector kit with 3m cable
VV5Q17-08FU2-D-Q···1 set–Manifold base No.
VQ1170-5MO-C6-Q·····4 sets–Valve No. (Stations 1 to 4)
VQ1270-5MOBC6-Q··· 4 sets–Valve No. (Stations 5 to 8)

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



P VQ1000
Kit (Flat Cable Connector)

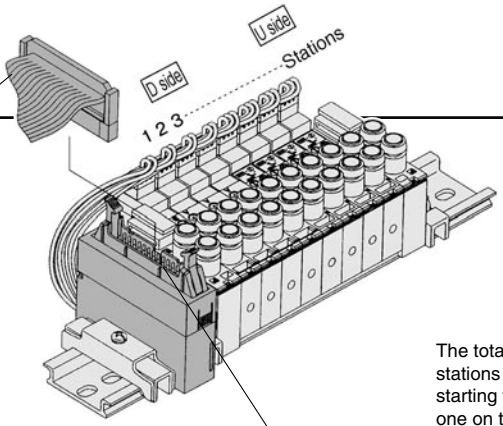


- MIL flat cable connector reduces installation labor savings for electrical connection.
- The connector (26 pin; 10, 16, and 20 pin option) conforms with MIL spec. permitting use of widely interchangeable commercial connectors.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Max. 16 stations.

Manifold Specifications

Series	Porting specifications			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ1000	Top	C6	C3, C4, C6, M5	Max. 16

Flat cable (26 pin)

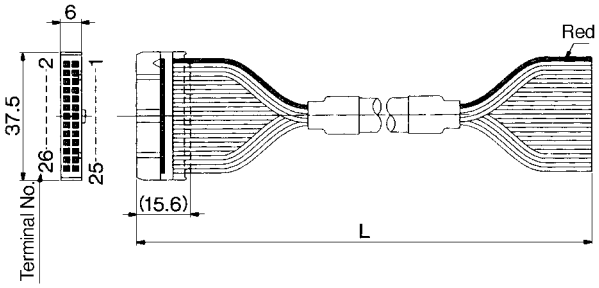


The total number of stations is tabulated starting from station one on the D side.

Cable Assembly

AXT100–FC26–1 to 3

(Flat cable connector ass'y can be ordered individually or included in a specific manifold model No.
Refer to "How to Order Manifold".)



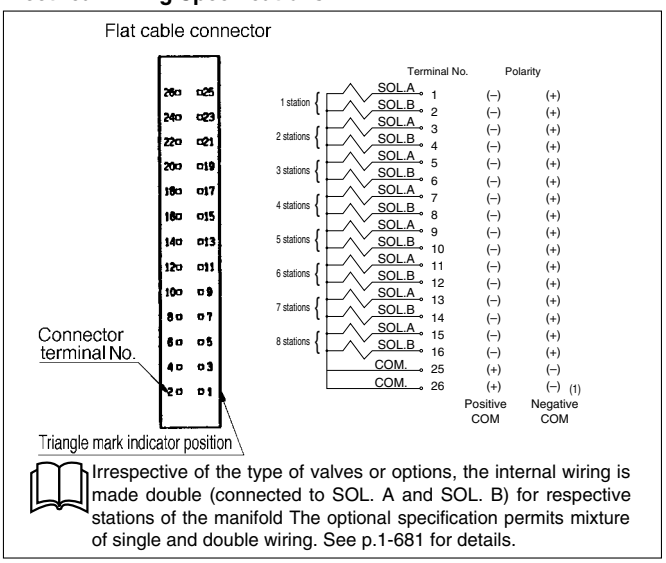
Flat cable connector assembly (Option)

Cable length (L)	Ass'y parts No.	Note
1.5m	AXT100-FC26-1	Cable 26 core X 28AWG
3m	AXT100-FC26-2	
5m	AXT100-FC26-3	

∗ For other commercial connectors, use 26 pin type with strain relief made in conformity with MIL-C-83503.

Note) Types with 10, 16, or 20 pin are also available.
See p.1-680 for details.

Electrical Wiring Specifications



Irrespective of the type of valves or options, the internal wiring is made double (connected to SOL. A and SOL. B) for respective stations of the manifold The optional specification permits mixture of single and double wiring. See p.1-681 for details.

Note) Use negative COM valves for negative COM specification manifolds.
(See p.1-681)

How to Order Manifold

VV5Q1 7 – 08 P U 1 – D – Q

Series VQ1000

Manifold

7	Plug lead unit/Cassette

Stations

01	1 station
⋮	⋮
16	16 stations

Note) (See p.1-681 for details.)

Connector location

U	Top (vertical)
S	Side (horizontal)

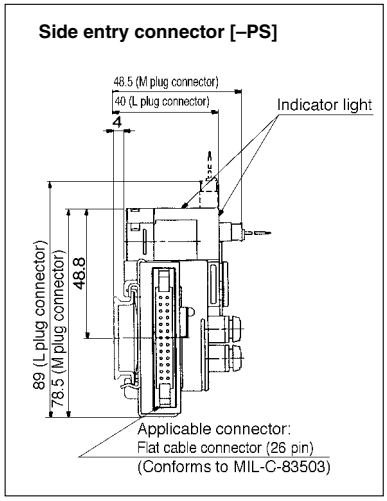
Cable (length)

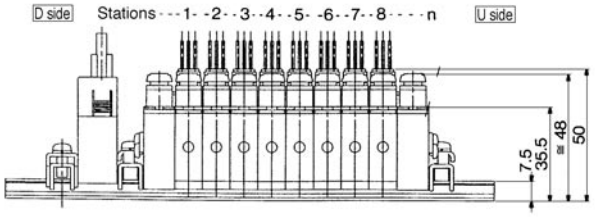
0	Without cable
1	With cable (1.5m)
2	With cable (3m)
3	With cable (5m)

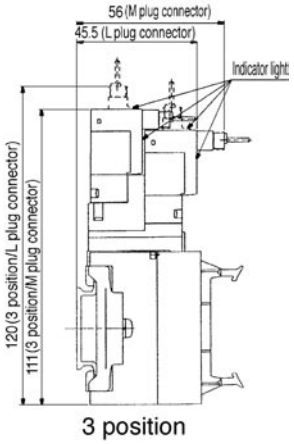
DIN rail/option

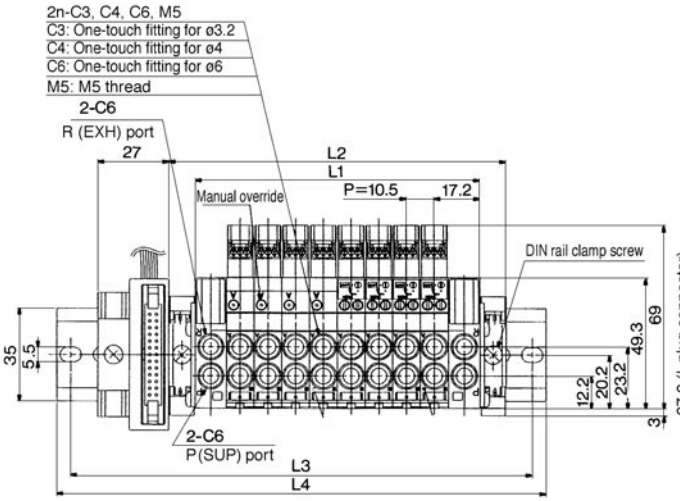
D (1)	DIN rail mounting
K (2)	Special wiring specification (Not double wiring)
N (3)	With name plate

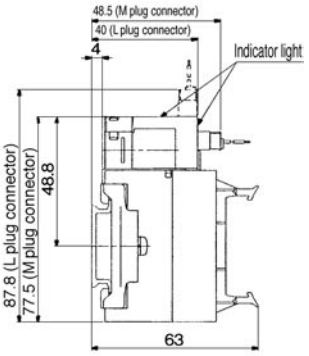
Note 1) Manifold is a DIN rail mounting style, and so suffix "-D" should be indicated.
Note 2) Specify the wiring specifications by means of the manifold specification form.
Note 3) Unmountable when the valve's manual is a locking lever style.
Note 4) When specifying more than one option, please list alphabetically.











Dimensions/Top entry connector [-PU] (mm)

L1=10.5n+24, L2=10.5n+44 n: Station (Max. 16)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	34.5	45	55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192
L2	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212
L3	112.5	112.5	125	137.5	150	162.5	175	175	187.5	200	212.5	225	237.5	237.5	250	262.5
L4	123	123	135.5	148	160.5	173	185.5	185.5	198	210.5	223	235.5	248	248	260.5	273

Dimensions/Side entry connector [-PS] (mm)

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

How to Order Valve

VQ1 1 7 0 Y – 5 MO □ – C6 -Q

Series VQ1000

Configuration

1	2 position single
2	2 position double (latching)
3	3 position closed centre
4	3 position exhaust centre
5	3 position pressure centre

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification	DC
–	Standard	(1.0W) ○
H (1)	High pressure	(1.5W) ○
Y (1)	Low wattage	(0.5W) ○

Note 1) Except for double (latching).

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Note 1) See "Options" on p.1-681 for negative COM specifications.
Note 2) Connector ass'y is necessary for F kits when increasing the valve station. See "Options" on p.1-681 for parts nos.

Manual override

–	Non-locking push style
B (1)	Push-locking slotted style
C	Push-locking lever style

Note 1) Amanual override for pilot valve is provided to the standard model for double style.

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.

Cylinder ports

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

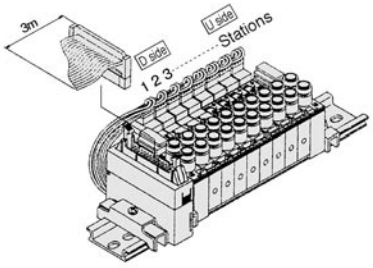
Note 1) The code is L for elblow piping for all manifold stations.
Example) L6: Elblow with One-touch fittings for ø6
Note 2) See "Options" for One-touch fittings in inch sizes.

How to Order Manifold Ass'y

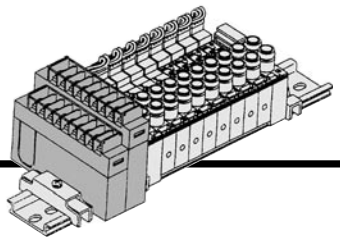
Specify valve and option nos. below the manifold base no.

(Example)
D-sub connector kit with 3m cable
VV5Q17-08PU2-D-Q···1 set–Manifold base No.
VQ1170-5MO-C6-Q···4 sets–Valve No. (Station 1 to 4)
VQ1270-5MOB-C6-Q···4 sets–Valve No. (Station 5 to 8)

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



T VQ1000
Kit (Terminal Block)

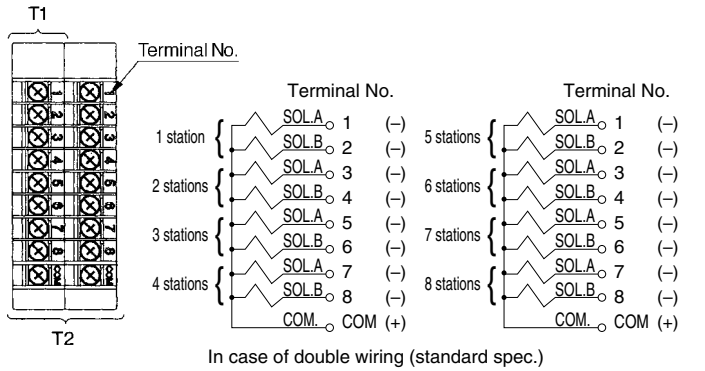


- It is a standard terminal block style.
- Two quautities of terminals can be selected in accordance with the number of stations. (8 terminals/16 terminals)
- Max.16 Stations.

Manifold Specifications

Series	Porting specifications			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ1000	Top	C6	C3, C4, C6, M5	Max. 16

● Electrical Wiring Specifications



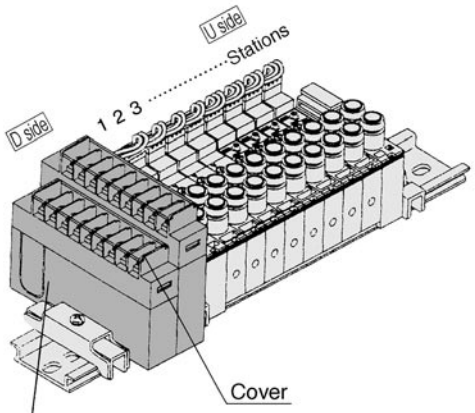
In case of double wiring (standard spec.)
T1 (Terminal block of 1 row): 1 to 4 stations
T2 (Terminal block of 2 rows): 5 to 8 stations
T1 and T2 can be optionally chosen by adopting the combinations of single and double wiring (option spec.), etc.

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. See p.1-681 for details.

Irrespective of the valves or options, the internal wiring is made double (connected to SOL. A and SOL. B) for respective stations of the manifold. The optional specification permits mixture of single and double wiring. See p.1-681 for details.



●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

VV5Q1 7 – 08 T 2 – D – Q

Series VQ1000

Manifold

7	Plug lead unit/Flip

Stations

01	1 station
⋮	⋮
16	16 stations

Note 1) See “option” on p.1-681 for negative COM Specifications.
Note 2) See p.1-681 for details.

Number of terminals

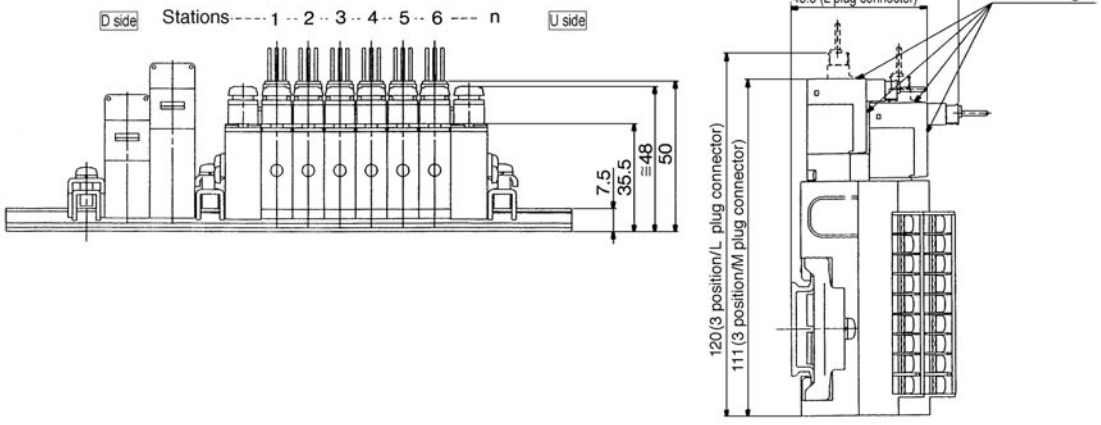
1	8 terminals in 1 row	1 to 4 stations applicable (Double)
2	16 terminals in 2 rows	5 to 8 stations applicable (Double)

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

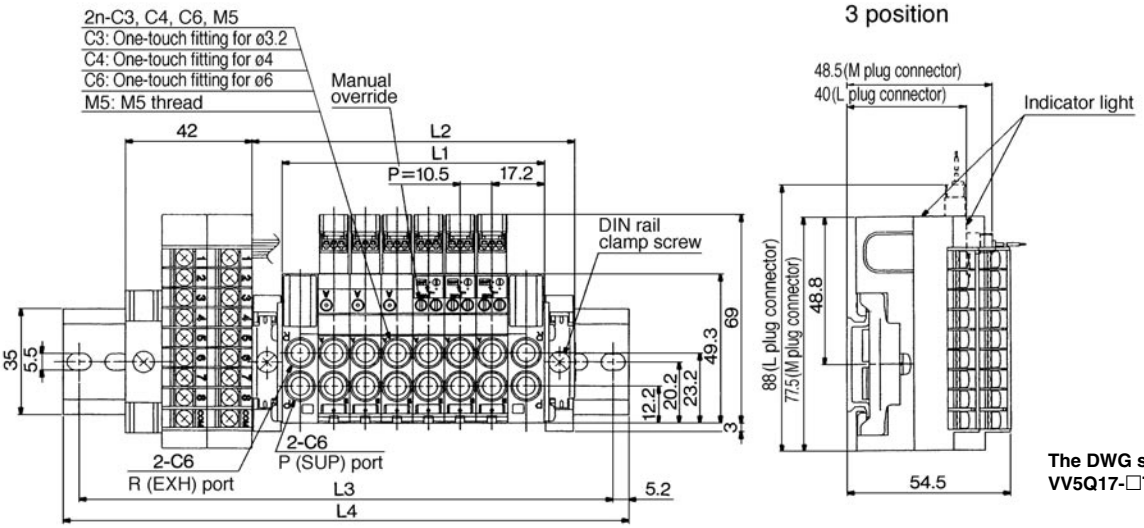
Option

D (1)	DIN rail mounting
K (2)	Special wiring specification(Not double wiring)
N (3)	With name plate

Note 1) Manifold is a DIN rail mounting style, and so suffix “-D” should be indicated.
Note 2) Specify the wiring specification by means of the mounted specification form.
Note 3) Unmountable when the valve's manual is a locking lever style.
Note 4) When specifying more than one option, please list alphabetically.



3 position



The DWG shows the case of VV5Q17-□T2-D□

Dimensions (mm)

Equation L1=10.5n+24 L2=10.5n+44 n: Stations (Max. 16)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	34.5	45	55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192
L2	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212
L3	125	137.5	137.5	150	162.5	175	187.5	200	200	212.5	225	237.5	250	262.5	275	275
L4	135.5	148	148	160.5	173	185.5	198	210.5	210.5	223	235.5	248	260.5	273	285.5	285.5

How to Order Valve

VQ1 1 7 0 Y – 5 MO ☐ – C6 -Q

Series VQ1000

Configuration

1	2 position single
2	2 position double (latching)
3	3 position closed centre
4	3 position exhaust centre
5	3 position pressure centre

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification	DC
–	Standard	(1.0W) ○
H (1)	High pressure	(1.5W) ○
Y (1)	Low wattage	(0.5W) ○

Note 1) Except for double (latching).

Note 1) See "Options" on p1-681 for negative COM specifications.
Note 2) Connector ass'y is necessary for T kits when increasing the valve station. See "Options" on p1-681 for parts nos.

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less
Order Made	Contact SMC for other voltages (9)

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking leverstyle

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

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.

Cylinder ports

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

Note 1) The code is L for elbow piping for all manifold stations.
Example) L6: Elbow with One-touch fittings for ø6

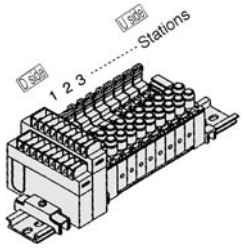
Note 2) See "Options" on p.1-681 for One-touch fittings in inch sizes.

How to Order Manifold Ass'y

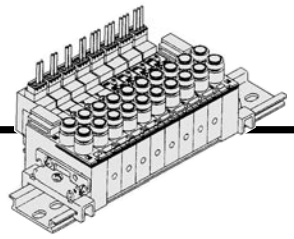
Specify valve and option nos. below the manifold base no.

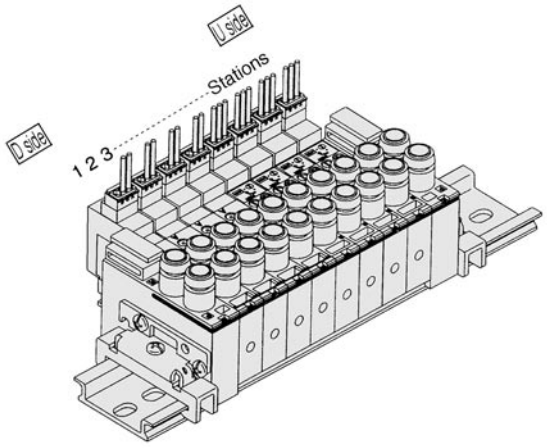
(Example)
Flat cable connector
VV5Q17-08T2-D-Q·····1 set–Manifold base No.
VQ1170-5MO-C6-Q·····4 sets–Valve No. (Stations 1 to 4)
VQ1270-5MOB-C6-Q ··· 4 sets–Valve No. (Stations 5 to 8)

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



C VQ1000
Kit (Connector)





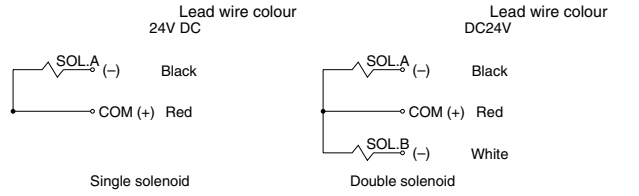
- Standard with lead wires connected to each valve individually.
- Max. 16 stations

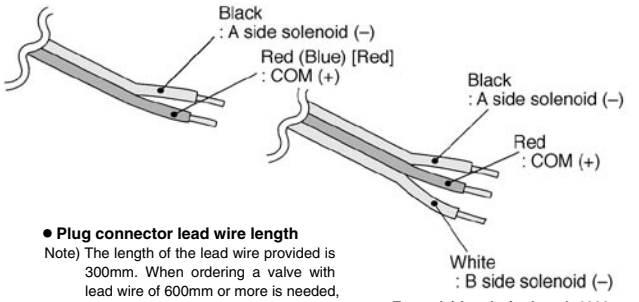
Manifold Specifications

Series	Porting specifications			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ1000	Top	C6	C3, C4, C6, M5	Max. 16

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 300mm. When ordering a valve with lead wire of 600mm or more is needed, specify both the valve without connector and the longer connector ass'y no.

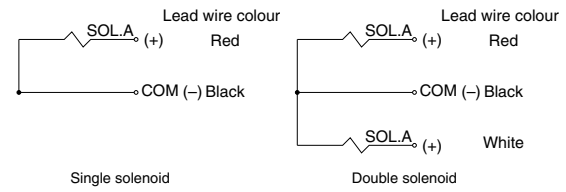
Example) Lead wire length 1000mm
VQ1170-5LO-C6·····3 pcs.
AXT661-14A-10 ·····3 pcs.

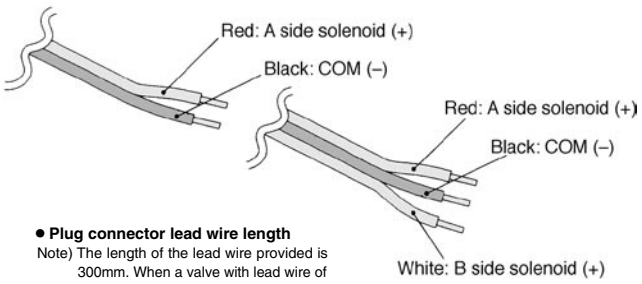
Connector ass'y No.(DC)

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

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 length of the lead wire provided is 300mm. When a valve with lead wire of 600mm or more is needed specify both the valve without connector and the longer connector ass'y No.

Example) Lead wire length 1000mm
VQ1170N-5LO-C6·····3 pcs.
AXT661-14AN-10 ·····3 pcs.

Connector ass'y No.

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

Note) Use negative COM valves for negative COM specification manifolds.

How to Order Manifold

VV5Q1 7 – 08 C – D □ -Q

Series VQ1000

Manifold

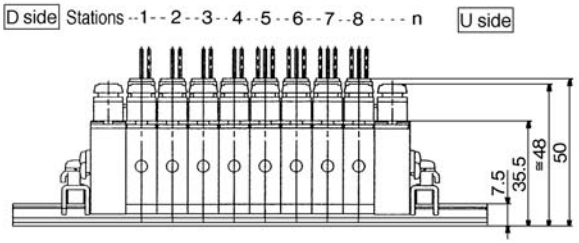
Stations

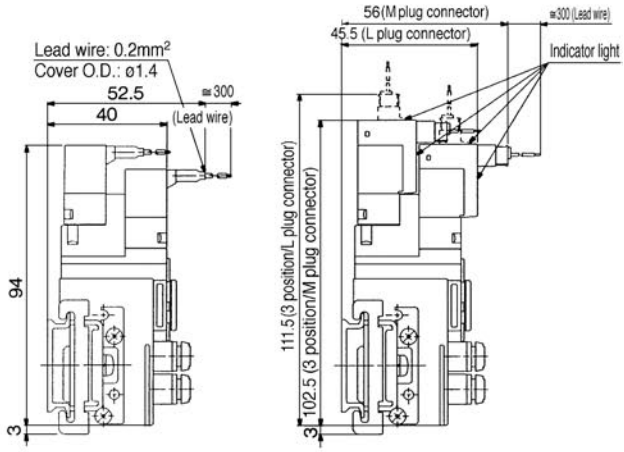
01	1 station
⋮	⋮
16	16 stations

Option

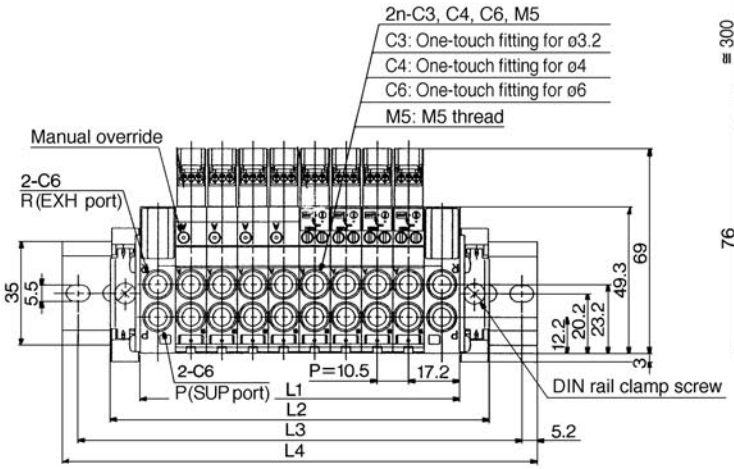
D (1)	DIN rail mounting
N (2)	With name plate

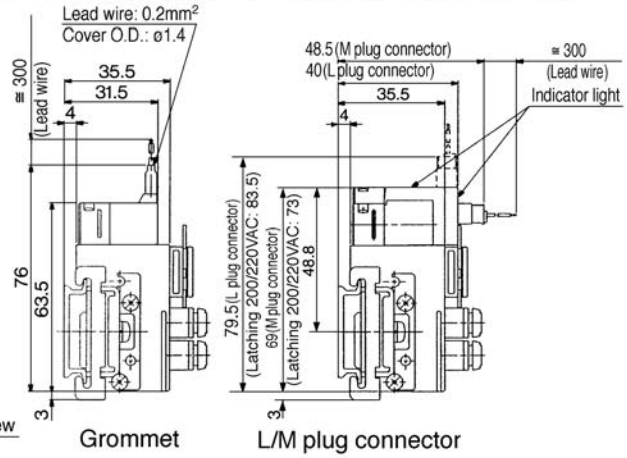
Note 1) Manifolds are a DIN rail mounting style , and so suffix "-D" should be indicated.
Note 2) Unmountable when the valve's manual is a locking lever style.
Note 3) When more than one option, "N" is desired, write as "DN."





3 position (Grommet) 3 position (L/M plug connector)





Grommet L/M plug connector

Dimensions (mm)

Equation L1=10.5n+24, L2=10.5n+44 n: Station (Max. 16)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	34.5	45	55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192
L2	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212
L3	75	87.5	100	112.5	125	137.5	137.5	150	162.5	175	187.5	200	200	212.5	225	237.5
L4	85.5	98	110.5	123	135.5	148	148	160.5	173	185.5	198	210.5	210.5	223	235.5	248

How to Order Valve

VQ1 1 7 0 Y – 5 M ☐ – C6 -Q

Series VQ1000

Configuration

1	2 position single
2	2 position double (latching)
3	3 position closed centre
4	3 position exhaust centre
5	3 position pressure centre

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H (2)	High pressure	(1.5W) ○
Y (2)	Low wattage	(0.5W) ○

Note 2) Except for double (latching).

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Note 1) See "Options" on p.1-681 for negative COM specifications.

Cylinder ports

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

Note 1) The code is L for elbow piping for all manifold stations.
Example) L6: Elbow with One-touch fittings for ø6
Note 2) See "Options" on p.1-681 for One-touch fittings in inch sizes.

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

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

Electrical entry

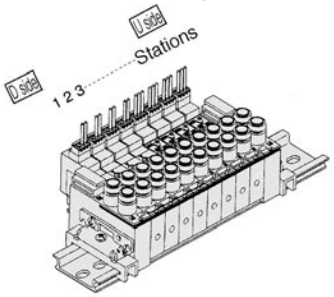
G	Grommet (Except for latching)
L	L plug connector with lead wire
LO	L plug connector without connector
M	M plug connector with lead wire
MO	M plug connector without connector

How to Order Manifold Ass'y

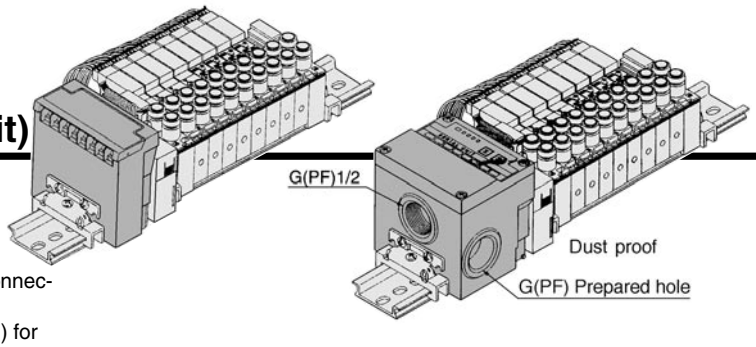
Specify valve and option nos. below the manifold base no.

(Example)
Connector kit with 3m cable
VV5Q17-08C-D-Q··· 1 set–Manifold base No.
VQ1170-5M-C6-Q·····4 sets–Valve No. (Stations 1 to 4)
VQ1270-5MB-C6-Q ···4 sets–Valve No. (Stations 5 to 8)

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



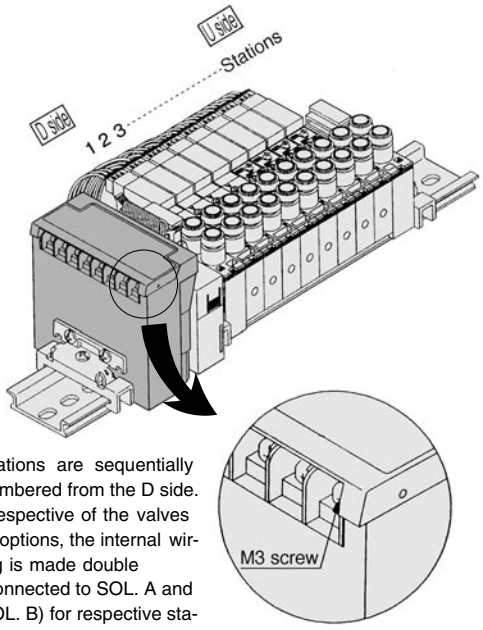
S VQ1000
Kit (Serial Transmission Unit)



- The serial transmission system minimizes wire mass and wire connection labor and promotes space-savings.
- The system comes in an SA (generic type for small scale system) for equipment with a small number of I/O points, or 32 points max., SB (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., SC (applicable to OMRON models), and SD (applicable to Sharp models; 504 points max.).
- 16 stations max. (Specify a model with more than 8 stations by using a manifold specification form.)

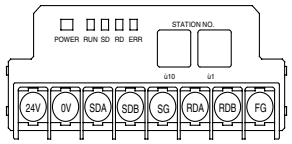
Manifold Specifications

Series	Porting specifications			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ1000	Top	C6	C3, C4, C6, M5	Max. 16



- Stations are sequentially numbered from the D side.
- Irrespective of the valves or options, the internal wiring is made double (connected to SOL. A and SOL. B) for respective stations of the manifold. The optional specitication permits mixture of single and double wiring. See p.1-681 for details.

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

	SB applicable to MELSECNET/MINI-S3 Data Link (Mitsubishi Electric.)
Name of terminal block (LED)	 LED name / Details: POWER: Lighting when power is turned ON RUN: Lighting when data transmission with the master station is normal RD: Lighting douring data reception SD: Lighting douring data transmission ERR.: Lighting when reception data error occurs. Light turns off when the error is corrected.
Note	● Master station: PLC made by Mitsubishi Electric Corp. Series MELSEC-A AJ71PT32-S3, AJ71T32-S3 A1SJ71PT32-S3 ＊ Max. 64 stations, connected to remote I/O stations (Max. 512 points). ● 16 outputs, 2 stations occupied.

How to Order Manifold

VV5Q1 7 – 08 S B – D – XP – Q

Dust proof (–XP)
Suffix "-XP" for the dust proof SI units. (Consult SMC.)

Series VQ1000

Manifold

7	Plug lead unit/Cassette

Stations

01	1 station
⋮	⋮
08 (1)	8 position (Single)
16	16 position (Double)

Note 1) As option the maximum number of stations can be increased based on special wiring specifi - cations.
See p.1-681 for details.

Style

B	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)
C	SI unit for SYSBUS Wire System (OMRON)
N	SI unit for Profibus DP
P	SI unit for Interbus
Q	SI unit for Device Net and CompoBus/D (OMRON)
Y	SI unit for Can Open
T2	SI unit for ASI (yellow+black wires) Max.8 stations
T4	SI unit for ASI (yellow+black wires) Max.4 stations
T5	SI unit for ASI (yellow wires) Max.4 stations

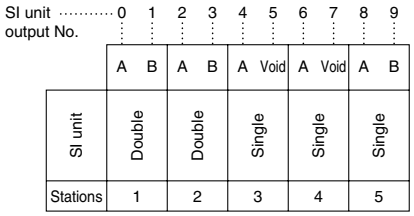
DIN rail/option

D (1)	DIN rail mounting
K (2)	Special wiring specification (Not double wiring)
N (3)	With name plate

Note 1) Manifold is a DIN rail mounting style, and so suffix "-D" shoud beindicated.
Note 2) Specify the wiring specifications by means of the manifold specification form.
Note 3) Unmountable when the valve's manual is a locking lever style.
Note 4) When specifying more than one option, please list alphbetically.

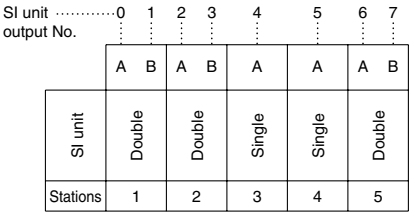
● SI unit output and coil numbering

<Wiring example 1>

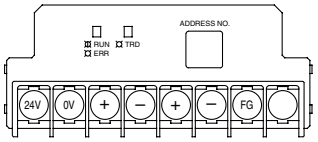


Double wiring (Standard)

<Wiring example 2> Mixed wiring is optional. Use the manifold specification form to specify.



Single/Double mixed wiring (Option)

	SC applicable to, SYSBUS Wire System (OMRON)
Name of terminal block (LED)	 LED name / Details: RUN — It lights when transmission is nomal and PLC is in the operation made. T/R ERR — It blinks when transmission is normal. It lights when transmission is abnormal.
Note	● Master station unit: OMRON's PLC SYSMAC Series C (CV) C500-RM201, C200H-RM201 * Max. 32 units, transmission terminal connected (Max. 512 points) ● 16 outputs

How to Order Valve

VQ1 1 7 0 Y – 5 MO – C6 -Q

Series VQ1000

Configuration

1	2 position single
2	2 position double (latching)
3	3 position closed centre
4	3 position exhaust centre
5	3 position pressure centre

Seal

0	Metal
1	Rubber

Pilot valve specifications

Symbol	Specification	DC
—	Standard	(1.0W) ○
H (1)	High pressure	(1.5W) ○
Y (1)	Low wattage	(0.5W) ○

Note 1) Except for double (latching).

Coil voltage

5	24V DC, With indicator light and surge suppressor

Note) Connector ass'y is necessary for S kits when increasing the valve stations. See "Options" p.1-681 for parts nos.

Cylinder ports

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

Note 1) The code is L for elbow piping for all manifold stations.
Example) L6: Elbow with One-touch fittings for ø6
Note 2) See "Options" on p.1-681 for One-touch fittings in inch sizes.

Manual override

—	Non-locking push style
B (1)	Push-locking slotted style
C	Push-locking lever style

Note 1) A manual override for pilot valve is provided to the standard model for double style.

Electrical entry

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

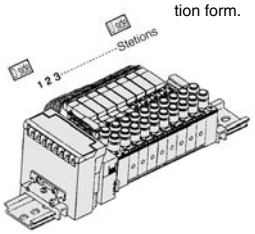
Note 1) Plug connector and lead wire layers are attached to the manifold.

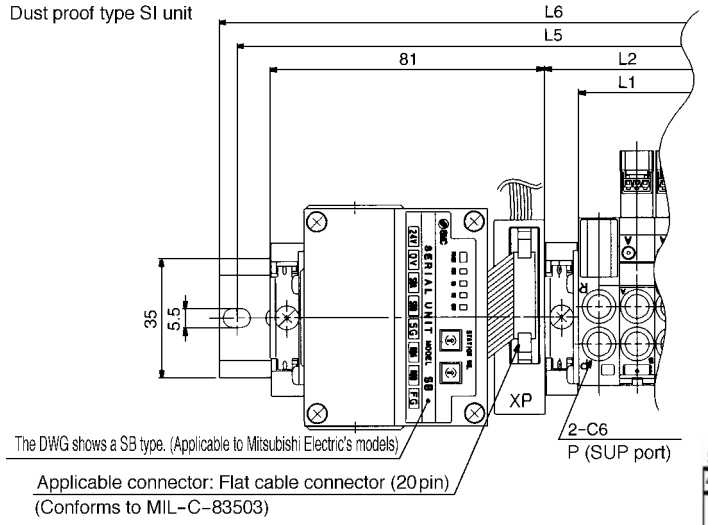
How to Order Manifold Ass'y

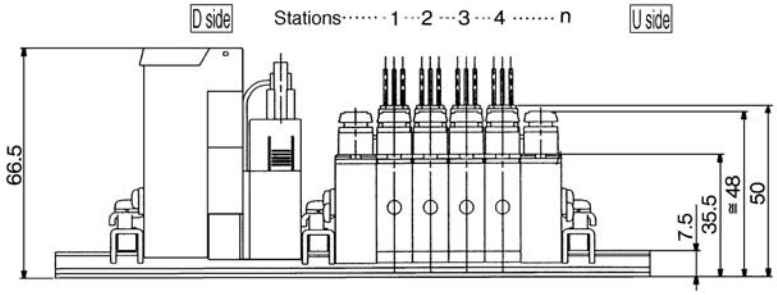
Specify valve and option nos. below the manifold base no.

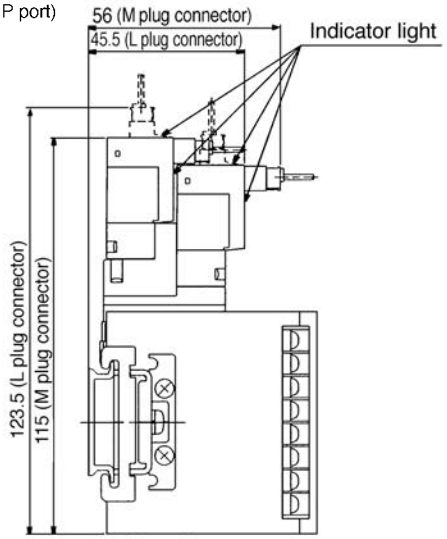
(Example)
Serial transmission unit kit
VV5Q17-08SA-D-Q·····1 set–Manifold base No.
VQ1170-5MO-C6-Q·····4 sets–Valve No. (Stations 1 to 4)
VQ1270-5MOB-C6-Q···4 sets–Valve No. (Stations 5 to 8)

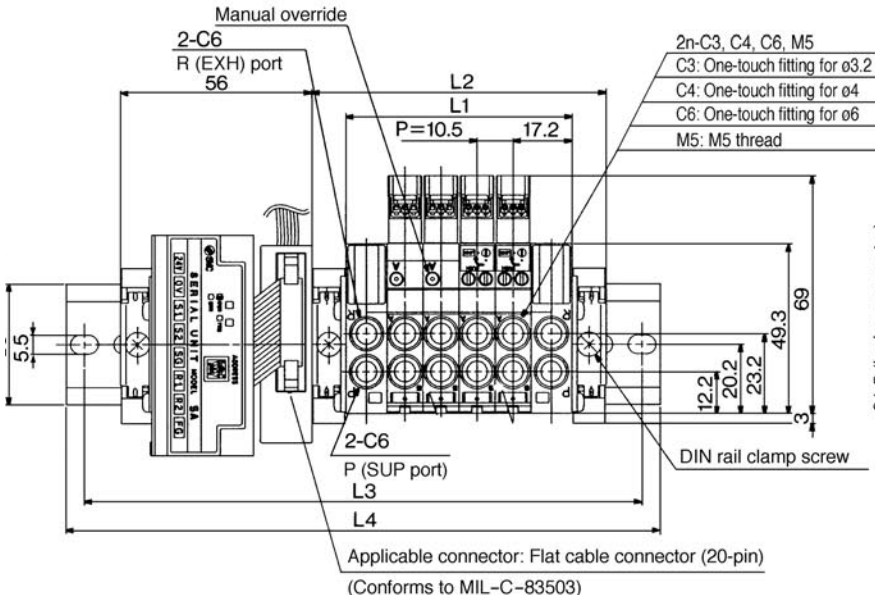
Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using a manifold specification form.

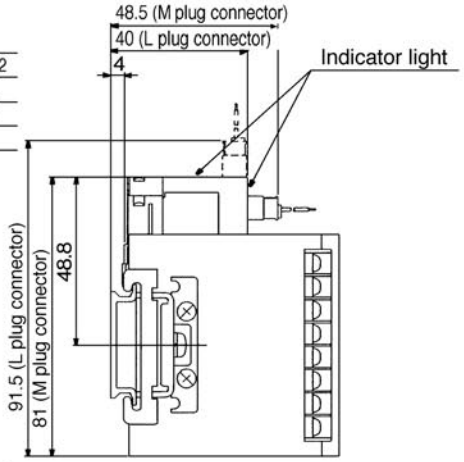












Dimensions (mm)

Dustproof type SI unit: L5=L3+25, L6=L4+25
Equation L1=10.5n+24, L2=10.5n+44, n: Station (Max. 16)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	34.5	45	55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192
L2	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212
L3	137.5	150	162.5	162.5	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300
L4	148	160.5	173	173	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5

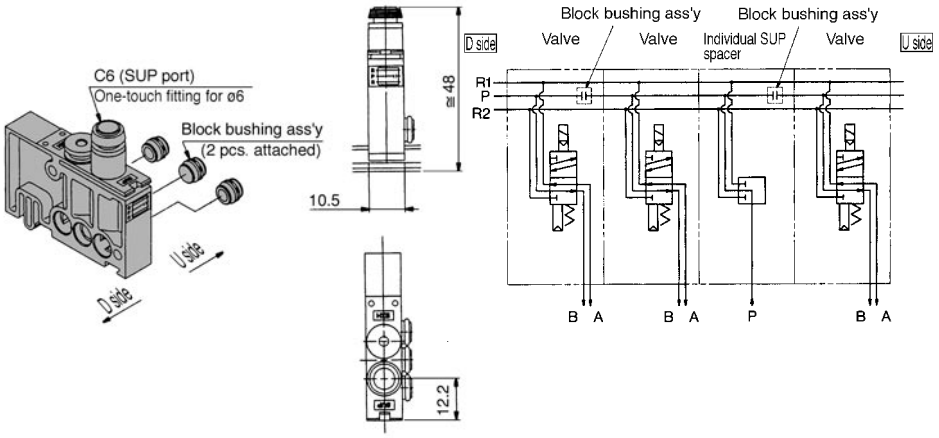
Manifolds with SI unit for Matsushita's MEWNET FP and Allen Bradley Co.'s model are the same with L5 and L6 dimensions of dustproof type SI unit.

Manifold Options/VQ1000

Individual SUP spacer
VVQ1000-P-7-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.) Block both sides of the station, for which the supply presseure from the individual SUP spacer is used, with SUP block plates. (See the application ex.)

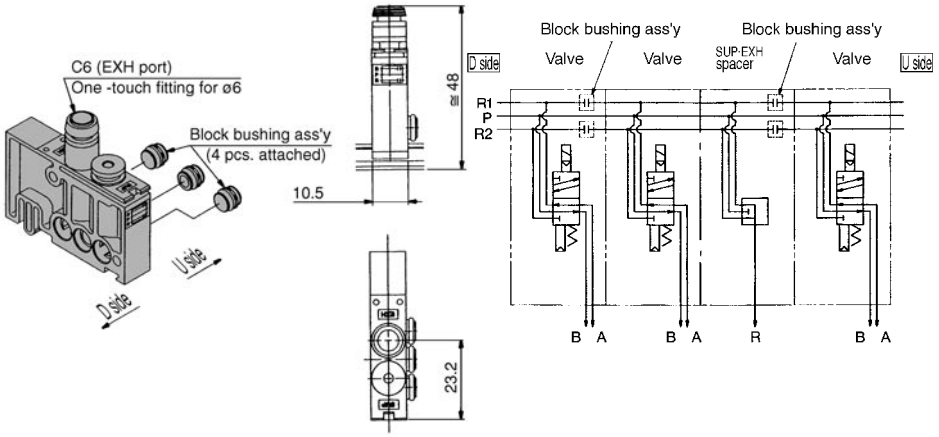
* Specify the spacer mounting position and SUP block plate mounting position by means of the manifold specification. The block plates are used in two places for one set. (Two SUP block plates for blocking SUP station are attached to the individual SUP spacer.)
  The spacer's specification can be changed (from an individual SUP spacer to an individual EXH spacer) by changing the coupling of the fittings and bushing.



Individual EXH spacer
VVQ1000-R-7-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.)
Block both sides of the individual valve EXH station. (See the application ex.)

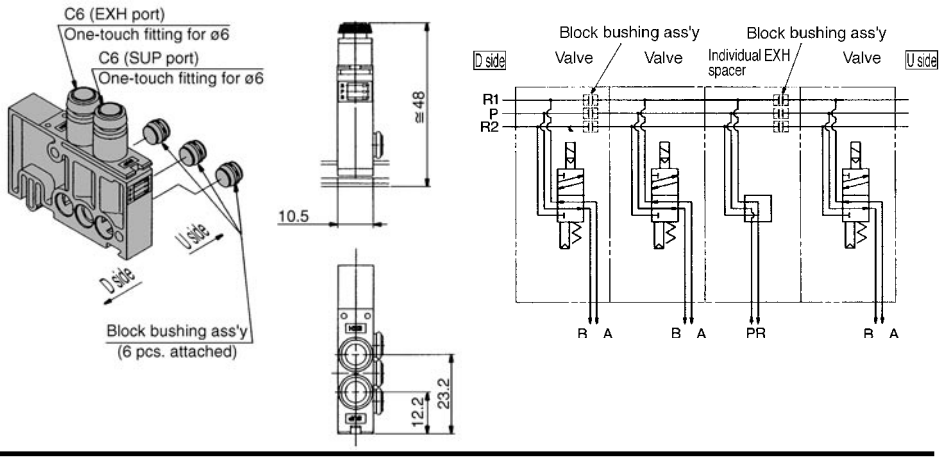
* Specify the spacer mounting position and EXH block plate mounting position by means of the manifold specification. The block plate are used in two places for one set. (Four EXH block plates for blocking EXH station are attached to the individual EXH spacer.)
* The spacer's specification can be changed (from an individual EXH spacer to an individual SUP spacer) by changing the coupling of the fittings and bushing.



Individual SUP/EXH spacer
VVQ1000-PR-7-C6

This spacer has both functions of the above individual SUP and EXH spacers. (See the application ex.)

* Specify the spacer mounting position and SUP/EXH block plate mounting position by means of the manifold specification. The block plates are used in two places for one set. (A SUP/EXH block plates for blocking SUP/EXH station are attached to the individual SUP/EXH spacer.)
* When using the spacer not for individual SUP/EXH but for improving the ability to supply/exhaust air, it is unnecessary to block the SUP/EXH passage. In this case, place an order via VVQ1000–PRA–7–C6.
* The spacer's specification can be changed by changing the coupling of the fittings and bushing.



Manifold Options

SUP EXH Block bushing assembly
VVQ1000-87A-B-50

<For SUP>

When one manifold is to be used for different, high and low pressures, this block bushing assembly is used between the stations under a defferent pressure. The block assembly is mounted on the U side of the valve's SUP passage.

* Specify the number of stations by using a manifold specification form.

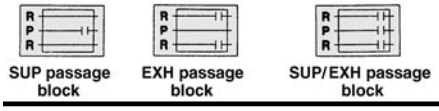
<For EXH>

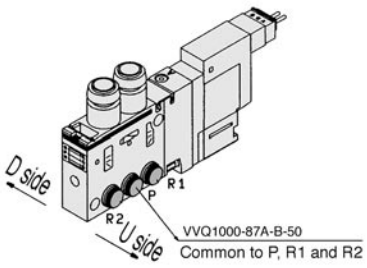
When a valve exhaust affects other stations due to the circuit configuration, this block bushing assembly is used between the stations whose EXH passages are to be separated each other. Since the block bushing assembly is mounted on the U side of the valve's R1 and R2 passages, two assemblies are necessary for one station.

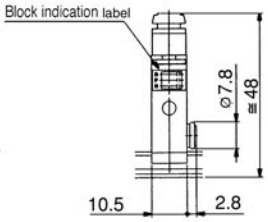
* Specify the number stations by using a manifold specification form.

<Blocking indication label>

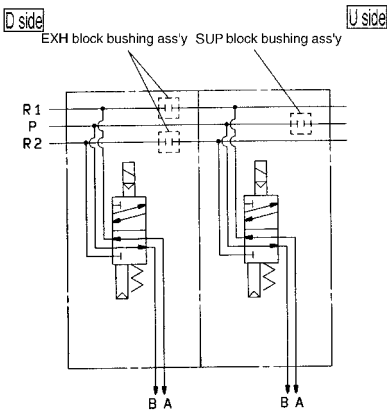
When using block bushing assembly for SUP, EXH passage, indication label for confirmation of the blocking position from outsideis attached. (one label for each)







* Can be included in manifold model No.



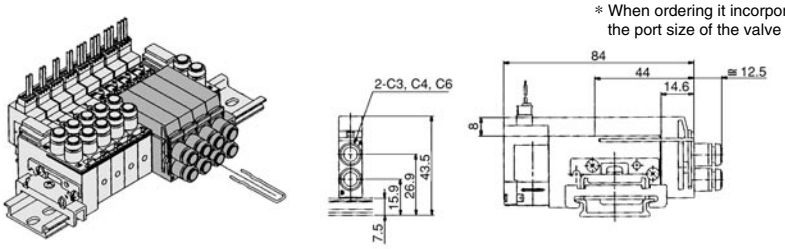
<Example>

* When ordering a block bushing incorporated with the manifold, a block indication label is attached to the manifold.

Elbow fittings assembly
VVQ1000-F7-L (C3, C4, C6)

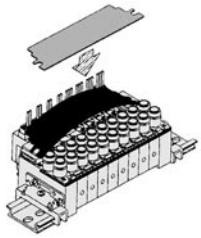
It is used in a side-valve-port case.

* When ordering it incorporated with a valve, the port size of the valve no. is "L□."

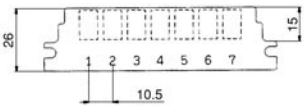


Name plate [-N7]
VVQ1000-N7-Station (1 to Max. stations)

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.
Open the face plate seating when the manual override is operating.



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

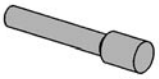


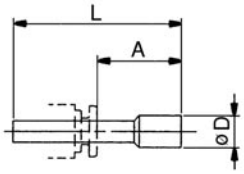
Blank plug

KQ2P-$^{23}_{04}_{06}$-00

Color spec: White

It is inserted into an unused cylinder port and SUP/EXH ports.
The minimum order quantity is 10 pcs.



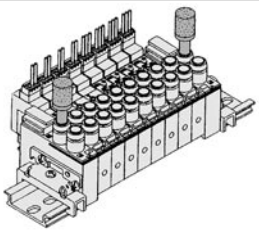


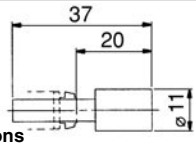
Dimensions (mm)

Fittings size ød	Model	A	L	D
3.2	**KQ2P-23-00**	16	31.5	5
4	**KQ2P-04-00**	16	32	6
6	**KQ2P-06-00**	18	35	8

Silencer
AN103-X233

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





Dimensions (mm)

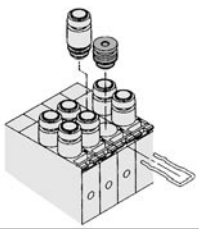
Series	Fittings size ød	Model	A	L	D	Effective area (mm²(Nℓ/min))	Silencing effect(dB)
VQ1000	6	AN103-X233	20	37	11	7 (392.6)	25

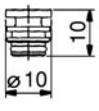
Port plug
VVQ0000-58A

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

Example) **VQ1130-5L-C6-A**

A port, Plug





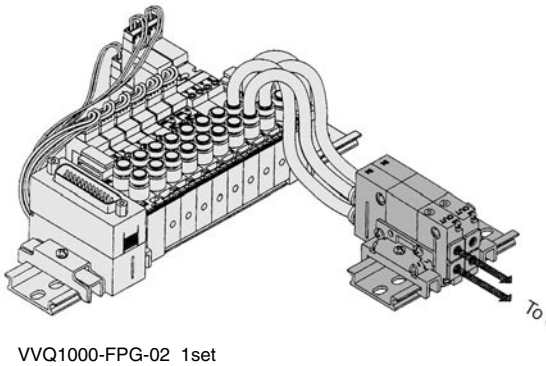
Double check block (Separate style) VQ1000-FPG-□□

It is used on the way of the secondary side piping to keep the cylinder in the middle position for a long time. Combining a double check block with a built-in pilot type double check valve and a two-position EXH 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.

Specifications

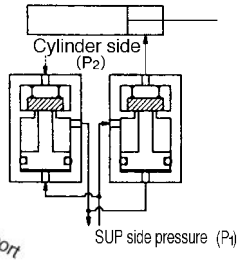
Max. operating pressure	0.8MPa
Min. operating pressure	0.15MPa
Ambient and fluid temperature	–5 to 50˚C
Effective area (Nℓ/min) (1)	2.7mm² (147.23)
Max. operating frequency	180CPM

Note 1) As per JISB8375-1981 (Supply pressure: 0.5MPa)



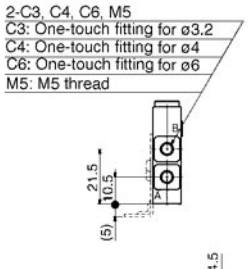
VVQ1000-FPG-02 1set
∗ VQ1000-FPG-C6M5-D 2 pcs.

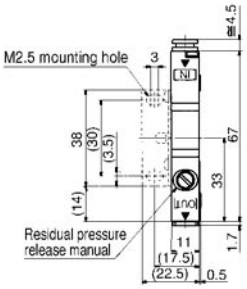
<Check Valve Operation Principle>

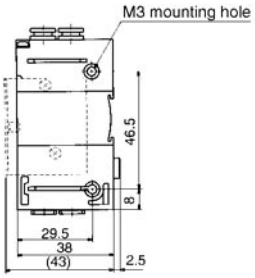


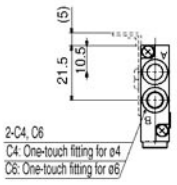
Dimensions

Single

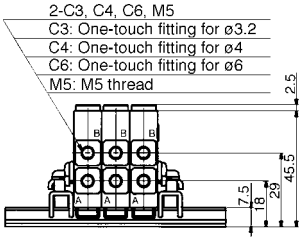


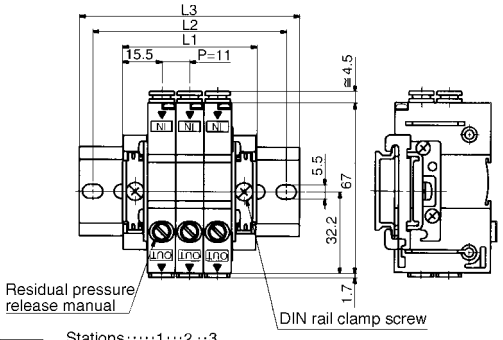


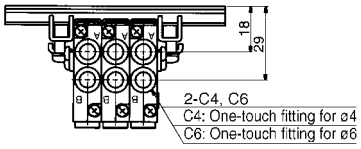




Manifold







Dimensions Equation 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

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

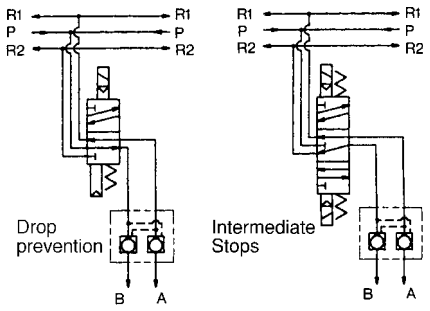
M5	M5 thread
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6

Option

—	None
F	With bracket
D	DIN rail mounting (for manifold)
N	Name plate

Note) When specifying more than one option, please list 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 } Double Check block
∗ VQ1000-FPG-C6M5-D, 3 sets }

⚠ Caution

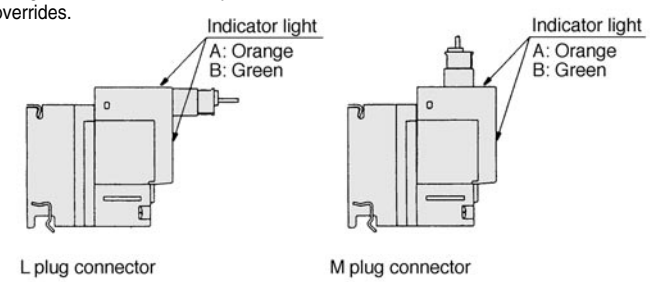
- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap. Also, check the cylinder's tube gasket, piston packing and rod packing for leakage.
- 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 ass'y on the double check block.
  {Tightening torque: 0.8 to 1.2Nm }
- 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.

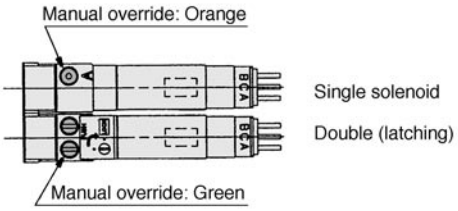
⚠ Precautions

⚠ Caution

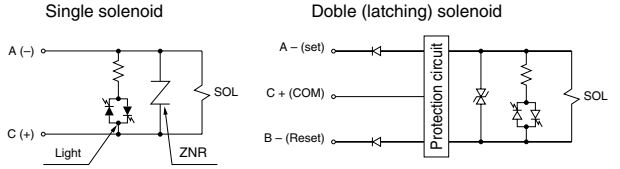
Indicator Light and Surge Voltage Suppressor

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 (latching) type. In the double (latching) type, A-side and B-side energization are indicated by two colours which match the colours of the manual overrides.





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) mechanism.
Note 2) Applicable to negative COM specification models
Note 3) In case of double(latching), the electromagnetic valve channel is, A-(set): P→A, B→R B-(reset): P→B, A→R

⚠ Caution

Double (Latching Solenoid) Style

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 (20ms or more). The usage and function is the same as the double solenoid type.

<Special Cautions for Latching Solenoid>

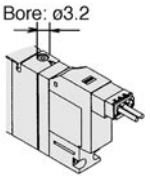
1. Select the circuit in which ON and OFF signals are not energized simultaneously.
2. 20ms energization time is necessary for self-holding.
3. Aboid using in a place with high vibration (5G or more) or a high magnetic field.
4. When shipped, the movable iron core is held in the ON position (reset) on the B side. Check to be sure it is held in the ON position by energization before use.
5. After manual operation, the main valve will return to its original opsition.
6. Contact SMC for long-term energization applications.

⚠ Caution

Manual Override

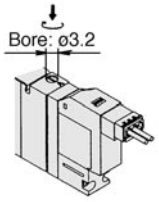
Without an electric signal for the solenoid valve the manual override is used for switching the main valve.

■ Non-locking push style



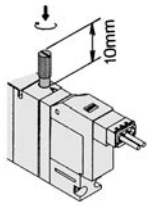
Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

■ Push-locking slotted style



Push down on the manual override button with a small screwdriver until it stops. While down, turn clockwise by 90˚ to lock it. Turn it counterclockwise to release it.

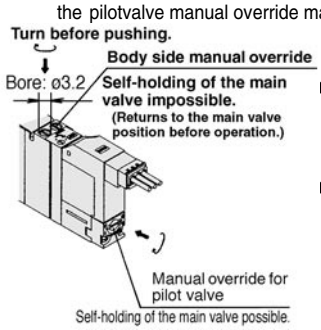
■ Push-locking lever style (Option)



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.

■ Manual override for double (latching) style

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



- Turn the manual override clockwise by 180˚ to set the ▶ mark to A and press it in the direction indicated by the arrow. It will be locked set in a (Passage: P→A) state.
- Turn the manual override counterclockwise by 180˚ to set the ▶ mark to B and press it in the direction indicated by the arrow. It will be reset in a (Passage: P→B) state. (It is reset when shipped.)

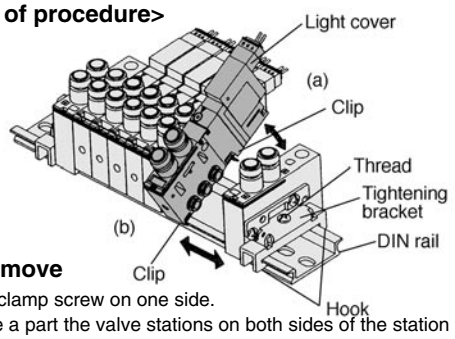
⚠ Caution

Do not apply too much torque when turning the locking type manual override. (0.1Nm or less)

⚠ Caution

How to Mount/Remove Solenoid Valve

<Sequence of procedure>



How to remove

① Loosen the clamp screw on one side.
② Slightly slide a part the valve stations on both sides of the station to be removed.
Pull up side (a) of the valve station and remove it from the DIN rail.

How to mount

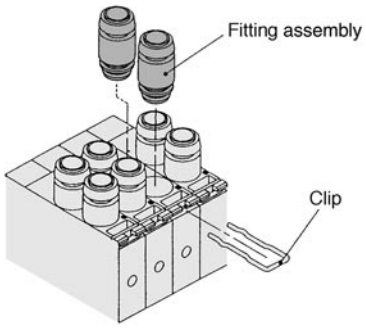
① Take procedures ① and ② above to make an open space in the position for mounting a new valve station.
② Diagonally insert the clip on the side (b) of the valve station to the DIN rail.
③ Press down on the valve station and insert the clip on the side (a) of the valve station to the DIN rail.
④ Slide the valve stations together so that there is no clearance between them. Position the clamp screw and tighten. (Appropriate clamping torque is 0.7 to 1.0Nm)

Note) Be careful to keep O ring or gallery dust free since dirt may cause air leakage.
Be sure both hooks of the bracket are fixed to the DIN rail.
Do not push on the light cover while mounting/removing the valve.

⚠ Caution

Replacement of Cylinder Port Fittings

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



Applicable tube O.D	Fitting ass'y No.
Applicable tube ø3.2	VVQ1000-50A-C3
Applicable tube ø4	VVQ1000-50A-C4
Applicable tube ø6	VVQ1000-50A-C6

∗ The minimum order quantity is 10 pcs.

⚠ Precautions

1) Protect O rings from scratches and dust to prevent air leakage.
2) The tightening torque for inserting fittings to the M5 thread ass'y should be 0.8 to 1.4 Nm.

⚠ Caution

How to Use Plug Connector

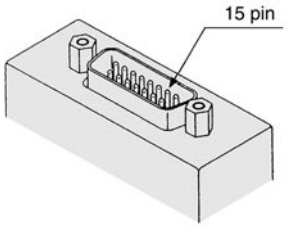
See p.1-655 for the details.

Options

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 pin**



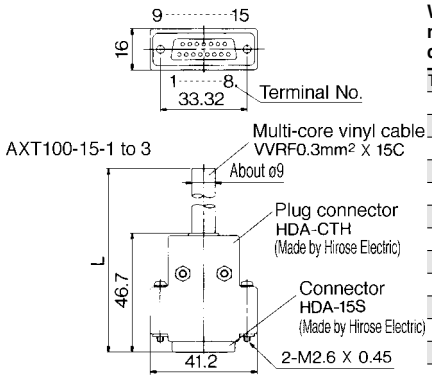
How to Order Manifold

VV5Q17 — 06 F SA — D -Q

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

How to order
D-sub connector, 15 pin
Connector location
-Side (horizontal)
Without cable

Pins \ Location	Top (vertical)		Side (horizontal)	
15 pin (Max. 7 stations)	Kit F	suffix: UA	Kit F	suffix: SA



Wire color table by terminal number of D-sub connector cable assembly

Terminal No.	wire color	Dot marking
1	Black	–
2	Brown	–
3	Red	–
4	Orange	–
5	Yellow	–
6	Pink	–
7	Blue	–
8	Violet	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black

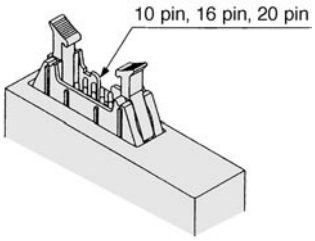
∗ As in the case of 25-pin models (standard), terminal No.1 is the first station SOL.A and the terminal No.8 is COM.

D-sub connector cable assembly

Length (L) \ Pins	15 pin
1.5m	AXT100-DS15-1
3m	AXT100-DS15-2
5m	AXT100-DS15-3

∗ When using other commercially available connectors, select models that conform to MIL-C-24308.

P **Kit (Flat cable connector) 10 pin, 16 pin, 20 pin**



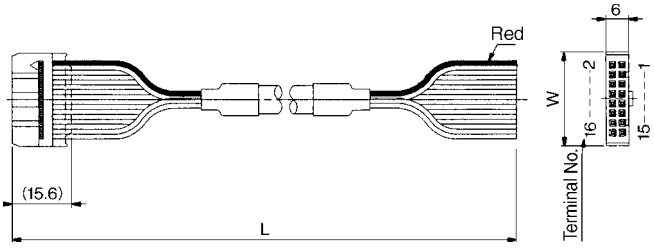
How to Order Manifold

VV5Q17 — 06 P SC — D -Q

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

How to order
Flat cable, 20 pin
Connector location
-Side (horizontal)
Without cable

Pins \ Location	Top (vertical)		Side (horizontal)	
10 pin (Max. 8 stations)	Kit P	suffix: UA	Kit P	suffix: SA
16 pin (Max.14 stations)		suffix: UB		suffix: SB
20 pin (Max.16 stations)		suffix: UC		suffix: SC



∗ As in the case of 26-pin models (standard), terminal No.1 is the first station SOL.A and the last two terminal numbers are used for COM.

Flat cable assembly

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

∗ When using other commercially available connectors, select models with strain relief that conform to MIL-C-83503.

Special Wiring Specifications

Regardless of the valve or option, the standard internal wiring for double solenoid capability is provided to each station of F/P/T/S kit.
As made-to-order, combinations of single and double wiring (commected to SOL.A, B) are available.

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 form.

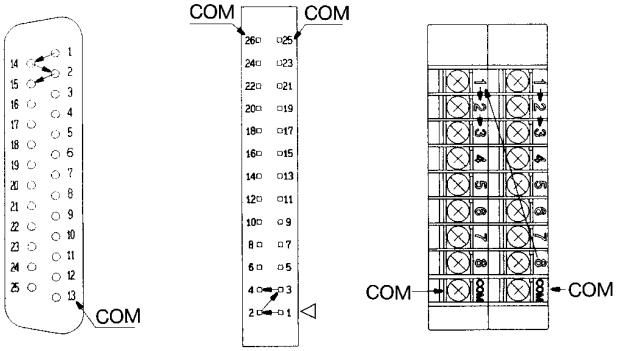
How to order manifold

VV5Q17–09FU0–D K S-Q

List option symbols in alphabetical order

2. Wiring specifications

With the A side solenoid of the 1st station as No.1 (meaning, to be connected to No.1 terminal), wires are connected in the order indicated by the arrow in the DWG without making any terminal vacant.



F kit
D-sub connector
(25 pin)

P kit
Flat cable connector
(26 pin)

T kit
Terminal block
(16 terminals)

3. Max. number of stations

The max. 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 cable connector)				T kit (Terminal block)		S kit (Serial transmission)
Model	F$^{U}_{S}$□ 25 pin	F$^{U}_{S}$A 15 pin	P$^{U}_{S}$□ 26 pin	P$^{U}_{S}$C 20 pin	P$^{U}_{S}$B 16 pin	P$^{U}_{S}$A 10 pin	T1	T2	S□
Max. number	16	14	16	16	14	8	8	16	16

Note) Due to the limitation of internal wiring.

Negative COM Specifications

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

How to Order Negative COM Manifold

VQ1170 N–5MO–C6-Q

Negative COM specification

Inch-size One-touch Fittings

The valve with inch-size One-touch fittings is shown below.

How to order manifold

VV5Q17–08FSO–DN–00T-Q

P, R port size ø1/4"

How to order valve

VQ1170 –5M–N7-Q

Cylinder ports

Symbol	N1	N3	N7
Tube O.D. (Inch)	ø1/8"	ø5/32"	ø1/4"

Plug Connector Assembly Model

F, P, T and S kits need connector assembly when adding a valve station. Specify the valve and connector assembly.

Connector assembly No.

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

Note) Lead wire length: 300mm

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. 30mm longer than the manifold with the specified number of stations is attached.

● **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)

VV5Q17–08FU1–D09S-Q

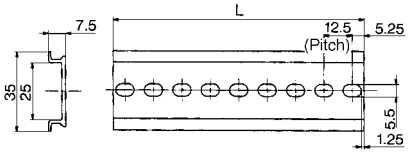
List option symbols in alphabetical order

DIN rail for 9 stations

● **When ordering DIN rail only**

DIN rail No.: AXT100–DR–n

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



L dimension L=12.5 X n+10.5

No.	1	2	3	4	5	6	7	8	9	10
L	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	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	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	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

Series VQ
Single Unit

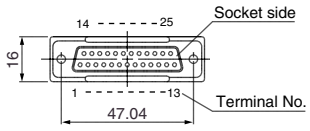
For individual use of a single valve

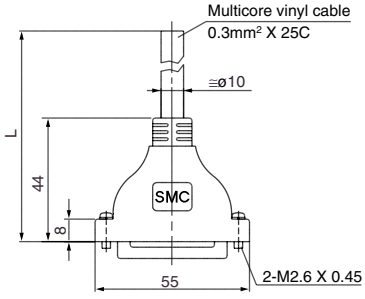
VQ1000

Model

Series		Configuration		Model		Effective area (mm²) (N ℓ/min) (1)	Response time (ms) (2) Standard:1W H: 1.5W	Weight (g)
Body ported	VQ1000 cassette plug lead	2 position	Single	Metal seal	VQ1160	3.6 (196.3)	12 or less	50
				Rubber seal	VQ1161	5.1 (274.82)	15 or less	
			Double (Latching)	Metal seal	VQ1260	3.6 (196.3)	12 or less	
				Rubber seal	VQ1261	5.1 (274.82)	15 or less	
		3 position	Closed centre	Metal seal	VQ1360	3.6 (196.3)	20 or less	65
				Rubber seal	VQ1361	5.1 (274.82)	25 or less	
			Exhaust centre	Metal seal	VQ1460	3.6 (196.3)	20 or less	
				Rubber seal	VQ1461	5.1 (274.82)	25 or less	
			Pressure centre	Metal seal	VQ1560	3.6 (196.3)	20 or less	
				Rubber seal	VQ1561	5.1 (274.82)	25 or less	

Note 1) Cylinder port size C6 (VQ1000).
Note 2) As per JISB8375-1981 (supply pressure: 0.5MPa; with indicator light and surge voltage suppressor; clean air). Subject to the pressure and air quality.





Standard Specifications

Valve	Seal		Metal seal	Rubber seal
	Fluid		Air/Inert gas	Air/Inert gas
	Max. operating pressure		0.7MPa(High pressure style: 0.8MPa)	
	Min. operating pressure	Single	0.1MPa	0.15MPa
		Double (latching)	0.18MPa	0.18MPa
		3 position	0.15MPa	0.2MPa
	Proof pressure		1.5MPa	
	Ambient and fluid temperature		–10 to 50˚C (1)	
	Lubrication		Not required	
	Manual override		Non-locking push style/Push-locking slotted, lever styles (option)	
	Impact/Vibration resistance (2)		150/30m/s²	
	Protection structure		Dust proof	
Solenoid	Coil rated voltage		12, 24V DC	
	Allowable voltage		±10% of rated voltage	
	Coil insulation		Class B or equivalent	
	Power consumption (Current value)	24V DC	1W DC (42mA), 1.5W DC (63mA) (3), 0.5W DC (21mA) (4)	
		12V DC	1W DC (83mA), 1.5W DC (125mA) (3), 0.5W DC (42mA) (4)	

Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, for both energized and de-energized states.
Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz. Test was performed at both energized and de-energized states to the axis and right angle directions of the main valve and armature. (Value in the initial stage.)
Note 3) Values in case of high pressure style (1.5W).
Note 4) Values in case of low wattage (0.5W) .

How to Order Valve

VQ1 1 6 0 Y 5 L C6 -Q

Series VQ1000

Configuration

1	2 position single
2	2 position double (latching)
3	3 position closed centre
4	3 position exhaust centre
5	3 position pressure centre

Seal

0	Metal
1	Rubber

Pilot valve (Option)

Symbol	Specification	DC
—	Standard	(1.0W) ○
H (2)	High pressure	(1.5W) ○
N	Negative COM	○
Y (2)	Low wattage	(0.5W) ○

Note 2) Except for double (latching).
Note 3) If specifying more then one symbol, list alphabetically.

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Electrical entry

G	Grommet (Except for latching)
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

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

Note) An override for pilot valve is provided to the standard model for double style.

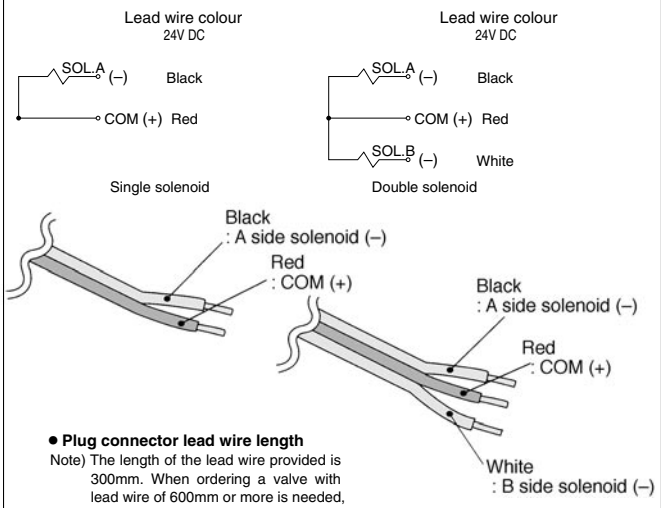
Sub-plate SUP, Cylinder ports

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

Note 1) See "Options" on p.1-681 for inch-size One-touch fittings.
Note 2) EXH port is a direct exhaust (with built-in silencer).

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 300mm. When ordering a valve with lead wire of 600mm or more is needed, specify both the valve without connector and the longer connector ass'y no.

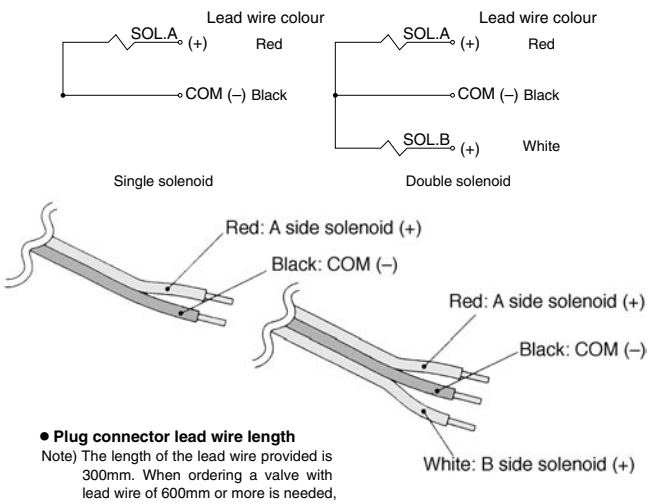
Example) Lead wire length 1000mm
VQ1170-5LO-C6·····3 pcs.
AXT661-14A-10 ·····3 pcs.

Connector ass'y No. (DC)

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

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 length of the lead wire provided is 300mm. When ordering a valve with lead wire of 600mm or more is needed, specify both the valve without connector and the longer connector ass'y no.

Example) Lead wire length 1000mm
VQ1170N-5LO-C6·····3 pcs.
AXT661-14AN-10 ·····3 pcs.

Connector ass'y No.

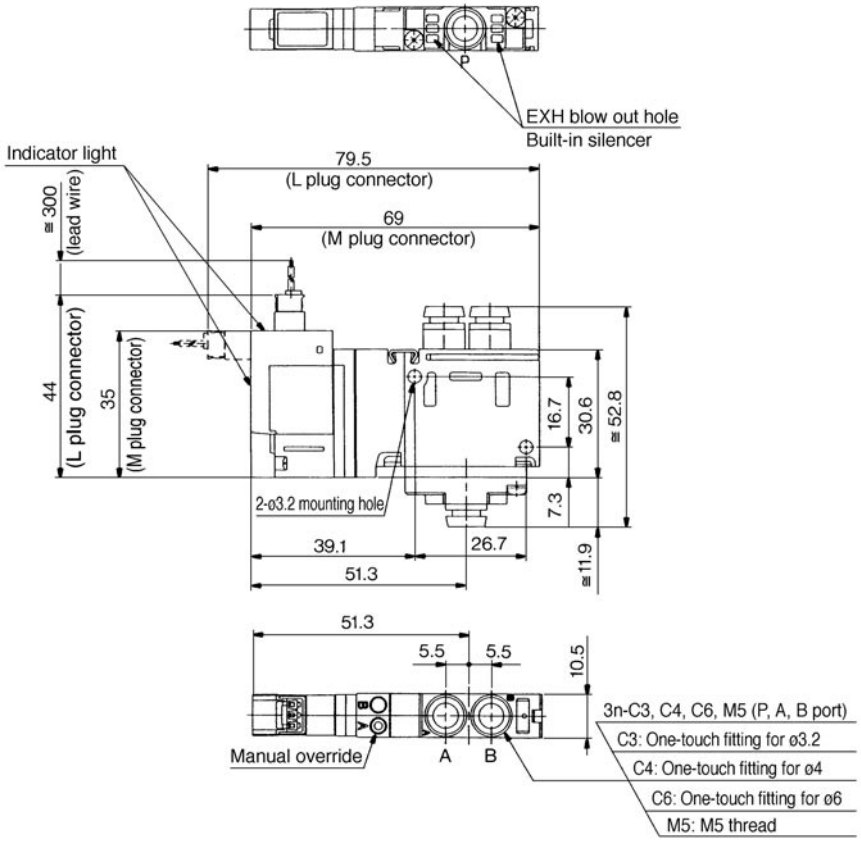
Lead wire length	Single/3 position No.	Double No.
Socket only (3 pcs.)	AXT661-12A	
300mm	AXT661-14AN	AXT661-13AN
600mm	AXT661-14AN-6	AXT661-13AN-6
1000mm	AXT661-14AN-10	AXT661-13AN-10
2000mm	AXT661-14AN-20	AXT661-13AN-20
3000mm	AXT661-14AN-30	AXT661-13AN-30

Note) Use negative COM valves for negative COM specification manifolds.

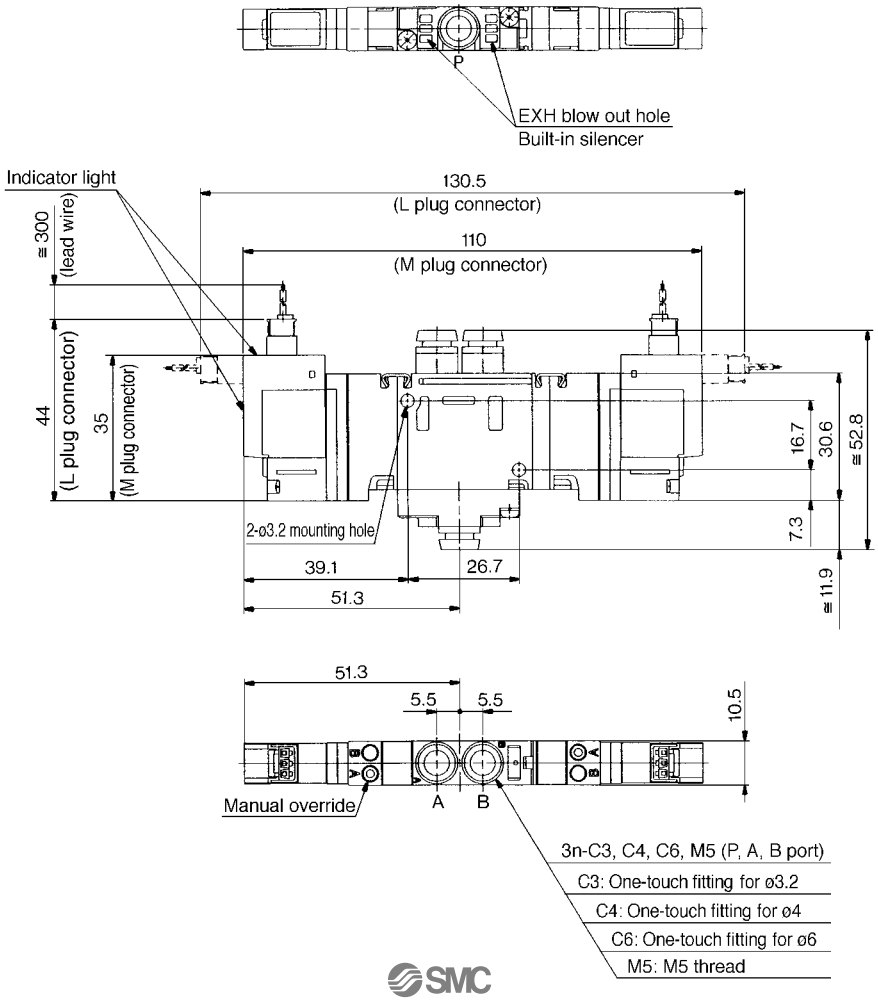
Single Unit

Dimensions (mm)

2 position single/double (latching): VQ1$^{1}_{2}$6$^{0}_{1}$



3 position closed centre/exhaust centre/pressure centre: VQ1$^{3}_{4}_{5}$6$^{0}_{1}$

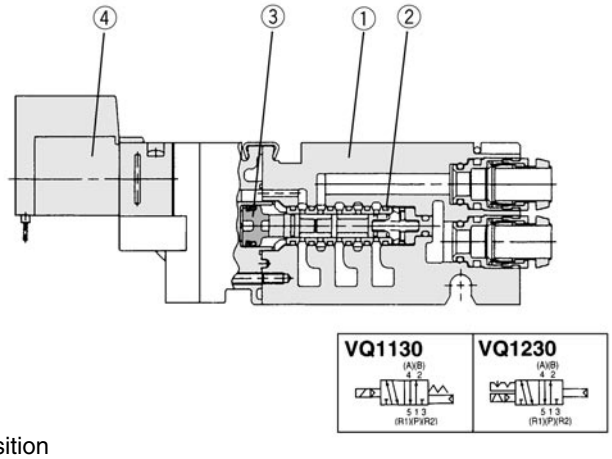


Construction/Component Parts, Replacement Parts

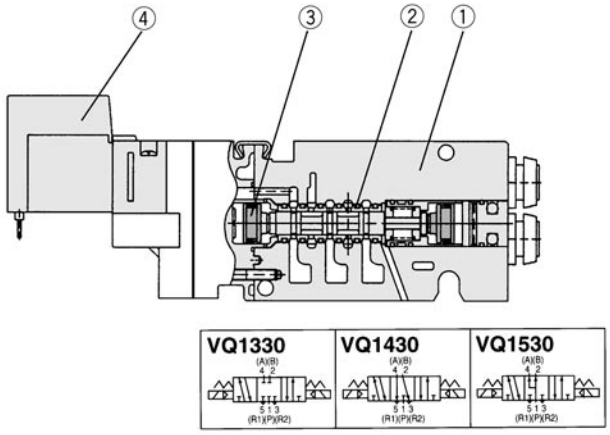
Construction: Plug-in Unit/Flip Style/VQ1000

Metal seal

Single/Double (latching)

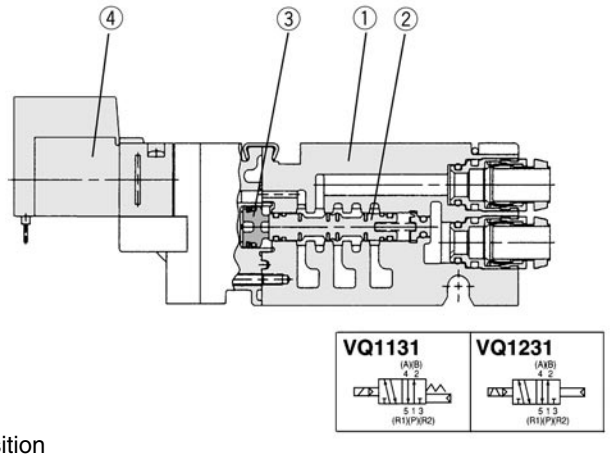


3 position

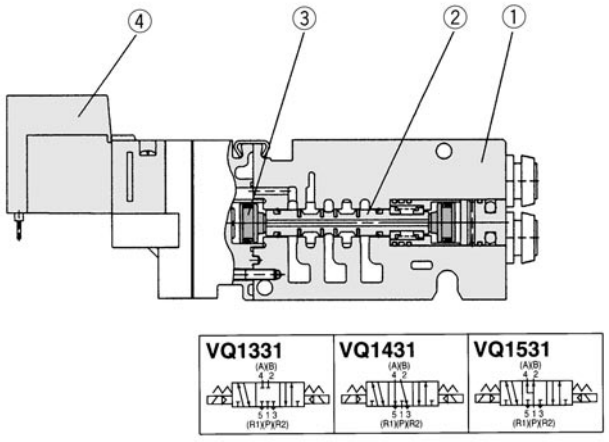


Rubber seal

Single/Double (latching)



3 position



Component Parts

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

④Pilot Valve Assembly

Single/3 position	VQ111$^{(H)}_{(Y)}$-□F-Q$^{(1)}$	
Double (latching)	VQ110L-□F-Q$^{(1)}$	

Note 1) (H): 1.5W
(Y): 0.5W

Voltage

5	24 V DC
6	12 V DC

Component Parts

No.	Description	Material	Note
①	Body	Aluminum die cast	
②	Spool valve	Aluminum/NBR	
③	Piston	Resin	

④Pilot Valve Assembly

Single/3 position	VQ111$^{(H)}_{(Y)}$-□F-Q$^{(1)}$	
Double (latching)	VQ110L-□F-Q$^{(1)}$	

Note 1) (H): 1.5W
(Y): 0.5W

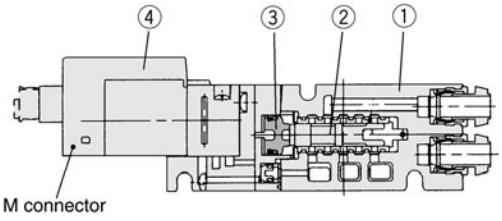
Voltage

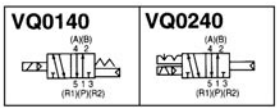
5	24 V DC
6	12 V DC

Construction: Plug Lead Unit/Flip Style/VQ0000/1000/2000

Metal seal

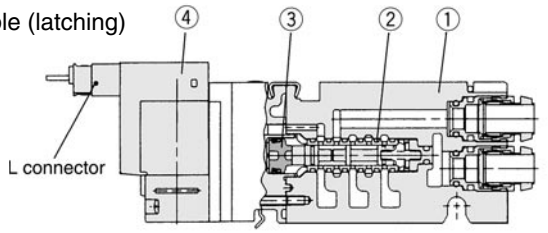
VQ0000

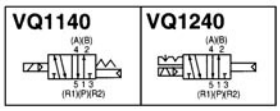




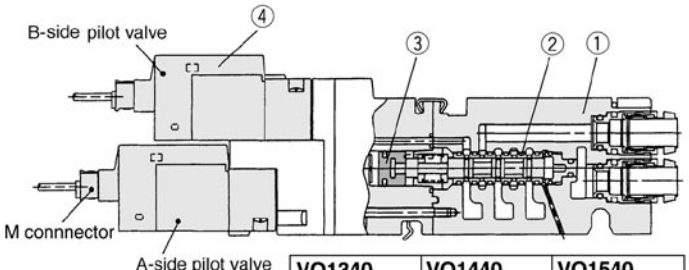
VQ1000

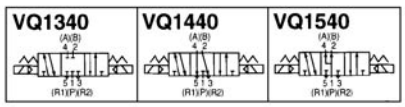
Single/Double (latching)



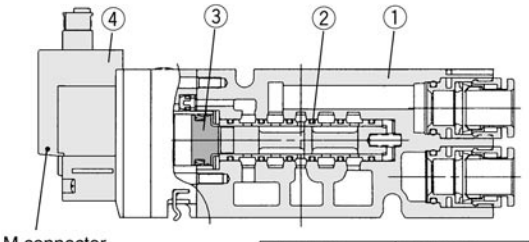


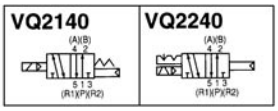
3 position





VQ2000





Componeı

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

④Pilot Valve Assembly

Single	VQ111P (H)(Y) - □ L M G - (1) – 2 3 (VQ0000) (VQ1000) (VQ2000) -Q 0: VQ0000 1: VQ1000, VQ2000 Voltage 5 to 6	
Double (latching)	VQ110L - □ L M G – 2 3 (VQ0000) (VQ1000) (VQ2000) -Q Voltage 5 to 6	
3 position (VQ1000 only)	VQ111P (H)(Y) - □ L M G - (1) – X18 -Q {A side(Bottom side)} {B side(Top side)} Voltage 5 to 6	The direction of the L and M connectors of a pilot valve is opposite to that of the single and double styles.

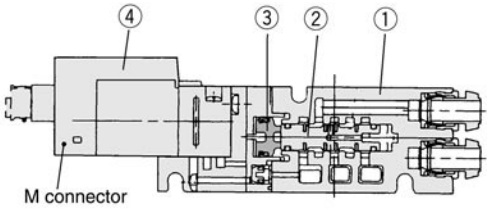
Note 1) (H): 1.5W, (Y): 0.5W, G type: DC only

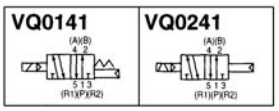
Voltage

5	24 V DC
6	12 V DC

Rubber seal

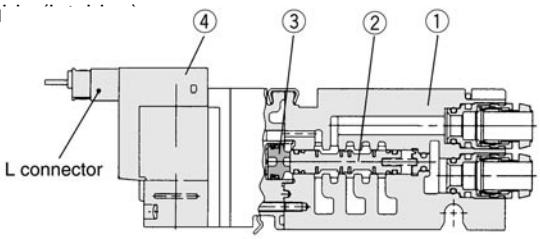
VQ0000

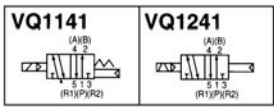




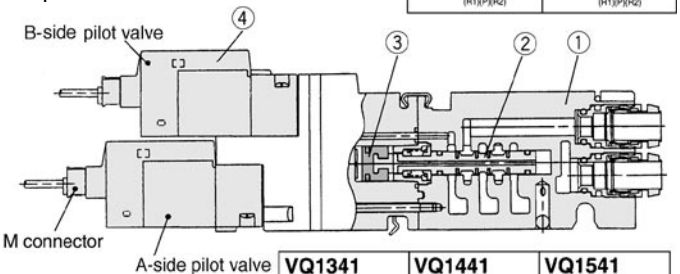
VQ1000

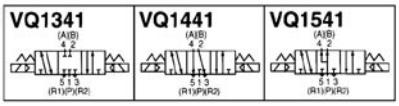
Single/Dou



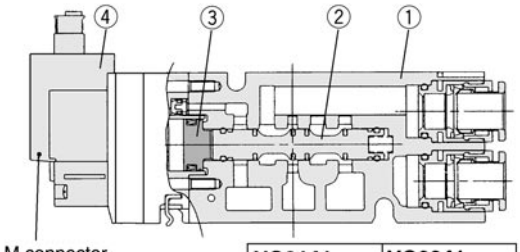


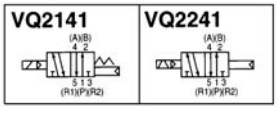
3 position





VQ2000





Component Parts

No.	Description	Material	Note
①	Body	Aluminum die cast	
②	Spool valve	Aluminum/NBR	
③	Piston	Resin	

④Pilot Valve Assembly

Single	VQ111P (H)(Y) - □ L M G - (1) – 2 3 (VQ0000) (VQ1000) (VQ2000) -Q 0: VQ0000 1: VQ1000, VQ2000 Voltage 5 to 6	
Double (latching)	VQ110L - □ L M G – 2 3 (VQ0000) (VQ1000) (VQ2000) -Q Voltage 5 to 6	
3 position (VQ1000 only)	VQ111P (H)(Y) - □ L M G - (1) – X18 -Q {A side(Bottom side)} {B side(Top side)} Voltage 5 to 6	The direction of the L and M connectors of a pilot valve is opposite to that of the single and double styles.

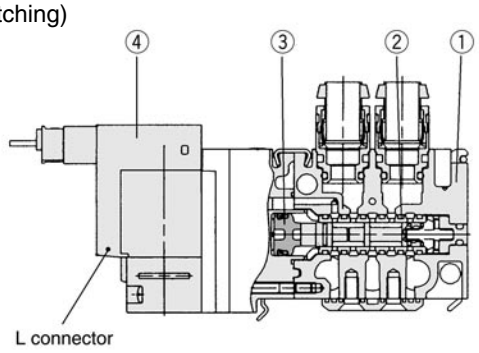
Note 1) (H): 1.5W, (Y): 0.5W, G type: DC only

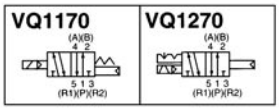
Construction

Construction: Cassette Plug Lead/VQ1000

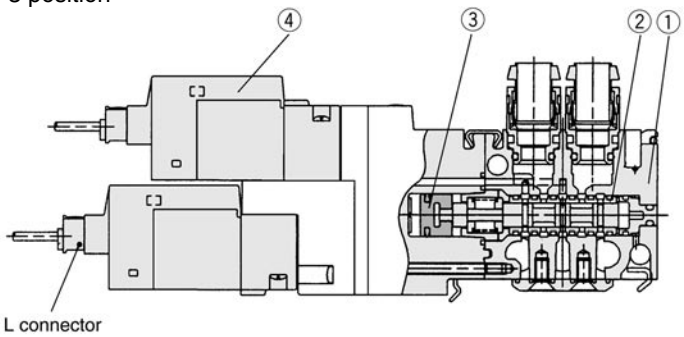
Metal seal

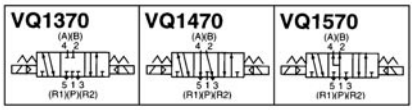
Single/Double (latching)





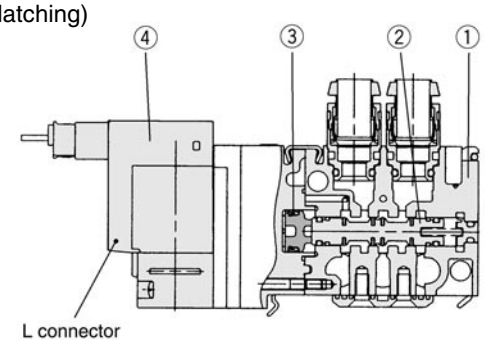
3 position

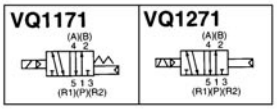




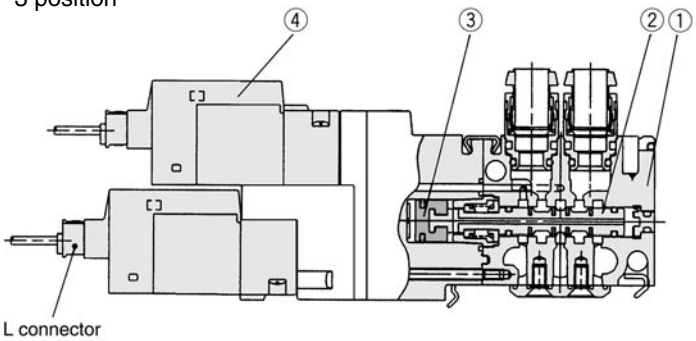
Rubber seal

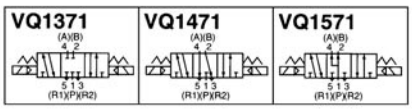
Single/Double (latching)





3 position





Component Parts

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

④Pilot Valve Assembly

Single	VQ111P(H)(Y)-□L M G-2-(1)Q	
Double (latching)	VQ110L-□L M-2-Q	
3 position (VQ1000 only)	VQ111P(H)(Y)-□L M G-X18-(1)Q [A side(Bottom side)] [B side(Top side)]	The direction of the L and M connectors of a pilot valve is opposite to that of the single and double style.

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

Voltage

5	24 V DC
6	12 V DC

Component Parts

No.	Description	Material	Note
①	Body	Zinc die-cast	
②	Spool valve	Aluminum/NBR	
③	Piston	Resin	

④Pilot Valve Assembly

Single	VQ111P(H)(Y)-□L M G-2-(1)Q	
Double (latching)	VQ110L-□L M-2-Q	
3 position (VQ1000 only)	VQ111P(H)(Y)-□L M G-X18-(1)Q [A side(Bottom side)] [B side(Top side)]	The direction of the L and M connectors of a pilot valve is opposite to that of the single and double style.

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

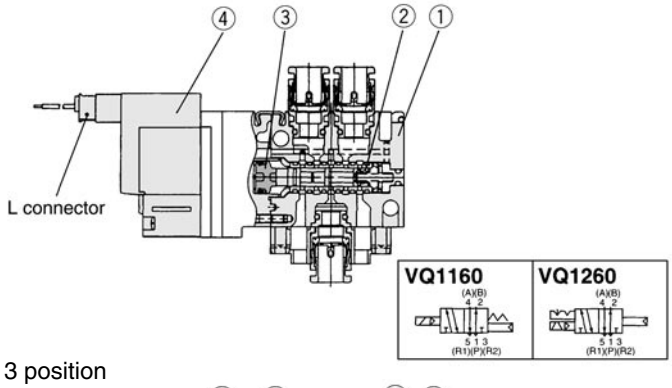
Voltage

5	24 V DC
6	12 V DC

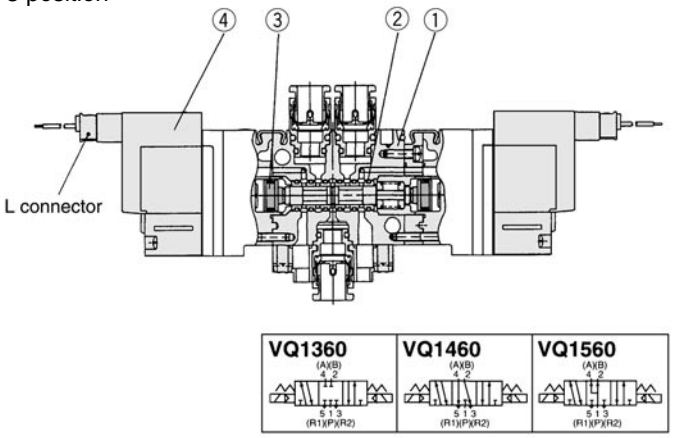
Construction: Single Unit/VQ1000

Metal seal

Single/Double (latching)

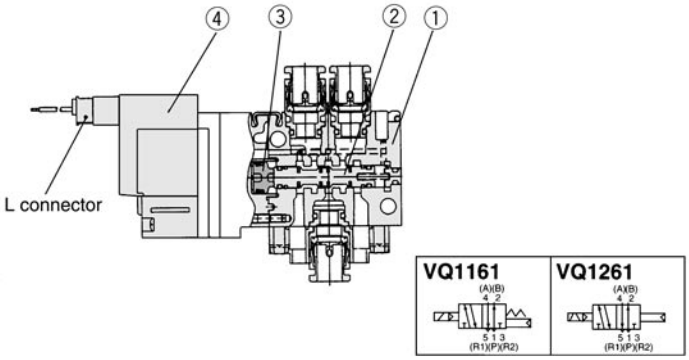


3 position

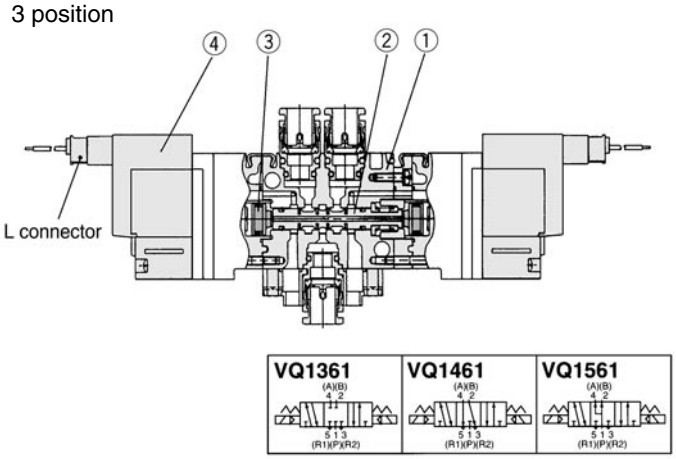


Rubber seal

Single/Double (latching)



3 position



Component Parts

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

④ Pilot Valve Assembly

Single/3 position	VQ111P(H)(Y)-□LMG-2-Q(1)	
Double (latching)	VQ110L-□LM-2-Q	

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

Voltage

5	24 V DC
6	12 V DC

Component Parts

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

④ Pilot Valve Assembly

Single/3 position	VQ111P(H)(Y)-□LMG-2-Q(1)	
Double (latching)	VQ110L-□LM-2-Q	

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

Voltage

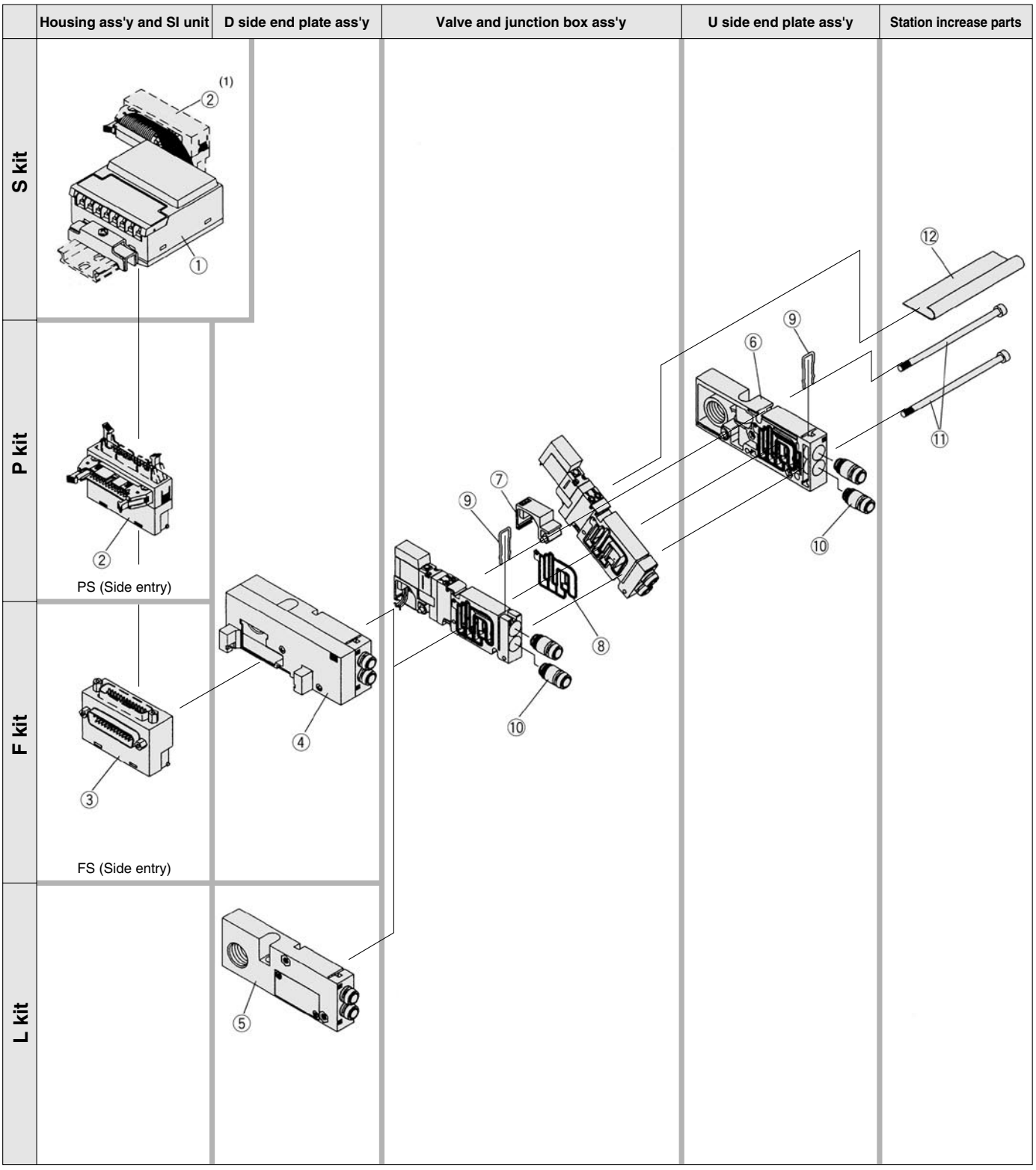
5	24 V DC
6	12 V DC

Exploded View of Manifold

Plug-in Unit/Flip Style/VQ1000(VV5Q13)

(F, P, L, S kit)

∗ Refer to the instruction manual to increase stations.



Note 1) S kit is composed of a flat cable housing assembly (AXT100–2–PU20) of ① SI unit and ② P kit (20 pin).

<Housing Assembly and SI Unit>

Housing Assembly and SI Unit No.

No.	Manifold	No.	Name
① (1)	(SB kit)	EX130-SMB1	SI unit for MELSEC-A (Mitsubishi Electric)
	(SC kit)	EX130-STA1	SI unit for SYSMAC (OMRON)
②	P^{U}_{S} kit	AXT100-1-P^{U}_{S}□ (2)	Flat cable housing ass'y □ =Number of pins: 26, 20, 16, 10
③	F^{U}_{S} kit	AXT100-1-F^{U}_{S}□ (2)	D-sub connector housing ass'y □ =Number of pins: 25, 15

Note 1) S kit is composed of a flat cable housing assembly (AXT100–1–PU20) of ① SI unit and ② P kit (20 pin). Place an order for AXT-100-1-PU20 separately.
Note 2) Top/vertical entry connector for FU and PU while side (horizontal) entry connector for FS and PS.

<D Side End Plate Assembly>

④⑤D Side End Plate Assembly No.

VVQ1000-3A-3-□-□

- **Option**
  - –: Common EXH
  - (1) **S**: Built-in Silencer, Direct exhaust
- **Electrical entry**
  - **F**: For F kit
  - **P**: For P kit
  - **L**: For L kit
  - **S**: For S kit

Note 1) Applicable for L kit only
Note 2) The housing assembly and SI unit of F/P/S kit are not included. Separately place an order for ①, ②, and ③.
Note 3) The⑩'s fitting assembly is included.

<U Side End Plate Assembly>

⑥U Side End Plate Assembly No.

VVQ1000-2A-3-□

- **Option**
  - –: Common EXH
  - **S**: Built-in silencer, Direct exhaust

Note) The ⑩'s fitting assembly is included.

<Junction Box Assembly>

⑦Junction Box Assembly No.

VVQ1000-1A-3-□

- **Electrical entry**
  - **F1**: For F kit
  - **P1**: P, G, T, S kit for 1 to 12 stations/Double wiring
  - **P2**: G, S kit for 13 to 16 stations/Double wiring
  - **P3**: G, S kit for 1 to 16 stations/Single wiring

Note) **L0**□: L0 kit
Note) **L1**□: L1 kit
Note) **L2**□: L2 kit
□: stations (1 to 16)

Note) Lead wire assembly for extensions is attached.

<Replacement Parts>

No.	Ass'y No.	Name	Material	Number
⑧	VVQ1000-80A-3-2	Packing	NBR	12
⑨	VVQ1000-80A-4	Clip	Stainless steel	12

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

<Fitting Assembly>

⑩Fitting Assembly No.

VVQ1000-50A-□

- **Port size**
  - **C3**: Applicable tube ø3.2
  - **C4**: Applicable tube ø4
  - **C6**: Applicable tube ø6

Note 1) Standard SUP/EXH port is C6.
Note 2) 10 pcs. per one set.

<Station Increase Parts>

∗ The station can be increased up to 2 stations.

No. (3)	Ass'y No.	Name	Material	Number (1)
⑪	VVQ1000-105A-3-□ (2)	Tie-rod bolt	Carbon steel	2
⑫		Junction cover	Stainless steel	1

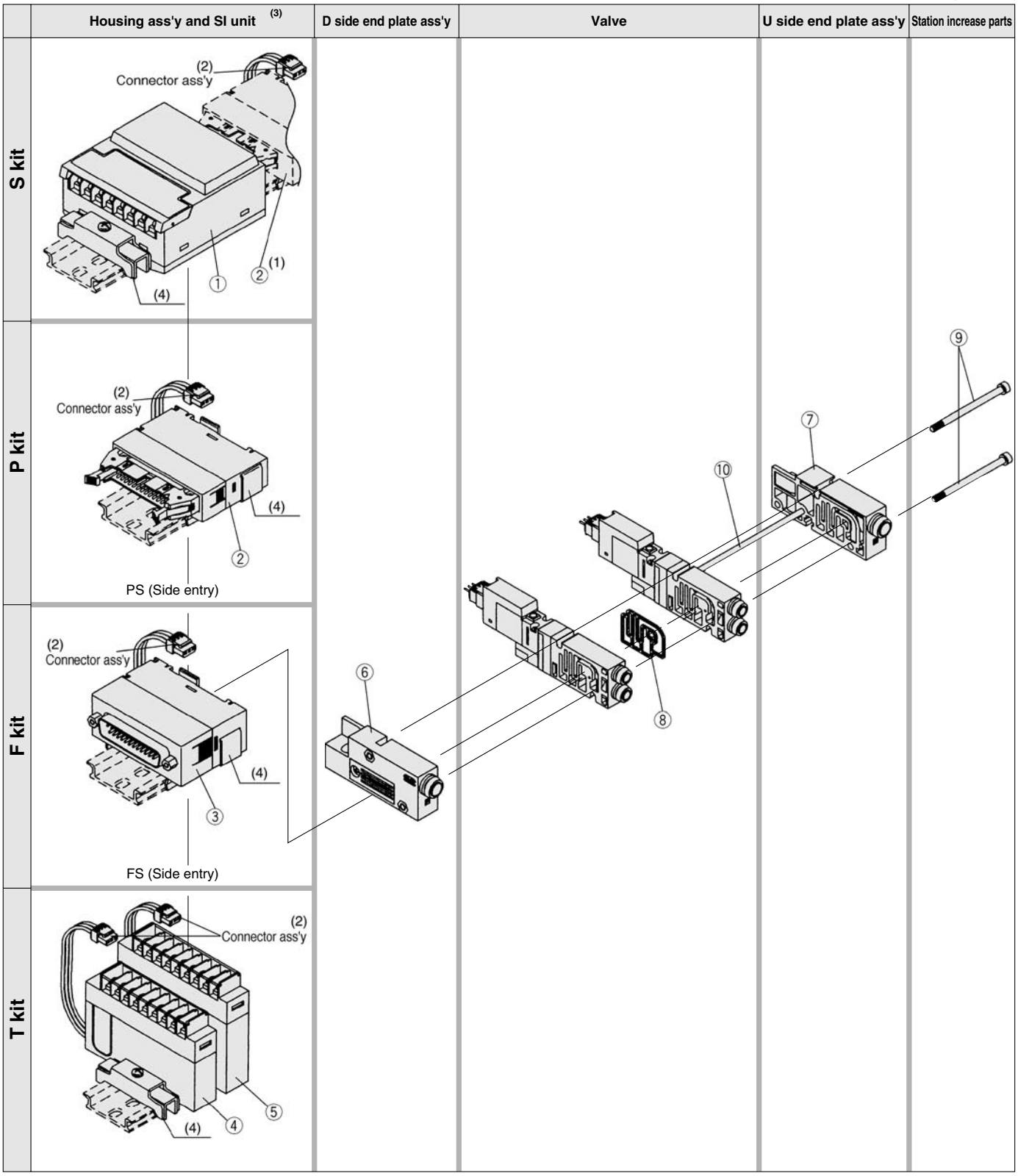
Note 1) Each number of replacement parts are included in one set.
Note 2) □: Number of stations (01 to 16)
Note 3) ⑪ and ⑫ are in one set.

Exploded View of Manifold

Plug Lead Unit/Flip Style/VQ0000 (VV5Q04)

(F, P, T, S kit)

∗ Refer to the instruction manual for the way of increasing stations.



Note 1) S kit is composed of a flat cable housing assembly (AXT100–2PU20) of ① SI unit and ② P kit (20 pin).
Note 2) Since no connector assembly is included, order it separately. (See p.1-657)
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	No.	Name
①[1]	(SB kit)	EX130-SMB1	SI unit for MELSEC-A (Mitsubishi Electric)
	(SC kit)	EX130-STA1	SI unit for SYSMAC (OMRON)
②	P^{U}_{S}kit	AXT100-2-P^{U}_{S}□[2]	Flat cable housing ass'y □ =Number of pins: 26, 20, 16, 10
③	F^{U}_{S}kit	AXT100-2-F^{U}_{S}□[2]	D-sub connector housing ass'y □ =Number of pins: 25,15
④[4]	T kit	AXT100-2-TB1	Terminal block assembly (8 terminals)
⑤[4]	T kit	AXT100-2-TB2	Terminal block assembly (8 terminals)

Note 1) S kit is composed of a flat cable housing assembly (AXT100-2-PS20) of ① SI unit and ② P kit (20 pin). 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. (See p.1-657)
Note 4) In case of standard specifications and double wiring, ④ is for 1 to 4 stations and ⑤ is for 5 to 8 stations.

<D Side End Plate Assembly>

⑥D Side End Plate Assembly No.

VVQ0000-3A-4-□

Option
S: Built-in silencer, Direct exhaust
P: Exclusively for SUP(Common exhaust type)

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

Kit	Type	D side End Plate Ass'y	U side End Plate Ass'y
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>

⑦U Side End Plate Assembly

VVQ0000-2A-4-□

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

<Replacement Parts>

No.	Ass'y No.	Name	Material	Number
⑧	VVQ0000-80A-4-2	Packing	NBR	12

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

<Station Increase Parts>

No.[3]	Ass'y No.	Name	Material	Number[1]
⑨	VVQ0000-105A-4-□[2]	Tie-rod bolt	Carbon steel	2
⑩		Guide rod	Stainless steel	1

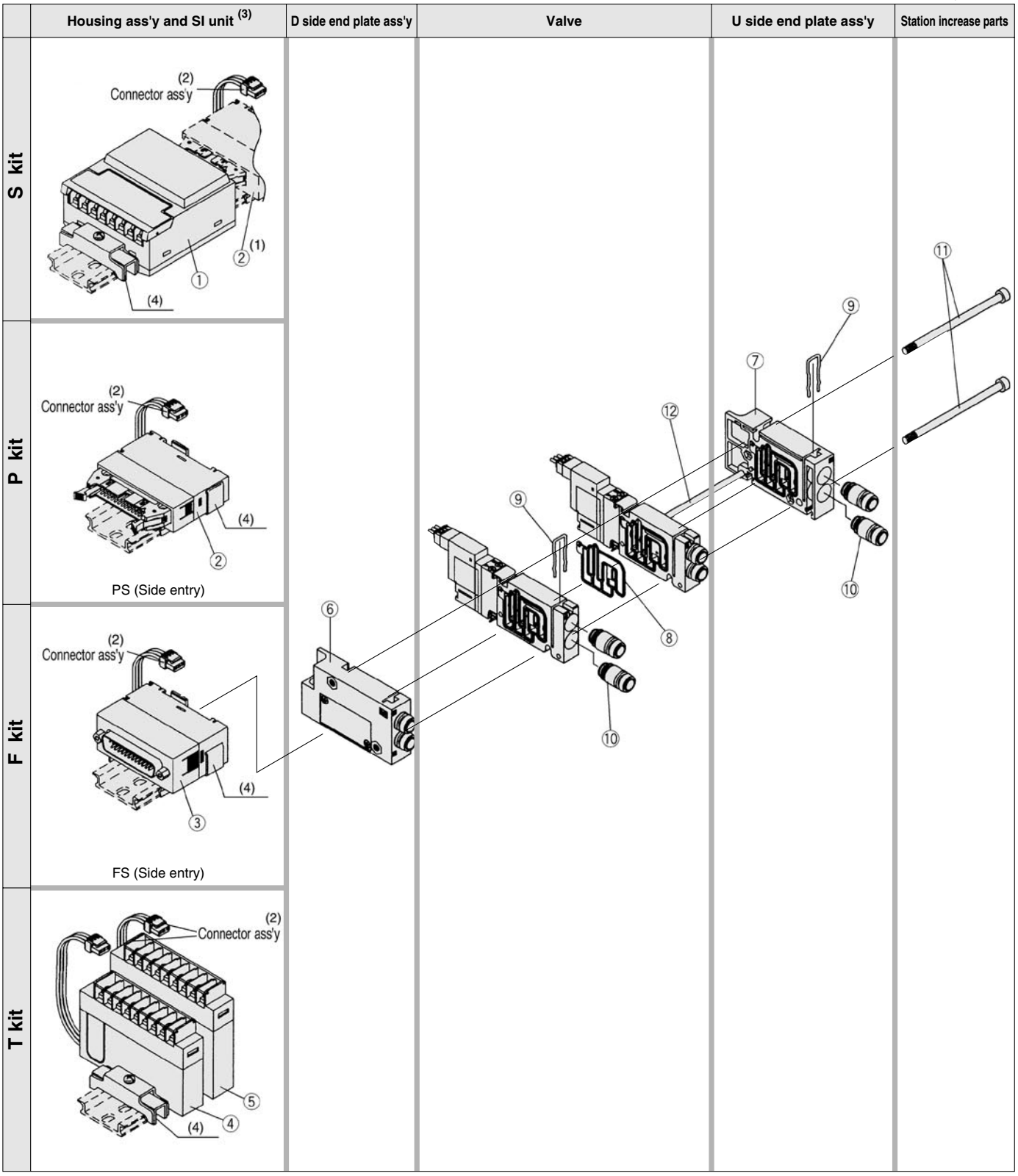
Note 1) Each number of replacement parts are included in one set.
Note 2) □: Number of stations (01 to 16)
Note 3) ⑨ and ⑩ are in one set.

Exploded View of Manifold

Plug Lead Unit/Flip Style/VQ1000 (VV5Q14)

(F, P, T, S kit)

∗ Refer to the instruction manual for the way of increasing stations.



Note 1) S kit is composed of a flat cable housing assembly (AXT100-2-PU20) of ① SI unit and ② P kit (20 pin).
Note 2) Since no connector assembly is included, order it separately. (See p.1-657)
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	No.	Name
①(1)	(SB kit)	EX130-SMB1	SI unit for MELSEC-A (Mitsubishi Electric)
	(SC kit)	EX130-STA1	SI unit for SYSMAC (OMRON)
②	P^{U}_{S}kit	AXT100-2-P^{U}_{S}□(2)	Flat cable housing ass'y □ =Number of pins: 26, 20, 16, 10
③	F^{U}_{S}kit	AXT100-2-F^{U}_{S}□(2)	D-sub connector housing ass'y □ =Number of pins: 25, 15
④	T kit	AXT100-2-TB1	Terminal block assembly (8 terminals)
⑤	T kit	AXT100-2-TB2	Terminal block assembly (8 terminals)

Note 1) S kit is composed of a flat cable housing assembly (AXT100-2-PS20) of ① SI unit and ② P kit (20 pin). 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 ass'y is included, order it separately. (See p.1-657)
Note 4) In case of standard specifications and double wring, ④ is for 1 to 4 stations and ⑤ is for 5 to 8 stations.

<D Side End Plate Assembly>

⑥D Side End Plate Assembly No.

VVQ1000-3A-4-□

Option
–: Common exhaust type
S: Built-in silencer, Direct exhaust (Applicable for C kit only)

Note) The ⑩'s fitting assembly is included.

<U Side End Plate Assembly>

⑦U Side End Plate Assembly No.

VVQ1000-2A-4-□

Option
–: Common exhaust type
S: Built-in silencer, Direct exhaust

Note) The ⑩'s fitting assembly is included.

<Replacement Parts>

No.	Ass'y No.	Name	Material	Number
⑧	VVQ1000-80A-3-2	Packing	NBR	12
⑨	VVQ1000-80A-4	Clip	Stainless steel	12

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

<Fittings Assembly>

⑩ Fittings Assembly No.

VVQ1000-50A-□

Port size
C3: Applicable tube ø3.2
C4: Applicable tube ø4
C6(1): Applicable tube ø6

Note 1) Standard SUP/EXH port is C6.
Note 2) 10 pcs. per one set.

<Station Increase Parts>

No.(3)	Ass'y No.	Name	Material	Number(1)
⑪	VVQ1000-105A-4-□(2)	Tie-rod bolt	Carbon steel	2
⑫		Guide rod	Stainless steel	1

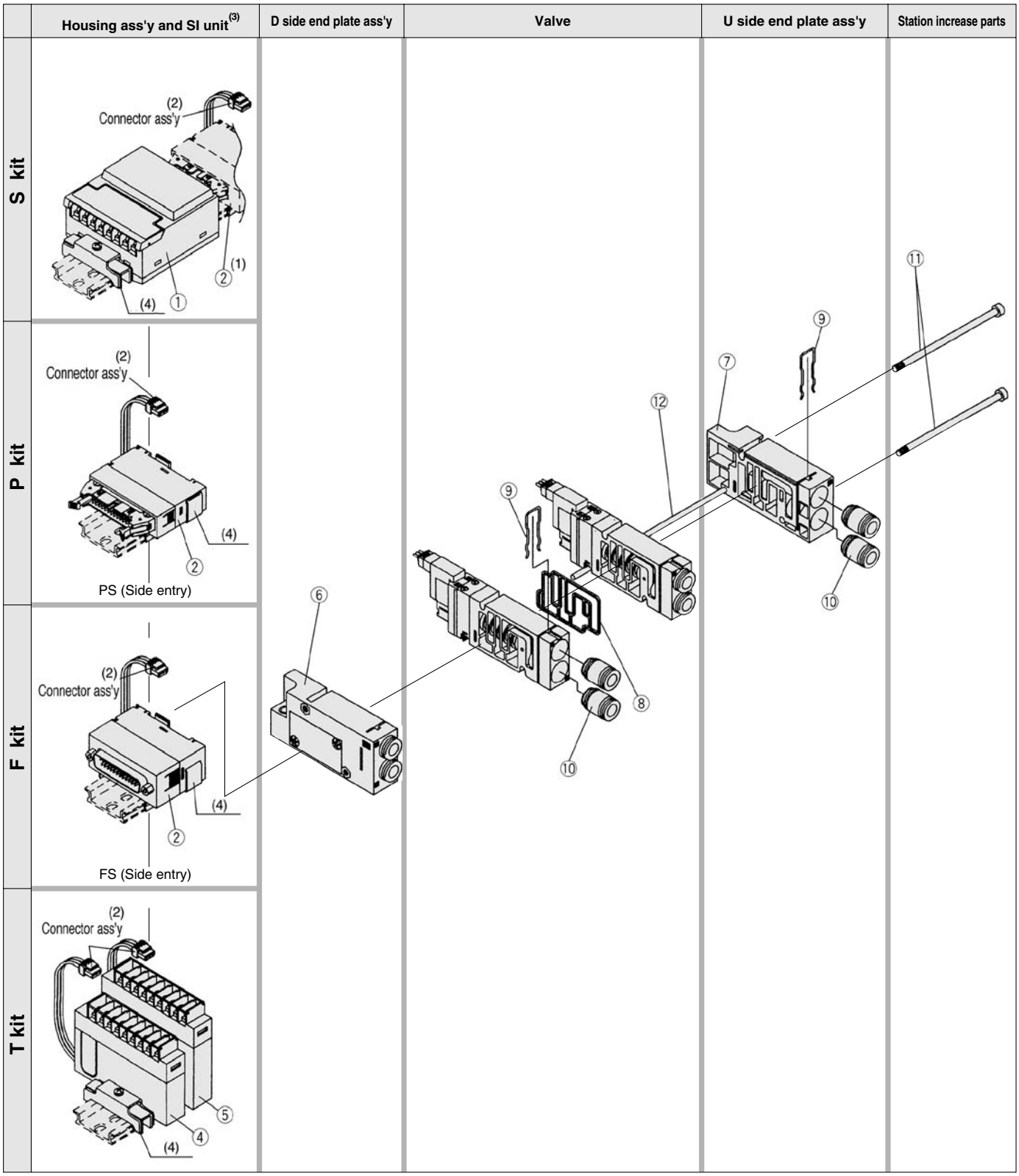
Note 1) Each number of replacement parts are included in one set.
Note 2) □: Number of stations (01 to 16)
Note 3) ⑪ and ⑫ are in one set.

Exploded View of Manifold

Plug Lead Unit/Flip Style/VQ2000 (VV5Q24)

(F, P, T, S kit)

∗ Refer to the instruction manual for the way of increasing stations.



Note 1) S kit is composed of a flat cable housing assembly (AXT100-2-PU20) of ① SI unit and ② P kit (20 pin).
Note 2) Since no connector assembly is included, order it separately. (See p.1-657)
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	No.	Name
①(1)	(SB kit)	EX130-SMB1	SI unit for MELSEC-A (Mitsubishi Electric)
	(SC kit)	EX130-STA1	SI unit for SYSMAC (OMRON)
②	P^{U}_{S}kit	AXT100-2-P^{U}_{S}□ (2)	Flat cable housing ass'y □=Number of pins: 26, 20, 16, 10
③	F^{U}_{S}kit	AXT100-2-F^{U}_{S}□ (2)	D-sub connector housing ass'y □=Number of pins: 25,15
④	T kit	AXT100-2-TB1	Terminal block assembly (8 terminals)
⑤	T kit	AXT100-2-TB2	Terminal block assembly (8 terminals)

Note 1) S kit is composed of a flat cable housing assembly (AXT100-2-PS20) of ① SI unit and ② P kit (20 pin).
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. (See p.1-657)
Note 4) In case of standard specifications and double wiring, ④ is for 1 to 4 stations and ⑤ is for 5 to 8 stations.

<D Side End Plate Assembly>

⑥D Side End Plate Assembly No.

VVQ2000-3A-4-□

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

Note) The ⑩ 's fitting assembly is included.

<U Side End Plate Assembly>

⑦ U Side End Plate Assembly No.

VVQ2000-2A-4-□

Option
–: Common exhaust
S: Built-in silencer, Direct exhaust

Note) The ⑩ 's fitting assembly is included.

<Replacement Parts>

No.	Ass'y No.	Name	Material	Number
⑧	VVQ2000-80A-3-2	Packing	NBR	12
⑨	VVQ2000-80A-3-4	Clip	Stainless steel	12

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

<Fittings Assembly>

⑩ Fittings Assembly No.

VVQ1000-51A-□

Port size
C4: Applicable tube ø4
C6: Applicable tube ø6
C8(1): Applicable tube ø8

Note 1) Standard SUP/EXH port is C8.
Note 2) 10 pcs. per one set.

<Station Increase Parts>

No.(3)	Ass'y No.	Name	Material	Number(1)
⑪	VVQ2000-105A-4-□ (2)	Tie-rod bolt	Carbon steel	2
⑫		Guide rod	Stainless steel	1

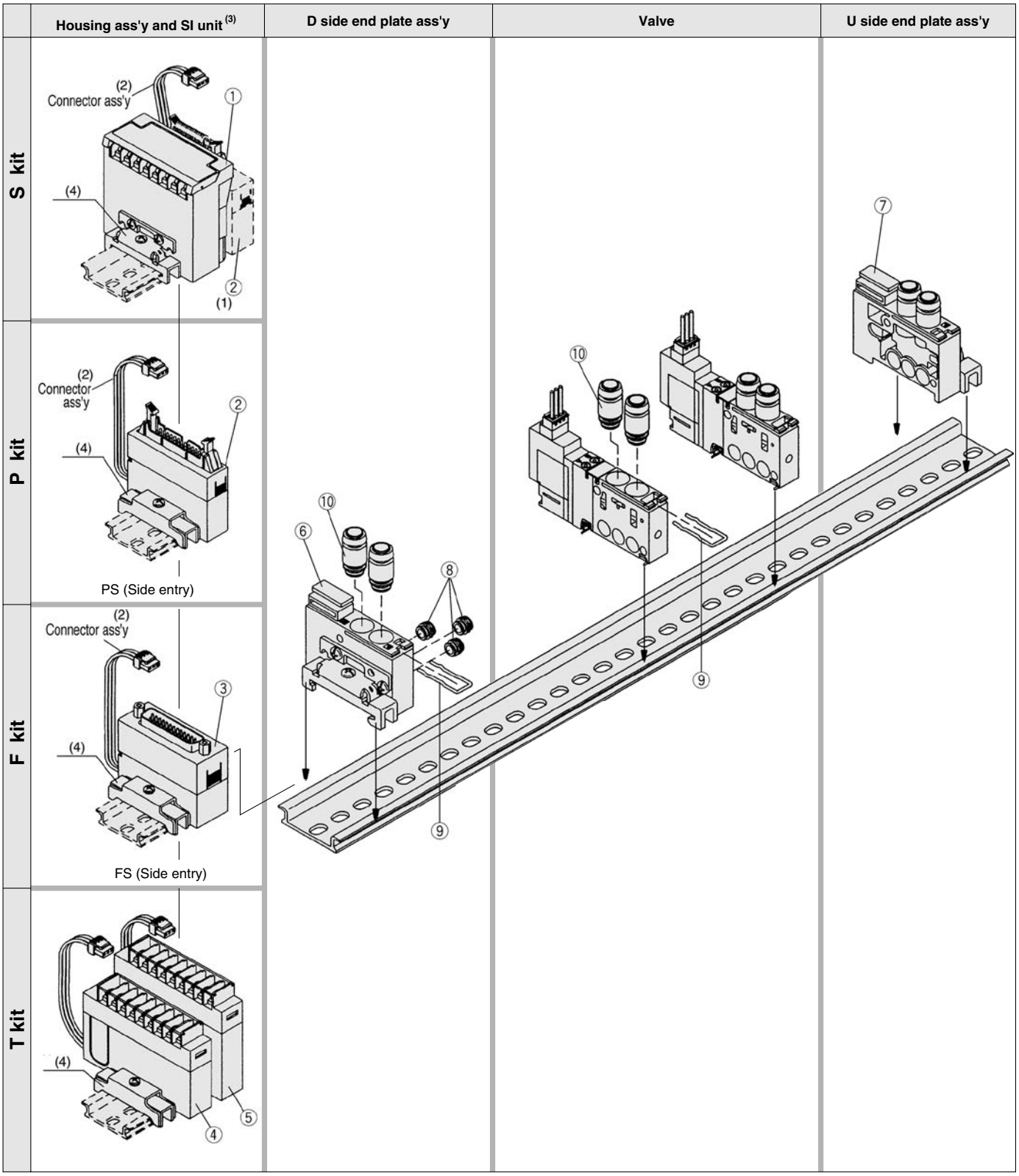
Note 1) Each number of replacement parts are included in one set.
Note 2) □: Number of stations (01 to 16)
Note 3) ⑪ and ⑫ are in one set.

Exploded View of Manifold

Cassette Style Plug Lead Unit/VQ1000 (VV5Q17)

(F, P, T, S kit)

∗ Refer to the instruction manual for the way of increasing stations.



Note 1) S kit is composed of a flat cable housing assembly (AXT100-2-PU20) of ① SI unit and ② P kit (20 pin).
Note 2) Since no connector assembly is included, order it separately. (See p.1-681)
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	No.	Name
①(1)	(SB kit)	EX121-SMB1(-XP)	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)
	(SC kit)	EX121-STA1(-XP)	SI unit for SYSBUS Wire System (OMRON)
	(SN kit)	EX121-SPR1	SI unit for Profibus DP
	(SP kit)	EX121-SIB1	SI unit for Interbus
	(SQ kit)	EX121-SDN1	SI unit for Device Net and Compo Bus/D (OMRON)
	(SY kit)	EX121-SCA1	SI unit for Can Open
	(ST2 kit)	EX121-SAS2	SI unit for ASI (yellow+black wires) Max. 8 stations
	(ST4 kit)	EX121-SAS4	SI unit for ASI (yellow+black wires) Max. 4 stations
	(ST5 kit)	EX121-SAS5	SI unit for ASI (yellow wires) Max. 4 stations
②	P^{U}_{S}kit	AXT100-2-P^{U}_{S}□(2)	Flat cable housing ass'y □ =Number of pins: 26, 20, 16, 10
③	F^{U}_{S}kit	AXT100-2-F^{U}_{S}□(2)	D-sub connector housing ass'y □ =Number of pins: 25,15
④(4)	T kit	AXT100-2-TA1	Terminal block assembly (8 terminals)
⑤(4)	T kit	AXT100-2-TA2	Terminal block assembly (8 terminals)

Note 1) A S kit is composed of a flat cable housing assembly (AXT100-2-PS20) of ① SI unit and ② P kit (20 pins). Place an order for AXT100-2-PS20 separately. Suffix "-XP" for dustproof type SI unit.
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. (See p.1-681)
Note 4) In case of standard specifications and double wiring, ④ is for 1 to 4 stations and ⑤ is for 5 to 8 stations.

<D Side End Plate Assembly>

⑥D Side End Plate Assembly No.

VVQ1000–3A–7

Note) The ⑩ 's fitting assembly is included.

<U Side End Plate Assembly>

⑦U Side End Plate Assembly No.

VVQ1000–2A–7

Note) The ⑩ 's fitting assembly is included.

<Replacement Parts>

No.	Ass'y No.	Name	Material	Number
⑧	VVQ1000-80A-7-2	Bush assembly		3
⑨	VVQ1000-80A-7-4	Clip	Stainless steel	12

<Fittings Assembly>

⑩Fittings Assembly No.

VVQ1000–50A–□

Port size
C3: Applicable tube ø3.2
C4: Applicable tube ø4
C6(1): Applicable tube ø6

Note 1) Standard SUP/EXH port is C6.
Note 2) 10 pcs. per one set.

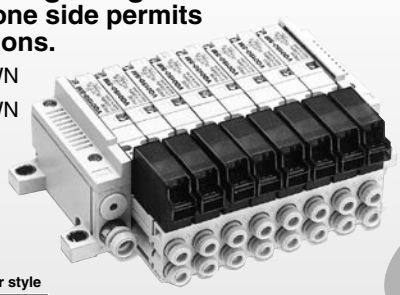
Metal Seal/Rubber Seal
Base Mounted
Series VQ

Small space and small volume

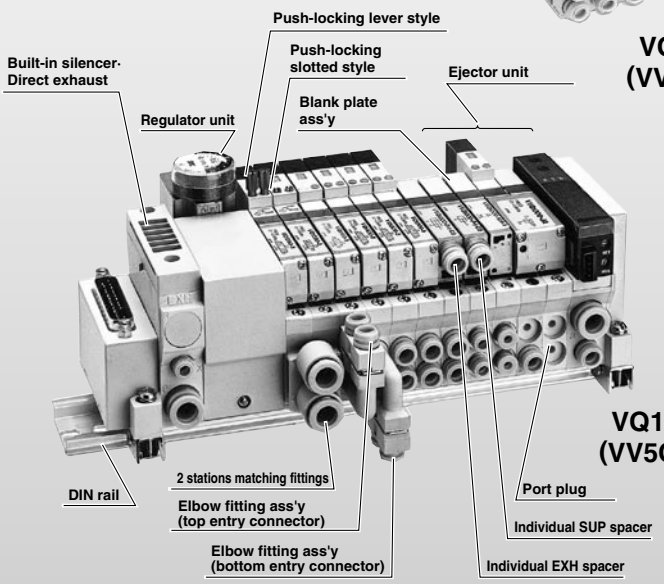
All pilot valves are compactly mounted on one side. The space saving design of mounting all fittings on one side permits mounting in three directions.

Mounting space·····45% DOWN

Mounting volume····· 50% DOWN



VQ0000 (VV5Q05)



VQ1000 (VV5Q11)

The photo does not show an actual use example.

Unprecedented high speed response and long service life

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

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

Dispersion accuracy ±2ms

Thin compact design with large flow capacity

Model	Manifold pitch (mm)	N ℓ/min		Cylinder speed
		Metal seal	Rubber seal	
VQ0000	11	147.23	196.3	up to ø40
VQ1000	10.5	196.3	294.45	up to ø50
VQ2000	16	785.2	883.35	up to ø80

VQ2000 (VV5Q21)

A variety of options

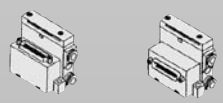
Innovative mounting methods

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

Built-in One-touch fittings for easy piping

A variety of commom wiring methods are standardized.

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

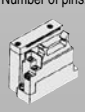


Top entry Side entry

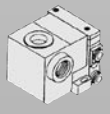
P Kit (Flat cable connector) Number of pins: 10, 16, 20, 26

Top entry Side entry

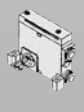
G Kit (Flat cable with terminal block) Number of pins: 20



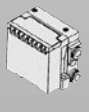
T Kit (Terminal box)



L Kit (Lead wire)



S Kit (Serial transmission unit)



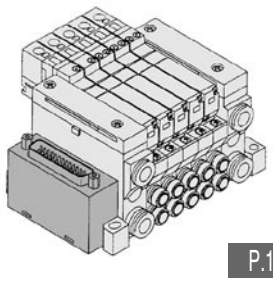
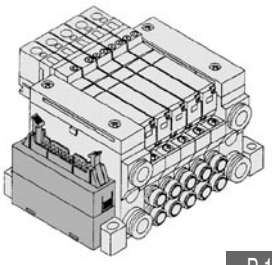
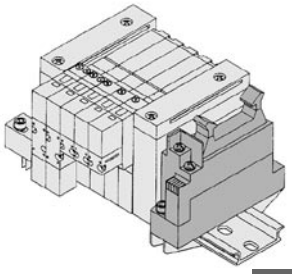
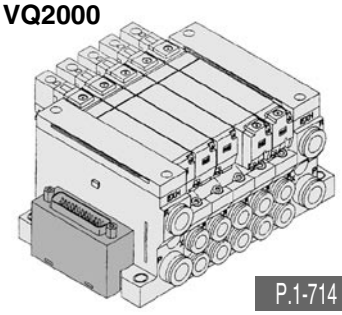
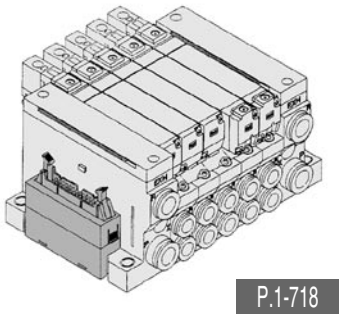
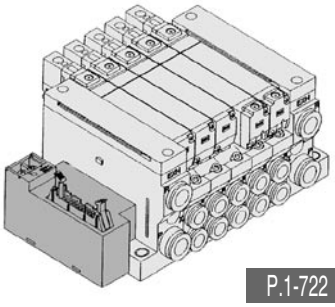
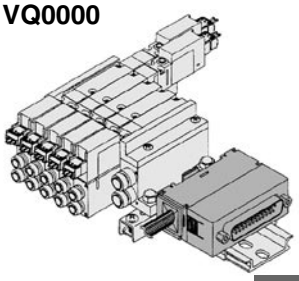
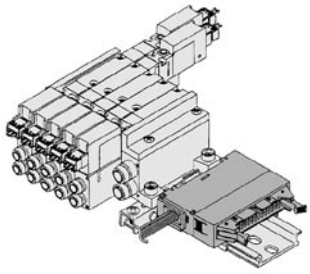
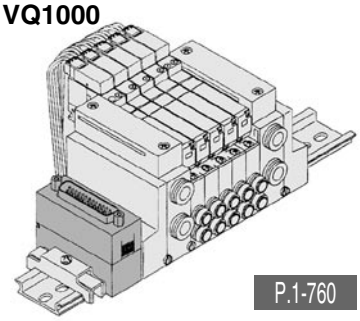
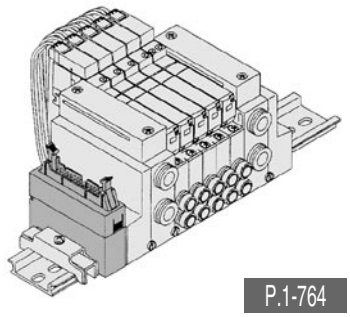
Valve Specifications

					Effective area mm² (Nℓ/min)		Configuration					Voltage	Electrical entry				Manual override		
					Single Double	3 position	Single	Double	Closed center	Exhaust center	Pressure center	12V,24V DC	Plug-in	Grommet	L plug connector	M plug connector	Non-locking push style	Push-locking slotted style	Push-locking lever style
Plug-in	Series VQ1000 P.1-708	Metal seal	VQ1□00		3.6 (196.3)	3.6 (196.3)	●	●	●	●	●	●	●				●	●	●
		Rubber seal	VQ1□01		5.4 (294.45)	5.4 (294.45)													
							P.1-712												
	Series VQ2000 P.1-710	Metal seal	VQ2□00		14.4 (785.2)	12.6 (687.05)	●	●	●	●	●	●	●				●	●	●
		Rubber seal	VQ2□01		16.2 (883.35)	14.4 (785.2)													
							P.1-712												
Plug lead	Series VQ0000 P.1-754	Metal seal	VQ0□50		2.7 (147.23)	2.0 (107.97)	●	●	●	●		●		●	●	●	●	●	
		Rubber seal	VQ0□51		3.6 (196.3)	2.7 (147.23)													
							P.1-758												
	Series VQ1000 P.1-756	Metal seal	VQ1□10		3.6 (196.3)	3.6 (196.3)	●	●	●	●	●	●			●		●	●	●
		Rubber seal	VQ1□11		5.4 (294.45)	5.4 (294.45)													
							P.1-758												

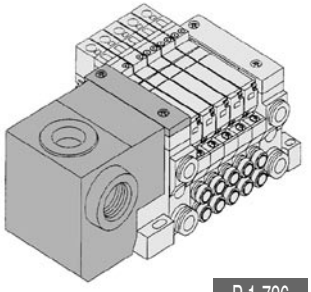
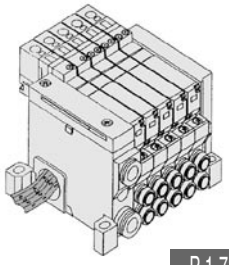
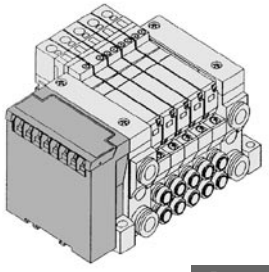
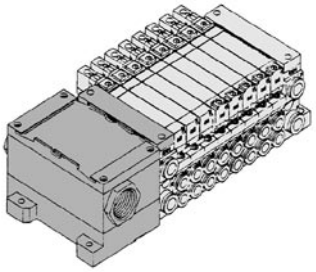
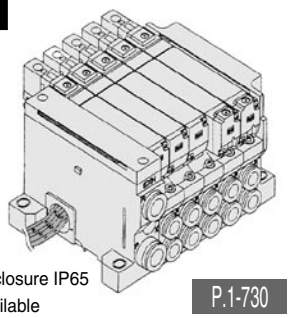
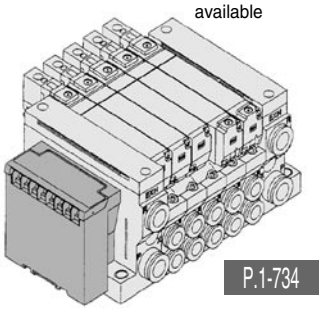
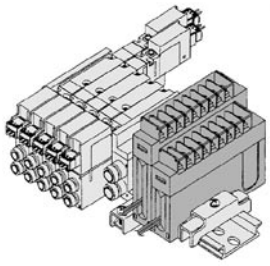
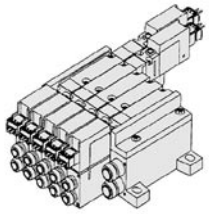
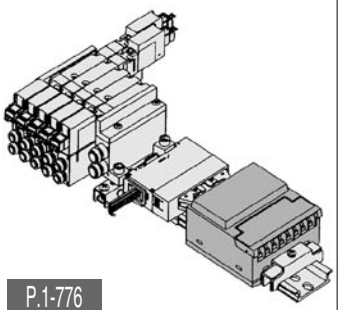
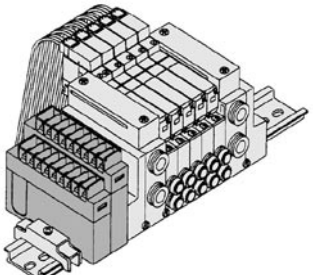
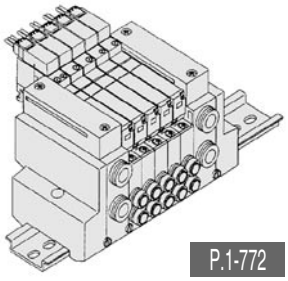
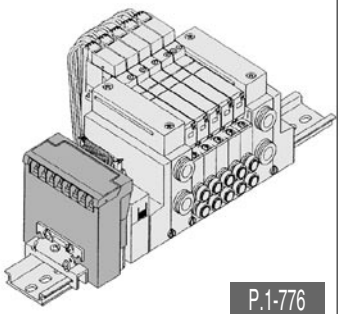
Options						Manifold Options													
External pilot	D-sub connector 15 pin	Flat cable 10 pin, 16 pin, 20 pin	Negative COM specifications	One-touch fitting/Inch size	For special wiring spec.	Blank plate	Individual SUP/EXH	SUP/EXH passage spacer	Name plate	Check valve for prevention of back pressure	DIN rail mounting	Built-in silencer	Silencer for EXH port	Elbow fitting for cylinder port	Two stations matching fittings for double flow rate	Plug for cylinder port	Ragulator unit	Ejector unit mounted	Double check block
●	●	●	● Contact SMC for S/G kit	●	● Except for L kit	●	●	●	●	●	●	●	●	●	●	●	●	●	●
P.1-759						P.1-738													
●	●	●	● Contact SMC for S/G kit	●	● Except for L kit	●	●	●	●	●	●	●	●	●	●	●			●
P.1-759						P.1-744													
	●	●	● Contact SMC for S kit	●	● Except for L kit	●	●	●	●		●	●	●						●
P.1-787						P.1-780													
	●	●	● Contact SMC for S kit	●	● Except for L kit	●	●	●	●	●	Standard	●	●	●	●	●			●
P.1-787						P.1-782													

Series VQ/Base Mounted: Variations

Manifold Variations

	F Kit	P Kit	G Kit
	D-sub connector Conforming to MIL D-sub connector	**Flat cable connector** Conforming to MIL flat cable connector	**Flat cable with power supply terminal block** Conforming to MIL flat cable connector. Applicable to OMRON's serial transmission unit.
Plug-in	**Series VQ1000**  P.1-714	 P.1-718	 P.1-722
Plug-in	**Series VQ2000**  P.1-714	 P.1-718	 P.1-722
Plug lead	**Series VQ0000**  P.1-760	 P.1-764	—
Plug lead	**Series VQ1000**  P.1-760	 P.1-764	—

Manifold Variations

T kit	L C kit	S kit	Port size	
			SUP EXH port	Cylinder port
Terminal box (Terminal block) Terminal blocks are compactly arranged on one side.	**Lead wire** Direct electrical entry style	**Serial transmission unit** Enables single-wire solenoid valve-PLC operation	P, R	A, B
 Terminal box P.1-726	L kit  P.1-730	 P.1-734	C8 (ø8) N9 (ø5/16") <Option> Built-in silencer	C3 (ø3.2) C4 (ø4) C6 (ø6) M5 (M5 thread) N1 (ø1/8") N3 (ø5/32") N7 (ø1/4")
 Enclosure IP65 available P.1-726	L kit  Enclosure IP65 available P.1-730	Enclosure IP65 available  P.1-734	C10 (ø10) N11 (ø3/8") <Option> Built-in silencer	C4 (ø4) C6 (ø6) C8 (ø8) N3 (ø5/32") N7 (ø1/4") N9 (ø5/16")
 Terminal block P.1-768	C kit  P.1-772	 P.1-776	C6 (ø6) N7 (ø1/4") <Option> Built-in silencer	C3 (ø3.2) C4 (ø4) M5 (M5 thread) N1 (ø1/8") N3 (ø5/32")
 Terminal block P.1-768	C kit  P.1-772	 P.1-776	C8 (ø8) N9 (ø5/16") <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

Series VQ0000

Model	Fitting (One-touch fitting) Effective area (mm^2) (Nℓ/min)	Cylinder speed (mm/s)	Cylinder bore size (mm)											
			Series CJ2 Pressure 0.5MPa Load factor 25% Piping length 2m Speed controller: AS2000F-06 (S=4.5mm^2) Cylinder stroke 50mm			Series CM2 Pressure 0.5MPa Load factor 50% Piping length 5m Speed controller: AS2000F-06 (S=4.5mm^2) Cylinder stroke 100mm				Series CA1 Pressure 0.5MPa Load factor 50% Piping length 5m Speed controller: AS2000F-06 (S=4.5mm^2) Cylinder stroke 300mm				
			ø6	ø10	ø16	ø20	ø25	ø32	ø40	ø40	ø50	ø63	ø80	ø100
VQ0000 (Metal seal)	ø4 2.7 (147.23)	150												
		300												
		450												
		600												
		750												
VQ0001 (Rubber seal)	ø4 3.6 (196.3)	150												
		300												
		450												
		600												
		750												

Series VQ1000

Model	Fitting (One-touch fitting) Effective area (mm^2) (Nℓ/min)	Cylinder speed (mm/s)	Cylinder bore size (mm)											
			Series CJ2 Pressure 0.5MPa Load factor 25% Piping length 2m Speed controller: AS3000F-06 (S=6.5mm^2) Cylinder stroke 50mm			Series CM2 Pressure 0.5MPa Load factor 50% Piping length 5m Speed controller: AS3000F-06 (S=6.5mm^2) Cylinder stroke 100mm				Series CA1 Pressure 0.5MPa Load factor 50% Piping length 5m Speed controller: AS3000F-06 (S=6.5mm^2) Cylinder stroke 300mm				
			ø6	ø10	ø16	ø20	ø25	ø32	ø40	ø40	ø50	ø63	ø80	ø100
VQ1000 (Metal seal)	ø6 3.6 (196.3)	150												
		300												
		450												
		600												
		750												
VQ1001 (Rubber seal)	ø6 5.4 (294.45)	150												
		300												
		450												
		600												
		750												

Series VQ2000

Model	Fittings (One-touch fitting) Effective area (mm^2) (Nℓ/min)	Cylinder speed (mm/s)	Cylinder bore size (mm)											
			Series CJ2 Pressure 0.5MPa Load factor 25% Piping length 2m Speed controller: AS3000F-08 (S=10mm^2) Cylinder stroke 50mm			Series CM2 Pressure 0.5MPa Load factor 50% Piping length 5m Speed controller: AS3000F-08 (S=10mm^2) Cylinder stroke 100mm				Series CA1 Pressure 0.5MPa Load factor 50% Piping length 5m Speed controller: AS3000F-08 (S=10mm^2) Cylinder stroke 300mm				
			ø6	ø10	ø16	ø20	ø25	ø32	ø40	ø40	ø50	ø63	ø80	ø100
VQ2000 (Metal seal)	ø8 14.4 (785.2)	150												
		300												
		450												
		600												
		750												
VQ2001 (Rubber seal)	ø8 16.2 (883.35)	150												
		300												
		450												
		600												
		750												

VQ1000
Base Mounted
Plug-in Unit

How to Order Manifold

VV5Q 1 1 – 08 C6 F U1 – □ -Q

Series

1	VQ1000

Manifold

1	Plug-in unit

Stations

01	1 station
⋮	⋮

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

Cylinder ports

Symbol	Port size
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
M5	M5 thread
CM	Mixed size/with port plug (1)
L3	Elbow One-touch fitting ø3.2 for top piping
L4	Elbow One-touch fitting ø4 for top piping
L6	Elbow One-touch fitting ø6 for top piping
L5	Elbow M5 thread for top piping
B3	Elbow One-touch fitting ø3.2 for bottom piping
B4	Elbow One-touch fitting ø4 for bottom piping
B6	Elbow One-touch fitting ø6 for bottom piping
B5	Elbow M5 thread for bottom piping
LM	Mixed size for elbow piping

Note 1) Specify "Mixed size/with port plug" by means of manifold specification form.
Note 2) Refer to "Options" on p.1-751 for One-touch fittings in inch sizes.
Note 3) M5 fittings for M5 thread are attached without being incorporated.

Kit

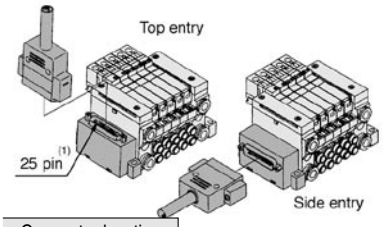
Option

Symbol	Option
—	None
B	Check valve for prevention of back pressure(2)
D	DIN rail mounting
G1	1 set of regulator unit (3)
G2	2 sets of regulator unit (3)
G3	3 sets of regulator unit (3)
J□	With vacuum ejector unit (4)
K	Special wiring specification (Not double wiring)(5)
N	With name plate
R	External pilot (6)
S	Built-in silencer (Direct exhaust)

Note 1) If specifying more than one option, please list alphabetically. Example) -BRS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using a manifold specification form.
Note 3) Specify the mounting position by means of the manifold specification form.
Note 4) Refer to p.1-742 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Specify the wiring by means of the manifold specification form. (Except for L kit)
Note 6) Indicate "R" for the valve with external pilot.

Kit/Electrical entry/Cable length

F Kit (D-sub connector)

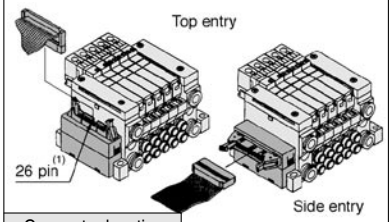


Connector location	
Top (vertical)	Side (honzontal)

P.1-714

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

P Kit (Flat cable connector)

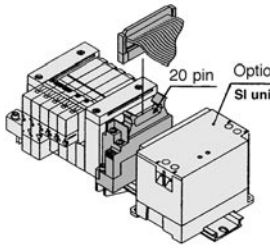


Connector location	
Top (vertical)	Side (honzontal)

P.1-718

P Kit	U0	P Kit	S0	Without cable	2 to 24 stations (2)
	U1		S1	With cable (1.5m)	
	U2		S2	With cable (3m)	
	U3		S3	With cable (5m)	

G Kit (Flat cable connector with power supply terminal block)

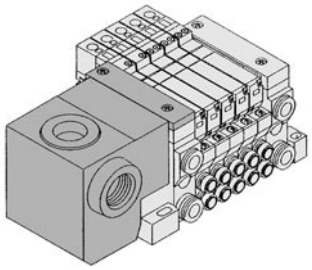


Compatible only with 24VDC valves.

P.1-722

G Kit	0	Without cable	2 to 16 stations (2)
	1	With cable (1.5m)	
	2	With cable (3m)	
	3	With cable (5m)	

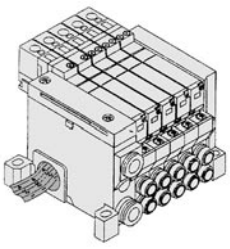
T Kit (Terminal box)



P.1-726

T Kit	O	Terminal box	2 to 24 stations (2)

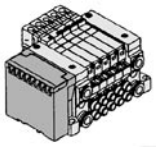
L Kit (Lead wire cable)



P.1-730

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

S Kit (Serial transmission unit)



The valve is equipped with an indicator light and surge voltage suppressor, and the voltage is 24V DC.

P.1-734

S Kit	B	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)	Max. (2) 16 stations
	C	SI unit for SYSBUS Wire System (OMRON)	
	N	SI unit for Profibus DP	
	P	SI unit for Interbus	
	Q	SI unit for Device Net and CompoBus/D (OMRON)	
	Y	SI unit for Can Open	
	T2	SI unit for ASI (yellow+black wires)	Max. 8
	T4	SI unit for ASI (yellow+black wires)	Max. 4
	T5	SI unit for ASI (yellow wires)	

Note 1) Besides the above, F and P kits with different number of pins are available. Refer to p1-749 for details.
Note 2) Refer to p.1-750 for details.

How to Order Valve

VQ 1 [1] 0 [0] Y – 5 [ ] [ ] -Q

Series

1	VQ1000

Configuration

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

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification
—	1.0W(0.7MPa Max. operating pressure)
H	1.5W(0.8MPa Max. operating pressure)
K (1)	1.0W(1.0MPa Max. operating pressure)
Y	0.5W(0.7MPa Max. operating pressure)
R	External pilot
N	Negative common

* Only the following combination is possible.
HN, KR, HNR, KN, KR, KNR, RY, NY, NRY, NR.
Note 1) Available only to metal seal type.

Indicator light and surge voltage suppressor

—	Yes
E (1)	No

Note 1) Unapplicable to the S kit.

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

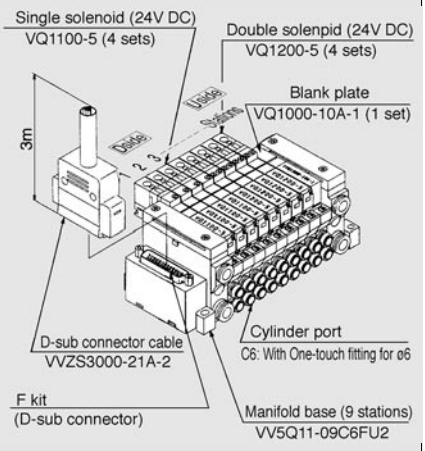
Protective class class III (Mark: ⏚)

Manual override

— Non-locking push style	B Push-locking slotted style
	C Push-locking lever style

How to Order Manifold Ass'y (Example)

Ordering example



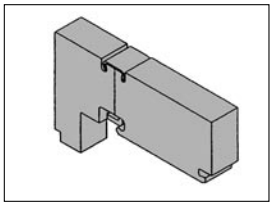
VV5Q11-09C6FU2-Q ··· 1 set (F kit 9 station manifold base No.)
VQ1100-5-Q ····· 4 sets (Single solenoid No.)
VQ1200-5-Q ····· 4 sets (Double solenoid No.)
VV1000-10A-1 ··· 1 sets (Blank plate No.)

Specify valve and option nos. below the manifold base No. When arrangement is complicated, specify the nos. by using a manifold specification form.

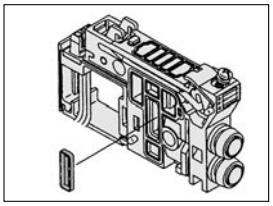
Manifold Options

P.1-738

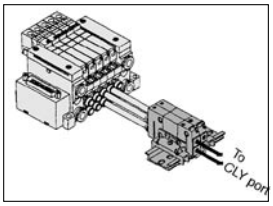
Blank plate assembly
VVQ1000-10A-1



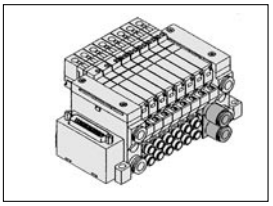
SUP block plate
VVQ1000-16A



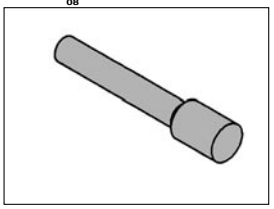
Double check block
VVQ1000-FPG-□□



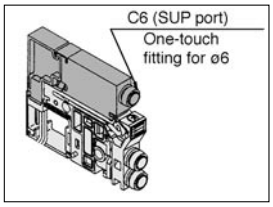
2 stations matching fitting assembly
VVQ1000-52A-C8



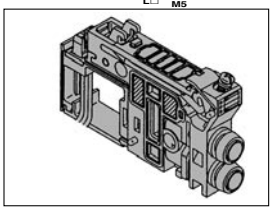
Blank plug
KQ2P-$^{23}_{04}$-00



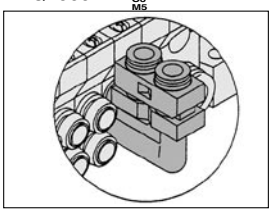
Indivdual SUP spacer
VVQ1000-P-1-C6



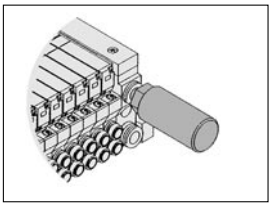
EXH block plate assembly
VVQ1000-19A-$^{F□}_{P□}$-$^{C3}_{C4}$ $^{C6}_{M5}$



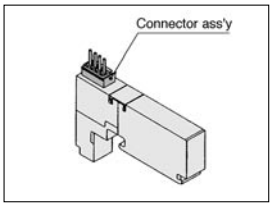
Elbow fittings assembly
VVQ1000-F-L$^{C3}_{C4}$ $^{C6}_{M5}$



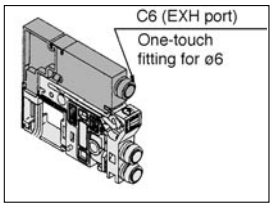
Silencer (EXH port)
AN200-KM8



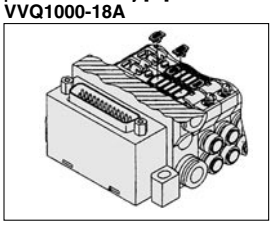
Blank plate with connector
VVQ1000-1C□-□



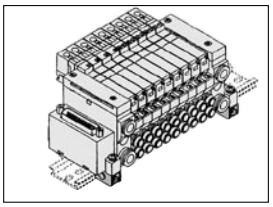
Individual EXH spacer
VVQ1000-R-1-C6



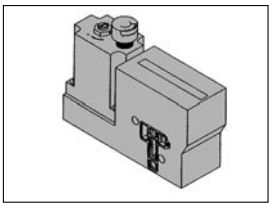
Check valve for prevention of back pressure assembly [-B]
VVQ1000-18A



DIN rail mounting bracket [-D]
VVQ1000-57A

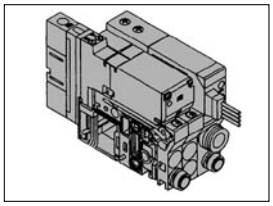


Regulator unit
VVQ1000-AR-1

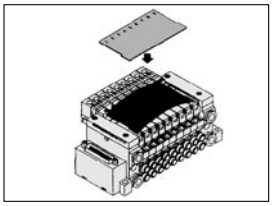


●Refer to p.1-747 for cylinder port fittings.
●Refer to p.1-799 for replacement parts.

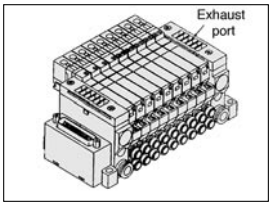
Vacuum ejector unit
[-J□]



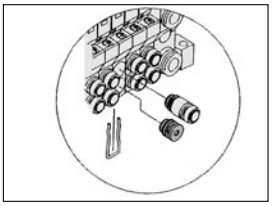
Name plate [N]
VVQ1000-N-Station (1 to Max. stations)



Built-in silencer, direct exhaust [-S]



Port plug
VVQ0000-58A



VQ2000

Base Mounted

Plug-in Unit

How to Order Manifold

VV5Q 2 1 – 08 C6 F U1 – □ -Q

Series

2	VQ2000

Manifold

1	Plug-in unit

Stations

01	1 station
⋮	⋮

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

Cylinder ports

Symbol	Port size
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
CM	Mixed size/with port plug(1)
L4	Elbow One-touch fitting ø4 for top piping
L6	Elbow One-touch fitting ø6 for top piping
L8	Elbow One-touch fitting ø8 for top piping
B4	Elbow One-touch fitting ø4 for bottom piping
B6	Elbow One-touch fitting ø6 for bottom piping
B8	Elbow One-touch fitting ø8 for bottom piping
LM	Mixed size for elbow piping

Note 1) Specify "Mixed size/with port plug" by means of manifold specification form.
Note 2) Refer to "Options" on p.1-751 for One-touch fittings in inch sizes.

Kit

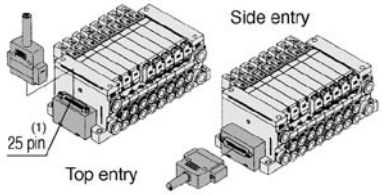
Option

Symbol	Option
–	None
B	Check valve for prevention of back pressure (2)
D	DIN rail mounting
K	Special wiring specification (Not double wiring) (3)
N	With name plate
R	External pilot (4)
S	Built-in silencer (Direct exhaust)
W	Enclosure: IP65 (T, L, and S kits only)

Note 1) If specifying more than one option, please list alphabetically. Example) -DNR
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by manifold specification form.
Note 3) Specify the wiring by means of the manifold specification form. (Except for L kit)
Note 4) Indicate "R" for the valve with external pilot.

Kit/Electrical entry/Cable length

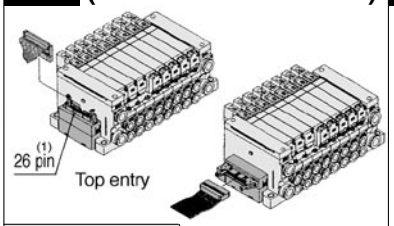
F Kit (D-sub connector)



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

P.1-719

P Kit (Flat cable connector)

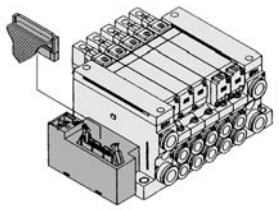


Connector location					
Top (vertical)		Side (honzontal)			
P Kit	U0	P Kit	S0	Without cable	2 to 24 (2) stations
	U1		S1	With cable (1.5m)	
	U2		S2	With cable (3m)	
	U3		S3	With cable (5m)	

P.1-718

G Kit (Flat cable connector with power supply terminal block)

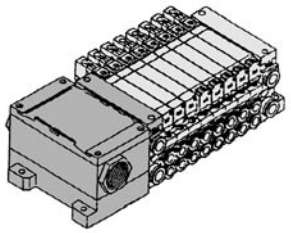
Compatible only with 24V DC valves.



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

P.1-722

T Kit (Terminal box)

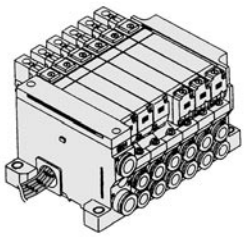


Dust tight/jet proof style (IP65) available

P.1-726

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

L Kit (Lead wire cable)

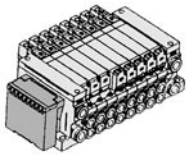


Dust tight/jet proof style (IP65) available

P.1-730

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

S Kit (Serial transmission unit)



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

P.1-734

S Kit	B	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)	Max. (2) 16 stations
	BB (4)	SI unit for MELSECNET/MINI-S3 Data Link System (2 power supply lines)(mitsubishi Electric)	
	C	SI unit for SYSBUS Wire System (OMRON)	
	N	SI unit for Profibus DP	
	P	SI unit for Interbus	
	Q	SI unit for Device Net	
	Y	SI unit for Can Open	
	T2	SI unit for ASI (yellow+black wires)	Max. 8
	T4	SI unit for ASI (yellow+black wires)	Max. 4
	T5	SI unit for ASI (yellow wires)	

Note 1) Besides the above, F and P kits with different number of pins are available. Refer to p.1-749 for details.
Note 2) Refer to p.1-750 for details.
Note 3) Refer to the pages on respective kits for IP65 type. (T, L and S kits)

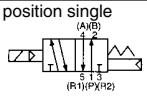
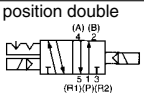
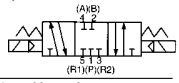
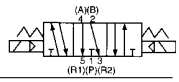
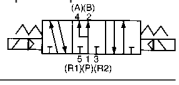
How to Order Valve

VQ 2 [1] 0 [0] Y – 5 [ ] [ ] [ ] -Q

Series

2	VQ2000

Configuration

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

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification
—	1.0W(0.7MPa Max. operating pressure)
H	1.5W(0.8MPa Max. operating pressure)
K (1)	1.0W(1.0MPa Max. operating pressure)
Y	0.5W(0.7MPa Max. operating pressure)
R	External pilot
N	Negative common

* Only the following combination is possible.
HN, KR, HNR, KN, KR, KNR, RY, NY, NRY, NR.
Note 1) Available only to metal seal type.

Indicator light and surge voltage suppressor

–	Yes
E (1)	No

Note 1) Unapplicable to the S kit.

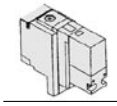
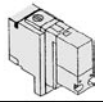
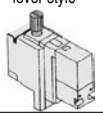
Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Manual override

– Non-locking push style	B Push-locking slotted style
	C Push-locking lever style

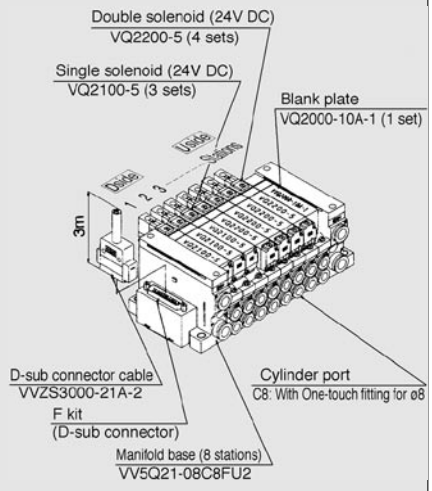
Enclosure

–	Dust-proof
W	IP65

Protective class
class III (Mark:⏚)

How to Order Manifold Ass'y (Example)

Ordering example



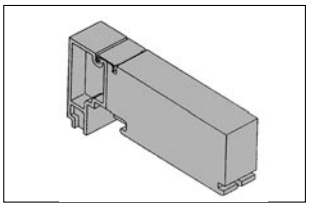
VV5Q21-08C8FU2-Q ··· **1 set** (F kit 8 station manifold base No.)
VQ2100-5-Q ····· **3 sets (Single solenoid No.)**
VQ2200-5-Q ····· **4 sets (Double solenoid No.)**
VVQ2000-10A-1 ··· **1 sets (Blank plate No.)**

Specify valve and option nos. below the manifold base No. When arrangement is complicated, specify the nos. by using a manifold specification form.

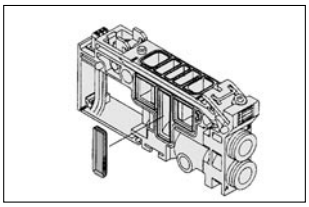
Manifold Options

P.1-744

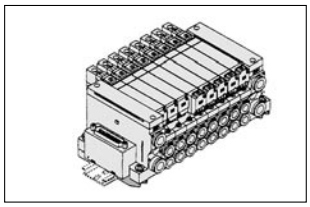
Blank plate assembly
VVQ2000-10A-1



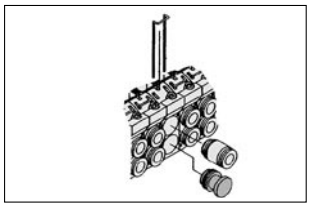
SUP block plate
VVQ2000-16A



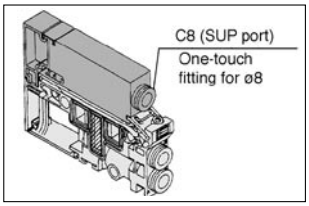
DIN rail mounting bracket [-D]
VVQ2000-57A



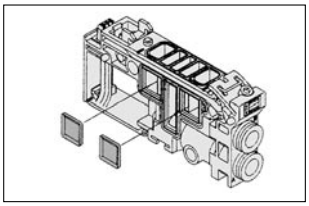
Port plug
VVQ1000-58A



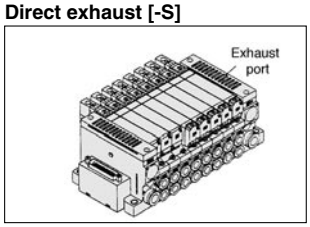
Indivdual SUP spacer
VVQ2000-P-1-C8



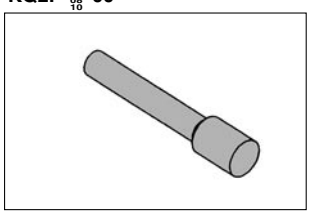
EXH block plate
VVQ2000-19A



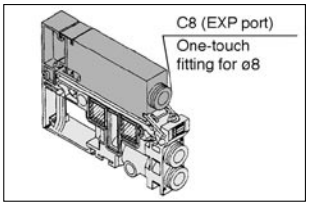
Built-in silencer,
Direct exhaust [-S]



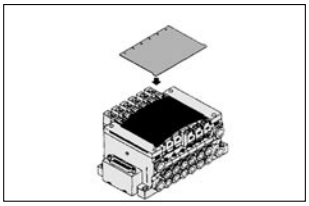
Blank plug
KQ2P-$^{04}_{06}$$^{06}_{08}$$^{08}_{10}$-00



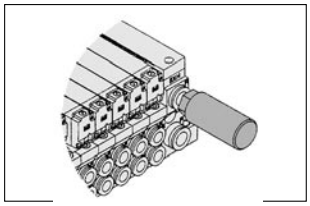
Indivdual EXH Spacer
VVQ2000-R-1-C8



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

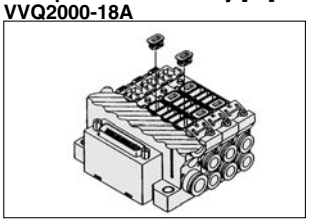


Silencer (EXH port)
AN200-KM10

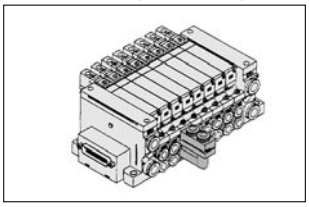


●Refer to p.1-747 for cylinder port fittings.
●Refer to p.1-801 for replacement parts.

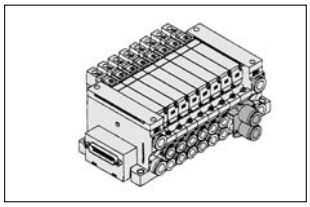
Check valve for prevention of back pressure assembly [-B]
VVQ2000-18A



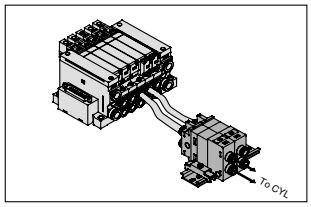
Elbow fitting assembly
VVQ2000-F-L (C4, C6, C8)



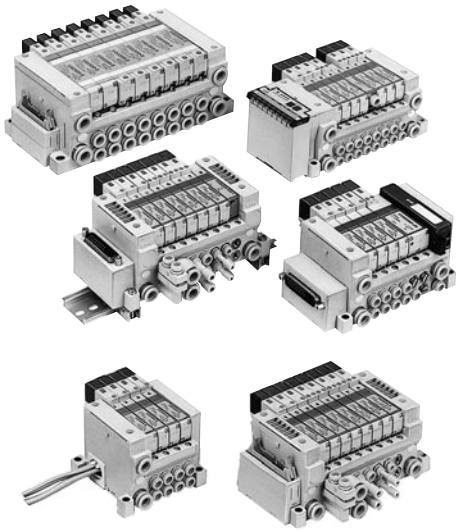
2 stations matching fitting assembly
VVQ2000-52A-C10



Double check block
VQ2000-FPG-□□



VQ1000/2000 Base Mounted
Plug-in Unit



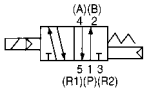
Model

Series	Configuration		Model		Effective area (1) (mm²) (Nℓ/min)	Response time (2) (ms) Standard: 1W H: 1.5W	Weight (g)
VQ1000	2 position	Single	Metal seal	VQ1100	3.6 (196.3)	12 or less	64
			Rubber seal	VQ1101	5.4 (294.45)	15 or less	
		Double	Metal seal	VQ1200	3.6 (196.3)	10 or less	78
			Rubber seal	VQ1201	5.4 (294.45)	15 or less	
	3 position	Closed centre	Metal seal	VQ1300	3.6 (196.3)	20 or less	
			Rubber seal	VQ1301	5.4 (294.45)	25 or less	
		Exhaust centre	Metal seal	VQ1400	3.6 (196.3)	20 or less	
			Rubber seal	VQ1401	5.4 (294.45)	25 or less	
		Pressure centre	Metal seal	VQ1500	3.6 (196.3)	20 or less	
			Rubber seal	VQ1501	5.4 (294.45)	25 or less	
VQ2000	2 position	Single	Metal seal	VQ2100	14.4 (785.2)	22 or less	90
			Rubber seal	VQ2101	16.2 (883.35)	24 or less	
		Double	Metal seal	VQ2200	14.4 (785.2)	15 or less	110
			Rubber seal	VQ2201	16.2 (883.35)	20 or less	
	3 position	Closed centre	Metal seal	VQ2300	12.6 (687.05)	29 or less	
			Rubber seal	VQ2301	14.4 (785.2)	34 or less	
		Exhaust centre	Metal seal	VQ2400	12.6 (687.05)	29 or less	
			Rubber seal	VQ2401	14.4 (785.2)	34 or less	
		Pressure centre	Metal seal	VQ2500	12.6 (687.05)	29 or less	
			Rubber seal	VQ2501	14.4 (785.2)	34 or less	

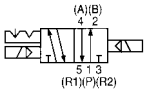
Note 1) Cylinder port size C6: (VQ1000), C8: (VQ2000) without check valve option for prevention of back pressure.
Note 2) As per JISB8375-1981 (supply pressure; 0.5 MPa; with indicator light and surge voltage suppressor; clean air) The response time is subject to the pressure and quality of the air. The values at the time of ON are given for double types.

JIS Symbol

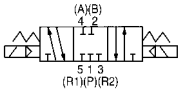
2 position single



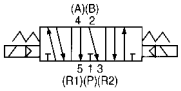
2 position double



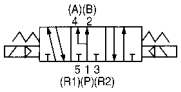
3 position closed center



3 position exhaust center



3 position pressure center



Standard Specifications

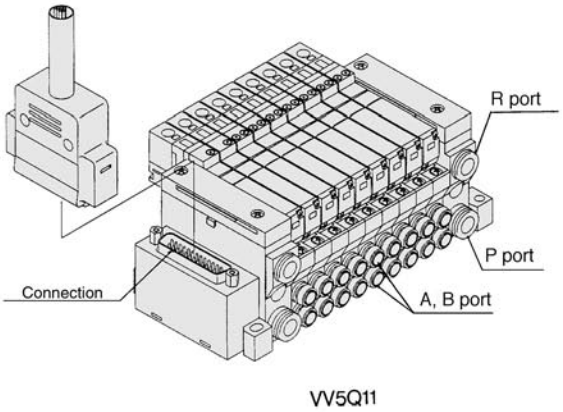
Valve	Seal		Metal seal	Rubber seal
	Fluid		Air/Inert gas	Air/Inert gas
	Max. operating pressure		0.7MPa (High pressure style: 0.8MPa)	
	Min. operating pressure	Single	0.1MPa	0.15MPa
		Double	0.1MPa	0.1MPa
		3 position	0.1MPa	0.2MPa
	Ambient and fluid temperature		–10 to +50°C (1)	
	Lubrication		Not required	
	Manual override		Non-locking push style/Push-locking slotted or lever style (Option)	
	Impact/Vibration resistance (2)		150/30 m/s²	
	Protection structure		Dust proof style, Dust tight/ jet proof style (IP65) (5)	
Solenoid	Coil rated voltage		12, 24VDC	
	Allowable voltage		±10% of rated voltage	
	Coil insulation		Class B or equivalent	
	Power consumption (Current value)	24V DC	1W DC (42mA), 1.5W DC (63mA) (3), 0.5W DC (21mA) (4)	
		12V DC	1W DC (83mA), 1.5W DC (125mA) (3), 0.5W DC (42mA) (4)	

Note 1) Use dry air to prevent condensation when operating at low temperature.
Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, for both energized and de-energized states.
Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2,000 Hz. Test was performed at both energize and de-energized states to the axis and right angle directions of the main valve and armature. (Value in the initial stage.)
Note 3) Value for high pressure style (1.5W)
Note 4) Value for low pressure style (0.5W)
Note 5) Dust tight/jet proof style (IP65) is available on T, L and S kits of VQ2000.

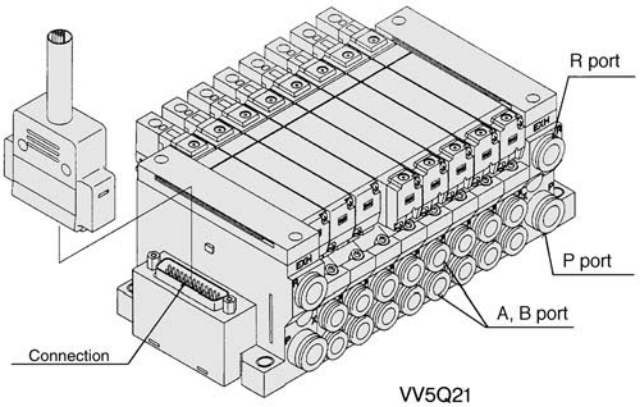
Manifold Specifications

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

Note 1) One-touch fittings in inch sizes are also applicable. Refer to p.1-751 for details.
Note 2) Refer to p.1-752 for details.

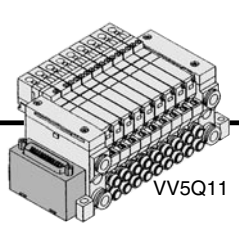


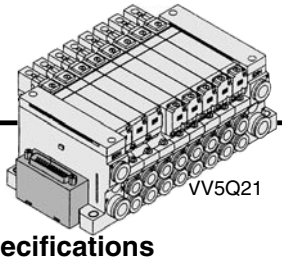
VV5Q11



VV5Q21

F VQ1000/2000
Kit (D-sub Connector)


VV5Q11


VV5Q21

- **The D-sub connector reduces installation labor for electrical connection.**
- **The D-sub connector (25 pin std., 15 pin option) conforms with MIL permitting use of commercial connectors with wide interchangeability.**
- **Top or side receptacle position can be selected in accordance with the available mounting space.**
- **Max. 24 stations.**

Manifold Specifications

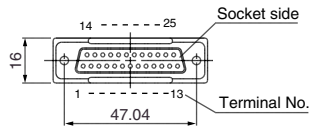
Series	Porting specifications			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ1000	Side	C8	C3, C4, C6, M5	Max. 24
VQ2000	Side	C10	C4, C6, C8	Max. 24

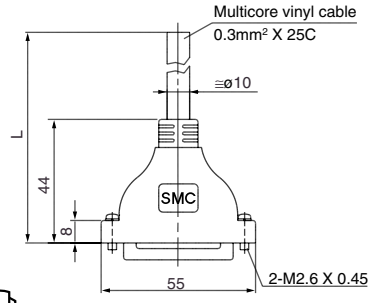
D-sub connector (25 pin)

Cable Assembly●

AXT100–DS25– $^{015}_{030}$ $^{}_{050}$

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





D-sub connector cable ass'y (Option)

Cable Length (L)	Ass'y No.
1m	GVVZS3000-21A-1
3m	GVVZS3000-21A-2
5m	GVVZS3000-21A-3
8m	GVVZS3000-21A-4
20m	GVVZS3000-21A-5

Electric characteristics

Item	Characteristic
Conductor resistance Ω/km, 20˚C	65 or less
Voltage limit V, 1min, AC	1000
Insulation resistance MΩ/km, 20˚C	5 or more

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

Wire color table by terminal number of D-sub connector cable assembly:

Terminal No.	Lead wire colour	Dot marking
1	Black	—
2	Brown	—
3	Red	—
4	Orange	—
5	Yellow	—
6	Pink	—
7	Blue	—
8	Violet	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	Violet	—
18	Gray	—
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	—

Note) Types with 15 pin are also available. See p.1.12-159 for details.

How to Order Manifold

VV5Q 1 1 – 08 C6 F U 1 – N -Q

Series

1	VQ1000
2	VQ2000

Manifold

1	Plug-in unit

Stations

02	2 stations
⋮	⋮
24	24 stations

Note) Refer to p.1-750 for details.

Connector location

U	Top(vertical)
S	Side(horizontal)

Cable (length)

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

Cylinder ports

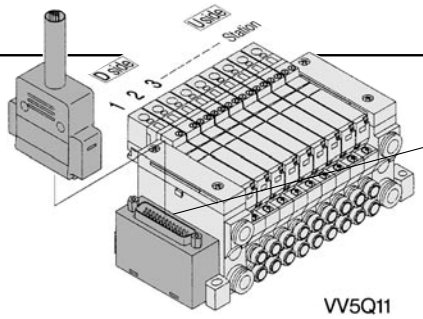
Symbol	Port size	VQ1000	VQ2000
C3	One-touch fitting for ø3.2	●	
C4	One-touch fitting for ø4	●	●
C6	One-touch fitting for ø6	●	●
C8	One-touch fitting for ø8		●
M5	M5 thread	●	
CM	Mixed size/with port plug	●	●(3)

Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type. Example) B6 (Elbow One-touch fitting for ø6, bottom piping.)
Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" by means of manifold specification form.
Note 4) Refer to "Options" on p.1-751 for One-touch fittings in inch sizes.

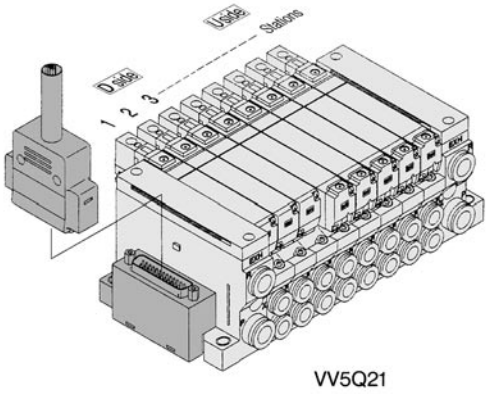
Option

Symbol	Option	VQ1000	VQ2000	Remarks
—	None	●	●	
B	Check valve for prevention of back pressure	●	●	(2)
D	DIN rail mounting	●	●	
G1	1 set of regulator unit	●		(3)
G2	2 sets of regulator unit			
G3	3 sets of regulator unit			
J□	With vacuum ejector unit	●		(4)
K	Special wiring specification (Not double wiring)	●	●	(5)
N	With name plate	●	●	
R	External pilot	●	●	(6)
S	Built-in silencer (Direct exhaust)	●	●	

Note 1) If specifying more than one option, please list alphabetically. Example) -BRS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by manifold specification form.
Note 3) Specify the mounting position by means of the manifold specification form.
Note 4) Refer to p.1-742 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Specify the wiring by means of the manifold specification form.
Note 6) Indicate "R" for the valve with external pilot.



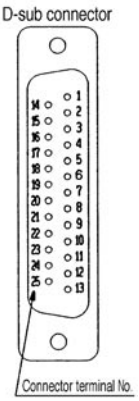
VV5Q11



VV5Q21

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

Electrical Wiring Specifications



D-sub cable ass'y
AXT100–DS25–$^{015}_{030}$^{050}
wire color table

	Terminal No.		Polarity	Lead wire color	Dot marking
1 station	SOL.A 1	(–)	(+)	Black	–
	SOL.B 14	(–)	(+)	Yellow	Black
2 station	SOL.A 2	(–)	(+)	Brown	–
	SOL.B 15	(–)	(+)	Pink	Black
3 station	SOL.A 3	(–)	(+)	Red	–
	SOL.B 16	(–)	(+)	Blue	White
4 station	SOL.A 4	(–)	(+)	Orange	–
	SOL.B 17	(–)	(+)	Violet	–
5 station	SOL.A 5	(–)	(+)	Yellow	–
	SOL.B 18	(–)	(+)	Gray	–
6 station	SOL.A 6	(–)	(+)	Pink	–
	SOL.B 19	(–)	(+)	Orange	Black
7 station	SOL.A 7	(–)	(+)	Blue	–
	SOL.B 20	(–)	(+)	Red	White
8 station	SOL.A 8	(–)	(+)	Violet	White
	SOL.B 21	(–)	(+)	Brown	White
9 station	SOL.A 9	(–)	(+)	Gray	Black
	SOL.B 22	(–)	(+)	Pink	Red
10 station	SOL.A 10	(–)	(+)	White	Black
	SOL.B 23	(–)	(+)	Gray	Red
11 station	SOL.A 11	(–)	(+)	White	Red
	SOL.B 24	(–)	(+)	Black	White
12 station	SOL.A 12	(–)	(+)	Yellow	Red
	SOL.B 25	(–)	(+)	White	–
	COM. 13	(+)	Note)(–)	Orange	Red

Positive COM Negative COM

Irrespective of the valves or options, the internal wiring is made double (connected to SOL. A and SOL. B) for respective stations of the manifold. The optional specification permits mixture of single and double wiring. See p.1-750 for details.

Note) Use negative COM valves for negative COM specification manifolds. (See p.1-750)

How to Order Valve

VQ 1 1 0 0 Y — 5 □ □ -Q

Series

1	VQ1000
2	VQ2000

Configuration

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

Seal

0	Metal
1	Rubber

Note) Refer to "Options" on p.1-750 and 1-751 for external pilot and negative COM specifications.

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H	High pressure	(1.5W) ○
Y	Low wattage	(0.5W) ○

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Indicator light and surge voltage suppressor

—	Yes
E	No

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

How to Order Manifold Ass'y

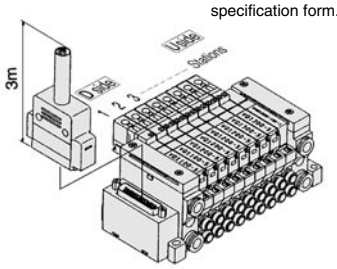
Specify valve and option nos. below the manifold base no.

(Example)

D-sub connector kit with 3m cable

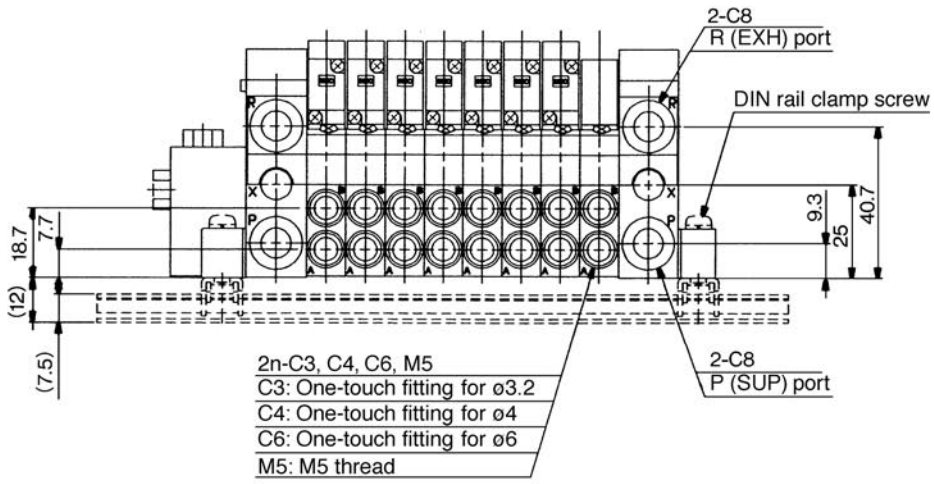
VV5Q11-09C6FU2-Q···1 set-Manifold base No.
VQ1100-5-Q·····2 sets-Valve No. (Stations 1 to 2)
VQ1200-5-Q·····4 sets-Valve No. (Stations 3 to 6)
VQ1300-5-Q·····2 sets-Valve No. (Stations 7 to 8)
VVQ1000-10A-1···1 set-Blank plate No. (Station 9)

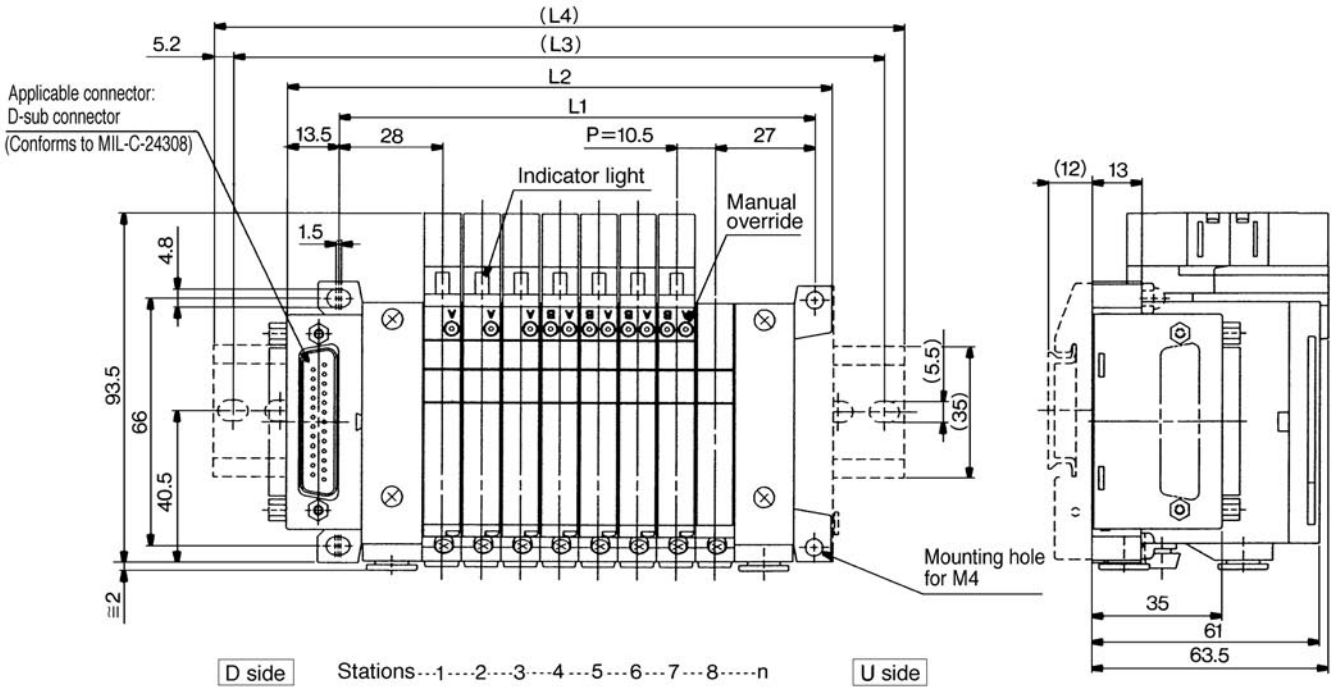
Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using a manifold specification form.



VQ1000

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





Dimensions (mm)

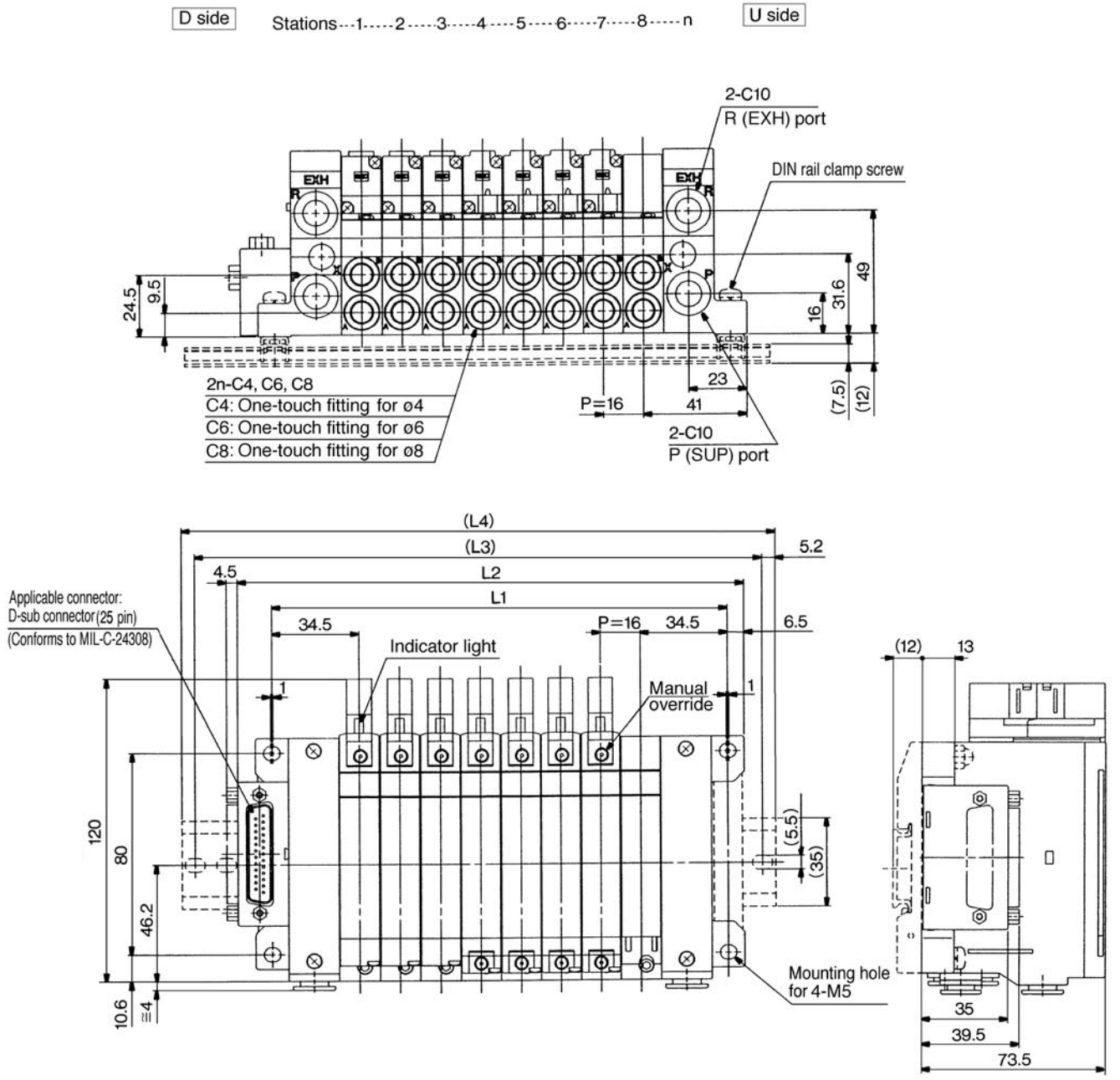
Equation L1=10.5n+44.5, L2=10.5n+62.5 n: Station (Max. 24)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	65.5	76	86.5	97	107.5	118	128.5	139	149.5	160	170.5	181	191.5	202	212.5	223	233.5	244	254.5	265	275.5	286	296.5
L2	83.5	94	104.5	115	125.5	136	146.5	157	167.5	178	188.5	199	209.5	220	230.5	241	251.5	262	272.5	283	293.5	304	314.5
(L3)	112.5	125	125	137.5	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5	300	312.5	325	325	337.5
(L4)	123	135.5	135.5	148	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.5	323	335.5	335.5	348

Vacuum ejector unit style: Equation L1=10.5n+28.7+(number of ejector units X 26.7)
L2=10.5n+46.3+(number of ejector units X 26.7)
L4 is L2 plus about 30.

VQ2000

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

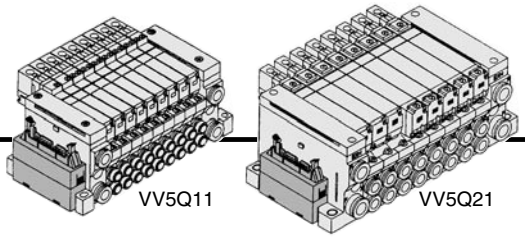


Dimensions (mm)

Equation L1=16n+53, L2=16n+73 n: Station (Max. 24)

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

P VQ1000/2000
Kit (Flat Cable Connector)



- **MIL flat cable connector reduces installation labor for electrical connection.**
- **The connector (26 pin; 10, 16, and 20 pin option) conforms with MIL spec. permitting use of widely interchangeable commercial connectors.**
- **Top or side receptacle position can be selected in accordance with the available mounting space.**
- **Max. 24 stations.**

Manifold Specifications

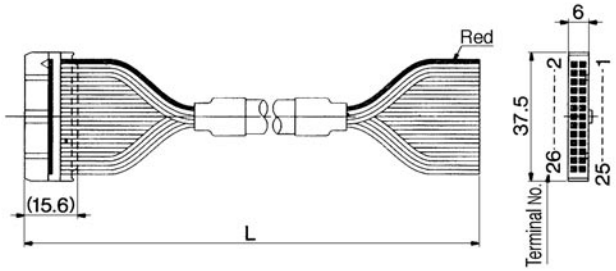
Series	Porting specifications			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ1000	Side	C8	C3, C4, C6, M5	Max. 24
VQ2000	Side	C10	C4, C6, C8	Max. 24

Flat cable (26 pin)

Cable Assembly

AXT100-FC26-1 to 3

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

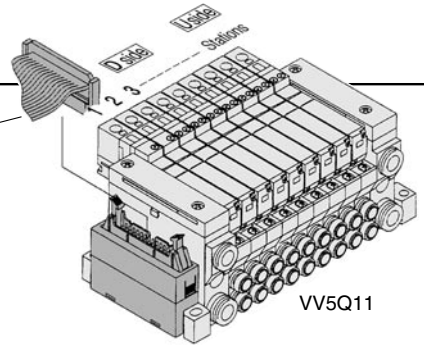


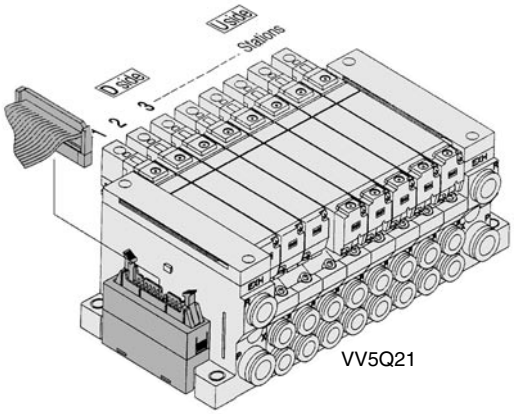
Flat cable connector assembly (Option)

Cable length (L)	Ass'y No.	Note
1.5m	AXT100-FC26-1	Cable 26 core X 28AWG
3m	AXT100-FC26-2	
5m	AXT100-FC26-3	

∗ For other commercial connectors, use 26-pin type with strain relief made in conformity with MIL-C-83503.

Note) Types with 10, 16, or 20 pin are also available. See p.1-749 for details.





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

How to Order Manifold

VV5Q 1 1 – 08 C6 P U 1 – N -Q

Series

1	VQ1000
2	VQ2000

Manifold

1	Plug-in unit

Stations

02	2 stations
⋮	⋮
24	24 stations

Note) Refer to p.1-750 for details.

Connector location

U	Top (vertical)
S	Side (horizontal)

Cylinder ports

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

Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type.
Example) B6 (Elbow One–touch fittings for ø6, bottom piping.)
Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" by means of manifold specification form.
Note 4) Refer to "Options" on p.1-751 for One-touch fittings in inch sizes.

Cable (length)

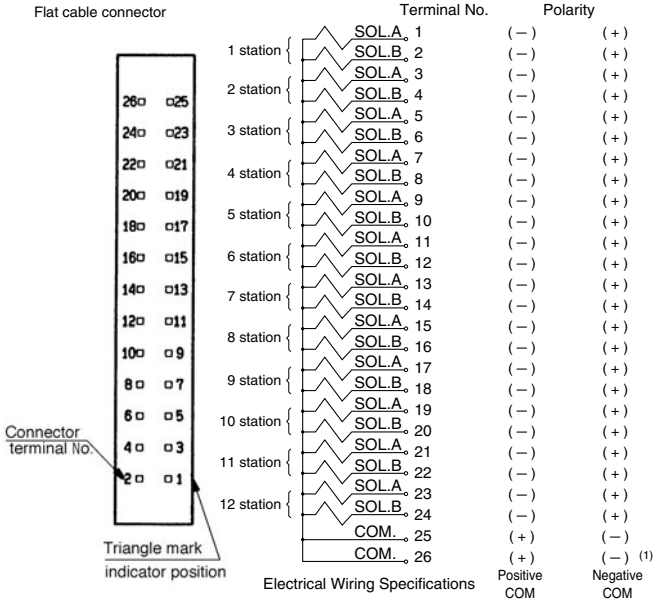
0	Without cable
1	With cable (1.5m)
2	With cable (3m)
3	With cable (5m)

Option

Symbol	Option	VQ1000	VQ2000	Remarks
–	None	●	●	
B	Check valve for prevention of back press.	●	●	(2)
D	DIN rail mounting	●	●	
G1	1 set of regulator unit	●		(3)
G2	2 sets of regulator unit			
G3	3 sets of regulator unit			
J□	With vacuum ejector unit	●		(4)
K	Special wiring specification (Not double wiring)	●	●	(5)
N	With name plate	●	●	
R	External pilot	●	●	(6)
S	Built-in silencer (Direct exhaust)	●	●	

Note 1) If specifying more than one option, please list alphabetically. Example) -BRS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by manifold specification form.
Note 3) Specify the mounting position by means of the manifold specification form.
Note 4) Refer to p.1-742 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Specify the wiring by means of the manifold specification form.

●Electrical Wiring Specifications



Irrespective of the valves or options, the internal wiring is made double (connected to SOL.A and SOL.B) for respective stations of the manifold. The optional specification permits mixture of single and double wiring. See p.1-750 for details.

Note) Use negative COM valves for negative COM specification manifolds. (See p.1-750)

How to Order Valve

VQ 1 1 0 0 Y — 5 □ □ -Q

Series

1	VQ1000
2	VQ2000

Configuration

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

Seal

0	Metal
1	Rubber

Note) Refer to "Options" on p.1-750 and 1-751 for external pilot and negative CO-M specifications.

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H	High pressure	(1.5W) ○
Y	Low pressure	(0.5W) ○

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Indicator light and surge voltage suppressor

—	Yes
E	No

Manual override

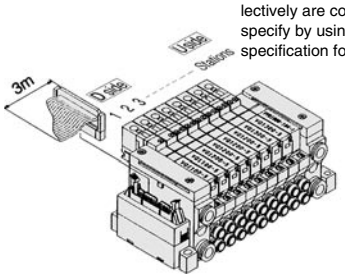
—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

How to Order Manifold Ass'y

Specity valve and option nos. below the manifold base no.

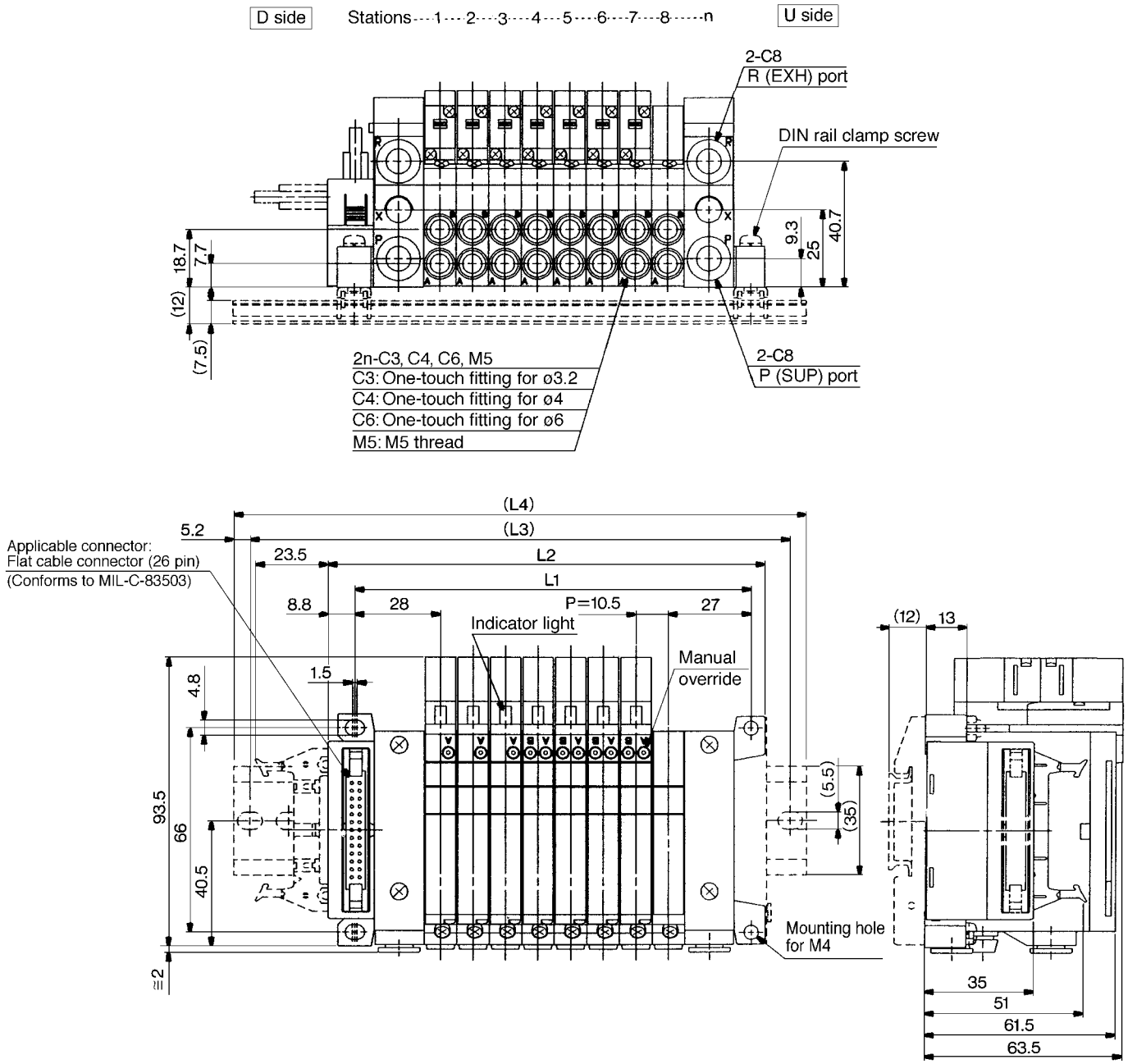
(Example)
Flat cable kit with 3m cable
VV5Q11-09C6PU2-Q··1 set –Manifold base No.
VQ1100-5-Q·····2 sets–Valve No. (Stations 1 to 2)
VQ1200-5-Q·····4 sets–Valve No. (Stations 3 to 6)
VQ1300-5-Q·····2 sets–Valve No. (Stations 7 to 8)
VVQ1000-10A–1···1 set –Blank plate No. (Station 9)

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



VQ1000

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



Dimensions (mm)

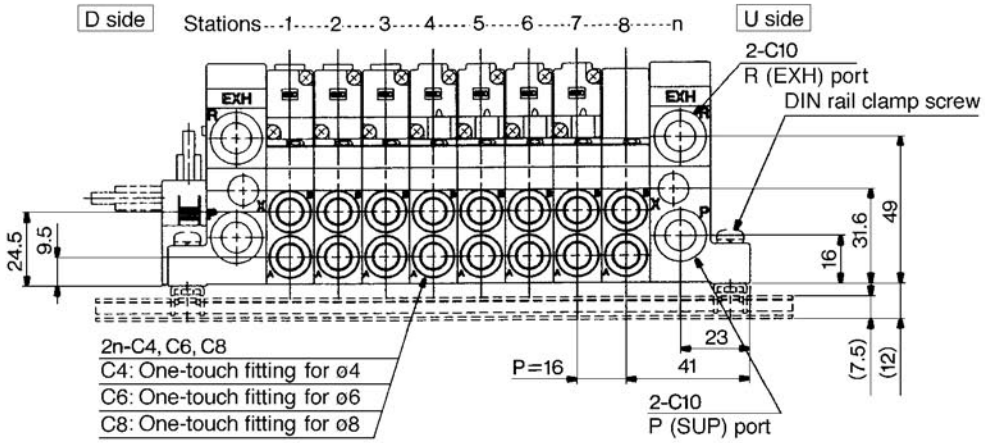
Equation L1=10.5n+44.5, L2=10.5n+62.5 n: Station (Max. 24)

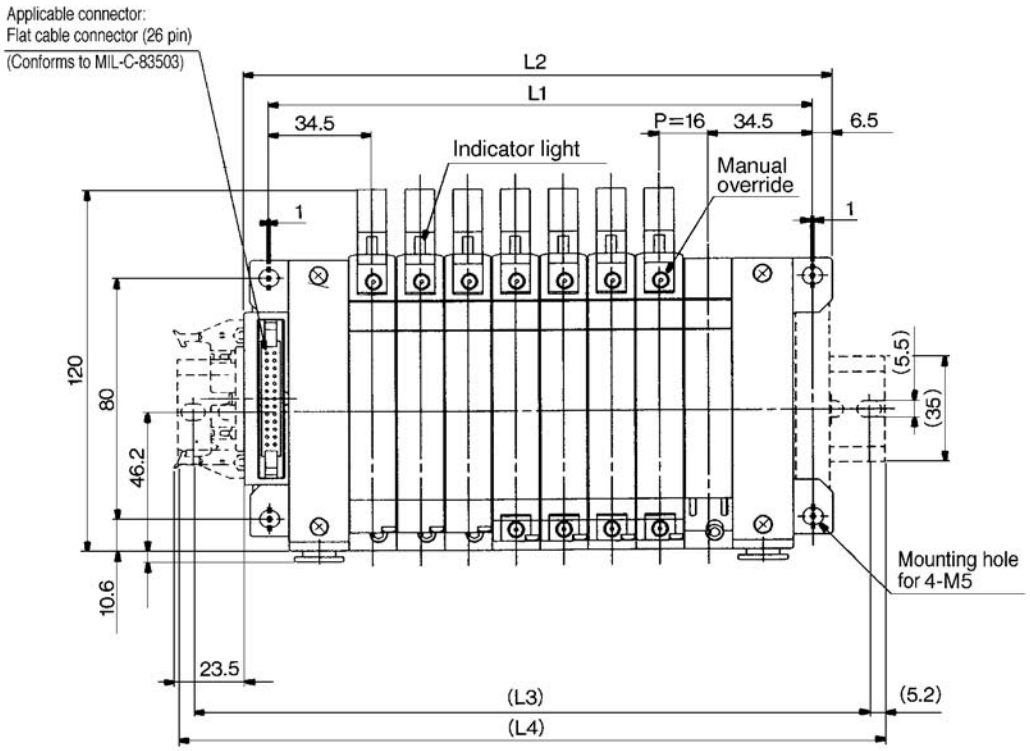
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	65.5	76	86.5	97	107.5	118	128.5	139	149.5	160	170.5	181	191.5	202	212.5	223	233.5	244	254.5	265	275.5	286	296.5
L2	78.5	89	99.5	110	120.5	131	141.5	152	162.5	173	183.5	194	204.5	215	225.5	236	246.5	257	267.5	278	288.5	299	309.5
(L3)	112.5	125	125	137.5	150	162.5	175	187.5	187.5	200	212.5	225	225	237.5	250	262.5	275	287.5	287.5	300	312.5	325	337.5
(L4)	123	135.5	135.5	148	160.5	173	185.5	198	198	210.5	223	235.5	235.5	248	260.5	273	285.5	298	298	310.5	323	335.5	348

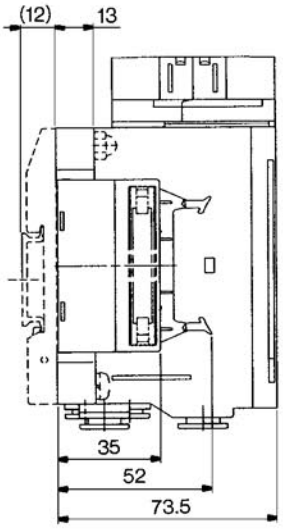
Vacuum ejector unit style: Equation L1=10.5n+28.7+(number of ejector units X 26.7)
L2=10.5n+41.3+(number of ejector units X 26.7)
L4 is L2 plus about 30.

VQ2000

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





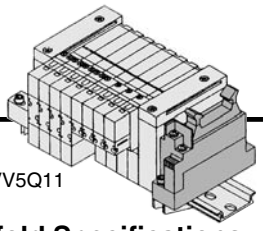


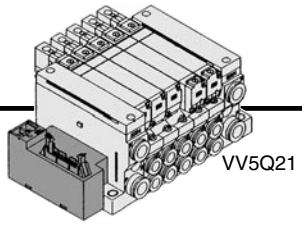
Dimensions (mm)

Equation L1=16n+53, L2=16n+68 n: Station (Max. 24)

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

G VQ1000/2000
Kit (Flat Cable Connector with Terminal Block)


VV5Q11


VV5Q21

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

Manifold Specifications

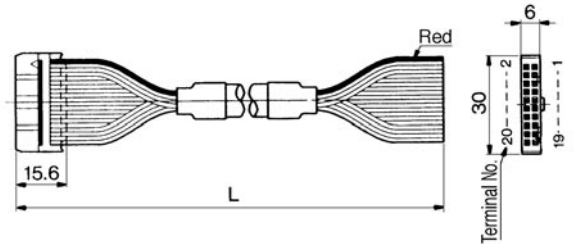
Series	Porting specifications			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ1000	Side	C8	C3, C4, C6, M5	Max.16
VQ2000	Side	C10	C4, C6, C8	Max.16

Flat cable(20 pin)

Cable Assembly

AXT100-FC20-1 to 3

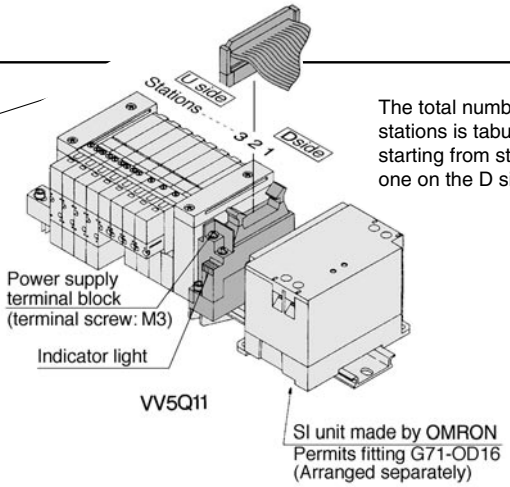
(Flat cable connector assembly can be ordered individually or included in a specific manifold model no. Refer to "How to Order Manifold".)



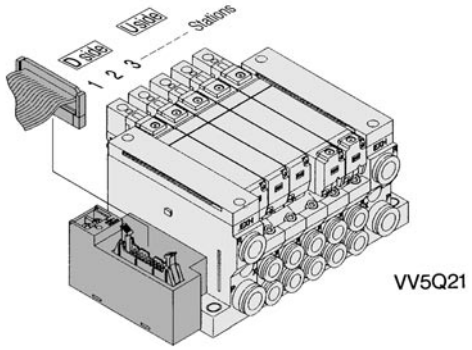
Flat cable connector assembly (Option)

Cable length (L)	Ass'y No	Note
1.5m	AXT100-FC20-1	Cable 20 core X 28AWG
3m	AXT100-FC20-2	
5m	AXT100-FC20-3	

∗ For other commercial connectors, use 20 pin type with strain relief made in conformity with MIL-C-83503.



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



How to Order Manifold

VV5Q 1 1 – 08 C6 G □ □ – N -Q

Series

1	VQ1000
2	VQ2000

Manifold

1	Plug-in unit

Stations

02	2 stations
⋮	⋮
16(1)	16 stations

Note 1) Refer to p.1-750 for details.

Connector location (Top entry)

–	VQ1000
U	VQ2000

Cylinder ports

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

Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type. Example) B6 (Elbow One-touch fittings for ø6, bottom piping.)
Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" by means of manifold specification form.
Note 4) Refer to "Options" on p.1-751 for One-touch fittings in inch sizes.

Cable (length)

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

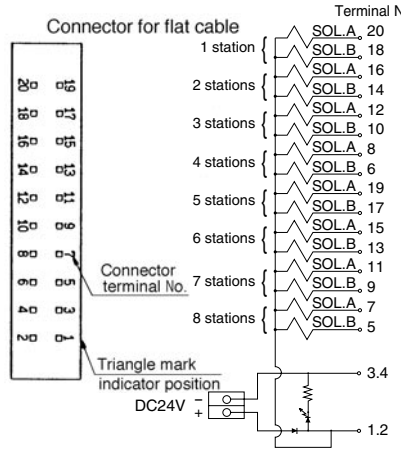
Option

Symbol	Option	VQ1000	VQ2000	Remains
–	None	●	●	
B	Check valve for prevention of back press.	●	●	(2)
D	DIN rail mounting	●	●	
G1	1 set of regulator unit	●		(3)
G2	2 sets of regulator unit			
G3	3 sets of regulator unit			
J□	With vacuum ejector unit	●		(4)
K	Special wiring specification (Not double wiring)	●	●	(5)
N	With nameplate	●	●	
R	External pilot	●	●	(6)
S	Built-in silencer (Direct-exhaust)	●	●	

Note 1) If specifying more than one option, please list alphabetically. Example) -BRS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by manifold specification form.
Note 3) Specify the mounting position by means of the manifold specification form.
Note 4) Refer to p.1-742 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Specify the wiring by means of the manifold specification form.
Note 6) Indicate "R" for the valve with external pilot.

•Connector Ass'y

Electrical circuit diagram (Shown as standard for all double solenoid connection.)



Irrespective of the valves or options, the internal wiring is made double (connected to SOL. A and SOL. B) for respective stations of the manifold.
The optional specification permits mixture of single and double wiring. See p.1-750 for details.

How to Order Valve

VQ 1 1 0 0 Y — 5 □ □ -Q

Series

1	VQ1000
2	VQ2000

Configuration

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

Seal

0	Metal
1	Rubber

Note) Refer to "Options" on p.1-751 for external pilot specifications.

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H	High pressure	(1.5W) ○
Y	Low wattage	(0.5W) ○

Coil voltage

5	DC24V

Indicator light and surge voltage suppressor

—	Yes
E	No

Manual override

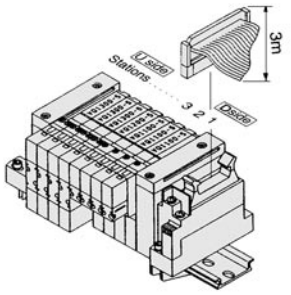
—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

How to Order Manifold Ass'y

Specify valve and option nos. below the manifold base no.

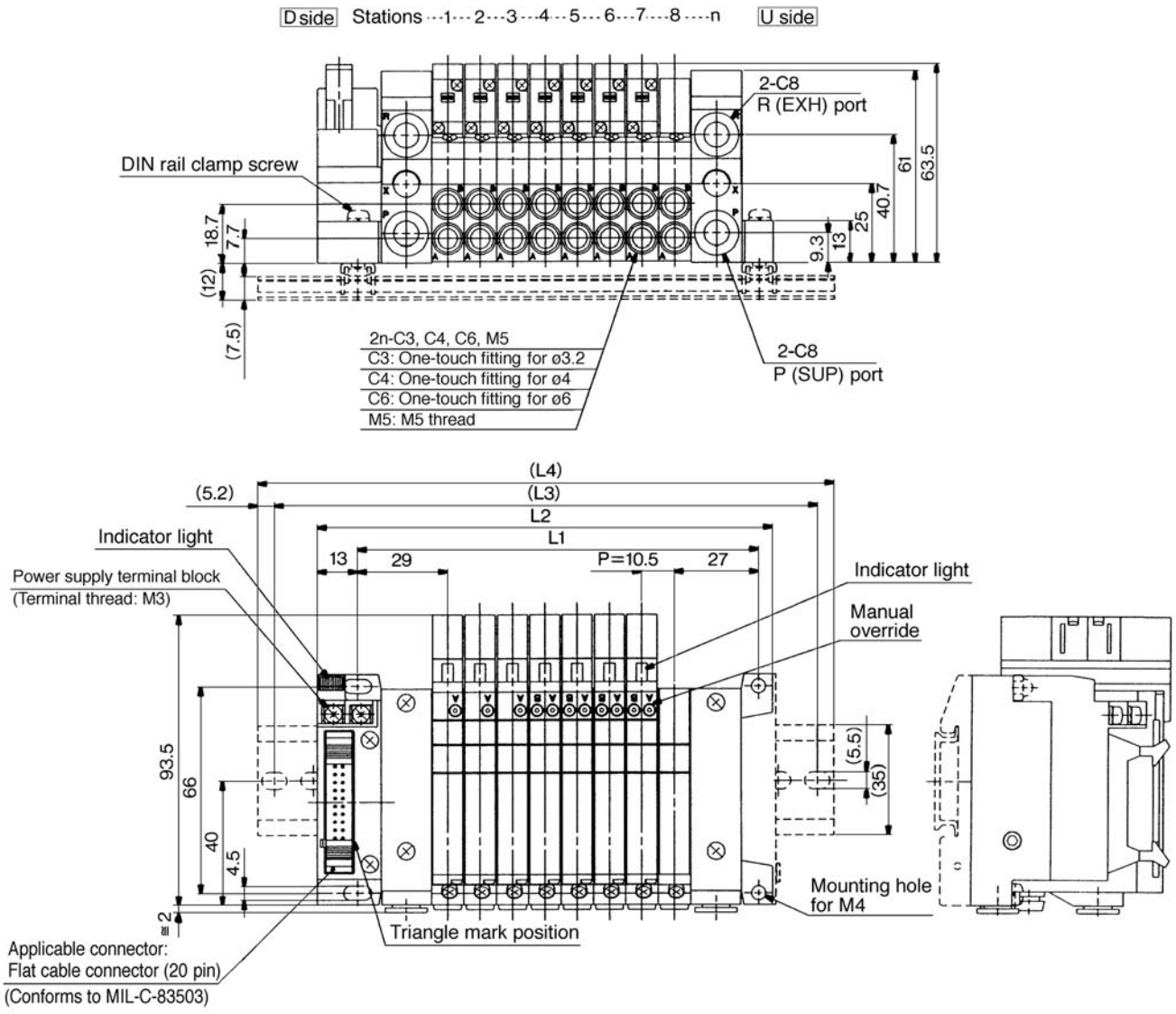
(Example)
Flat cable with power supply terminal block and 3m cable
VV5Q11-08C6G2-Q···1 set –Manifold base No.
VQ1100-5-Q····· 4 sets–Valve No. (Stations 1 to 4)
VQ1200-5-Q····· 1 set –Valve No. (Stations 5)
VQ1300-5-Q····· 3 sets–Valve No. (Stations 6 to 8)

Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated,



VQ1000

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



Dimensions (mm)

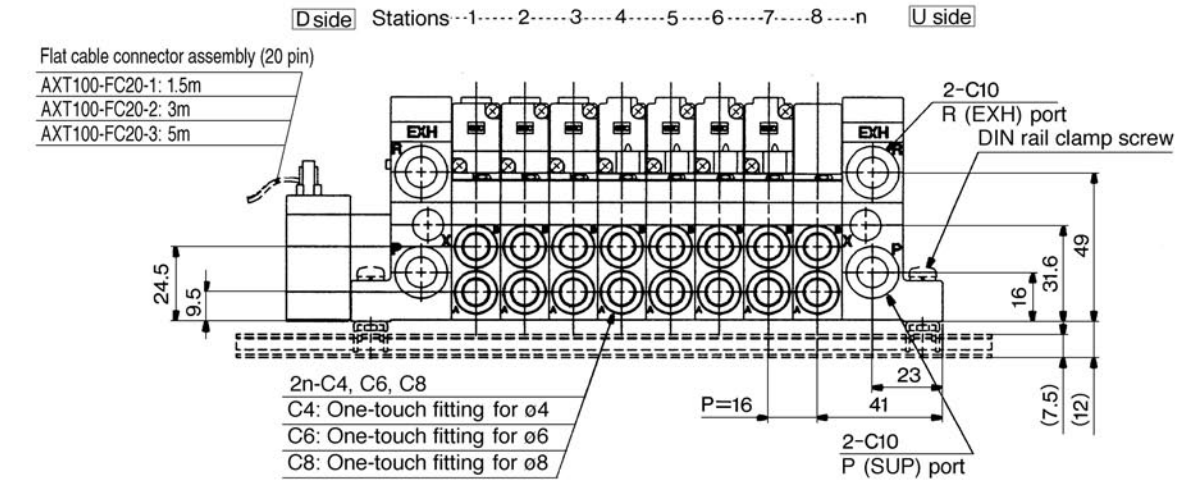
Equation L1=10.5n+45.5, L2=10.5n+63 n: Station (Max. 16)

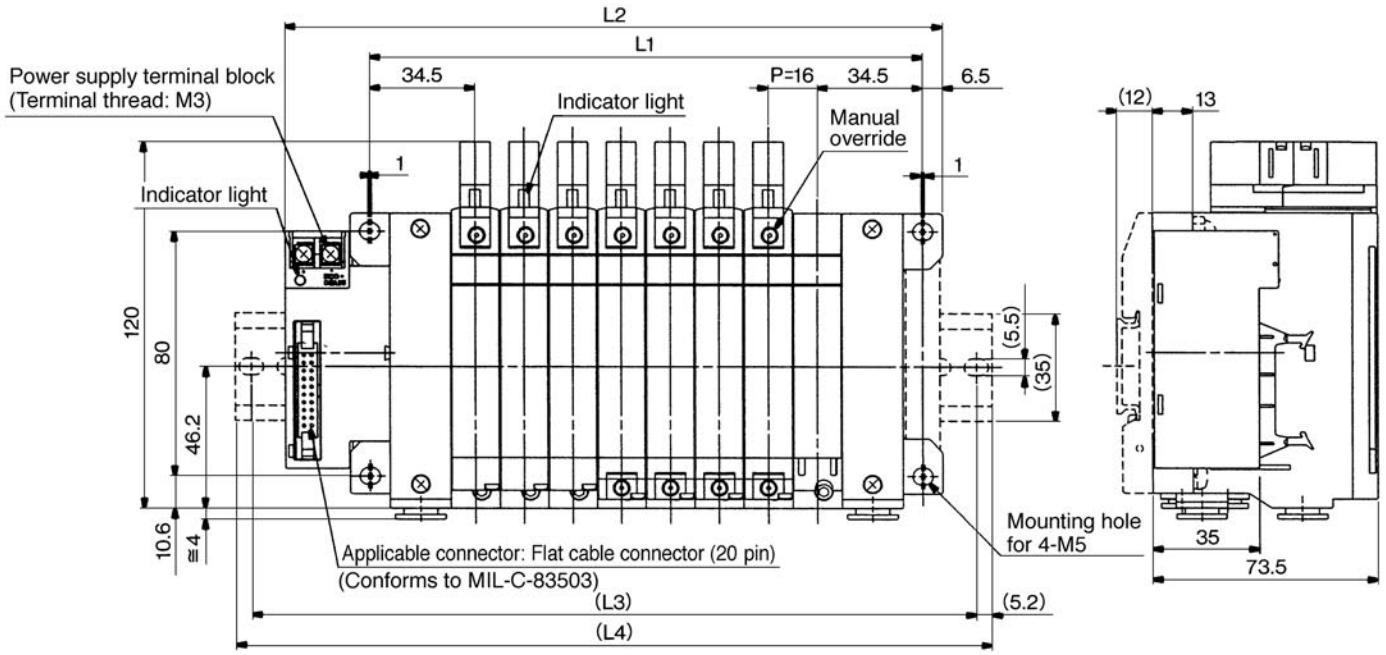
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	66.5	77	87.5	98	108.5	119	129.5	140	150.5	161	171.5	182	192.5	203	213.5
L2	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231
(L3)	112.5	125	125	137.5	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	262.5
(L4)	123	135.5	135.5	148	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5	273

Vacuum ejector unit style: Equation L1=10.5n+29.7+(number of ejector units X 26.7)
L2=10.5n+46.8+(number of ejector units X 26.7)
L4 is L2 plus about 30.

VQ2000

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





Dimensions (mm)

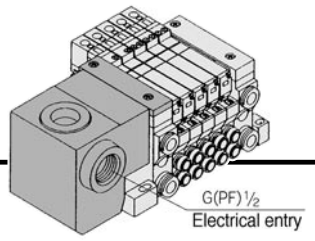
Equation L1=16n+53, L2=16n+87 n: Station (Max. 16 stations)

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

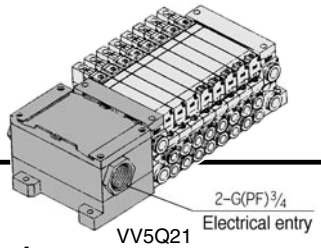
Vacuum ejector unit style: Equation L1=10. 5n+29.7+(number of ejector units X 26.7)
L2=10. 5n+46.8+(number of ejector units X 26.7)
L4 is L2 plus about 30.

T VQ1000/2000
Kit (Terminal Box)

IP65 available



VV5Q11

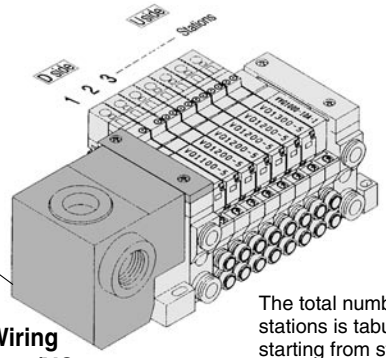


VV5Q21

- **This kit has a small terminal box inside a junction box. The electrical entry port {VQ1000: G(PF)1/2, VQ2000: G(PF)3/4} permits connection of conduit fittings.**
- **Max. 24 stations.**
- **Enclosure: dust-resistant/jet–proof type (IP65) available. (Series VQ2000)**

Manifold Specifications

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



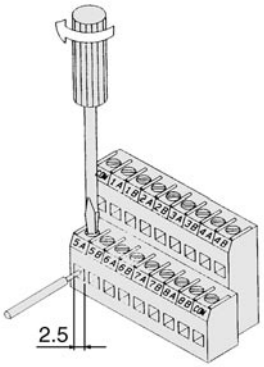
The total number of stations is tabulated starting from station one on the D side.

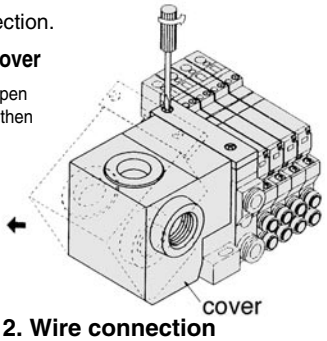
Terminal Block Connection

Open the terminal block cover for wire connection.

Sequence 1. How to remove terminal block cover

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



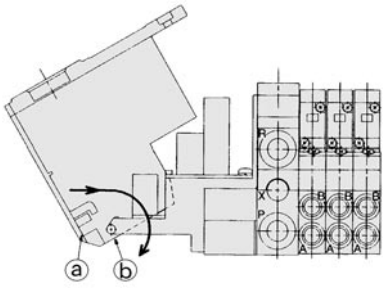


Sequence 2. Wire connection

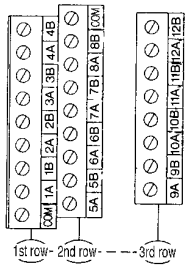
The diagram on the left shows the terminal block wiring schematic.
All stations are provided with double solenoid wiring.
Insert each lead wire into the terminal opening and tighten the screw directlv above.

Sequence 3. How to replace terminal block cover

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



●Electrical Wiring Specifications/VQ1000

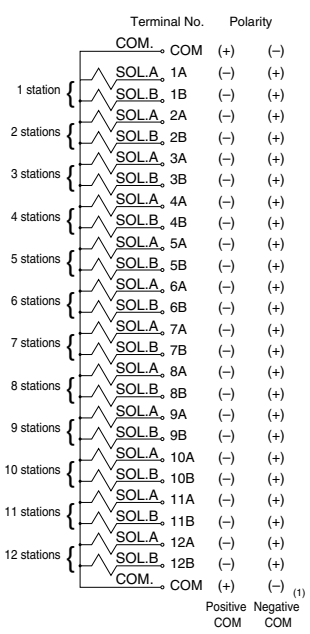


The quantity of terminal blocks used depends on the number of manifold stations:

Manifold	Qty.of terminal blocks
2 to 8 stations	2 rows
9 to 12 stations	3 rows

Irrespective of the valves or options, the internal wiring is made double (connected to SOL. A and SOL. B) for respective stations of the manifold. The optional specification permits mixture of single and double wiring. See p.1-750 for details.

Note) Use negative COM valves for negative COM specification manifolds. See p.1-750 for details.



How to Order Manifold

VV5Q 1 1 – 08 C6 T 0 – N -Q

Series

1	VQ1000
2	VQ2000

Manifold

1	Plug-in unit

Stations

02	2 stations
⋮	⋮
24 Note)	24 stations

Note) VQ2000: Max. 20 stations.

Note) Refer to "Options" on p.1-750 for negative COM specifications.

Cylinder ports

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

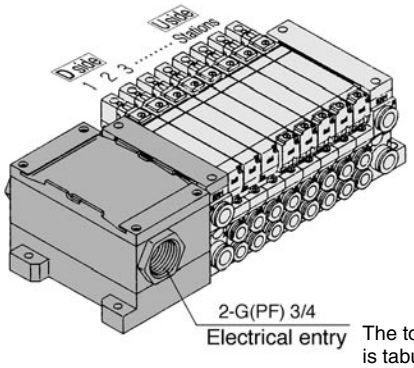
Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type.
Example) B6 (Elbow One-touch fittings for ø6, bottom piping.)
Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" by means of manifold specification form.
Note 4) Refer to "Options" on p.1-751 for One-touch fittings in inch sizes.

Option

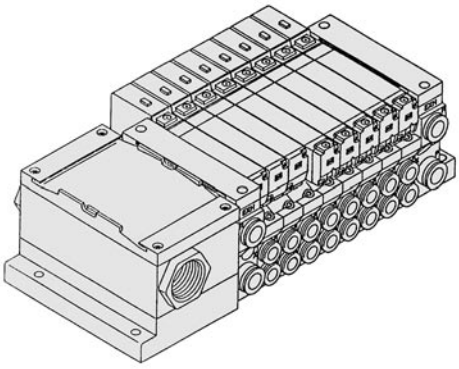
Symbol	Option	VQ1000	VQ2000	Remarks
–	None	●	●	
B	Check valve for prevention of back press.	●	●	(2)
D	DIN rail mounting	●	●	
G1	1 set of regulator unit	●		(3)
G2	2 sets of regulator unit			
G3	3 sets of regulator unit			
J□	With vacuum ejector unit	●		(4)
K	Special wiring specification (Not double wiring)	●	●	(5)
N	With name plate	●	●	
R	External pilot	●	●	(6)
S	Built-in silencer (Direct exhaust)	●	●	
W	IP65		●	

Note 1) If specifying more than one option, please list alphabetically. Example) -BRS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by a manifold specification form.
Note 3) Specify the mounting position by means of the manifold specification form.
Note 4) Refer to p.1-742 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Specify the wiring by means of the manifold specification form.
Note 6) Indicate "R" for the valve with external pilot.

SMC

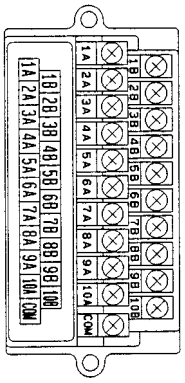


The total number of stations is tabulated starting from station one on the D side.



VV5Q21
Dust resistant/Jet proof type

●Special Wiring Specifications/VQ2000



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

Irrespective of the valves or options, the internal wiring is made double (connected to SOL. A and SOL. B) for respective stations of the manifold. The optional specifications permits mixture of single and double wiring.
See p.1-750 for details.

Note) Use negative COM valves for negative COM specification manifolds.
See p1-750 for details.

How to Order Valve

VQ 1 1 0 0 Y — 5 □ □ □ -Q

Series

1	VQ1000
2	VQ2000

Configuration

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

Seal

0	Metal
1	Rubber

Note) Refer to "Options" on p.1-750 and 1-751 for external pilot and negative COM specifications.

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H	High pressure	(1.5W) ○
Y	Low wattage	(0.5W) ○

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Indicator light and surge voltage suppressor

—	Yes
E	No

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

Enclosure

—	Dust proof
W	Dust tight/Jet proof (IP65) Note)

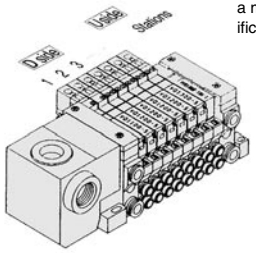
Note) VQ2000 only.

How to Order Manifold Ass'y

Specify valve and option nos. below the manifold base no.

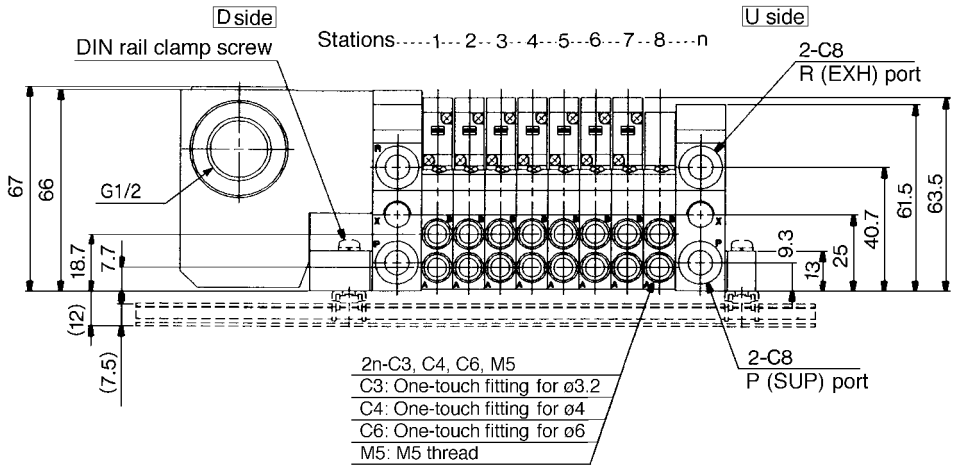
(Example)
Terminal box kit
VV5Q11-08C6T0-Q ··· 1 set—Manofold base No.
VQ1100-5-Q ····· 2 sets—Valve No. (Stations 1 to 2)
VQ1200-5-Q ····· 4 sets—Valve No. (Stations 3 to 6)
VQ1300-5-Q ····· 1 set—Valve No. (Station 7)
VVQ1000-10A–1 ···· 1 set—Blank plate No. (Station 8)

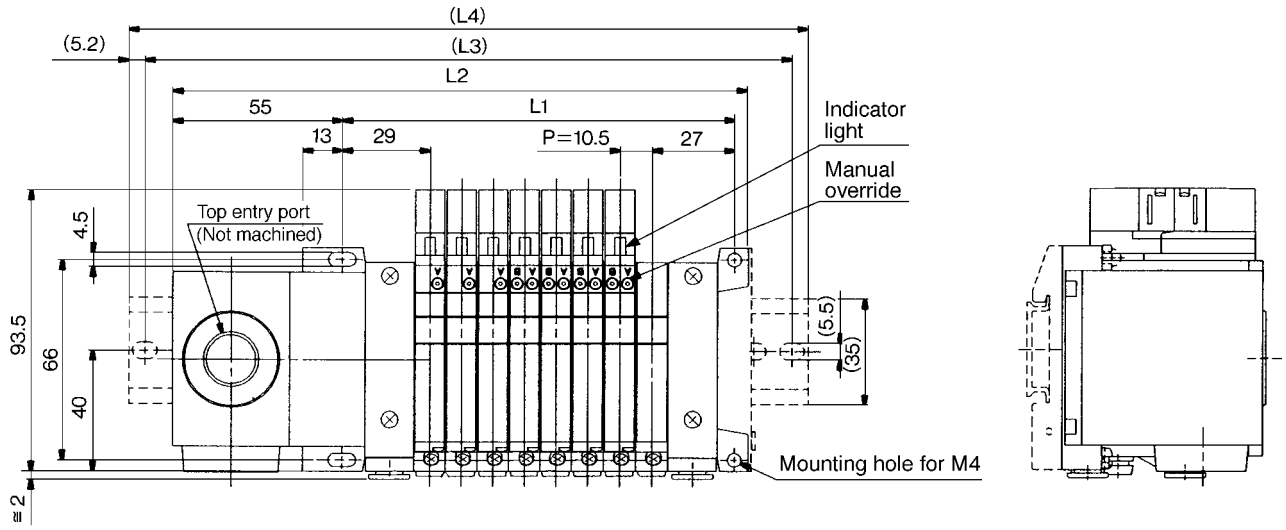
Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using a manifold specification form.



VQ1000

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





Dimensions (mm)

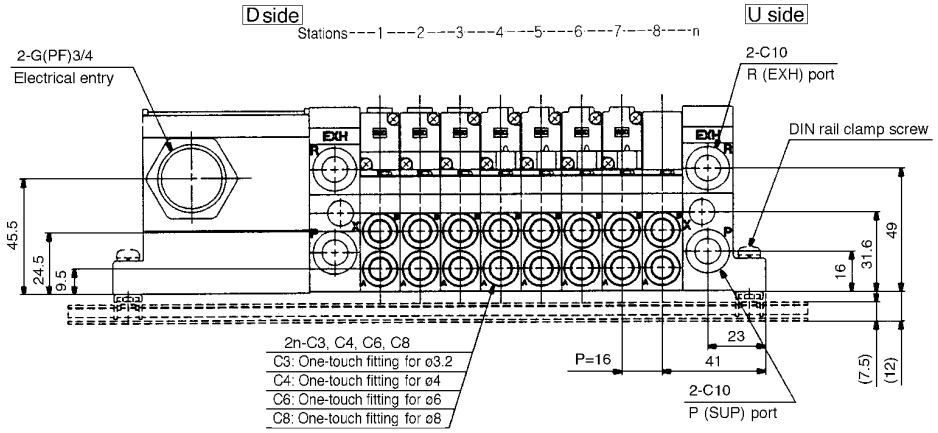
Equation L1=10.5n+45.5, L2=10.5n+105 n: Station (Max. 24)

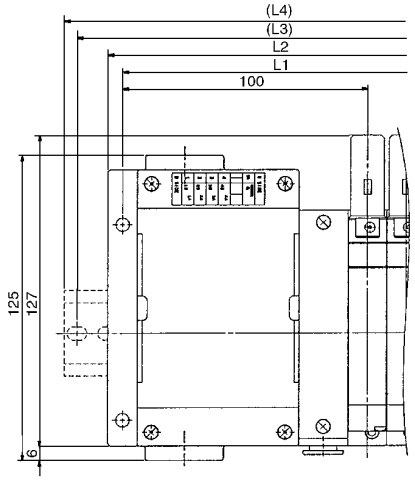
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	66.5	77	87.5	98	108.5	119	129.5	140	150.5	161	171.5	182	192.5	203	213.5	224	234.5	245	255.5	266	276.5	287	297.5
L2	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5	294	304.5	315	325.5	336	346.5	357
(L3)	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	262.5	262.5	275	287.5	300	312.5	325	325	337.5	350	362.5	375	387.5
(L4)	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5	273	273	285.5	298	310.5	323	335.5	335.5	348	360.5	373	385.5	398

Vacuum ejector unit style: Equation L1=10.5n+29.7+(number of ejector units X 26.7)
L2=10.5n+88.8+(number of ejector units X 26.7)
L4 is L2 plus about 30.

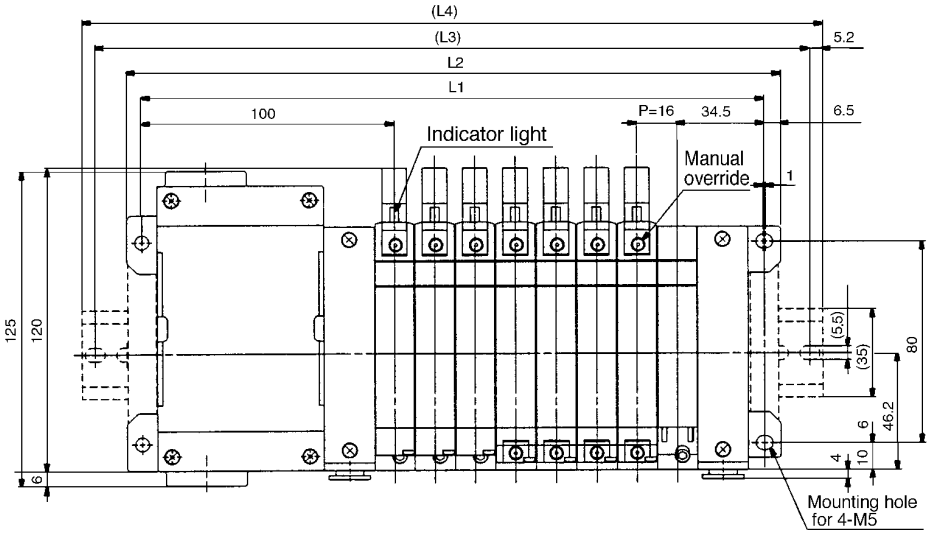
VQ2000

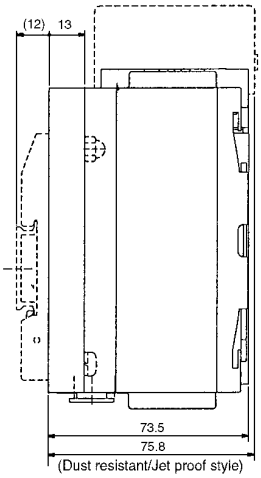
The broken lines and dimensions in parentheses indicate DIN rail mounting style [-D].





Dust resistant/Jet proof style
Terminal box kit





Dimensions (mm)

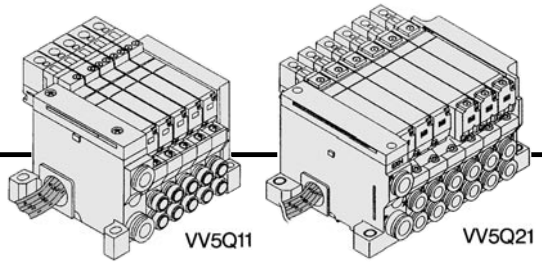
Equation L1=16n+118.5 L2=16n+131 n: Station (Max. 20)

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

Vacuum ejector unit style: Equation L1=10.5n+29.7+(number of ejector unit X 26.7)
L2=10.5n+88.8+(number of ejector unit X 26.7)
L4 is L2 plus about 30.

L VQ1000/2000
Kit (Lead Wire Cable)

IP65 available



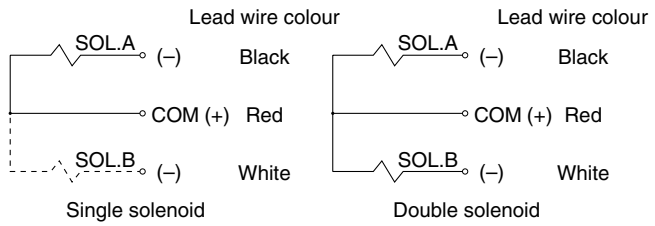
- Direct electrical entry. Models with one or more stations are available.
- P (SUP) and R (EXH) ports are provided on one side for further space savings.
- Max. 8 stations.
- Enclosure: dust resistant/Jet proof style (IP65) available. (Series VQ2000)

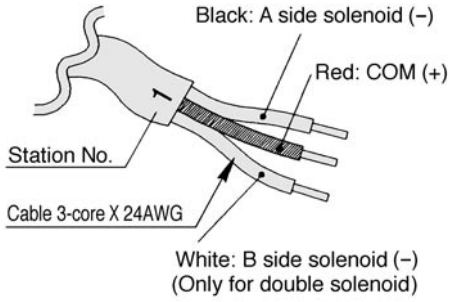
Manifold Specifications

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

Wiring Specifications/Positive COM●

Irrespective of the valve mounted, three lead wires are attached to each station. The red wire is for COM connection.



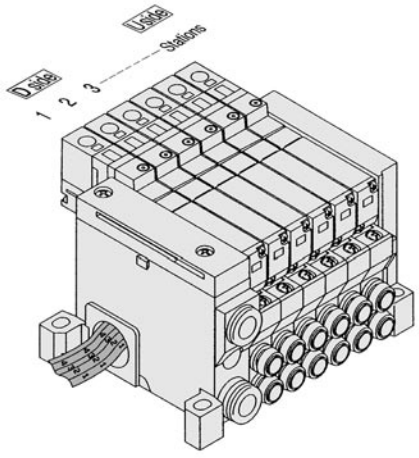


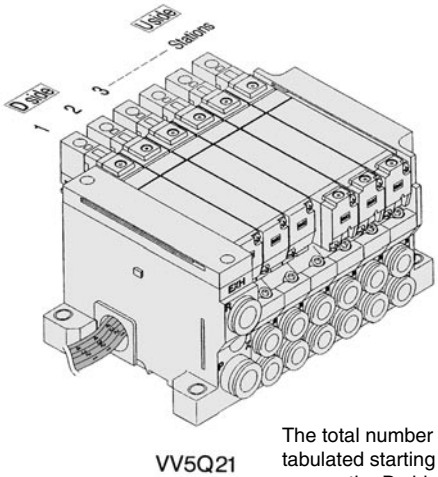
Use any of the following cable lead wire ass'ys to change the lead wire length:

Cable lead wire assembly with connector

Lead wire length (L)	Part No.
0.6m	**VVQ1000-84A-6-**∗
1.5m	**VVQ1000-84A-15-**∗
3m	**VVQ1000-84A-30-**∗

∗ No.of stations 1 to 8





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

How to Order Manifold

VV5Q 1 1 – 06 C6 L 1 – N -Q

Series

1	VQ1000
2	VQ2000

Manifold

1	Plug-in unit

Stations

01	1 stations
⋮	⋮
08	8 stations

Note) Refer to "Options" on p.1-750 for negative COM specifications.

Cylinder ports

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

Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type. (VQ1000 only)
Example) B6 (Elbow One-touch fittings for ø6, bottom piping.)
Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" by means of manifold specification form.
Note 4) Refer to "Options" on p.1-751 for One-touch fittings in inch sizes.

Cable (length)

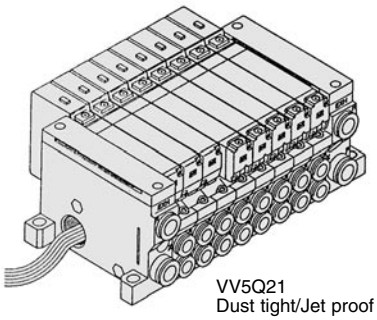
0	With cable (0.6m)
1	With cable (1.5m)
2	With cable (3m)

Option

Symbol	Option	VQ1000	VQ2000	Remarks
—	None	●	●	
B	Check valve for prevention of back press.	●	●	(2)
D	DIN rail mounting	●	●	(3)
G1	1 set of regulator unit	●		(3)
G2	2 sets of regulator unit	●		(3)
G3	3 sets of regulator unit	●		(4)
J□	With vacuum ejector unit	●		
N	With name plate	●	●	(5)
R	External pilot capable	●	●	
S	Built-in silencer (Direct exhaust)	●	●	
W	IP65		●	

Note 1) If specifying more than one option, please list alphabetically. Example) -BRS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by a manifold specification form.
Note 3) Specify the mounting position by means of the manifold specification form.
Note 4) Refer to p.1-742 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Indicate "R" for the valve with external pilot.

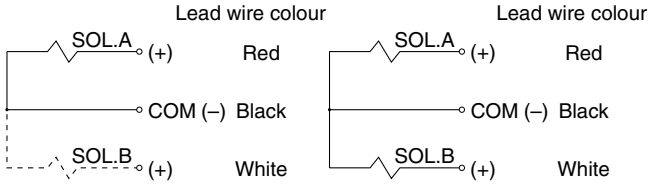
SMC

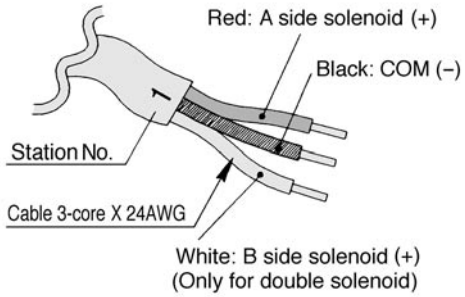


VV5Q21
Dust tight/Jet proof style

●**Wiring Specifications/Negative COM (Options)**

Irrespective of the valve mounted, three lead wires are attached to each station. The black wire is for COM connection.





Cable lead wire assembly with connector

Lead wire length (L)	Part No.
0.6m	**VVQ1000-84AN-6-**∗
1.5m	**VVQ1000-84AN-15-**∗
3m	**VVQ1000-84AN-30-**∗

∗ No. of stations 1 to 8

Note) Use negative COM type valves for negative COM specification manifolds.
See p.1-750 for further details.

How to Order Valve

VQ 1 1 0 0 Y — 5 □ □ □ -Q

Series

1	VQ1000
2	VQ2000

Configuration

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

Seal

0	Metal
1	Rubber

Note) Refer to "Options" on p.1-750 and 1-751 for external pilot and negative COM specifications.

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H	High pressure	(1.5W) ○
Y	Low wattage	(0.5W) ○

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Indicator light and surge voltage suppressor

—	Yes
E	No

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

Enclosure

—	Dust-proof
W	IP65

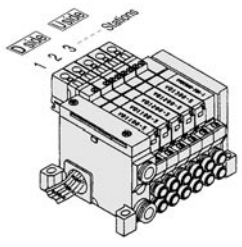
Note) VQ2000 only.

How to Order Manifold Ass'y

Specify valve and option nos. below the manifold base no.

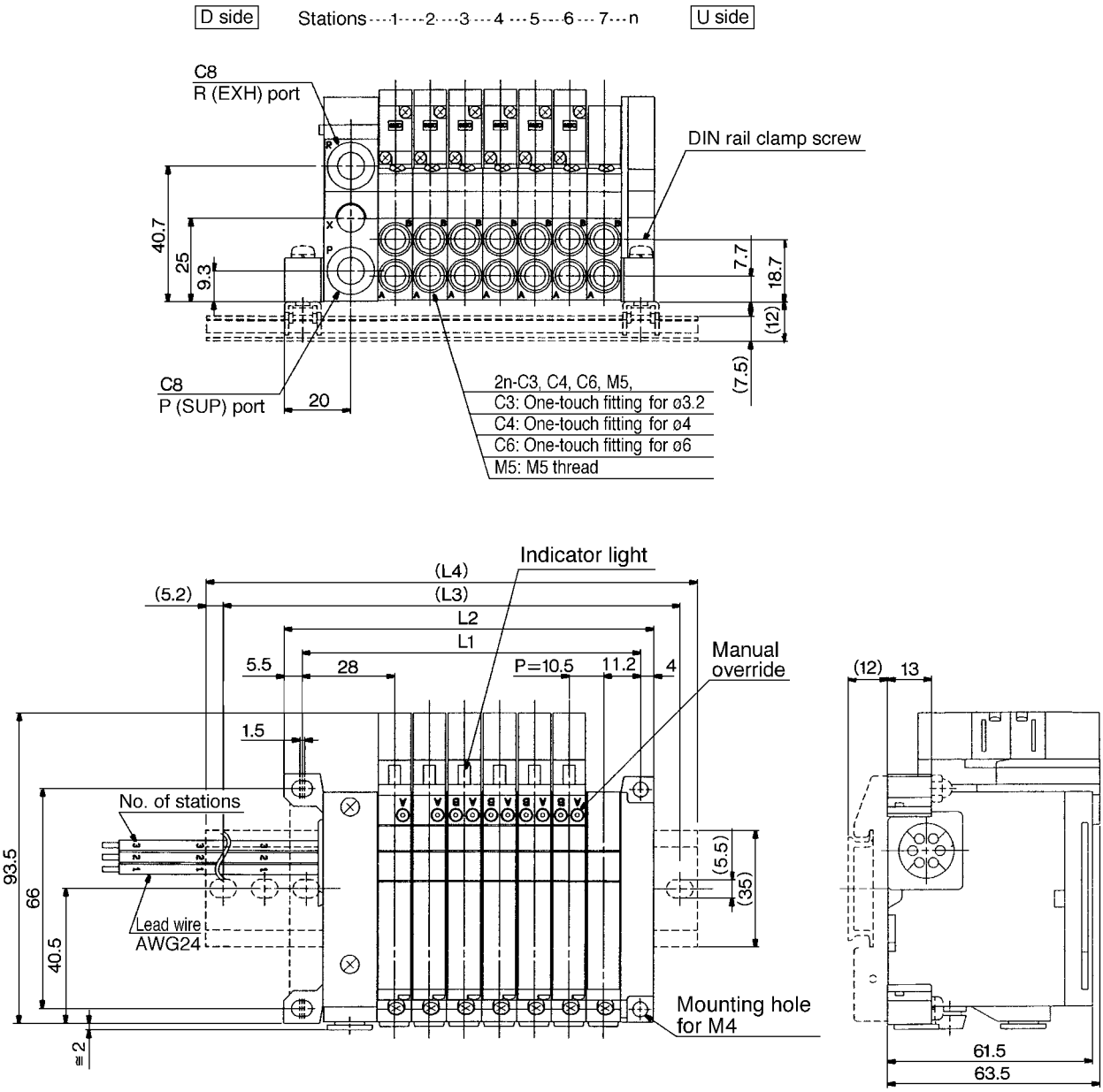
(Example)
With lead wire kit/cable (3m)
VV5Q11-06C6L2-Q ·····1 set–Manifold base No.
VQ1100-5-Q ·····2 sets–Valve No. (Stations 1 to 2)
VQ1200-5-Q ·····2 sets–Valve No. (Stations 3 to 4)
VQ1300-5-Q ·····1 set–Valve No. (Station 5)
VVQ1000-10A-1 ·····1 set–Blank plate No. (Station 6)

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



VQ1000

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



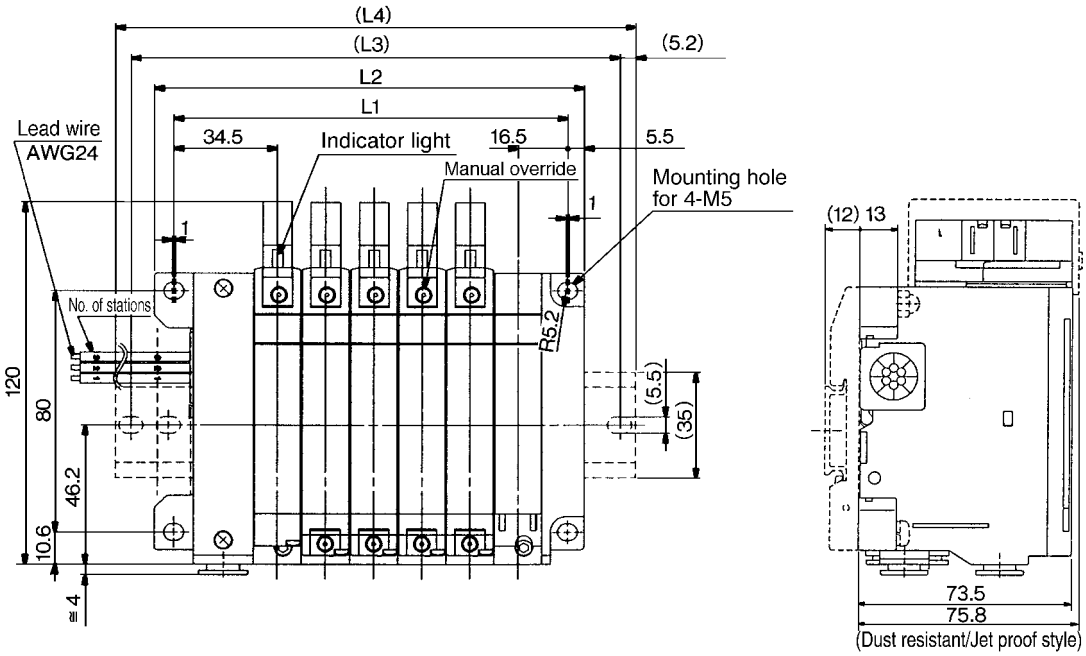
Dimensions (mm) Equation L1=10.5n+28.5, L2=10.5n+38 n: Station (Max. 8 stations)

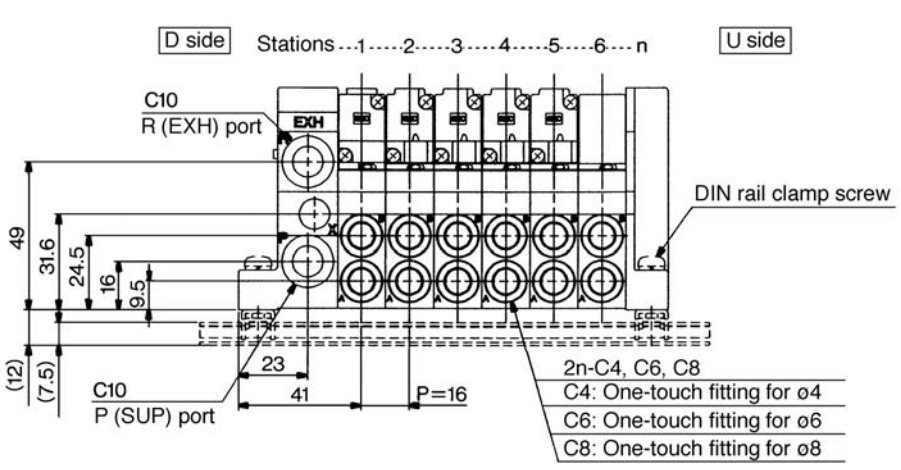
L \ n	1	2	3	4	5	6	7	8
L1	39	49.5	60	70.5	81	91.5	102	112.5
L2	48.5	59	69.5	80	90.5	101	111.5	122
(L3)	75	87.5	87.5	100	112.5	125	137.5	150
(L4)	85.5	98	98	110.5	123	135.5	148	160.5

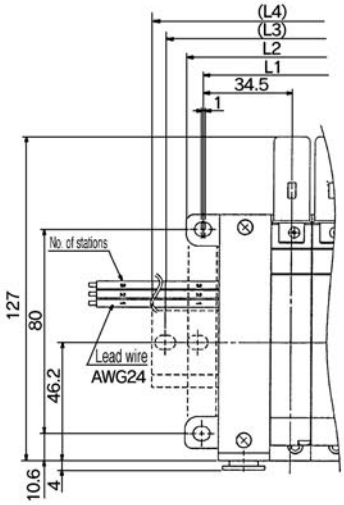
Vacuum ejector unit style: Equation L1=10.5n+28.5+(number of ejector units X 26.7)
L2=10.5n+38+(number of ejector units X 26.7)
L4 is L2 plus about 30.

VQ2000

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





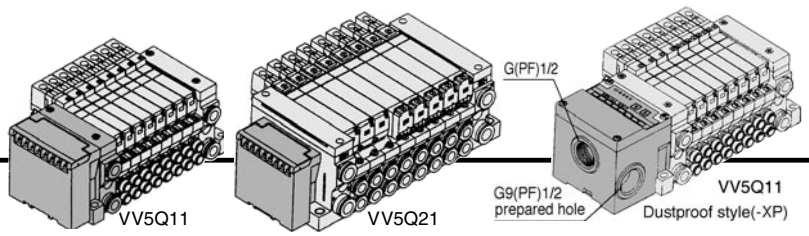


Dimensions (mm)

Equation L1=16n+35, L2=16n+47 n: Station (Max. 8 stations)

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

S VQ1000/2000
Kit (Serial Transmission Unit)

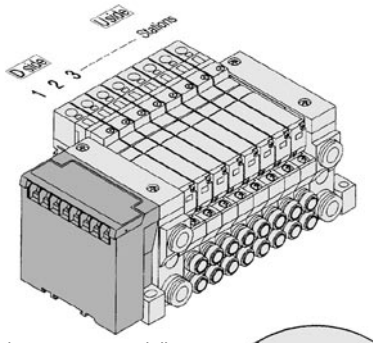


IP65 available

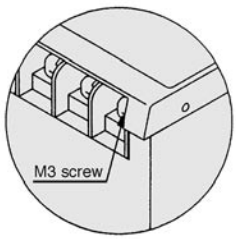
- The serial transmission system minimizes wire mass and wire connection labor and promotes space savings.
- The system comes in SA (general for small scale system) for equipment with a small number of I/O points, or 32 points max., SB (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., SC (applicable to OMRON models), SD (applicable to Sharp models: 504 points max.), SF (applicable to NKE models: 128 points max.), SJ (applicable to Sunx models), SK (applicable to Fuji Electric models), SQ (applicable to OMRON's Compo Bus/D), and SR (applicable to OMRON's Compo Bus/S).
- Max. 16 stations. (Specify a model with 9 to 16 stations by using a manifold specification form.)
- Enclosure: dust-resistant/jet-proof style (IP65) available (Series VQ2000)

Manifold Specifications

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



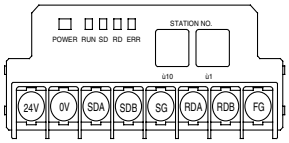
- Stations are sequentially numbered from the D side.
- Irrespective of the valves or options, the internal wiring is made double (connected to SOL. A and SOL. B) for respective staions of the manifold. The optional specification permits mixture of single and double wiring. See p.1-750 for details.



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

Name of terminal block (LED)

SB applicable to MELSECNET/MINI-S3 Data Link (Mitsubishi Electric)



LED name	Details
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

- Master station:
  PLC made by Mitsubishi Electric Corp.
  Series MELSEC-A
  AJ71PT32-S3, AJ71T32-S3
  A1SJ71PT32-S3
  * Max. 64 stations, connected to remote I/O stations (Max. 512 points).
- 16 outputs, 2 stations occupied.

How to Order Manifold

VV5Q 1 1 – 08 C6 S B – N – XP -Q

Series

1	VQ1000
2	VQ2000

Manifold

1	Plug-in unit

Stations

02	2 stations
⋮	⋮
16(1)	16 stations

Note 1) Refer to p.1-750 for details.

Cylinder ports

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

Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type. (VQ1000 only)
Example) B6 (Elbow One-touch fittings for ø6, bottom piping.)
Note 2) Specify as "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" by means of manifold specification form.
Note 4) Refer to "Options" on p.1-751 for One-touch fittings in inch sizes.

Style

B	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)	Max. 16 stations
BB(2)	SI unit for MELSECNET/MINI-S3 Data Link System (2 power supply lines) (Mitsubishi Electric)	
C	SI unit for SYSBUS Wire System (OMRON)	
N	SI unit for Profibus DP	
P	SI unit for Interbus	
Q	SI unit for Device Net and CompoBus/D (OMRON)	
Y	SI unit for Can Open	
T2	SI unit for ASI (yellow+black wires)	Max. 8
T4	SI unit for ASI (yellow+black wires)	Max. 4
T5	SI unit for ASI (yellow wires)	

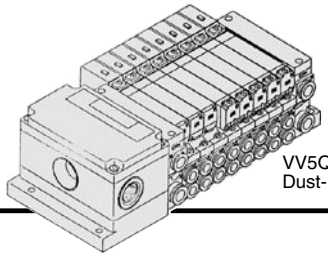
Note 1) The general type requires a transmission unit on CPU side.
Note 2) SBB kit is usable only for VQ2000 dust tight/ jet proof style (IP65).

Dust proof style(–XP)
Suffix "-XP" for the dust proof SI units.

Option

Symbol	Option	VQ1000	VQ2000
–	None	●	●
B	Check valve for prevention of back pressure(2)	●	●
D	DIN rail mounting	●	●
G1	1set of regulator unit (3)	●	
G2	2 sets of regulator unit (3)		
G3	3 sets of regulator unit		
J□	With vacuum ejector unit(4)	●	
K	Special wiring specification (Not double wiring) (5)	●	●
N	With name plate	●	●
R	External pilot (6)	●	●
S	Built-in silencer (Direct-exhaust)	●	●
W	Enclosure: IP65 (Except SN, SP, SY, ST2•4•5)		●

Note 1) If specifying more than one option, please list alphabetically. Example) –BRS
Note 2) Models with a suffix "–B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by manifold specification form.
Note 3) Specify the mounting position by means of the manifold specification form.
Note 4) Refer to p.1-742 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Specify wiring by the manifold specification form.
Note 6) Indicate "R" for the valve with external pilot.
Note 7) A combination of "W" and "XP" is unavailable.



VV5Q21
Dust-resistant/jet-proof style (–W)

●SI unit output and coil numbering

<Wiring example 1>

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

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

Double wiring (Standard)

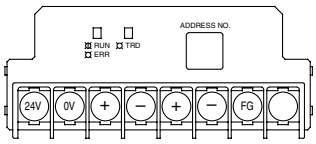
<Wiring example2>

Mixed wiring is optional. Use the manifold specification form to specify.

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

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

Single/Double mixed wiring (Option)

	SC applicable to SYSBUS Wire System (OMRON)
Name of terminal block(LED)	 LED name / Details: RUN: It lights when transmission is normal and PLC is in the operation mode. T/R ERR: It blinks when transmission is normal. It lights when transmission is abnormal.
Note	●Master station unit: OMRON's PLC SYSMAC Series C (CV) C500-RM201, C200H-RM201 ∗ Max. 32 units, transmission terminal connected (Max. 512 points) ●16 outputs

How to Order Valve

VQ 1 1 0 0 Y — 5 □ □ -Q

Series

1	VQ1000
2	VQ2000

Configuration

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

Seal

0	Metal
1	Rubber

Note) Refer to "Options" on p.1-750 and 1-751 for external pilot and negative COM specifications.

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H	High pressure	(1.5W) ○
Y	Low wattage	(0.5W) ○

Coil voltage

5	24V DC/With indicator light and surge voltage suppressor

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

Enclosure

—	Dust-proof
W	Dust resistant/Jet proof (IP65) (1)

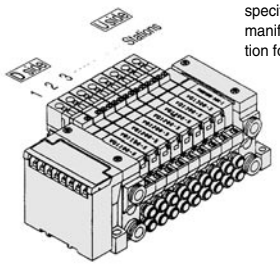
Note) VQ2000 only.

How to Order Manifold Ass'y

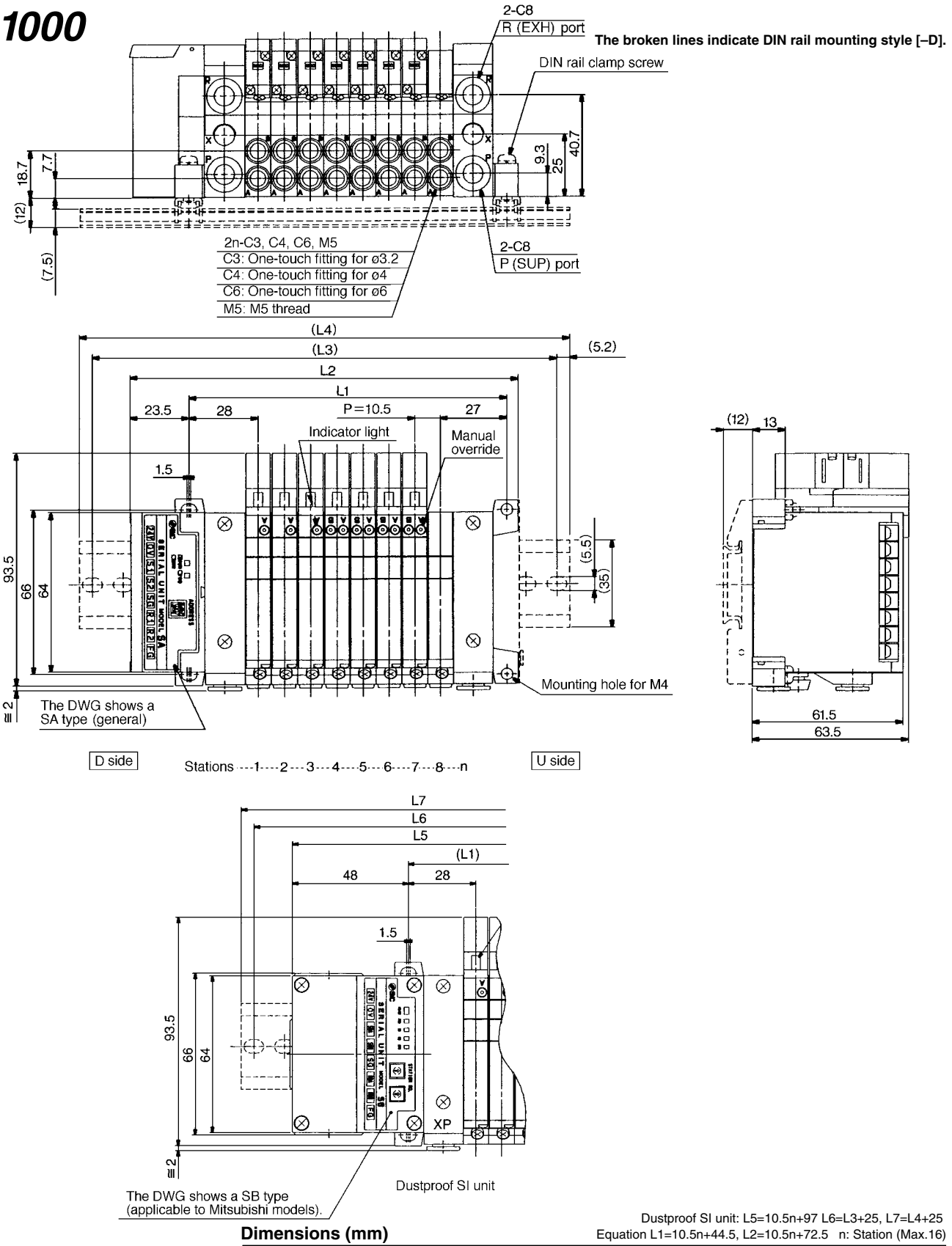
Specify valve and option nos. below the manifold base no.

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

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



VQ1000



Dustproof SI unit: L5=10.5n+97 L6=L3+25, L7=L4+25
Equation L1=10.5n+44.5, L2=10.5n+72.5 n: Station (Max.16)

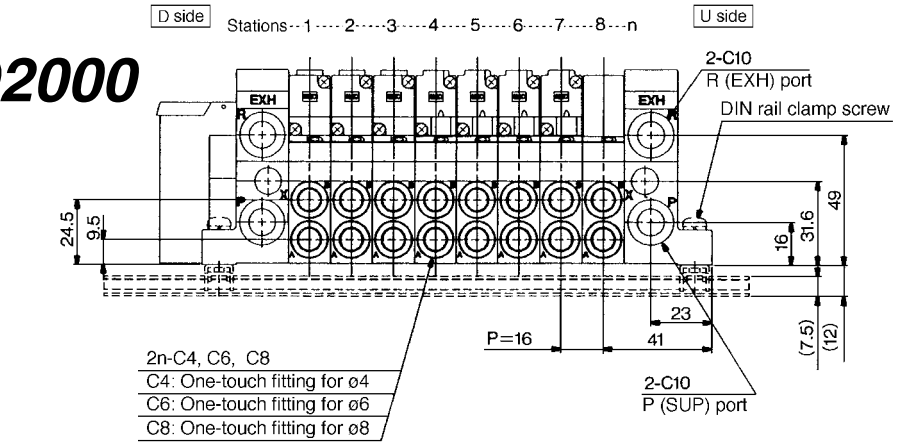
Dimensions (mm)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	65.5	76	86.5	97	107.5	118	128.5	139	149.5	160	170.5	181	191.5	202	212.5
L2	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5	230	240.5
(L3)	125	125	137.5	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	250	262.5
(L4)	135.5	135.5	148	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5	260.5	273

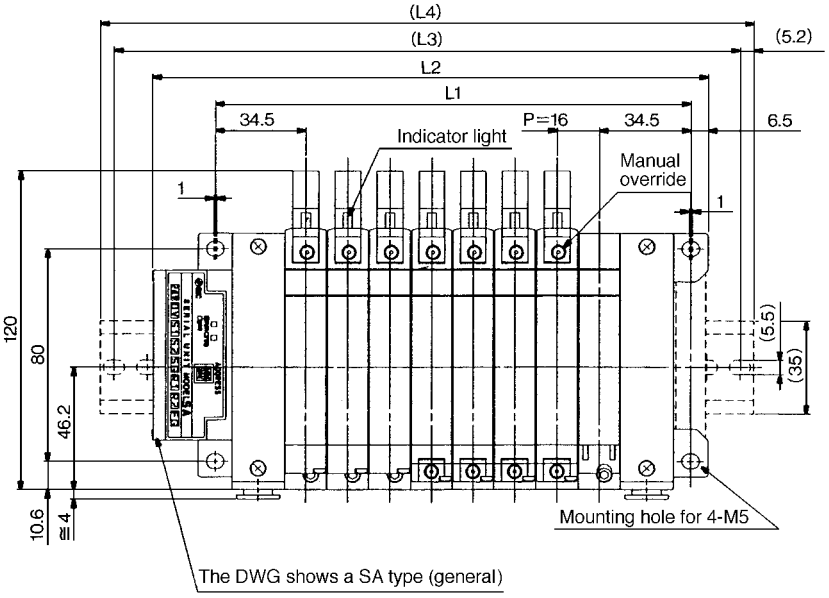
Vacuum ejector unit style: Equation L1=10.5n+28.7+(number of ejector units X 26.7)
L2=10.5n+56.3+(number of ejector units X 26.7)
L4 is L2 plus about 30.

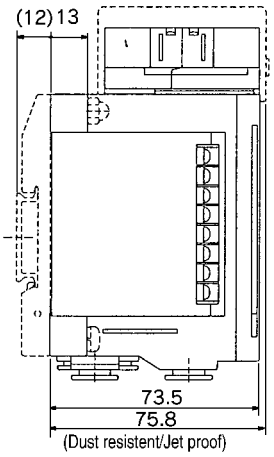
Note) Manifolds with SI unit for Matsushita's MEWNET FP and Allen Bradley Co.'s model are the same with L5, L6 and L7 dimensions of dust-proof SI unit.

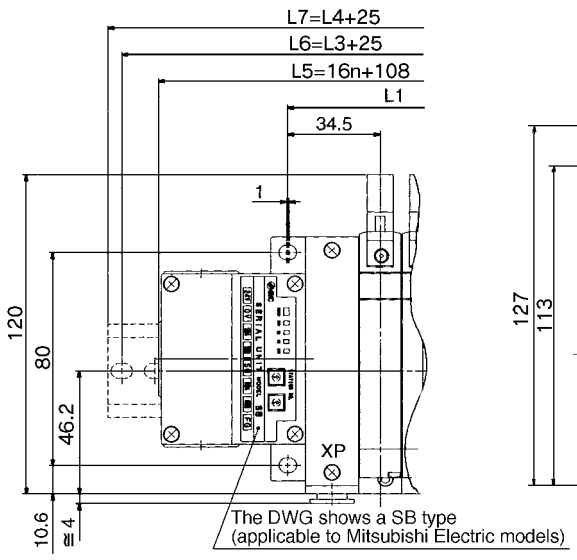
VQ2000



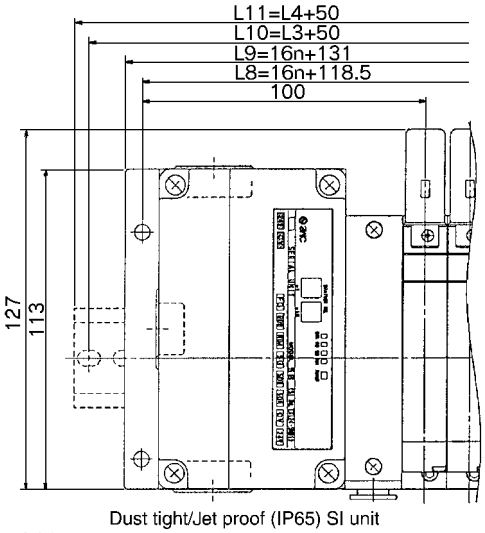
The broken lines indicate DIN rail mounting style [–D].







Dustproof SI unit



Dust tight/Jet proof (IP65) SI unit

Dustproof SI unit: L5=16+108, L6=L3+25, L7=L4+25
Dust tight/jet proof SI unit: L8=16n+118.5, L9=16n+131
L10=L3+50, L11=L4+50
Equation L1=16+53, L2=16+83 n: Station (Max. 16)

Dimensions (mm)

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

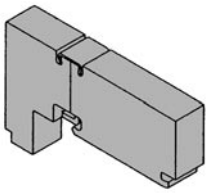
Note) Manifolds with SI unit for Matsushita's MEWNET FP and Allen Bradley Co.'s model are the same with L5, L6 and L7 dimensions of dust-proof SI unit.

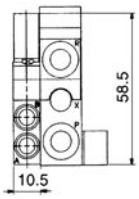
Manifold Options/For VQ1000

Blank plate assembly
VVQ1000-10A-1

JIS Symbol

It is mounted on a specific position of a manifold block from which a valve is removed for maintenance or in which a spare valve is planned to be mounted.

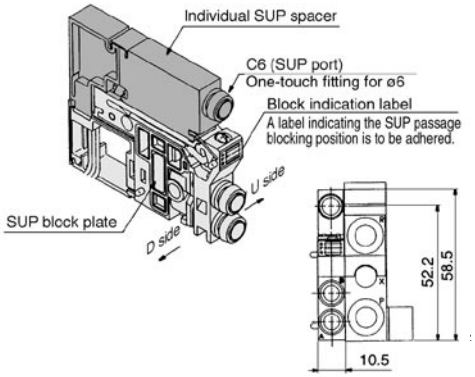


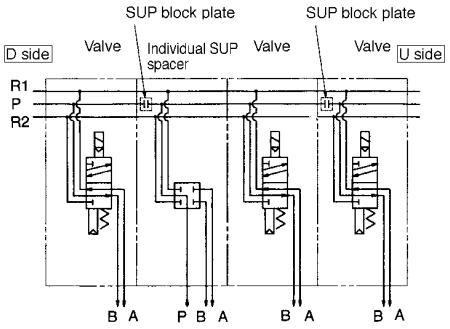


Individual SUP spacer
VVQ1000-P-1-C6

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.)
Block both sides of the station, for which the supply pressure from the individual SUP spacer is used, with SUP block plates. (See the application ex.)

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

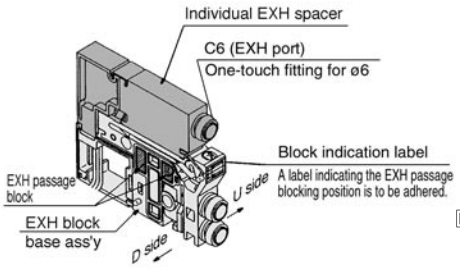


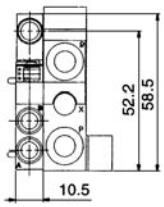


Individual EXH spacer
VVQ1000-R-1-C6

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

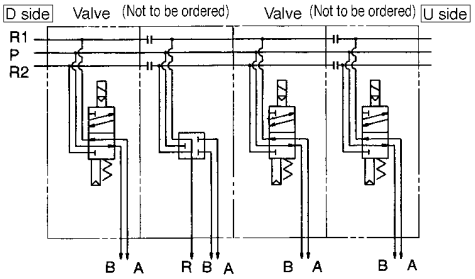
* Specify the mounting position, as well as the EXH block base or EXH block plate position by means of the using manifold specification form. The block plate are used in two places for one set.
* An EXH block base ass'y is used in the blocking position when ordering an EXH spacer incorporated with a manifold No. However, do not order an EXH block base ass'y because it is attached to the spacer.
  When separately ordering an individual EXH spacer, separately order an EXH block base ass'y because it is not attached to the spacer.
* Electric wiring is connected to the position of the manifold station where the individual EXH spacer is mounted.





Name/Type	Stations	1	2	3	4	5	6	7
Valve	Single	●		●	●			
	⋮							
Option	Individual EXH spacer VVQ1000-R-1-C6		●					
	EXH cut-off location: Specify 2 places.	●		●				

Individual EXH spacer + EXH block base ass'y — **Valve + EXH block base ass'y**



SUP block plate
VVQ1000-16A

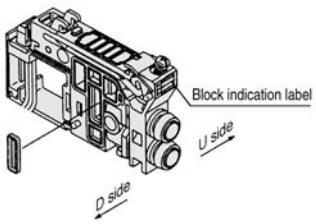
When high and low pressures are simultaneously supplied to one manifold, a block plate is inserted between stations under different pressures.

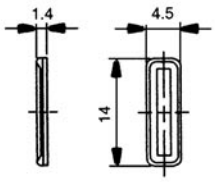
* Specify the number of stations by using a manifold specification form.

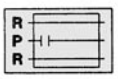
<Blocking indication label>

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

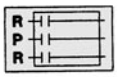
* When ordering a block plate incorporated with the manifold No., a block indication label is attached to the manifold.







SUP passage block



SUP/EXH passage block

Blank plate with connector
VVQ1000–1C□–□

Manifold

1	VV5Q11

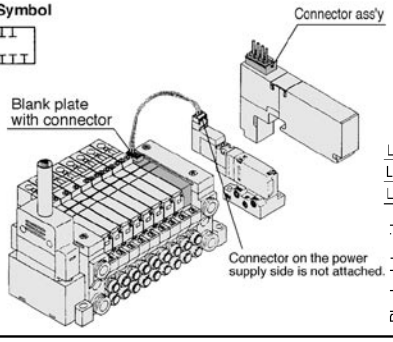
Connector

–	Without connector
1	With connector/2 wire
2	With connector/4 wire

Lead wire length (mm)

—	300	20	2000
6	600	25	2500
10	1000	30	3000
15	1500		

JIS Symbol



Blank plate with a connector for individually outputing electricity to drive a single valve or equipment that are not on the manifold base.

* When "N" is suffixed to the nameplate, the plate will be different from a standard shape.

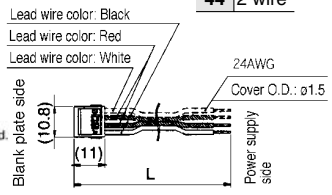
Note) Electric current should be 1A or less. (Including the mounted valves.)

Connector assembly No.
AXT661–43A–6

43	4 wire
44	2 wire

Lead wire length

—	300mm
6	600mm
10	1000mm
20	2000mm
30	3000mm

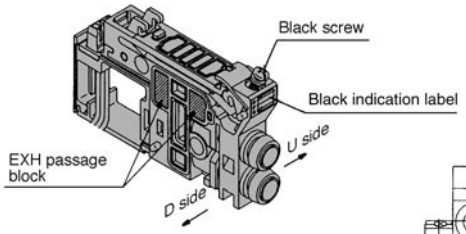


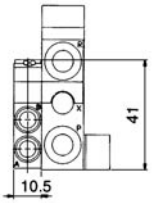
EXH block base assembly
VVQ1000-19A-$\begin{smallmatrix}F\square\\P\square\\L\square\end{smallmatrix}$-(C3, C4, C6, M5)

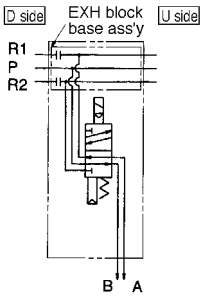
Manifold block ass'y
Electrical entry

F1	For F kit (2 to 12 stations)/Double wiring	
F2	For F kit (13 to 24 stations)/Double wiring	
F3	For F kit (2 to 24 stations)/Single wiring	
P1	For P, G, T, S kit (2 to 12 stations)/Double wiring	
P2	For P, G, T, S kit (13 to 24 stations)/Double wiring	
P3	For P, G, T, S kit (2 to 24 stations)/Single wiring	
L0*	L0 kit	*1 to 8 stations
L1*	L1 kit	
L2*	L2 kit	

The manifold block ass'y is used between stations for which exhaust is desired to be divided when valve exhaust affects other stations due to the circuit configuration. The EXH passage on the D-side is blocked in the EXH block base ass'y. It is also used in combination with an individual EXH spacer for individual exhaust.





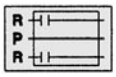


* When ordering by using the manifold specification form, specify the EXH block base ass'y no. by adding suffix "*" below the manifold no.
* Specify the number of stations by using the manifold specification form.

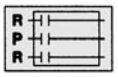
<Blocking indication label>

When blocking the EXH passage with an EXH block base ass'y, indication label for confirmation of the blocking position from outside is attached. (one label for each)

* When ordering a EXH block base incorporated with the manifold No., a block indication label is attached to the manifold.



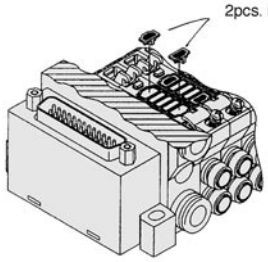
EXH passage block



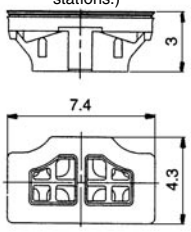
SUP/EXH passage block

Check valve for prevention of back pressure assembly [–B]
VVQ1000-18A

It prevents cylinder malfunction caused by other valve exhaust. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single action cylinder is used or an exhaust center type solenoid valve is used.
Note) When a check valves for back pressure prevention is desired to be installed only in desired manifold stations, write clearly the part No. and specify the number of stations by using a manifold specification form.



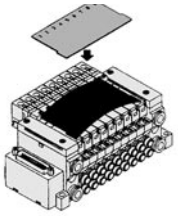
* When ordering assemblies incorporated with a manifold, add suffix "–B" to the manifold No. (When installed in all manifold stations.)



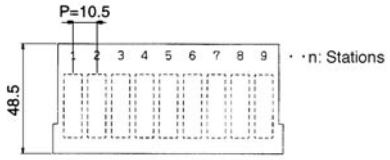
(Precautions)
1. The check valves for prevention of back pressure ass'y is assembly parts with a check valve structure. However, as slight air leakage is allowed for the back pressure, take care the exhaust air will not be throttled at the exhaust port.
2. When a check valves for prevention of back pressure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

Name plate [-N]
VVQ1000-N-Station (1 to Max. stations)

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

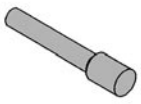


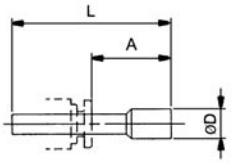
* When ordering assemblies incorporated with a manifold, add suffix "-N" to the manifold No.



Blank plug (For One-touch fittings)
KQ2P-$\begin{smallmatrix}23\\04\\06\\08\end{smallmatrix}$-00

It is inserted into an unused cylinder port and SUP/EXH ports.
The minimum order quantity is 10 pcs.



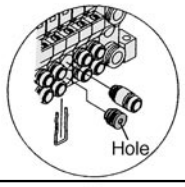


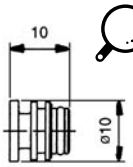
Dimensions (mm)

Fittings size ød	Model	A	L	D
3.2	**KQ2P-23-00**	16	31.5	3.2
4	**KQ2P-04-00**	16	32	6
6	**KQ2P-06-00**	18	35	8
8	**KQ2P-08-00**	20.5	39	10

Port plug
VVQ0000-58A

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

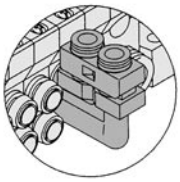


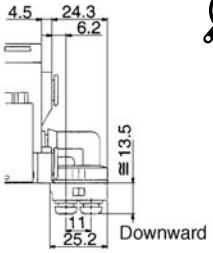


* When ordering a plug incorporated with a manifold, indicate "CM" for the port size in the manifold no., as well as, the mounting position and number of stations and cylinder port mounting positions, A and B, by means of the manifold specification form.
* Lightly screw an M3 screw in the port plug hole and pull it for removal.

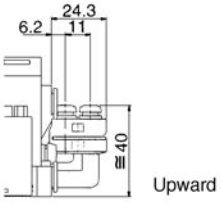
Elbow fitting assembly
VVQ1000-F-L(C3, C4, C6, M5)

It is used for piping that extends upward or downward from the manifold.
When installing it in part of the manifold stations, specify the ass'y no. and the mounting position and number of stations by means of the manifold specification form.





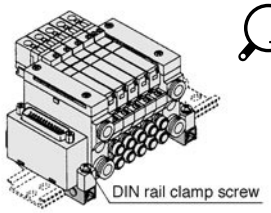
* When ordering an assemblies incorporated with a manifol indicate "L□" or "B□" for the manifold port size. (When installed in all stations.)



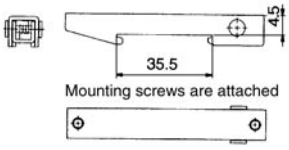
Manifold Options/For VQ1000

DIN rail mounting bracket
VVQ1000-57A

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



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

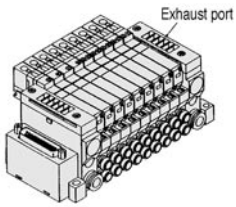


Built-in silencer, Direct exhaust [-S]

This is an exhaust port on a top the manifold end plate.
The built–in silencer exhibits an excellent noise suppression effect. (Silencing effect: 30dB)

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

●See p.1-748 for maintenance.

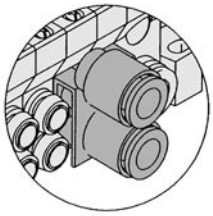


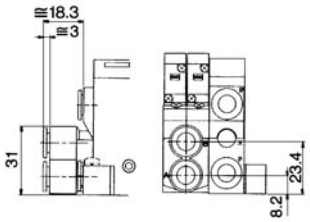
∗ When ordering assemblies incorporated with a manifold, add suffix "S" to the manifold No.

2 stations matching fitting assembly
VVQ1000-52A-C8

For driving a cylinder with a large bore, valves for two stations are operated to double the flow rate. This ass'y for the cylinder port is used in that case. The ass'y is equipped with one-touch fittings for a ø8 bore.

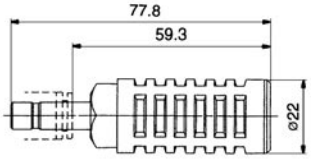
∗ The bore for the manifold no. is "CM." Clearly indicate the 2–station matching fittings ass'y no., and specify the number of stations and positions by means of the manifold specifications.





Silencer (EXH port)

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



Dimensions (mm)

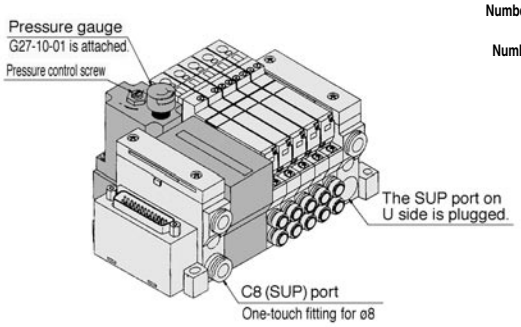
Serise	Fittings size ød	Model	A	L	D	Effective area (mm²)(N ℓ/min)	Silencing effect dB
VQ1000	8	AN200-KM8	59.3	77.8	22	20(1079.65)	30

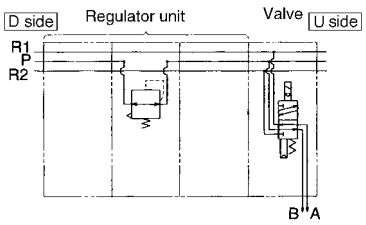
Regulator unit
VVQ1000-AR-1

The regulator controls the SUP air pressure in a manifold.

Specifications

Max. operating pressure	0.8MPa
Setting pressure range	0.05 to 0.7MPa
Ambient and fluid temperature	5 to 50˚
Fluid	Air
Cracking pressure	0.02MPa
Structure	Relieving style





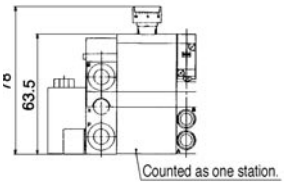
How to Order

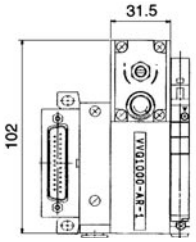
Indicate an option symbol "-G∗" for the manifold no. and be sure to specify the mounting position and number of stations by means of the manifold specification form. One unit is counted as one station and occupies a space for three stations, therefore, pay attention to the manifold size. The regulator valve unit, to which no wire is connected, valves can be mounted up to the standard max. number of stations of each kit.

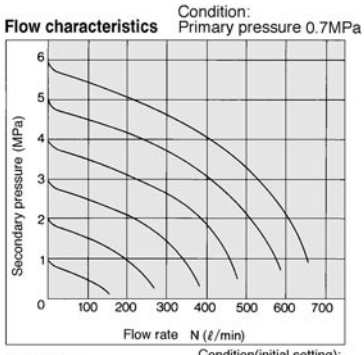
How to Order Manifold

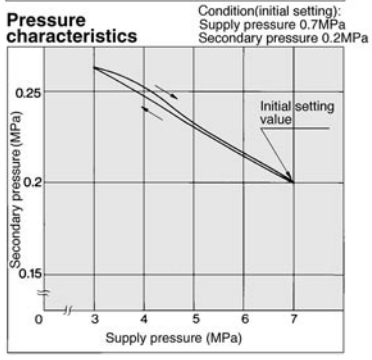
VV5Q11–14C6FUO–DG2-Q

- Number of manifold stations: Number of mounted valves (12) + Number of regulator units (2)
- Number of regulator units (2) (Max. 3 units)
- With regulator unit
- List option symbols in alphabetical order









⚠ Caution

●Pressure setting

Check the supply pressure and then turn the pressure control screw to set the secondary pressure. Turning the screw clockwise will increase the secondary pressure while turning it counterclockwise decrease the pressure. (Set the pressure by turning the screw in the increase direction.)

●Installation

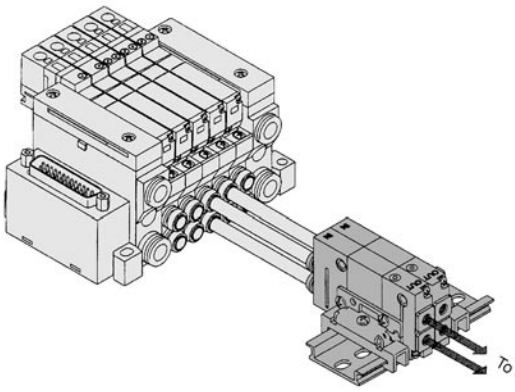
Since some level of the actuator's operational frequency may lead to a sharp pressure change, pay attention to the pressure gauge durability.

Double check block(Separate style): For VQ1000
VQ1000-FPG-□□

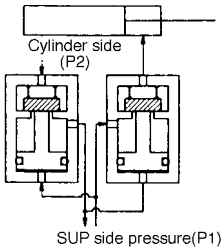
It is used on the way of the secondary side piping to keep the cylinder in the intermediate position for a long time. Combining a double check block with a built-in pilot type double check valve and a 3 position EXH center solenoid valve will enable the cylinder to stop in the middle or maintain its 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	0.8MPa
Min. operating pressure	0.15MPa
Ambient and fluid temperature	–5 to 50˚
Effective area (Nℓ/min) (1)	2.7mm² (147.23)
Max. operating frequency	180CPM



<Check Valve Operation Principle>

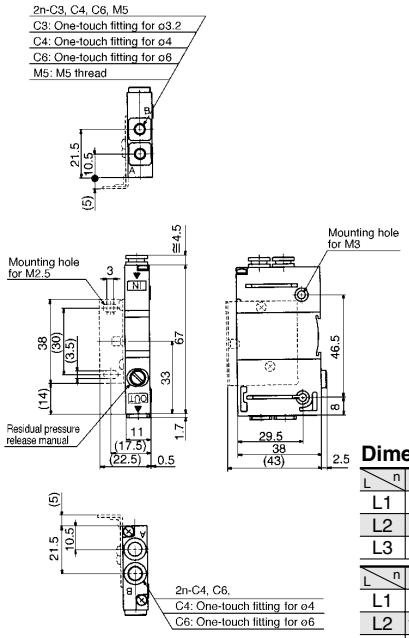


Note 1) As per JISB8375-1981
(Supply pressure: 0.5MPa)

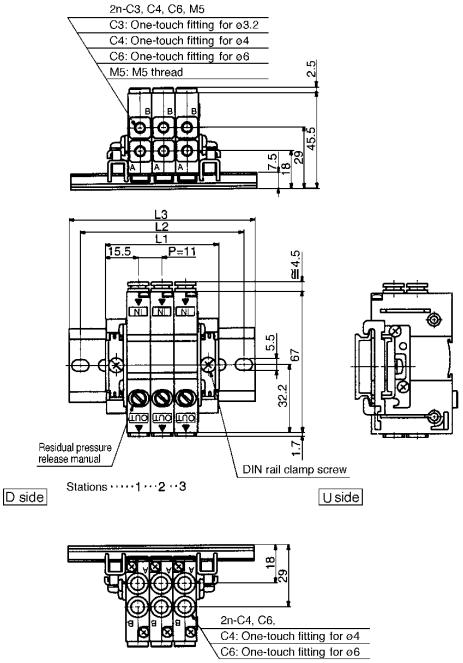
VVQ1000-FPG-02 1 set
∗ VQ1000-FPG-C6M5-D 2 pcs.

Dimensions

Single unit



Manifold



Dimensions (mm) Equation 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

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

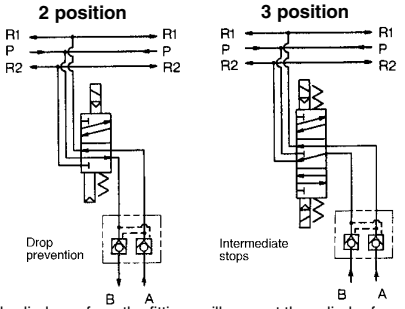
M5	M5 thread
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6

Option

—	None
F	With blacket
D	DIN rail mounting (for manifold)
N	With name plate

Note) When specifying more than one option, please list alphabetically.
Ex.) -DN

<Example>



Manifold

VVQ1000–FPG– 06

Stations

01	1 station
⋮	⋮
16	16 stations

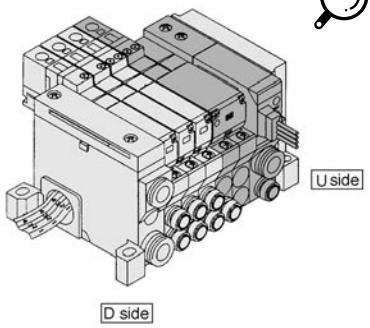
<Example>
VVQ1000-FPG-06···6 stations of manifold
∗ VQ1000-FPG-C4M5-D, 3 sets
∗ VQ1000-FPG-C6M5-D, 3 sets } double check block

⚠ 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 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 ass'y on the double check block. {Tightening torque: 0.8 to 1.2Nm}
- 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.

Manifold Option/Vacuum Ejector Unit: VQ1000

A vacuum ejector unit can be mounted on the manifold base for a solenold valve. Instead of mounting the valve and vacuum ejector unit separately, this option reduces piping, wiring and creates additional space savings.



Note 1) SUP and EXH ports on the vacuum ejector unit manifold bace are arranged on D side alone.The end plate on the U side is the same as that used in the L kit.
Note 2) Individual piping is provided for the supply and exhaust ports of the vacuum ejector unit.
Note 3) The manifold with an vacuum ejector unit type is mounted from the U side.
Note 4) One vacuum ejector unit co-rresponds to one station.
* Specify the position of stations by means of the manifold specification form.

Specifications

Unit No.	VVQ1000-J□-□□□-A	VVQ1000-J□-□□□-B
Nozzle diameter (mm)	0.7	1.0
Max. suction flow rate (N*l*/min)	11	20
Max. vacuum pressure	–630mmHg	
Max. operating pressure	0.8MPa	
Standard supply pressure	0.5MPa	
Operating temperature	5 to 50˚C	

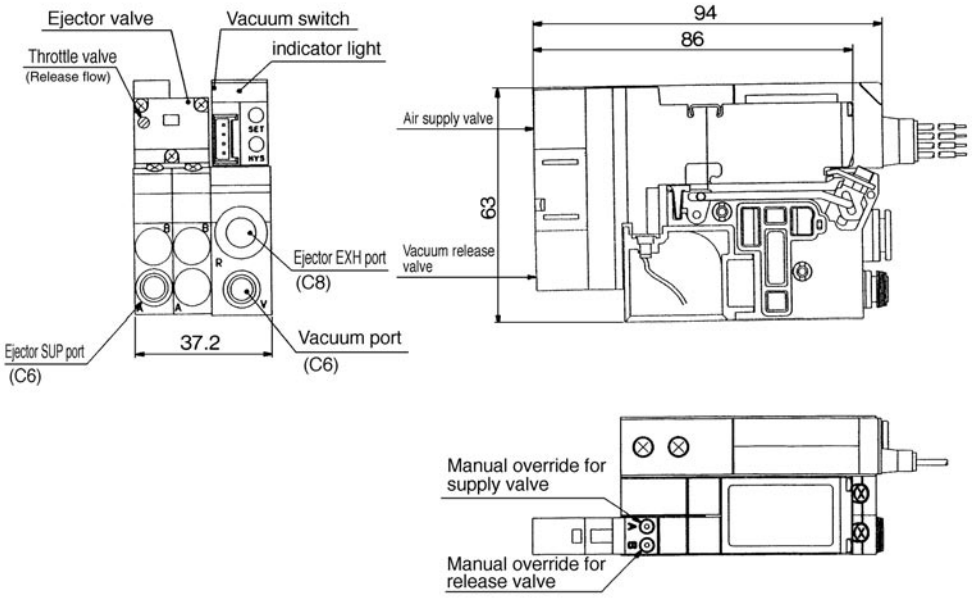
Max. Number of Ejector Units

(Max. Number of ejector units is subject to the number of valve stations)

Max. number of ejector units	Max. number of mounted valves		
	F, P, T kit	S, G kit	L kit
1	11(20)	7(14)	7
2	10(16)	6(12)	6
3	9(12)	5(10)	5
4	8(8)	4(8)	—
5	4(4)	3(4)	—

Note) The max. number of mounted valves applies to double wiring. Parenthesized numbers apply to single wiring. Contact SMC for conditions other than the above or mixed wiring.

Dimensions (mm)



How to Order Vacuum Ejector Unit

VV5Q11–05C6FUO–J P 1 S-Q

Vacuum switch

–	No
P	Yes

Ejection Unit

1 to 5

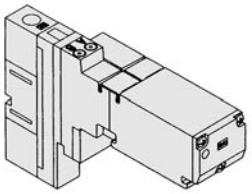
List option symbols in alphabetical order

Example)

VV5Q11-05C6FUO-JP1 … 1 set — Manifold No.
* VQ1100-5 …… 2 sets — Valve No. (Stations 1 to 2)
* VQ1200-5 …… 2 sets — Valve No. (Stations 3 to 4)
* VVQ1000-J1-5-A …… 1 set — Ejector valve No.
* ZSE1-00-15-CL …… 1 set — Vacuum switch No.

Note 1) Count one ejector unit as one manifold station.
Note 2) The ejector unit is mounted next to the U-side end plate.
Note 3) The U-side end plate is used exclusively for ejector units. (No P nor R port provided)
Note 4) The dimension of manifold with an ejector unit is different from the standard dimension. See the formula for calculating the dimensions for each kit.

How to Order Vacuum Ejector Valve



VVQ1000 – J 1 – 5 H C – A

Manifold

1	Plug-in unit

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Pilot valve

Symbol	Specification	DC
–	Standard	(1.0W) ○
H	High pressure	(1.5W) ○
Y	Low wattage	(0.5W) ○
N	Negative COM	○

Note) If specifying more than one symbol, please list alphabetically.

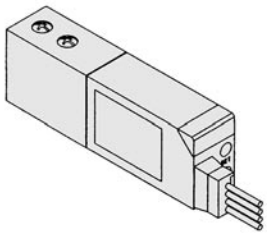
Nozzle specifications

Symbol	Nozzle diameter	Vacuum release valve
A	ø0.7	Provided
B	ø1.0	

Manual override

–	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

How to Order Vacuum Pressure Switch



ZSE1 – 00 – 15 CL

Switch/Voltage (Solid state: 12 to 24V DC)

14	NPN/1 setting, 3 revolution adjustment
15	NPN/1 setting, 200˚ adjustment
16	NPN/2 setting, 3 revolution adjustment
17	NPN/2 setting, 200˚ adjustment
18	NPN/1 setting, 3 revolution adjustment, analog
19	NPN/1 setting, 200˚ adjustment, analog

Electrical entry

–	With 0.6m grommet lead
L	With 3m grommet lead
C	With 0.6m connector lead
CL	With 3m connector lead
CN	Without connector lead (1)

Note 1) When ordering switch with lead wire of 5m long, indicate both part nos. (See below.)

How to Order Connector

●Without lead wire (Connector 1 pc., socket 4 pcs). ·····ZS-20-A

●With lead wire·····ZS-20-5A-50

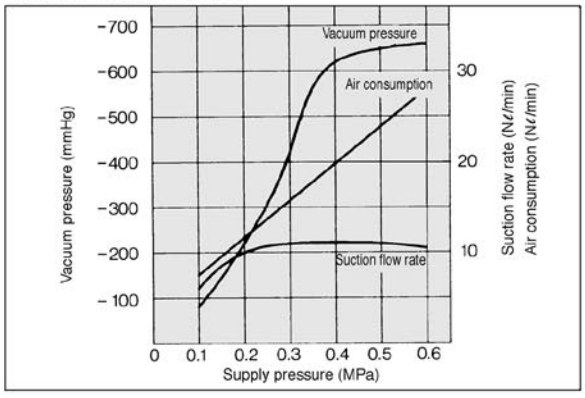
Lead wire length

–	0.6m
30	3m
50	5m

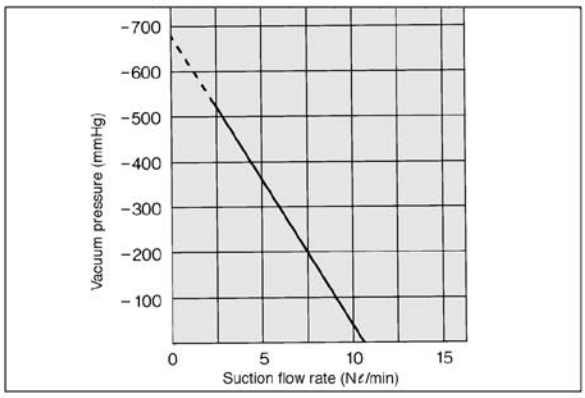
Flow Characteristics/Exhaust Characteristics

(The flow characteristics are for the supply pressure of 0.5MPa.)

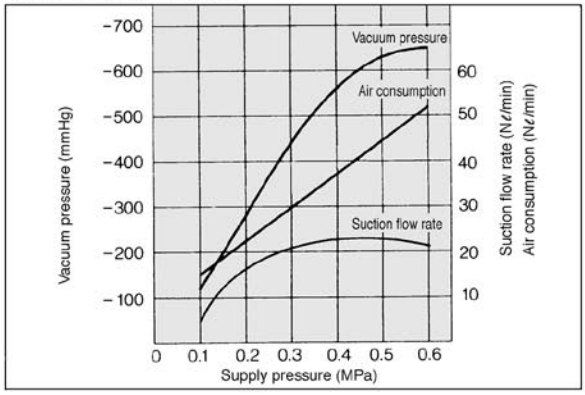
Nozzle diameter ø0.7
Exhaust Characteristics



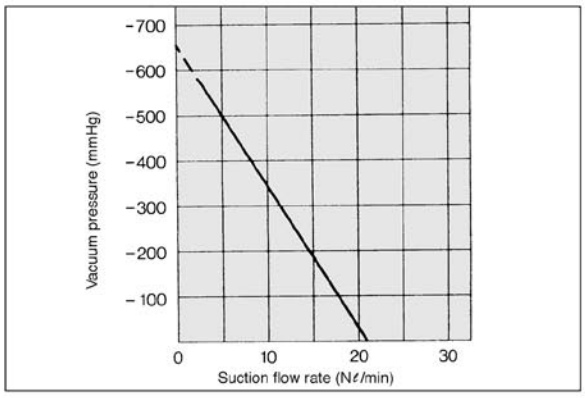
Flow Characteristics



Nozzle diameter ø1.0
Exhaust Characteristics



Flow Characteristics

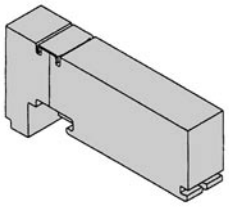


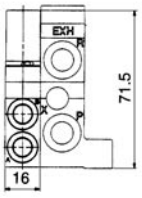
Manifold Options/For VQ2000

Blank plate assembly
VVQ2000-10A-1

JIS Symbol

It is mounted on a specific position of a manifold block from which a valve is removed for maintenance or in which a spare valve is planned to be mounted.

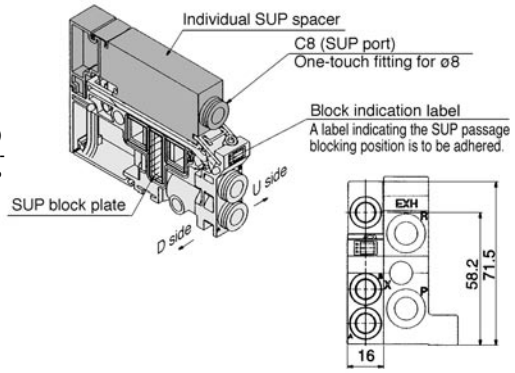


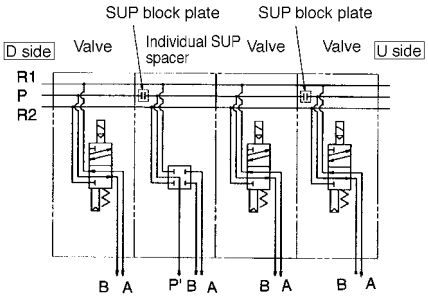


Individual SUP spacer
VVQ2000-P-1-C8

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

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

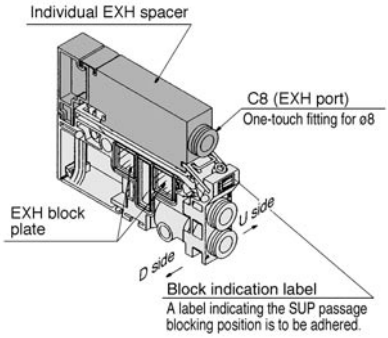


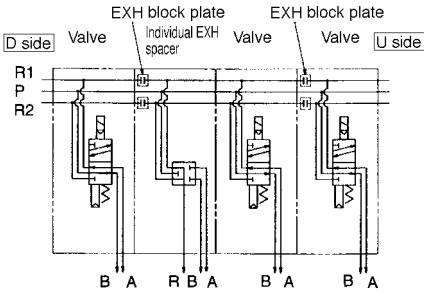


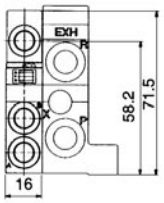
Individual EXH spacer
VVQ2000-R-1-C8

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

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



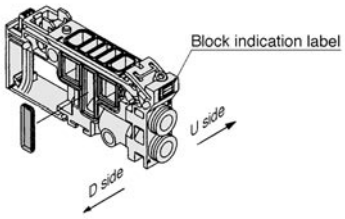


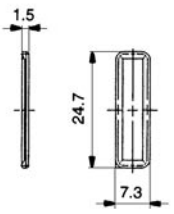


SUP block plate
VVQ2000-16A

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

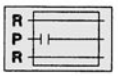
- ∗ Specify the number of stations by using a manifold specifiifcation form.



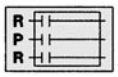


<Blocking indication label>

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



SUP passagge block



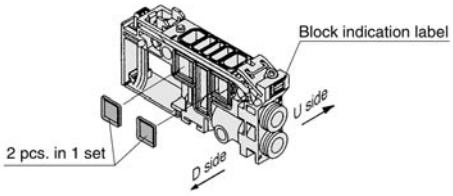
SUP/EXH passagge block

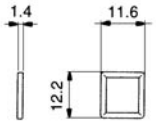
∗ When ordering a block plate incorporated with the manifold No., a block indication label is attached to the manifold.

EXH block plate
VVQ2000-19A

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

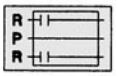
- ∗ Specify the number of stations by using a manifold specification form.



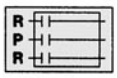


<Blocking indication label>

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



SUP passagge block



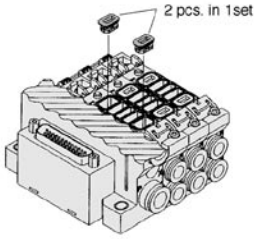
SUP/EXH passagge block

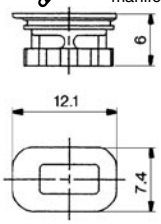
∗ When ordering a block plate incorporated with the manifold No., a block indication label is attached to the manifold.

Check valve for prevention of back pressure assembly [-B]
VVQ2000-18A

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

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





* When ordering assemblies incorporated with a manifold, add suffix "-B" to the manifold No. (When installed in all manifold stations.)

(Precautions)

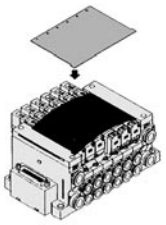
1. The check valves for prevention of back pressure ass'y is assembly parts with a check valve structure. However, as slight air leakage is allowed for the back pressure, takecare the exhaust air will not be throttled at the exhaust port.
2. When a check valves for pervention of back pressure is mounted,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

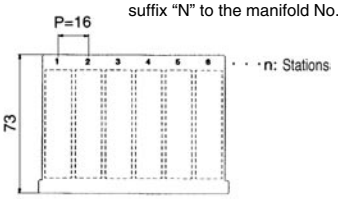
Name plate[-N]
VVQ2000-N-Station (1 to Max. stations)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.

Insert it into the groove on the side of the end plate and bend it as shown in the figure.

●Suffix "N" to the manifold No.





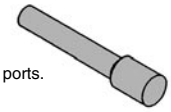
* When ordering assemblies incorporated with a manifold, suffix "N" to the manifold No.

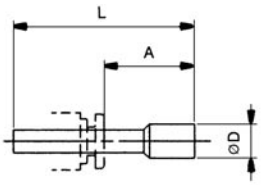
Blank plug (For One-touch fittings)

KQ2P-$\begin{matrix}04\\06\\08\end{matrix}$-00

●Colour spec: White

It is inserted into an unused cylinder port and SUP/EXH ports.
The minimum order quantity is 10pcs.



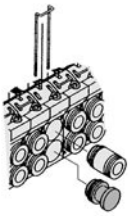


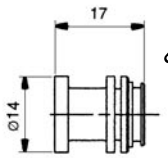
Dimensions (mm)

Fittings size ød	Model	A	L	D
4	**KQ2P-04-00**	16	32	6
6	**KQ2P-06-00**	18	35	8
8	**KQ2P-08-00**	20.5	39	10

Port plug
VVQ1000-58A

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



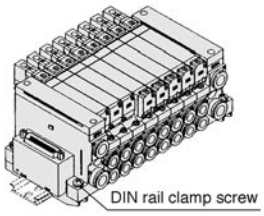


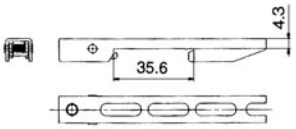
* When ordering a plug incorporated with a manifold, indicate "CM" for the port size in the manifold no., as well as, the mounting position and number of sations and cylinder port mounting positions, A and B, by means of the manifold specification form.

DIN rail mounting bracket
VVQ2000-57A

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

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





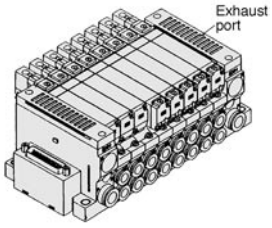
* When ordering assemblies incorporated with a manifold, add suffix "D" to the manifold No.

Built-in silencer, Direct exhaust[-S]

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

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

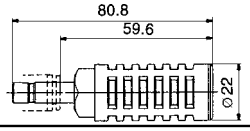
●See p.1-748 for maintenance.



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

Silencer (EXH port)

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

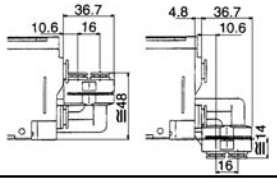


Dimensions (mm)

Series	Fittings size ød	Model	A	L	D	Effective area mm^2(Nℓ/min)	Silencing effect dB
VQ2000	10	AN200-KM10	59.6	80.8	22	26(1374.1)	30

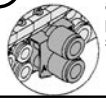
Elbow fitting assembly
VVQ2000-F-L (C4, C6, C8)

It is used for piping that extends upward or downward from the manifold. When installing it in part of the manifold stations, specify the ass'y no. and the mounting position and number of stations by means of the manifold specification form.

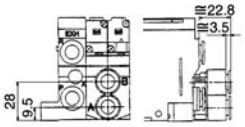


2 stations matching fitting assembly
VVQ2000-52A-C10

For driving a cylinder with a large bore, valves for two stations are operated to double the flow rate. This ass'y for the cylinder port is used in that case. The ass'y is equipped with One-touch fittings for a ø10 bore.



* The bore for the manifold no. is "CM". Clearly indicate the 2-station matching fitting ass'y no., and specify the number of stations and positions by means of the manifold specifications.



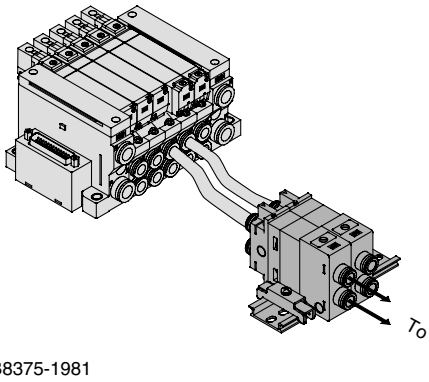
Manifold Options/For VQ2000

Double check block (Separate style) for VQ2000
VQ2000–FPG–□□–□

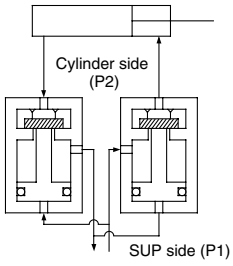
It is used on the way of the secondary side piping to keep the cylinder in the intermediate position for a long time. Combining the double check block with a built-in pilot type double check valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain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

Specifications

Max. operating pressure	0.8MPa
Min. operating pressure	0.15MPa
Ambient and fluid temperature	–5 to 50˚C
Effective area (N*l*/min) (1)	18mm² (981.5)
Max. operating frequency	180 c.p.m



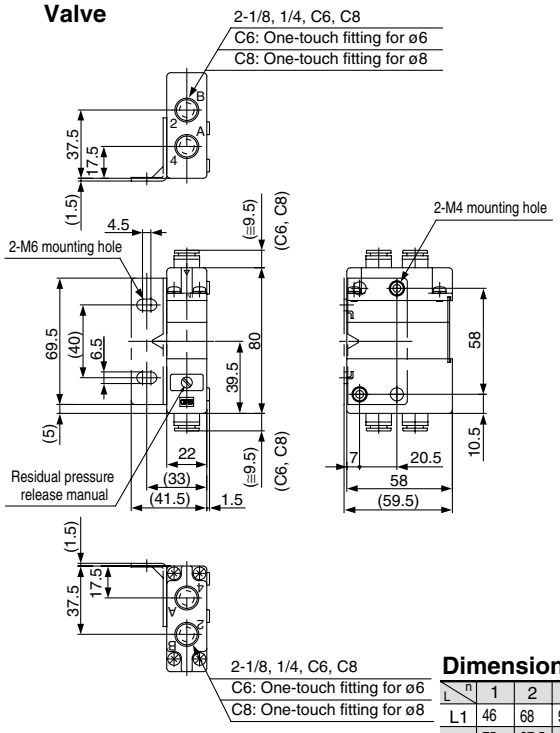
<Check Valve Operation Principle>



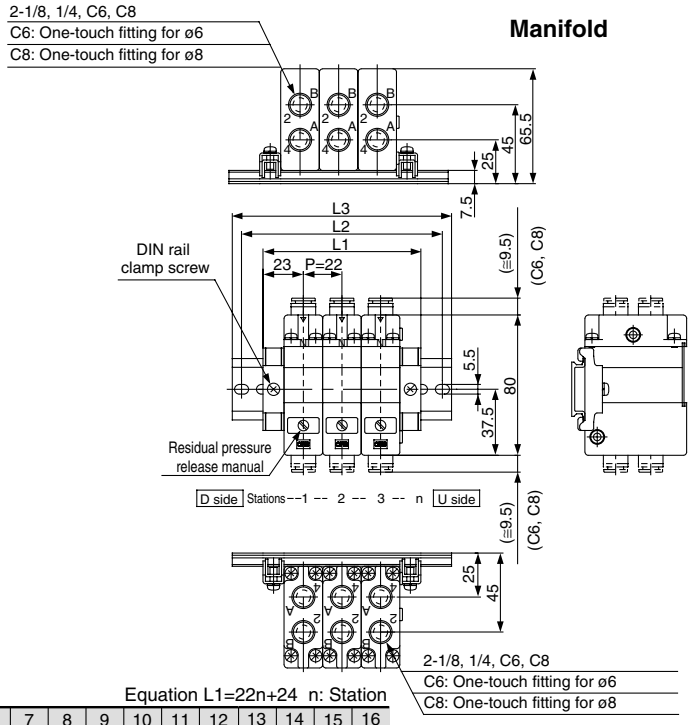
Note 1) As per JISB8375-1981
(Supply pressure: 0.5MPa)

Dimensions

Valve



Manifold



Dimensions Equation L1=22n+24 n: Station

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

How to Order

Double check block

VQ2000–FPG– [01□] [01□] – [F]

IN side port size

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

OUT side port size

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

Option

–	None
D	DIN rail mounting (for manifold)
F	With bracket
N	Name plate

Note) If specifying more than one option, please list alphabetically. Ex.) -DN

Thread

–	Rc (PT)
F	G (PF)
N	NPT
T	NPTF

Manifold

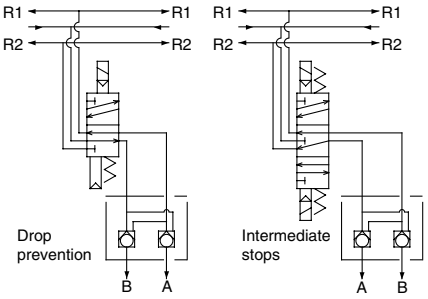
VVQ2000–FPG– [06]

Stations

01	1 station
⋮	⋮
16	16 stations

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

<Example>



⚠ 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 leakage.
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- When screwing the fittings in the double check block, applied torque is as shown below:

Thread	Applicable tightening torque (Nm)
1/8	7 to 9
1/4	12 to14

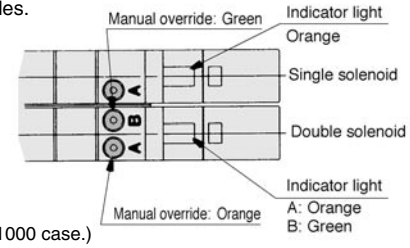
- If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop intermediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

⚠ Precautions

⚠Caution

Indicator Light and Surge Voltage Suppressor

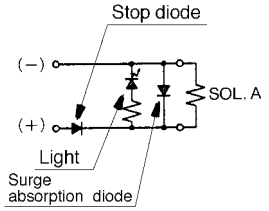
The lighting positions are concentrated on one side for both single solenoid style and double solenoid style. In the double solenoid style, A-side and B-side energization are indicated by two colors which match the colours of the manual overrides.



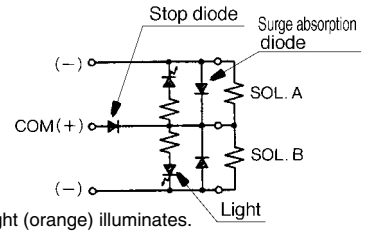
(DWG shows a VQ1000 case.)

DC Type Circuit Diagram

Single solenoid



Double solenoid



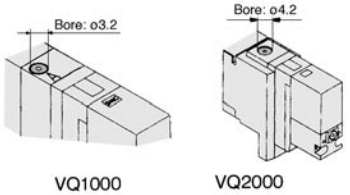
Note) A-side energization: A light (orange) illuminates.
B-side energization: B light (green) illuminates.
Equipped with a wiring error prevention (stop diode) mechanism and a surge absorption (surge absorption diode) mechanism.

⚠Warning

Manual Override

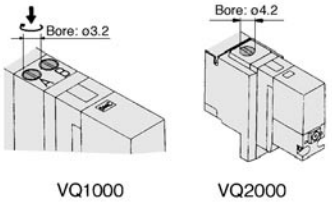
Without an electric signal for the solenoid valve the manual override is used for switching the main valve. Standard model: Non-locking push style Option: Push-locking slotted/lever style.

■Non–locking push style



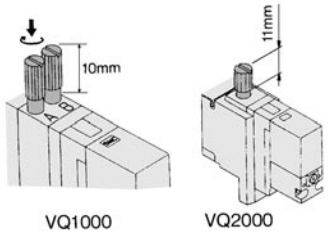
Push down on the manual override button with a small screwdriver unit it stops. Release the screwdriver and the manual override will return.

■Push–locking slotted style<Option>



Push down on the manual override button with a small screwdriver unit it stops. While down, turn clockwise by 90˚ to lock it. Turn it counterclockwise to release it.

■Push–locking lever style<Option>



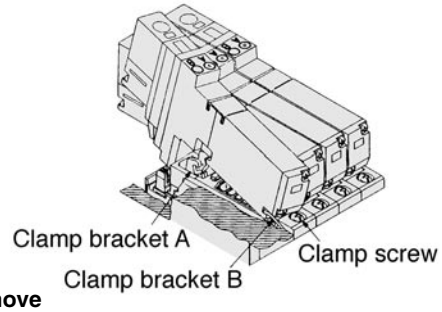
Push down on the manual override button with a small screwdriver or with your fingers until it stops.Turn clockwise by 90˚ to lock it. Turn it counterclockwise to release it.

⚠Caution

Do not apply too much torque when turning the lock style manual override. (0.1Nm or less)

⚠Caution

How to Mount/Remove Solenoid Valve



How to remove

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

How to mount

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

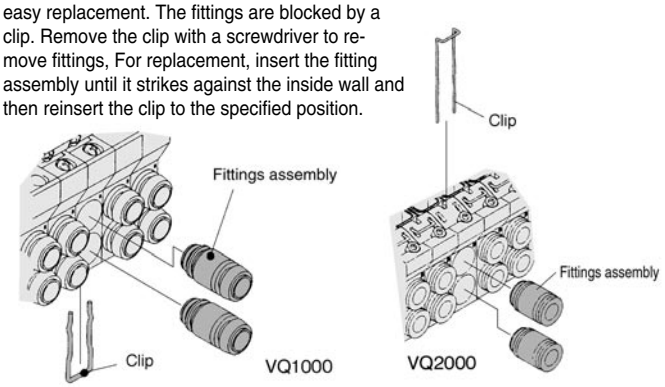
⚠Caution

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

⚠Caution

Replacement of Cylinder Port Fittings

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



Applicable tube O.D	Fitting ass'y No.	
	VQ1000	VQ2000
Applicable tube ø3.2	VVQ1000-50A-C3	—
Applicable tube ø4	VVQ1000-50A-C4	VVQ1000-51A-C4
Applicable tube ø6	VVQ1000-50A-C6	VVQ1000-51A-C6
Applicable tube ø8	—	VVQ1000-51A-C8
M5 thread	VVQ1000-50A-M5	—

∗ Refer to "Options" for other types of fittings.

⚠Caution

1) Protect O-rings from scratches and dust to prevent air leakage.
2) After screwing in the fittings,mount the M5 fitting assembly on the manifold base. {Tightening torque: 0.8 to 1.2Nm}
3) The minimum order quantity is 10 pcs.

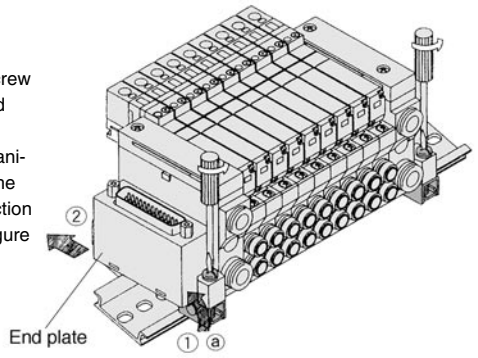
⚠ Precautions

⚠Caution

Mounting/Removing from the DIN Rail

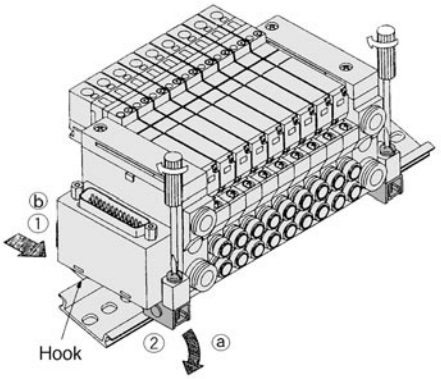
Removing

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



Mounting

1) Hook side (b) of the manifold base on the DIN rail.
2) Press down side (a) and mount the end plate on the DIN rail. Tighten the clamp screw on side (a) of the end plate. The appropriate tightening torque is 0.8 to 1.2Nm.



⚠Caution

Enclosure IP65

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

⚠Caution

Built-in Silencer Replacement Element

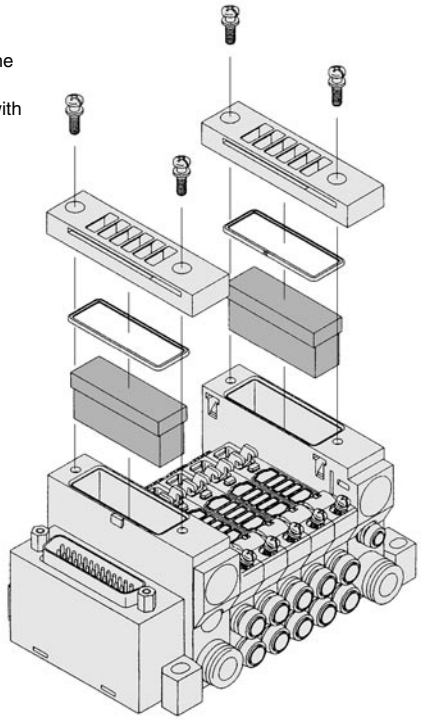
A silencer element is incorporated in the end plate on both sides of the manifold base. A dirty and choked element may reduce cylinder speed or cause malfunction.
Clean or replace the dirty element.

Element part No.

Model	Element part No.	
	VQ1000	VQ2000
Built-in silencer, Direct exhaust	VVQ1000-82A-1	VVQ2000-82A-1

∗ The minimum order quantity is 10 pcs. (5 sets).

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

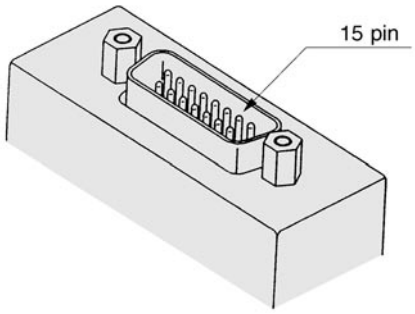


Options

Different Number of Connector Pins

F kit or P kit with a different number of pins (standard pins; F=25, P=26) are available. 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 pin**



How to Order Manifold

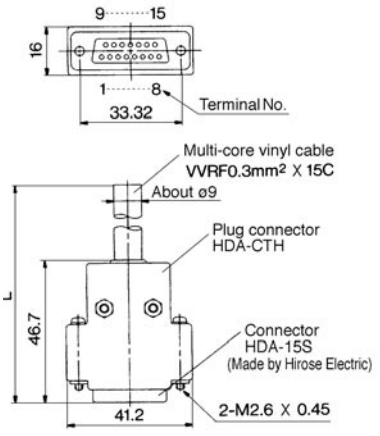
VV5Q11 — 06 C6 F SA — N -Q

- 06: Stations
- C6: Cylinder ports
- SA: Kit, Electrical entry
- N: Option

How to order
D-sub connector, 15 pin
Connector location-Side (horizontal)
Without cable

Kit, Electrical entry

Pins \ Location	Top (vertical)		Side (horizontal)	
15 pin (Max. 7 stations)	F Kit	suffix: UA	F Kit	suffix: UA



Wire colour table by terminal number of D–sub connector cable assembly

Terminal no.	Lead wire colour	Dot marking
1	Black	—
2	Brown	—
3	Red	—
4	Orange	—
5	Yellow	—
6	Pink	—
7	Blue	—
8	Violet	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black

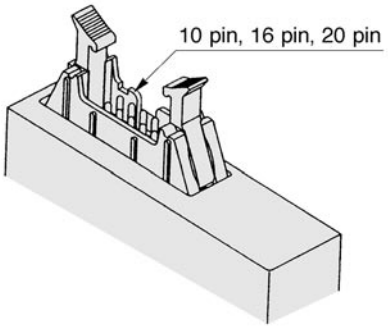
∗ In the same way as the 25 pin (standard) products, the terminal No.1 is for SOL. A at the 1st station, the terminal No.9 for SOL.B at the 1st station, and the terminal No.8 for COM.

D-sub connector cable assembly

Length (L) \ Pins	15 pin
1.5m	AXT100-DS15-1
3m	AXT100-DS15-2
5m	AXT100-DS15-3

∗ When using other commercially available connectors, select models that conform to MIL-C-24308.

P **Kit (Flat cable connector) 10 pin, 16 pin, 20 pin**



How to Order Manifold

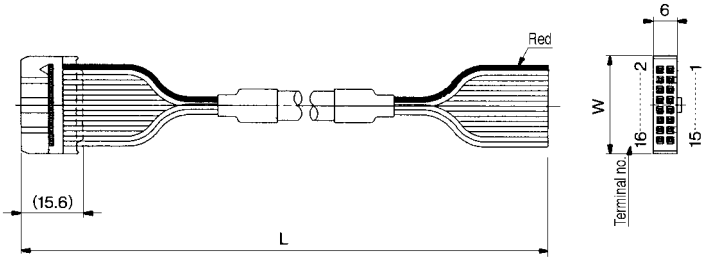
VV5Q11 — 06 C6 P SC — N -Q

- 06: Stations
- C6: Cylinder ports
- SC: Kit, Electrical entry
- N: Option

How to order
Flat cable, 20 pin
Connector location-Side (horizontal)
Without cable

Kit, Electrical entry

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



∗ In the same way as the 26 pin (standard) products, 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 cable assembly

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

∗ When using other commercially available connectors, select models with strain relief that conform to MIL-C-83503.

Options

Special Wiring Specifications

Regardless of the valve or option, the standard internal wiring for double solenoid capability is provided to each station of F/P/G/S/T kit. As optional specifications, combinations of single and double wiring(connected to SOL. A, B) are available.

1. How to Order

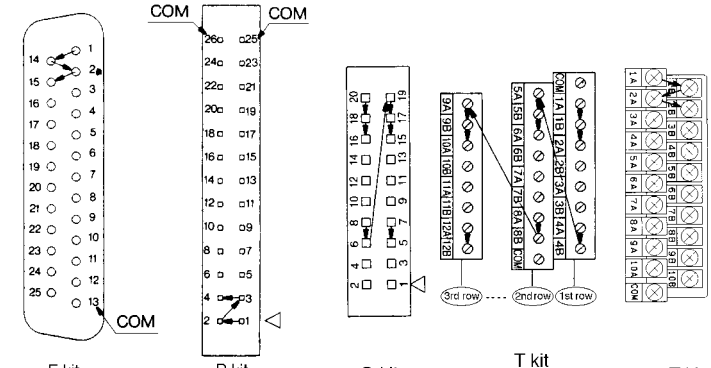
Indicate an option symbol, "-K," for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification form.

How to order manifold **VV5Q11–08C6FU1–D K S-Q**

List option symbols in alphabetical order

2. Wiring specification

With the A side solenoid of the 1st station as no.1 (meaning to be connected to no.1 terminal), wires are connected in the order indicated by the arrow in the DWG without making any terminal vacant.



F kit D-sub connector (25 pin) | P kit Flat cable connector (26 pin) | G kit Flat cable with terminal block | T kit Terminal block (VQ1000 24 terminals) | T kit Terminal block (VQ2000)

3. Max. number of stations

The max. 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 cable connector)				G kit (Flat cable with terminal block)	T kit (Terminal block)			S kit (Serial transmission)
Model	FU□ 25P	FUA 15P	PU□ 26P	PUC 20P	PUB 16P	PUA 10P	G□	VQ1000	2rows of terminal blocks 16	3rows of terminal blocks 24	S□
Max. number	24	14	24	18	14	8	16	VQ2000	20		16

Negative COM Specifications

Specifiy the valve model no. as shown below for negative COM specification. The manifold no. shown below is for the T and L kits. For other kits the standard manifold can be used. Contact SMC for negative COM S or G kit.

VQ1100 N – 5-Q

Negative COM specification

How to Order Negative COM Manifold

T kit:

VV5Q11 – 06 C6 T N – N -Q

- **Option**
- **Negative COM specification**
- **Cylinder ports**
- **Stations**

L kit:

VV5Q11 – 06 C6 L N 1 – N -Q

- **Stations**
- **Cylinder ports**
- **Negative COM specification**
- **Option**
- **Electrical entry (Cable length)**

0	With cable (0.6m)
1	With cable (1.5m)
2	With cable (3m)

Dual Style 3 position Double Valve

3 potition double valve is used when single electrical wiring is applied to each station of the manifold base. By adopting single wiring for the manifold base and using this dual valve, wiring when single and double valves are mixed will be efficient. Two stations are used for a dual style valve.

How to Order

VQ1 [2] 0 [1] [D] – [5] [ ] [ ] -Q

Configuration

2	2 position double
3	3 position closed centre
4	3 position exhaust centre
5	3 position pressure centre

Seal

0	Metal
1	Rubber

Pilot valve specifications

Symbol	Specification	DC
—	Standard	(1.0W) ○
D	Dual style	○
H	High pressure	(1.5W) ○
Y	Low wattage	(0.5W) ○

Note) If specifying more than one option, please list alphabetically.

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less
Order Made	Contact SMC for other voltages (9)

Indicator light and surge voltage suppressor

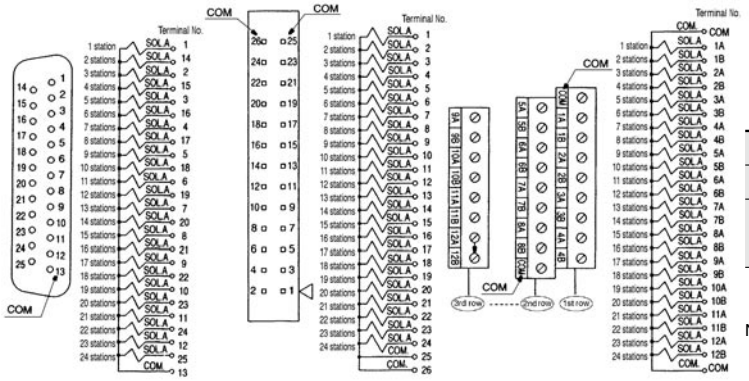
—	Yes
E	No

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style

∗ Order a singl wiring manifold base. Suffix option code "-K" to the manifold number, and specify single wiring by means of the manifold specification form. (Reter to the special wiring specifications on p.1-750 for details).

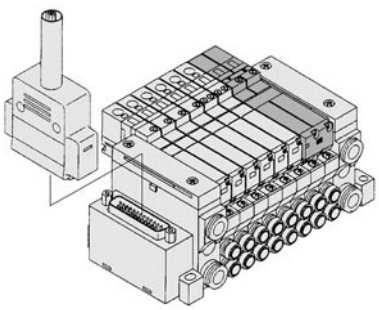
Single Wiring Specifications



F kit
D-sub connector
(25 pin)

P kit
Flat cable connector
(26 pin)

T kit
Terminal block
(24 terminals)



External Pilot Specifications

When the supply air pressure is lower than the required minimum operating pressure (0.1 to 0.2MPa) for the solenoid valve (or when the valve is used for vacuum), specify an external pilot model.
Order a manifold or valve by suffixing the external pilot specification, "R."
The X-port of the manifold base is equipped with One-touch fittings for external pilot.
VQ1000: C4(One-touch fitting for ø4)
VQ2000: C6(One-touch fitting for ø6)

How to Order Manifold

VV5Q11–08C6FU1–RS-Q

List option symbols in alphabetical order

How to Order Valve

VQ1100 R –5-Q

External pilot specification

Note 1) When low wattage is also desired, specify as "RY".
Note 2) In this valve pilot exhaust is connected to the EA passage of the manifold. Therefore, it is not possible to supply air from EXH port, nor vacuum from ports other than SUP port.

Inch-size One-touch Fitting

The valve with inch-size One-touch fittings is shown below.

VV5Q11– [06] [N7] [PS0] – [N] -Q

Stations
Cylinder ports
Kit/Electrical entry
Option

Symbol		N1	N3	N7	N9	M5T	NM
Applicable tube O.D. (inch)		ø1/8"	ø5/32"	ø1/4"	ø5/16"	10-32UNF (M5 thread)	Mixed size
A, B port	VQ1000	●	●	●	—	●	●
	VQ2000	—	●	●	●	—	●

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

P, R port size
VQ1000····· ø5/16"(N9)
VQ2000····· ø3/8"(N11)

Options

DIN Rail Mounting Style

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. 30mm longer than the manifold with the specified number of stations is attached.

●When DIN rail is unnecessary

(DIN rail mounting brackets only are attached.)

Indicate the option symbol, "-D0." for the manifold no.

Example)

VV5Q11-08C6FU1-D0S-Q

List option symbols in alphabetical order

●When using DIN rail longer than the manifold with specified number of stations

Clearly indicate the necessary number of stations next to the option symbol, "–D." for the manifold no.

Example)

VV5Q11-08C6FU1-D09S-Q

DIN rail for 9 stations

List option symbols in alphabetical order

●When changing the manifold style into a DIN rail mounting

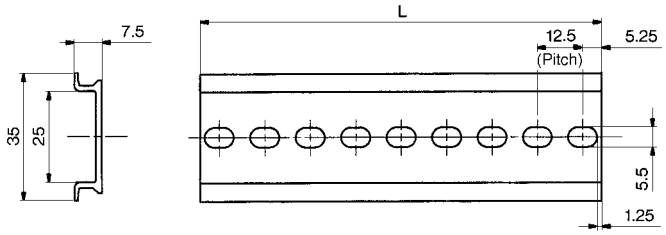
Order brackets for mounting a DIN rail. (See "Options" on p.1.12-150 and 1.12-155)

No. VVQ1000-57A (For VQ1000)
VVQ2000-57A (For VQ2000)
2 pcs. per one set.

●When ordering DIN rail only

DIN rail No. AXT100-DR-□

∗ Put no. in the square using the DIN rail dimensional table.
Refer to the each kit dimensional drawing for L dimension.



L dimension (mm) L=12.5 X n+10.5

No.	1	2	3	4	5	6	7	8	9	10
L	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	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	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	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

VQ0000
Base Mounted
Plug Lead Unit

How to Order Manifold

VV5Q 05 – 08 C4 F U1 – D -Q

Series

05	VQ0000

Stations

01	1 station
⋮	⋮

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

Cylinder ports

Symbol	Port size
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
M5	M5 thread
CM	Mixed size/with port plug (1)

Note 1) Specify "Mixed size/with port plug" by means of manifold specification form.
Note 2) Refer to "Options" on p1-788 for One-touch fittings in inch sizes.
Note 3) M5 fittings for M5 thread are attached without being incorporated.

Kit

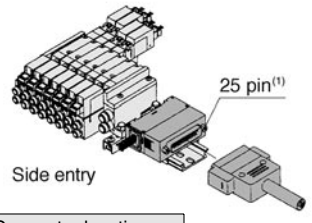
Option

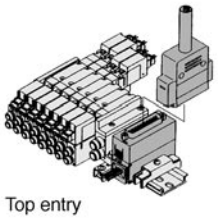
Symbol	Option
–	None
D	DIN rail mounting (2)
K	Special wiring specification (Not double wiring) (3)
N	With name plate
S	Built-in silencer (Direct exhaust)

Note 1) When specifying more than one option, please list 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 by means of the manifold specification form. (Except for C kit.)

Kit/Electrical entry/Cable length

F Kit (D-sub connector)

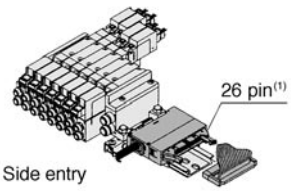


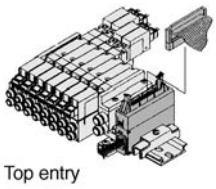


P.1-760

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

P Kit (Flat cable connector)

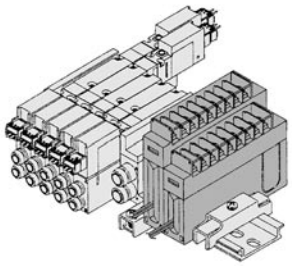




P.1-764

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

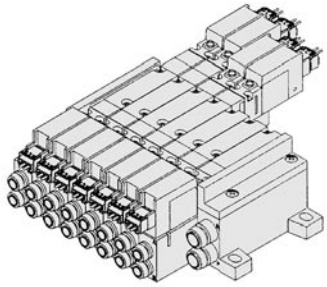
T Kit (Terminal box)



P.1-768

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

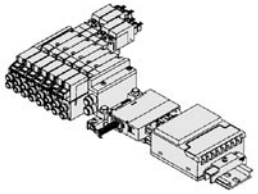
C Kit (Connector)



P.1-772

C	Connector	Max. 16 stations

S Kit (Serial transmission unit)



The valve is equipped with an indicator light and surge voltage suppressor, and the voltage is 24VDC. Contact SMC for details.

P.1-776

S Kit	B	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)	Max. (2) 16 stations
	C	SI unit for SYSBUS Wire System (OMRON)	
	N	SI unit for Profibus DP	
	P	SI unit for Interbus	
	Q	SI unit for Device Net and CompoBus/D (OMRON)	
	Y	SI unit for Can Open	
	T2	SI unit for ASI (yellow+black wires)	Max. 8
	T4	SI unit for ASI (yellow+black wires)	Max. 4
	T5	SI unit for ASI (yellow wires)	

Note 1) Besides the above, F and P kits with different number of pins are available. Refer to p.1787 for details.
Note 2) Refer to p.1.12-198 for details.
Note 3) Consult SMC for the following transmission kits; Matsushita Electric Works Ltd., Allen-Bradley Co., Sunx, Fuji Electric Company Ltd., OMRON Corp.

How to Order Valve

VQ 0 1 5 0 Y – 5 LO □ -Q

Series

0	VQ0000

Configuration

1	2 position single
2	2 position double
3	3 position closed centre
4	3 position exhaust centre

Body

5	VQ0000

Seal

0	Metal
1	Rubber

Manual override

—	Non-locking push style
B	Push-locking slotted style

Electrical entry

G: Grommet (C Kit only Except for 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
	*	*

Note 1) LO or MO type valve is used for F, P, T, and S kits.The plug coneector 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.
* With indicator light and surge voltage supressor.

Pilot valve

Symbol	Specification
—	1.0W(0.7MPa Max. operating pressure)
H	1.5W(0.8MPa Max. operating pressure)
K (1)	1.0W(1.0MPa Max. operating pressure)
Y	0.5W(0.7MPa Max. operating pressure)
N	Negative common

* Only the following combination is possible. HN, KN, YN.
Note 1) Available only to metal seal type.

Coil voltage

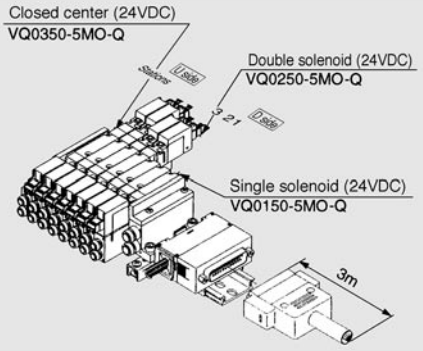
5	24 V DC
6	12 V DC
9	50 V or less
Order Made	Contact SMC for other voltages (9)

Note 1) Refer to "Options" on p.1-788 for negative COM specifications.
Note 2) F, P, T and S kits requires connector ass'y when increasing valve stations. Refer to "Options" on p1-788 for parts nos.

Protective class class III (Mark: ⏀)

How to Order Manifold Ass'y (Example)

Ordering example

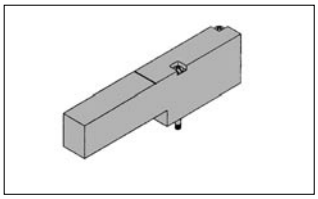


VV5Q05-07C4FS2-D-Q ··· 1 set (F kit 7 station manifold base No.)
VQ0150-5MO-Q ··· 3 set (Single solenoid No.)
VQ0250-5MO-Q ··· 2 set (Double solenoid No.)
VQ0350-5MO-Q ··· 2 set (3 position solenoid No.)

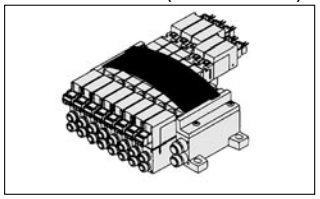
Specify valve and option nos. below the manifold base no. When arrangement is complicated, specify the nos. by using a manifold specification form.

Manifold Options

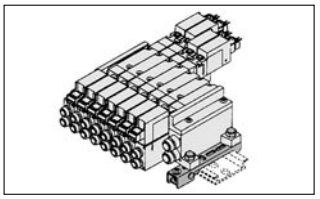
Blank plate assembly
VVQ0000-10A-5



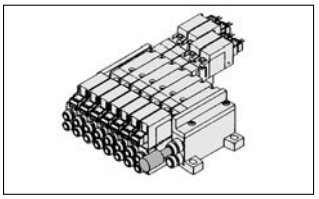
Name plate [-N*]
VQ0000-N5-Station (1 to Max. stations)



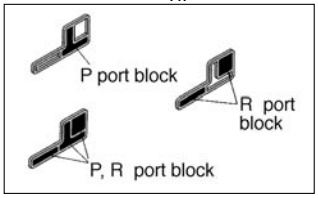
DIN rail mounting bracket [-D]
VVQ0000-57A-5



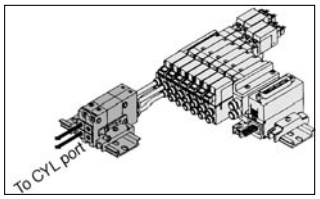
Silencer AN103-X233



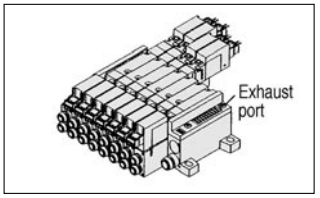
SUP/EXH block plate
VVQ0000-16A-5- P / R / PR



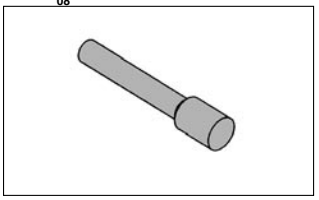
Double check block
VQ1000-FPG-□□



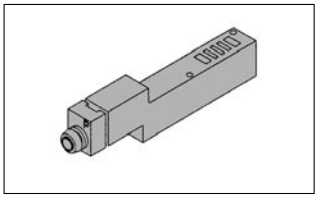
Built-in silencer, Direct exhaust [-S]



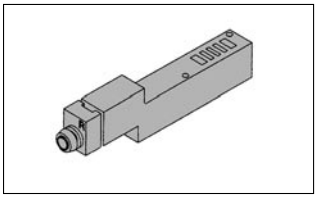
Blank plug
KQP- 23 / 04 / 06 / 08 **-00**



Individual SUP spacer
VVQ0000-P-5-C4



Individual EXH spacer
VVQ0000-R-5-C4



●Refer to p.1-785 for cylinder port fittings.
●Refer to p1-803 for replacement parts.

VQ1000
Base Mounted
Plug Lead Unit

How to Order Manifold

VV5Q 12 – 08 C6 F U1 – D -Q

Series

12	VQ1000

Stations

01	1 station
⋮	⋮

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

Cylinder ports

Symbol	Port size
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
M5	M5 thread
CM	Mixed size/with port plug
L3	Elbow One-touch fitting ø3.2 for top piping
L4	Elbow One-touch fitting ø4 for top piping
L6	Elbow One-touch fitting ø6 for top piping
L5	Elbow M5 thread for top piping
B3	Elbow One-touch fitting ø3.2 for bottom piping
B4	Elbow One-touch fitting ø4 for bottom piping
B6	Elbow One-touch fitting ø6 for bottom piping
B5	Elbow M5 thread for bottom piping
LM	Mixed size for elbow piping

Note 1) Specify "Mixed size/with port plug" by means of manifold specification form.
Note 2) Refer to "Options" on p.1-788 for One-touch fittings in inch sizes.
Note 3) M5 fittings for M5 thread are attached without being incorporated.

Kit

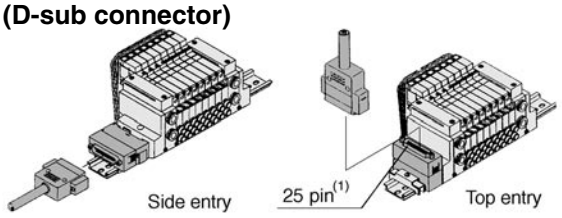
Option

Symbol	Option
—	None
B	Check valve for prevention of back pressure
D	DIN rail mounting (3)
K	Special wiring specification (Not double wiring) (4)
N	With name plate
S	Built-in silencer (Direct exhaust)

Note 1) If specifying more than one option, please list alphabetically. Example) -BNS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by manifold specification form.
Note 3) Manifolds are all equipped with a DIN rail, so indicate suffix "D".
Note 4) Specify the wiring by means of the manifold specification form. (Except for C kit)

Kit/Electrical entry/Cable length

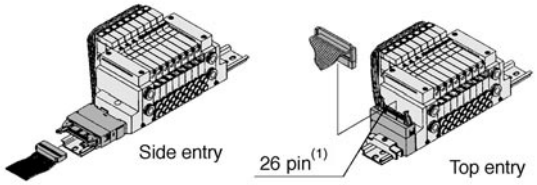
F Kit (D-sub connector)



P.1-760

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

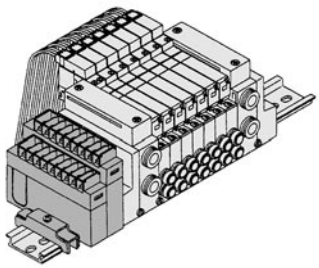
P Kit (Flat cable connector)



P.1-764

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

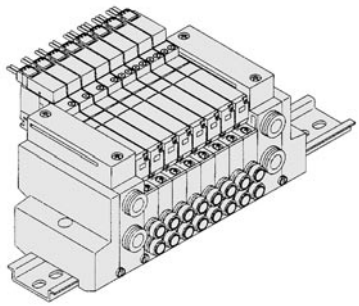
T Kit (Terminal block)



P.1-768

T Kit	1	Number of terminals: 8, 1row	Applicable stations: 1 to 4
	2	Number of terminals: 16, 2rows	Applicable stations: 5 to 8 (2)

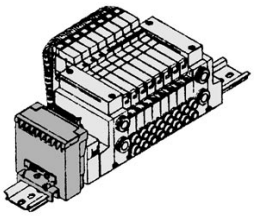
C Kit (Connector)



P.1-772

C	Connector	Max. 16 stations

S Kit (Serial transmission unit)



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

P.1-776

S Kit	B	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)	Max. (2) 16 stations
	C	SI unit for SYSBUS Wire System (OMRON)	
	N	SI unit for Profibus DP	
	P	SI unit for Interbus	
	Q	SI unit for Device Net and CompoBus/D (OMRON)	
	Y	SI unit for Can Open	
	T2	SI unit for ASI (yellow+black wires)	Max. 8
	T4	SI unit for ASI (yellow+black wires)	Max. 4
	T5	SI unit for ASI (yellow wires)	

Note 1) Besides the above, F and P kits with different number of pins are available. Refer to p.1-787 for details.
Note 2) Refer to p.1788 for details.

How to Order Valve

VQ 1 [1] [1] [0] [Y] – [5] [LO] [ ] -Q

Series

1	VQ1000

Configuration

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

Body

1	VQ1000

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification
—	1.0W(0.7MPa Max. operating pressure)
H	1.5W(0.8MPa Max. operating pressure)
K (1)	1.0W(1.0MPa Max. operating pressure)
Y	0.5W(0.7MPa Max. operating pressure)
N	Negative common

* Only the following combination is possible.
HN, KR, HNR, KN, KR, KNR, RY, NY, NRY, NR.
Note 1) Available only to metal seal type.

Electrical entry

L: L plug connector with lead wire	LO: L plug connector without connector
With indicator light and voltage suppressor	With indicator light and voltage suppressor

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

Manual override

— Non-locking push style	B Push-locking slotted style
	C Push-locking lever style

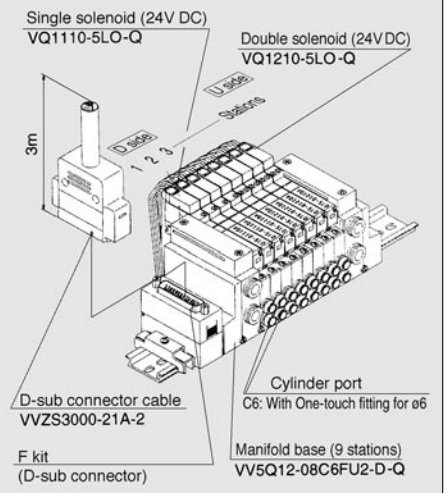
Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

How to Order Valve Manifold Ass'y (Example)

Ordering example



VV5Q12-08C6FU2-D-Q ···1 set (F kit 8 station manifold base No.)
VQ1110-5LO-Q ·····4 sets (Single solenoid No.)
VQ1210-5LO-Q ·····4 sets (Double solenoid No.)

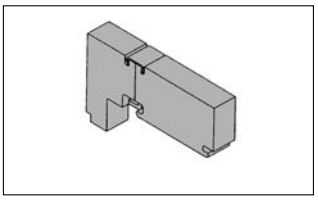
Specify valve and option nos. below the manifold base no. When arrangement is complicated, specify the nos. by using a manifold specification form.

Protective class
class III (Mark:⏀)

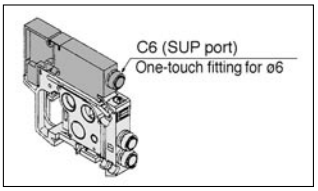
Manifold Options

P.1-782

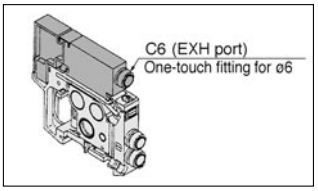
Blank plate assembly
VVQ1000-10A-1



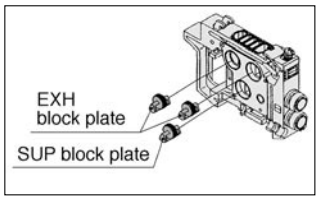
Individual SUP spacer
VVQ1000-P-1-C6



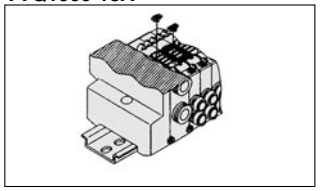
Individual EXH spacer
VVQ1000-R-1-C6



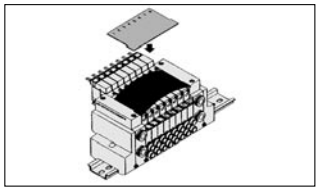
SUP/EXH block plate
VVQ1000-16A-2



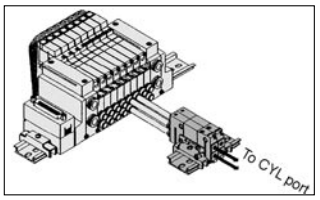
Check valve for prevention of back pressure assembly [-B]
VVQ1000-18A



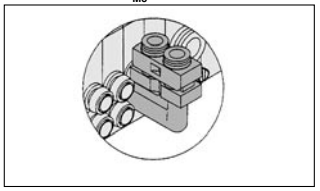
Name plate [-N∗]
VQ1000-N2-Station (1 to Max. stations)



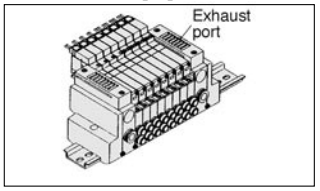
Double check block
VVQ1000-FPG-□□



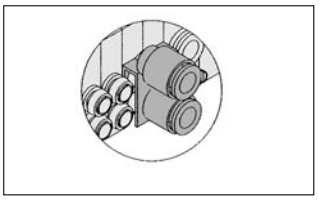
Elbow fitting assembly
VVQ1000-F-L C3 C4 C6 M5



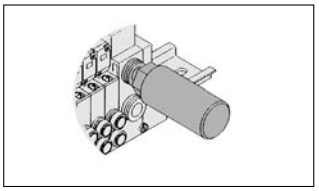
Built-in silencer,
Direct exhaust [-S]



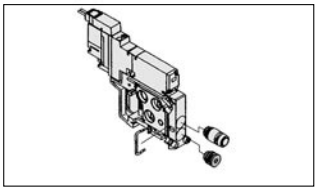
2 stations matching fitting assembly
VVQ1000-52A-C8



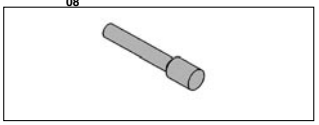
Silencer AN200-KM8



Port plug
VVQ0000-58A

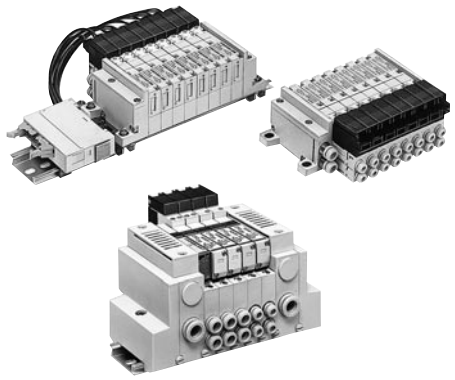


Blank plug
KQ2P- 23 04 06 08 **-00**



●Refer to p.1-785 for cylinder port fittings.
●Refer to p.1-805 for replaceable parts.

VQ0000/1000 Base Mounted
Plug Lead Unit



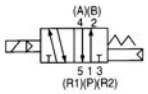
Model

Series	Configuration		Model		Effective area (1) (mm^2) (Nℓ/min)	Response time (ms)(2) Standard: 1W H: 1.5W	Weight (g)
VQ0000	2 position	Single	Metal seal	VQ0150	2.7 (147.23)	12 or less	36
			Rubber seal	VQ0151	3.6 (196.3)	15 or less	
		Double	Metal seal	VQ0250	2.7 (147.23)	10 or less	50
			Rubber seal	VQ0251	3.6 (196.3)	15 or less	
	3 position	Closed centre	Metal seal	VQ0350	2.0 (107.97)	20 or less	
			Rubber seal	VQ0351	2.7 (147.23)	25 or less	
		Exhaust centre	Metal seal	VQ0450	2.0 (107.97)	20 or less	
			Rubber seal	VQ0451	2.7 (147.23)	25 or less	
VQ1000	2 position	Single	Metal seal	VQ1110	3.6 (196.3)	12 or less	64
			Rubber seal	VQ1111	5.4 (294.45)	15 or less	
		Double	Metal seal	VQ1210	3.6 (196.3)	10 or less	78
			Rubber seal	VQ1211	5.4 (294.45)	15 or less	
	3 position	Closed centre	Metal seal	VQ1310	3.6 (196.3)	20 or less	
			Rubber seal	VQ1311	5.4 (294.45)	25 or less	
		Exhaust centre	Metal seal	VQ1410	3.6 (196.3)	20 or less	
			Rubber seal	VQ1411	5.4 (294.45)	25 or less	
		Pressure centre	Metal seal	VQ1510	3.6 (196.3)	20 or less	
			Rubber seal	VQ1511	5.4 (294.45)	25 or less	

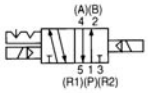
Note 1) Cylinder port size C4: (VQ0000), C6: (VQ1000) without check valve option for prevention of back pressure.
Note 2) As per JISB8375-1981 (supply pressure; 0.5 MPa; with indicator light and surge voltage suppressor; clean air) The response time is subject to the pressure and quality of the air. The values at the time of ON are given for double styles.

JIS Symbol

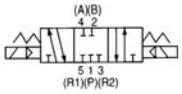
2 position single



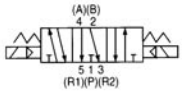
2 position double



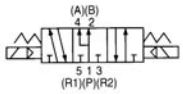
3 position closed center



3 position exhaust center



3 position pressure center



Standard Specifications

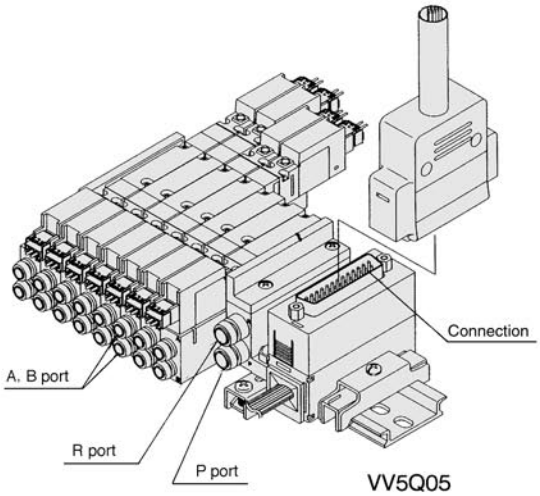
Valve	Seal		Metal seal	Rubber seal
	Fluid		Air/Inert gas	Air/Inert gas
	Max.operating pressure		0.7MPa(High pressure type: 0.8MPa)	
	Min. operating pressure	Single	0.1MPa	0.15MPa
		Double	0.1MPa	0.1MPa
		3 position	0.1MPa	0.2MPa
	Ambient and fluid temperature		–10 to +50˚C (1)	
	Lubrication		Not required	
	Manual override		Non-locking push style/Push-locking slotted or lever style (Option)	
	Impact/Vibration resistance (2)		150/30m/s^2	
	Protection structure		Dust proof	
Solenoid	Coil rated voltage		12, 24V DC	
	Allowable voltage		±10% of rated voltage	
	Coil insulation		Class B or equivalent	
	Power consumption (Current value)	24V DC	1W DC (42mA), 1.5W DC (63mA),(3) 0.5W DC (21mA),(4)	
		12V DC	1W DC (83mA), 1.5W DC (125mA),(3) 0.5W DC (42mA),(4)	

Note 1) Use dry air to prevent dew condensation when operating at low temperature.
Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, for both energized and de-energized states.
Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2,000 Hz. Test was performed at both energize and de-energized states to the axis and right angle directions of the main valve and armature. (Value in the initial stage.)
Note 3) Value for high pressure type (1.5W)
Note 4) Value for low pressure type (0.5W)

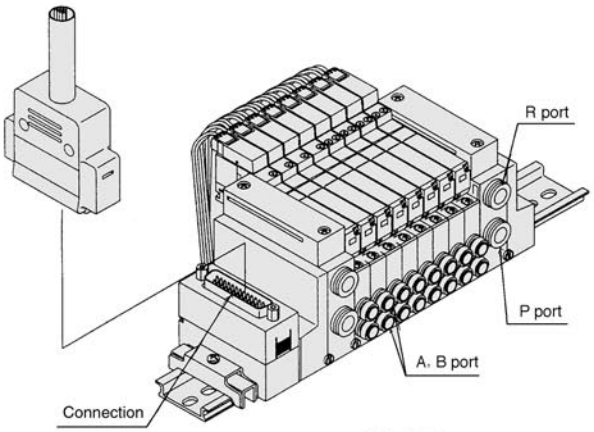
Manifold Specifications

Series	Base model	Electrical connection	Porting specifications			Applicable stations (2)	Applicable solenoid valve	5 station weight (g)
			Port location	Port size (1)				
				P, R	A, B			
VQ0000	**VV5Q05-□□□**	■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□50 VQ0□51	330 (Single) 400 (Double, 3-position)
VQ1000	**VV5Q12-□□□**	■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))	C3 (ø3.2) C4 (ø4) C6 (ø6) M5 (M5 therad)	1 to 16 stations	VQ1□10 VQ1□11	818 (Single) 885 (Double, 3-position)

Note 1) One-touch fittings in inch sizes are also available. Refer to p.1-788 for details.
Note 2) Refer to p1-788 for details.

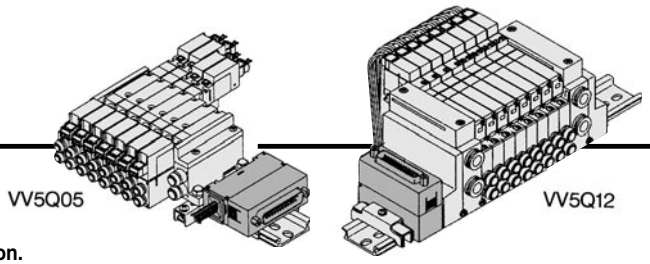


VV5Q05



VV5Q12

F VQ0000/1000
Kit(D-sub Connector)



- **The D-sub connector reduces installation labor for electrical connection.**
- **The D-sub connector (25 pin std., 15 pin option)conforms with MIL permitting use of commercial connectors with wide interchangeability.**
- **Top or side connector receptacle position can be selected in accordace with the available mounting space.**
- **Max.16 stations.**

Manifold Specifications

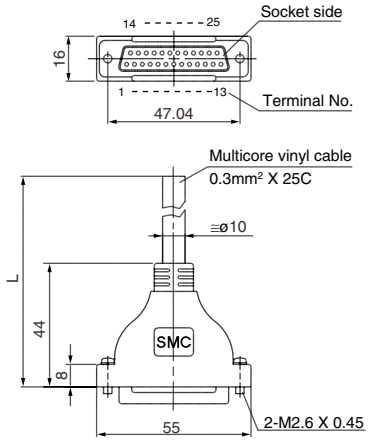
Series	Porting specifications			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ0000	Side	C6	C3, C4, M5	Max.16
VQ1000	Side	C8	C3, C4, C6, M5	Max.16

D-sub connector (25 pin)

AXT100-DS25- $^{015}_{030}$ $^{}_{050}$

Cable Assembly●

The D-sub connector cable ass'y can ordered individually or included in a specific manifold model No. Refer to "How to Order Manifold".



D-sub connector cable ass'y (Option)

Cable Length (L)	Ass'y No.
1m	GVVZS3000-21A-1
3m	GVVZS3000-21A-2
5m	GVVZS3000-21A-3
8m	GVVZS3000-21A-4
20m	GVVZS3000-21A-5S

Electric characteristics

Item	Characteristic
Conductor resistance Ω/km, 20˚C	65 or less
Voltage limit V, 1min, AC	1000
Insulation resistance MΩ/km, 20˚C	5 or more

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

Wire colour table by terminal number of D-sub connector cable ass'y:

Terminal No.	Wire colour	Dot marking
1	Black	—
2	Brown	—
3	Red	—
4	Orange	—
5	Yellow	—
6	Pink	—
7	Blue	—
8	Violet	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	Violet	—
18	Gray	—
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	—

Note) Types with 15 pin are also available. See p.1.12-197 for details.

How to Order Manifold

VV5Q 12 — 08 C6 F U 1 — D -Q

Series/Manifold●

05	VQ0000	Plug lead unit
12	VQ1000	

Stations●

01	1 station
⋮	⋮
08	8 stations (1)

Note 1) As option, the maximum number of stations can be increased by special wiring specifications. Refer to p.1-788 for details.

Cylinder ports●

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

Note 1) Specify "Mixed size/with port plug" by means of manifold specification form.
Note 2) Refer to "Options" on p.1-788 for One-touch fittings in inch sizes.

Connector location●

U	Top (vertical)
S	Side (horizontal)

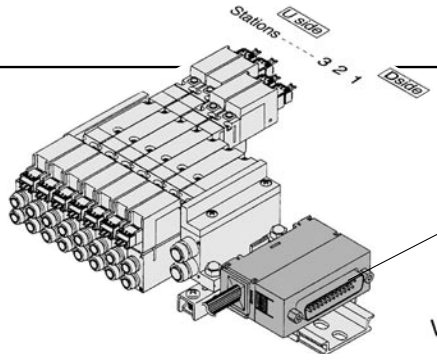
Cable (length)●

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

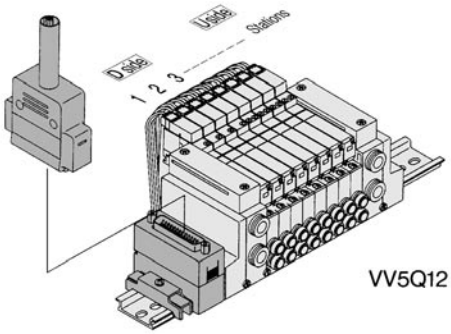
Option●

Symbol	Option	VQ0000	VQ1000
B	Check valve for prevention of back perss.		● (2)
D	DIN rail mounting	●	● (3)
K	Special wiring specification (Not double wiring)	●	● (4)
N	With name plate	●	●
S	Built-in silencer (Direct exhaust)	●	●

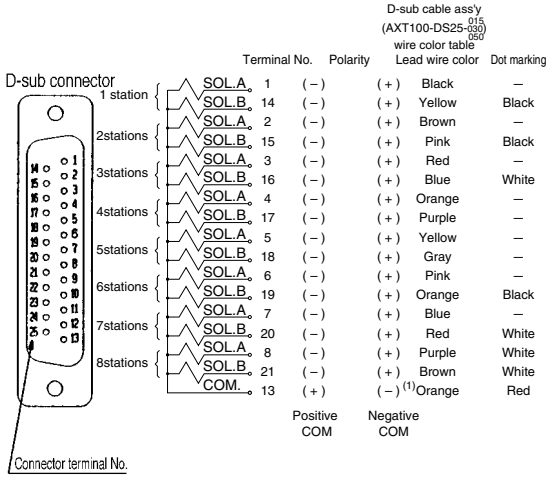
Note 1) If specifying more than one option, please list alphabetically.
Example) -BNS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using a manifold specification form.
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 by means of the manifold specification form.



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



Electrical Wiring Specifications



Irrespective of the valves or options, the internal wiring is made double(connected to SOL. A and SOL. B)for respective stations of the manifold. The optional specification permits mixture of single and double wiring.
See p.1-788 for details.

Note 1) Use negative COM valves for negative COM specification manifolds. (See p.1-788)

How to Order Valve

VQ 1 1 1 0 Y – 5 LO [ ] -Q

Series

0	VQ0000
1	VQ1000

Configuration

1	2 position single
2	2 position double
3	3 position closed centre
4	3 position exhaust centre
5	3 position pressure centre (VQ1000 only)

Body

5	VQ0000	Plug lead unit
1	VQ1000	

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H	High pressure	(1.5W) ○
Y	Low wattage	(0.5W) ○

Electrical entry

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

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

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style (1)

Note 1) VQ1000 only.

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

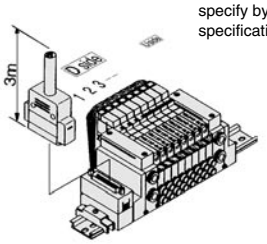
Note 1) Refer to "Options" on p.1-788 for negative COM specifications.
Note 2) F kit requires connector ass'y when increasing valve stations. Refer to "Options" on p.1-788 for part No.

How to Order Manifold Ass'y

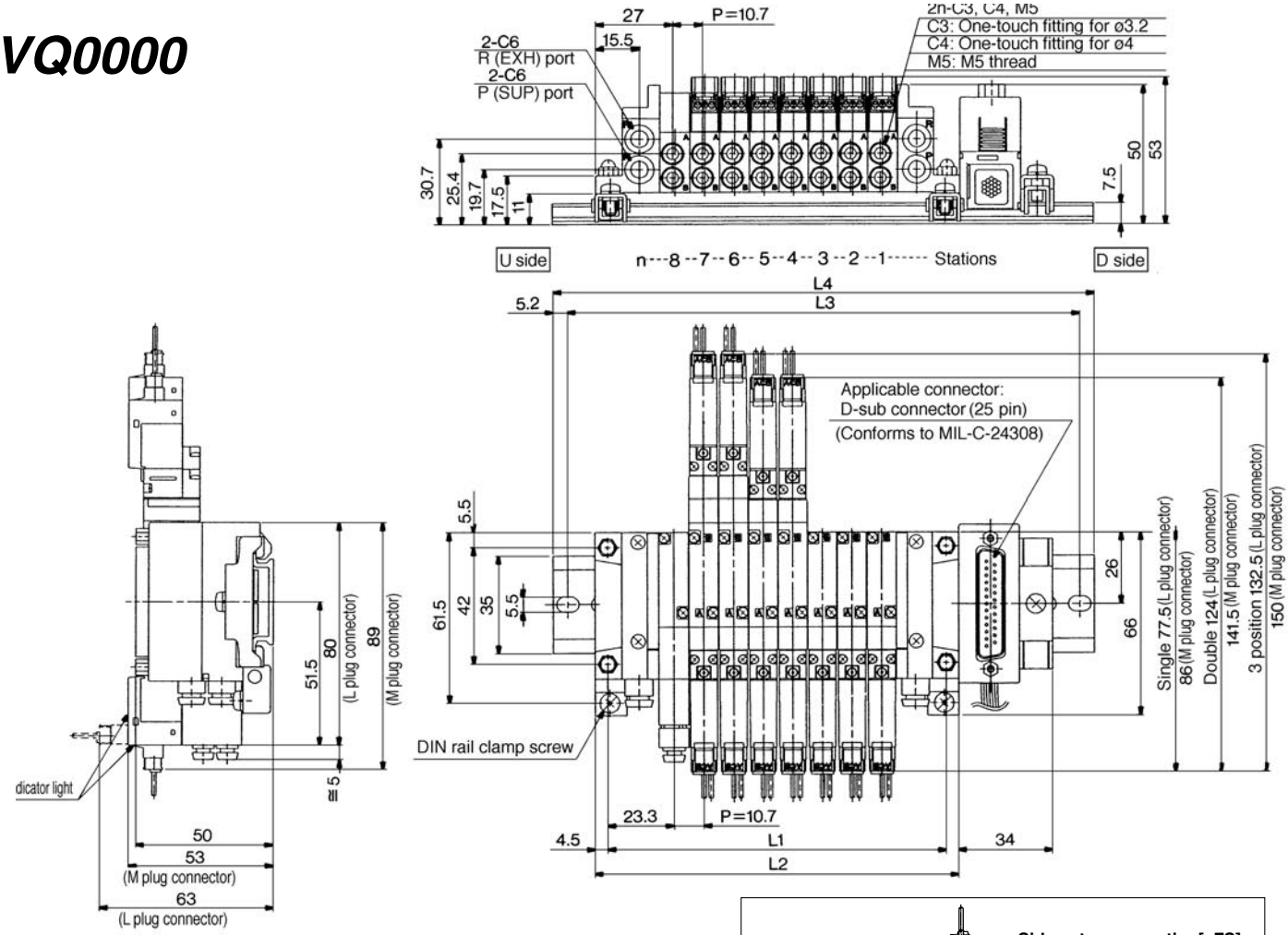
Specify valve and option Nos. below the manifold base no.

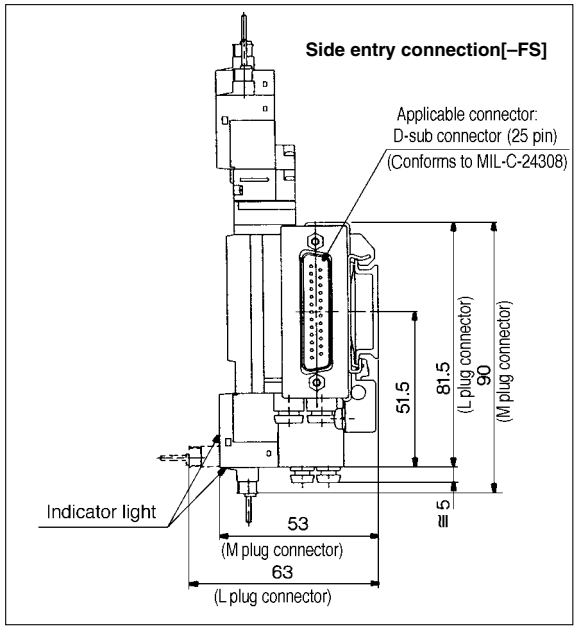
(Example)
D-sub connector kit with 3m cable
VV5Q12-08C6FU2-D-Q ···1 set–Manifold base No.
VQ1110-5LO-Q·····4 sets–Valve No. (Stations 1 to 4)
VQ1210-5LO-Q·····4 sets–Valve No. (Stations 5 to 8)
VQ1310-5LO-Q·····2 sets–Valve No. (Stations 7 to 8)
VVQ1000-10A-1 ·····1 set–Blank plate No.(Station 9)

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



VQ0000





Dimensions/Top entry connector [-FU] (mm)

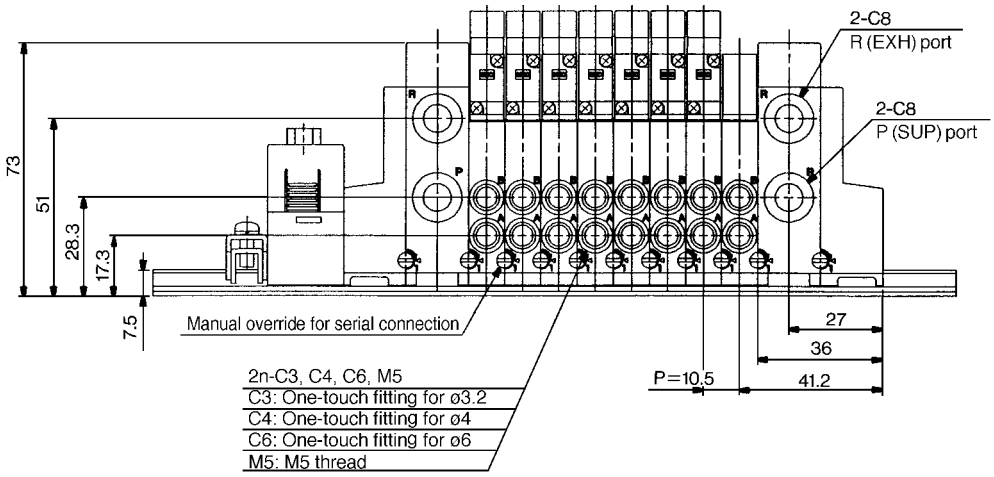
Equation L1=10.7n+36, L2=10.7n+45 n: Station (Max. 16)

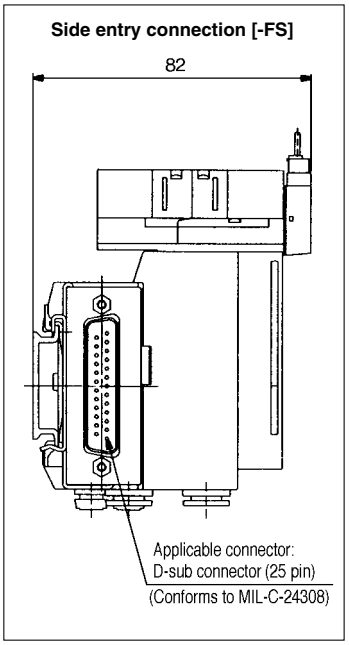
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	46.5	57.4	68.1	78.8	89.5	100.2	110.9	121.6	132.3	143	153.7	164.4	175.1	185.8	196.5	207.2
L2	55.7	66.4	77.1	87.8	98.5	109.2	119.9	130.6	141.3	152	162.7	173.4	184.1	194.8	205.5	216.2
L3	112.5	125	137.5	150	162.5	175	175	187.5	200	212.5	225	237.5	250	250	262.5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

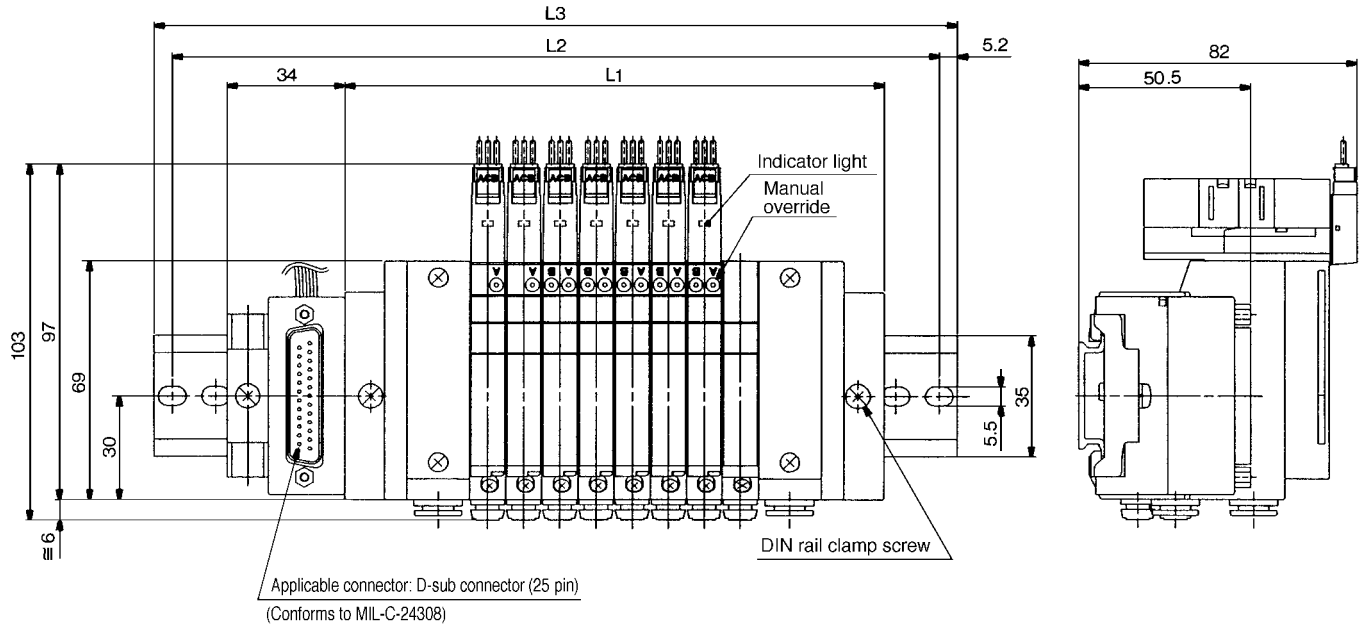
Dimensions/Side entry connector [-FS] (mm)

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

VQ1000







D side Stations ··· 1 ··· 2 ··· 3 ··· 4 ··· 5 ··· 6 ··· 7 ··· 8 ····· n U side

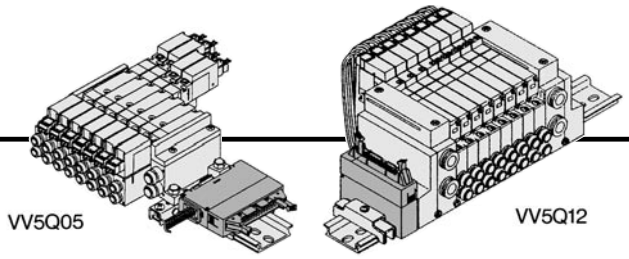
Dimensions/Top entry connector [-FU] (mm) Equation L1=10.5n+72 n: Station (Standrad max. 16)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	82.5	93	103.5	114	124.5	135	145.5	156	166.5	177	187.5	198	208.5	219	229.5	240
L2	137.5	150	162.5	175	187.5	200	200	212.5	225	237.5	250	262.5	262.5	275	287.5	300
L3	148	160.5	173	185.5	198	210.5	210.5	223	235.5	248	260.5	273	273	285.5	298	310.5

Dimensions/Side entry connector [-FS] (mm)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L2	162.5	175	187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5	300	312.5	312.5
L3	173	185.5	198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.5	323	323

P VQ0000/1000
Kit (Flat Cable Connector)



- **MIL flat cable connector reduces installation labor for electrical connection.**
- **The connector (26 pin; 10, 16, and 20 pin option) conforms with MIL spec. permitting use of widely interchangeable commercial connectors.**
- **Top or side receptacle position can be selected in accordance with the available mounting space.**
- **Max.16 stations.**

Manifold Specifications

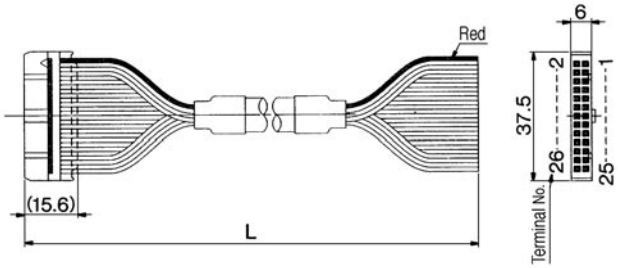
Series	Porting specifications			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ0000	Side	C6	C3, C4, M5	Max.8
VQ1000	Side	C8	C3, C4, C6, M5	Max.8

Flat cable (26 pin)

Cable Assembly ●

AXT100–FC26–1 to 3

(Flat cable connector ass'y can be ordered individually or included in a specific manifold model no. Refer to "How to Order Manifold".)

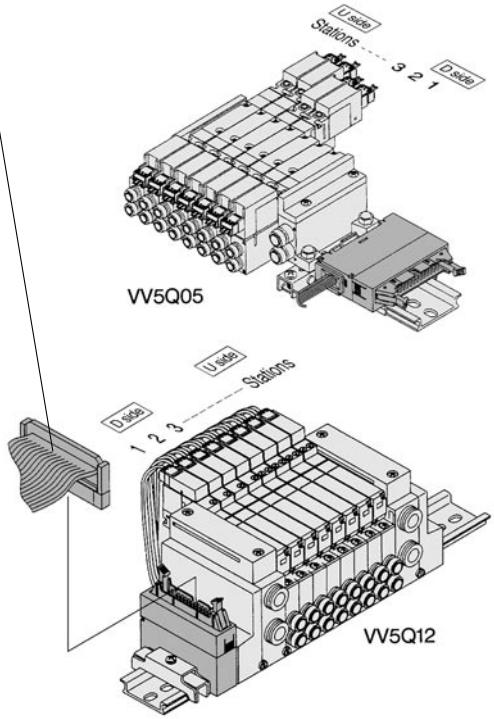


Flat cable connector assembly (Option)

Cable length (L)	Ass'y No.	Note
1.5m	AXT100-FC26-1	Cable 26 core X 28AWG
3m	AXT100-FC26-2	
5m	AXT100-FC26-3	

∗ For other commercial connectors, use a 26 pin type with strain relief made in conformity with MIL-C-83503.

Note) Types with 10, 16, or 20 pin are also available. See p.1-787 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** **[ ]** **-Q**

Series/Manifold

05	VQ0000	Plug lead unit
12	VQ1000	

Stations

01	1 station
⋮	⋮
16	16 stations (1)

Note 1) As option, the maximum number of stations can be increased by special wiring specifications. Refer to p.1-788 for details.

Connector location

U	Top (vertical)
S	Side (horizontal)

Cylinder ports

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

Note 1) Specify "Mixed size/with port plug" by means of manifold specification form.
Note 2) Refer to "Options" on p.1-788 for One-touch fittings in inch sizes.

Cable (length)

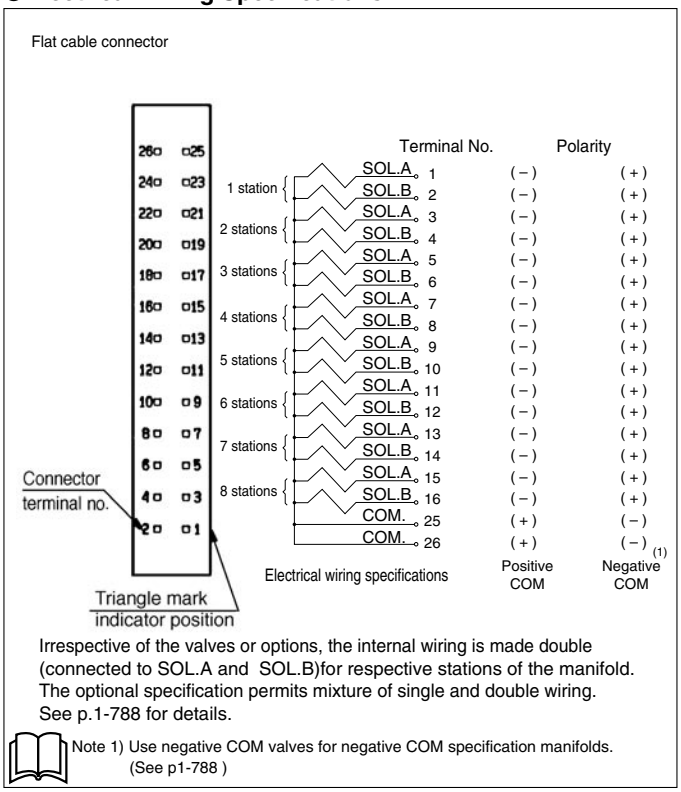
0	Without cable
1	With cable (1.5m)
2	With cable (3m)
3	With cable (5m)

Option

Symbol	Option	VQ0000	VQ1000
B	Check valve for prevention of back press.		● (2)
D	DIN rail mounting	●	● (3)
K	Special wiring specification (Not double wiring)	●	● (4)
N	With name plate	●	●
S	Built-in silencer (direct exhaust)	●	●

Note 1) If specifying more than one option, please list alphabetically. Example) -BNS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using a manifold specification form.
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 by means of the manifold specification form.

●Electrical Wiring Specifications



Irrespective of the valves or options, the internal wiring is made double (connected to SOL.A and SOL.B)for respective stations of the manifold. The optional specification permits mixture of single and double wiring. See p.1-788 for details.

Note 1) Use negative COM valves for negative COM specification manifolds. (See p1-788)

How to Order Valve

VQ 1 1 1 0 Y – 5 LO [ ] -Q

Series

0	VQ0000
1	VQ1000

Configuration

1	2 position single
2	2 position double
3	3 position closed centre
4	3 position exhaust centre
5	3 position pressure centre (VQ1000 only)

Body

5	VQ0000	Plug lead unit
1	VQ1000	

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H	High pressure	(1.5W) ○
Y	Low wattage	(0.5W) ○

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Electrical entry

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

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

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style (1)

Note 1) VQ1000 only.

Note 1) Refer to "Options" on p.1-788 for negative COM specifications.
Note 2) P kit requires connector ass'y when increasing valve stations. Refer to "Options" on p.1-788 for parts No.

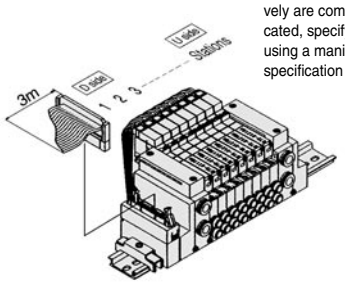
How to Order Manifold Ass'y

Specify valve and option nos. below the manifold base no.

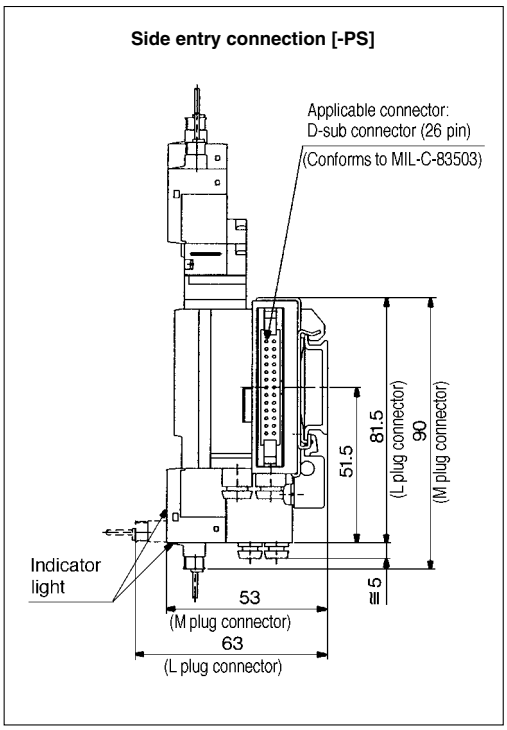
(Example)
Flat cable kit with 3m cable

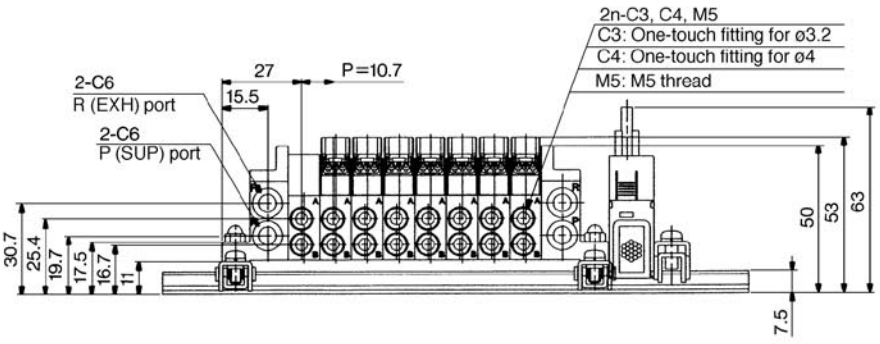
VV5Q12-08C6PU1-D-Q ···1 set–Manifold base No.
VQ1110-5LO-Q····· 4 sets–Valve No. (Stations 1 to 4)
VQ1210-5LO-Q····· 4 sets–Valve No. (Stations 5 to 8)

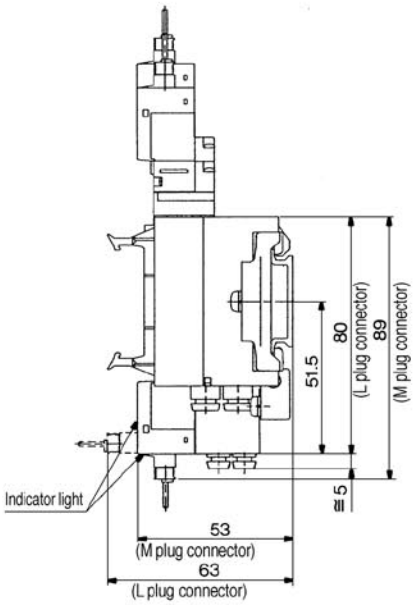
Write sequentially from the 1st station on the D side. When part Nos. written collectively are complicated, specify by using a manifold specification form.

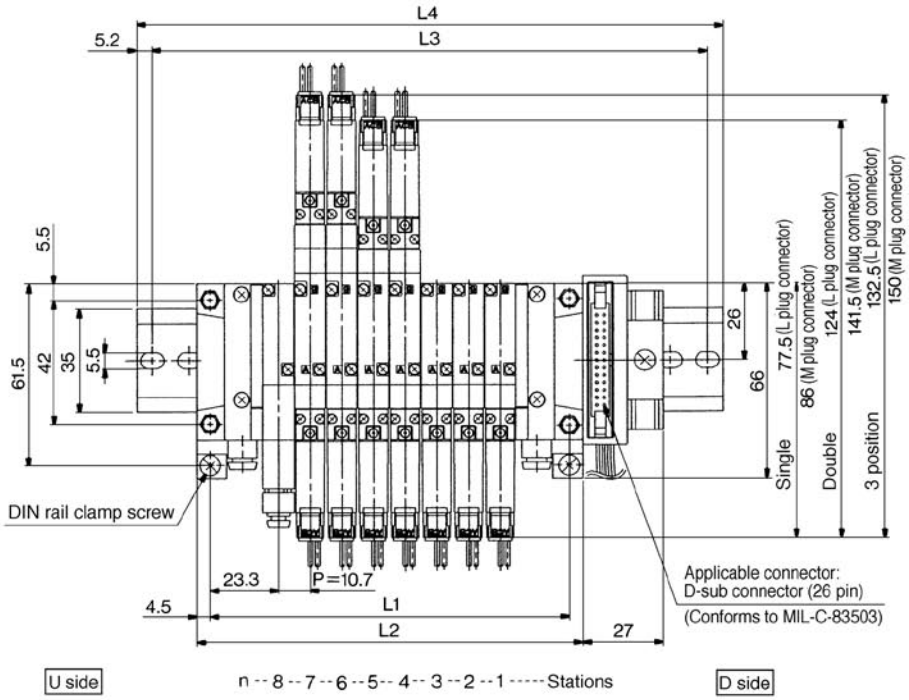


VQ0000









Dimensions/Top entry connector [-PU] (mm)

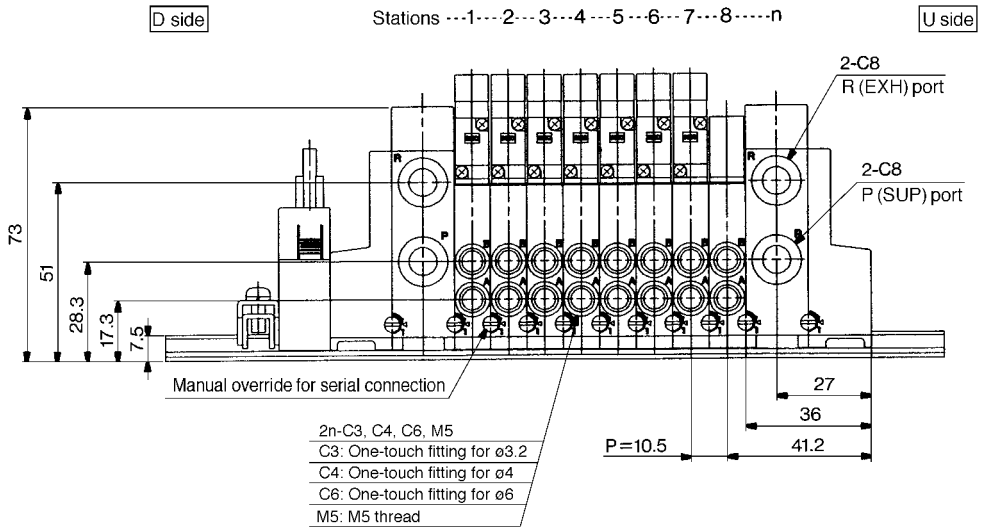
Equation L1=10.7n+36, L2=10.7n+45 n: Station (Max. 16)

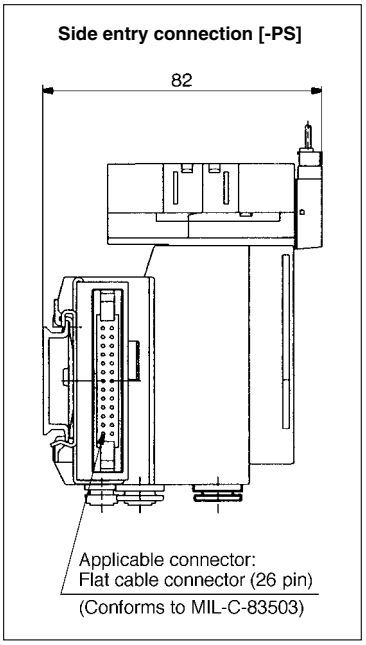
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	46.7	57.4	68.1	78.8	89.5	100.2	110.9	121.6	132.3	143	153.7	164.4	175.1	185.8	196.5	207.2
L2	55.7	66.4	77.1	87.8	98.5	109.2	119.9	130.6	141.3	152	162.7	173.4	184.1	194.8	205.5	216.2
L3	112.5	125	125	137.5	150	162.5	175	187.5	200	200	212.5	225	237.5	250	262.5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

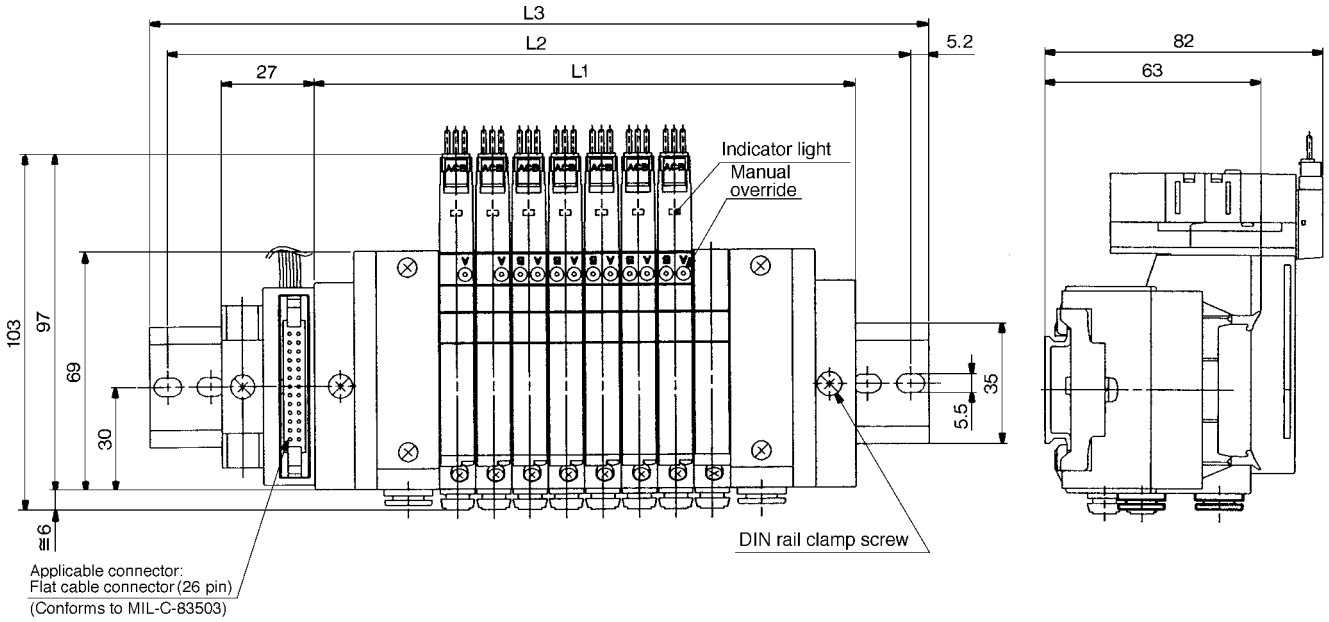
Dimensions/Side entry connector [-PS] (mm)

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

VQ1000







Dimensions/Top entry connector [-PU] (mm)

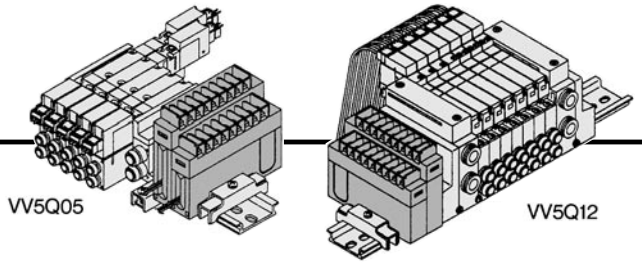
Equation L1=10.5n+72 n: Station (Max. 16)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	82.5	93	103.5	114	124.5	135	145.5	156	166.5	177	187.5	198	208.5	219	229.5	240
L2	137.5	150	150	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5	275	287.5	287.5
L3	148	160.5	160.5	173	185.5	198	210.5	223	235.5	235.5	248	260.5	273	285.5	298	298

Dimensions/Side entry connector [-PS] (mm)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L2	162.5	175	187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5	300	312.5	312.5
L3	173	185.5	198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.5	323	323

T VQ0000/1000
Kit (Terminal Block)

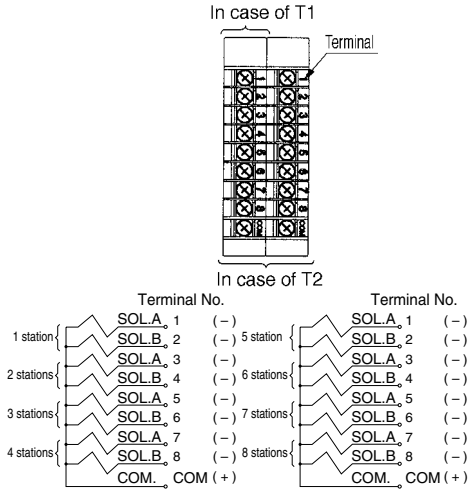


- **It is a standard terminal block style.**
- **Two quantities of teminals can be selected in accordance with the number of stations. (8 terminals/16 terminals)**
- **Standard max. 8 stations. (Optional 16 stations possible.)**

Manifold Specifications

Series	Porting specifications			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ0000	Side	C6	C3, C4, M5	Max. 8
VQ1000	Side	C8	C3, C4, C6, M5	Max. 8

●Electrical Wiring Specifications



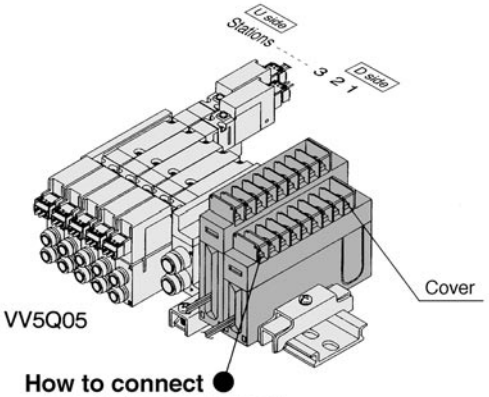
In case of double wiring (standard apec.)
T1 (Terminal block of 1 row): 1-4 stations
T2 (Terminal block of 2 rows): 5-8 stations
T1 and T2 can be optionally chosen by adopting the combinations of single and double wiring(option spec.)etc.

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

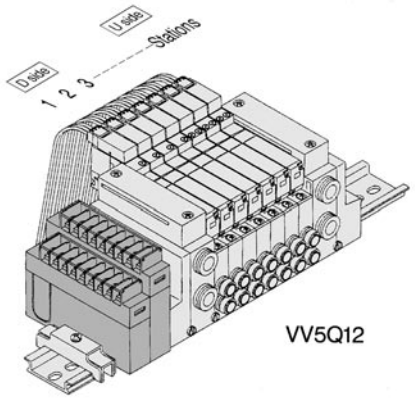
Note) Wiring other than those above is possible.
See p.1-788 for details.

Irrespective of the valves or options, the internal wiring is made double (connected to SOL.A and SOL.B)for respective stations of the manifold. The optional specification permits mixture of single and double wiring.
See p.1-788 for details.



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 12 — 08 C6 T 2 — D □ -Q

Series/Manifold

05	VQ0000	Plug lead unit
12	VQ1000	

Stations

01	1 station
⋮	⋮
16	16 stations (1)

Note1) Refer to p.1-788 for details.

Cylinder ports

Symbol	Port size
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
M5	M5 thread
CM	Mixed size/with port plug (1)

Note 1) Specify "Mixed size/with port plug" by means of manifold specification form.
Note 2) Refer to "Options" on p.1-788 for One-touch fittings in inch sizes.

Number of terminals

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

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

Option

Symbol	Option	VQ0000	VQ1000
B	Check valve for prevention of back press.		● (2)
D	DIN rail mounting	●	● (3)
K	Special wiring spec. (Not double wiring)	●	● (4)
N	With name plate	●	●
S	Built-in silencer (Direct exhaust)	●	●

Note 1) If specifying more than one option, please list alphabetically. Example) -BNS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using a manifold specification form.
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 by means of the manifold specification form.

How to Order Valve

VQ 1 1 1 0 Y 5 [ ] [ ] -Q

Series

0	VQ0000
1	VQ1000

Configuration

1	2 position single
2	2 position double
3	3 position closed centre
4	3 position exhaust centre
5	3 position pressure centre (VQ1000 only)

Body

5	VQ0000	Plug lead unit
1	VQ1000	

Seal

0	Metal
1	Rubber

Note 1) Refer to "Options" on p.1-788 for negative COM specifications.
Note 2) T kit requires connector ass'y when increasing valve stations. Refer to "options" on p.1-788 for parts No.

Pilot valve

Symbol	Specification	DC
–	Standard	(1.0W) ○
H	High pressure	(1.5W) ○
Y	Low wattage	(0.5W) ○

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Electrical entry

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

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

Manual override

–	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style (1)

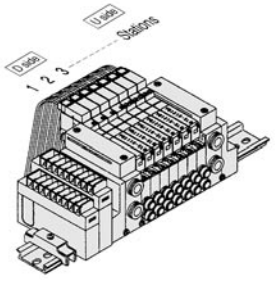
Note 1) VQ1000 only.

How to Order Manifold Ass'y

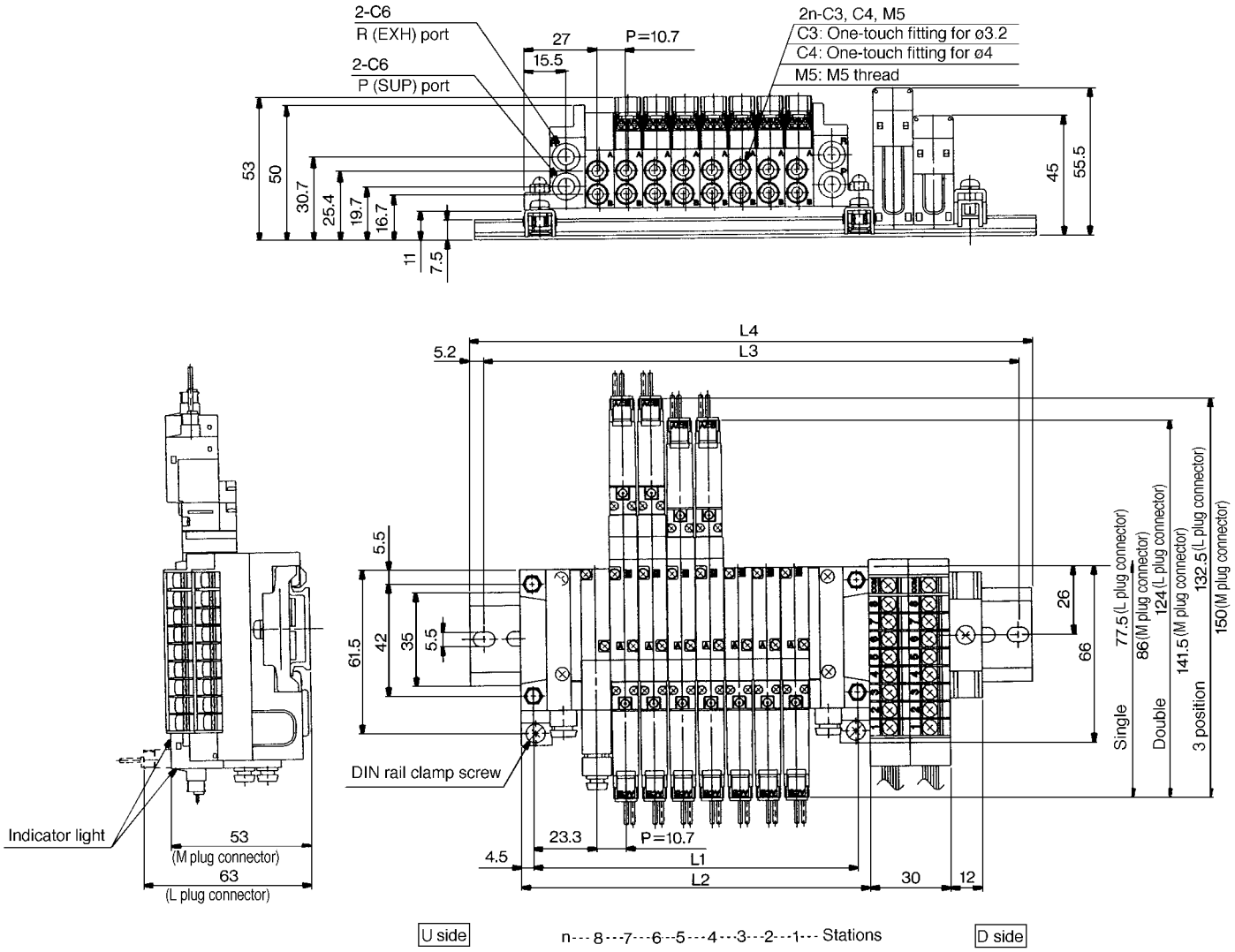
Specify valve and option nos. below the manifold base no.

(Example)
Flat cable kit with 3m cable
VV5Q12-07C6T2-D-Q··· 1 set–Manifold base No.
VQ1110-5LO-Q ····· 4 sets–Valve No. (Stations 1 to 4))
VQ1210-5LO-Q ····· 3 sets–Valve No. (Stations 5 to 8))

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



VQ0000



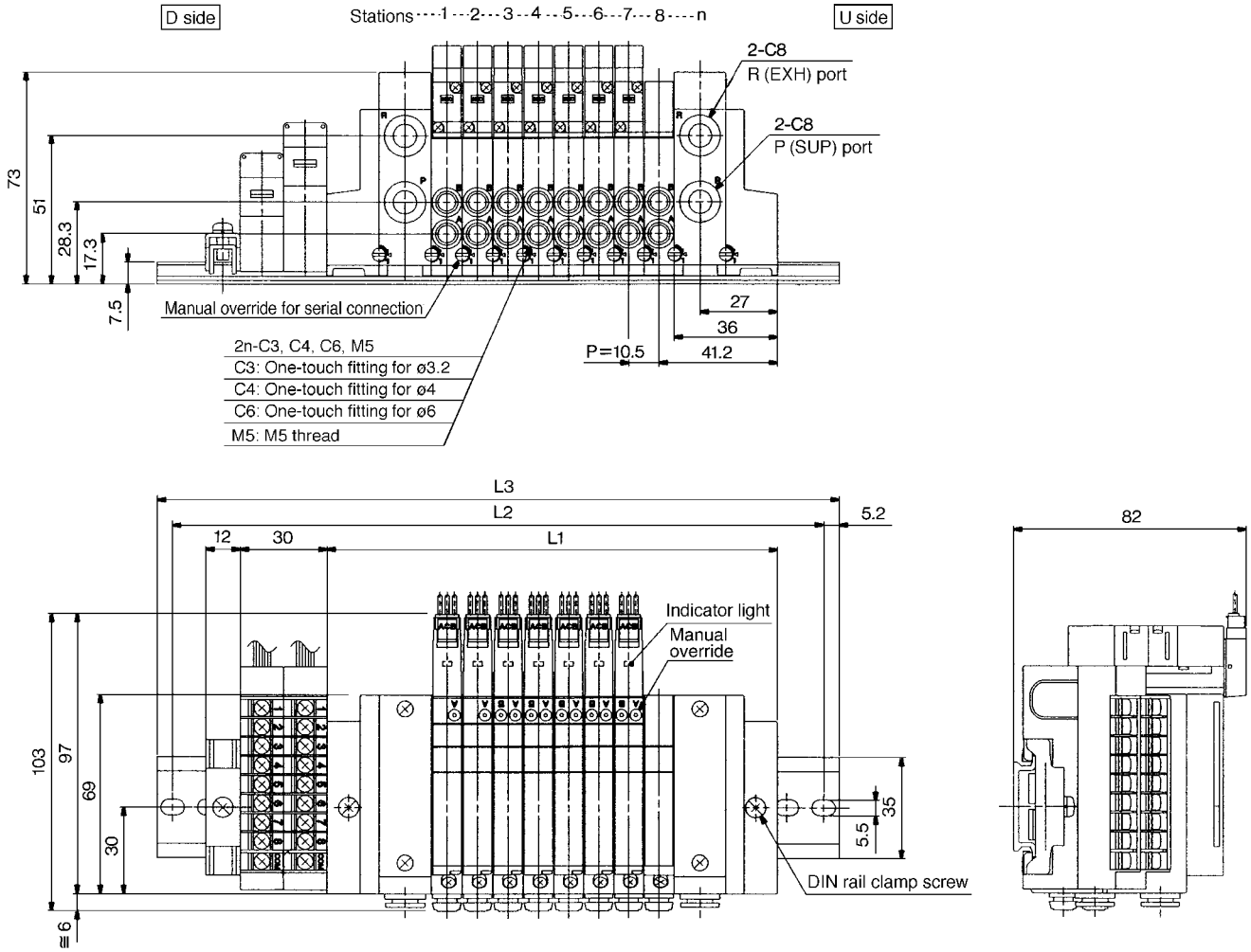
This DWG shows the case of VV5Q05–□□T2–D□

Dimensions (mm)

Equation L1=10.7n+36, L2=10.7n+45 n: Station (Max.16)

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

VQ1000



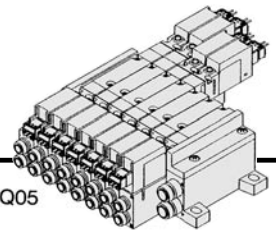
This DWG shows the case of VV5Q12–□□T2–D□

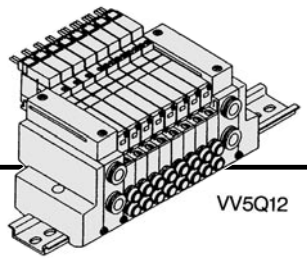
Dimensions (mm)

Equation L1=10.5n+72 n: Station (Max.16)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	82.5	93	103.5	114	124.5	135	145.5	156	166.5	177	187.5	198	208.5	219	229.5	240
L2	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5	300	312.5
L3	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.5	323

C VQ0000/1000
Kit (Connector)

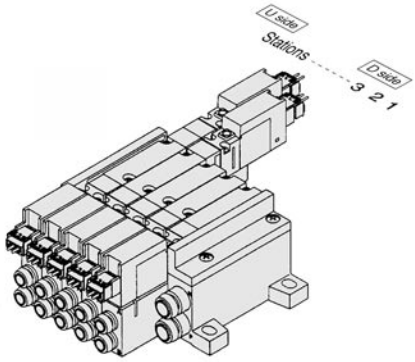

VV5Q05


VV5Q12

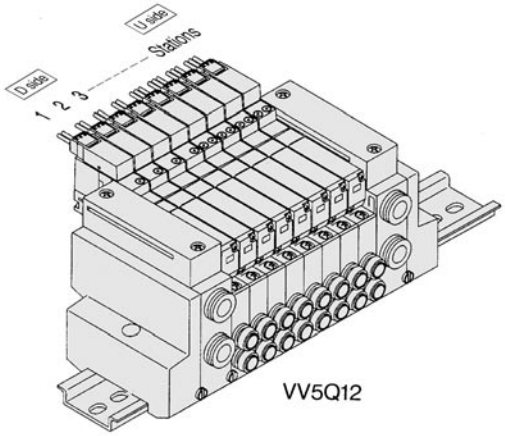
●**Standard with lead wires plug-connected to each valve individually.**
●**Max. 16 stations.**

Manifold Specifications

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



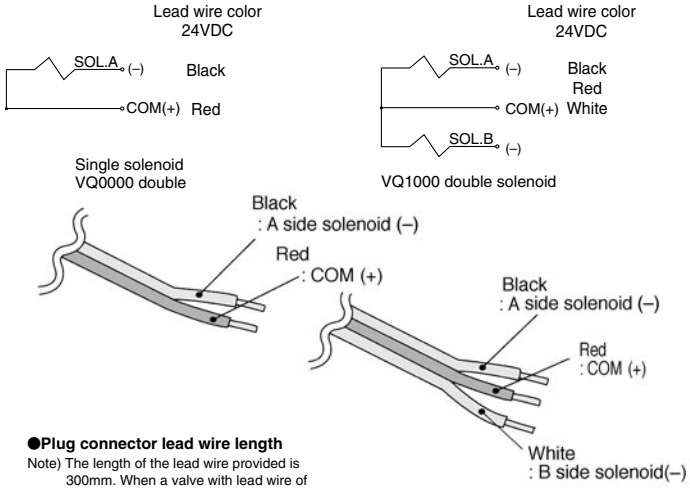
VV5Q05



VV5Q12

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 300mm. When a valve with lead wire of 600mm or more is needed, specify both the valve without connector and the longer connector ass'y no.

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

Connector assembly (DC)

Lead wire length	No. for single & VQ0000 double	No. for VQ1000 double
Socket (3 pcs.)	AXT661-12A	
300mm	AXT661-14A	AXT661-13A
600mm	AXT661-14A-6	AXT661-13A-6
1000mm	AXT661-14A-10	AXT661-13A-10
2000mm	AXT661-14A-20	AXT661-13A-20
3000mm	AXT661-14A-30	AXT661-13A-30

How to Order Manifold

VV5Q 12 — 08 C6 C — N -Q

Series/Manifold

05	VQ0000	Plug lead unit
12	VQ1000	

Stations

01	1 station
⋮	⋮
16	16 stations

Cylinder ports

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

Note 1) Specify "Mixed size/with port plug" by means of manifold specification form.
Note 2) Refer to "Option" on p.1-788 for One-touch fittings in inch sizes.

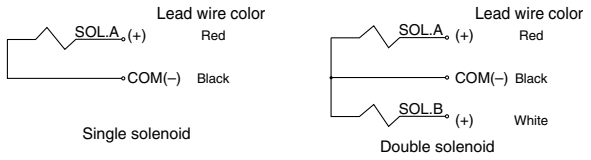
Option

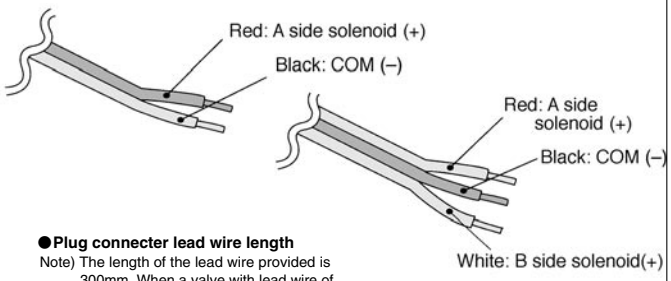
Symbol	Option	VQ0000	VQ1000
—	Note	●	
B	Check valve for prevention of back press.		● (2)
D	DIN rail mounting	●	● (3)
N	With nameplate	●	●
S	Built-in silencer (Direct exhaust)	●	●

Note 1) If specifying more than one option, please list alphabetically. Example) –BNS
Note 2) Models with a suffix "–B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using a manifold specification form.
Note 3) VQ1000 are all equipped with a DIN rail, so indicate suffix "D".

●Wiring Specifications/Negative COM (Option)

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





●Plug connecter lead wire length

Note) The length of the lead wire provided is 300mm. When a valve with lead wire of 600mm or more is needed, specify both the valve without connector and the longer connector ass'y no.

Example) Lead wire length 1000mm
VQ1110N-5LO-Q ····· 3 pcs.
AXT661-14AN-10····· 3 pcs.

Connector assembly

Lead wire length	No. for single & VQ0000 double	No. for VQ1000 double
Socket (3 pcs.)	AXT661-12A	
300mm	AXT661-14AN	AXT661-13AN
600mm	AXT661-14AN-6	AXT661-13AN-6
1000mm	AXT661-14AN-10	AXT661-13AN-10
2000mm	AXT661-14AN-20	AXT661-13AN-20
3000mm	AXT661-14AN-30	AXT661-13AN-30

Note) Use negative COM valves for negative COM specification manifolds.

How to Order Valve

VQ 1 1 1 0 Y – 5 L □ -Q

Series

0	VQ0000
1	VQ1000

Configuration

1	2 position single
2	2 position double
3	3 position closed centre
4	3 position exhaust centre
5	3 position pressure centre (VQ1000 only)

Body

5	VQ0000	Plug lead unit
1	VQ1000	

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H	High pressure	(1.5W) ○
Y	Low wattage	(0.5W) ○

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less

Order Made Contact SMC for other voltages (9)

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style (1)

Note 1) Available only for VQ1000.

Electrical entry

		VQ0000	VQ1000
G	Grommet	●	—
L	L plug connector with lead wire	●	●
LO	L plug connector without connector	●	●
M	M plug connector with lead wire	●	—
MO	M connector without connector	●	—

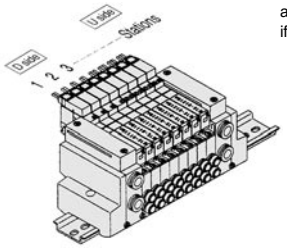
Note) Refer to "Options" on p.1-788 for negative COM specifications.

How to Order Manifold Ass'y

Specify valve and option nos. below the manifold base no.

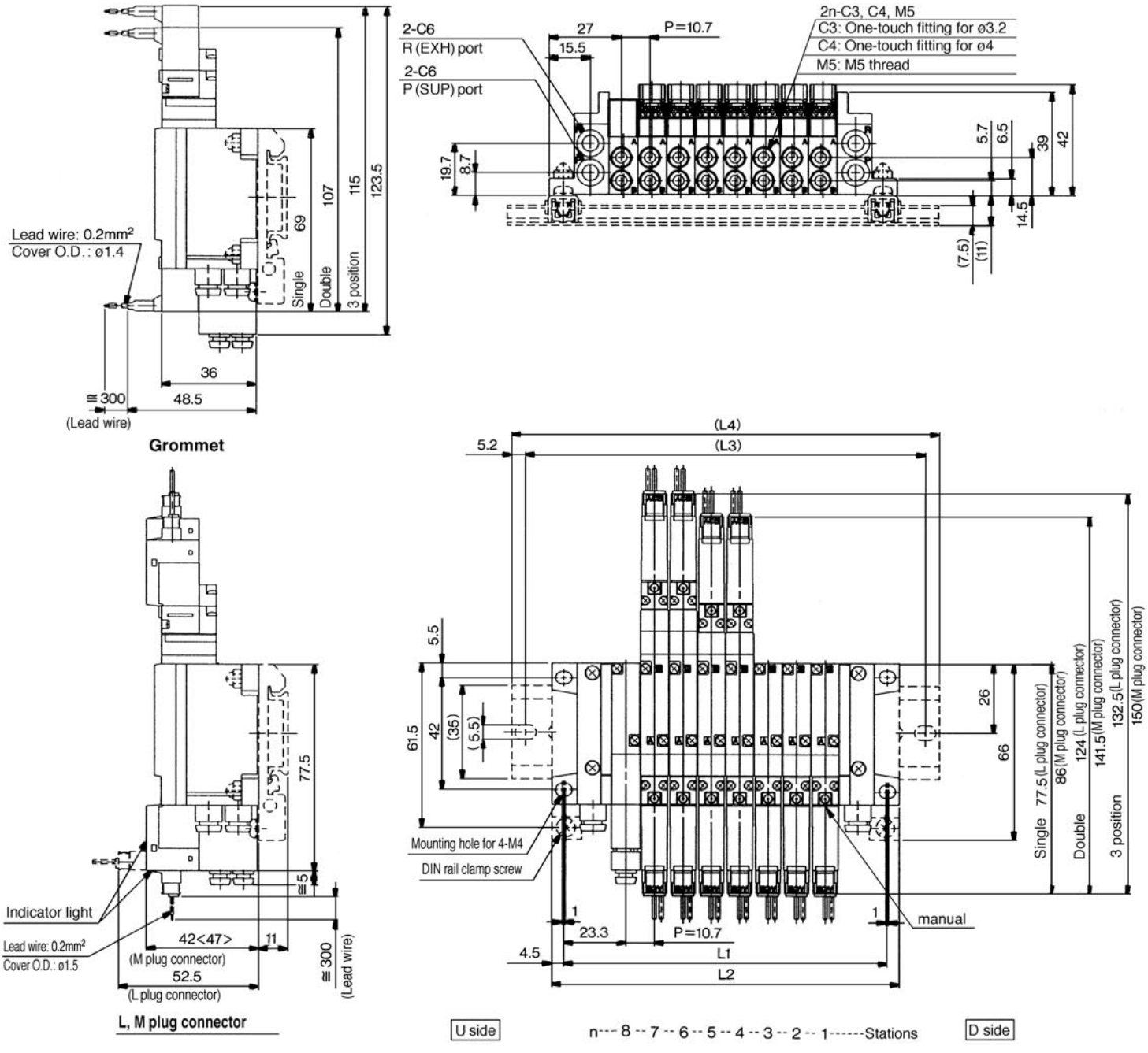
(Example)
Connector kit
VV5Q12–08C6C-D-Q.....1 set –Manifold base No.
∗ VQ1110-5-Q····· 4 sets–Valve No. (Stations 1 to 3)
∗ VQ1210-5-Q····· 4 sets–Valve No. (Stations 4 to 7)
∗ VVQ1000-10A-1·····1 set –Blank plate No. (Stations 8)

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



VQ0000

The broken line indicate DIN rail mounting style [–D].

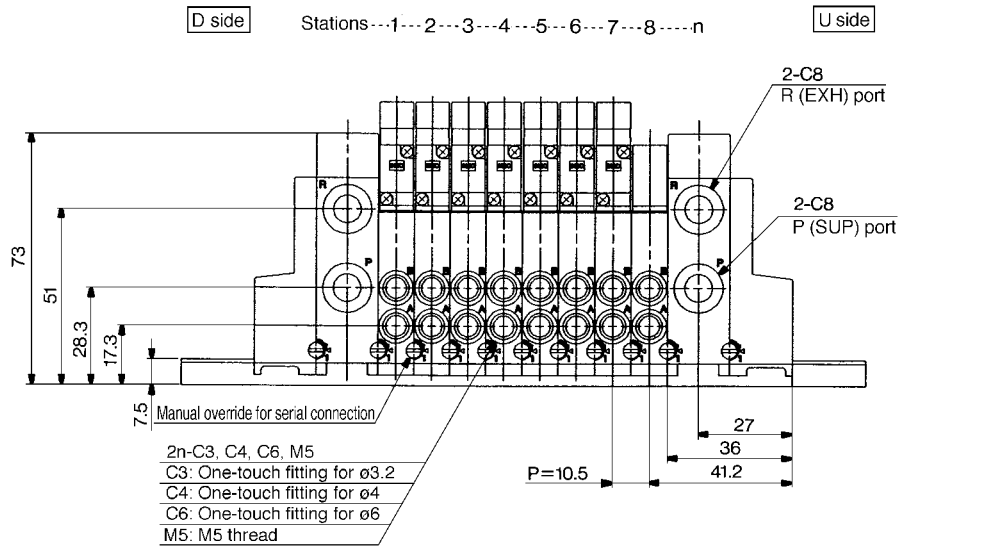


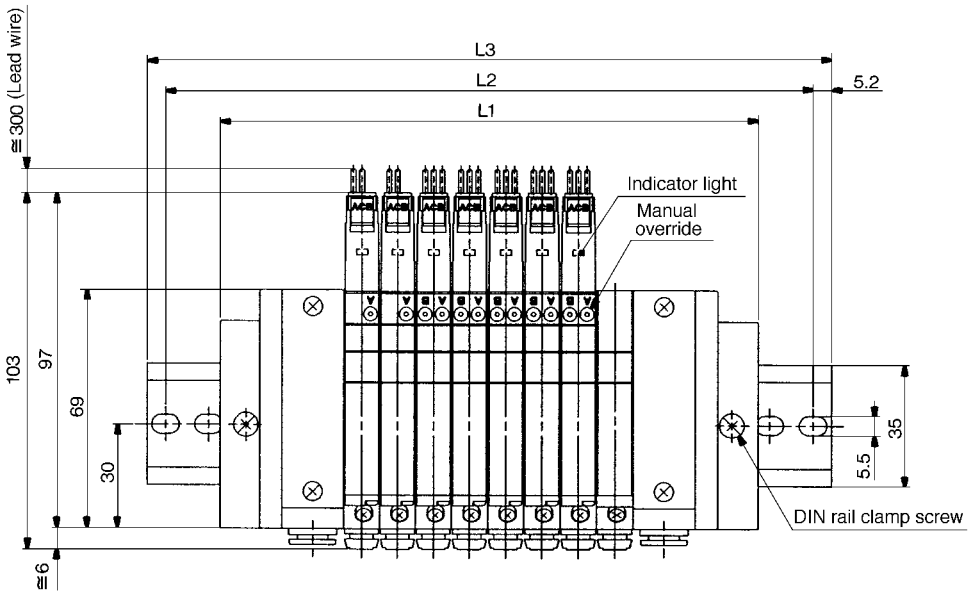
Dimensions (mm)

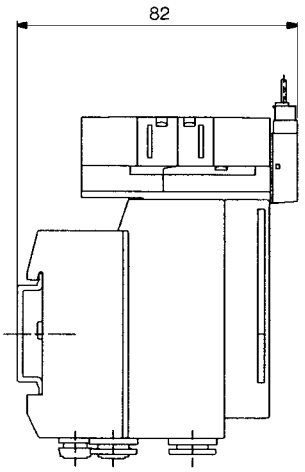
Equation L1=10.7n+36, L2=10.7n+45 n: Station (Max. 16)

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

VQ1000



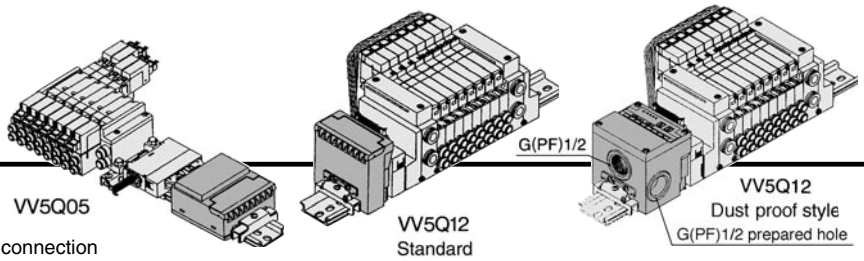




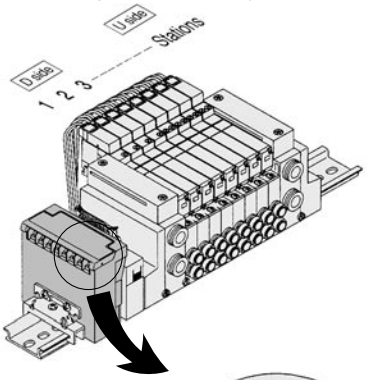
Dimensions (mm) Equation L1=10.5n+72 n: Station (MAX.16)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	82.5	93	103.5	114	124.5	135	145.5	156	166.5	177	187.5	198	208.5	219	229.5	240
L2	112.5	112.5	125	137.5	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	250	262.5
L3	123	123	135.5	148	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5	260.5	273

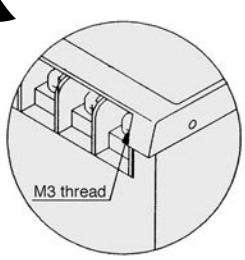
S VQ0000/1000
Kit (Serial Transmission Unit)



- The serial transmission system minimizes wire mass and wire connection labor and promotes space savings.
- The system comes in SA (general type for small scale system) for equipment with a small number of I/O points, or 32 points max., SB (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., SC (applicable to OMRON models), SD (applicable to Sharp models: 504 points max.), SF (applicable to NKE models: 128 points max.), SJ (applicable to Sunx models), SK (applicable to Fuji Electric models), SQ (applicable to OMRON's Compo Bus/D), and SR (applicable to OMRON's Compo Bus/S).
- Max. 8 stations. (Specify a option model with 9 to 16 stations by using a manifold specification form.)



●Stations are sequentially numbered from the D side.
●Irrespective of the valves or options, the internal wiring is made double (connected to SOL.A and SOL.B) for respective stations of the manifold. The optional specification permits mixture of single and double wiring. See p.1-788 for details.



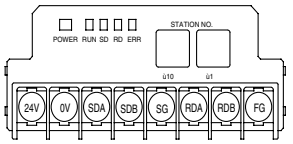
Item	Specifications
External power supply	24V DC, +10%, –5%
Current consumption (Internal unit)	SA, SB, SD, SE, SF, SG, SJ, SK, SQ, SR: 0.1A SC: 0.3A

Manifold Specifications

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

Name of terminal block(LED)

SB applicable to MELSECNET/MINI-S3 Data Link (Mitsubishi Electric Corp.)



LED name	Detalls
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
ERROR	Lighting when reception data error occurs. Lighting off when the error is corrected.

Note

- Master station:
  PLC made by Mitsubishi Electric Corp.
  Series MELSEC-A
  AJ71PT32-S3, AJ71T32-S3
  A1SJ71PT32-S3
  * Max.64 stations, connected to remote I/O stations (Max. 512 points).
- 16 outputs, 2 stations occupied.

How to Order Manifold

VV5Q 12 – 08 C6 S B – D – XP -Q

- 12 → Series/Manifold
- 08 → Stations
- C6 → Cylinder ports
- S → Style
- B → Option
- D → Option
- XP → Dust proof styel (-XP)(VQ1000 only)
  Suffix "-XP" for the dust proof SI unit. (Consult SMC.)
- -Q → Option

Series/Manifold

05	VQ0000	Plug lead unit
12	VQ1000	

Stations

01	1 station
⋮	⋮
16	16 stations (1)

Note 1) Refer to p.1-788 for details.

Cylinder ports

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

Note 1) Specify "Mixed size/with port plug" by means of manifold specification form.
Note 2) Refer to "Options" on p.1-788 for One-touch fittings in inch sizes.

Style

B	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)
C	SI unit for SYSBUS Wire System (OMRON)
N	SI unit for Profibus DP
P	SI unit for Interbus
Q	SI unit for Device Net and CompoBus/D (OMRON)
Y	SI unit for Can Open
T2	SI unit for ASI (yellow+black wires) Max.8 stations
T4	SI unit for ASI (yellow+black wires) Max.4 stations
T5	SI unit for ASI (yellow wires) Max.4 stations

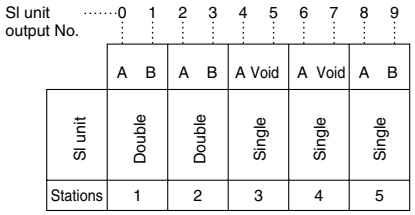
Option

Symbol	Option	VQ0000	VQ1000
B	Check for prevention of back press.		● (2)
D	DIN rail mounting	●	● (3)
K	Special wiring specification (Not double wiring)	●	● (4)
N	With name plate	●	●
S	Built silencer (Direct exhaust)	●	●

Note 1) If specifying more than one option, please list alphabetically. Example) -BNS
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using a manifold specification form.
Note 3) S kit of VQ0000 and all of VQ1000 are equipped with a DIN rail, so indicate suffix "-D".
Note 4) Specify wiring by the manifold specification form.

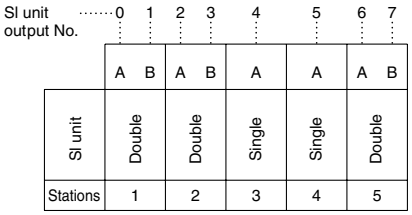
● SI unit output and coil numbering

<Wiring example 1>

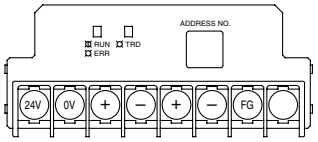


Double wiring (Standard)

<Wiring example 2> Mixed wiring is optional. Use the manifold specification from to specify.



Single/Double mixed wiring (Option)

	SC applicable to SYSBUS Wire System (OMRON)
Name of terminal block (LED)	
Note	● Master station unit: OMRON's PLC SYSMAC Series C(CV) C500-RM201, C200H-RM201 ＊ Max. 32 units, transmission terminal connected (Max. 512 points) ● 16 outputs

LED name	Details
RUN	It lights when transmissions is normal and PLC is in the operation mode.
T/R	It blinks when transmission is normal.
ERR	It lights when transmission is abnomal.

How to Order Valve

VQ 1 1 1 0 Y — 5 LO □ -Q

Series

0	VQ0000
1	VQ1000

Configuration

1	2 position single
2	2 position double
3	3 position closed centre
4	3 position exhaust centre
5	3 position pressure centre (VQ1000 only)

Body

5	VQ0000	Plug lead unit
1	VQ1000	

Seal

0	Metal
1	Rubber

Note) S kit requires connector ass'y when increasing valve stations. Refer to "Options" on p.1-788.

Pilot valve

Symbol	Specification	DC
—	Standard	(1.0W) ○
H	High pressure	(1.5W) ○
Y	Low wattage	(0.5W) ○

Coil voltage

5	24V DC; With indicator light and surge voltage suppressor

Electrical enty

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

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

Manual override

—	Non-locking push style
B	Push-locking slotted style
C	Push-locking lever style (1)

Note 1) Availabie only for VQ1000.

How to Order Manifold Ass'y

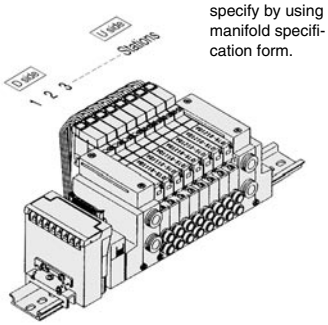
Specify valve and option nos. below the manifold base no.

(Example)

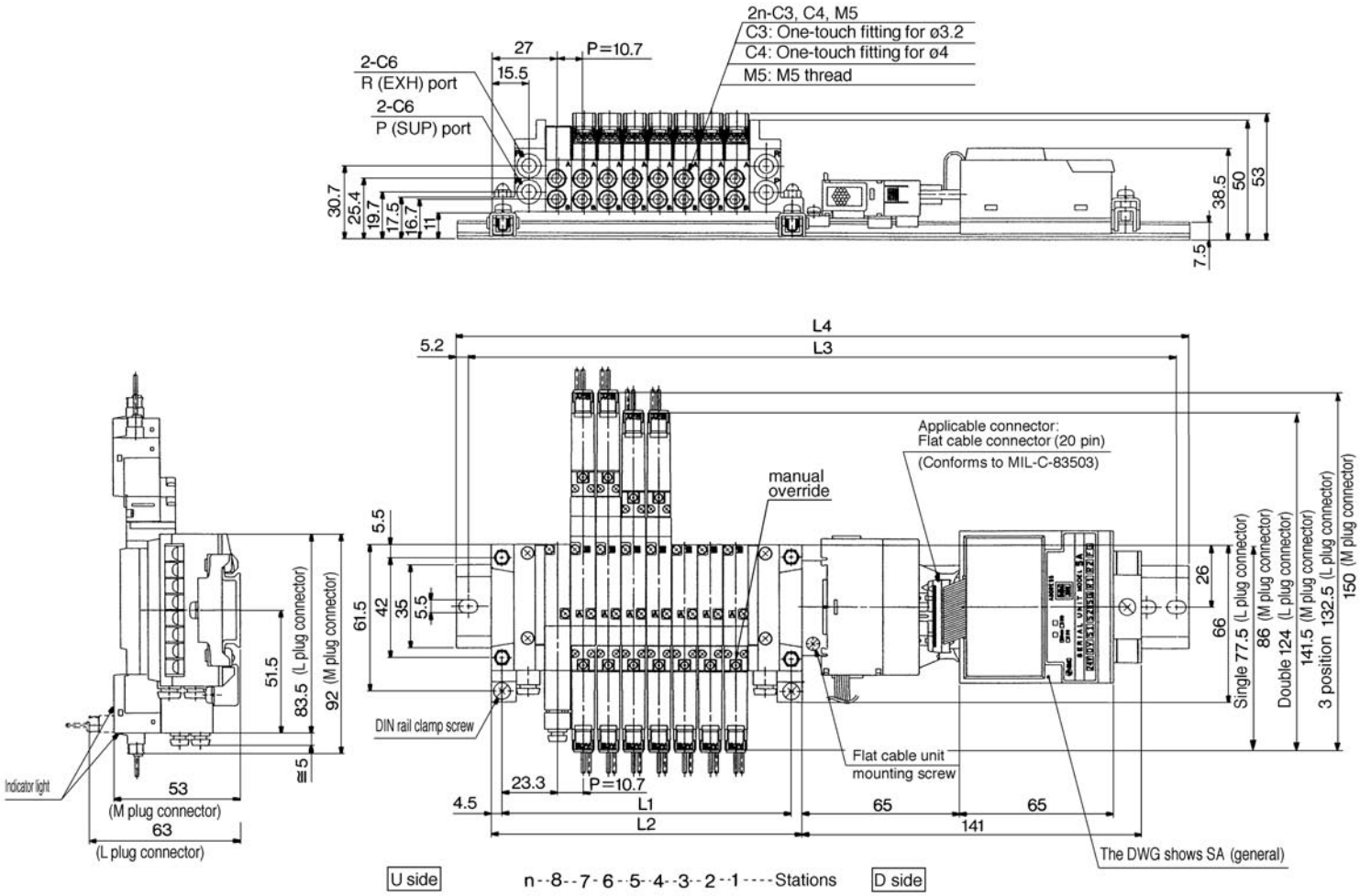
Serial transmission unit kit

VV5Q12-08C6SA-D-Q···1 set –Manifold base No.
VQ1110-5LO-Q·····4 sets–Valve No. (Stations 1 to 4)
VQ1210-5LO-Q·····4 sets–Valve No. (Stations 5 to 8)

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



VQ0000

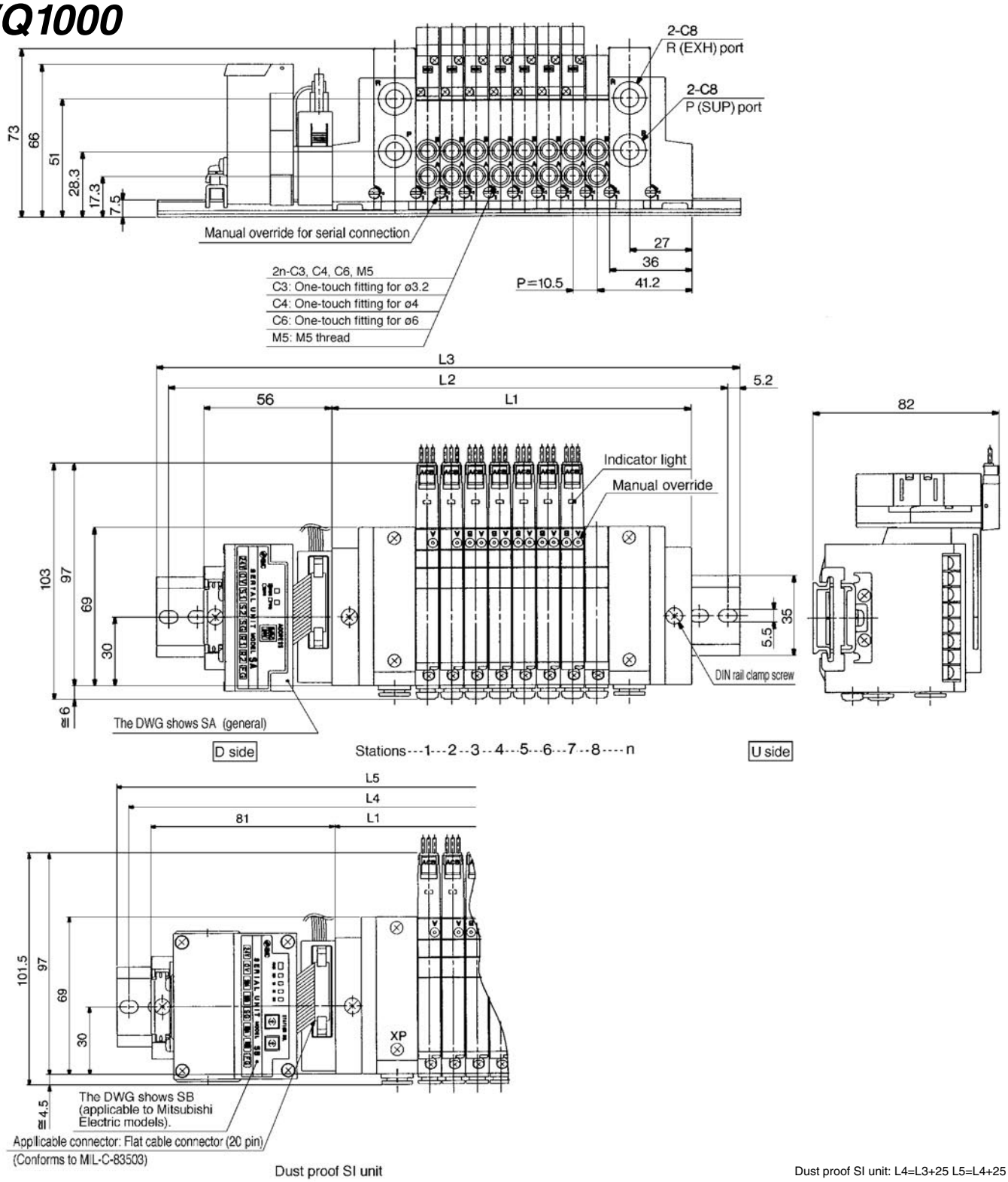


Dimensions (mm)

Equation L1=10.7n+36, L2= 10.7n+45 n: Station (Max. 16)

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

VQ1000



Dust proof SI unit: L4=L3+25 L5=L4+25

Dimensions (mm)

Equation L1=10.5n+72 n: Station (Max.16)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	82.5	93	103.5	114	124.5	135	145.5	156	166.5	177	187.5	198	208.5	219	229.5	240
L2	162.5	175	187.5	200	200	212.5	225	237.5	250	262.5	275	275	287.5	300	312.5	325
L3	173	185.5	198	210.5	210.5	223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5

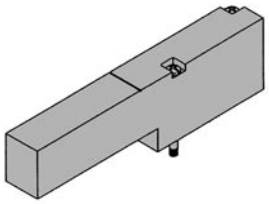
Note) Manifolds with SI unit for Matsushita' s MEWNET FP and Allen Bradley Co.'s model are the same with L4 and L5 dimensions of dust proof SI unit.

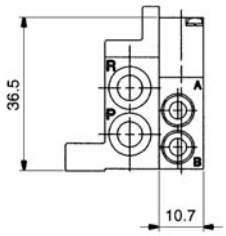
Manifold Options/For VQ0000

Blank plate assembly
VVQ0000-10A-5

JIS Symbol

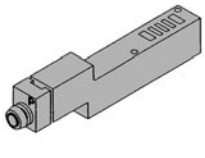
It is mounted on a specific position of a manifold block from which a valve is removed for maintenance or in which a spare valve is planned to be mounted.

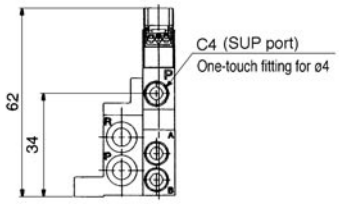


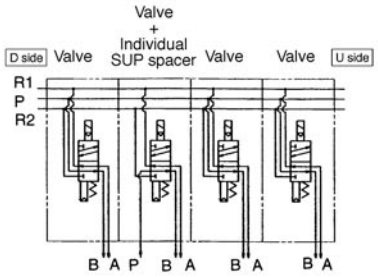


Individual SUP spacer
VVQ0000-P-5-C4

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.

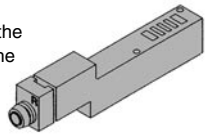


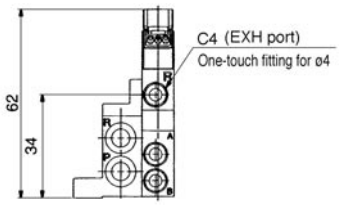


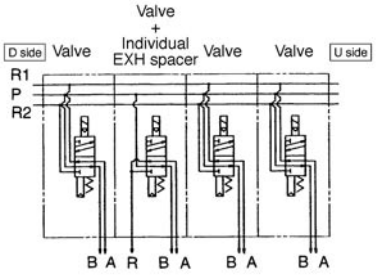


Individual EXH spacer
VVQ0000-R-5-C4

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-

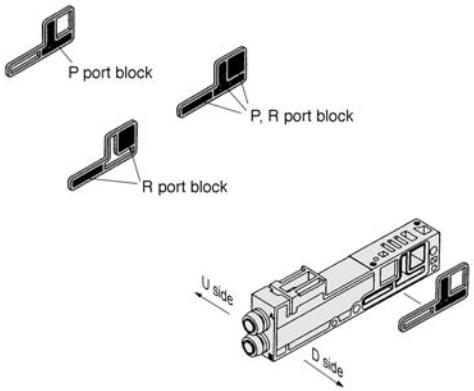
P (SUP)
R (EXH)
PR (SUP/EXH)

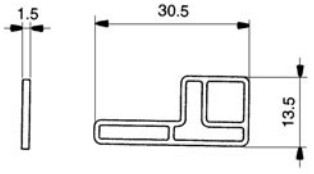
P (For SUP)
When high and low, different pressures are supplied to one manifold, a SUP block (P) is inserted between the stations under different pressures.

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.

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

∗ Specify the station's qty and position by using a manifold specification form.

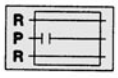




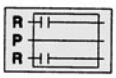
<Blocking indication label>

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

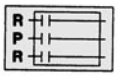
∗ When ordering a block plate incorporated with the manifold No., a block indication label is attached to the manifold.



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



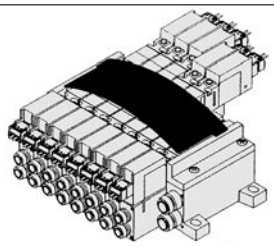
EXH passage block
(VVQ0000-16A-5-R)



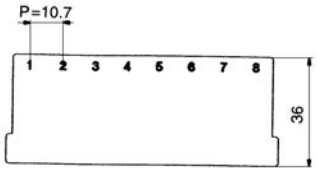
SUP, EXH passage block
(VVQ0000-16A-5-PR)

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.

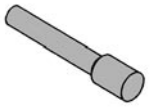


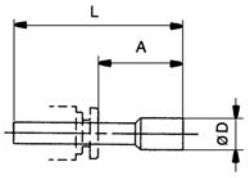
Blank plug (For One-touch fittings)

KQ2P- 23 / 04 / 06 **-00**

Colour: White

It is inserted into an unused cylinder port and SUP/EXH ports.
The minimum order quantity is 10 pcs.



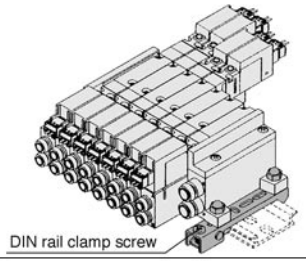


Dimensions (mm)

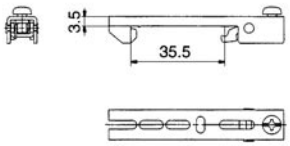
Fittings size ød	Model	A	L	D
3.2	**KQ2P-23-00**	16	31.5	3.2
4	**KQ2P-04-00**	16	32	6
6	**KQ2P-06-00**	18	35	8

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 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 set of manifold(2 DIN rail mounting brackets).



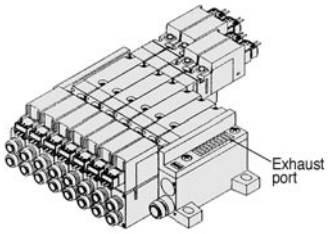
* When ordering assemblies incorporated with a manifold, add suffix "-D" to the manifold no.



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: 20dB)
Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

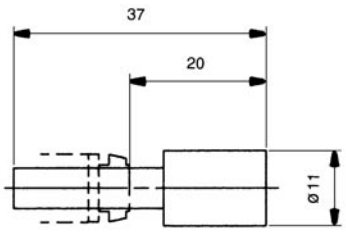
● See p.1-786 for maintenance.



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

Silencer (EXH port)

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



Dimensions (mm)

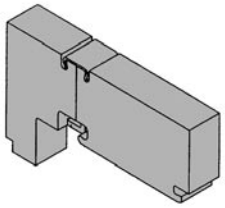
Series	Fittings size ød	Model	A	L	D	Effective area (mm^2)(Nℓ/min)	Silencing effect. dB
VQ0000	6	AN103-X233	20	37	11	7(392.6)	25

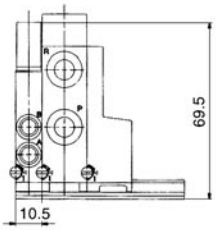
Manifold Options/For VQ1000

Blank plate assembly
VVQ1000-10A-1

JIS Symbol

It is mounted on a specific position of a manifold block from which a valve is removed for maintenance or in which a spare valve is planned to be mounted.

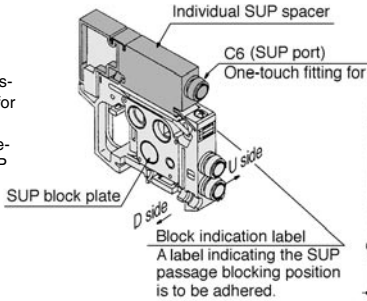


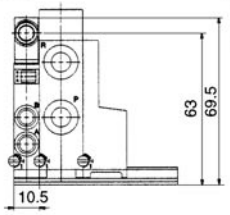


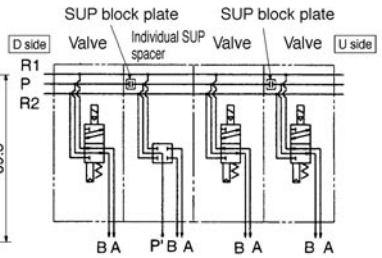
Individual SUP spacer
VVQ1000-P-2-C6

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.)
Block both sides of the station, for which the supply pressure from the individual SUP spacer is used, with SUP block plates. (See the application ex.)

* Specify the spacer mounting position and SUP block plate position by means of the manifold specification form. The bolck plate are used in two places for one set. (Two SUP block plates for blocking SUP station are attached to the individual SUP spacer.)



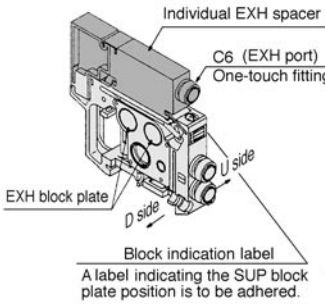


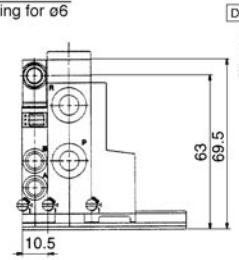


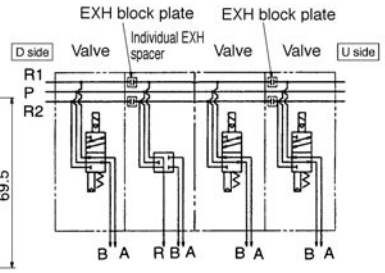
Individual EXH spacer
VVQ1000-R-2-C6

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

* Specify the mounting position, as well as EXH block base or EXH block plate position by means of the using manifold speciffcation form. The block plate are used in two places for one set.



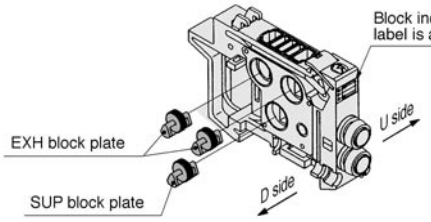


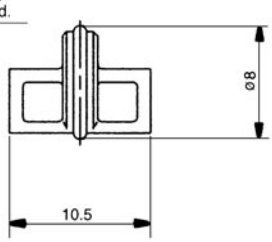


SUP/EXH block plate
VVQ1000-16A-2

When high and low, different pressures are supplied to one manifold, a SUP block plate is inserted between the stations under different pressures. When a valve exhaust affects other stations due to the circuit configuration, this plate is also used between the stations where exhaust should be separated. It is also used for individual exhaust by combining an EXH block plate with an individual EXH spacer. (2 EXH plates are necessary for 1 station.)
Note) The SUP/EXH block plate is common.

* Specify the atation's qty and position by using a manifold specification form.

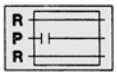




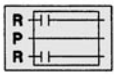
<Blocking indication label>

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

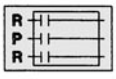
* When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.



SUP passage block



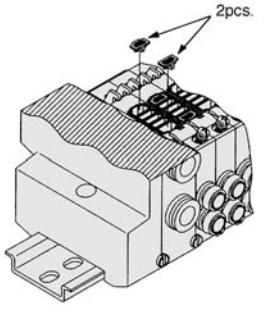
EXH passage block



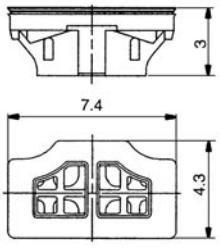
SUP/EXH passage block

Check valve for prevention of back pressure assembly [-B]
VVQ1000-18A

It prevents cylinder malfunction caused by other valve exhaust. Insert it into R (EXH)port on the manifold side of a valve which is affected. It is effective when a single-action cylinder is used or an exhaust center type solenoid valve is used.
Note) When a check valves for back pressure prevention is desired to be installed only in desired manifold stations, write celarly the part No. and specify the number of stations by using manifold specification form.



* When ordering assembiles incorporated with a manifold, add suffix "–B" to the manifold No.

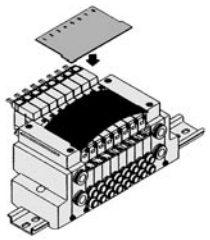


<Precautions>

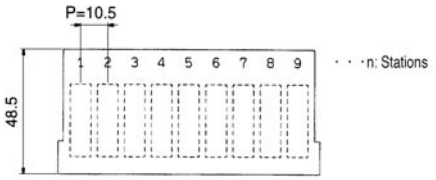
1. The check valves prevention of back pressure ass'y is assembly parts with a check valve structure. However, as slight air leakage is allowed for the back pressure, take the exhaust air will not be throttled at the exhaust port.
2. When a check valve for prevention of back pressure is mounted, the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

Name plate [-N∗]
VVQ1000-N2-Station (1 to Max. stations)

It is 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.



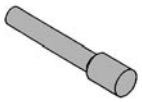
∗ When ordering assemblies incorporated with a manifold, add suffix "–N" to the manifold No.

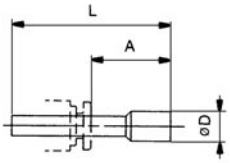


Blank plug (For One-touch fittings)
KQ2P-$^{23}_{04}_{06}_{08}$-00

Colour: White

It is inserted into an unused cylinder port and SUP/EXH ports.
The minimum order quantity is 10 pcs.



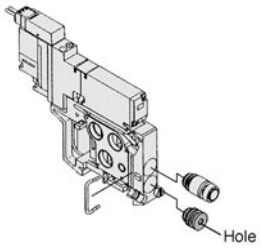


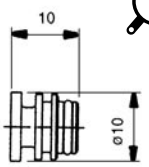
Dimensions (mm)

Fittings size ød	Model	A	L	D
3.2	**KQ2P-23-00**	16	31.5	3.2
4	**KQ2P-04-00**	16	32	6
6	**KQ2P-06-00**	18	35	8
8	**KQ2P-08-00**	20.5	39	10

Port plug
VVQ0000-58A

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

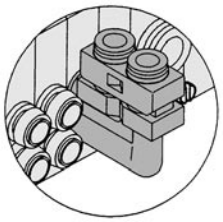


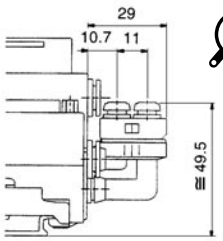


∗ When ordering a plug incorporated with a manifold, indicate "CM" for the port size in the manifold no., as well as, the mounting position and number of stations and cylinder port mounting positions, A and B, by means of the manifold specification form.
∗ Lightly screw an M3 screw in the port plug hole and pull it for removal.

Elbow fitting assembly
VVQ1000-F-L $^{C3}_{C4}_{C6}_{M5}$

It is used for piping that extends upward or downward from the manifold.
When not mounting it to all manifold stations, cleary write the elbow type fitting ass'y no. and specify the station's qty and position by manifold specifications.



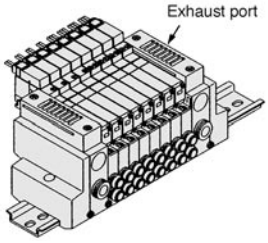


∗ When ordering assemblies incorporated with a manifold, indicate "L□" or "B□" for the manifold port size.

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: 30dB)
Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

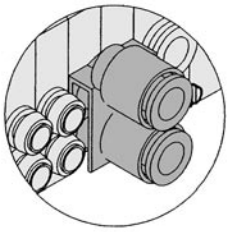
● See p.1-786 for maintenance.

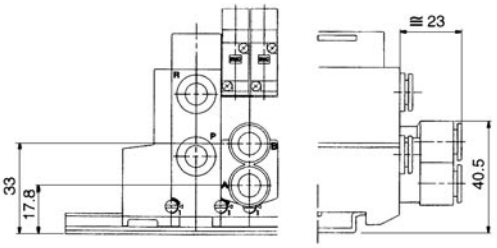


∗ When ordering assemblies incorporated with a manifold, add suffix "–S" to the manifold No.

2 stations matching fitting assembly
VVQ1000-52A-C8

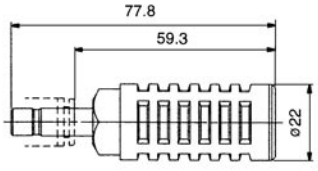
For driving a cylinder with a large bore, valves for two stations are operated to double the flow rate. This ass'y for the cylinder port is used in that case. The ass'y is equipped with One-touch fittings for a ø8 bore.
∗ The bore for the manifold no. is "CM." Clearly indicate the 2-station matching fittings ass'y No., and specify the number of stations and positions by means of the manifold specifications.





Silencer (EXH port)

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



Dimensions (mm)

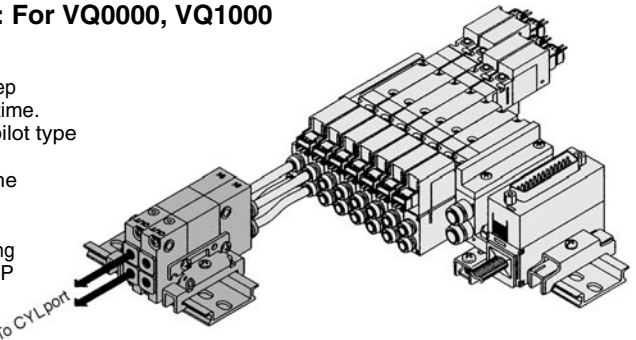
Series	Fitting size ød	Model	A	L	D	Silencing effect dB
VQ1000	8	AN200-KM8	59.3	77.8	22	30

Manifold Option Parts/VQ0000/VQ1000

Double check block (Separate style): For VQ0000, VQ1000

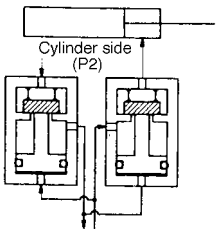
VQ1000–FPG–□□

It is used on the way of the secondary side piping keep the cylinder in the intermediate position for a long time. Combining a double check block with a built-in pilot type double check valve and a 3 position EXH 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.



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

<Check Valve Operation Principle>



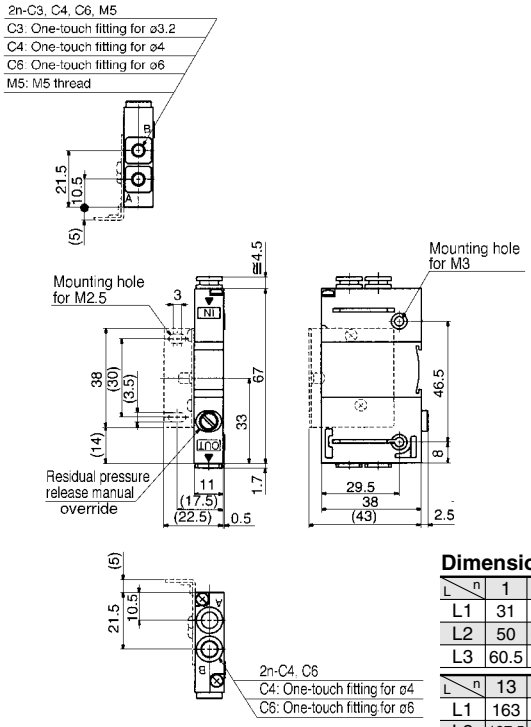
Specifications

Max. operating pressure	0.8MPa
Min. operating pressure	0.1MPa
Ambient and fluid temperature	–5 to 50˚C
Effective area (N*l*/min) Note)	2.7mm² (147.23)
Max. operating fraquency	180CPM

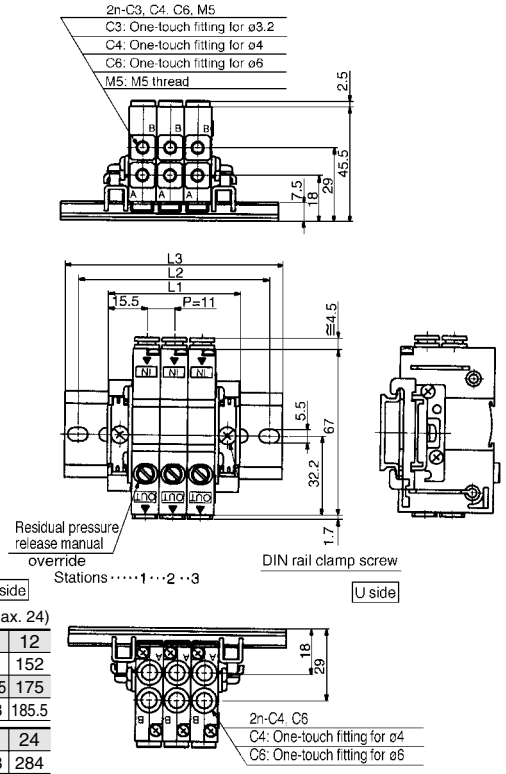
Note) As per JISB8375-1981
(Supply pressure: 0.5 MPa)

Dimensions

Single



Manifold



Dimensions Equation 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

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

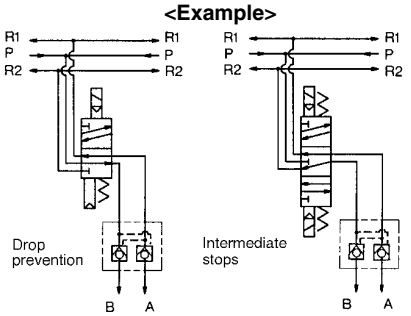
M5	M5 thread
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6

Option

–	None
F	With blacket
D	DIN rail mounting (for manifold)
N	With name plate

Note 1) When specifying more than one option, please list alphabetically. Example)-DIN

<Example>



Manifold

VVQ1000–FPG– 06

Stations

01	1 station
⋮	⋮
16	16 stations

<Example>
VVQ1000-FPG-06·····6 stations of manifold
* VQ1000-FPG-C4M5-D, 3 sets
* VQ1000-FPG-C6M5-D, 3 sets } Double check block

⚠ Caution

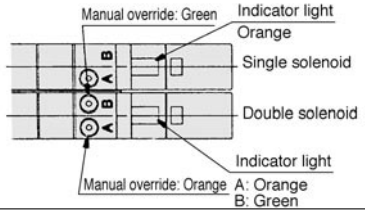
- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap. Also, check the cylinder's tube gasket, piston packing and rod packing for leakage.
- 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 ass'y on the double check block.
  {Tightening torque: 0.8 to 1.2Nm}
- If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop intermediately.

⚠Precautions

⚠Caution

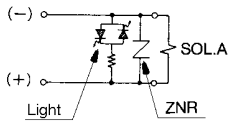
Indicator Light and Surge Voltage Suppressor

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

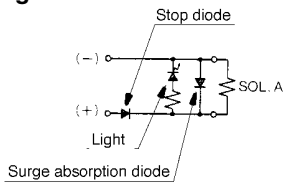


∗ In case of VQ0000, solenoid and manual override on both sides.

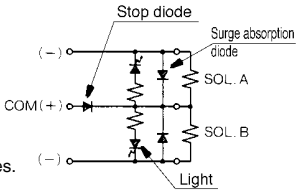
VQ0000 (DC)



VQ1000 (DC)
Single solenoid



VQ1000
Double solenoid



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

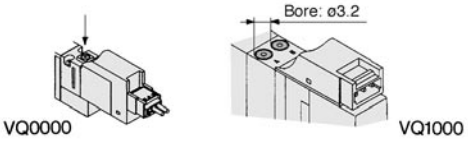
Note) A-side energization: A light (orange) illuminates. B-side energzation: B-light (green) illuminates.
Equipped with a wiring error prevention (stop diode) mechanism and a surge absorption (surge absorption diode) mechanism.

⚠Warning

Manual Override

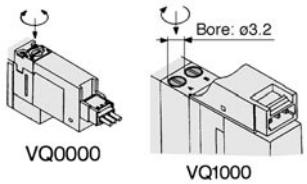
Without an electric signal for the solenoid valve the manual override is used for switching the main valve.
Standard model: Non-locking push style
Option: Push-locking slotted/lever style

■Non-locking push style



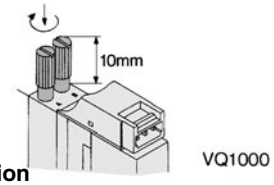
Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

■Push-locking slotted style <Opiton>



Push down on the manual override button with a small screwdriver until it stops. While down, turn clockwise by 90˚ to lock it.Turn it counterclockwise to release it.

■Push-locking lever style <Option>

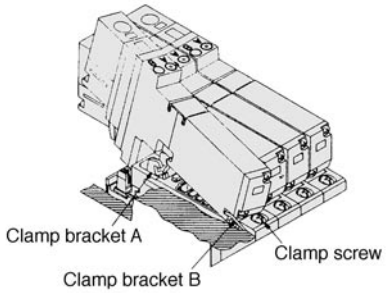


Push down on the manual override button with a small screwdriver or with your fingers until it stops. Turn clockwise by 90˚ to lock it. Turn it counterclockwise to release it.

⚠Caution
Do not apply too much torque when turning the lock style manual override. (0.1Nm or less)

⚠Caution

How to Mount/Remove Solenoid Valve



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. When the screw head cannot be pressed easily, gently press the area near the manual override of the valve.

How to mount

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. (Appropriate clamping torque: 2.5 to 0.35Nm)

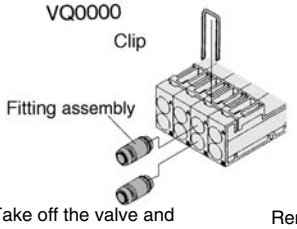
⚠Caution

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

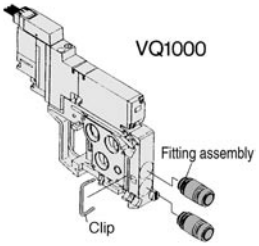
⚠Caution

Replacement of Cylinder Port Fittings

The cylinder port fitting are in 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 unitl 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 tube O.D	Fitting ass'y No.	
	VQ0000	VQ1000
Applicable tube ø3.2	VVQ1000-51A-C3	VVQ1000-50A-C3
Applicable tube ø4	VVQ1000-51A-C4	VVQ1000-50A-C4
Applicable tube ø6	—	VVQ1000-50A-C6
M5 female thread	—	VVQ1000-50A-M5

∗ Refer to “Options” on p.1-780 to 1-783 for other types of fittings.

⚠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 1.2Nm. When inserting operation is difficult, the M5 thread assembly can be removed from the manifold block, attach the fitting, and then reinstall to the manifold.
3) The minimum order quantity is 10 pcs.

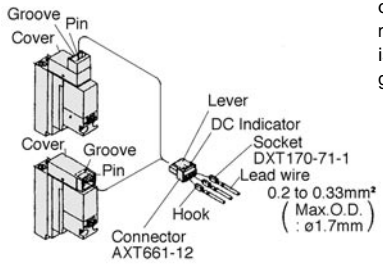
⚠ Precautions

⚠Caution

How to Use Plug Connector

Connection/Disconnection of Plug

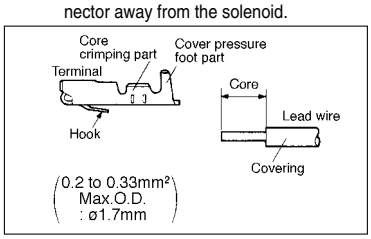
Push the connector straight onto the pins of the solenoid, making sure the lip of the lever is securely positions in the groove on the solenoid cover.



Crimping the Lead Wire and Socket

Peel 3.2 to 3.7mm of the tip of lead wire, enter the core wires 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.

Crimp the lever against the connector and pull the connector away from the solenoid.

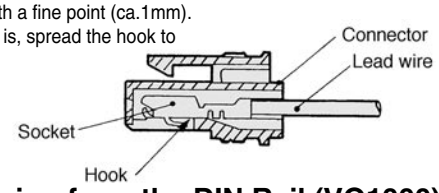


Socket with Lead Wire Connection

Insert a socket into the square hole (Indicated +, –) 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.

Disconnection

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

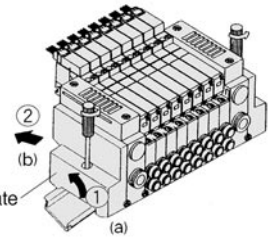


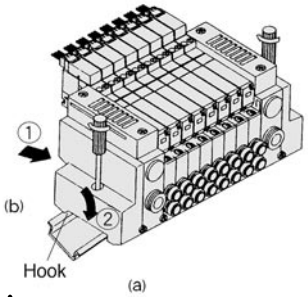
⚠Caution

Mounting/Removing from the DIN Rail (VQ1000)

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.





Mouting

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. Tighten the clamp screw on side (a) of the end plate. The appropriate tightening torque is 1.2 to 1.6Nm.

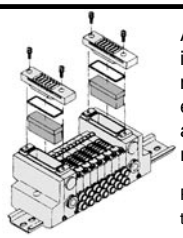
⚠Caution

Enclosure IP65

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

⚠Caution

Built-in Silencer Replacement Element



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.

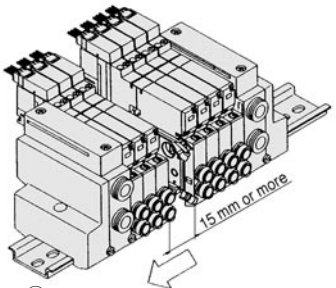
Model	Element part No.	
	VQ0000	VQ1000
Built-in Silencer, Direct exhaust(-S)	VVQ0000-82A-1	VVQ1000-82A-1

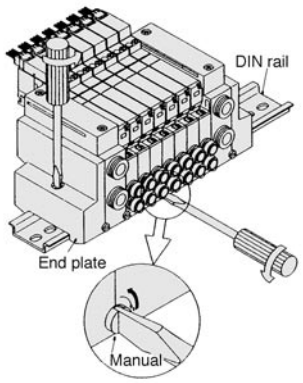
∗ The minimum order quantity is 10 pcs.

⚠Caution

Manifold Base Station Increasing Procedure(VQ1000)

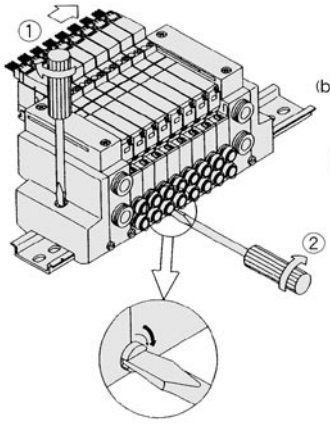
① Loosen the clamp screw on the top surface of the end plate on one side.
②Turn the manual override between the manifold blocks at the increasing location with a regular screwdriver, etc. couterclockwise.

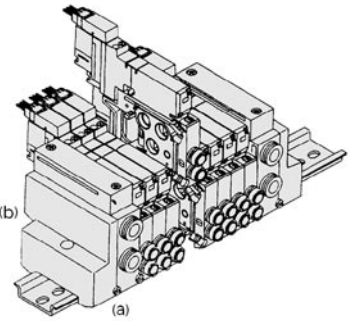




③ Slide the manifold base to the side where the screw is loosened. Make a clearance of 15mm or more.

④ Mount the station-increasing manifold block ass'y 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 thus station-increasing is completed. (Appropriate tightening torque is 1.2 to 1.6Nm)

Manifold block assembly

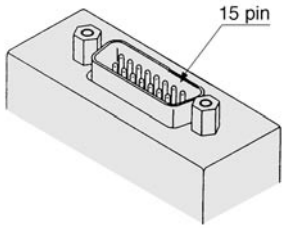
VQ1000	Port size
VVQ1000-1A-2-C3	One-touch fitting for ø3.2
VVQ1000-1A-2-C4	One-touch fitting for ø4
VVQ1000-1A-2-C6	One-touch fitting for ø6
VVQ1000-1A-2-M5	M5 thread

Options

Different Number of Connector Pins

When an F kit or P kit with a different number of pins (standard pins: F=25; P=26) is desired, the cable assembly will not be provided. Place an order for the cable assembly separately. Select the desired number of pins and cable length from the cable assembly list.

F **Kit (D-sub connector) 15 pin**



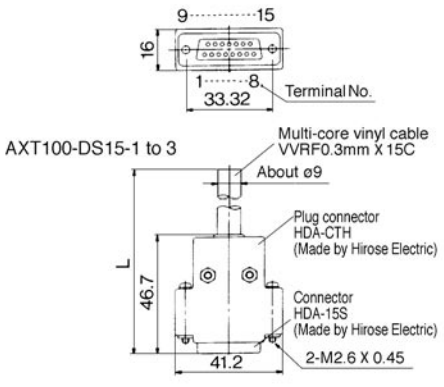
How to Order Manifold

VV5Q12 – 06 F SA – D □ -Q

- 06: Stations
- F: How to order D-sub connector, 15 pin
- SA: Connector location –Side(horizontal) Without cable
- D: Option

Kit/Electrical entry

Pins \ Location	Top (vertical)		Side (horizontal)	
15 pin (Max. 7stations)	F Kit	suffix: UA	F Kit	suffix: SA



Wire colour table by terminal number of D-sub connector cable assembly

Terminal No.	Lead wire colour	Dot marking
1	Black	—
2	Brown	—
3	Red	—
4	Orange	—
5	Yellow	—
6	Pink	—
7	Blue	—
8	Violet	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black

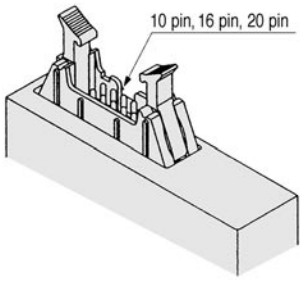
∗ In the same way as the 25 pin (standard) products, the terminal No.1 for is SOL.A at the 1st stantion, the terminal No.9 for SOL.B at the 1st station, and the terminal No.8 for COM.

D-sub connector cable assembly

Length(L) \ Pins	15 pin
1.5m	AXT100-DS15-1
3m	AXT100-DS15-2
5m	AXT100-DS15-3

∗ When using other commercially avaiable connectors, select models that conform to MIL-C-24308.

P **Kit (Flat cable connector) 10 pin, 16 pin, 20 pin**



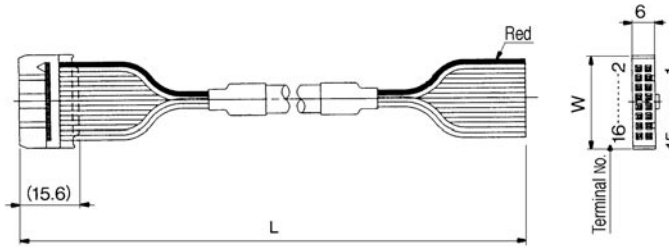
How to Order Manifold

VV5Q12 – 06 P SC – D □ -Q

- 06: Number of stations
- P: How to order Flat cable, 20 pin
- SC: Connector location –Side (horizontal) Without cable
- D: Option

Kit/Electrical entry

Pins \ Location	Top (vertical)		Side (horizontal)	
10 pin (Max. 4 stantions)	P Kit	suffix: UA	P Kit	suffix: SA
16 pin (Max. 7 stantions)		suffix: UB		suffix: SB
20 pin (Max. 9 stantions)		suffix: UC		suffix: SC



∗ In the same way as the 26 pin (standard) products, the terminal No.1 is 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 cable assembly

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

∗ When using other commercially avaiable connectors, select models with strain relief that conform to MIL-C-83503.

Made to Order

Special Wiring Specifications

Regardless of the valve or option, the standard internal wiring for double solenoid capability is provided to each station of F/P/T/S kit.
As made-to-order combinations of single and double wiring (connected to SOL A, B) are available.

1. How to Order

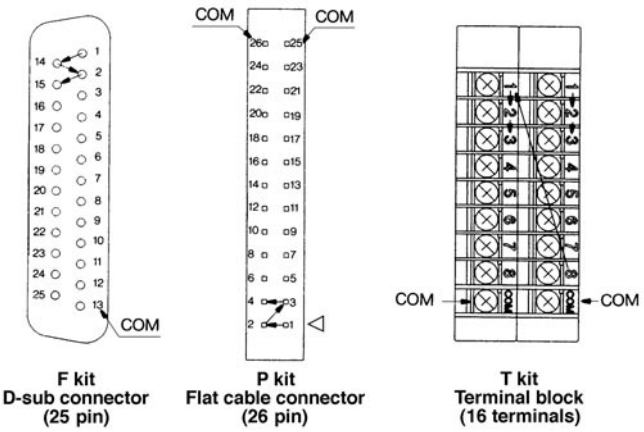
Indicate an option symbol, "–K," for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification form.

How to order manifold **VV5Q05–08C4FU1–D K S-Q**

List option symbols in alphabetical order

2. Wiring specification

With the A side solenoid of the 1st station as no.1 (meaning, to be connected to no.1 terminal), wires are connected in the order indicated by the arrow in the DWG without making any terminals vacant.



F kit
D-sub connector (25 pin)

P kit
Flat cable connector (26 pin)

T kit
Terminal block (16 terminals)

3. Max. number of stations

The max. 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 cable connector)				T kit (Terminal block)		S kit (Serial transmission)
Model	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. number	16 (1)	14	16 (1)	16 (1)	14	8	8	16	16

Note 1) Due to the limitation of internal wiring.

Negative COM Specifications [Series VQ1□10]

Order the valves and manifolds with negative COM specification as follows.

VQ1110 N –5M-Q

Negative COM specification

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

Inch-size One-Touch Fitting

The valve with inch-size One-touch fittings is shown below.

VV5Q12– 06 N7 PSO – D -Q

Number of stations
Cylinder ports
Option
Kit/Electrical entry

Symbol		N1	N3	N7	M5T	NM
Applicble tube O.D(Inch)		ø1/8"	ø5/32"	ø1/4"	10-32UNF (M5)	Mixed size
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.

P, R port size
VQ0000····· ø1/4"
VQ1000····· ø5/16"

Plug Connector Assembly Model

F, P, and S kits need connector assembly when adding a valve station. Specify the style of valve and connector assembly.

Connector assembly No.

Specifications		No.
Single VQ0000 (2 wire)	Positive COM	AXT661-14A-F
	Negative COM	AXT661-14AN-F
Double(latching) (3 wire)	Positive COM	AXT661-13A-F
	Negative COM	AXT661-13AN-F

Note) Lead wire length: 300mm
The parts numbers above are applicable to 2 to 10 stations.
11 to 16 stations: "AXT661-$^{13}_{14}$A(N)-F-425".

DIN Rail Mounting Style

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. 30mm 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–D0S-Q

List option symbols in alphabetical order

● 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-Q

DIN rail for 9 stations

List option symbols in alphabetical order

● When changing the manifold style into a DIN rail mounting (VQ0000 only)

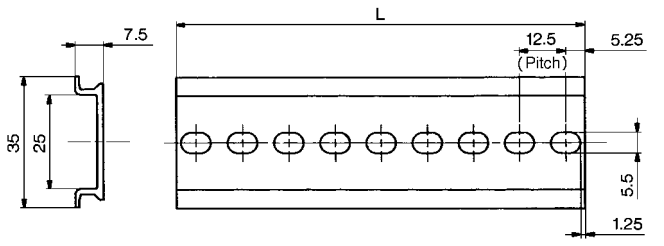
Order brackets for mounting a DIN rail. (See Options on p.1.12-191)

No. VVQ0000–57A–5 2 pcs. per one set.

● When ordering DIN rail only (VQ0000 only)

DIN rail No.: AXT100–DR–□

∗ Put no. in the square using the DIN rail dimensional table.
Refer to the each kit dimensional drawing for L dimension.



L dimension (mm) L=12.5 X n+10.5

No.	1	2	3	4	5	6	7	8	9	10
L	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	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	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	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

Series VQ
Single Unit

For individual use of a single valve

VQ0000

Model

Series		Configuration		Model		Effective area[1] (mm²)(Nℓ/min)	Response time [2] (ms) Standerd: 1W H: 1.5W	Weight (g)
Base mounted	VQ0000 plug lead	2 position	Single	Metal seal	VQ0150	2.7 (147.23)	12 or less	50[3]
				Rubber seal	VQ0151	3.6 (196.3)	15 or less	
			Double	Metal seal	VQ0250	2.7 (147.23)	10 or less	
				Rubber seal	VQ0251	3.6 (196.3)	15 or less	
		3 position	Closed centre	Metal seal	VQ0350	2.0 (107.97)	20 or less	65[3]
				Rubber seal	VQ0351	2.7 (147.23)	25 or less	
			Exhaust centre	Metal seal	VQ0450	2.0 (107.97)	20 or less	
				Rubber seal	VQ0451	2.7 (147.23)	25 or less	

Note 1) Cylinder port size C4: (VQ0000)
Note 2) As per JIS8375-1981(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.
Note 3) Weight including sub-plate.

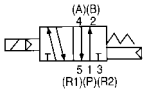
Standard Specifications

Valve	Seal		Metal seal	Rubber seal
	Fluid		Air/Inert gas	Air/Inert gas
	Max.operating pressure		0.7MPa (High pressure type: 0.8MPa)	
	Min. operating pressure	Single	0.1MPa	0.15MPa
		Double	0.1MPa	0.1MPa
		3 position	0.1MPa	0.2MPa
	Ambient and fluid temperature		–10 to +50˚C [1]	
	Lubrication		Not required	
	Manual override		Non-locking push style/Push-locking slotted or lever style (Option)	
	Impact/Vibration resistance [2]		150/30 m/s²	
	Protection structure		Dust proof	
Solenoid	Coil rated voltage		12, 24V DC	
	Allowable voltage		±10% of rated voltage	
	Coil insulation		Class B or equivalent	
	Power consumption (Current value)	24V DC	1W DC (42mA), 1.5W DC (63mA),[3] 0.5W DC (21mA) [4]	
		12V DC	1W DC (83mA), 1.5W DC (125mA),[3] 0.5W DC (42mA) [4]	

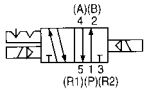
Note 1) Use dry air to prevent condensation when operating at low temperature.
Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, for both energized and deenergized states.
Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2,000 Hz. Test was performed at both energize and de-energized states to the axis and right angle directions of the main valve and armature. (Value in the initial stage.)
Note 3) Value for high pressure type (1.5W)
Note 4) Value for low wattage type (0.5W)

JIS Symbol

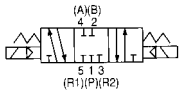
2 position single



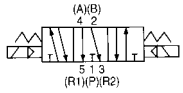
2 position double



3 position closed centre



3 position exhaust centre



How to Order Valve

VQ0 1 5 0 Y – 5 L □ – C4 -Q

Series VQ0000

Configuration

1	2 position single
2	2 position double
3	3 position closed centre
4	3 position exhaust centre

Seal

0	Metal
1	Rubber

Pilot valve (Option)

Symbol	Specification	DC
—	Standard	(1.0W) ○
H	Hight pressure	(1.5W) ○
Y	Low wattage	(0.5W) ○

Coil voltage

5	24 V DC
6	12 V DC
9	50 V or less
Order Made	Contact SMC for other voltages (9)

Electrical entry

G	Grommet
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

—	Non-locking push style
B	Push-locking slotted style *

* Option

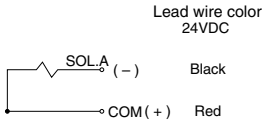
Sub-plate SUP/CYL ports

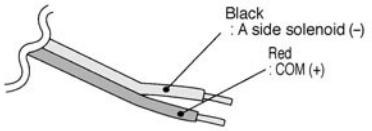
—	Without subplate
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
M5	M5 thread

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 300mm. When a valve with lead wire of 600mm or more is needed, specify both the valve without connector and the longer connector ass'y no.

Example) Lead wire length 1000mm
VQ1110N-5LO ····· 3 pcs.
AXT661-14A-10·····3 pcs.

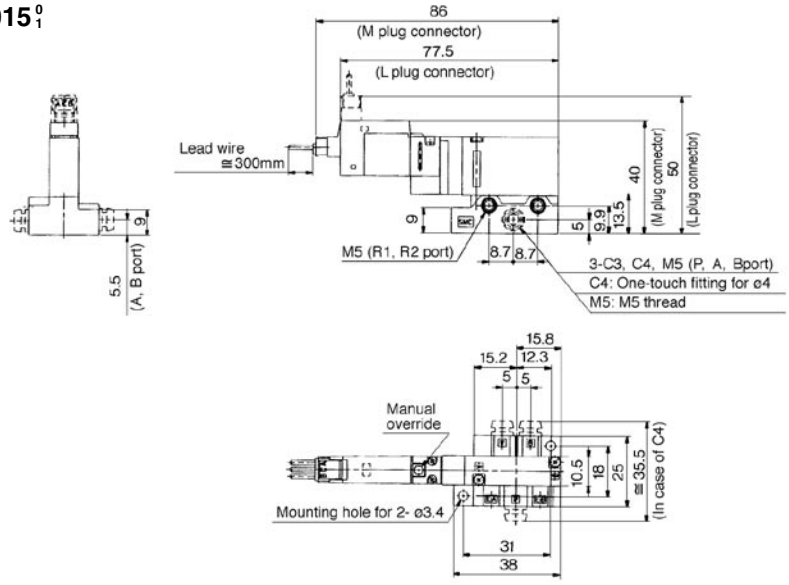
Connector assembly

Lead wire length	Ass'y part No.
Socket (3 pcs.)	AXT661-12A
300mm	AXT661-14A
600mm	AXT661-14A-6
1000mm	AXT661-14A-10
2000mm	AXT661-14A-20
3000mm	AXT661-14A-30

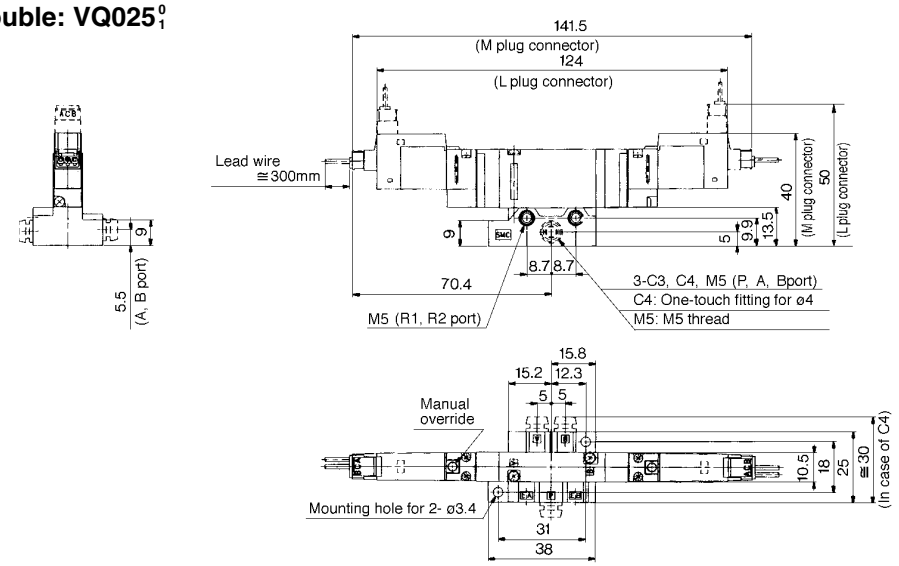
Single Unit

Dimensions

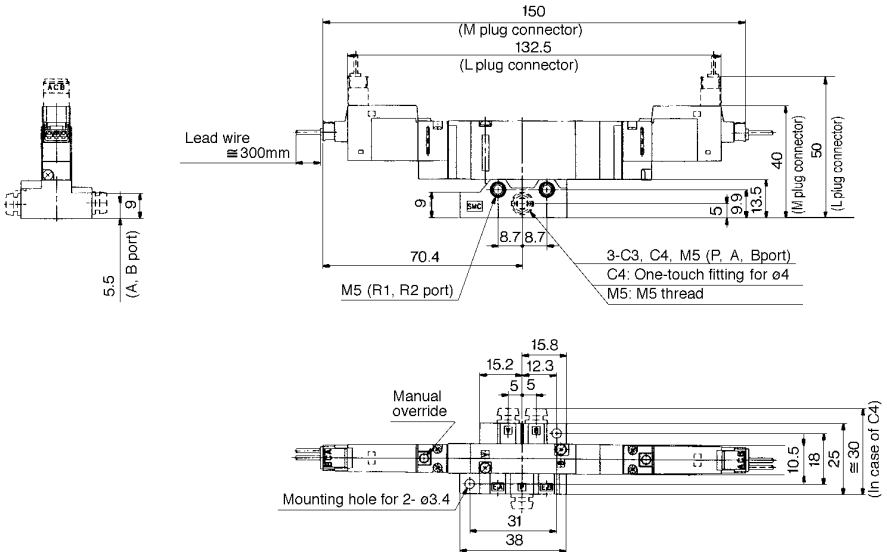
2 position single: VQ015$^{0}_{1}$



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



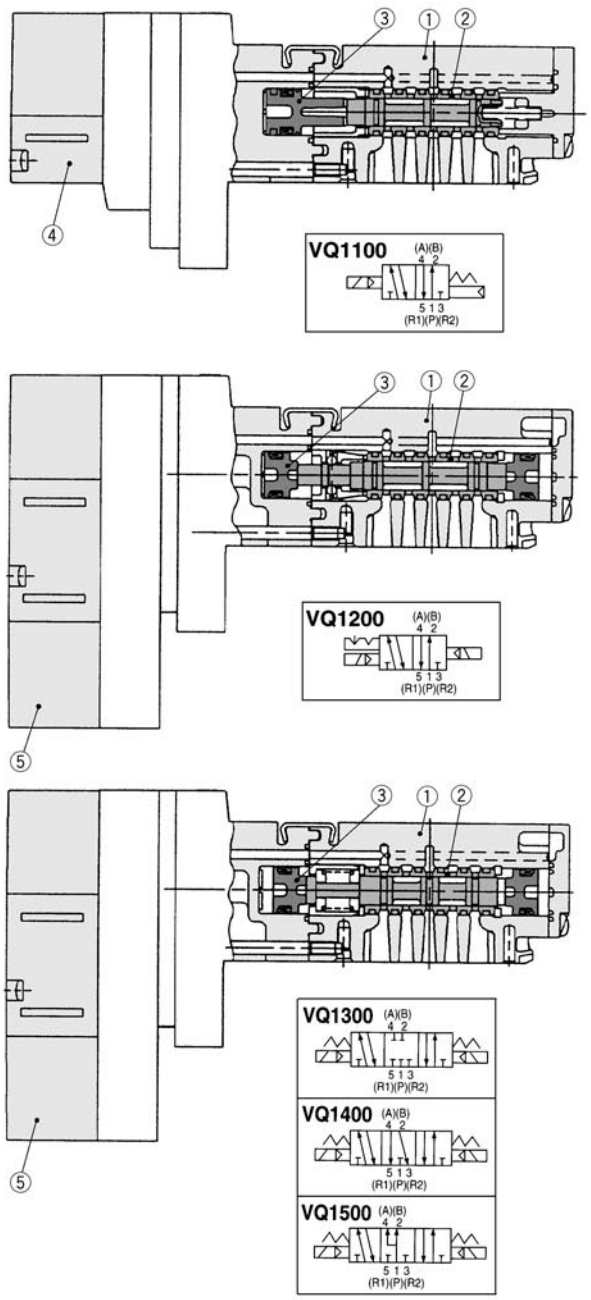
3 position closed centre/exhaust centre: VQ0$^{3}_{4}$5$^{0}_{1}$



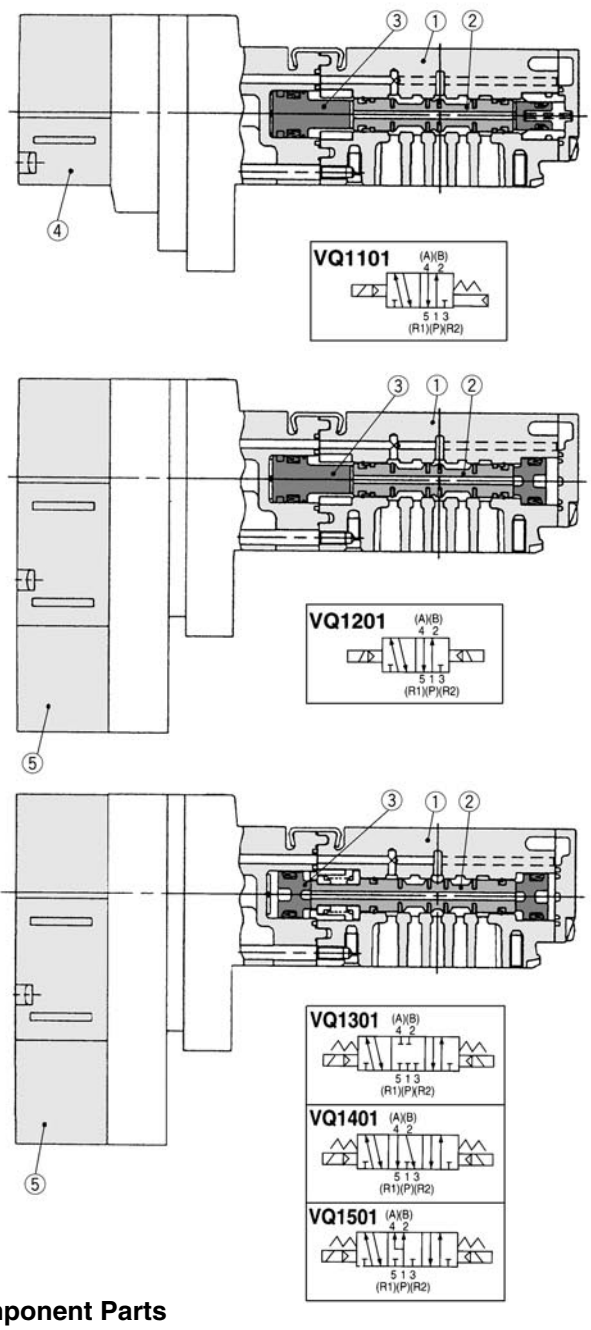
Construction/Component Parts, Replacement Parts

Construction: Plug-in Unit/VQ1000

Metal seal



Rubber seal



Component Parts

No.	Description	Material	Note
①	Body	Zinc die cast	
②	Spool/Sleeve	Stainless steel	
③	Piston	Resin	

Replacement Parts

④	Pilot valve assembly	VQ111$^{(H)}_{(Y)}$-□-1$^{(1)}$	Single
⑤	Pilot valve assembly	VQ131$^{(H)}_{(Y)}$-□$^{(1)}$	Double/ 3 position

Note 1) (Y): 0.5W
(H): 1.5W

Voltage

5	24 V DC
6	12 V DC

Component Parts

No.	Description	Material	Note
①	Body	Zinc die cast	
②	Spool valve	Aluminum/NBR	
③	Piston	Resin	

Replacement Parts

④	Pilot valve assembly	VQ111$^{(H)}_{(Y)}$-□-1$^{(1)}$	Single
⑤	Pilot valve assembly	VQ131$^{(H)}_{(Y)}$-□$^{(1)}$	Double/ 3 position

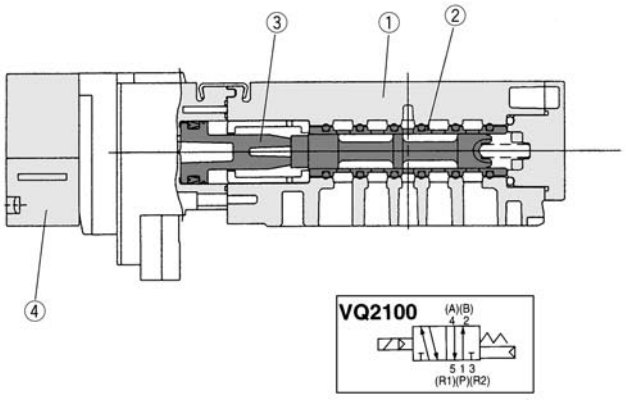
Note 1) (Y): 0.5W
(H): 1.5W

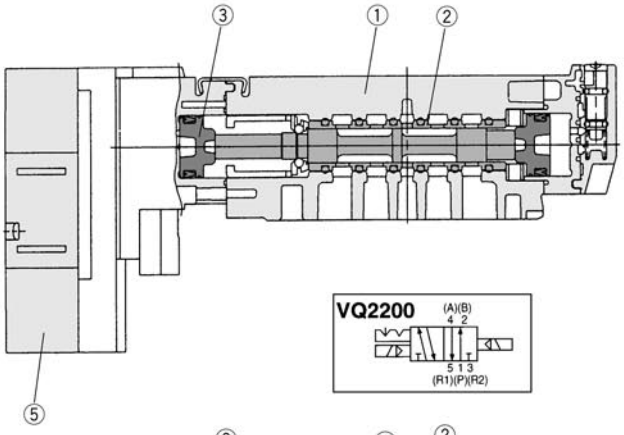
Voltage

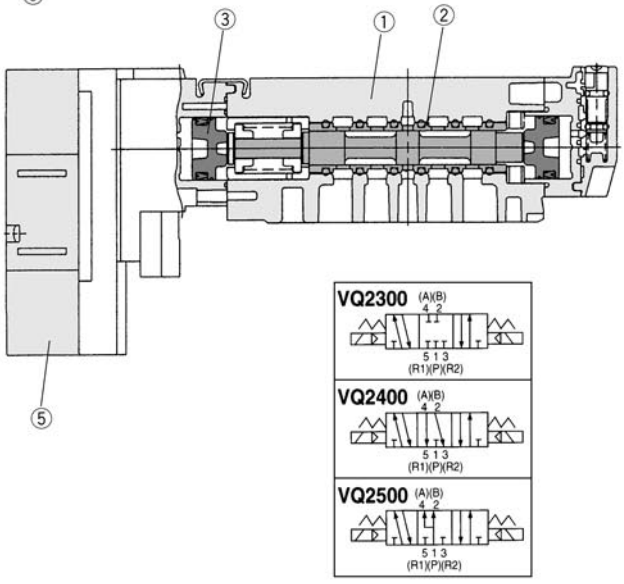
5	24 V DC
6	12 V DC

Construction: Plug-in Unit/VQ2000

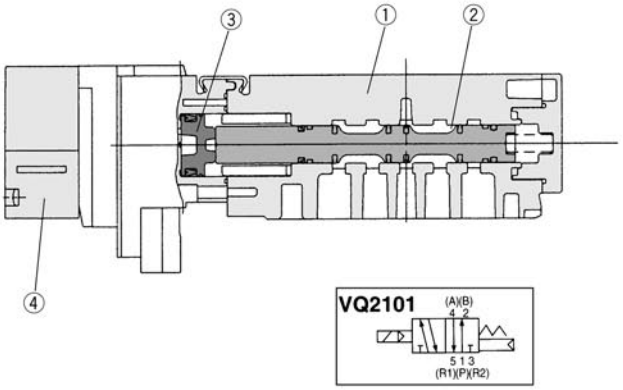
Metal seal

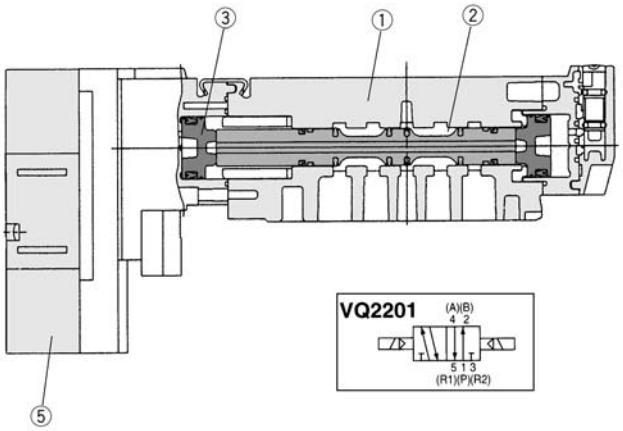


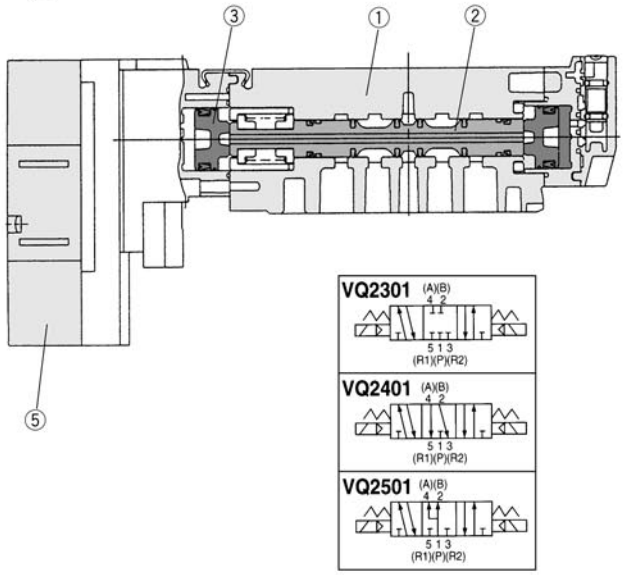




Rubber seal







Component Parts

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

Replacement Parts

④	Pilot valve assembly	VQ111$^{(H)}_{(Y)}$-□-1$^{(1)}$	Single
⑤	Pilot valve assembly	VQ131$^{(H)}_{(Y)}$-□$^{(1)}$	Double/ 3 position

Note 1) (Y): 0.5W
(H): 1.5W

Voltage

5	24 V DC
6	12 V DC

Component Parts

No.	Description	Material	Note
①	Body	Aluminum die cast	
②	Spool valve	Aluminum/NBR	
③	Piston	Resin	

Replacement Parts

④	Pilot valve assembly	VQ111$^{(H)}_{(Y)}$-□-1$^{(1)}$	Single
⑤	Pilot valve assembly	VQ131$^{(H)}_{(Y)}$-□$^{(1)}$	Double/ 3 position

Note 1) (Y): 0.5W
(H): 1.5W

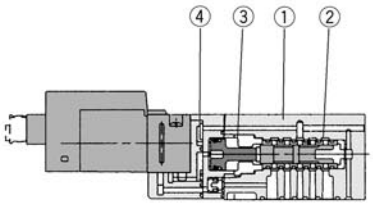
Voltage

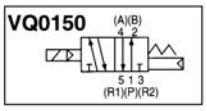
5	24 V DC
6	12 V DC

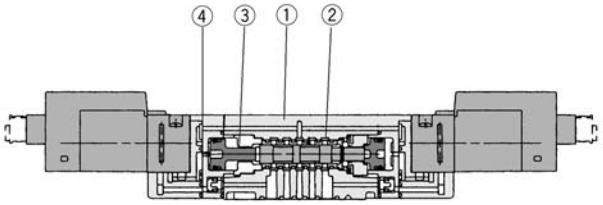
Construction

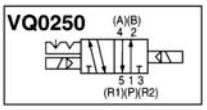
Construction: Plug Lead Unit/VQ0000

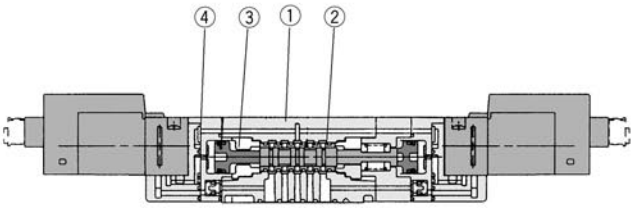
Metal seal

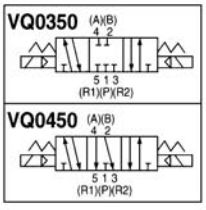




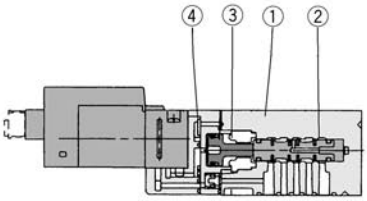


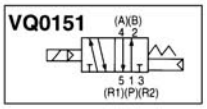


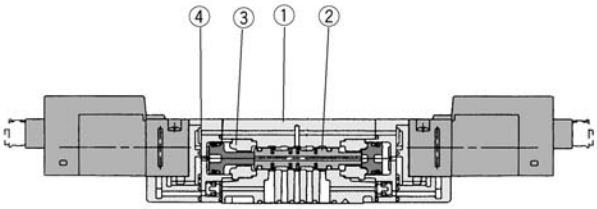


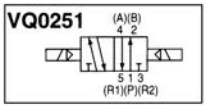


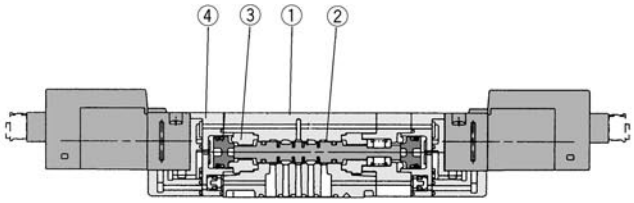
Rubber seal

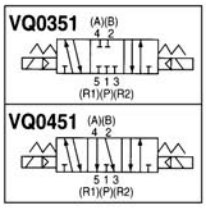












Component Parts

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

Replacement Parts

④	Pilot valve assembly	VQ110P$^{(H)}_{(Y)}$-□-1$^{L}_{M}$$^{(1)}_{G}$	

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

Voltage

5	24 V DC
6	12 V DC

Component Parts

No.	Description	Material	Note
①	Body	Aluminum die cast	
②	Spool valve	Aluminum/NBR	
③	Piston	Resin	

Replacement Parts

④	Pilot valve assembly	VQ110P$^{(H)}_{(Y)}$-□-1$^{L}_{M}$$^{(1)}_{G}$	

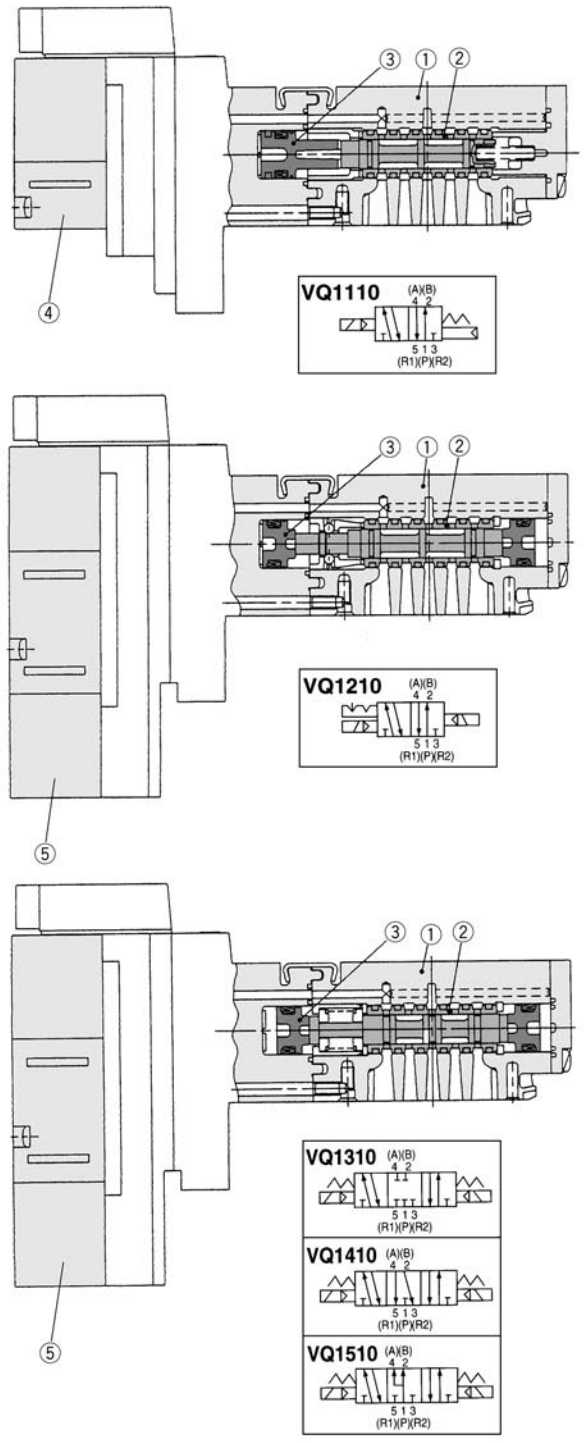
Note 1) (Y): 0.5W, (H): 1.5W
DC only for G type.

Voltage

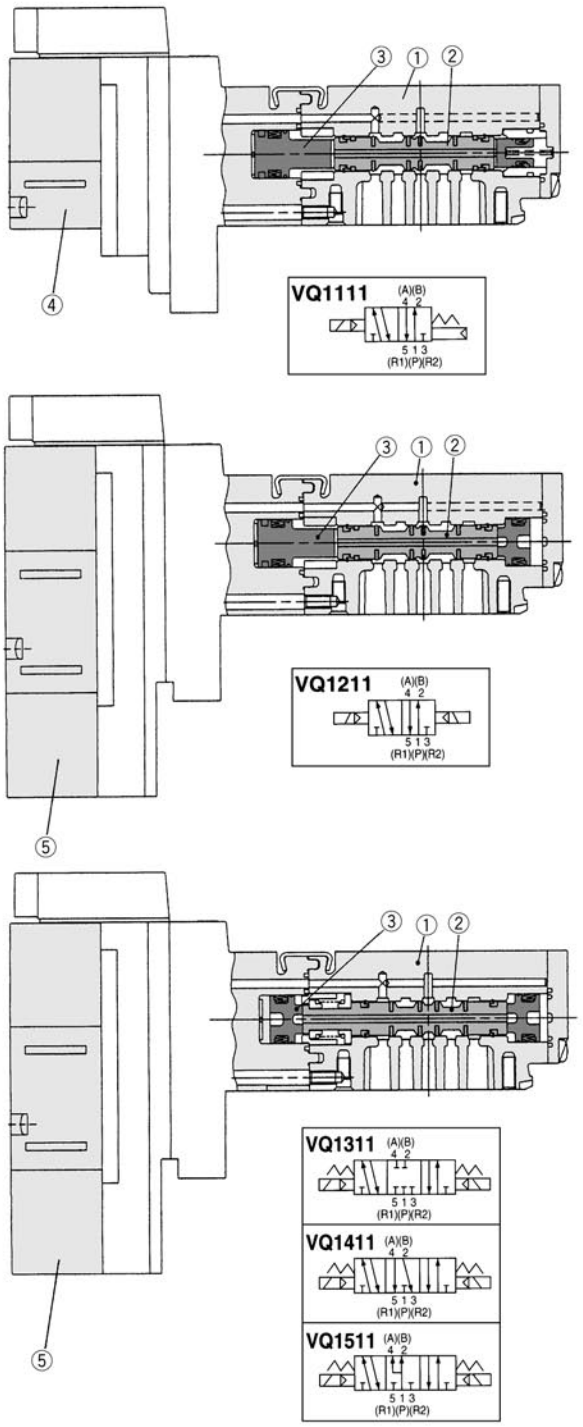
5	24 V DC
6	12 V DC

Construction: Plug Lead Unit/VQ1000

Metal seal



Rubber seal



Component Parts

No.	Description	Material	Note
①	Body	Zinc die cast	
②	Spool/Sleeve	Stainless steel	
③	Piston	Resin	

Replacement Parts

④	Pilot valve assembly	VQ111$^{(H)}_{(Y)}$-□-1$^{(1)}$	Single
⑤	Pilot valve assembly	VQ131$^{(H)}_{(Y)}$-□$^{(1)}$	Double/ 3 position

Note 1) (Y): 0.5W
(H): 1.5W

Voltage

5	24 V DC
6	12 V DC

Component Parts

No.	Description	Material	Note
①	Body	Zinc die cast	
②	Spool valve	Aluminum/NBR	
③	Piston	Resin	

Replacement Parts

④	Pilot valve assembly	VQ111$^{(H)}_{(Y)}$-□-1$^{(1)}$	Single
⑤	Pilot valve assembly	VQ131$^{(H)}_{(Y)}$-□$^{(1)}$	Double/ 3 position

Note 1) (Y): 0.5W
(H): 1.5W

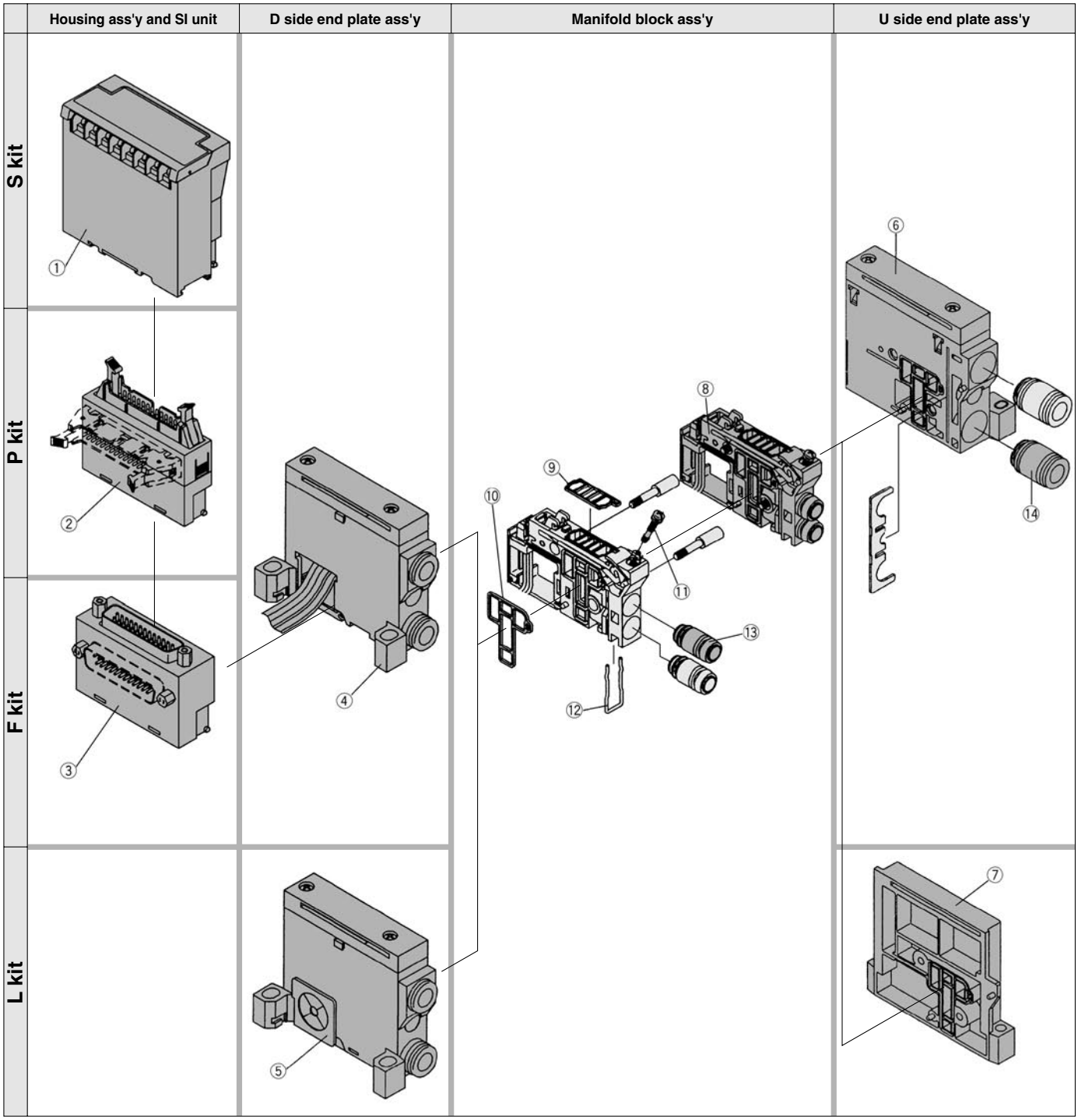
Voltage

5	24 V DC
6	12 V DC

Exploded View of Manifold

Plug-in Unit/VQ1000

(F, P, L, S kit)



<Housing Assembly and SI Unit>

Housing Assembly and SI Unit No.

No.	Manifold	No.	Name
①	(SB kit)	EX120-SMB1	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)
	(SC kit)	EX120-STA1	SI unit for SYSBUS Wire System (OMRON)
	(SN kit)	EX120-SPR1	SI unit for Profibus DP
	(SP kit)	EX120-SIB1	SI unit for Interbus S
	(SQ kit)	EX120-SDN1	SI unit for Device Net and Compo Bus/D (OMRON)
	(SY kit)	EX120-SCA1	SI unit for Can Open
	(ST2 kit)	EX120-SAS2	SI unit for ASI (yellow+black wires) Max. 8 stations
	(ST4 kit)	EX120SAS4	SI unit for ASI (yellow+black wires) Max. 4 stations
	(ST5 kit)	EX120SAS5	SI unit for ASI (yellow wires) Max. 4 stations
	(SV kit)	EX120-SMJ1	SI unit for CC-LINK (Mitsubishi Electric)
②	P $^{U}_{S}$ kit	AXT100-1-P $^{U}_{S}$ □ (1)	Flat cable housing ass'y □=Number of pins: 26, 20, 16, 10
③	F $^{U}_{S}$ kit	AXT100-1-F $^{U}_{S}$ □ (1)	D-sub connector housing ass'y □=Number of pins: 25, 15

Note 1) Top (vertical) entry connector for FU and PU while side(horizontal) entry connector for FS and PS.

<D Side End Plate Assembly>

④⑤D Side End Plate Assembly No.

VVQ1000–3A–1–□–□

Electrical entry

F	For F kit
P	For P kit
L	For L kit
S	For S kit

Option

–	Common EXH
R (1)	External pilot
S (1)	Built-in silencer, Direct exhaust

Note 1) RS when both conditions are applicable.
Note 2) The housing assembly and SI unit of F/P/S kit are not included. Separately place an order for ①, ②, and ③.

<U Side End Plate Assembly>

⑥U Side End Plate Assembly No. (For F/P/S kits)

VVQ1000–2A–1–□

Option

–	Common EXH
R	External pilot
S	Built-in silencer, Direct exhaust

Note)The ⑭'s fitting assembly is included.

⑦U Side End Plate Assembly No. (For L kit)

VVQ1000–2A–1–L

<Manifold Block Assembly>

⑧Manifold Block Assembly No.

VVQ1000–1A–□–□

Electrical entry

F1	F kit for 2 to 12 stations/Double wiring
F2	F kit for 13 to 24 stations/Double wiring
F3	F kit for 2 to 24 stations/Single wiring
P1	P, S kit for 2 to 12 stations/Double wiring
P2	S kit for 13 to 24 stations/Double wiring
P3	S kit for 2 to 24 stations/Single wiring
L0□ (1)	L0 kit □: Stations (1 to 8)
L1□ (1)	L1 kit □: Stations (1 to 8)
L2□ (1)	L2 kit □: Stations (1 to 8)

Port size

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

Note 1) Tie-rod (2 pcs.) and lead wire assembly for extensions are attached

<Replacement Parts for Manifold Block>

Replacement Parts

No.	Ass'y No.	Name	Material	Number
⑨	VVQ1000-80A-1	Gasket	NBR	12
⑩	VVQ1000-80A-2	Packing	NBR	12
⑪	VVQ1000-80A-3	Clamp screw	Carbon steel	12
⑫	VVQ1000-80A-4	Clip	Stainless steel	12

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

<Fitting Assembly>

⑬Fitting Assembly No. (For cylinder port)

VVQ1000–50A–□

Port size

C3	Applicable tube ø3.2
C4	Applicable tube ø4
C6	Applicable tube ø6
M5	M5 thread

Note) 10 pcs. per one set.

⑭Fitting Assembly No. (For P, R ports)

VVQ1000–51A–C8

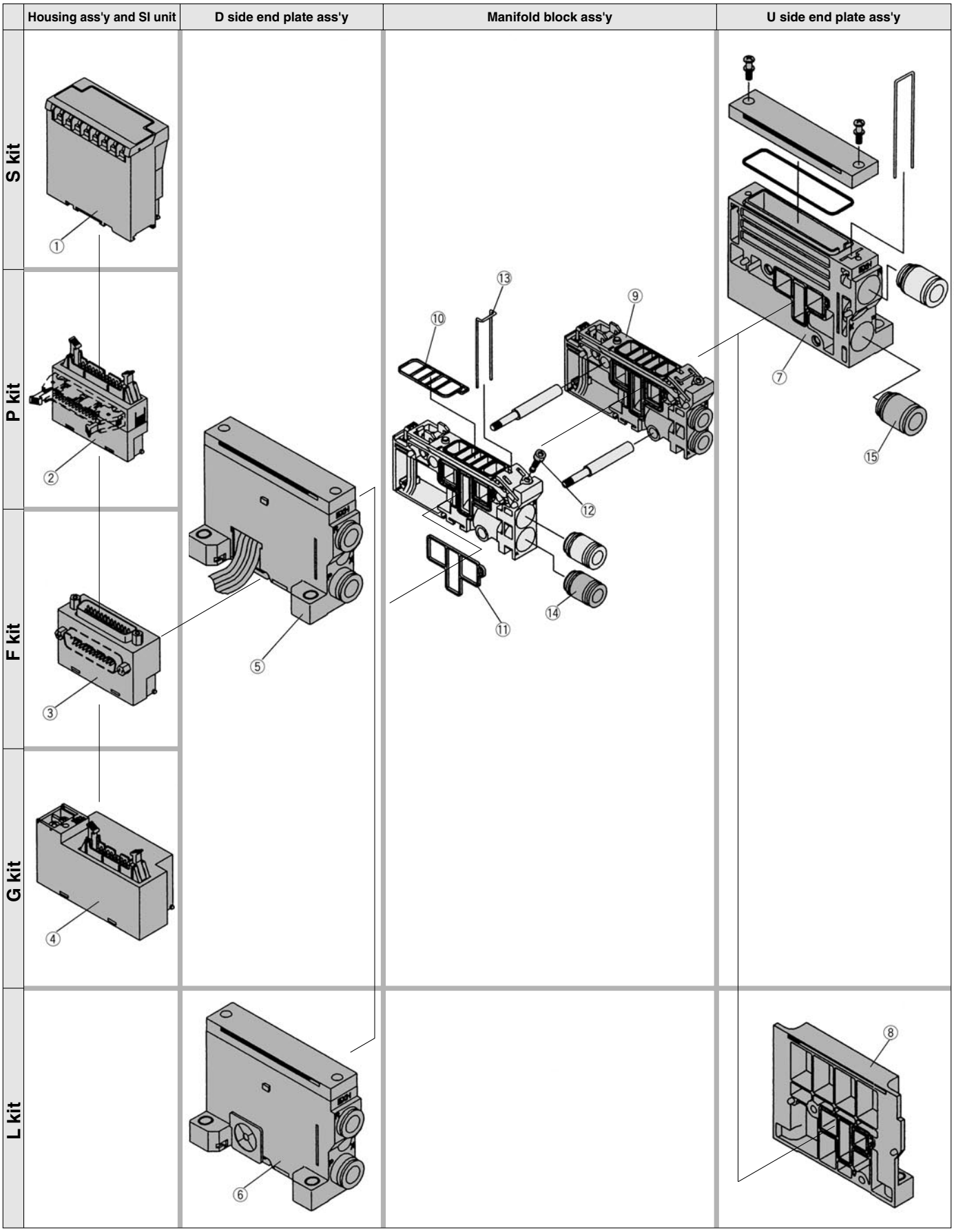
Applicable tube ø8

Note) 10 pcs. per one set.

Exploded View of Manifold

Plug-in Unit/VQ2000

(F, P, L, G, S kit)



<Housing Assembly and SI Unit>

Housing Assembly and SI Unit No.

No.	Manifold	No.	Name
①	(SB kit)	EX120-SMB1(-XP)(1) [EX123-SMB1](2)	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)
	(SBB kit)	[EX124-SMB1](3)	SI unit for MELSECNET/MINI-S3 Data Link System (2 power supply lines) (Mitsubishi Electric)
	(SC kit)	EX120-STA1(-XP)(1) [EX123-STA1](2)	SI unit for SYSBUS Wire System (OMRON)
	(SN kit)	EX120-SPR1	SI unit for Profibus DP
	(SP kit)	EX120-SIB1	SI unit for Interbus S
	(SQ kit)	EX120-SDN1 [EX124-SDN1](2)	SI unit for Device Net and Compobus/D (OMRON)
	(SY kit)	EX120-SCA1	SI unit for Can Open
	(ST2 kit)	EX120-SAS2	SI unit for ASI (yellow+black wires) Max. 8 stations
	(ST4 kit)	EX120SAS4	SI unit for ASI (yellow+black wires) Max. 4 stations
	(ST5 kit)	EX120-SAS5	SI unit for ASI (yellow wires) Max. 4 stations
②	P$^{U}_{S}$ kit	AXT100-1-P$^{U}_{S}$□ (4)	Flat cable housing ass'y □=Number of pins: 26, 20,16,10
③	F$^{U}_{S}$ kit	AXT100-1-F$^{U}_{S}$□ (4)	D-sub connector housing ass'y □=Number of pins: 25, 15
④	Gkit	AXT100-1-GU20	Flat cable housing ass'y with terminal block

Note 1) Suffix "–XP" for dust-proof SI unit.
Note 2) Dust tight/jet proof style (IP65)
Note 3) SBB kit is usable only for dust tight/jet proof style (IP65).
Note 4) Top entry connector for FU and PU while side entry connector for FS and PS.

<D Side End Plate Assembly>

⑤⑥D Side End Plate Assembly No.

VVQ2000–3A–1□–□

Electrical entry

F	For F kit
P	For P kit
L	For L kit
G	For G kit
S	For S kit

Option

–	Common EXH
R (1)	External pilot
S (1)	Built-in silencer, Direct exhaust

Note 1) Specify as "RS" when both conditions are applicable.
Note 2) The housing assembly and SI unit of F/P/G/S kit are not included. Separately place an order for ①, ②, ③and④.
Note 3) Consult SMC for dust tight/jet proof style (IP65).

<U Side End Plate Assembly>

⑦U Side End Plate Assembly No. (For F/P/G/S kits)

VVQ2000–2A–1□

Option

–	Common EXH
R	External pilot
S	Built-in silencer, Direct exhaust

Note 1) The ⑮ fitting assembly is included.
Note 2) The housing assembly and SI unit of F/P/G/S kit are not included. Separately place an order for ①, ②, ③and④.
Note 3) Consult SMC for dust tight/jet proof style (IP65).

⑧U Side End Plate Assembly No. (For L kit)

VVQ2000–2A–1–L

<Manifold Block Assembly>

Note) Tie-rod (2 pcs.) and lead wire ass'y for extensions are attached

⑨Manifold Block Assembly No.

VVQ2000–1A–□–□–□

Electrical entry

F1	F kit for 2 to 12 stations/Double wiring
F2	F kit for 13 to 24 stations/Double wiring
F3	F kit for 2 to 24 stations/Single wiring
P1	P, S kit for 2 to 12 stations/Double wiring
P2	S kit for 13 to 24 stations/Double wiring
P3	S kit for 2 to 24 stations/Single wiring
L0□	L0 kit□ Stations (1 to 8)
L1□	L1 kit□ Stations (1 to 8)
L2□	L2 kit□ Stations (1 to 8)

Port size

C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8

Enclosure

–	Dust-proof
W	Dust-resistant/jet-proof (IP65)

<Replacement Parts for Manifold Block>

Replacement Parts

No.	Ass'y No.	Name	Material	Number
⑩	VVQ2000-80A-1	Gasket	NBR	12
⑪	VVQ2000-80A-2	Packing	NBR	12
⑫	VVQ2000-80A-3	Clamp screw	Carbon steel	12
⑬	VVQ2000-80A-4	Clip	Stainless steel	12

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

<Fitting Assembly>

⑭Fitting Assembly No. (For cylinder port)

VVQ1000–51A–□

Port size

C4	Applicable tube ø4
C6	Applicable tube ø6
C8	Applicable tube ø8

Note) 10 pcs. per one set.

⑮Fitting Ass'y No. (For P, R ports)

VVQ2000–51A–C10

Applicable tube ø10

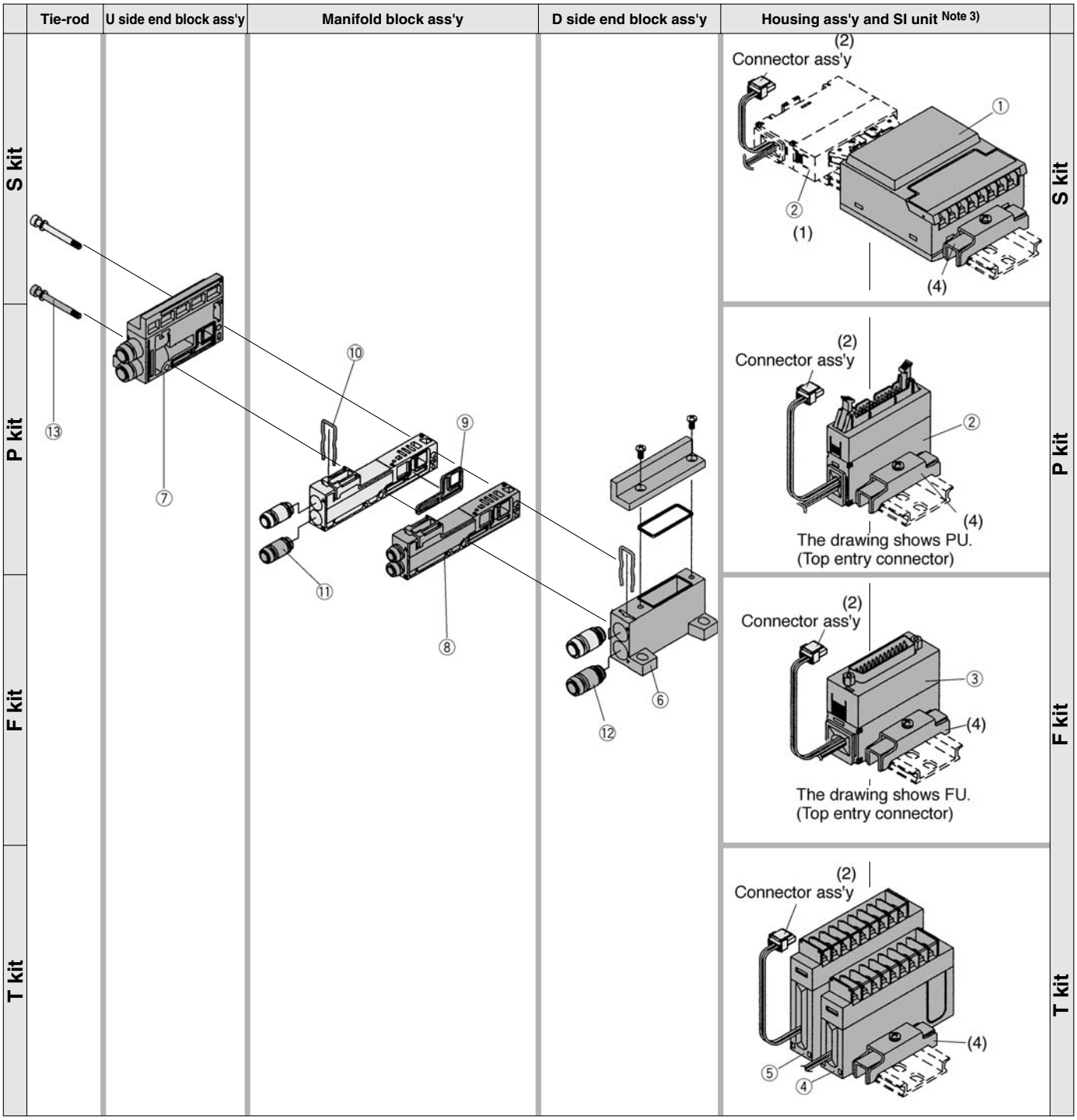
Note) 10 pcs. per one set.

Exploded View of Manifold

Plug Lead Unit/VQ0000

(F, P, C, S kit)

∗ Refer to the instruction manual for the way of increasing stations.



Note 1) S kit is composed of a flat cable housing ass'y (AXT100-2-PS20) of ① SI unit and ② P kit (20 pin).
Note 2) Since no connector ass'y is included, order it separately. (See p.1-788)
Note 3) Housing ass'y 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	No.	Name
① (1)	(SB kit)	EX130-SMB1	SI unit for MELSEC-A (Mitsubishi Electric)
	(SC kit)	EX130-STA1	SI unit for SYSMAC (OMRON)
②	P_S^U kit	AXT100-2-P_S^U □ (2)	Flat cable housing ass'y □=Number of pins: 26, 20, 16, 10
③	F_S^U kit	AXT100-2-F_S^U □ (2)	D-sub connector housing ass'y □=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 cable housing ass'y (AXT100-2-PS20) of ① SI unit and ② P kit (20 pin). Order 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. (See p.1-788)
Note 4) In case of standard specifications and double wiring. ④ is for 1 to 4 stations and ⑤ is for 5 to 8 stations.

<D Side End Plate Assembly>

⑥D Side End Plate Assembly No.

VVQ0000–3A–5–□

Option

—	Common EXH
S	Built-in silencer, Direct exhaust

Note) The ⑫'s fitting assembly is included.

<U Side End Plate Assembly>

⑦U Side End Plate Assembly No.

VVQ0000–2A–5–□

Option

—	Common EXH
S	Built-in silencer, Direct exhaust

<Manifold Block Assembly>

⑧Manifold Block Assembly No.

VVQ0000–1A–5–□

Port size

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

<Replacement Parts for Manifold Block>

Replacement Parts

No.	Ass'y No.	Name	Material	Number
⑨	VVQ0000-80A-5-2	Packing	NBR	12
⑩	VVQ0000-80A-5-4	Clip	NBR	12

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

<Fittings Assembly>

⑪Fittings Assembly No. (For cylinder port)

VVQ0000–50A–□

Port size

C3	Applicable tube ø3.2
C4	Applicable tube ø4

Note) 10 pcs. per one set.

⑫Fitting Ass'y No. (For P, R ports)

VVQ1000–50A–C6

Applicable tube ø6

Note) 10 pcs. per one set.

<Tie-rod Bolt>

⑬Tie-rod Bolt

VVQ0000–103A–5–□

Stations

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

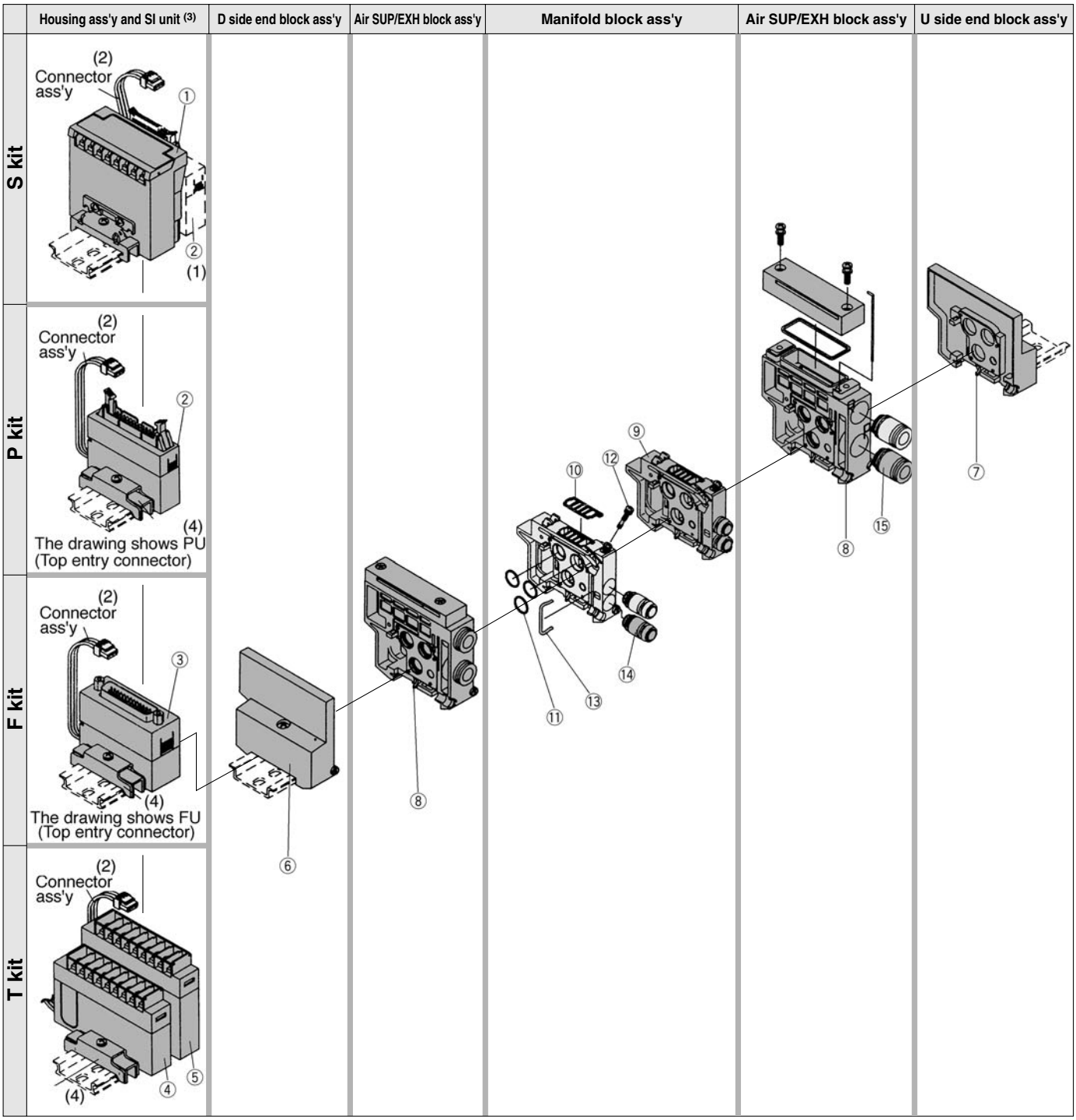
Note) 2 bolts per one set.

Exploded View of Manifold

Plug Lead Unit/VQ1000

(F, P, T, S kit)

∗Refer to the instruction manual for the way of increasing stations



Note 1) S kit is composed of a flat cable housing ass'y (AXT100-2-PU20) of ① SI unit and ② P kit (20 pin).
Note 2) Since no connector ass'y is included, order it separately. (See p.1-788)
Note 3) Housing ass'y 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	No.	Name
①	(SB kit)	EX121-SMB1	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)
	(SC kit)	EX121-STA1	SI unit for SYSBUS Wire System (OMRON)
	(SN kit)	EX121-SPR1	SI unit for Profibus DP
	(SP kit)	EX121-SIB1	SI unit for Interbus
	(SQ kit)	EX121-SDN1	SI unit for Device Net and Compo Bus/D (OMRON)
	(SY kit)	EX121-SCA1	SI unit for Can Open
	(ST2 kit)	EX121-SAS2	SI unit for ASI (yellow+black wires) Max. 8 stations
	(ST4 kit)	EX121-SAS4	SI unit for ASI (yellow+black wires) Max. 4 stations
	(ST5 kit)	EX121-SAS5	SI unit for ASI (yellow wires) Max. 4 stations
②	P^{U}_{S}kit	AXT100-2-P^{U}_{S}□ (2)	Flat cable housing ass'y □=Number of pins: 26, 20, 16, 10
③	F^{U}_{S}kit	AXT100-2-F^{U}_{S}□ (2)	D-sub connector housing ass'y □=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 cable housing ass'y (AXT100-2-PU20) of ① SI unit and ① P kit (20 pin). Order AXT100-2-PV20 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. (See p.1-788) Contact SMC for 200/220VAC specifications.
Note 4) In case of standard specifications and double wiring, ④ is for 1 to 4 stations and ⑤ is for 5 to 8 stations.

<D Side End Plate Assembly>

⑥D Side End Plate Assembly No.

VVQ1000–3A–2

<U Side End Plate Assembly>

⑦U Side End Plate Assembly No.

VVQ1000–2A–2

<Air Supply/EXH Block Assembly>

⑧Air Supply/EXH Block Assembly No.

VVQ1000–PR–2–C8–□

Note) The ⑮'s fitting assembly is included.

Option

—	Common EXH
S	Built in Silencer, Direct exhaust

<Manifold Block Assembly>

⑨Manifold Block Assembly No.

VVQ1000–1A–2–□

Port size

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

<Replacement Parts for Manifold Block>

Replaceable Parts

No.	Ass'y No.	Name	Material	Number
⑩	VVQ1000-80A-1	Gasket	NBR	12
⑪	VVQ1000-80A-2-2	O ring	NBR	12
⑫	VVQ1000-80A-3	Clamp screw	Carbon steel	12
⑬	VVQ1000-80A-2-4	Clip	Stainless steel	12

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

<Fitting Assembly>

⑭Fitting Assembly No. (For cylinder port)

VVQ1000–50A–□

Port size

C3	Applicable tube ø3.2
C4	Applicable tube ø4
C6	Applicable tube ø6
M5	M5 thread

Note) 10 pcs. per one set.

⑮Fitting Assembly No. (For P, R ports)

VVQ1000–51A–C8

Applicable tube ø8

Note) 10 pcs. per one set.