Metal Seal/Rubber Seal
Body Ported
Series VQ

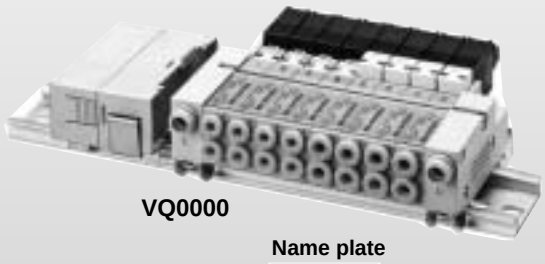
Thin compact design with large flow capacity (Flip style)

Model	Manifold pitch (mm)	Cv factor		Cylinder size
		Metal seal	Rubber seal	
VQ0000	10.5	0.15	0.2	up to ø40
VQ1000	11	0.25	0.35	up to ø50
VQ2000	16	0.81	0.90	up to ø80

A variety of product groups meet all FA needs.

- **Flip style demonstrates spacesaving effect.**
- **Cassette style enables flexible, speedy station increasing/decreasing**

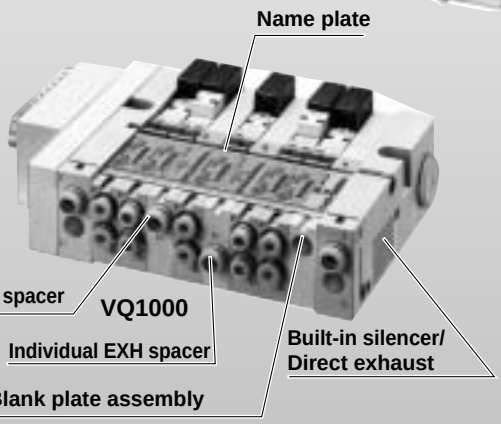
Flip Style



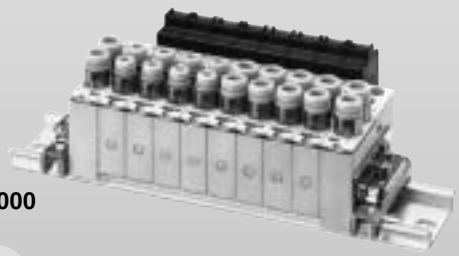
VQ0000

Cassette Style

VQ2000



A variety of options



VQ1000

Unprecedented high speed response and long service life

(In-house comparison)

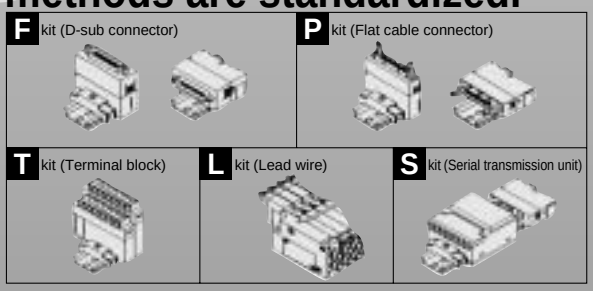
(Metal seal, single, with indicator light and surge voltage suppressor)

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.



Built-in One-touch fittings for easy piping

Body Ported

Valve Specifications

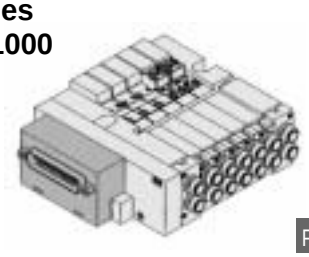
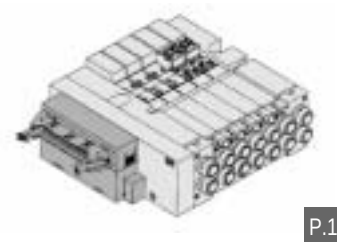
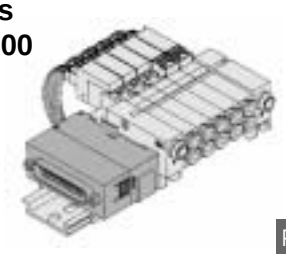
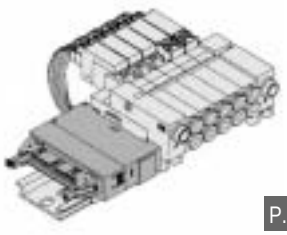
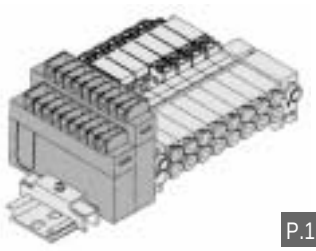
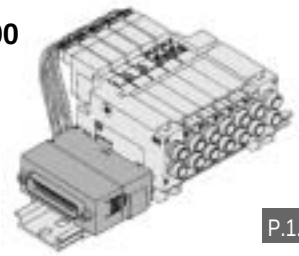
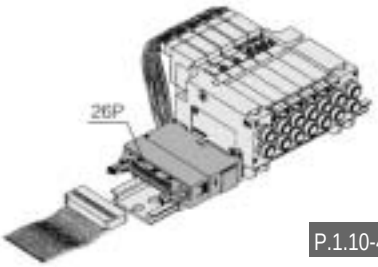
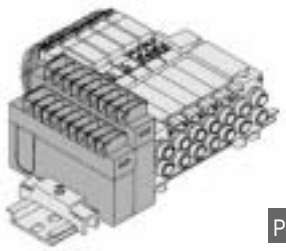
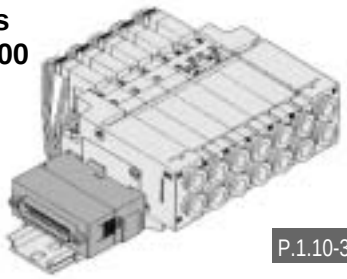
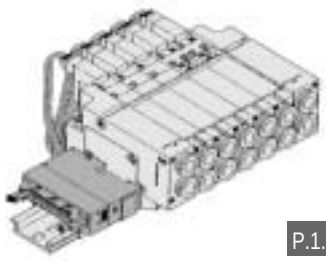
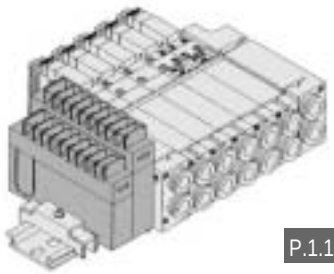
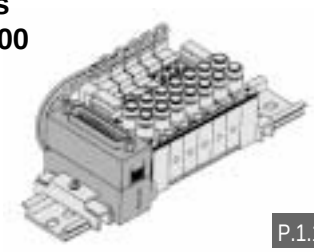
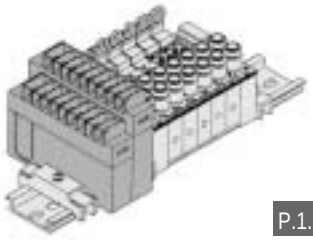
				Effective area (mm²) (Cv factor)		Configuration					Voltage			Electrical entry				Manual override		
				Single Double	3 position	Single	Double	Closed center	Exhaust center	Pressure center	12V 24V DC	100V 110V AC (50/60 Hz)	200V 220V AC (50/60 Hz)	Plug-in	Grommet	L plug connector	M plug connector	Non-locking push style	Push-locking slotted style	Push-locking lever style
Plug-in	Series VQ1000	Metal seal	VQ1□30	4.5 (0.25)	4.5 (0.25)	●	●	●	●	●	●	●	●	●				●	●	●
		Rubber seal	VQ1□31	6.3 (0.35)	6.3 (0.35)		Latching													
	P.1.10-8					P.1.10-10														
Plug lead	Series VQ0000	Metal seal	VQ0□40	2.7 (0.15)	1.9 (0.11)	●	●	●	●		●	●	●		Single, 3 position only	●	●	●	●	
		Rubber seal	VQ0□41	3.6 (0.2)	2.7 (0.15)		Latching													
	P.1.10-28					P.1.10-34														
	Series VQ1000	Metal seal	VQ1□40	4.5 (0.25)	4.5 (0.25)	●	●	●	●	●	●	●	●		Single, 3 position only	●	●	●	●	●
		Rubber seal	VQ1□41	6.3 (0.35)	6.3 (0.35)		Latching													
	P.1.10-28					P.1.10-34														
	Series VQ2000	Metal seal	VQ2□40	14.6 (0.81)	—	●	●				●	●	●		Single, 3 position only	●	●	●	●	●
		Rubber seal	VQ2□41	16.2 (0.9)	—		Latching													
	P.1.10-28					P.1.10-34														
Cassette	Series VQ1000	Metal seal	VQ1□70	3.6 (0.2)	3.6 (0.2)	●	●	●	●	●	●	●	●		Single, 3 position only	●	●	●	●	●
		Rubber seal	VQ1□71	5.4 (0.28)	5.4 (0.28)		Latching													
	P.1.10-70					P.1.10-72														

Options	P.1.10-26	P.1.10-66	P.1.10-66	P.1.10-66	P.1.10-90
D-sub connector 15 pin	●	●	●	●	●
Flat cable 10 pin, 16 pin, 20 pin	●	●	●	●	●
Negative COM specifications	Except for S kit ●	Except for S kit ●	Except for S kit ●	Except for S kit ●	Except for S kit ●
One-touch fitting/Inch size	●	●	●	●	●
For special wiring spec.	Except for L kit ●	Except for C kit ●	Except for C kit ●	Except for C kit ●	Except for C kit ●

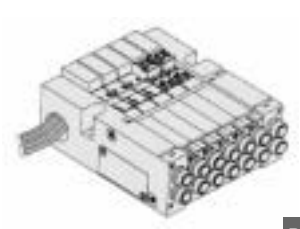
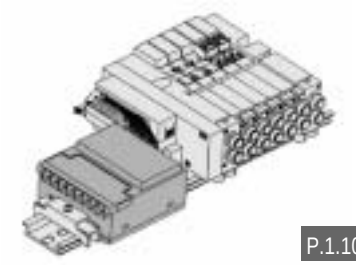
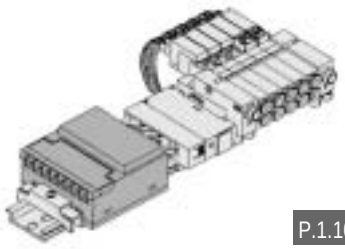
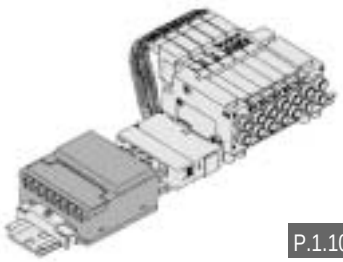
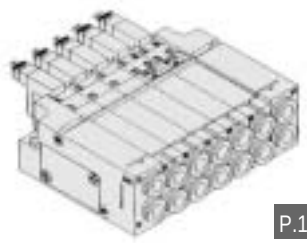
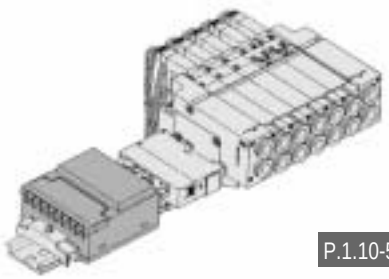
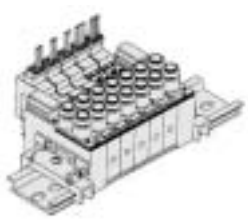
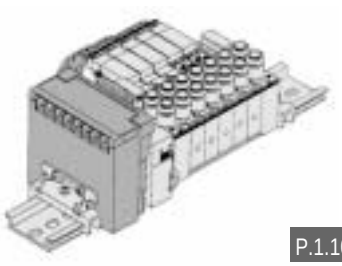
Manifold Options	P.1.10-21	P.1.10-57	P.1.10-57	P.1.10-57	P.1.10-85
Blank plate	●	●	●	●	
Individual SUP/EXH	●	●	●	●	●
SUP/EXH passage spacer	●	●	●	●	●
Name plate	●	●	●	●	●
DIN rail mounting	●	●	●	●	Standard ●
Built-in silencer	●	●	●	●	
Silencer for EXH port	●	●	●	●	●
Elbow fitting for cylinder port					●
Plug for cylinder port	●	●	●		●
Double check block	●	●	●	●	●

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.1.10-12	 P.1.10-14	—
Plug lead	**Series VQ0000**  P.1.10-36	 P.1.10-40	 P.1.10-44
	Series VQ1000  P.1.10-36	 26P P.1.10-40	 P.1.10-44
	Series VQ2000  P.1.10-36	 P.1.10-40	 P.1.10-44
Cassette	**Series VQ1000**  P.1.10-74	 P.1.10-76	 P.1.10-78

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.1.10-16	 P.1.10-18	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.1.10-48	 P.1.10-52	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.1.10-48	 P.1.10-52	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.1.10-48	 P.1.10-52	C8 (ø8) N9 (ø5/16") <Option> Built-in silencer	C6 (ø6) C8 (ø8) N7 (ø1/4") N9 (ø5/16")
C kit  P.1.10-80	 P.1.10-82	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)(Cv)	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 (0.15)	150												
		300												
		450												
		600												
		750												
VQ0001 (Rubber seal)	ø4 3.6 (0.2)	150												
		300												
		450												
		600												
		750												

Series VQ1000

Model	Fitting (One-touch fitting) Effective area (mm^2)(Cv)	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 (0.25)	150												
		300												
		450												
		600												
		750												
VQ1001 (Rubber seal)	ø6 6.3 (0.35)	150												
		300												
		450												
		600												
		750												

Series VQ2000

Model	Fitting (One-touch fitting) Effective area (mm^2)(Cv)	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 (0.81)	150												
		300												
		450												
		600												
		750												
VQ2001 (Rubber seal)	ø8 16.2 (0.90)	150												
		300												
		450												
		600												
		750												

VQ0000

Body Ported

Plug Lead Unit/Flip Style

How to Order Manifold

VV5Q 0 4 – 08 F S1 – D

Series

0	VQ0000

Manifold

4	Plug lead unit/Flip

Stations

01	1 station
⋮	⋮

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

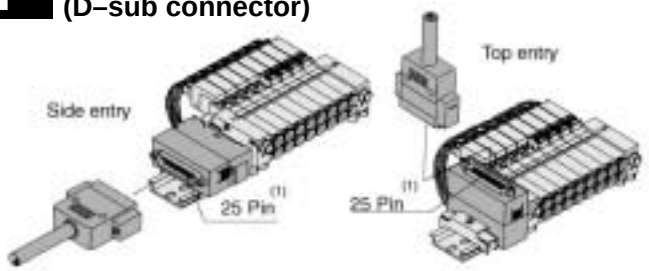
Option

–	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.

Kit/Electrical entry/Cable length

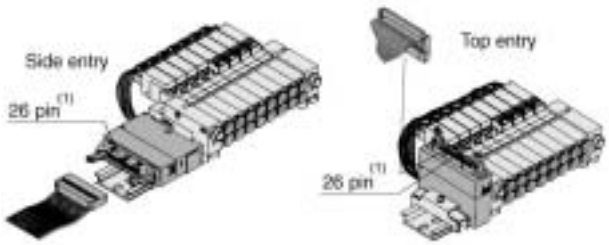
F Kit (D–sub connector)



P.1.10-36

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)	

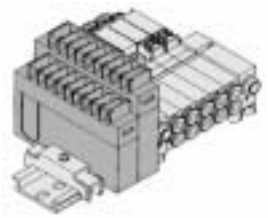
P Kit (Flat cable connector)



P.1.10-40

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. 1.10-44

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

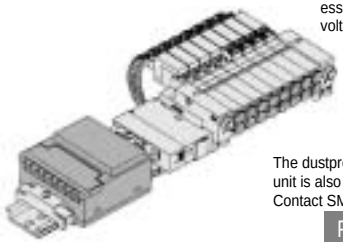
C Kit (Connector)

P.1.10-48

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.



The dustproof SI unit is also applicable. Contact SMC for details.

P.1.10-52

S (3) kit	O	Without SI unit
	A	With general style SI unit
	B	With SI unit for MELSEC-A (Mitsubishi Electric)
	C	With SI unit for SYSMAC (OMRON)
	D	With SI unit for New Satellite (Sharp)
	F1	With SI unit for 16 point Uni-wire System (NKE)
	H	With SI unit for 16 point Uni-wire H System (NKE)

Max.16 (2) stations

Note 1) Besides the above,F and P kits with different number of pins are available. See p1.10-66 for details.
Note 2) See p1.10-67 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..

VQ0000

Body Ported

Plug Lead Unit/Flip Style

How to Order Manifold

VV5Q 0 4 – 08 F S1 – D

Series

0	VQ0000

Manifold

4	Plug lead unit/Flip

Stations

01	1 station
⋮	⋮

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

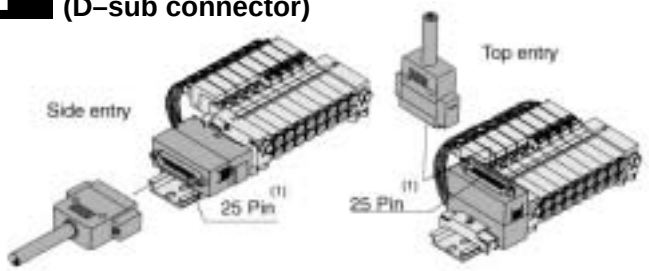
Option

–	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.

Kit/Electrical entry/Cable length

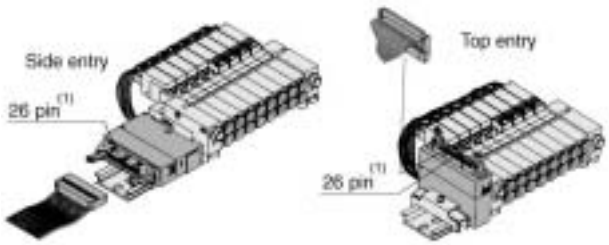
F Kit (D–sub connector)



P.1.10-36

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)	

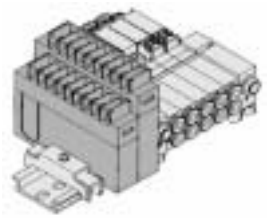
P Kit (Flat cable connector)



P.1.10-40

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. 1.10-44

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

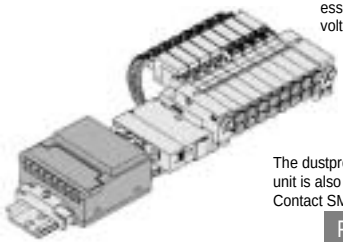
C Kit (Connector)

P.1.10-48

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.



The dustproof SI unit is also applicable. Contact SMC for details.

P.1.10-52

S (3) kit	O	Without SI unit
	A	With general style SI unit
	B	With SI unit for MELSEC-A (Mitsubishi Electric)
	C	With SI unit for SYSMAC (OMRON)
	D	With SI unit for New Satellite (Sharp)
	F1	With SI unit for 16 point Uni-wire System (NKE)
	H	With SI unit for 16 point Uni-wire H System (NKE)

Max.16 (2) stations

Note 1) Besides the above,F and P kits with different number of pins are available. See p1.10-66 for details.
Note 2) See p1.10-67 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..

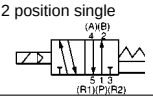
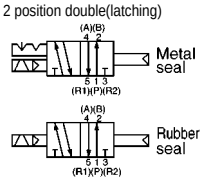
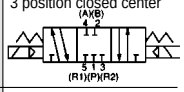
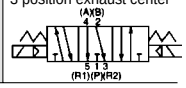
How to Order Valve

VQ 0 | 1 | 4 | 0 | Y | 5 | L | | C4

Series

0	VQ0000

Configuration

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

Note 1) 3 position requires two stations.

Coil voltage

1	100V AC (50/60Hz)
2 (1)	200V AC (50/60Hz)
3	110V AC (50/60Hz)
4 (1)	220V AC (50/60Hz)
5	24V DC
6	12V DC

Note 1) The C kit is applicable to 200/220V AC.

Pilot valve

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

Note 1) See p.1.10-34 for AC.
Note 2) Except for double (latching)

Seal

0	Metal
1	Rubber

Note 1) See "Options" on p.1.10-67 for negative COM specifications.
Note 2) F, P, T and S kits need connector ass'y when increasing the valve stations. See "Options" on p.1.10-67.

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

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

Note) See "Options" on p.1.10-67 for inch size One-touch fittings.

Manual override

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

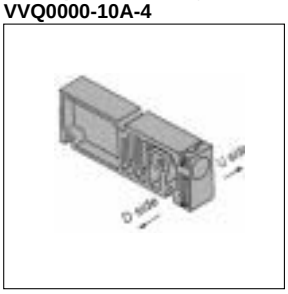
Note) Double (latching) valves are non-locking push style. However, main spool position are held corresponding to manual override position.

SY
SYJ
SX
VK
VZ
VF
VFR
VP7
VP4

Manifold Options

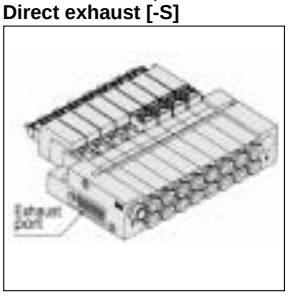
P.1.10-57

Blank plate assembly
VVQ0000-10A-4



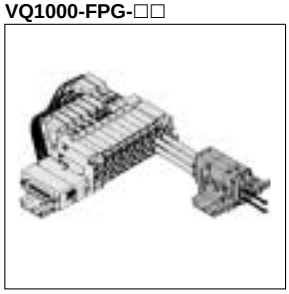
Name plate [-N4]
VVQ0000-N4-Station (1 to Max. stations)

Built-in silencer, Direct exhaust [-S]

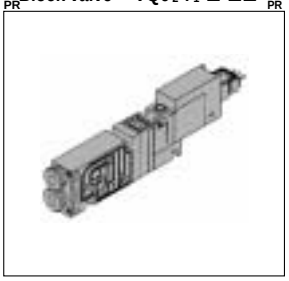


Individual SUP spacer
VVQ0000-P-4-C4

Double check block
VQ1000-FPG-□□



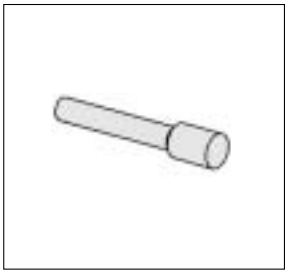
P, R, PR Block valve VQ0$^{1}_{2}$4$^{0}_{1}$-□-□□-P, R, PR



Individual EXH spacer
VVQ0000-R-4-C4

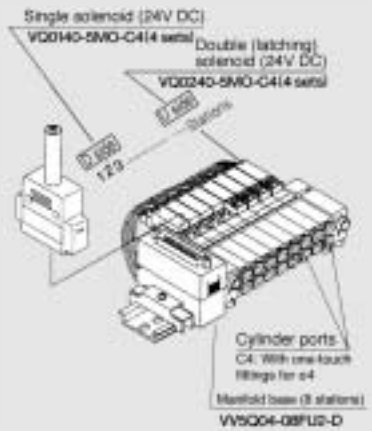
DIN rail mounting bracket
VVQ0000-57A-4

Blank plug KQP-$^{23}_{04}_{06}$-X19



How to Order Manifold Ass'y (Example)

Ordering example



VV5Q04-08FU2-D··· 1 set (F kit 8 station manifold base No.)
∗ VQ0140-5MO-C4··· 4 sets (Single solenoid No.)
∗ VQ0240-5MO-C4··· 4 sets (Double solenoid No.)
→ The ∗ mark is an assembling mark. Prefix "∗" to parts nos. of solenoid valves, etc.

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.1.10-103 for replacement parts.**

VQ
VQ4
VQZ
VQD
VZS
VFS
VS
VS7

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

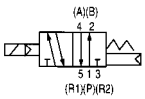
Model

Series	Conflguration		Model		Effective area[1] (mm²) (Cv)	Response time[2] ms Standard: 1W H: 1.5W	Response time[2] ms Low wattage AC	Weight (g)
VQ0000	2 position	Single	Metal seal	VQ0140	2.7 (0.15)	12 or less	15 or less	35
			Rubber seal	VQ0141	3.6 (0.2)	15 or less	20 or less	
		Double (latching)	Metal seal	VQ0240	2.7 (0.15)	12 or less	15 or less	
			Rubber seal	VQ0241	3.6 (0.2)	15 or less	20 or less	
	3 position	Closed center	Metal seal	VQ0340	1.9 (0.11)	20 or less	26 or less	105
			Rubber seal	VQ0341	2.7 (0.15)	25 or less	33 or less	
		Exhaust center	Metal seal	VQ0440	1.9 (0.11)	20 or less	26 or less	
			Rubber seal	VQ0441	2.7 (0.15)	25 or less	33 or less	
VQ1000	2 position	Single	Metal seal	VQ1140	4.5 (0.25)	12 or less	15 or less	57
			Rubber seal	VQ1141	6.3 (0.35)	15 or less	20 or less	
		Double (latching)	Metal seal	VQ1240	4.5 (0.25)	12 or less	15 or less	
			Rubber seal	VQ1241	6.3 (0.35)	15 or less	20 or less	
	3 position	Closed center	Metal seal	VQ1340	4.5 (0.25)	20 or less	26 or less	
			Rubber seal	VQ1341	6.3 (0.35)	25 or less	33 or less	
		Exhaust center	Metal seal	VQ1440	4.5 (0.25)	20 or less	26 or less	
			Rubber seal	VQ1441	6.3 (0.35)	25 or less	33 or less	
		Pressure center	Metal seal	VQ1540	4.5 (0.25)	20 or less	26 or less	
			Rubber seal	VQ1541	6.3 (0.35)	25 or less	33 or less	
VQ2000	2 position	Single	Metal seal	VQ2140	14.6 (0.81)	22 or less	29 or less	103
			Rubber seal	VQ2141	16.2 (0.90)	24 or less	31 or less	
		Double (latching)	Metal seal	VQ2240	14.6 (0.81)	22 or less	29 or less	
			Rubber seal	VQ2241	16.2 (0.90)	24 or less	31 or less	

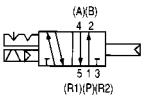
Note 1) Cylinder port size C4: (VQ0000), C6: (VQ1000), C8: (VQ2000)
Note 2) As per JISB8375-1981 (supply pressure: 0.5MPa; with indicator light and surge voltage suppressor; clean air) Subject to the pressure and air quality.

JIS Symbol

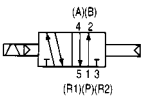
2 position single



2 position double (latching)

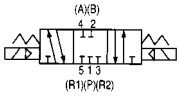


Metal seal

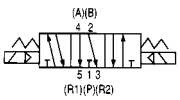


Rubber seal

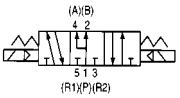
3 position closed center



3 position exhaust center



3 position pressure center

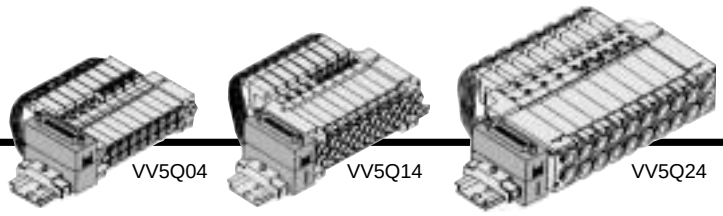


Standard Specifications

Valve	Seal		Metal seal	Rubber seal
	Fluid		Air/Inert gas	Air/inert gas
	Max. operating pressure		0.7MPa (High pressure: 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, 100V, 110V, 200V, 220V AC (50/60Hz)	
	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]	
		100V AC	Inrush 1.2VA (12mA), Holding 1.2VA (12mA)	
		110V AC	Inrush 1.3VA (11.7mA), Holding 1.3VA (11.7mA)	
		200V AC	Inrush 2.4VA (12mA), Holding 2.4VA (12mA)	
		220V AC	Inrush 2.6VA (11.7mA), Holding 2.6VA (11.7mA)	

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.

F VQ0000/1000/2000
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 receptacle position can be selected in accordance with the available mounting space.
- Max. 16 stations.

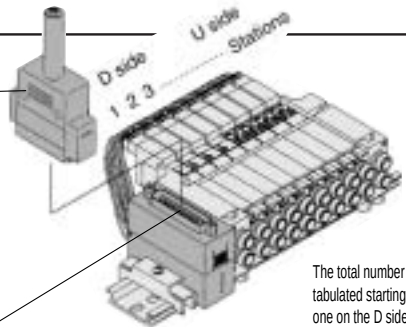
Manifold Specifications VV5Q14

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)

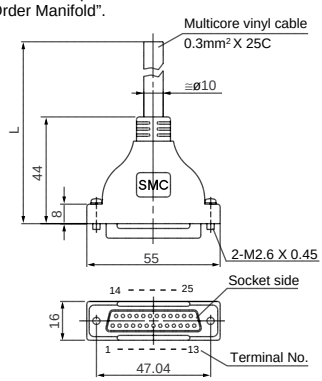
AXT100-DS25-$^{015}_{030}$ $^{}_{050}$

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.	Note
1.5m	AXT100-DS25-015	Cable 25 core X 24AWG
3m	AXT100-DS25-030	
5m	AXT100-DS25-050	

* For other commercial connectors, use a 25 pin female connector made in conformity with MIL-C-24308.

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

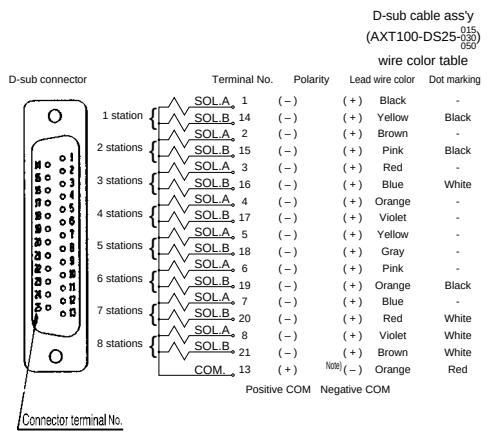
* The min. bending radius of D-sub cable assembly is 20 mm.

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
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.1.10-66 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.1.10-67 for datails.

Note) Use negative COM valves for negative COM specification manifolds. (See p.1.10-67)

How to Order Manifold

VV5Q 1 4 – 08 F S 1 – D

Series

0	VQ0000
1	VQ1000
2	VQ2000

Manifold

4	Plug lead unit/Flip

Stations

01	1 station
⋮	⋮
16	16 stations

See p.1.10-67 for details.

Connector location

U	Top (vertical)
S	Side (horizontal)

Cable (length)

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

Option

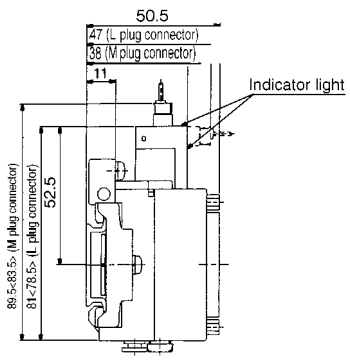
Symbol	Option
D (2)	DIN rail mounting
K	Special wiring specification (Not double wiring)
N	With name plate
S	Built-in silencer {Direct exhaust (U side only)}

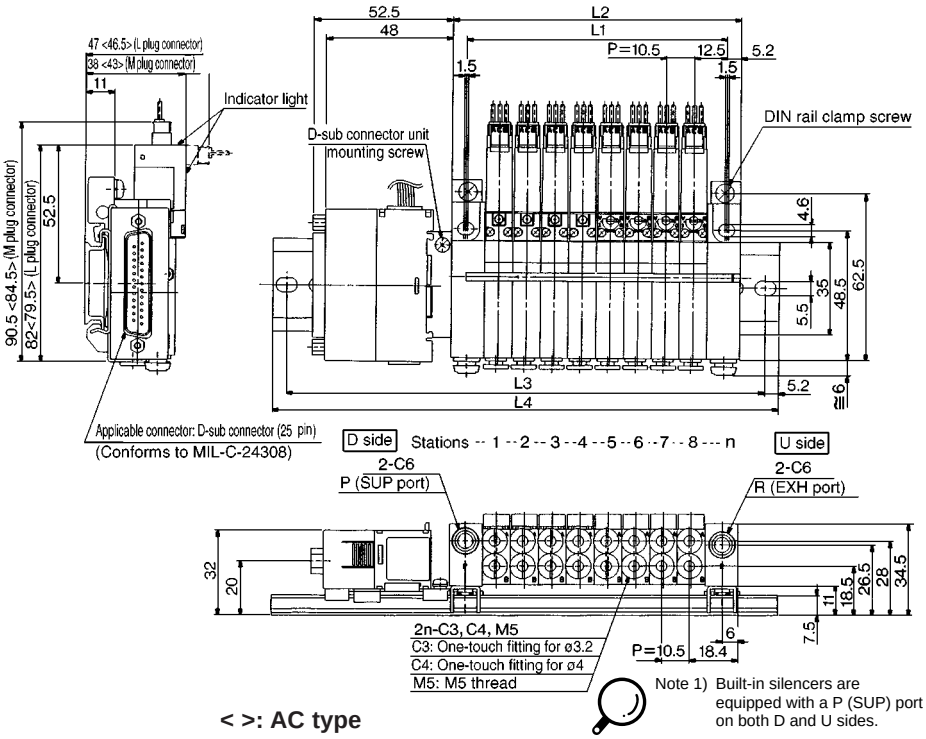
Note 1) When specifying more than one option, please list alphabetically. Example) -DNS

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

VQ0000

Top entry connector [–FU]





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

< >: AC type

CAD
- Manifold
  F kit (Top entry connector)···SV5Q04M, #1
  F kit (Side entry connector)···SV5Q04M, #2
- Valve
  2 position single···SV5Q04V, #7
  2 position double···SV5Q04V, #8

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

Series

0	VQ0000
1	VQ1000
2	VQ2000

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification	DC	AC
–	Standard	(1.0W) ○	(1) ○
H (2)	High pressure	(1.5W) ○	–
Y (2)	Low wattage	(0.5W) ○	–

Note 1) See p1.10-34 for AC.
Note 2) Except for double (latching).

Configuration

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

Note 1) Two stations required.
Note 2) L plug connector is used for AC.

Coil voltage

1	100V AC (50/60Hz)
3	110V AC (50/60Hz)
5	24V DC
6	12V DC

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.1.10-67 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

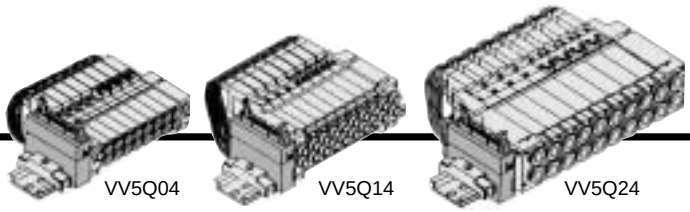
Plug connector and lead wire layers are attached to the manifold.

How to Order Manifold Ass'y

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

Note 1) See "Options" on p.1.10-67 for negative COM specification.
Note 2) Connector ass'y is necessary for F kits when increasing the valve station. See "Options" on p.1.10-67 for parts nos.

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


VV5Q04 VV5Q14 VV5Q24

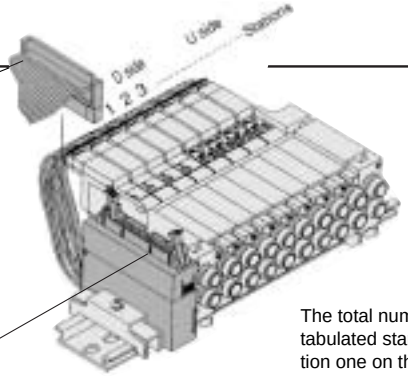
- MIL flat cable connector reduces installation labor for electrical connection.
- The connector (26 pin; 10, 16, and 20 pin option) comforms with MIL spec. permitting use of widely interchangeable commercial connectors.
- Top or side receptacle position can be selected in accordance with the available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

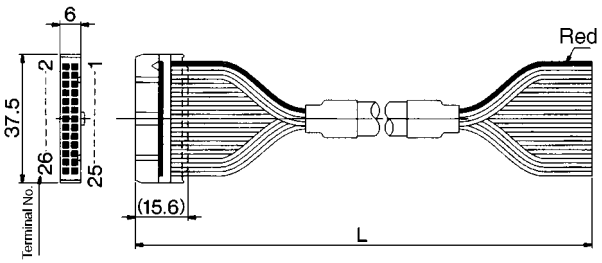


VV5Q14

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

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".)



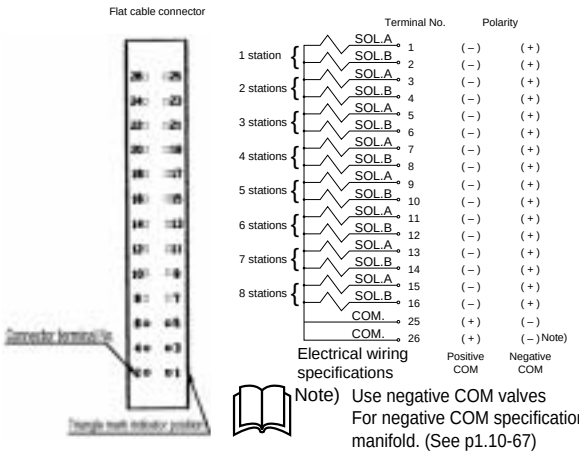
Flat cable connector assembly (Option)

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.1.10-67 for details.

Electrical Wiring Specifications



Electrical wiring specifications

Note) Use negative COM valves For negative COM specification manifold. (See p1.10-67)

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 p1.10-67 for details.

How to Order Manifold

VV5Q 1 4 – 08 P S 1 – D

Series

0	VQ0000
1	VQ1000
2	VQ2000

Manifold

4	Plug lead unit/Flip

Station

01	1 station
⋮	⋮
16	16 stations

Note) See p.1.10-67 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

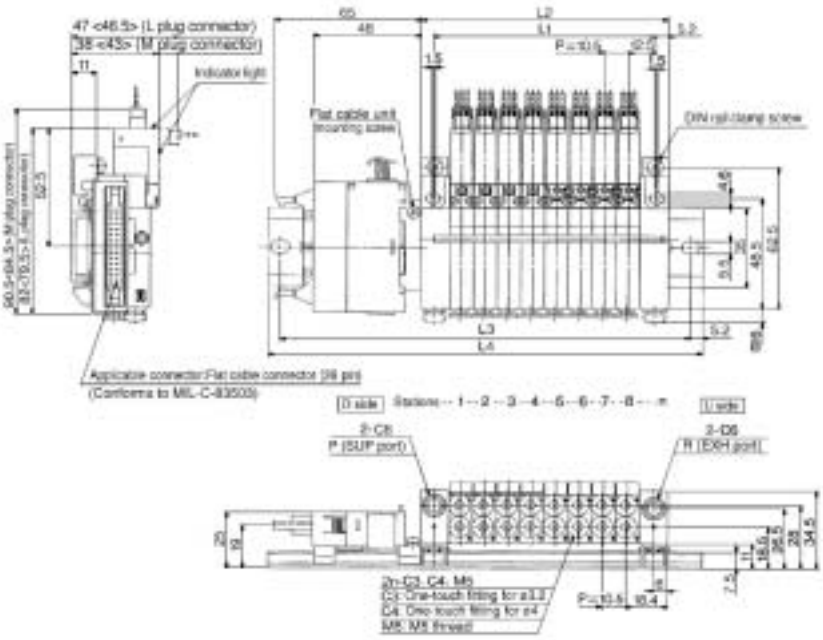
D(2)	DIN rail mounting
K(3)	Special wiring specification (Not double wiring)
N	With name plate
S	Built-in silencer {Direct exhaust (U side only)}

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

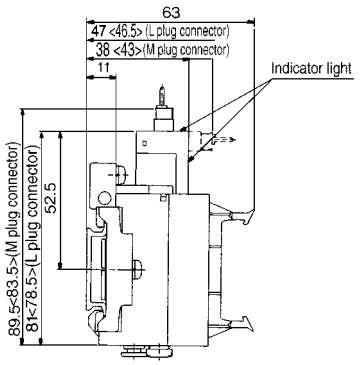
Note 2) P kits are DIN rail mounting styles, so include suffix "-D"

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

VQ0000



Top entry connector [-PU]



< >: AC

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.

- Manifold
  P kit (Top entry connector)···SV5Q04M, #3
  P kit (Side entry connector)···SV5Q04M, #4
- Valve
  2 position single···SV5Q04V, #7
  2 position double···SV5Q04V, #8

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

Series

0	VQ0000
1	VQ1000
2	VQ2000

Seal

0	Metal
1	Rubber

Pilot valve

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

Note 1) See p.1.10-34 for AC.
Note 2) Except for double (latching).

Configuration

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

Note 1) Two stations required.
Note 2) L type plug connector is used for AC.

Coil voltage

1	100V AC (50/60Hz)
3	110V AC (50/60Hz)
5	24V DC
6	12V DC

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.1.10-67 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

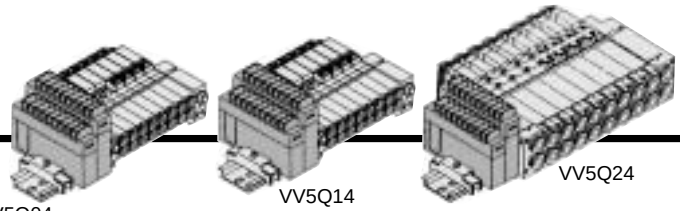
Note) Plug connector and lead wire layers are attached to the manifold.

Note 1) See "Options" on p.1.10-67 for negative COM specification.
Note 2) Connector ass'y is necessary for P kit when increasing the valve station. See "Options" on p.1.10-67 for parts nos.

How to Order Manifold Ass'y

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

T VQ0000/1000/2000
Kit (Terminal Block)

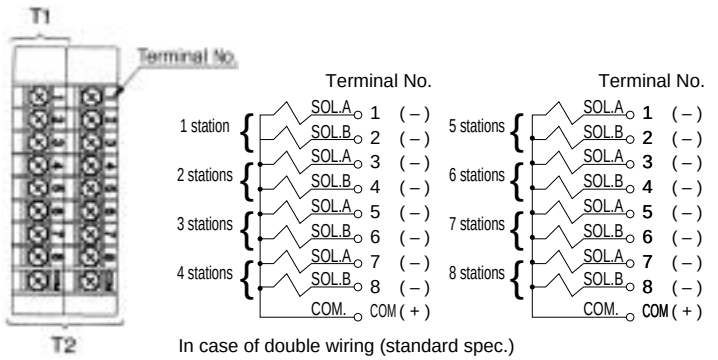


- It is a standerd terminal block style.
- Two quantities of terminals can be selected in accordance with the number of stations. (8 terminals/16 terminals)
- Max. 16 stations

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



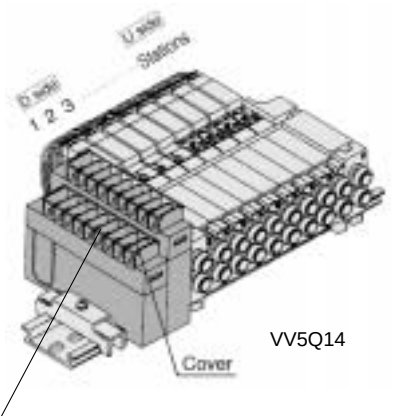
In case of double wiring (standard spec.)
T1 (Terminal block of 1 row): 1 to 4 stations
T2 (Terminal block of 2 rows): 5 to 8 stations
T1 and T2 can be optionally chosen by adopting the combinations of single and double wiring (optional spec.), etc.

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.1.10-67 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.1.10-67 for details.



VV5Q14

● 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

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.1.10-67 for negative COM specifications.
Note 2) As option, the max.number of stations can be increased based on specialwiring specifications. See p.1.10-67 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)}

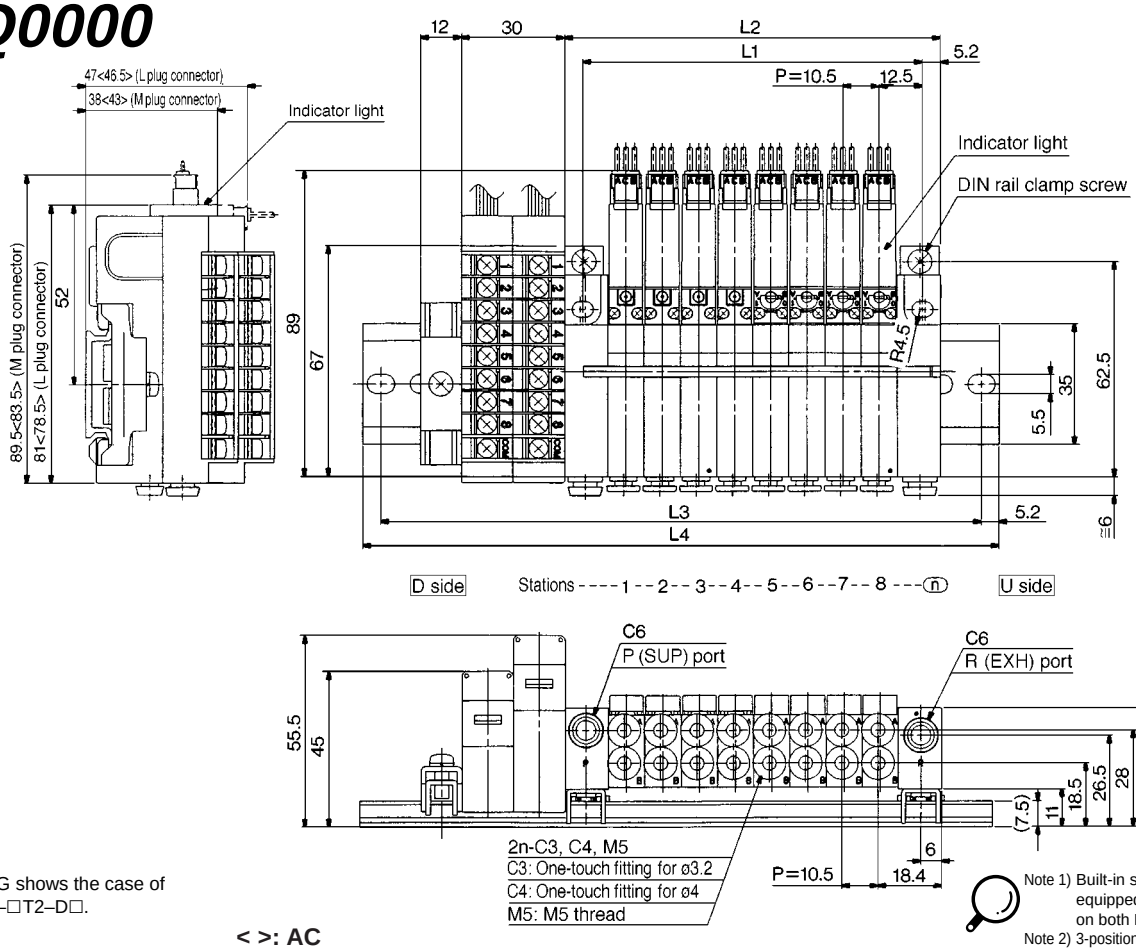
Note 1) When specifying more than one option, please list alphabetically.
Example) -DNS
Note 2) T kits are DIN rail mounted type, so include suffix "–D"
Note 3) Specify the wiring specifications by means of the manifold specification form.

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□.

< >: AC

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

Series

0	VQ0000
1	VQ1000
2	VQ2000

Seal

0	Metal
1	Rubber

Pilot valve

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

Note 1) See p1.10-34 for AC.
Note 2) Except for double (latching).

Configuration

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

Note 1) Two stations required.
Note 2) L plug connector is used for AC.

Coil voltage

1	100V AC (50/60Hz)
3	110V AC (50/60Hz)
5	24V DC
6	12V DC

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.1.10-67 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

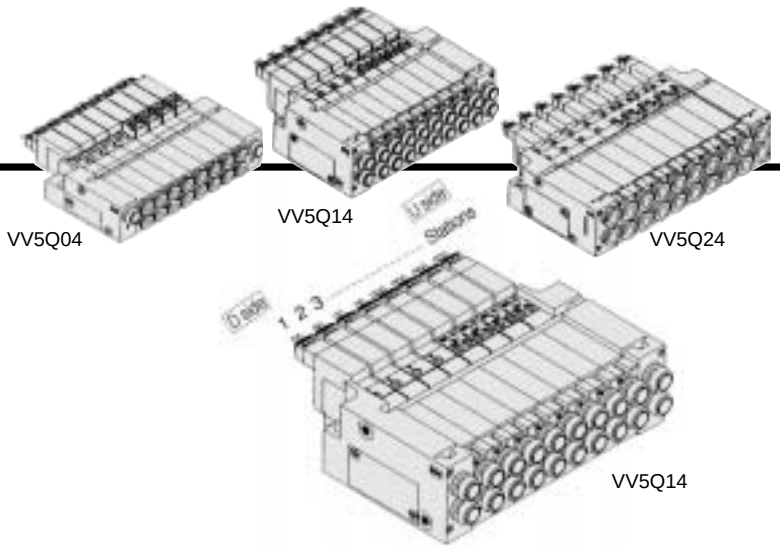
Note) Plug connector and lead wire layers are attached to the manifold.

Note 1) See "Options" on p.1.10-67 for negative COM specification.
Note 2) Connecter ass'y is necessary for T kits when increasing the valve station. See "Options" on p.1.10-67 for parts nos.

How to Order Manifold Ass'y

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

C VQ0000/1000/2000
Kit (Connector)



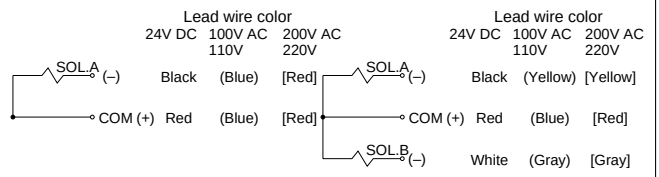
- Standard with lead wires connected to each valve individually.
- Max. 16 stations.

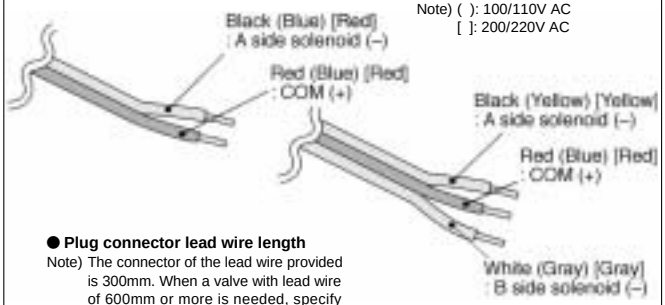
Manifold Specifications

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.

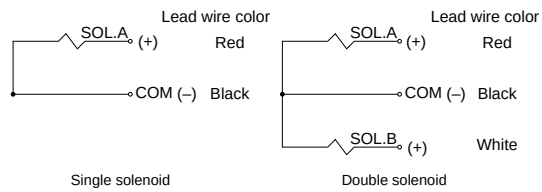
Connector ass'y No. (DC)

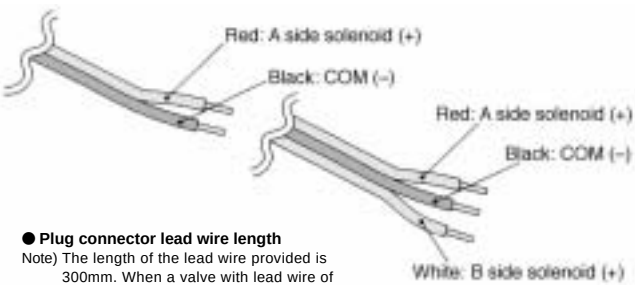
Lead wire length	Single/3 position No.	Double No.
Socket only (3 pcs.)	AXT661-12A	
300mm	AXT661-14A	AXT661-13A
600mm	AXT661-14A-6	AXT661-13A-6
1000mm	AXT661-14A-10	AXT661-13A-10
2000mm	AXT661-14A-20	AXT661-13A-20
3000mm	AXT661-14A-30	AXT661-13A-30

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

Series

0	VQ0000
1	VQ1000
2	VQ2000

Manifold

4	Plug lead unit/Flip

Stations

01	1 station
⋮	⋮
16	16 stations

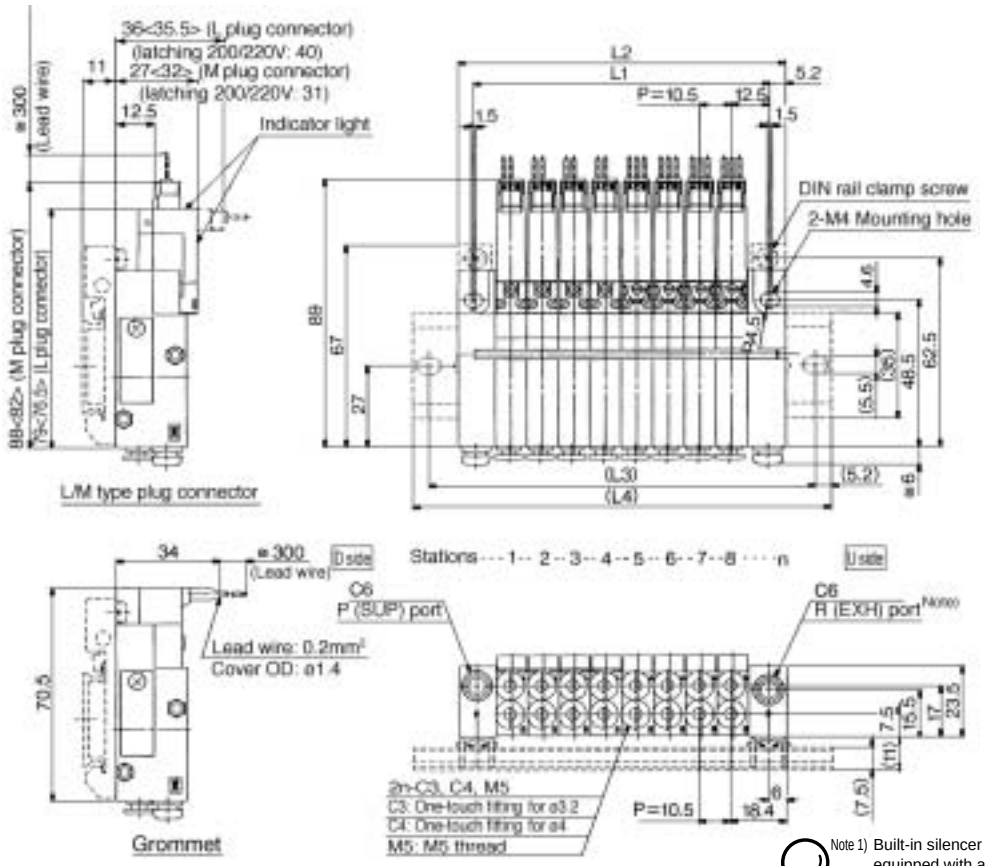
Option

—	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

CAD

VQ0000



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

< >: AC

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.

CAD
- Manifold
  C kit·····SV5Q14M, #5
- Valve
  2 position single ·····SV5Q04V, #7
  2 position double·····SV5Q04V, #8

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

Series

0	VQ0000
1	VQ1000
2	VQ2000

Seal

0	Metal
1	Rubber

Pilot valve

Symbol	Specification	DC	AC
–	Standard	(1.0W) ○	(1) ○
H (2)	High pressure	(1.5W) ○	–
Y (2)	Low wattage	(0.5W) ○	–

Note 1) See p.1.10-34for AC.
Note 2) Except for double (latching).

Configuration

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

Note 1) Two stations required.
Note 2) L plug connector is used for AC.

Coil voltage

1	100V AC (50/60Hz)
2	200V AC (50/60Hz)
3	110V AC (50/60Hz)
4	220V AC (50/60Hz)
5	24V DC
6	12V DC

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.1.10-67 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

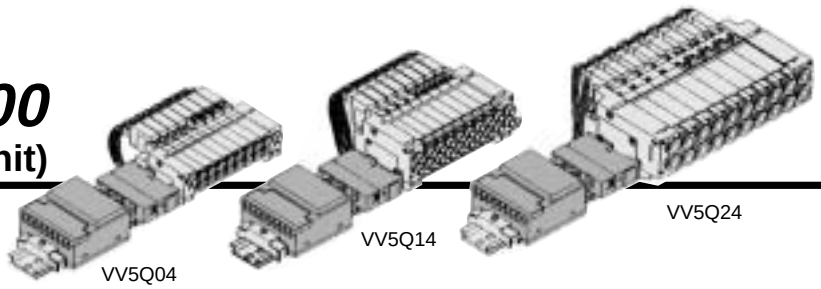
G	Grommet (Except for double (latching) and AC.)
L	L plug connector with lead wire
LO	L plug connector without connector
M	M plug connector with lead wire
MO	M plug connector without connector

Note) See "Options" on p.1.10-67 for negative COM specification.

How to Order Manifold Ass'y

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

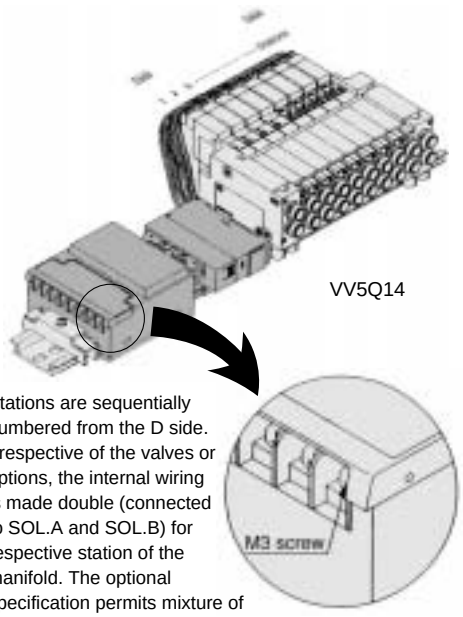
S VQ0000/1000/2000
Kit (Serial Transmission Unit)



- The serial transmission system minimizes wire mass and wire connection labor and promotes space-savings.
- The system comes in an SA (generic 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.)

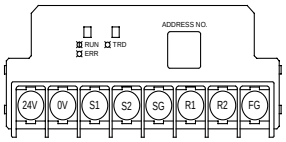
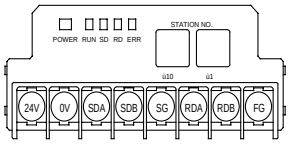
Manifold Specifications

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.1.10-67 for details.

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

	SA applicable to Series EX300	SB applicable to MELSECNET/MINI–S3 Data Link (Mitsubishi Electric.)
Name of terminal block (LED)	 LED name / Details: RUN/ERR: Blinking when received data is nomal; Lighting when data is abnomal TRD: Lighting during data reception	 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	●T unit Can be connected with PLC I/O card for serial transmission. EX300-TMB1···For models of Mitsubishi Electric Corp. EX300-TTA1··· For models of OMRON Corp. EX300-TFU1··· For models of Fuji Electric Company Ltd. EX300-T001···For general models ∗ Up to 32 points per unit. ●16 outputs.	●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 A – D

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.1.10-67 for details.

Style

O	Without SI unit
A	With general type SI unit
B	With SI unit for MELSEC-A (Mitsubishi Electric)
C	With SI unit for SYSMAC (OMRON)
D	With SI unit for New Satellite (Sharp)
F1	With SI unit for 16 point Uni-wire System (NKE)
H	With SI unit for 16 point Uni-wire H System (NKE)

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

∗ The dustproof SI unit also applicable. Contact SMC 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)}

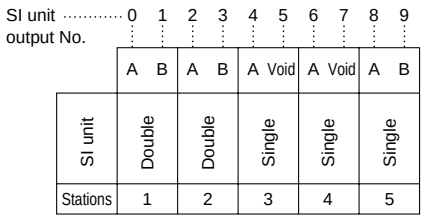
Note 1) When specifying more than one option, please list alphabetically.
Example) -DNS

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

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

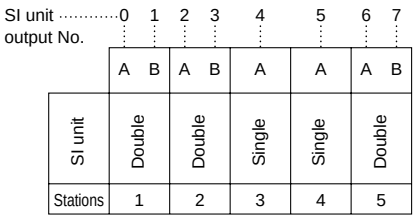
● SI unit output and coil numbering

<Wiring example 1>

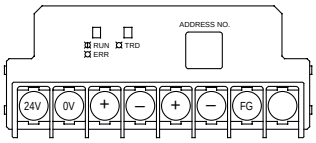
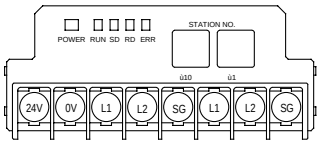


Double wiring (Standard)

<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)	SD applicable to Satellite I/O Link System (Sharp)
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.	LED name / Details POWER: It lights when power is turned ON. RUN: It lights when power is turned ON and slave stations are in normal operation. ERROR: It lights when slave station switch setting is abnormal, communication is abnormal, master station's PLC is at rest,and slave station unit is out of order. R.SET HOLD: It lights when control input is made for the master station.
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	●Master station unit: Sharp's PLC New Satellite Series W ZW-31LM New Satellite Series JW JW-23LM, JW-31LM Max. 31 units*, I/O slave stations connected (Max. 504 points) ●16 outputs

How to Order Valve

VQ 1 1 4 0 Y – 5 LO □ – C6

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 center	● (1)	● (2)	—
4	3 position exhaust center	● (1)	● (2)	—
5	3 position pressure center	—	● (2)	—

Note 1) Two stations required
Note 2) L plug connector for AC.

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.1.10-67 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.1.10-67 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

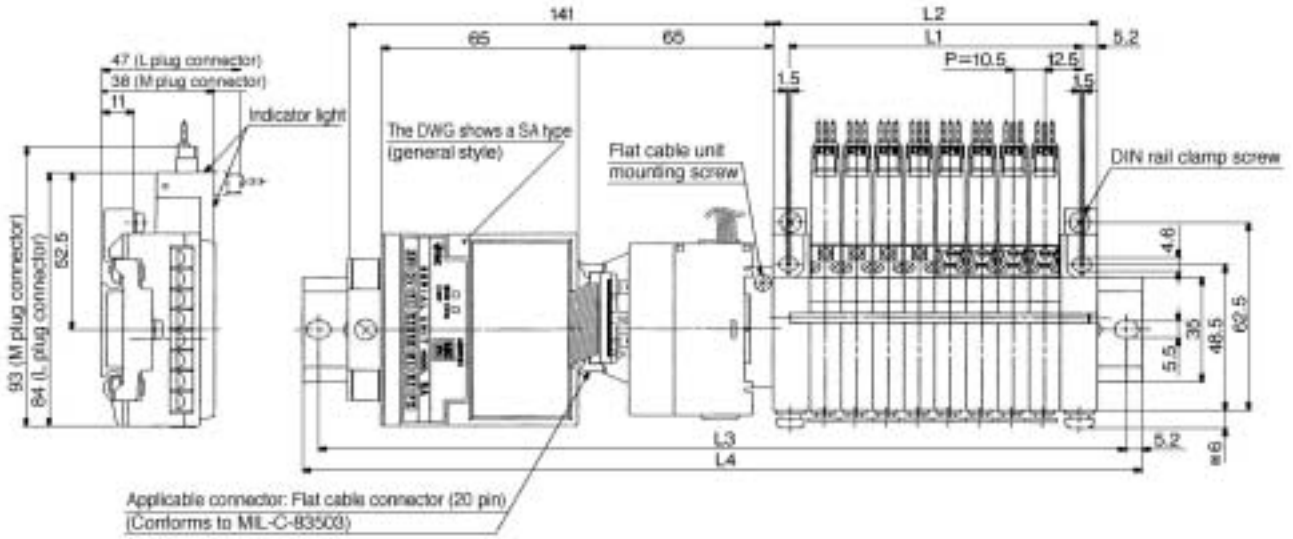
LO	L plug connector without connector
MO	M plug connector without connector

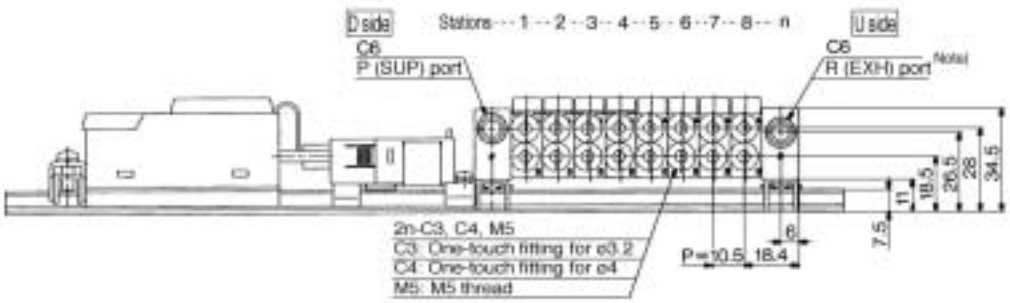
Note) Plug connector and lead wire layers are attached to the manifold.

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)

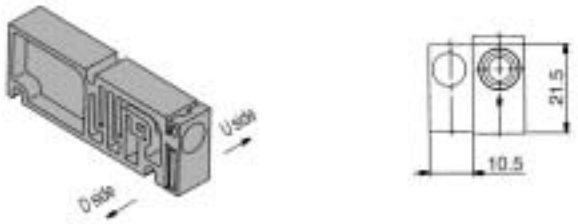
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	25	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5
L2	35.5	46	56.5	67	77.5	88	98.5	109	119.5	130	140.5	151	161.5	172	182.5	193
L3	200	212.5	225	237.5	250	250	262.5	275	287.5	300	312.5	312.5	325	337.5	350	362.5
L4	210.5	223	235.5	248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

CAD
- ●Manifold
  S kit···SV5Q04M, #6
- ●Valve
  2 position single ···SV5Q04V, #7
  2 position double···SV5Q04V, #8

Manifold Options/For VQ0000

Blank plate assembly
VVQ0000-10A-4

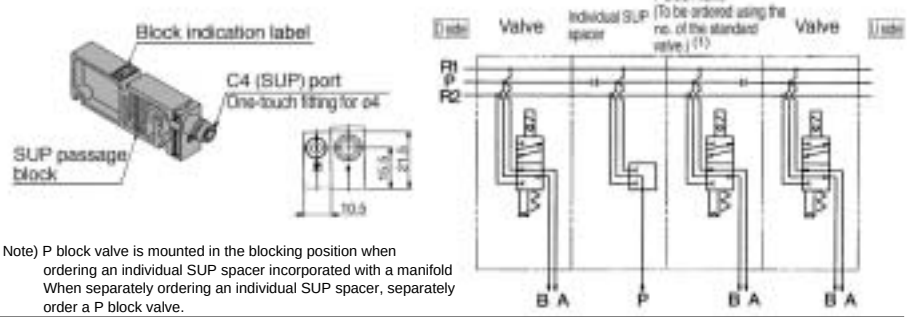
It is used when a blank plate is mounted to a manifold in advance for possible valve mounting, etc.



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.



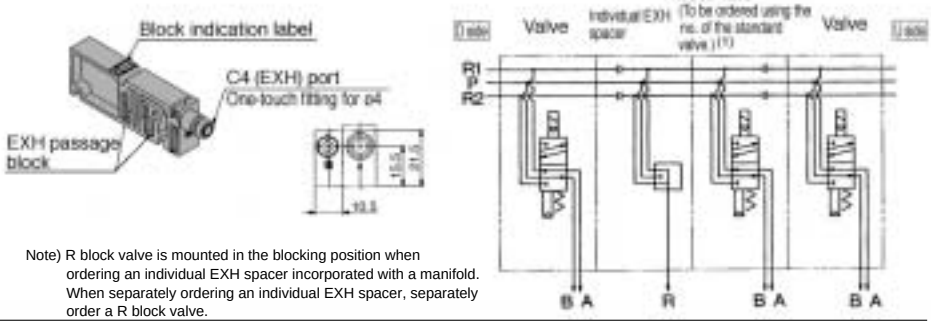
Note) P block valve is mounted in the blocking position when ordering an individual SUP spacer incorporated with a manifold When separately ordering an individual SUP spacer, separately order a P block valve.

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

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.

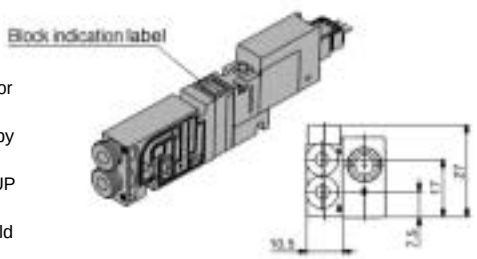
The block valve is constructed so that U sides of SUP and EXH passages are blocked.

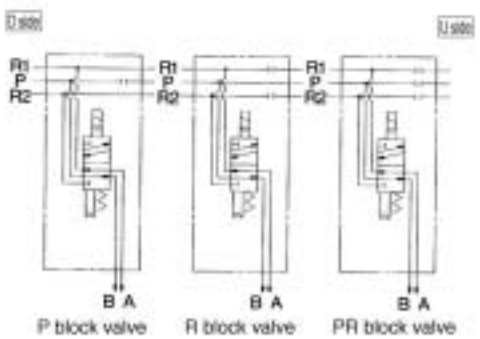
∗ Specify the number of stations by using a manifold specification form.

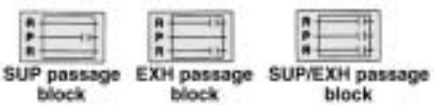
<Blocking indication label>

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.





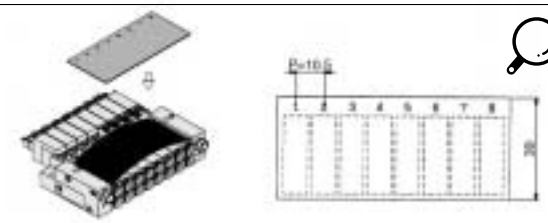


For SUP passage block	VQ0$\frac{1}{2}$4$\frac{0}{1}$-□-□□-P
For EXH passage block	VQ0$\frac{1}{2}$4$\frac{0}{1}$-□-□□-R
For SUP/EXH passage block	VQ0$\frac{1}{2}$4$\frac{0}{1}$-□-□□-PR

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

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.

Insert it into the groove on the side of the end plate and bend it as shown in the figure.



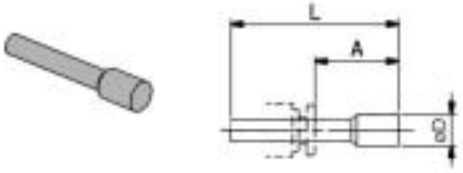
∗ When ordering assemblies incorporated with a manifold, suffix "–N" to the manifold No.

Blank plug
KQP-$\frac{23}{04}$/06-X19

Color: White

It is inserted into an unused cylinder port and SUP/EXH ports.

The minimum order quantity is 10 pcs.



Dimensions

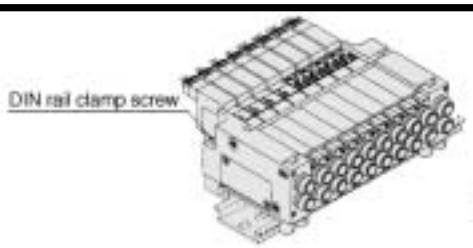
Fittings size ød	Model	A	L	D
3.2	**KQP-23-X19**	16	31.5	3.2
4	**KQP-04-X19**	16	32	6
6	**KQP-06-X19**	18	35	8

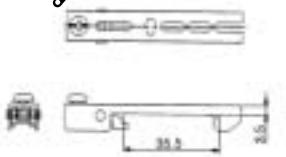
Manifold options ···SV5Q04OP, #1 to #6

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).



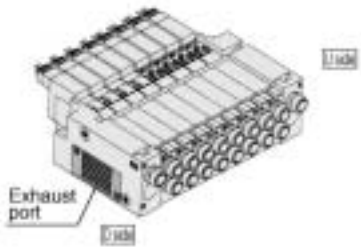


∗ When ordering assamblies incorporated with a manifold, add suffix "–D" to the manifold No.

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.1.10-65 for maintenance.



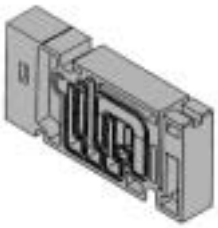
∗ When ordering assamblies incorporated with a manifold, add suffix "–S" to the manifold No.

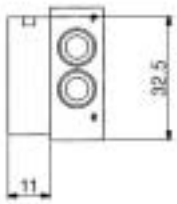
DIN rail mounting bracket···SV5Q04OP, #7

Manifold Option Parts/For VQ1000

Blank plate assembly
VVQ1000-10A-4

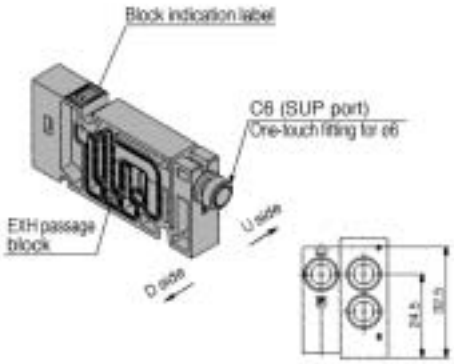
It is used when a blank plate is mounted to a manifold in advance for possible valve mounting, etc.

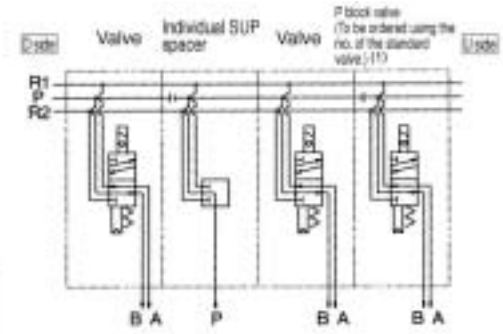




Individual SUP spacer
VVQ1000-P-4-C6

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.

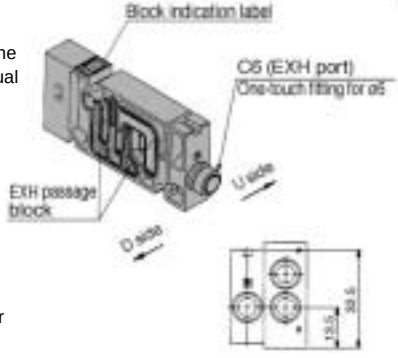


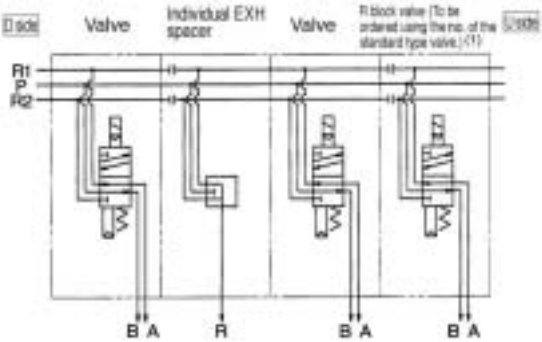


Note 1) P block valve is mounted in the blocking position when ordering an individual SUP spacer incorporated with a manifold. When separately ordering an individual SUP spacer, separately order a P block valve.

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···SV5Q14OP, #1 to #3

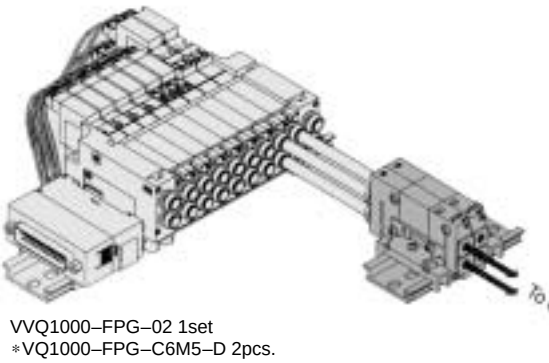
Manifold Options

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.

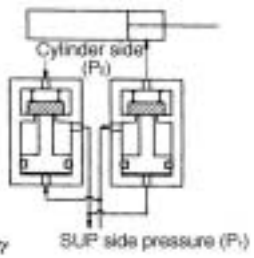
Specifications

Max. operating pressure	0.8MPa
Min. operating pressure	0.15MPa
Ambient and fluid temperature	–5 to 50˚C
Effective area (Cv) (1)	2.7mm² (0.15)
Max. operating frequency	180CPM



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

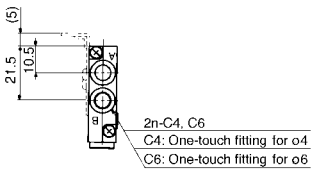
<Check Valve Operation Principle>



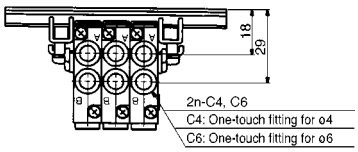
Note 1) As per JISB8375–1981
(Supply pressure: 0.5MPa)

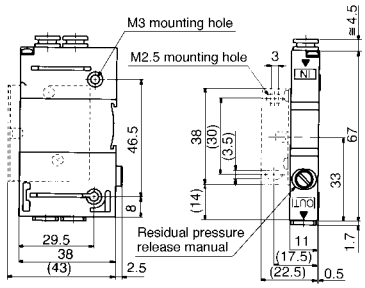
Dimensions

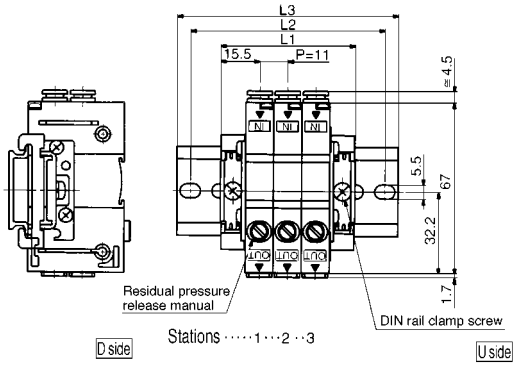
Single unit

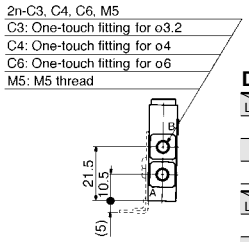


Manifold





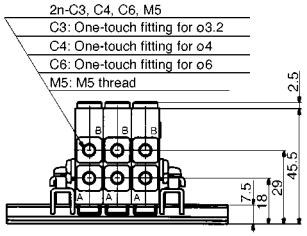




Dimensions Equation L1=11n+20 n: Station (Max. 24 stations)

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

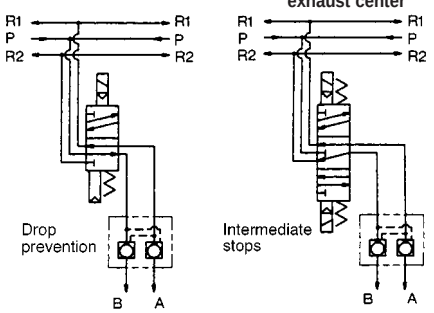
Symbol	Port size
M5	M5 thread
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6

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.

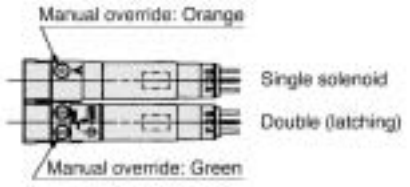
⚠ Precautions

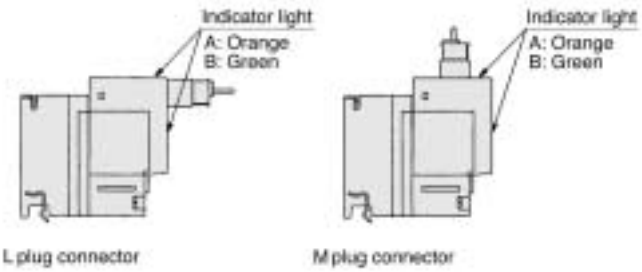
Be sure to read before handling. Refer to p.0-33 to 0-36 for Safety Instructions and common precautions.

⚠ Caution

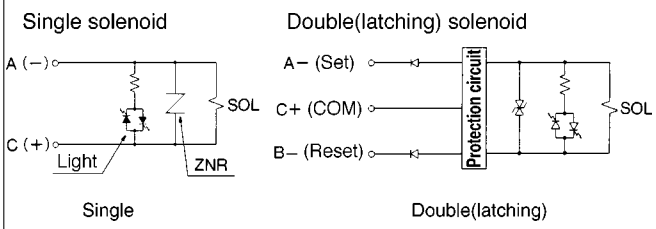
Indicator Light and Surge Voltage Suppressor

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.

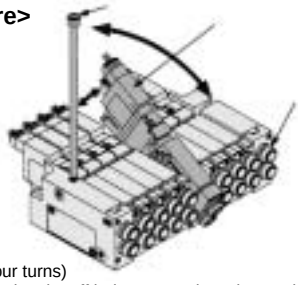
<Special Cautions for Latching Solenoid>

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

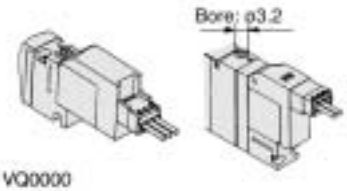
VQ0000	0.5 to 0.7Nm
VQ1000	1.0 to 1.4Nm
VQ2000	1.0 to 1.4Nm

⚠ Caution

Manual Override

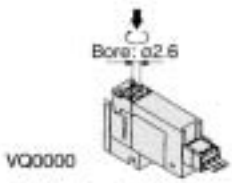
Without an electric signal for the solenoid valve the manual override is used for switching the main valve.

■ Non-locking push style

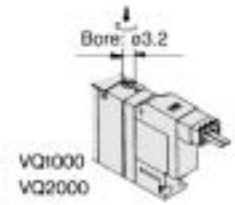


Push down on the manual override button with a small screwdriver until it stops. Release the screwdrever and the manual override will return.

■ 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.

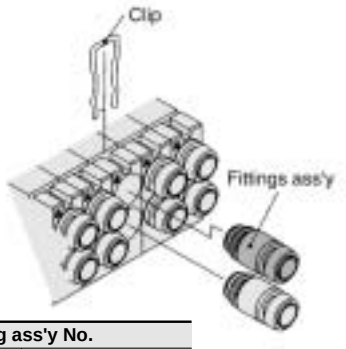
· Turn the manual override clockwise by 180˚ to set the ► mark to A and press it in the direction indicated by the arrow. It will be locked set in a (Passage: P → A) state.
· Turn the manual override counterclockwise by 180˚ to set the ► mark to B and press it in the direction indicated by the arrow. 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 manual override. (0.1Nm or less)

⚠ Caution
Replacement of Cylinder Port Fittings

The cylinder port fittings are in a cassette for easy replace.
(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

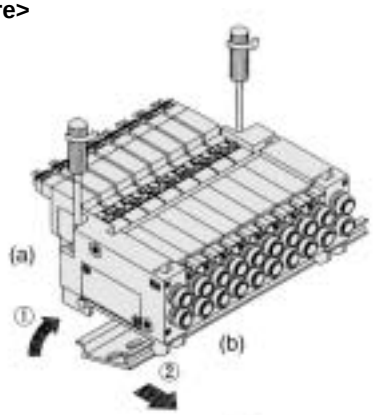
1) Protect O rings from scratches and dust to prevent air leakage.
2) The tightening torque for inserting fittings to the M5 thread assembly should be 0.8 to 1.4 Nm.

⚠ Caution
Mounting/Removing from the DIN Rail

<Sequence of procedure>

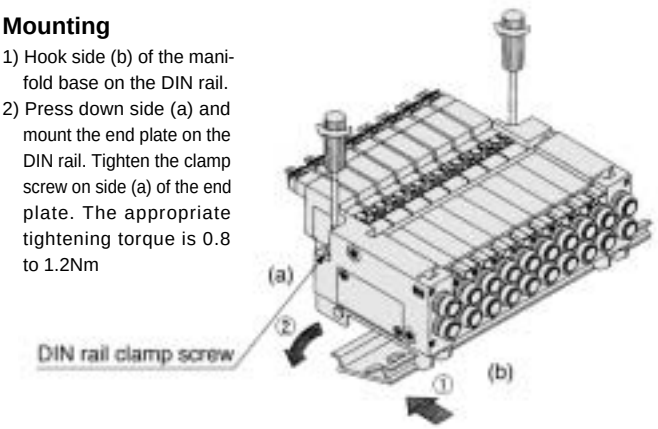
Removing

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

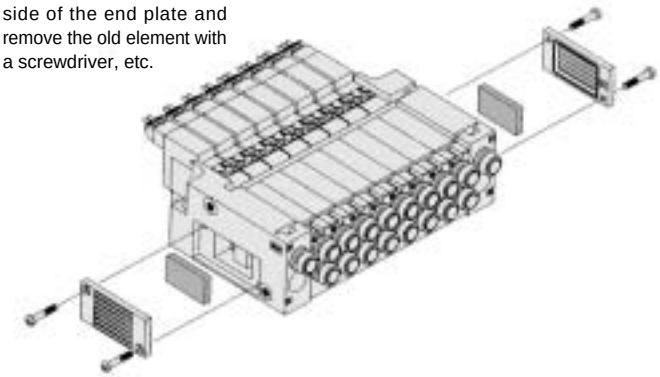
A silencer element is incorporated in the end plate on both sides of the manifold base. A dirty and choked element may reduce cylinder speed or cause malfunction. Clean or replace the dirty element.

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

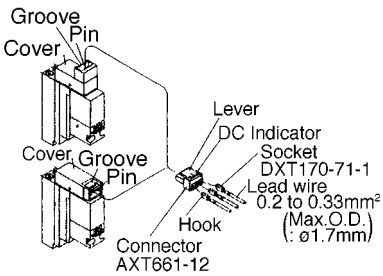
∗ The minimum order quantity is 10 pcs.

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

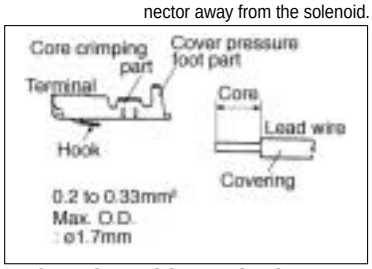


Push the connector straight onto the pins of the solenoid, making sure the lip of the lever is securely positioned in the groove on the solenoid cover.

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

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.

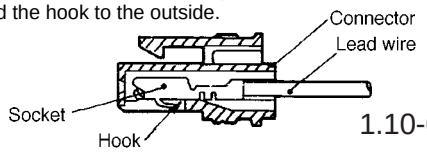


Connection/Disconnection of Socket with Lead Wire Connection

Insert a socket int 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.

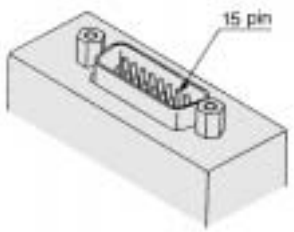


Options

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**

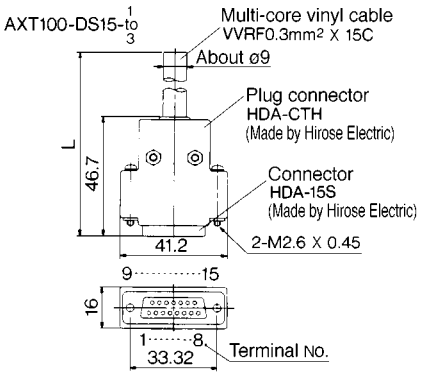


How to Order Manifold

Ex.) **VV5Q14 – 06 F SA – D**

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

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 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

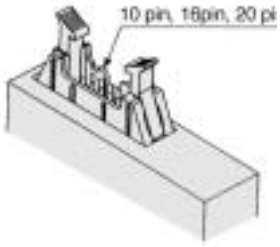
∗ As in the case of 25 pin models (standard), terminal No.1 is the first station SOL.A and the terminal No.8 is COM.

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**

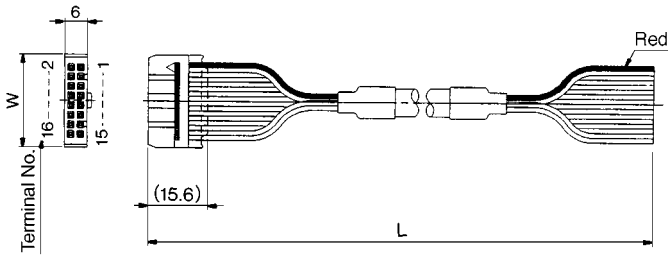


How to Order Manifold

Ex.) **VV5Q14 – 06 P SC – D**

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

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

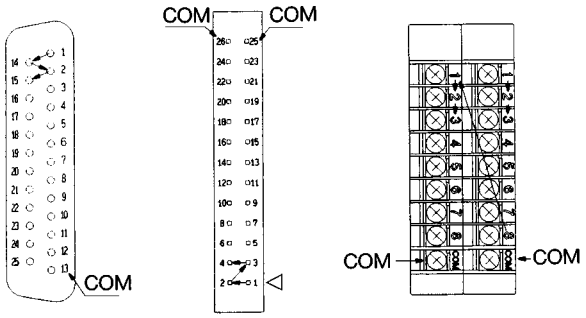
Indicate an option symbol, "–K," for the manifold No. and be sure to specify the mounting position and number of stations of the single and double wiring by means of a manifold specification form.

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

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

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

P, R port size

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

How to order valve

VQ1140 – 5M – N7

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

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

List option symbols in alphabetical order

DIN rail for 9 stations

● When changing the manifold style into a DIN rail mounting

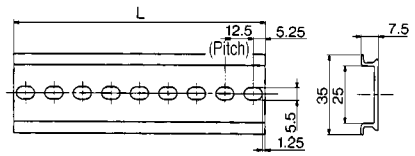
Order brackets for mounting a DIN rail. (See Options on p.1.10-58 and 1.10-59 and 1.10-62)

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

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.)

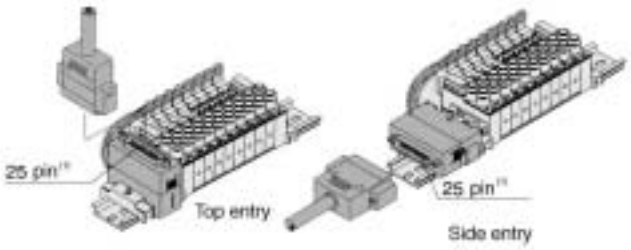
Option

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.

Kit/Electrical entry/Cable length

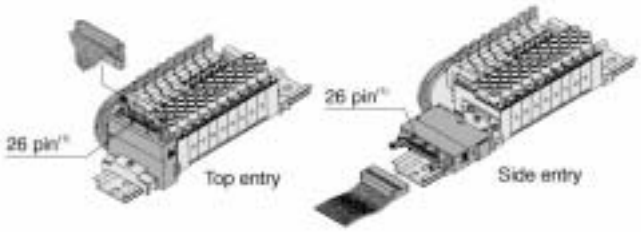
F Kit (D-sub connector)



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.1.10-74

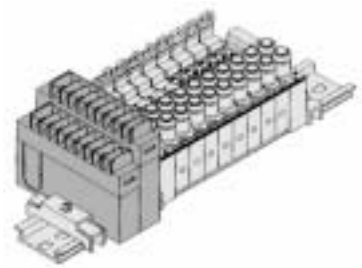
P Kit (Flat cable connector)



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)	

P.1.10-76

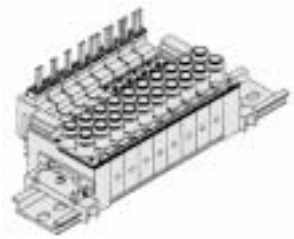
T Kit (Terminal block)



P.1.10-78

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

C Kit (Connector)

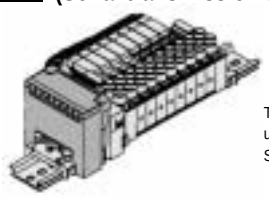


P.1.10-80

C	Connector	Max.16 stations

S Kit (Serial transmission unit)

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



The dustproof type SI unit is also applicable. See p.1.10-82 for details.

P.1.10-82

S Kit	**O**	Without SI unit	Max.16 (2) stations
	A	With general style SI unit, Series EX300	
	B	MELSECNET Data Link System (Mitsubishi Electric)	
	C	SYSBUS Wire System (OMRON)	
	D	Satellite I/O Link System (Sharp)	
	E	MEWNET-F System (Matsushita Electric Works Ltd.)	
	F1	16 point Uni-wire System (NKE)	
	G	Remote I/O (RIO) System (Allen-Bradley Co.)	
	H	16 point Uni-wire H System (NKE)	
	J1	16 point S-LINK System (Sunx)	
	J2	8 point S-LINK System (Sunx)	Max.8
	K	T-LINK Mini System (Fuji Electric.)	Max.16 stations
	Q	Device Net and Compo Bus/D (OMRON)	
	R1	16 point Compo Bus/S (OMRON)	
	R2	8 point Compo Bus/S (OMRON)	Max.8
	V	CC-LINK (Mitsubishi Electric)	Max.16

Note 1) Besides the above, F and P kits with different number of pins are available. See p.1.10-90 for details.
Note 2) See p.1.10-91 for details.

How to Order Valve

VQ 1 1 7 0 Y 5 M [ ] C6

Series VQ1000

Configuration

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

Note 1) L type plug connecter is used for 3 position AC.

Coil voltage

1	100V AC (50/60Hz)
2(1)	200V AC (50/60Hz)
3	110V AC (50/60Hz)
4(1)	220V AC (50/60Hz)
5	24V DC
6	12V DC

Note 1) 200/220V AC models are applicabe to the C kit.

Pilot valve

Symbol	Specification	DC	AC
–	Standard	(1.0W) ○	○(1)
H(2)	High pressure	(1.5W) ○	–
Y(2)	Low wattage	(0.5W) ○	–

Note 1) See p.1.10-72 for AC.
Note 2) Except for double(latching).

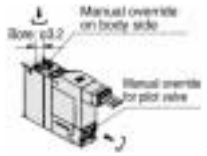
Seal

0	Metal
1	Rubber

Note 1) See "Options" on p.1.10-91 for negative COM specifications.
Note 2) Connector ass'y is necessary for F, P, T and S kits when increasing the valve stations, See "Options" on p.1.10-91 for parts nos.

Manual override

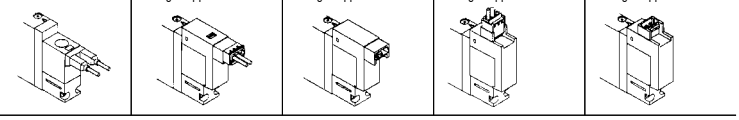
— Non-locking push style	B Push-locking slotted style	C Push-locking lever style



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

Electrical entry

G: Grommet (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

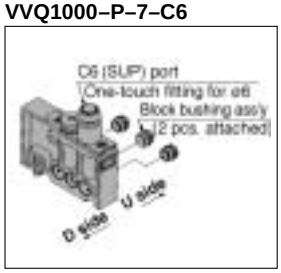
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
M5	M5 thread

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

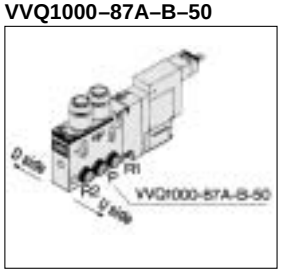
Manifold Options

P.1.10-85

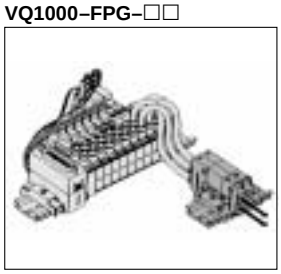
Individual SUP spacer
VVQ1000–P–7–C6



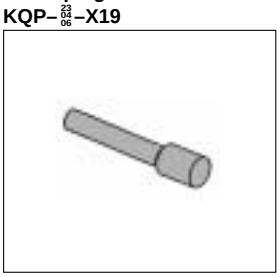
SUP/EXH block bushing assembly
VVQ1000–87A–B–50



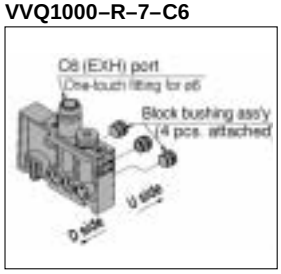
Double check block
VQ1000–FPG–□□



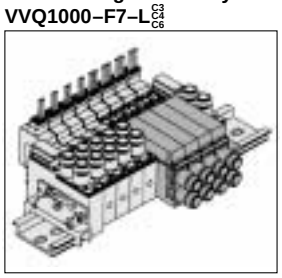
Blank plug
KQP–$^{03}_{04}$–X19



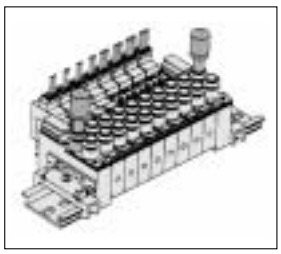
Individual EXH spacer
VVQ1000–R–7–C6



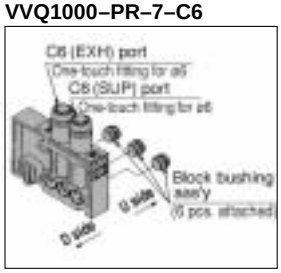
Elbow fittings assembly
VVQ1000–F7–L$^{C3}_{C4}$



Silencer
AN103–X233

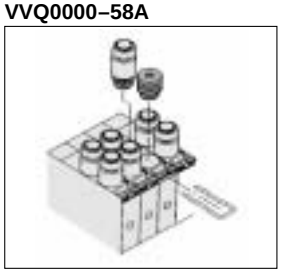


Individual SUP/EXH spacer
VVQ1000–PR–7–C6



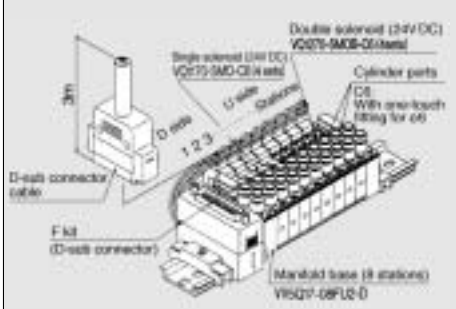
Name plate [–N7]
VVQ1000–N7–station (1 to Max. stations)

Port plug
VVQ0000–58A



How to Order Manifold Ass'y (Example)

Ordering example



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

The ∗ mark is an assembling mark. Prefix "∗" to ass'y Nos. of solenoid valves, etc.

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.1.10-89 for cylinder port fittings.**
- **See p.1.10-109 for replacement parts.**

VQ1000 Body Ported
Plug Lead Unit/Cassette Style

Model

Series	Configuration		Model		Effective area[1] (mm^2)(Cv factor)	Response time[2](ms)		Weight (g)
						Standard 1W	Low wattage AC	
VQ1000	2 position	Single	Metal seal	VQ1170	3.6 (0.20)	12 or less	15 or less	67
			Rubber seal	VQ1171	5.1 (0.28)	15 or less	20 or less	
		Double (latching)	Metal seal	VQ1270	3.6 (0.20)	12 or less	15 or less	
			Rubber seal	VQ1271	5.1 (0.28)	15 or less	20 or less	
	3 position	Closed center	Metal seal	VQ1370	3.6 (0.20)	20 or less	26 or less	
			Rubber seal	VQ1371	5.1 (0.28)	25 or less	33 or less	
		Exhaust center	Metal seal	VQ1470	3.6 (0.20)	20 or less	26 or less	
			Rubber seal	VQ1471	5.1 (0.28)	25 or less	33 or less	
		Pressure center	Metal seal	VQ1570	3.6 (0.20)	20 or less	26 or less	
			Rubber seal	VQ1571	5.1 (0.28)	25 or less	33 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.

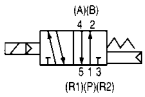
Standard Specifications

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, 100, 110, 200, 220VAC (50/60Hz)	
	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]	
		100V AC	Inrush 1.2VA (12mA), Holding 1.2VA (12mA)	
		110V AC	Inrush 1.3VA (11.7mA), Holding 1.3VA (11.7mA)	
		200V AC	Inrush 2.4VA (12mA), Holding 2.4VA (12mA)	
		220V AC	Inrush 2.6VA (11.7mA), Holding 2.6VA (11.7mA)	

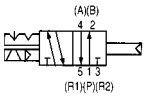
Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, for both energized and de-energized 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

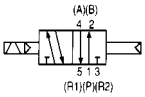
2 position single



2 position double (latching)

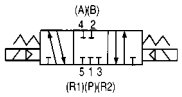


Metal seal

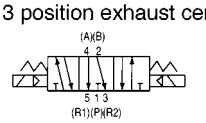


Rubber seal

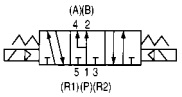
3 position closed center



3 position exhaust center



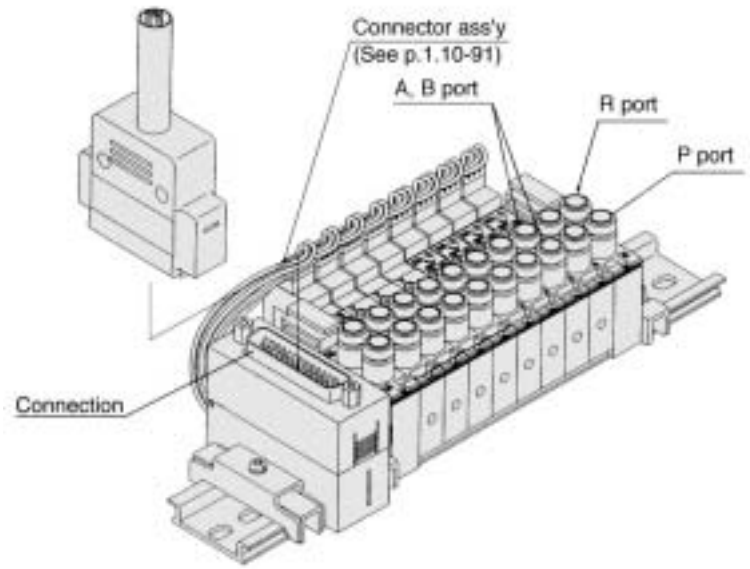
3 position pressure center



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.1.10-91 for details.
Note 2) See p.1.10-91 for details.

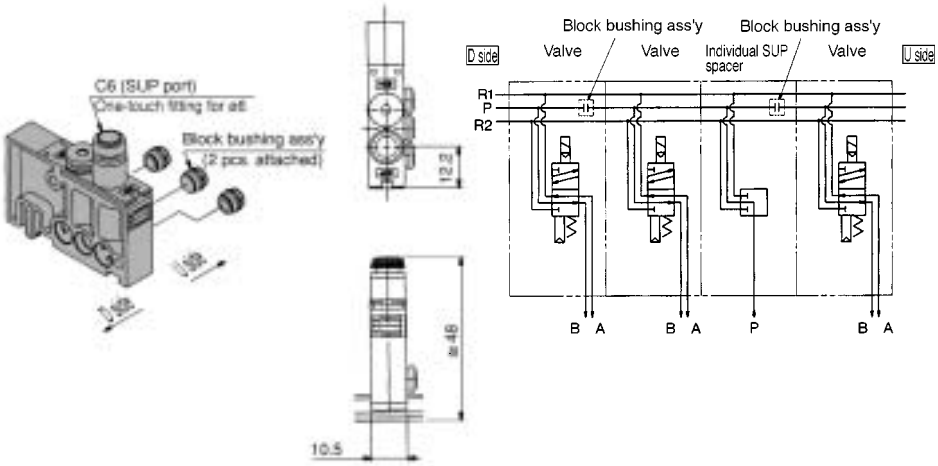


Manifold Options/VQ1000

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.)

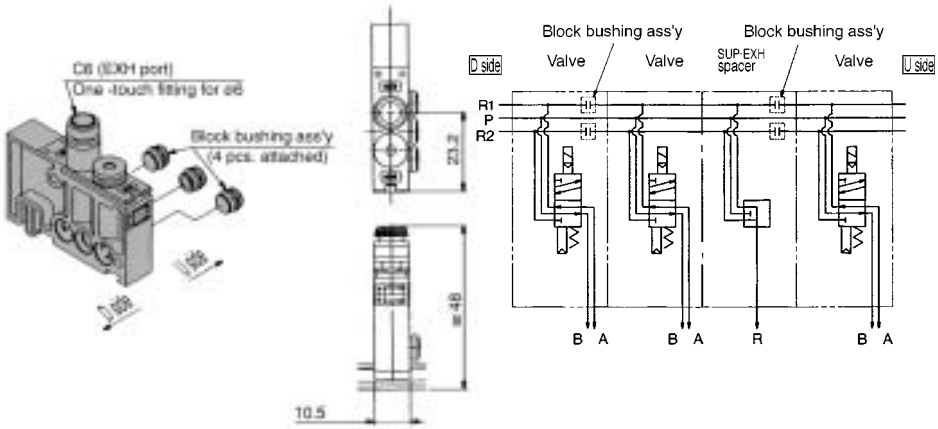
* Specify the spacer mounting position and SUP block plate mounting position by means of the manifold specification. The block plate are used in two places for one set. (Two SUP block plates for blocking SUP station are attached to the individual SUP spacer.)
  The spacer's specification can be changed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

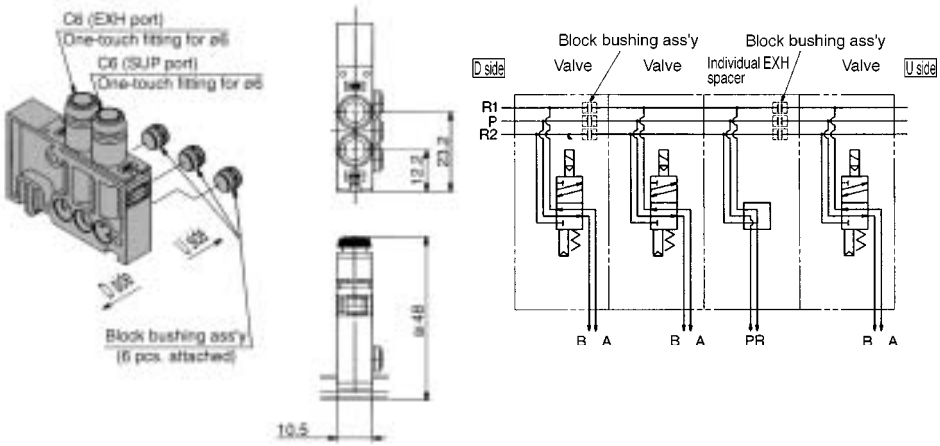
* Specify the spacer mounting position and EXH block plate mounting position by means of the manifold specification. The block plate are used in two places for one set. (Four EXH block plates for blocking EXH station are attached to the individual EXH spacer.)
* The spacer's specification can be changed (from an insividual EXH specer 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 plate 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···SV5Q170P, #1 to #3

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.

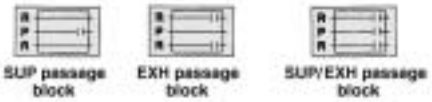
<For EXH>

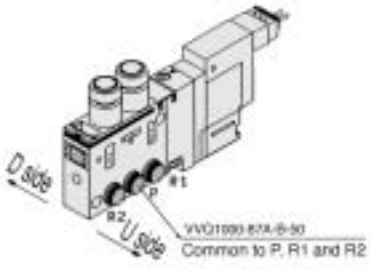
When a valve exhaust affects other stations due to the circuit configuration, this block bushing assembly is used between the stations whose EXH passages are to be separated each other. Since the block bushing assembly is mounted on the U side of the valve's R1 and R2 passages, two assemblies are necessary for one station.

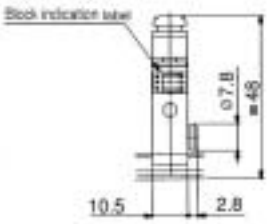
* Specify the number stations by using a manifold specification form.

<Blocking indication label>

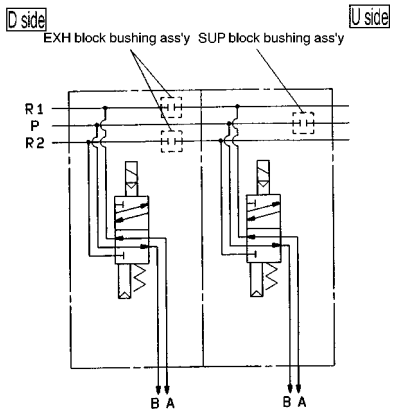
When using block bushing assembly for SUP, EXH passage, indication label for confirmation of the blocking position from outsideis attached. (one label for each)







* Can be included in manifold model No.



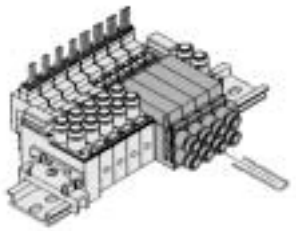
<Example>

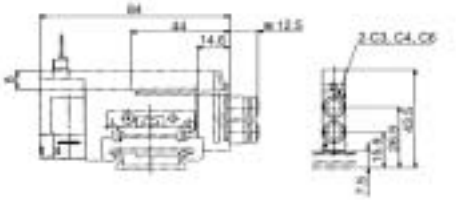
* When ordering a block bushing incorporated with the manifold, a block indication label is attached to the manifold.

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.

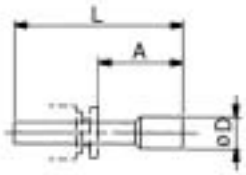
* When ordering assemblies incorporated with a manifold, suffix "-N" to the manifold no.

Blank plug

KQP-$^{23}_{04}_{06}$-X19

Color spec: White

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

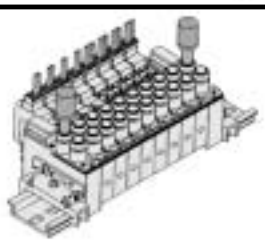


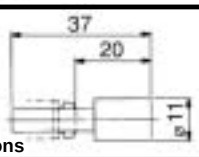
Dimensions **(mm)**

Fittings size ød	Model	A	L	D
3.2	**KQP-23-X19**	16	31.5	5
4	**KQP-04-X19**	16	32	6
6	**KQP-06-X19**	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)**

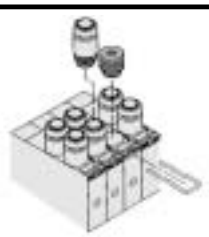
Series	Fittings size ød	Model	A	L	D	Effective area (mm^2(Cv))	Silencing effect(dB)
VQ1000	6	AN103-X233	20	37	11	7 (0.4)	25

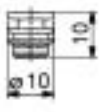
Port plug
VVQ0000-58A

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





Manifold options···SV5Q170P, #4 to #8

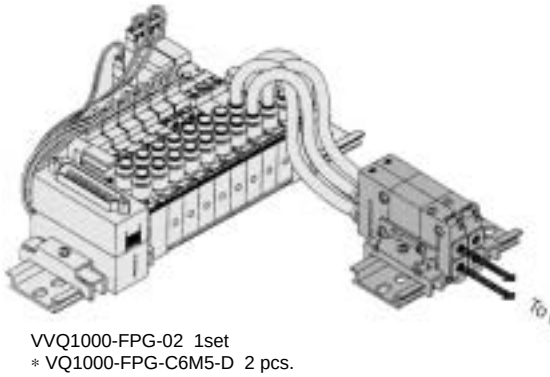
Double check block (Separate style) VQ1000-FPG-□□

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

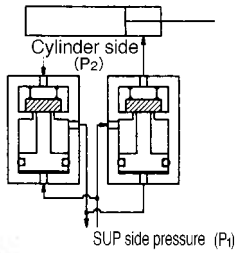
Max. operating pressure	0.8MPa
Min. operating pressure	0.15MPa
Ambient and fluid temperature	–5 to 50˚C
Effective area (Cv factor)(1)	2.7mm² (0.15)
Max. operating frequency	180CPM

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



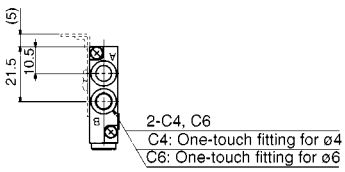
VVQ1000-FPG-02 1set
∗ VQ1000-FPG-C6M5-D 2 pcs.

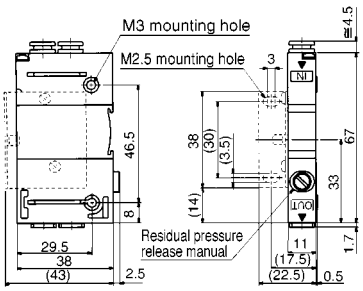
<Check Valve Operation Principle>

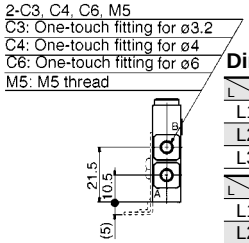


Dimensions

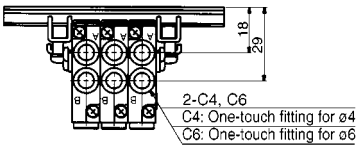
Single

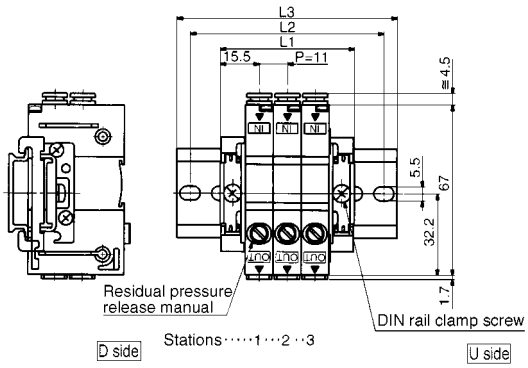


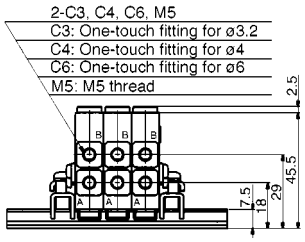




Manifold







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

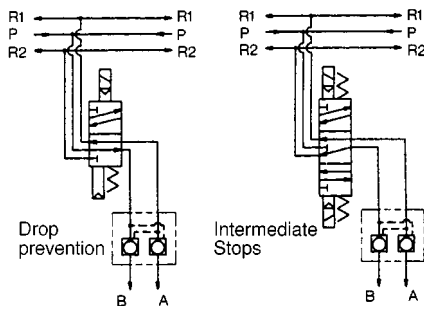
M5	M5 thread
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6

Option

—	None
F	With blacket
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
∗ 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.

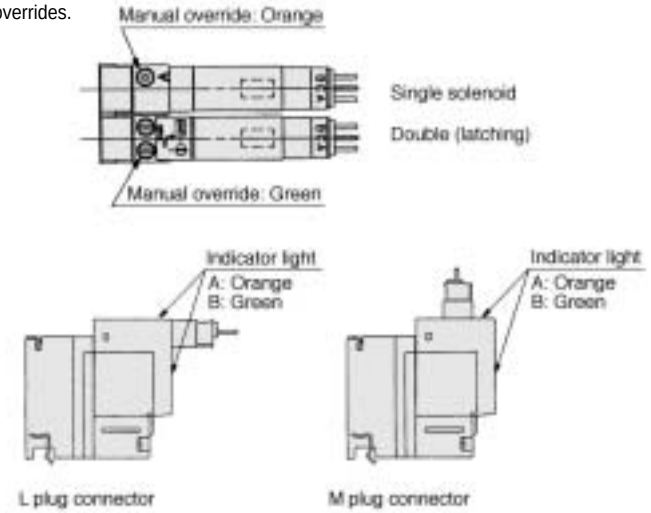
⚠ Precautions

Be sure to read before handling. Refer to p.0-33 to 0-36 for Safety Instructions and common precautions.

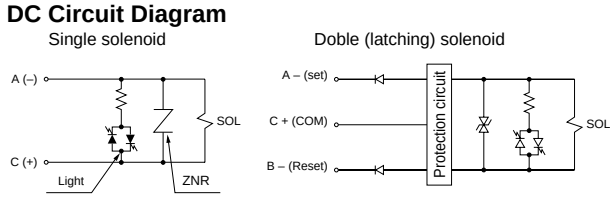
⚠ Caution

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 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) 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

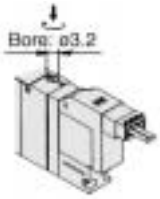
Manual Override

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



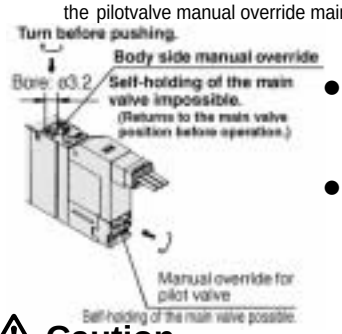
Push down on the manual override button with a small screwdriver until it stops. While down, turn clockwise by 90˚ to lock it. Turn it counterclockwise to release it.

■ 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.)

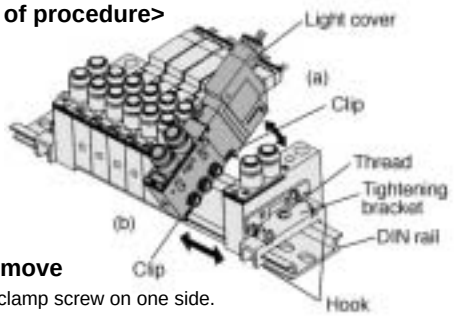
⚠ Caution

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

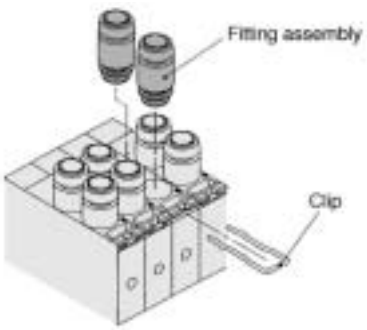
① Take procedures ① and ② above to make an open space in the position for mounting a new valve station.
② Diagonally insert the clip on the side (b) of the valve station to the DIN rail.
③ Press down on the valve station and insert the clip on the side (a) of the valve station to the DIN rail.
④ Slide 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.1.10-65 for the details.

Series VQ
Single Unit

For individual use of a single valve

VQ1000

Model

Series		Configuration		Model		Effective area (mm²) (Cv) (1)	Response time (ms) (2)		Weight (g)
							Standard:1W H: 1.5W	Low wattage AC	
Body ported	VQ1000 cassette plug lead	2 position	Single	Metal seal	VQ1160	3.6 (0.2)	12 or less	15 or less	50
				Rubber seal	VQ1161	5.1 (0.28)	15 or less	20 or less	
			Double (Latching)	Metal seal	VQ1260	3.6 (0.2)	12 or less	15 or less	
				Rubber seal	VQ1261	5.1 (0.28)	15 or less	20 or less	
		3 position	Closed center	Metal seal	VQ1360	3.6 (0.2)	20 or less	26 or less	65
				Rubber seal	VQ1361	5.1 (0.28)	25 or less	33 or less	
			Exhaust center	Metal seal	VQ1460	3.6 (0.2)	20 or less	26 or less	
				Rubber seal	VQ1461	5.1 (0.28)	25 or less	33 or less	
			Pressure center	Metal seal	VQ1560	3.6 (0.2)	20 or less	26 or less	
				Rubber seal	VQ1561	5.1 (0.28)	25 or less	33 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.

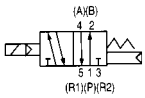
Standard Specifications

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, 100, 110, 200, 220V AC (50/60Hz)	
	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)	
		100V AC	Inrush 0.5VA (5mA), Holding 0.5VA (5mA)	
		110V AC	Inrush 0.55VA (5mA), Holding 0.55VA (5mA)	
		200V AC	Inrush 1.0VA (5mA), Holding 1.0VA (5mA)	
		220V AC	Inrush 1.1VA (5mA), Holding 1.1VA (5mA)	

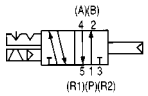
Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle directions of the main valve and armature, for both energized and de-energized 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) .

JIS Symbol

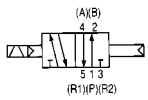
2 position single



2 position double (latching)

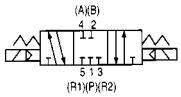


Metal seal

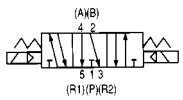


Rubber seal

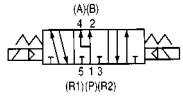
3 position closed center



3 position exhaust center



3 position pressure center



How to Order Valve

VQ1 [1] 6 [0] [Y] – [5] [L] [ ] – [C6]

Series VQ1000

Configuration

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

Seal

0	Metal
1	Rubber

Pilot valve (Option)

Symbol	Specification	DC	AC
—	Standard	(1.0W) ○	○ (1)
H (2)	High pressure	(1.5W) ○	–
N	Negative COM	○	–
Y (2)	Low wattage	(0.5W) ○	–

Note 1) See p.1.10-92 for AC.
Note 2) Except for double (latching).
Note 3) If specifying more then one symbol, list alphabetically.

Coil rated voltage

1	100V AC (50/60Hz)
2	200V AC (50/60Hz)
3	110V AC (50/60Hz)
4	220V AC (50/60Hz)
5	24V DC
6	12V DC

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.

Electrical entry

G	Grommet (Except for latching and 100/110V AC style)
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

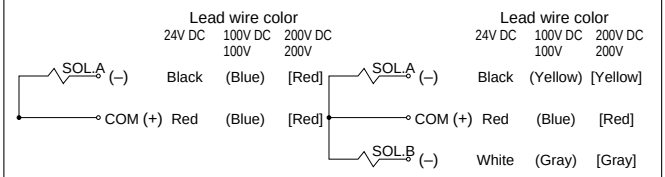
Sub-plate SUP, Cylinder ports

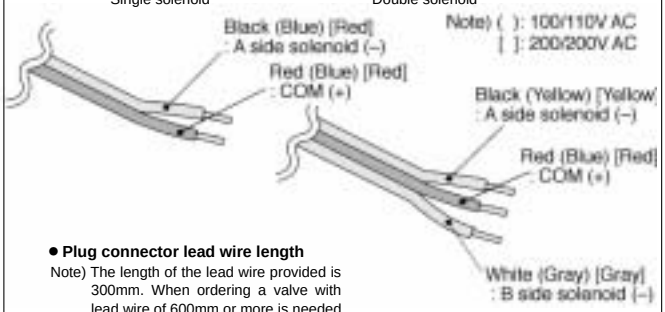
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
M5	M5 thread

Note 1) See "Options" on p.1.10-91 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.

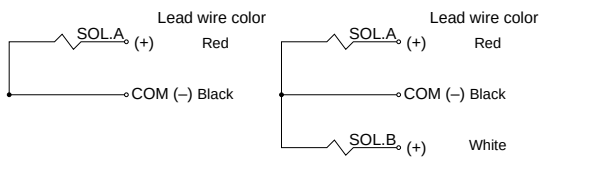
Connector ass'y No. (DC)

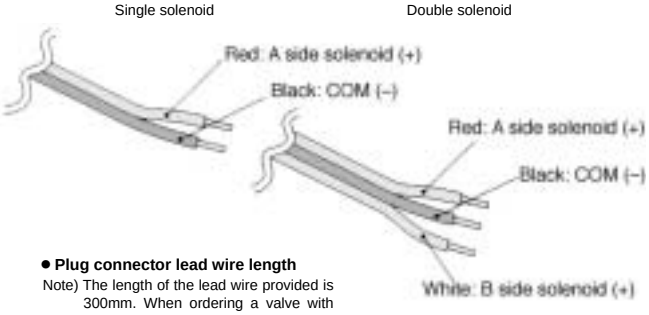
Lead wire length	Single/3 position No.	Double No.
Socket only (3 pcs.)	AXT661-12A	
300mm	AXT661-14A	AXT661-13A
600mm	AXT661-14A-6	AXT661-13A-6
1000mm	AXT661-14A-10	AXT661-13A-10
2000mm	AXT661-14A-20	AXT661-13A-20
3000mm	AXT661-14A-30	AXT661-13A-30

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 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.

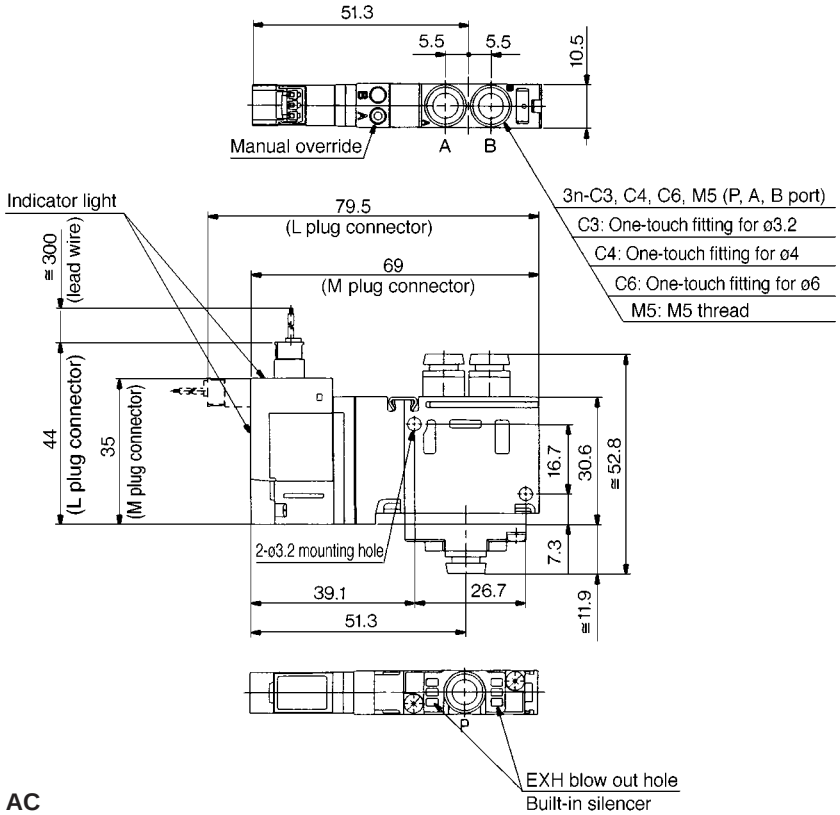
Lead wire length	Single/3 position No.	Double No.
Socket only (3 pcs.)	AXT661-12A	
300mm	AXT661-14AN	AXT661-13AN
600mm	AXT661-14AN-6	AXT661-13AN-6
1000mm	AXT661-14AN-10	AXT661-13AN-10
2000mm	AXT661-14AN-20	AXT661-13AN-20
3000mm	AXT661-14AN-30	AXT661-13AN-30

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

Single Unit

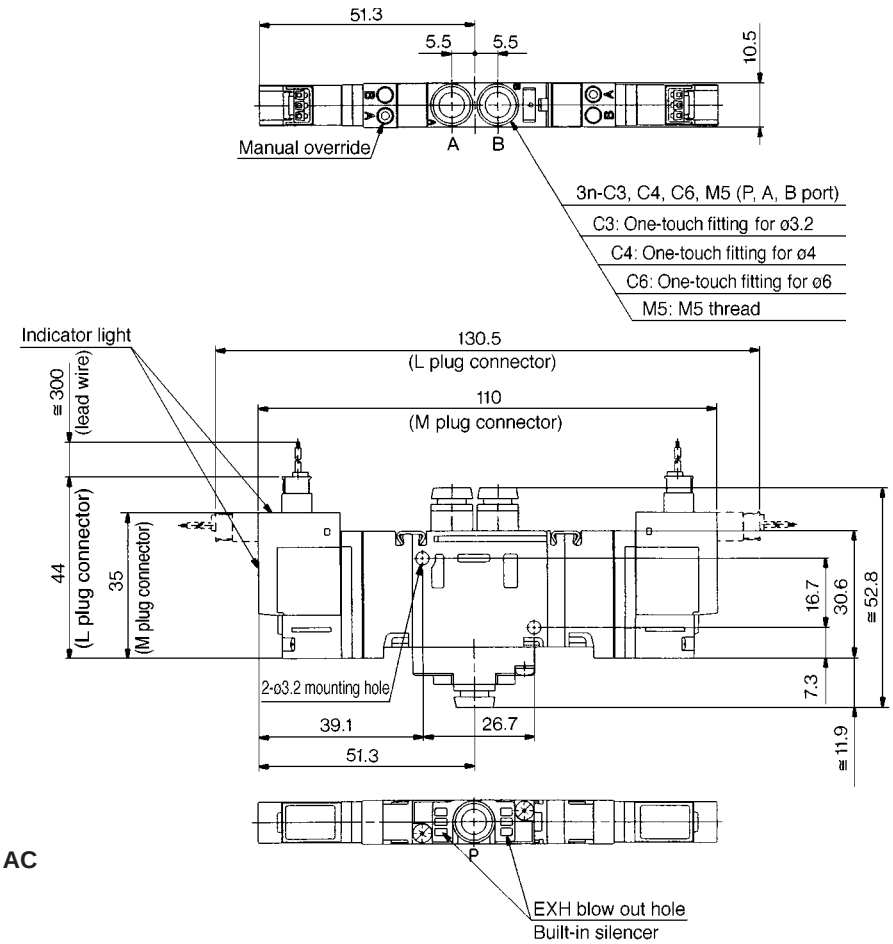
Dimensions (mm)

2 position single/double (latching): VQ1$^{1}_{2}$6$^{0}_{1}$



< >: AC

3 position closed center/exhaust center/pressure center: VQ1$^{3}_{4}_{5}$6$^{0}_{1}$

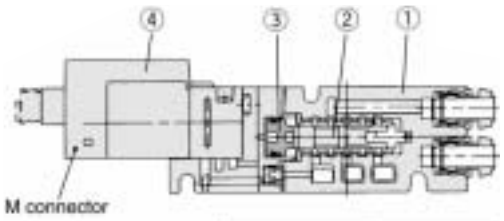


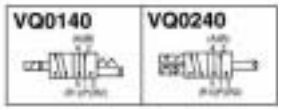
< >: AC

Construction: Plug Lead Unit/Flip Style/VQ0000/1000/2000

Metal seal

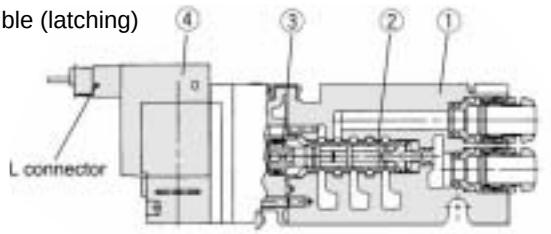
VQ0000

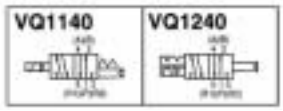




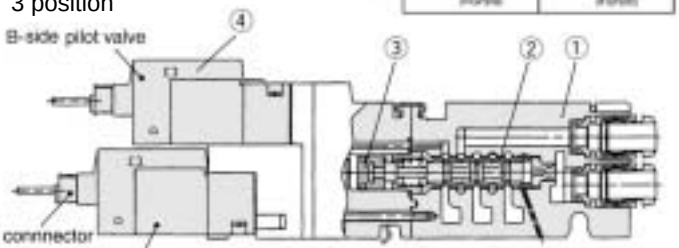
VQ1000

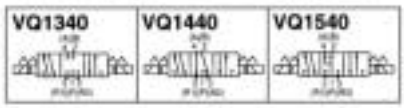
Single/Double (latching)



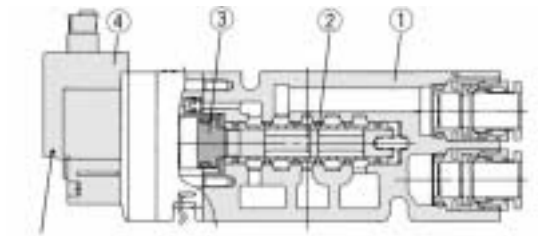


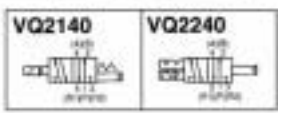
3 position





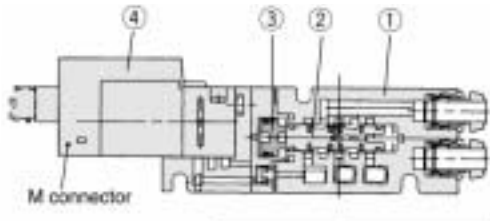
VQ2000

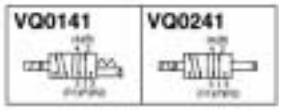




Rubber seal

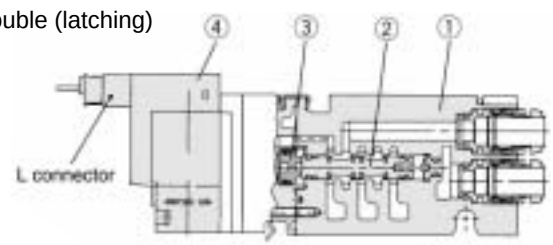
VQ0000

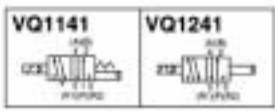




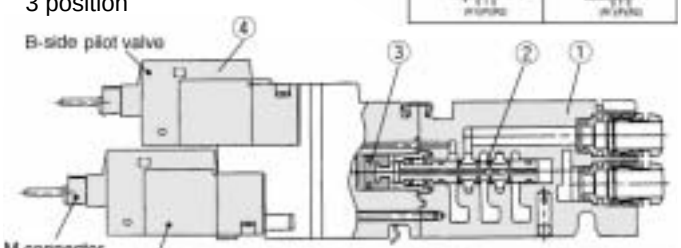
VQ1000

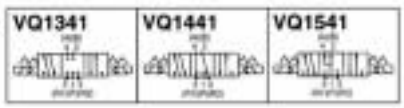
Single/Double (latching)



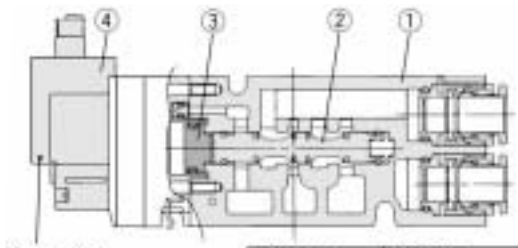


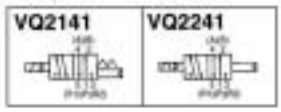
3 position





VQ2000





Component Parts

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

④Pilot Valve Assembly

Single	VQ111P (H)(Y) - □ (1) L M G - 2 3 (VQ0000) (VQ1000) (VQ2000) Voltage 1 to 6 (0: VQ0000, 1: VQ1000, VQ2000)	
Double (latching)	VQ110L - □ L M - 2 3 (VQ0000) (VQ1000) (VQ2000) Voltage 1 to 6	
3 position (VQ1000 only)	VQ111P (H)(Y) - □ (1) L M G - X18{A side(Bottom side)} – {B side(Top side)} Voltage 1 to 6	The direction of the L and M connectors of a pilot valve is opposite to that of the single and double styles.

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

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) - □ (1) L M G - 2 3 (VQ0000) (VQ1000) (VQ2000) Voltage 1 to 6 (0: VQ0000, 1: VQ1000, VQ2000)	
Double (latching)	VQ110L - □ L M - 2 3 (VQ0000) (VQ1000) (VQ2000) Voltage 1 to 6	
3 position (VQ1000 only)	VQ111P (H)(Y) - □ (1) L M G - X18{A side(Bottom side)} – {B side(Top side)} Voltage 1 to 6	The direction of the L and M connectors of a pilot valve is opposite to that of the single and double styles.

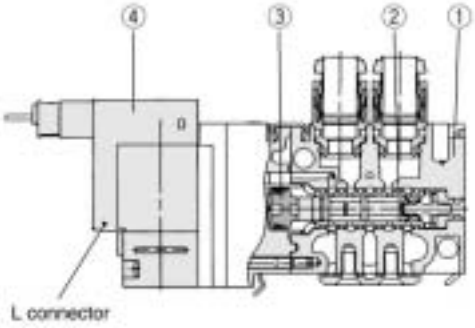
Note 1) (H): 1.5W, (Y): 0.5W, G type: DC only

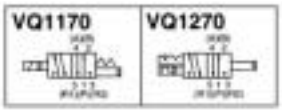
Construction

Construction: Cassette Plug Lead/VQ1000

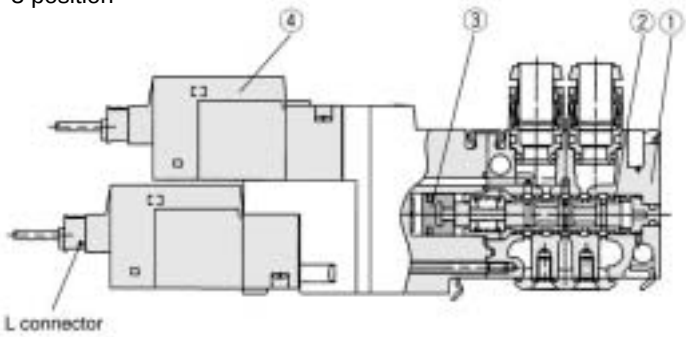
Metal seal

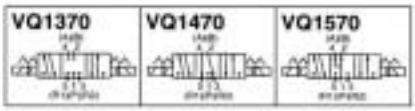
Single/Double (latching)





3 position





Component Parts

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

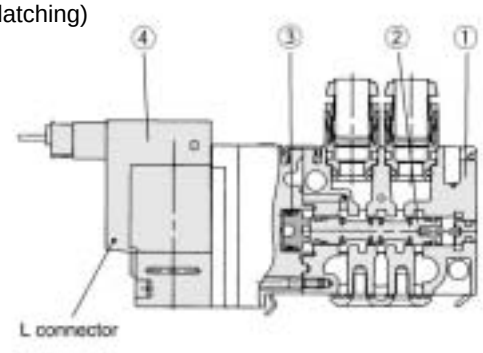
④Pilot Valve Assembly

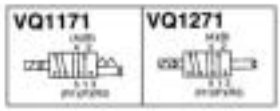
Single	VQ111P(H)(Y)-□L M-2 (1) Voltage 1 to 6 G	
Double (latching)	VQ110L-□L M-2 Voltage 1 to 6	
3 position (VQ1000 only)	VQ111P(H)(Y)-□L M-X18 (1) {A side(Bottom side)} – {B side(Top side)} Voltage 1 to 6 G	The direction of the L and M connectors of a pilot valve is opposite to that of the single and double style.

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

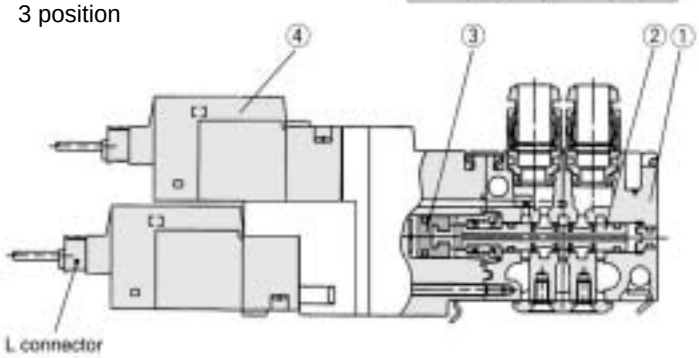
Rubber seal

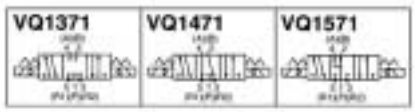
Single/Double (latching)





3 position





Component Parts

No.	Description	Material	Note
①	Body	Zinc die-cast	
②	Spool valve	Aluminum/NBR	
③	Piston	Resin	

④Pilot Valve Assembly

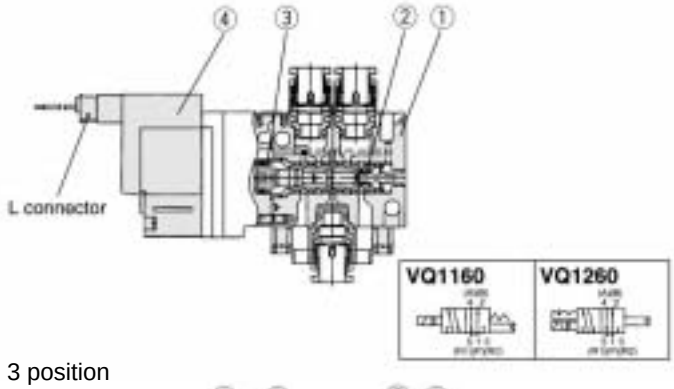
Single	VQ111P(H)(Y)-□L M-2 (1) Voltage 1 to 6 G	
Double (latching)	VQ110L-□L M-2 Voltage 1 to 6	
3 position (VQ1000 only)	VQ111P(H)(Y)-□L M-X18 (1) {A side(Bottom side)} – {B side(Top side)} Voltage 1 to 6 G	The direction of the L and M connectors of a pilot valve is opposite to that of the single and double style.

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

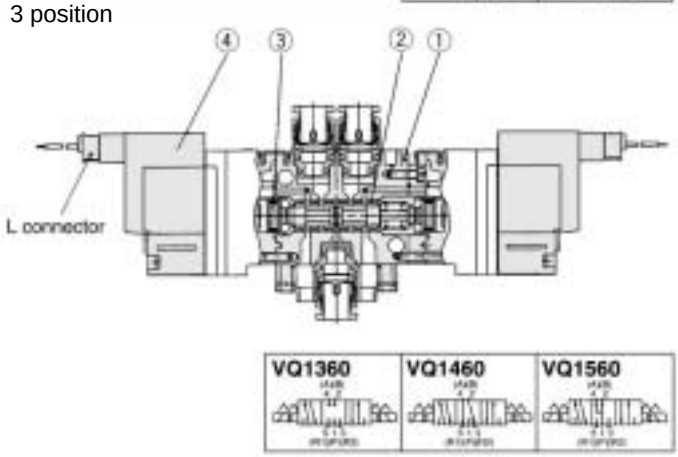
Construction: Single Unit/VQ1000

Metal 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	

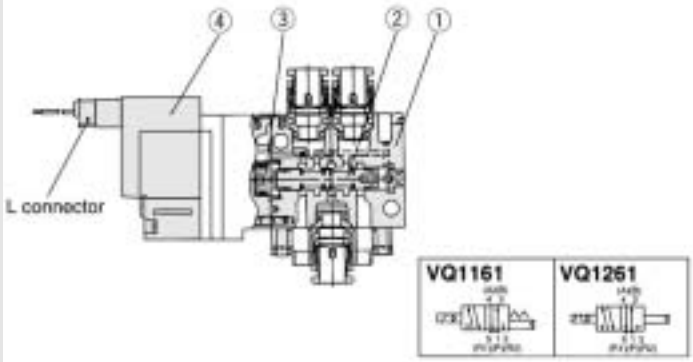
④Pilot Valve Assembly

Single/3 position	VQ111P(H)(Y)-□LMG-2 (1) Voltage 1 to 6	
Double (latching)	VQ110L-□LM-2 Voltage 1 to 6	

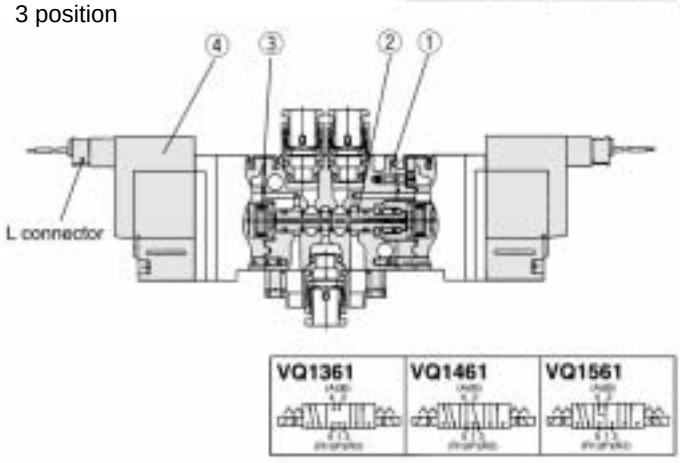
Note 1) (H): 1.5W,
(Y): 0.5W,
G type: DC only

Rubber seal

Single/Double (latching)



3 position



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	VQ111P(H)(Y)-□LMG-2 (1) Voltage 1 to 6	
Double (latching)	VQ110L-□LM-2 Voltage 1 to 6	

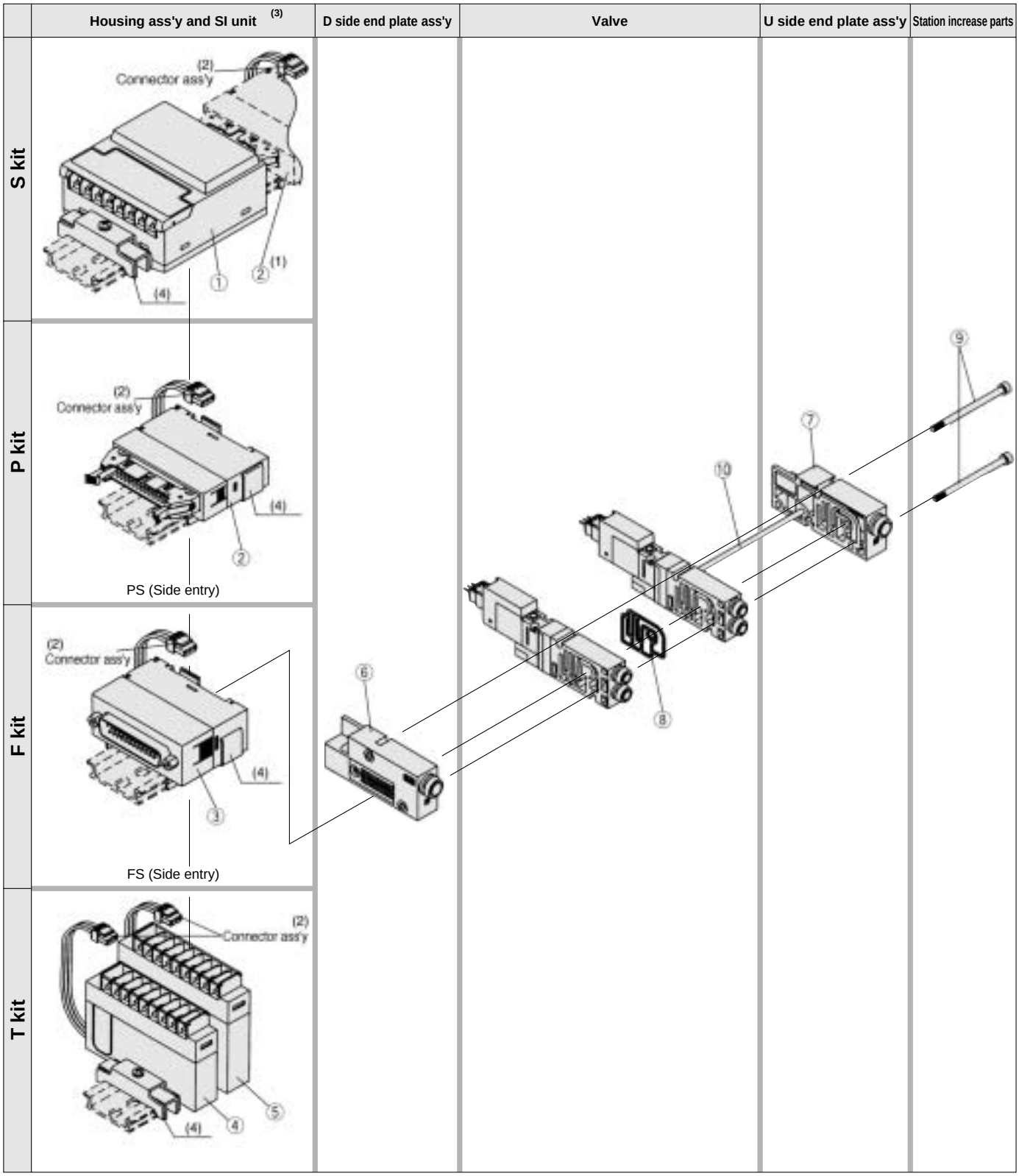
Note 1) (H): 1.5W,
(Y): 0.5W,
G type: DC only

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.1.10-67)
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)	(SA kit)	EX330-S001	SI unit (General type)
	(SB kit)	EX130-SMB1	SI unit for MELSEC-A (Mitsubishi Electric)
	(SC kit)	EX130-STA1	SI unit for SYSMAC (OMRON)
	(SD kit)	EX130-SSH1	SI unit for New Satellite (Sharp)
	(SF1 kit)	EX130-SUW1	SI unit for 16 point Uni-wire System (NKE)
	(SH kit)	EX130-SUH1	SI unit for 16 point Uni-wire H System (NKE)
②	P_S^Ukit	AXT100-2-P_S^U□(2)	Flat cable housing ass'y □ =Number of pins: 26, 20, 16, 10
③	F_S^Ukit	AXT100-2-F_S^U□(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.1.10-67)
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

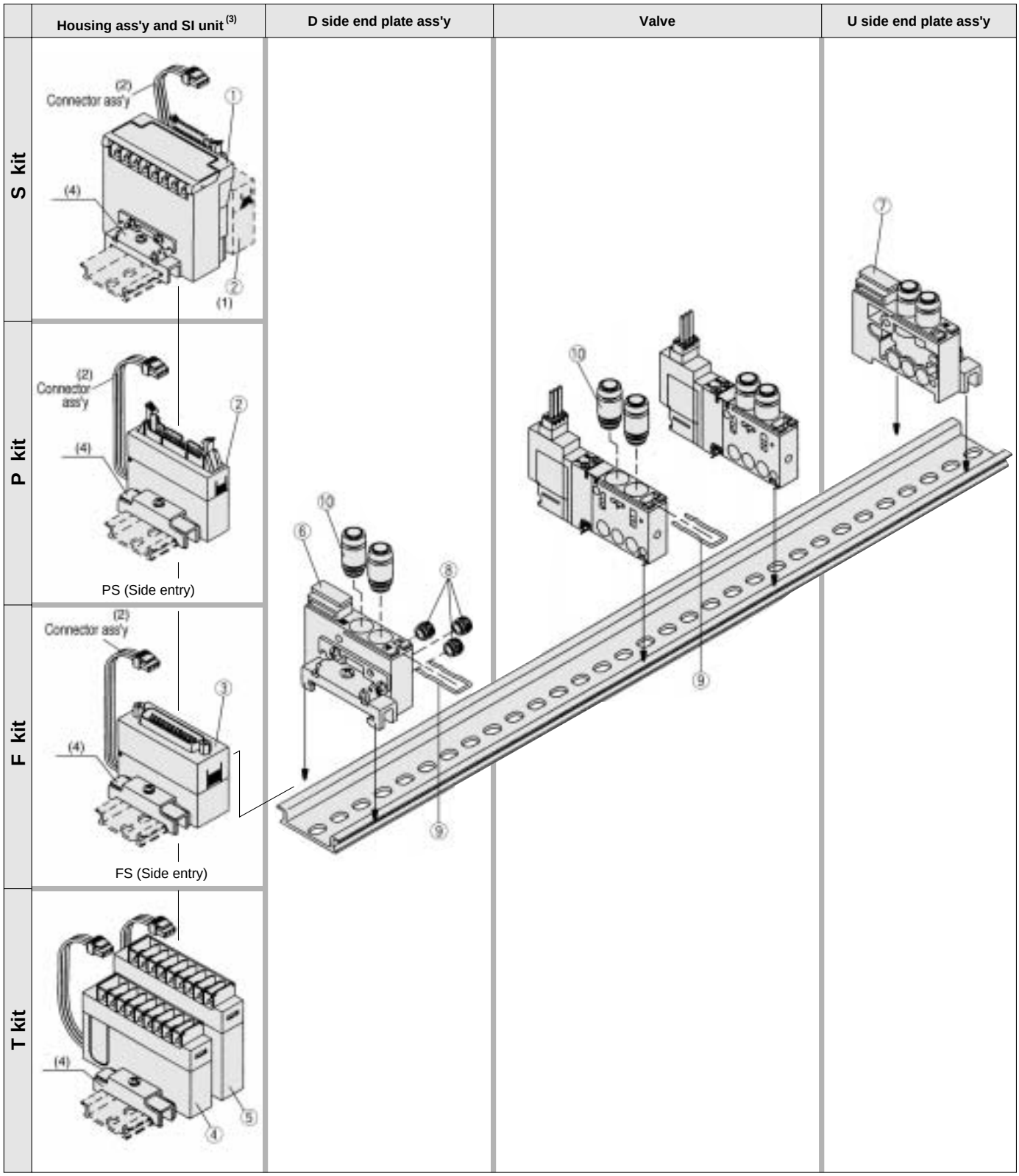
Note 1) Each number of replacement parts are included in one set.
Note 2) □: Number of stations (01 to 16)
Note 3) ⑨ and ⑩ are in one set.

Exploded View of Manifold

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.1.10-91)
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)	(SA kit)	EX321-S001(-XP)	General type SI unit, Series EX300
	(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)
	(SD kit)	EX121-SSH1(-XP)	SI unit for Satellite I/O Link System (Sharp)
	(SE kit)	EX121-SPA1	SI unit for MEWNET-F System (Matsushita Electric Works Ltd.)
	(SF1 kit)	EX121-SUW1(-XP)	SI unit for 16 point Uni-wire System (NKE)
	(SG kit)	EX121-SAB1	SI unit for Remote I/O (RIO) System (Allen-Bradley Co.)
	(SH kit)	EX121-SUH1(-XP)	SI unit for 16 point Uni-wire H System (NKE)
	(SJ1 kit)	EX121-SSL1(-XP)	SI unit for 16 point S-LINK System (Sunx)
	(SJ2 kit)	EX121-SSL2(-XP)	SI unit for 8 point S-LINK System (Sunx)
	(SK kit)	EX121-SFU1(-XP)	SI unit for T-LINK Mini System (Fuji Electric)
	(SQ kit)	EX121-SDN1	SI unit for Device Net and Compo Bus/D (OMRON)
	(SR1 kit)	EX121-SCS1(-XP)	SI unit for 16 point Compo Bus/S (OMRON)
	(SR2 kit)	EX121-SCS2(-XP)	SI unit for 8 point Compo Bus/S (OMRON)
	(SV kit)	EX121-SMJ1(-XP)	SI unit for CC-LINK (Mitsubishi Electric)
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.1.10-91)
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.