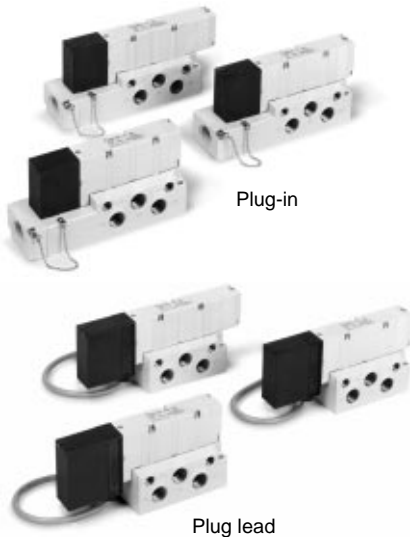


# Series VQ4000

## Base Mounted Valve

# Plug-in, Plug Lead/Single Unit



### Model

Series	Configuration	Model	Effective area (mm <sup>2</sup> ) (Cv) <sup>(1)</sup>	Response time ms <sup>(2)</sup>		Weight (kg) <sup>(3)</sup>		
				Standard: 1W	Low wattage and AC			
VQ4000	2 position	Single	Metal seal	VQ41 <sub>5</sub> 0	36.0 (2.0)	20 or less	22 or less	0.23 (0.29)
			Rubber seal	VQ41 <sub>5</sub> 1	39.6 (2.2)	25 or less	27 or less	
		Double	Metal seal	VQ42 <sub>5</sub> 0	36.0 (2.0)	12 or less	12 or less	0.26 (0.32)
			Rubber seal	VQ42 <sub>5</sub> 1	39.6 (2.2)	15 or less	15 or less	
	3 position	Closed center	Metal seal	VQ43 <sub>5</sub> 0	32.4 (1.8)	45 or less	47 or less	0.28 (0.34)
			Rubber seal	VQ43 <sub>5</sub> 1	36.0 (2.0)	50 or less	52 or less	
		Exhaust center	Metal seal	VQ44 <sub>5</sub> 0	36.0 (2.0)	45 or less	47 or less	0.28 (0.34)
			Rubber seal	VQ44 <sub>5</sub> 1	39.6 (2.2)	50 or less	52 or less	
		Pressure center	Metal seal	VQ45 <sub>5</sub> 0	36.0 (2.0)	45 or less	47 or less	0.28 (0.34)
			Rubber seal	VQ45 <sub>5</sub> 1	39.6 (2.2)	50 or less	52 or less	
		Double check	Metal seal	VQ46 <sub>5</sub> 0	19.8 (1.1)	55 or less	57 or less	0.50 (0.56)
			Rubber seal	VQ46 <sub>5</sub> 1	21.6 (1.2)	62 or less	64 or less	



- Note 1) Value for valve on sub-plate and cylinder port Rc3/8  
 Note 2) As per JISB8375-1981 (Supply pressure: 0.5MPa, with indicator light and surge suppressor, clean air).  
 Note 3) ( ): Weight of plug lead unit  
 Table: Without sub-plate  
 With sub-plate: Add 0.41kgf for plug-in style, 0.30kgf for plug lead style.

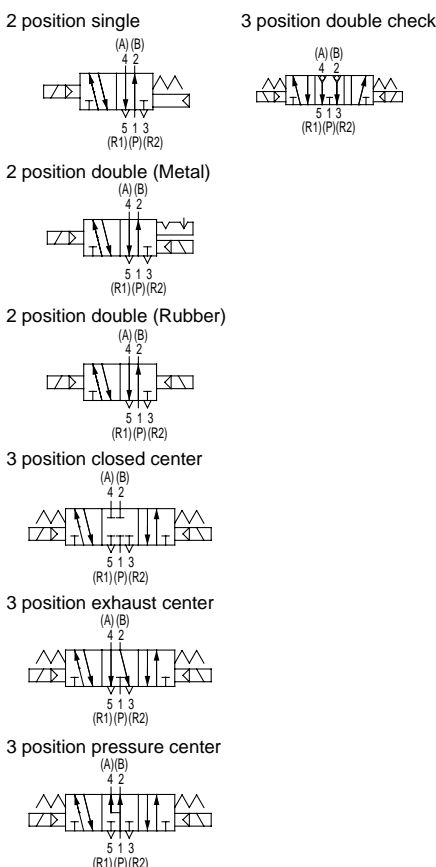
### Standard Specifications

	Seal			
	Metal seal	Rubber seal		
Fluid	Air, Inert gas			
Max. operating pressure <sup>(3)</sup>	1.0MPa			
Min. operating pressure	Single	0.15MPa		
	Double	0.15MPa		
	3 position	0.15MPa		
Ambient and fluid temperature	-10 to 50°C <sup>(1)</sup>	-5 to 50°C <sup>(1)</sup>		
Lubrication	Not required			
Manual override	Non-locking push style/Locking slotted style (Option)			
Shock/Vibration resistance	150/30 m/s <sup>2</sup> <sup>(2)</sup>			
Enclosure	Dust proof (Available IP65 style)			
Coil rated voltage	12, 24V DC and 100, 110, 200, 220V AC (50/60Hz)			
Solenoid specifications	Allowable voltage	±10% of rated voltage		
	Coil insulation	Class B or equivalent		
	Power consumption (Current value)	24V DC	1W DC (42mA), 0.5W DC (21mA) <sup>(3)</sup>	
		12V DC	1W DC (83mA), 0.5W DC (42mA) <sup>(3)</sup>	
		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) Shock resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle direction of the main valve and armature, for both energized and de-energized states. (Value in the initial stage.)  
 Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2,000 Hz. Test was performed at both energize and de-energized states to the axis and right angle direction of the main valve and armature. (Value in the initial stage.)  
 Note 3) Values in case of low power consumption model (0.5W).

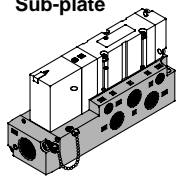
### Symbol



## How to Order Valve

**Body style**

**O: Plug-in Sub-plate**



**Port size**

-	Without sub-plate (for manifold)
02	Rc1/4
03	Rc3/8

Note) Refer to p.1.11-46 for thread standard.

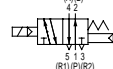
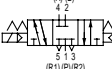
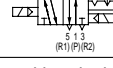
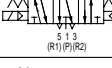
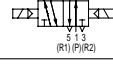
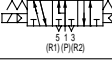
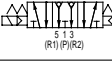
**Piping**

-	Side piping
B	Bottom piping

**Plug-in** VQ4 1 0 0

**Plug lead** VQ4 2 5 1

**Configuration**

1	2 position single	3	3 position closed center
			
2	Metal 2 position double	4	3 position exhaust center
			
2	Rubber 2 position double	5	3 position pressure center
			
		6 (Note)	3 position double check
			

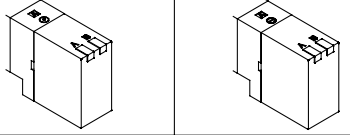
Note) Refer to p.1.11-36 for double check style.

**Enclosure**

-	Dust-proof
W	Dust tight, jet proof (Applicable to IP 65)

**Manual override**

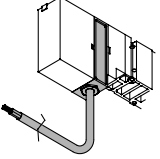
- : Non-locking push style	B: Locking slotted style
----------------------------	--------------------------



**Light and surge voltage suppressor**

-	With
E	W/o light/With surge suppressor

**Electrical entry**

Grommet	G	
	H	
		Lead wire length 0.6m
		Lead wire length 1.5m

**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

**Seal**

0	Metal seal
1	Rubber seal

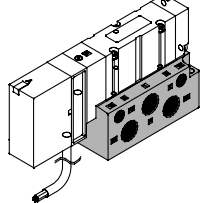
**Function**

-	Standard (1W)
Y <sup>(1)</sup>	Low wattage (0.5W)
R <sup>(2)</sup>	External pilot

Note 1) Applicable to DC specification.  
 Note 2) Refer to p.1.11-46 for external pilot specification. Combination of external pilot and perfect interface is not possible.  
 Note 3) When specifying more than one option, indicate symbols alphabetically.

**Body style**

**5: Plug lead Sub-plate**



- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VP4
- VQ
- VQ4
- VQZ
- VQD
- VZS
- VFS
- VS
- VS7

## How to Order Sub-plate

**Electrical entry**

P	Plug-in conduit terminal
S	Plug lead

**Port size**

02	Rc1/4
03	Rc3/8

Note 1) Bottom piping type is applicable to only Rc1/4.  
 Note 2) Refer to p.1.11-46 for thread standard.

**Piping**

-	Side piping
B	Bottom piping

**Enclosure**

-	Dust proof
W	Dust tight, Jet proof

**How to replace pilot valve ass'y (Voltage)**

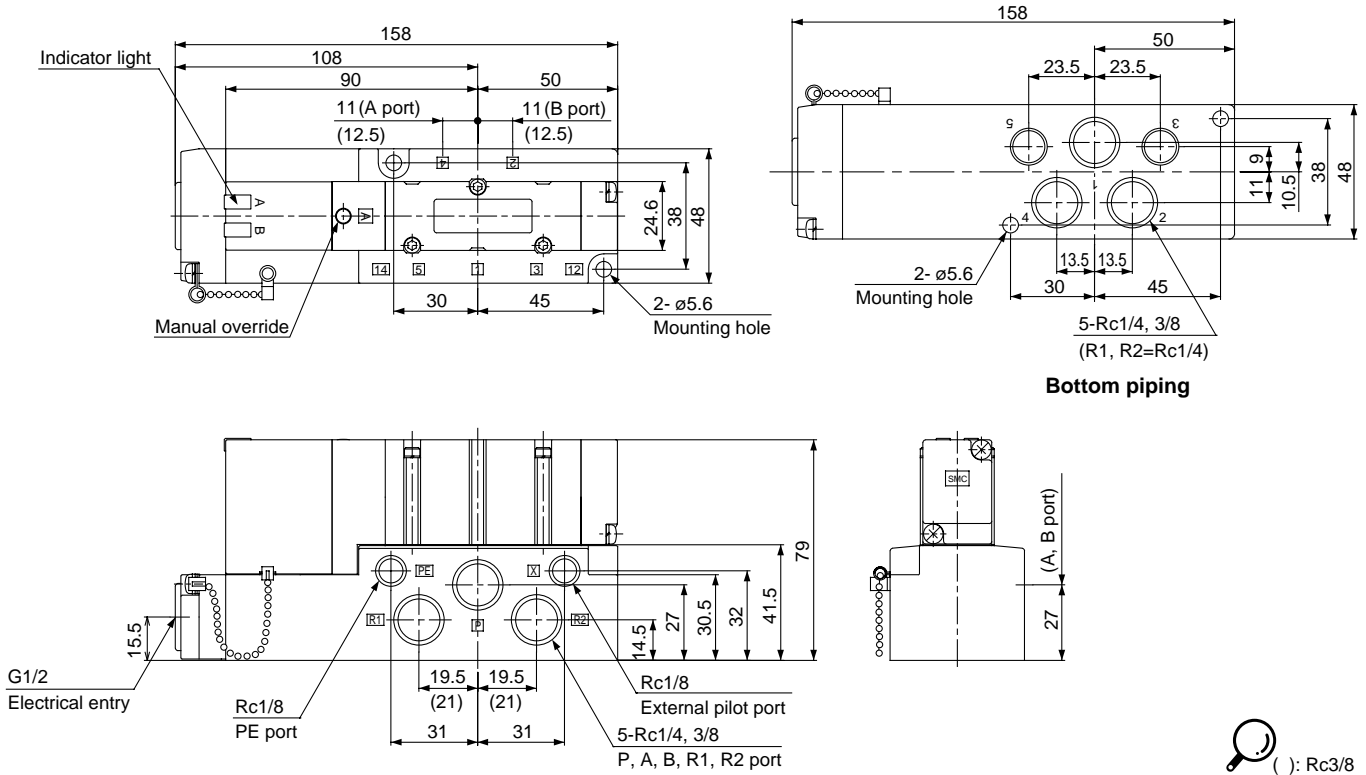
- Refer to p.1.11-42 and p.1.11-43 for part no. of pilot valve ass'y
- Refer to p.1.11-3 for "How to Replace".

# Series VQ4000

## Plug-in

### Conduit terminal

#### 2 position single: VQ410<sup>0</sup>-□

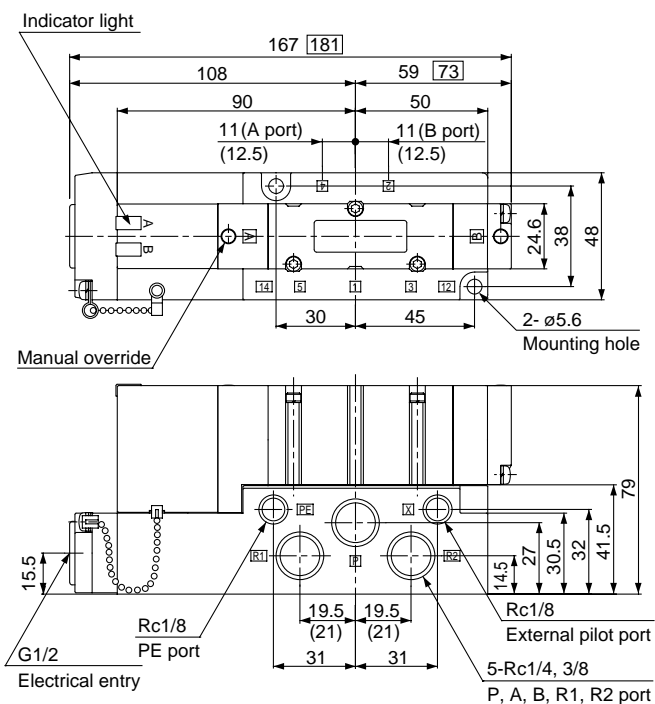


#### 2 position double: VQ420<sup>0</sup>-□

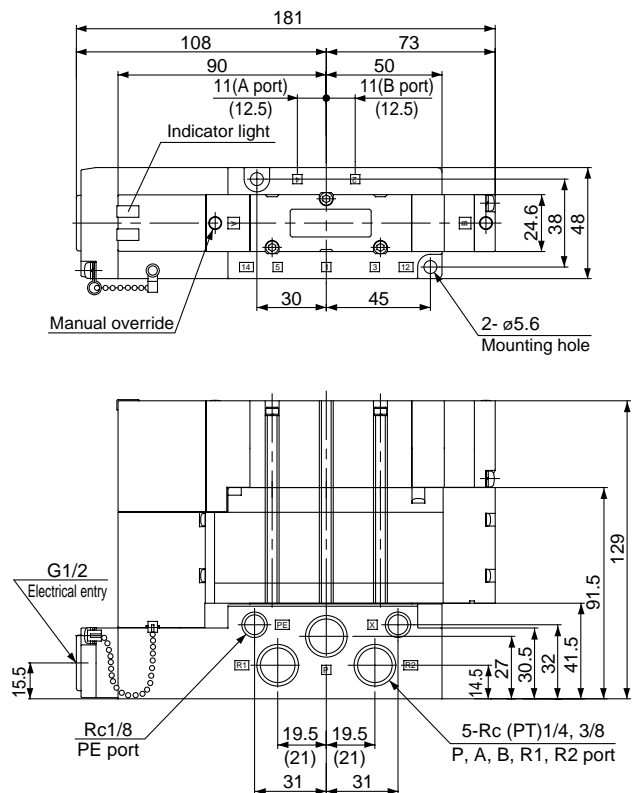
#### 3 position closed center: VQ430<sup>0</sup>-□

#### 3 position exhaust center: VQ440<sup>0</sup>-□

#### 3 position pressure center: VQ450<sup>0</sup>-□



#### 3 position double check: VQ460<sup>0</sup>-□

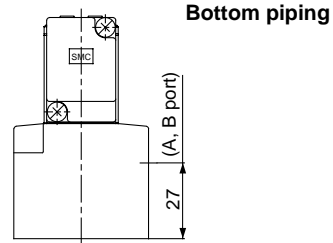
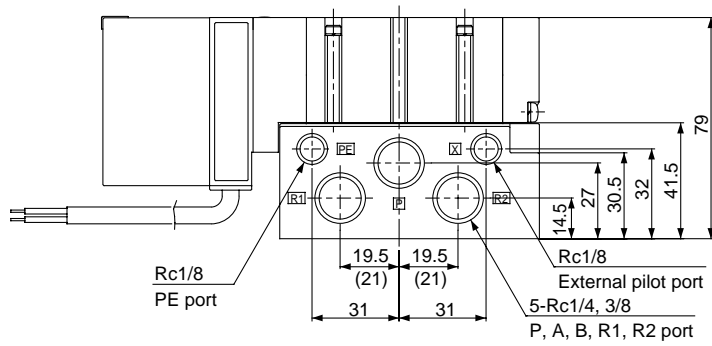
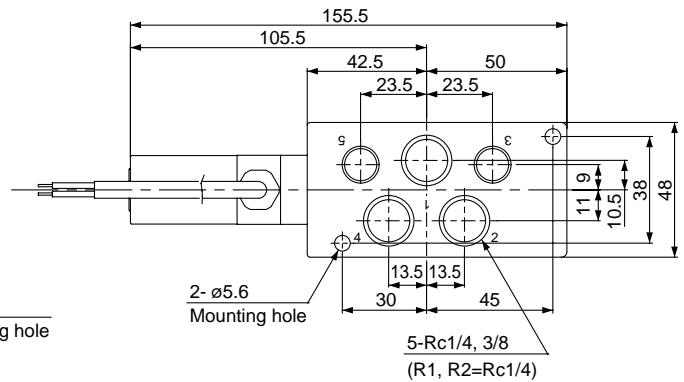
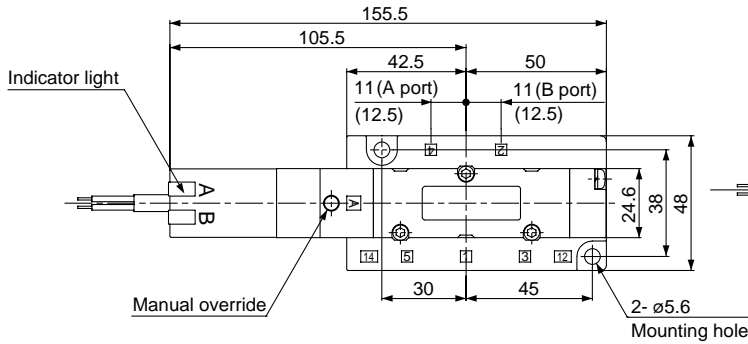


□ : 3 position  
( ) : Rc3/8

# Plug Lead

## Grommet

2 position single: VQ415<sup>0</sup><sub>1</sub>-□<sup>G</sup><sub>H</sub>



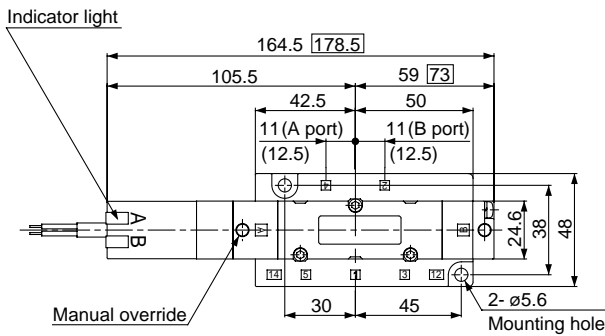
⊕ : Rc3/8

2 position double: VQ425<sup>0</sup><sub>1</sub>-□<sup>G</sup><sub>H</sub>

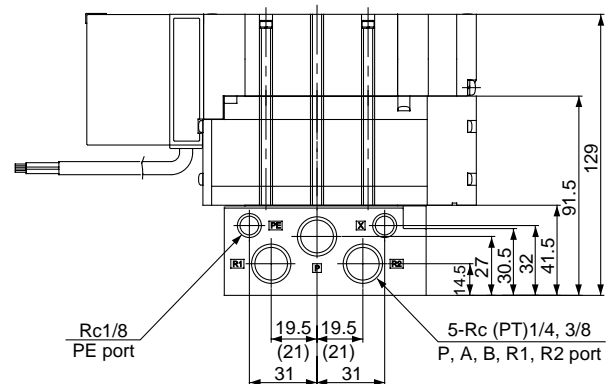
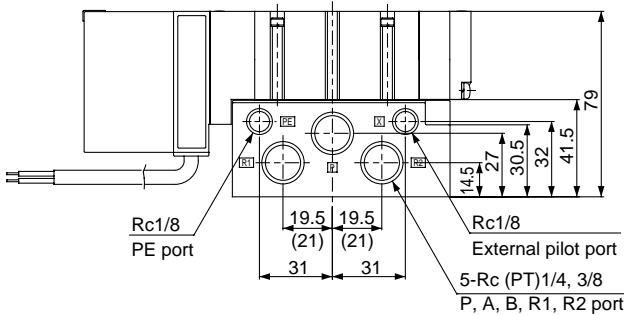
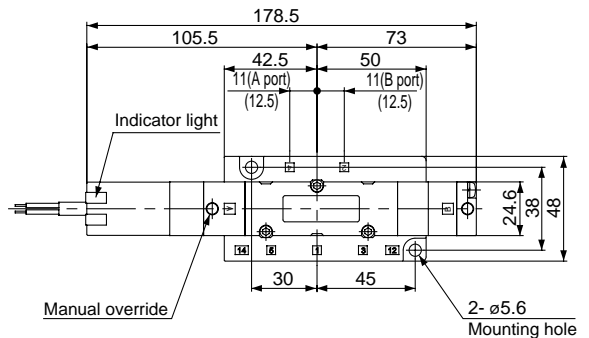
3 position closed center: VQ435<sup>0</sup><sub>1</sub>-□<sup>G</sup><sub>H</sub>

3 position exhaust center: VQ445<sup>0</sup><sub>1</sub>-□<sup>G</sup><sub>H</sub>

3 position pressure center: VQ455<sup>0</sup><sub>1</sub>-□<sup>G</sup><sub>H</sub>



3 position double check: VQ465<sup>0</sup><sub>1</sub>



⊕ : 3 position  
⊖ : Rc3/8

- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VP4

VQ

VQ4

VQZ

VQD

VZS

VFS

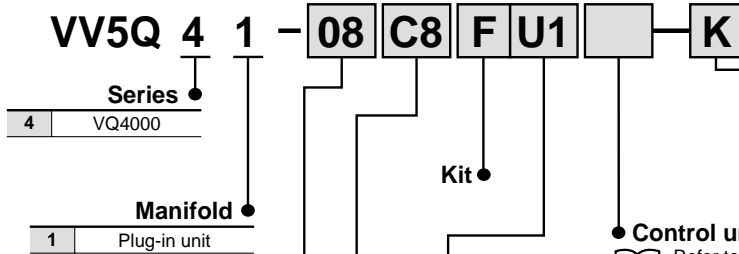
VS

VS7

# Series VQ4000 Base Mounted Plug-in Manifold



## How to Order Manifold

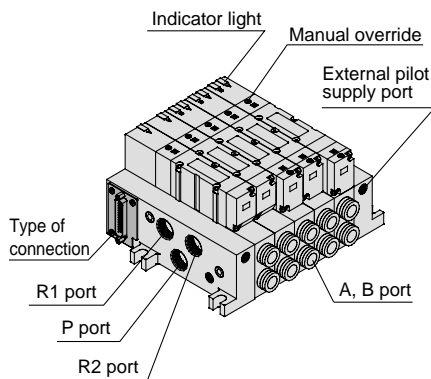


Stations	
02	2 stations
⋮	⋮

Max. and Min. number of stations depends on kit. (Refer to table below.)

### Port size

C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12
02	Rc1/4
03	Rc3/8
B	Bottom piping Rc1/4
CM	Mixed size



Note) Shown VV5Q41-05C12FD0

### Option

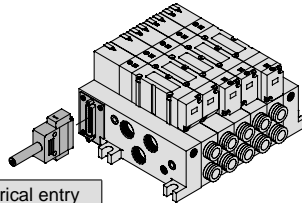
Symbol	Option
-	None
CD <sup>(2)</sup>	Exhaust cleaner: For D side mounting
CU <sup>(2,3)</sup>	Exhaust cleaner: For U side mounting
K <sup>(4)</sup>	Special wiring specification (Other than double wiring)
N	Name plate (T kit only)
SB	Built-in silencer (Direct exhaust from both sides) F/L kits only
SD	Built-in silencer (Direct exhaust from D side)
SU	Built-in silencer (Direct exhaust from U side)
W	Enclosure IP65 (except F kit)



- Note 1) When specifying more than one option, combine symbols in alphabetical order. Example)-CDK
- Note 2) Combination of [C<sub>U</sub>] and [S<sub>U</sub>] is not possible.
- Note 3) Combination of T and S kit is not available.
- Note 4) Specify the wiring specifications by means of the manifold specification form. (except L kit)

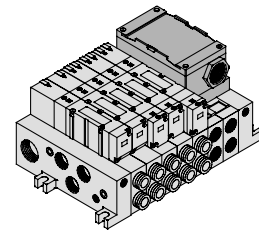
### Kit/Electrical entry/Cable length

#### F Kit (D-sub connector)



Electrical entry				2 to 16 stations
D side	U side	Kit	U side	
D0	U0	Without cable		
D1	U1	Cable length 1.5m		
D2	U2	Cable length 3m		
D3	U3	Cable length 5m		

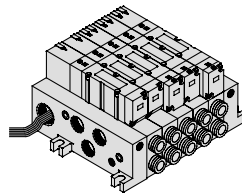
#### T Kit (Terminal box kit)



Applicable to IP65

Kit T	0	Terminal box	3 to 18 stations
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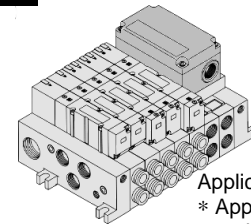
#### L Kit (Lead wire kit)



Electrical entry				2 to 16 stations
D side	U side	Kit	U side	
D0	U0	Cable length 0.6m		
D1	U1	Cable length 1.5m		
D2	U2	Cable length 3m		

Applicable to IP65

#### S Kit (Serial interface kit)



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

Applicable to IP65  
\* Applicable to INPUT and OUTPUT styles.

Kit S	Option		3 to 18 stations
O	Without SI unit		
A	With general SI unit		
B	SI for MELSECNET/mini-S3 Data Link System (Mitsubishi Electric)		
BB	SI for MELSECNET/mini-S3 Data Link System (2 power supply systems)(Mitsubishi Electric)		
C	SI for SYSBUS Wire System (OMRON)		
D	SI for Satellite I/O Link System (Sharp)		
F1	SI for 16 point Uni-wire System (NKE)		
J1	SI for 16 point S-LINK System (Sunx)		
J2	SI for 8 point S-LINK System (Sunx)		
K	SI for T-LINK Mini System (Fuji Electric)		
Q	SI for Device Net and Compo Bus/D (OMRON)		
R1	SI for 16 point Compo Bus/S (OMRON)		
R2	SI for 8 point Compo Bus/S (OMRON)		
BM	SI for MELSECNET/mini-S3 Data Link System (Mitsubishi Electric)	Input units (□: 0 to 2 stations)	



\* Refer to p.1.11-26 to p.1.11-29 for INPUT and OUTPUT styles.

### Manifold Specifications

Series	Base No.	Connection	Porting specifications			Applicable max stations	Applicable valve	Weight 5 stations (kg)
			Port location	Port size (1)				
				P, R	A, B			
VQ4000	VV5Q41-□□□	<ul style="list-style-type: none"> <li>■ F kit-D-sub connector</li> <li>■ T kit-Terminal box</li> <li>■ L kit-Lead wire</li> <li>■ S kit-Serial transmission</li> </ul>	Side	Rc1/2	C8 (For ø8) C10 (For ø10) C12 (For ø12)	F, T kit 12 stations	VQ4□00 VQ4□01	2.24
			Bottom	Option (Built-in silencer (Direct exhaust))	Rc1/4 Rc3/8	L kit 16 stations		
					Rc1/4	S kit 10 stations		· L kit · Except solenoid valve weight

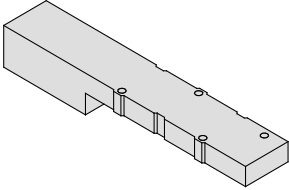
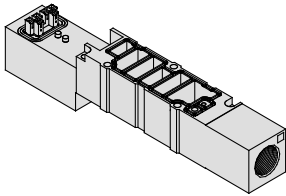
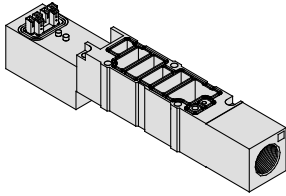

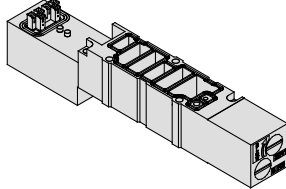
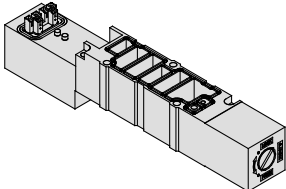
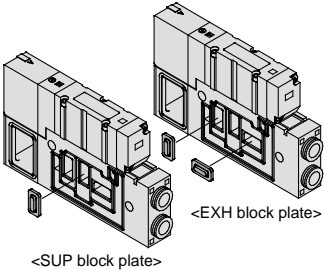
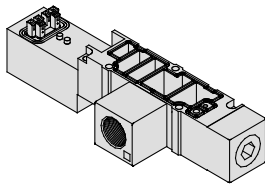
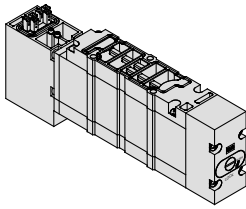
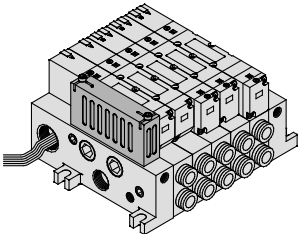
Note 1) Refer to P.1.11-46 for further information on One-touch fittings for inch sizes and thread standards.

### Number of Manifold Stations/Effective Area (mm<sup>2</sup> (Cv)) at Individual Operation

Model	Passage/Stations	1 station	5 stations	10 stations	15 stations
2 position metal seal VQ4 <sub>2</sub> 100	P→A or B	28.8 (1.6)	28.8 (1.6)	28.8 (1.6)	28.8 (1.6)
	A→R1, B→R2	32.4 (1.8)	32.4 (1.8)	32.4 (1.8)	32.4 (1.8)
2 position rubber seal VQ4 <sub>2</sub> 01	P→A or B	36.0 (2.0)	36.0 (2.0)	36.0 (2.0)	36.0 (2.0)
	A→R1, B→R2	37.8 (2.1)	37.8 (2.1)	37.8 (2.1)	37.8 (2.1)

Note) Port size. Rc3/8

### Manifold Options

<b>Blank plate assembly</b> <b>VVQ4000-10A-1</b> 	<b>Individual SUP spacer</b> <b>VVQ4000-P-1-03</b> 	<b>Individual EXH spacer</b> <b>VVQ4000-R-1-03</b> 	 <ul style="list-style-type: none"> <li>Refer to p.1.11-34 to p.1.11-37 for detail dimensions of each option.</li> <li>Refer to p.1.11-45 for spare parts no.</li> <li>Refer to p.1.11-38 to p.1.11-41 for control unit.</li> </ul>
<b>Interface speed control</b> <b>VVQ4000-20A-1</b> 	<b>SUP stop valve spacer</b> <b>VVQ4000-37A-1</b> 	<b>SUP EXH block plate</b> <b>VVQ4000-16A</b> 	
<b>Release valve spacer</b> <b>VVQ4000-24A-1D<sup>(1, 2)</sup></b> 	<b>Double check spacer with residual pressure exhaust</b> <b>VVQ4000-25A-1<sup>(1)</sup></b> 	<b>Built-in silencer (Direct exhaust)</b> <b>[-S□]<sup>(1)</sup></b> 	

Note 1) Release valve spacer, built-in silencer (direct exhaust), exhaust cleaner mounting and double check spacer for residual pressure exhaust cannot be combined with external pilot.  
 Note 2) Can be mounted on L kit only. For other kits, order E type control unit. (Refer to p.1.11-38 to 1.11-41)



SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VP4

VQ

VQ4

VQZ

VQD

VZS

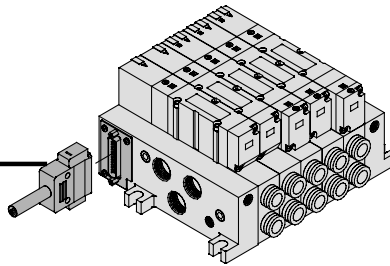
VFS

VS

VS7

# Series VQ4000

## F Kit (D-sub connector)



- The D-sub connector permits simple rationalization and installation labor saving for electrical connection.
- The D-sub connector (25 pin std.) conforms with MIL permitting use of commercial connectors with wide interchangeability.
- U side or D side receptacle position can be selected in accordance with the available mounting space.
- Max. 18 stations

### Manifold specifications

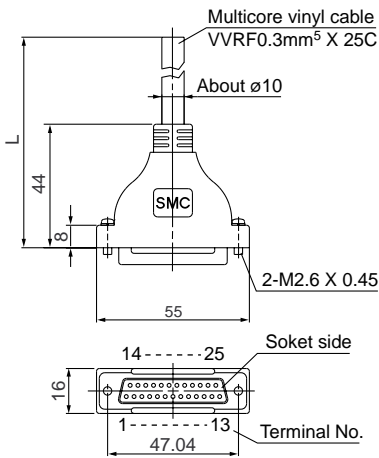
Series	Porting specifications		Applicable Max. stations
	Port location	Port size	
VQ4000	Side	Rc1/2	16 stations
	Bottom	Rc1/4	

## D-sub Connector (25 pin)

### • Cable Ass'y

015  
AXT100-DS25-030  
050

(The D-sub connector cable ass'y can be ordered with a manifold part number.)  
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

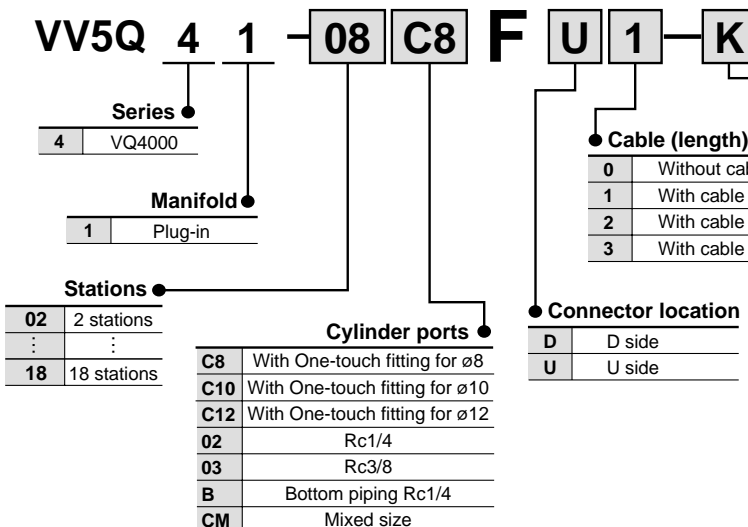
Item	Property
Conductor resistance Ω/km, 20°C	65 or less
Voltage limit V, 1 min, AC	1000
Insurance resistance MΩkm, 20°C	5 or more

Note) The minimum bending radius of D-sub cable ass'y is 20mm.

### Wire color table by terminal 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
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	-

## How to Order Manifold



### • Options

Symbol	Option
-	None
CD <sup>(2)</sup>	Exhaust cleaner: For D side mountig
CU <sup>(2)</sup>	Exhaust cleaner: For U side mountig
K <sup>(3)</sup>	Special wiring specification (Other than double wiring)
SB	Built-in silencer (Direct exhaust from both sides) F/L kits only
SD	Built-in silencer (Direct exhaust from D side)
SU	Built-in silencer (Direct exhaust from U side)



Note 1) When specifying more than one option, combine symbols in alphabetical order. Example)-CDK

Note 2) Combination of [C<sub>D</sub> U] and [S<sub>D</sub> U] is not possible.



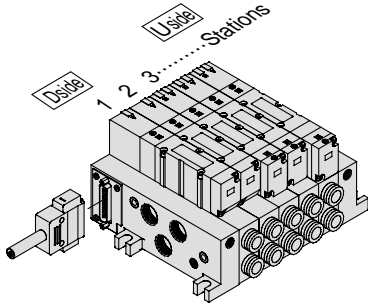
Note 3) Specify the wiring specifications by means of the manifold specification form.

Note 4) Refer to P.1.11-38 to p.1.11-41 for with control unit.



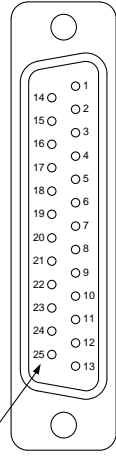
\* As optional specifications, the maximum number of stations can be increased based on special wiring specifications. See p.1.11-11 for details.

## Electrical Wiring Specifications



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

### D-sub connector



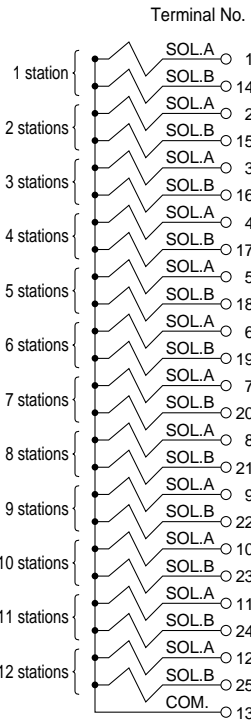
Connector terminal No.

Regardless 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 standard specification permits mixture of single and double wiring. Refer to below.

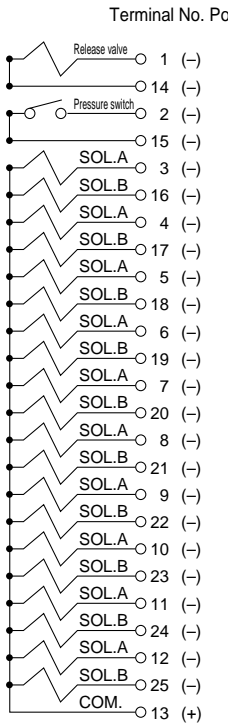


Note 1) No polarity. Possible to use as negative common.

### Standard wiring



### Wiring with control unit



### D-sub connector ass'y AXT100-DS25-030 Wire color table 015 050

Terminal No.	Polarity	Lead wire color	Dot marking
1 (-)	(+)	Black	—
14 (-)	(+)	Yellow	Black
15 (-)	(+)	Brown	—
16 (-)	(+)	Pink	Black
17 (-)	(+)	Red	—
18 (-)	(+)	Blue	White
19 (-)	(+)	Orange	—
20 (-)	(+)	Violet	—
21 (-)	(+)	Yellow	—
22 (-)	(+)	Gray	—
23 (-)	(+)	Pink	—
24 (-)	(+)	Orange	Black
25 (-)	(+)	Blue	—
1 (-)	(+)	Red	White
14 (-)	(+)	Violet	White
15 (-)	(+)	Brown	White
16 (-)	(+)	Gray	Black
17 (-)	(+)	Pink	Red
18 (-)	(+)	White	Black
19 (-)	(+)	Gray	Red
20 (-)	(+)	White	Red
21 (-)	(+)	Black	White
22 (-)	(+)	Yellow	Red
23 (-)	(+)	White	—
24 (-)	(+)	Orange <sup>(1)</sup>	Red
25 (-)	(-)	Orange <sup>(1)</sup>	Red

Positive common Negative common

## Special Wiring Specifications

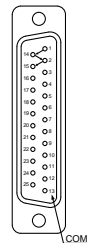
Regardless of the valve or option, the standard internal wiring for double solenoid capability is provided to each station. As option specifications, single and double wiring (connected to SOL.A, B) is available.

### 1. Special wiring specification

Suffix option symbol "-K" added to manifold part number and indicate single/double wiring of each station on "Manifold Specification Form".

### 2. Wiring specifications

When the A side solenoid of the 1st station as No.1 (meaning, to be connected to No.1 terminal), wires are connected in the order indicated by the arrow in the DWG without making any terminal vacant. Max. station No. is 18 stations.



D-sub connector

## How to Order Valve

**VQ 4 1 0 0 5**

**Series**  
4 VQ4000

**Configuration**

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
6	3 position perfect

**Manual override**

—	Non-locking push style
B	Locking slotted style

**Light and surge voltage suppressor**

—	With
E	W/o light, with surge suppressor

**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

**Function**

—	Standard (1W)
Y <sup>(1)</sup>	Low wattage (0.5W)
R <sup>(2)</sup>	External pilot

**Seal**

0	Metal
1	Rubber

Note 1) Applicable to DC specification.  
Note 2) Refer to p.1.11-46 for external pilot specification. Combination of external pilot and perfect interface is not possible.  
Note 3) When specifying more than one option, indicate symbols alphabetically.

## How to Order Manifold Ass'y

Addsuffix valve and option numbers to the manifold base number.

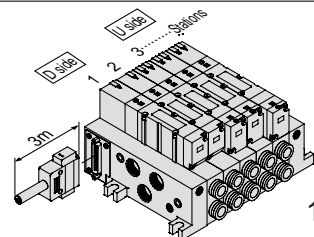
### <Example>

With D-sub connector kit and cable (3m)

- VV5Q41-05C8FD2...1 set — Manifold base part number
- \* VQ4100-5.....2 set — Valve part No. (Station 1 to 2)
- \* VQ4200-5.....2 set — Valve part No. (Station 3 to 4)
- \* VQ4300-5.....1 set — Valve part No. (Station 5)

Prefix "※" to mark parts for ass'y part number of solenoid valves, etc.

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

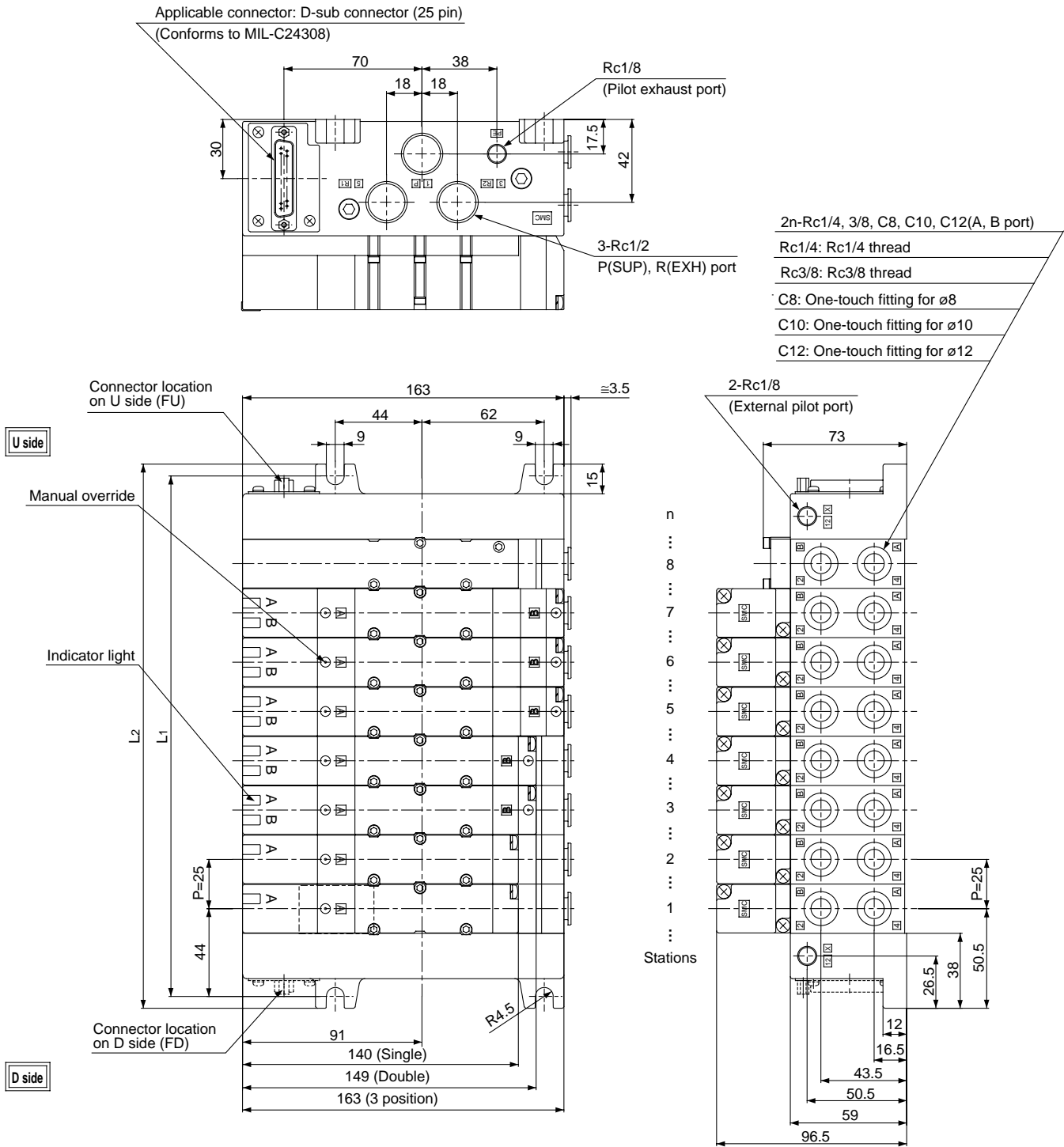


- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VP4
- VQ
- VQ4
- VQZ
- VQD
- VZS
- VFS
- VS
- VS7

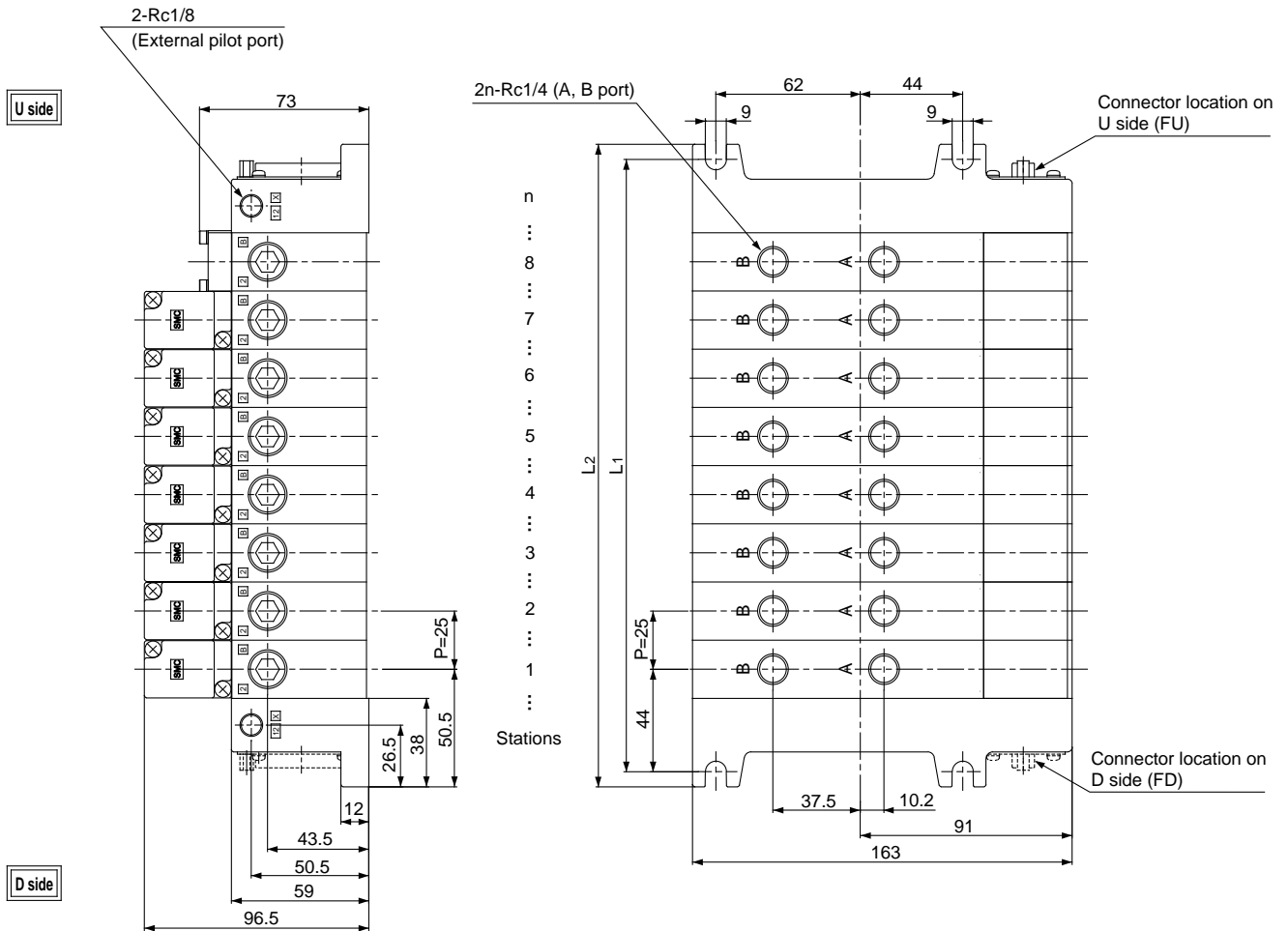


# Series VQ4000

## F Kit (D-Sub Connector)



Bottom piping



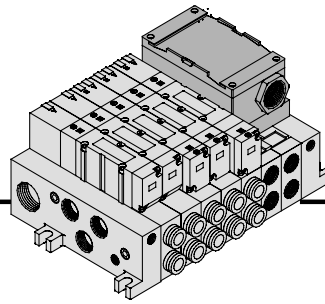
- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VP4
- VQ
- VQ4**
- VQZ
- VQD
- VZS
- VFS
- VS
- VS7

**Dimensions** Equation  $L1=25n+63$   $L2=25n+76$  n: Station (Max. standard 18 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L1	88	113	138	163	188	213	238	263	288	313	338	363	388	413	438	463	488	513
L2	101	126	151	176	201	226	251	276	301	326	351	376	401	426	451	476	501	526

# Series VQ4000

## T Kit (Terminal box)



**IP65 is possible.**

- Enclosure: Possible to be IP65
- This kit has a small terminal block inside a junction box. The electrical entry port G3/4 permits connection of bracket of electrical wire pipe.
- Max. 18 stations
- 2 stations are used for terminal box mounting.

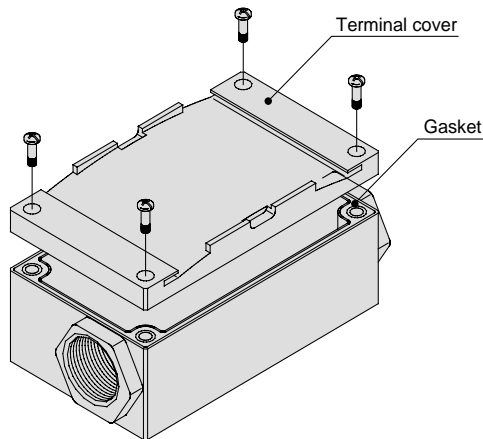
### Manifold specifications

Series	Porting specifications			Applicable Max. stations
	Port location	Port size		
		P, R	A, B	
VQ4000	Side	Rc1/2	C8, 10, 12 Rc1/4, 3/8	18 stations
	Bottom		Rc1/4	

## Terminal Block Connection

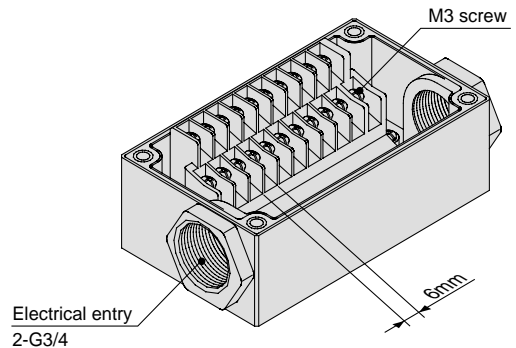
### Sequence 1. How to remove terminal block cover

Loosen the screw (M3) 4 pcs. on the terminal block cover and open it. The cover can then be removed from the terminal block.



### Sequence 2. Wire connection

The diagram on the right shows the terminal block wiring schematic. All stations are provided with double solenoid wiring. Since marking is available in terminal, each wire should be connected to power supply side.



### Sequence 3. How to mount terminal block cover

Tighten the screws according to below table after check the gasket installing condition.

Applicable tightening torque Nm
0.6 to 1.0

## How to Order Manifold

**VV5Q 4 1 -08 C8 T 0 -K**

Series	Manifold	Stations
4 VQ4000	1 Plug-in unit	03 3 stations : : 18 18 stations

Note) Add 2 stations for terminal block box mounting.

Cylinder ports	Options
C8 One-touch fitting for ø8	- None
C10 One-touch fitting for ø10	CD Exhaust cleaner for D side mounting
C12 One-touch fitting for ø12	K <sup>(2)</sup> Special wiring specification (Other than double wiring)
02 Rc1/4	N With name plate
03 Rc3/8	SD Built-in silencer (Direct-exhaust from D side)
B Bottom piping Rc1/4	W Enclosure IP65
CM Mixed size	

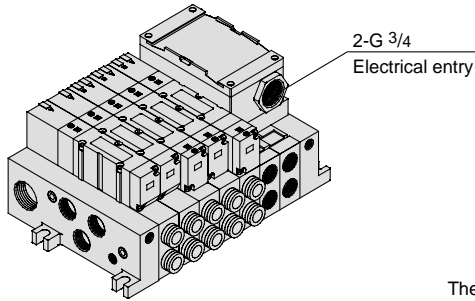
Note) As optional specifications, the maximum number of stations can be increased based on special wiring specifications. Refer to p.1.11-15 for further information.

### Options

Symbol	Option
-	None
CD	Exhaust cleaner for D side mounting
K <sup>(2)</sup>	Special wiring specification (Other than double wiring)
N	With name plate
SD	Built-in silencer (Direct-exhaust from D side)
W	Enclosure IP65



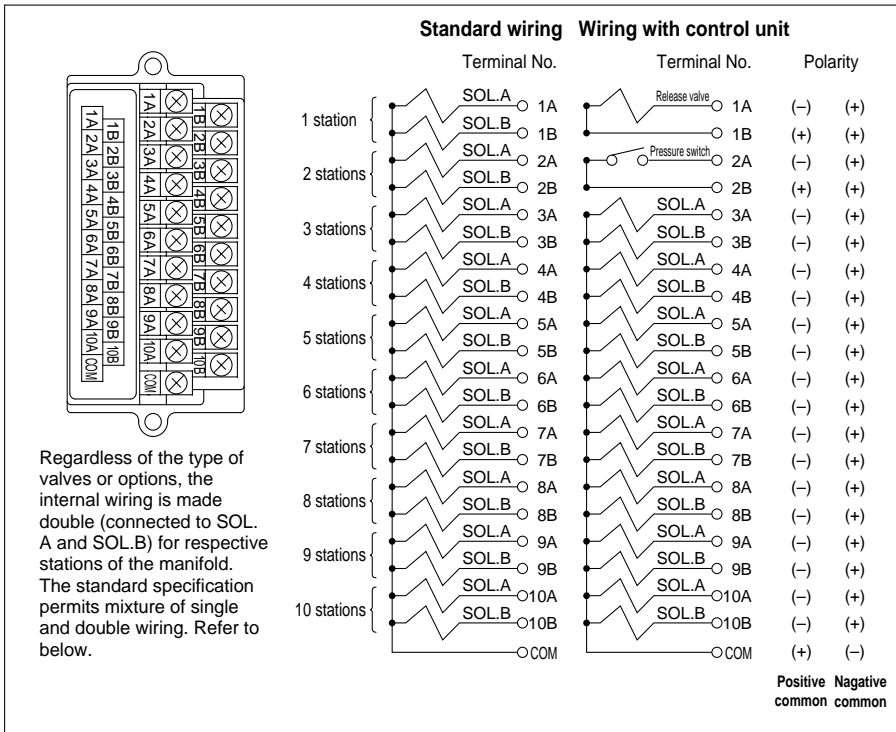
- Note 1) When specifying more than one option, list alphabetical order. Example) -CDK  
 Note 2) Combination of [CD] and [SD] is not possible.  
 Note 3) Specify the wiring specifications by means of the manifold specification form.  
 Note 4) Refer to p.1.11-38 to p.1.11-41 for with control unit.



2-G 3/4  
Electrical entry

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

## Electrical Wiring Specifications



Regardless of the type of valves or options, the internal wiring is made double (connected to SOL.A and SOL.B) for respective stations of the manifold. The standard specification permits mixture of single and double wiring. Refer to below.

## Special Wiring Specifications

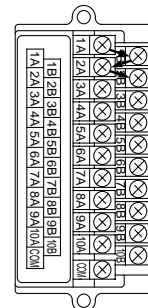
Regardless of the valve or option, the standard internal wiring for double solenoid capability is provided to each station. As option specifications type of single and double wiring (connected to SOL.A, B) is available.

### 1. Special wiring specification

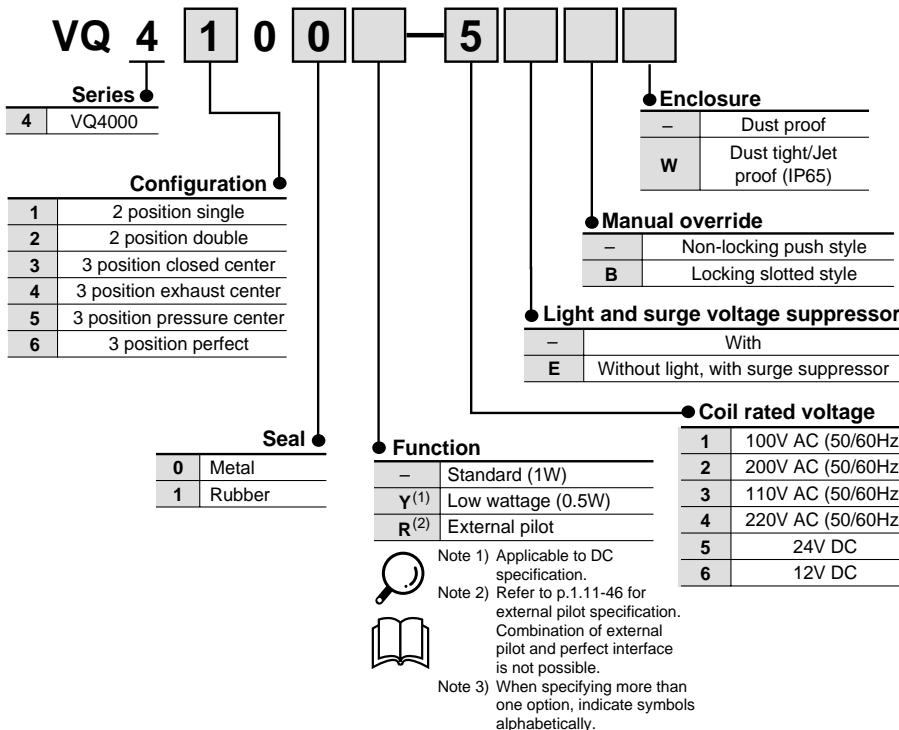
Suffix option symbol "K" to manifold part number. Indicate single/double wiring of each station on "Manifold Specification Form".

### 2. Wiring specifications

When the A side solenoid of the 1st station as no.1 (meaning, to be connected to no.1 terminal), wires are connected in the order indicated by the arrow in the DWG without making any terminal vacant. Max. station no. is 16 stations.



## How to Order Valve



## How to Order Manifold Ass'y

Add suffix valve and option numbers to the manifold base number.

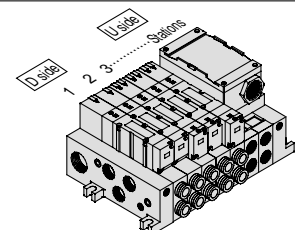
### <Example>

With D sub-connector kit and cable (3m)

VV5Q41-07C8T0.....1 set - Manifold base part number  
\* VQ4100-5.....2 set - Valve part No. (Station 1 to 2)  
\* VQ4200-5.....2 set - Valve part No. (Station 3 to 4)  
\* VQ4300-5.....1 set - Valve part No. (Station 5)

Prefix "\*" to mark parts for ass'y part number of solenoid valves, etc.

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



SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VP4

VQ

VQ4

VQZ

VQD

VZS

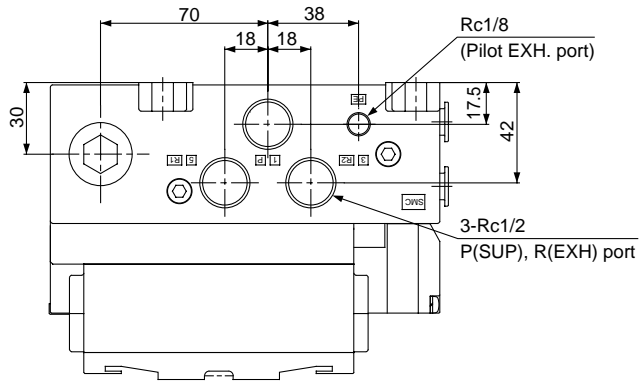
VFS

VS

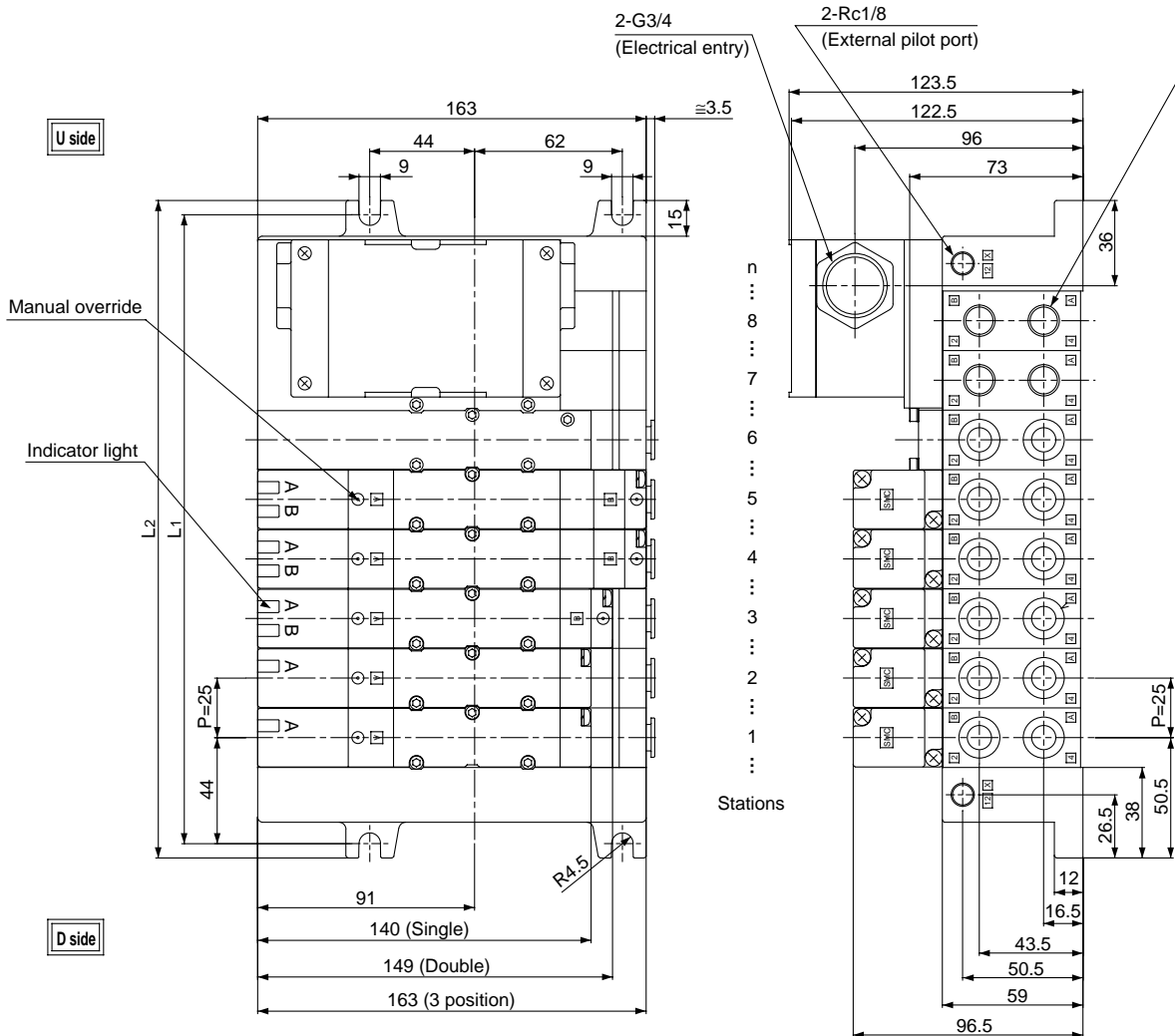
VS7

# Series VQ4000

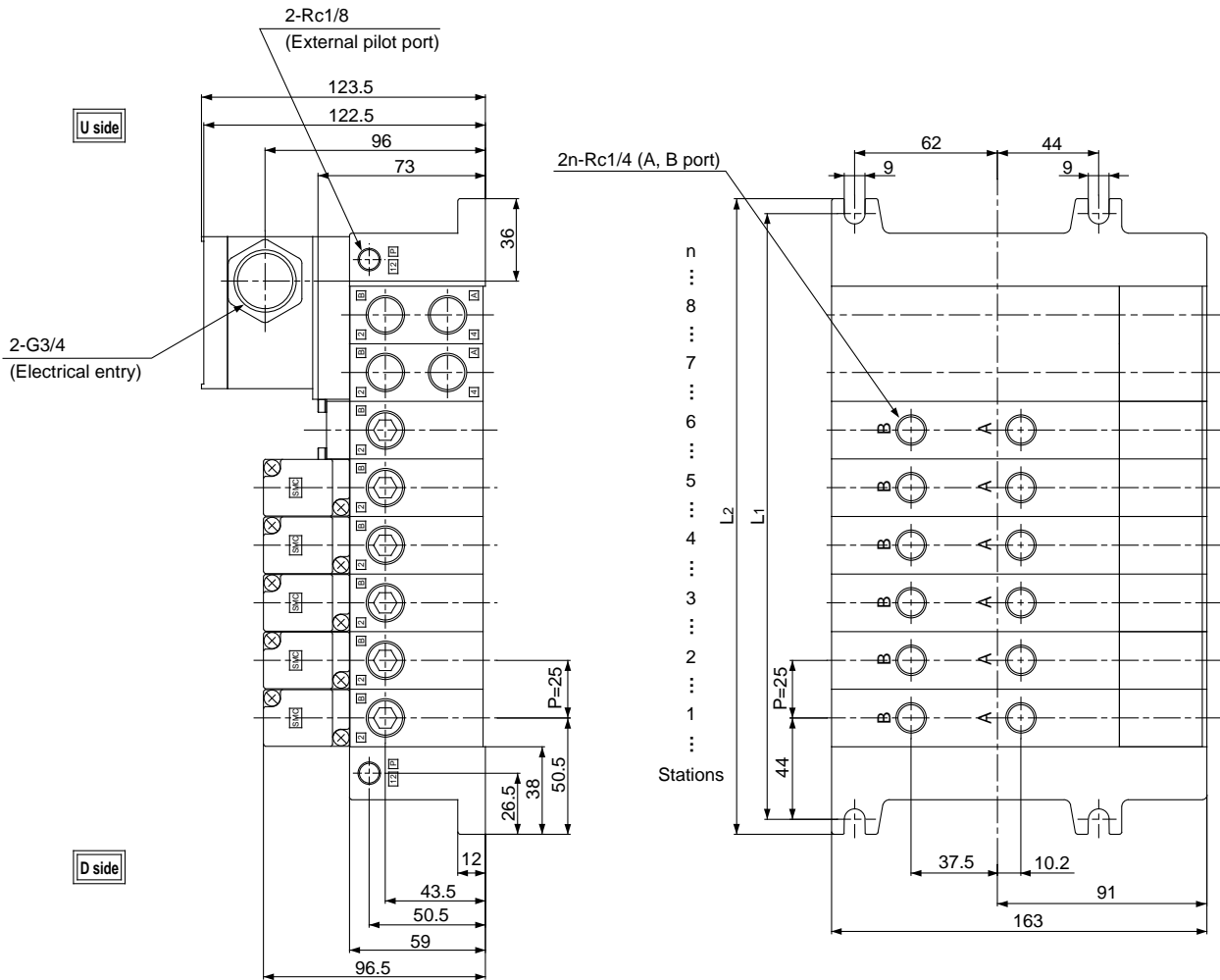
## T Kit (Terminal box)



- 2n-Rc1/4, 3/8, C8, C10, C12(A, B port)
- Rc1/4: Rc1/4 thread
- Rc3/8: Rc3/8 thread
- C8: One-touch fitting for  $\varnothing 8$
- C10: One-touch fitting for  $\varnothing 10$
- C12: One-touch fitting for  $\varnothing 12$



**Bottom piping**



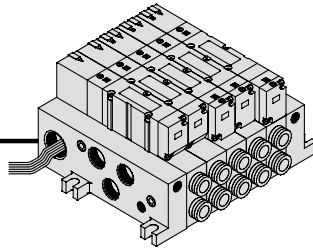
- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VP4
- VQ
- VQ4**
- VQZ
- VQD
- VZS
- VFS
- VS
- VS7

**Dimensions** Equation  $L1=25n+63$   $L2=25n+76$  n: Station (Max. standard 18 stations)  
\* Including 2 stations for terminal box.

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L1	88	113	138	163	188	213	238	263	288	313	338	363	388	413	438	463	488	513
L2	101	126	151	176	201	226	251	276	301	326	351	376	401	426	451	476	501	526

# Series VQ4000

## L Kit (Lead wire cable)



**IP65 is possible.**

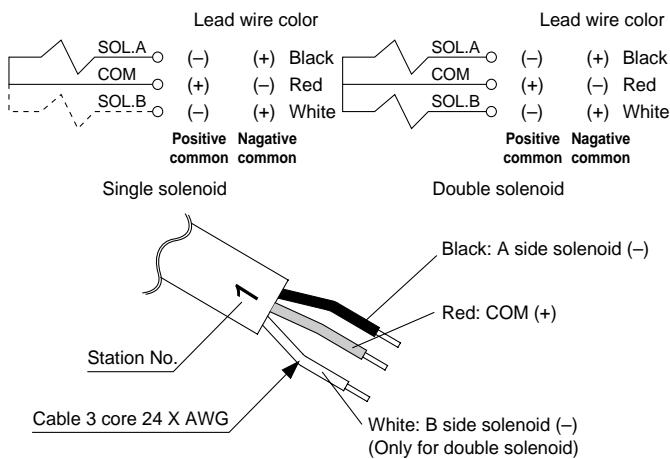
- Possible to be IP65.
- Direct electrical entry. Models with two or more stations are available.
- Electrical entry is provided on D and U sides.
- Max. 16 stations.

### Manifold specification

Series	Port location	Porting location		Applicable stations
		P, R	A, B	
VQ4000	Side	Rc1/2	C8, 10, 12 Rc1/4, 3/8	Max. 16 stations
	Bottom		Rc1/4	

## Wiring Specifications

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



### Cable lead wire ass'y with connector

Lead wire length	Part No.
0.6m	VVQ4000-44A-8-□
1.5m	VVQ4000-44A-15-□
3m	VVQ4000-44A-30-□

□: Number of stations 1 to 16.

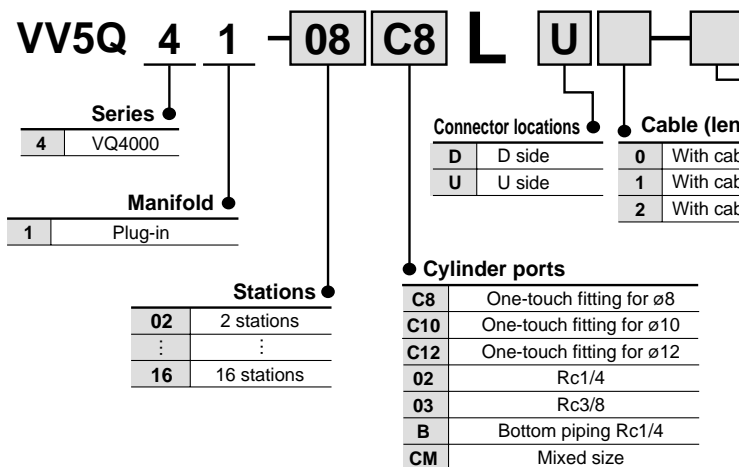


Use a lead wire with connector ass'y shown in the right table to change the lead wire length.

Note 1) There is no polarity. It can be also used as negative COM.

Note 2) Connect the release valve and the pressure switch to SOL. A side on the manifold with control unit.

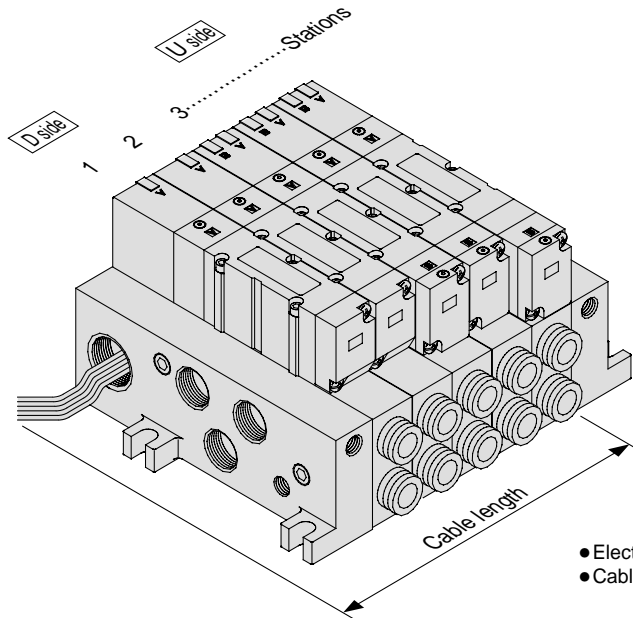
## How to Order Manifold



### Options

Symbol	Option
-	None
CD	Exhaust cleaner for D side mounting
CU	Exhaust cleaner for U side mounting
SB	Built-in silencer (Direct exhaust from both sides)
SD	Built-in silencer (Direct exhaust from D side)
SU	Built-in silencer (Direct exhaust from U side)
W	Enclosure: IP65

\* When specifying more than one option, please list in alphabetical order. Example) -CDW



- Electrical entry is on D side.
- Cable length is from solenoid valve body.

- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VP4

## How to Order Valve

**VQ 4 1 0 0** — **5** — — —

**Series**

4	VQ4000
---	--------

**Configuration**

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
6	3 position perfect

**Seal**

0	Metal
1	Rubber

**Enclosure**

—	Dust proof
W	Dust tight, jet proof (IP65)

**Manual override**

—	Non-locking push style
B	Locking slotted style

**Light and surge voltage suppressor**

—	With
E	Without light, with surge suppressor

**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

**Function**

—	Standard (1W)
Y (1)	Low wattage (0.5W)
R (2)	External pilot

Note 1) Applicable to DC specification.  
 Note 2) Refer to p.1.11-46 for external pilot specification. Combination of external pilot and perfect interface is not possible.  
 Note 3) When specifying more than one option, indicate symbols alphabetically.

## How to Order Manifold Ass'y

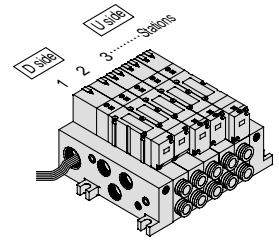
Add suffix valve and option numbers to the manifold base number.

**<Example>**  
**With lead wire kit, cable (3m)**  
 VV5Q41-05C8LDZ...1 set — Manifold base part number  
 \* VQ4100-5.....2 set — Valve part No. (Station 1 to 2)  
 \* VQ4200-5.....2 set — Valve part No. (Station 3 to 4)  
 \* VQ4300-5.....1 set — Valve part No. (Station 5)

Prefix "\*" to mark parts for ass'y part number of solenoid valves, etc.

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

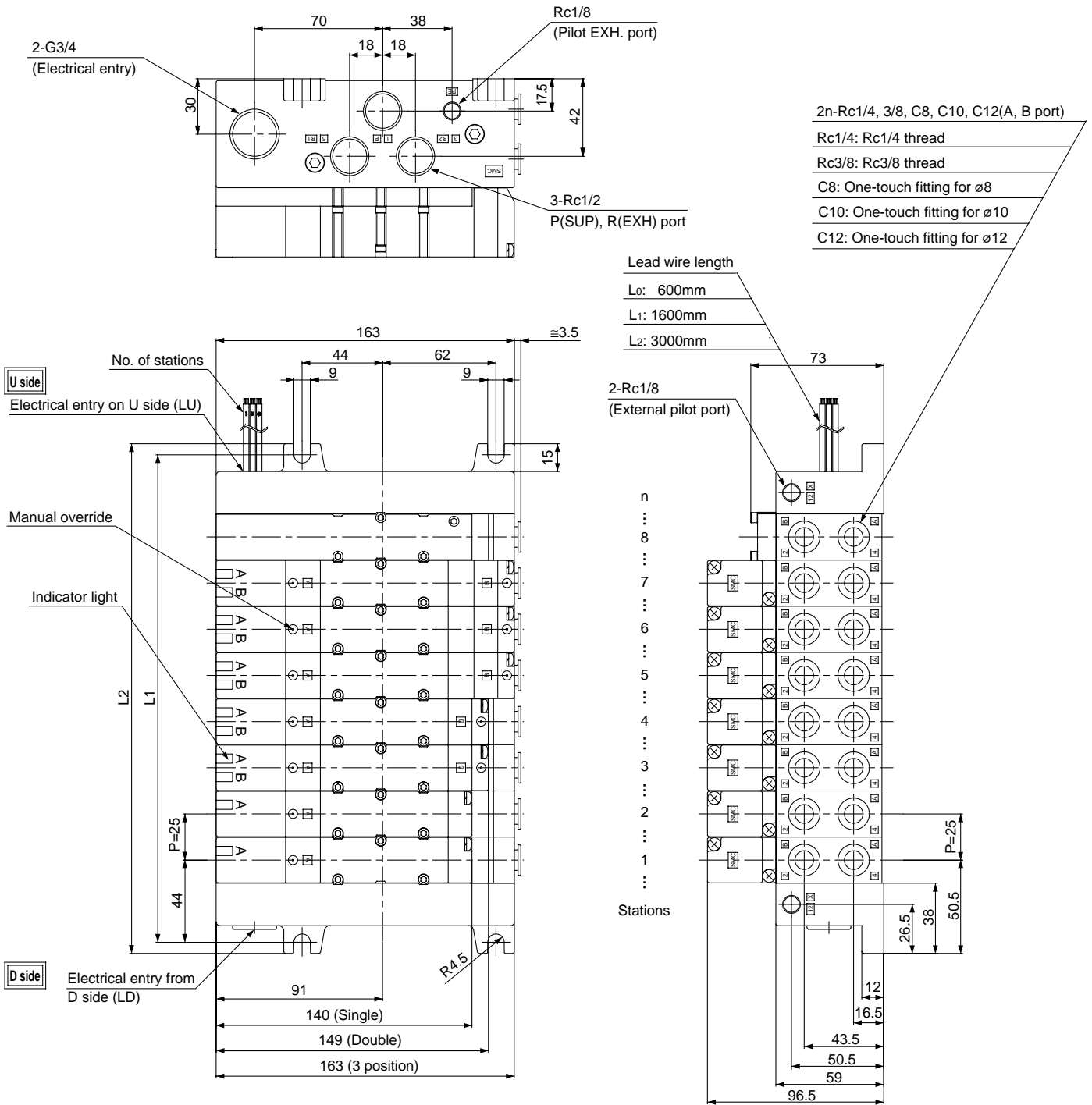
- VQ
- VQ4
- VQZ
- VQD
- VZS
- VFS
- VS
- VS7



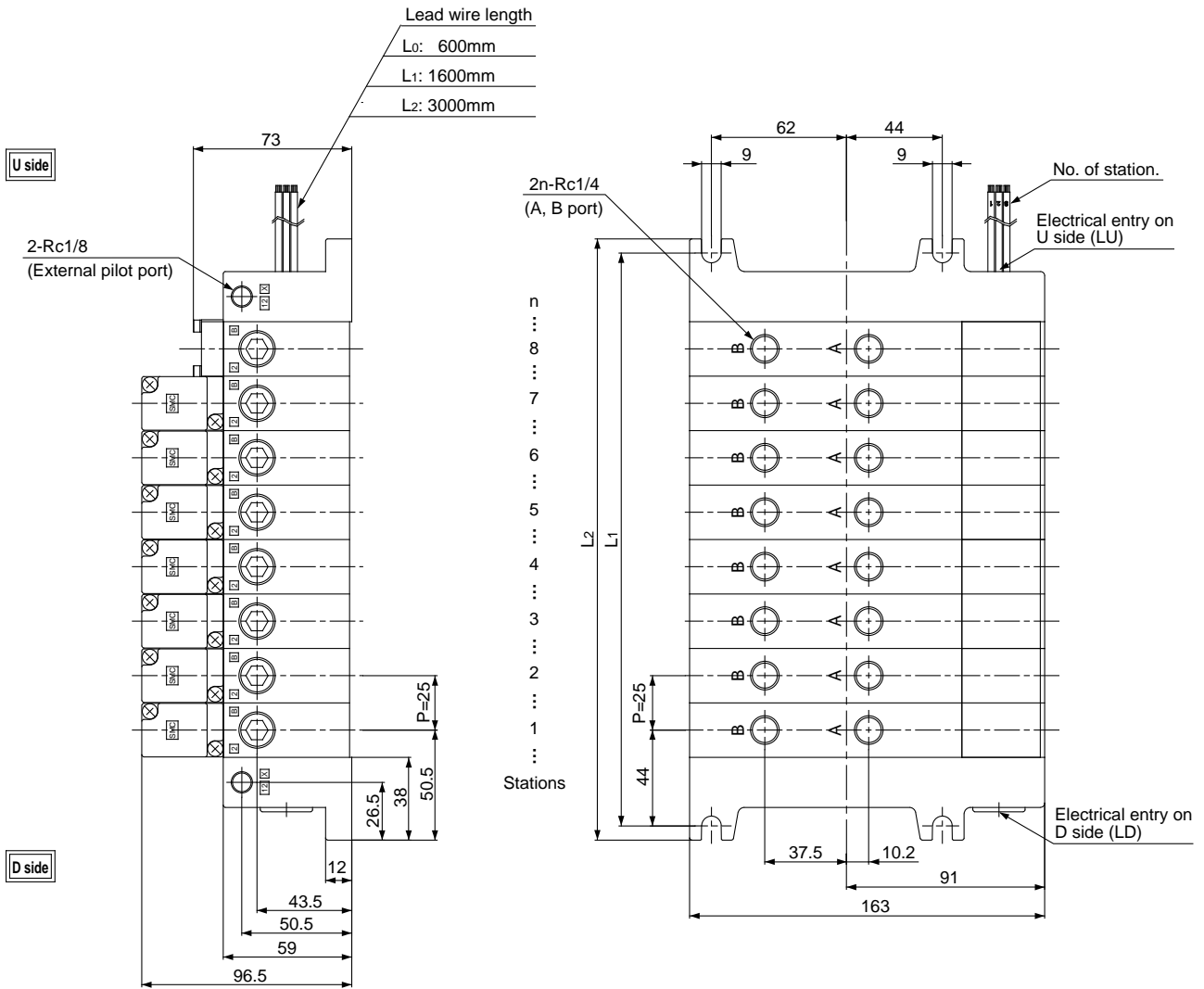


# Series VQ4000

## L Kit (Lead wire cable)



Bottom piping



- VY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VP4
- VQ
- VQ4**
- VQZ
- VQD
- VZS
- VFS
- VS
- VS7

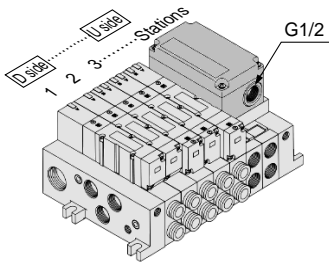
**Dimensions** Equation  $L1=25n+63$   $L2=25n+76$  n: Station (Max. 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	88	113	138	163	188	213	238	263	288	313	338	363	388	413	438	463
L2	101	126	151	176	201	226	251	276	301	326	351	376	401	426	451	476

## S Kit (Serial interface)

IP65 is possible.

- The serial interface system minimizes wire mass and wire connection labor and promotes space savings.
- The system comes in an SA type (generic for small scale systems) for equipment with a small number of I/O points, or 32 points max., SB type (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., SC type (applicable to OMRON models), SD type (applicable to Sharp models; 504 points max.), and SF type (applicable to NKE uni-wire system; 128 points max.), SJ type (applicable to Sanks models), SK type (applicable to Fuji electric models), SQ type (applicable to OMRON Compo Bus/D), SR type (Compo Bus/S).
- 18 stations max.
- 2 stations are used for serial unit mounting.



- Stations are sequentially numbered from the D side.
- Regardless of the valve or option, the internal wiring is made double (connected to SOL.A and SOL.B) for respective stations of the manifold. The standard specification permits mixture of single and double wiring.

Item	Specification
External power supply	24V DC +10%, -5%
Current consumption (Internal unit)	SA, SB, SBB, SD, SF, SH, SJ, SK, SQ, SR, SV: 0.1A 0.3A

### Manifold specifications

Series	Porting specifications			Applicable Max. stations
	A, B port location	Port size		
		P, R	A, B	
VQ4000	Side	Rc1/2	C8,10,12 Rc1/4, 3/8	18 stations
	Bottom		Rc1/4	

	SA type Applicable to series EX300	SB type applicable to MELSECNET/mini-S3 Data Link (Mitsubishi Electric)																		
Name of terminal block (LED)	<table border="1"> <thead> <tr> <th>LED name</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>TRD</td> <td>Lightening during data reception</td> </tr> <tr> <td>RUN/ERR</td> <td>Blinking when received data is normal; Lightening when data is abnormal.</td> </tr> </tbody> </table>	LED name	Details	TRD	Lightening during data reception	RUN/ERR	Blinking when received data is normal; Lightening when data is abnormal.	<table border="1"> <thead> <tr> <th>LED name</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lighting when power is turned ON.</td> </tr> <tr> <td>RUN</td> <td>Lighting when data transmission is normal.</td> </tr> <tr> <td>RD</td> <td>Lighting during data reception.</td> </tr> <tr> <td>SD</td> <td>Lighting during data transmission</td> </tr> <tr> <td>ERR.</td> <td>Lighting when reception error occurs. Light turns off when corrected.</td> </tr> </tbody> </table>	LED name	Details	POWER	Lighting when power is turned ON.	RUN	Lighting when data transmission is normal.	RD	Lighting during data reception.	SD	Lighting during data transmission	ERR.	Lighting when reception error occurs. Light turns off when corrected.
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RD	Lighting during data reception.																			
SD	Lighting during data transmission																			
ERR.	Lighting when reception error occurs. Light turns off when corrected.																			
Note	<ul style="list-style-type: none"> <li>• T unit Can be connected with PLC I/O card for serial transmission. EX300-TMB1...For models of Mitsubishi Electric Corp. EX300-TTA 1...For models of OMRON Corp. EX300-TFU 1...For models of Fuji Electric Company Ltd. EX300-TOO1...For general models * T unit has 32 control points per unit.</li> <li>• 16 outputs.</li> </ul>	<ul style="list-style-type: none"> <li>• Master station: Sequencer 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).</li> <li>• 16 outputs, 2 stations occupied.</li> </ul>																		

\* Refer to Operation Manual for further details of specifications and handling.

### How to Order Manifold

VV5Q 4 1 - 08 C8 S A -

Series	Manifold
4	VQ4000
1	Plug-in unit

Stations	
03	3 stations
...	...
18	18 stations

Note) Add 2 stations for serial unit mounting.

Style	
O	Without SI units
A	With general type SI units
B	SI for MELSECNET/mini-S3 Data Link System (Mitsubishi Electric)
BB	SI for MELSECNET/mini Data Link System (2 power supply systems)(Mitsubishi Electric)
C	SI for SYSBUS Wire System (OMRON)
D	SI for Satellite I/O Link System (Sharp)
F1	SI for 16 point Uni-wire System (NKE)
H	SI for 16 point Uni-wire H System (NKE)
J1	SI for 16 point S-LINK System (Sunx)
J2	SI for 8 point S-LINK System (Sunx)
K	SI for T-LINK Mini System (Fuji Electric)
Q	SI for Device Net and Compo Bus/D (OMRON)
R1	SI for 16 point Compo Bus/S (OMRON)
R2	SI for 8 point Compo Bus/S (OMRON)
V	SI for CC-LINK (Mitsubishi Electric)

Cylinder ports	
C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12
02	Rc1/4
03	Rc3/8
B	Bottom piping Rc1/4
CM	Mixed size

### Options

Symbol	Option
-	None
CD	Exhaust cleaner: For D side mounting
K <sup>(2)</sup>	Special wiring specification (Except double wiring)
SD	Built-in silencer (Direct exhaust from D side)
w	Enclosure: IP65

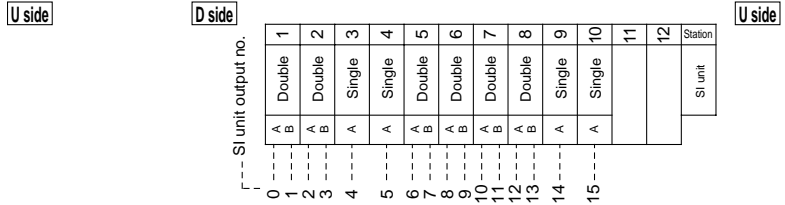
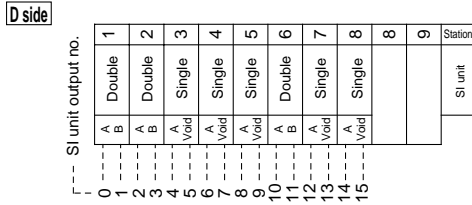
- Note 1) When specifying more than one option, combine symbols in alphabetical order. Example)-CDK
- Note 2) Combination of [CD] and [SD] is not possible.
- Note 3) Specify by using manifold specification from on wiring specification.
- Note 4) Refer to p.1.11-38 to p.1.11-41 for with control unit.
- Note 5) The release valve and the pressure switch on the manifold with control unit are connected to another power supply. Cable length is 0.6m for L kit.

## • SI unit output and coil numbering

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

### <Wiring example 1> Double wiring (Standard)

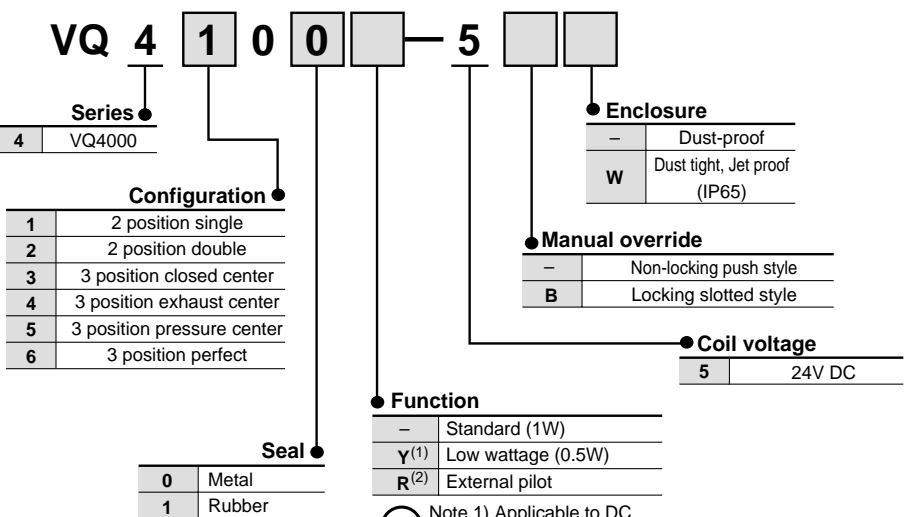
### <Wiring example 2> Single/Double mixed wiring (Option)



	SC type applicable to SYSBUS Wire System (OMRON)	SD type applicable to Satellite I/O Link System (Sharp)																
Name of terminal block (LED)	<table border="1"> <thead> <tr> <th>LED name</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>RUN</td> <td>It lights when transmission is normal and PLC is in the operation mode.</td> </tr> <tr> <td>T/R ERR</td> <td>It blinks when transmission is normal. It lights when transmission is abnormal.</td> </tr> </tbody> </table>	LED name	Details	RUN	It lights when transmission is normal and PLC is in the operation mode.	T/R ERR	It blinks when transmission is normal. It lights when transmission is abnormal.	<table border="1"> <thead> <tr> <th>LED name</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>It lights when power is turned ON.</td> </tr> <tr> <td>RUN</td> <td>It lights when power is ON and slave stations are in normal operation.</td> </tr> <tr> <td>ERROR</td> <td>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.</td> </tr> <tr> <td>R.SET HOLD</td> <td>It lights when control input is made for the master station.</td> </tr> </tbody> </table>	LED name	Details	POWER	It lights when power is turned ON.	RUN	It lights when power is 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.
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R.SET HOLD	It lights when control input is made for the master station.																	
Note	<ul style="list-style-type: none"> <li>Master station unit: OMRON's PLC SYSMAC Series C(CV) C500-RM201, C200H-RM201</li> <li>* Max. 32 units, transmission terminal connected (Max. 512 points)</li> <li>• 16 outputs</li> </ul>	<ul style="list-style-type: none"> <li>Master station unit: Sharp's PLC New Satellite Series W ZW-31LM New Satellite Series JW JW-23LM, JW-31LM</li> <li>* Max. 31 units, I/O slave stations connected (Max. 504 points)</li> <li>16 outputs</li> </ul>																

- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VP4
- VQ
- VQ4**
- VQZ
- VQD
- VZS
- VFS
- VS
- VS7

## How to Order Valve



Note 1) Applicable to DC specification.

Note 2) Refer to p.1.11-46 for external pilot specification. Combination of external pilot and perfect interface is not possible.

Note 3) When specifying more than one option, indicate symbols alphabetically.

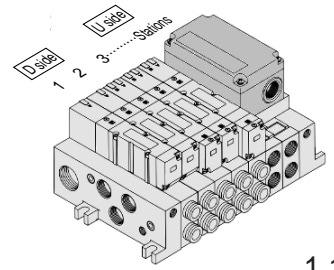
## How to Order Manifold Ass'y

Add suffix valve and option number to the manifold base number.

**<Example>**  
**Serial transmission unit**  
 VV5Q41-07C8SA...1 set - Manifold base part number  
 \* VQ4100-5.....2 set - Valve part No. (Station 1 to 2)  
 \* VQ4200-5.....2 set - Valve part No. (Station 3 to 4)  
 \* VQ4300-5.....1 set - Valve part No. (Station 5)

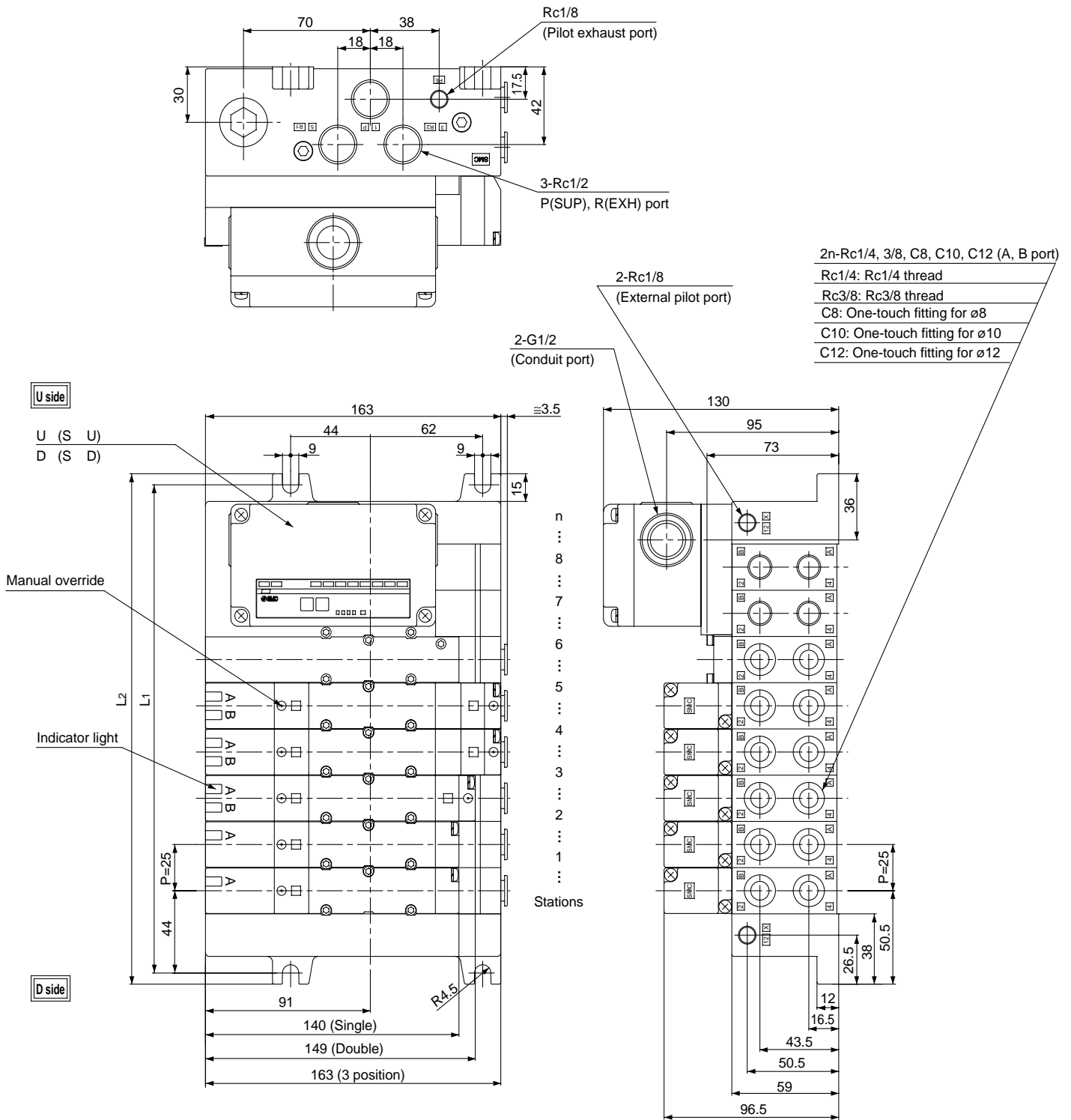
Prefix "\*" to mark parts for ass'y part number of solenoid valves, etc.

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

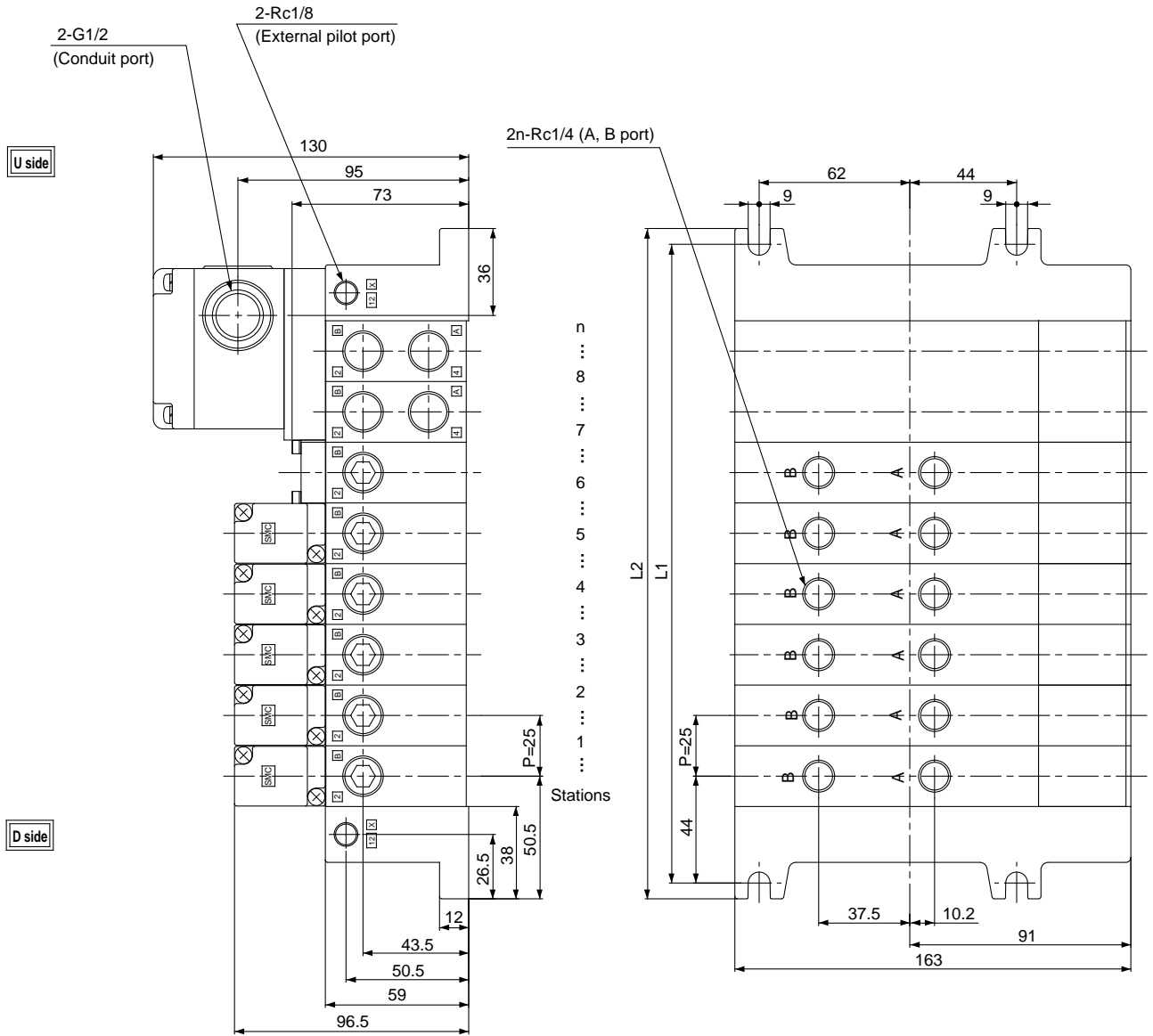


# Series VQ4000

## S Kit (Serial interface)



**Bottom piping**



n: Station (Max. standard 18 stations)  
\* Including 2 stations for SI unit box mousing

Dimensions		Equation $L1=25n+63$ $L2=25n+76$																	
L \ n	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L1		88	113	138	163	188	213	238	263	288	313	338	363	388	413	438	463	488	513
L2		101	126	151	176	201	226	251	276	301	326	351	376	401	426	451	476	501	526

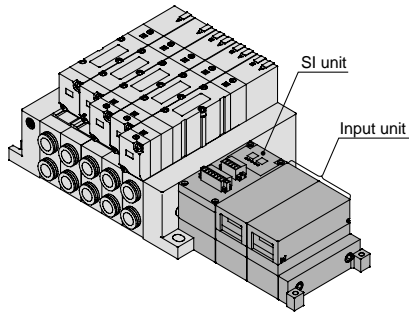
# Series VQ4000

## S Kit (Applicable to input/output, Serial interface)

- Input signal such as auto switch is possible to connect. Connector for supply voltage and signal wiring promotes wire connection labor.
- This SBM type can be applicable to Mitsubishi MELSECNET/MINI-S3 data link system.
- 16 stations max.

### Manifold specification

Series	Porting specification			Applicable max. stations
	Port location	Port size		
		P, R	A, B	
VQ4000	Side	Rc1/2	C8, 10, 12 Rc1/4, 3/8	16 stations
	Bottom		Rc1/4	



Item	Specifications
External power supply (2 system)	For valve operation: +10% and -5% of 24V DC SI unit: ±10% of 24V DC
Current consumption (Internal unit)	SB: 0.2A

SBM type applicable to MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)																																	
Name of indication																																	
	<table border="1"> <thead> <tr> <th>LED name</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>PW</td> <td>Lighting when power is turned ON.</td> </tr> <tr> <td>RUN</td> <td>Lighting when data transmission with the master station is normal.</td> </tr> <tr> <td>RD</td> <td>Lighting during data reception</td> </tr> <tr> <td>ERR.</td> <td>Blinking when transmission is normal.</td> </tr> </tbody> </table>	LED name	Details	PW	Lighting when power is turned ON.	RUN	Lighting when data transmission with the master station is normal.	RD	Lighting during data reception	ERR.	Blinking when transmission is normal.																						
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10	SDA	Signal connection terminal from next terminal																															
11	SDB																																
12	SG																																
Note	<ul style="list-style-type: none"> <li>• MELSECNET-MINI-S3 data link system</li> <li>• Master unit: AJ71PT32-S3 AJ71T32-S3 A1SJ71PT32-S3</li> </ul>																																
	<ul style="list-style-type: none"> <li>• SI unit Output points 16 points, Input points 16 points, 4 occupation stations * If signal from external input equipment should be needed, I unit is necessary.</li> <li>• I unit Interface unit for transmission of the signal from external input equipment to SI unit. Connecting points is 8. 2 I units can connect to SI unit.</li> </ul>																																

### How to Order Manifold

VV5Q 4 1 - 08 C8 S BM

Series  
4 VQ4000

Manifold  
1 Plug-in

Stations  
02 2 stations  
...  
08 8 stations

Used model (Applicable to Input/Output)  
BM BM MELSECNET/MINI-S3 data link system

• Cylinder ports

C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12
02	Rc1/4
03	Rc3/8
B	Bottom piping Rc1/4
CM	Mixed size

Number of input units  
0 Without unit  
1 1  
2 2

#### Options

Symbol	Option
-	None
CD	Exhaust cleaner: For D side mountig
K <sup>(2)</sup>	Special wiring specification (Except double wiring)
SD	Built-in silencer (Direct exhaust from D side)



Note 1) When specifying more than one option, combine symbols in alphabetical order. Example)-CDK

Note 2) Combination of [CD] and [SD] is not available.

Note 3) Specify wiring by using manifold specification form.

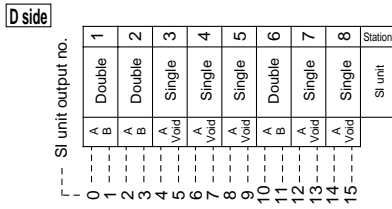
Note 4) Refer to p.1.11-38 to p.1.11-41 for with control unit.



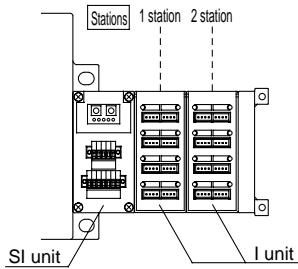
Note 5) The release valve and the pressure switch on the manifold with control unit are connected to another power supply. Cable length is 0.6m for L kit.

## • SI unit output and coil numbering

### <Wiring example 1> Double wiring (Standard)



U side



### I unit specifications

Input style	DC Input (Sink type)	
Number of input points	16 points	
Insurance	Photo coupler insurance	
Rated input voltage	24V DC	
Input current	10mA	
Operating voltage	ON voltage	15V DC or more
	OFF voltage	6V DC or less
Input response time	OFF-ON	10ms or less
	ON-OFF	10ms or less
Input indication	LED indication (Red)	
Common connection	16 points/1 common	

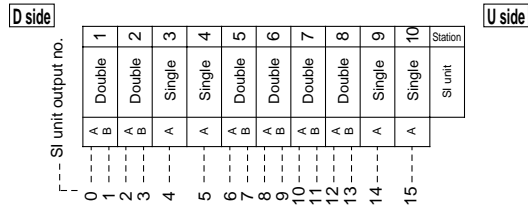
### Input I unit (Input unit)

Input numbers are fallen on the terminal numbers 0, 1.....in order.

Stations	No. connector terminals	No. of inputs
1	0	0
	1	1
	2	2
	3	3
	4	4
	5	5
	6	6
2	7	7
	0	8
	1	9
	2	A
	3	B
	4	C
	5	D
6	E	
7	F	

Mixed wiring is optional. Use the manifold specification form.

### <Wiring example 2> Single/Double mixed wiring (Option)



U side

### I unit: How to connect input terminal

Terminal	Details
1	24V Power supply for external input equipment
2	None
3	0V Power supply for external input equipment
4	Input signal External input equipment signal

### Wiring of external input wiring

#### • 3 wire

I unit circuit: 24V, 24VDC, 24V, 24VDC

Example: [Circuit diagram]

#### • 2 wire

I unit circuit: 24V, 24VDC, 24V, 24VDC

Example: [Circuit diagram]

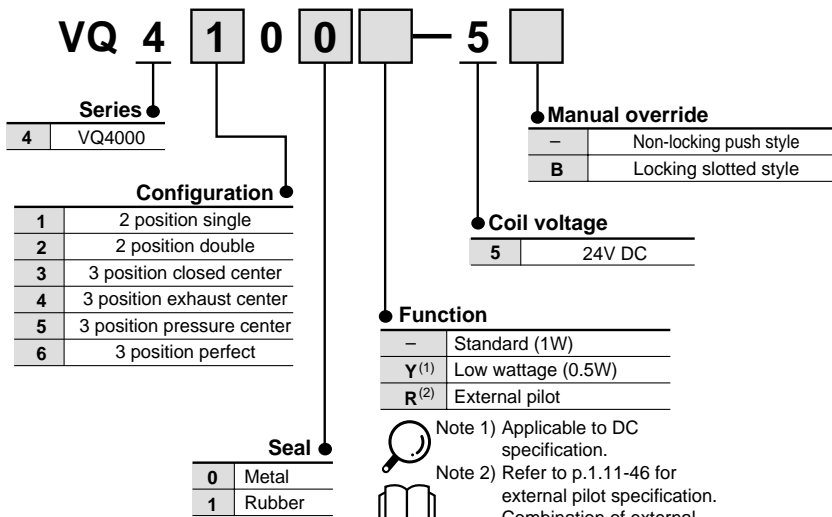
### How to connect attached pressed plug

- Pass electrical wire into insertion hole of plug wire.
- Do pressure welding with pliers. When pressure welding, press the cover till it is locked.
- Cut the rest of electric wire. When cutting the wire, hold up the rest such as figure and cut into V form groove. Cut it at slant position.

\* External connection specification Connector applicable wire : Conductor  $\phi$ 0.4mm,  $\phi$ 0.5mm,  $\phi$ 0.65mm, Each cover  $\leq$   $\phi$ 2.0mm.

- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VP4
- VQ
- VQ4
- VQZ
- VQD
- VZS
- VFS
- VS
- VS7

## How to Order Valve



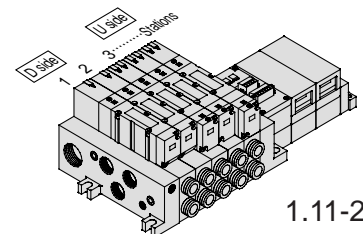
## How to Order Manifold Ass'y

Add suffix valve and option number to the manifold base number.

**<Example>**  
**Serial transmission unit**  
 VV5Q41-05C8SBMZ...1 set - Manifold base part number  
 \* VQ4100.....2 set - Valve part No. (Station 1 to 2)  
 \* VQ4200.....2 set - Valve part No. (Station 3 to 4)  
 \* VQ4300.....1 set - Valve part No. (Station 5)

Prefix "\*" to mark parts for ass'y part number of solenoid valves, etc.

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



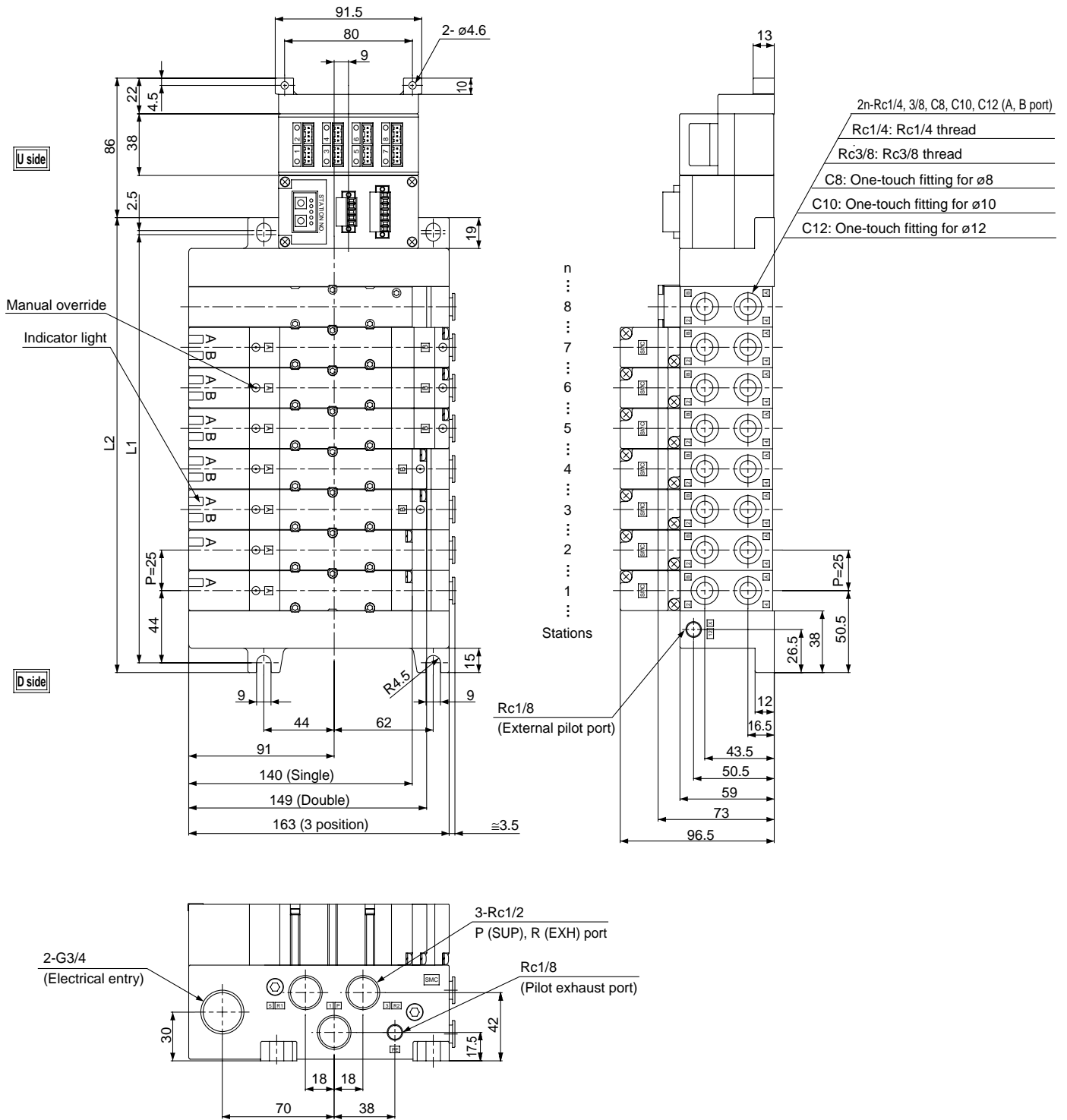


# Series VQ4000

## S

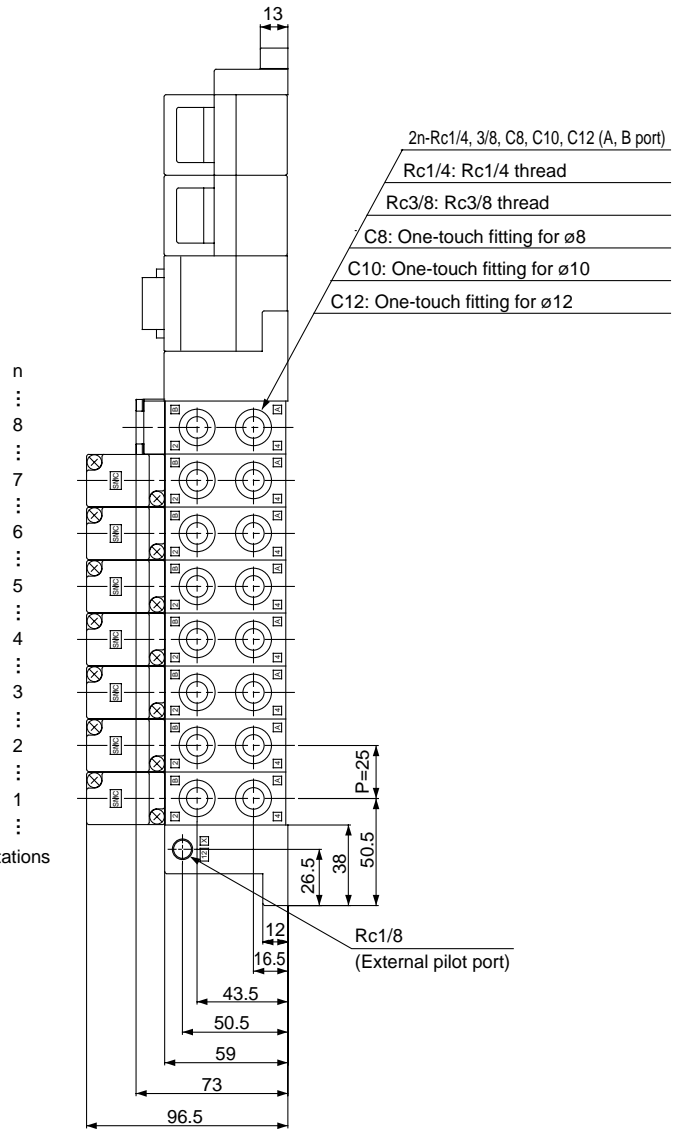
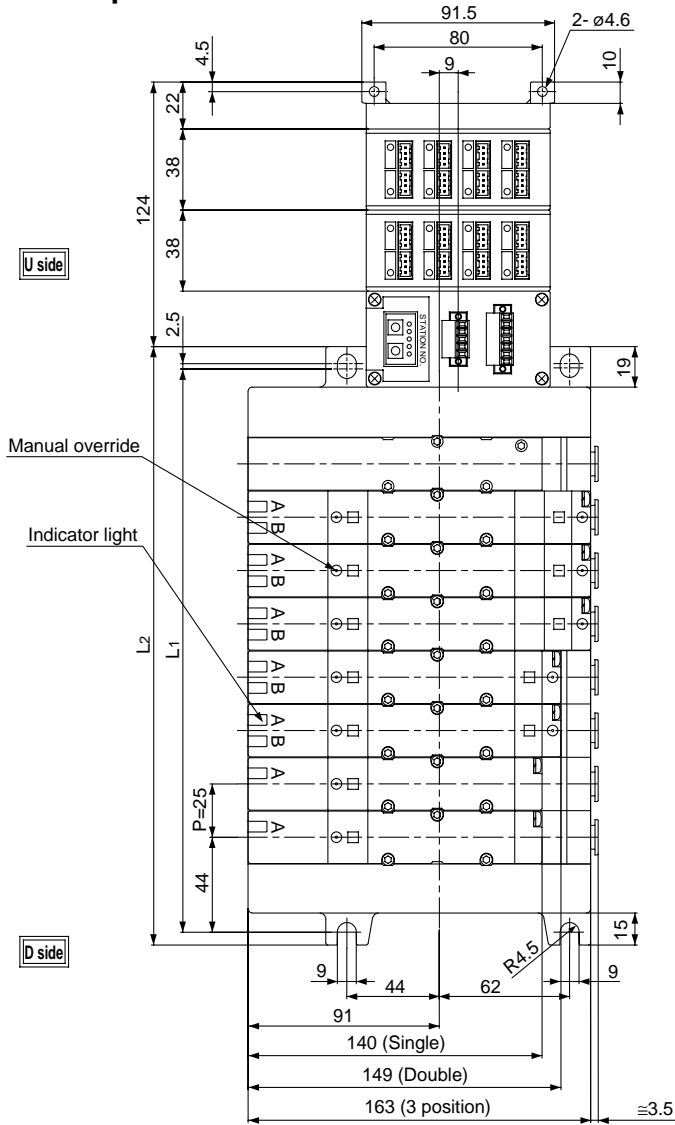
### Kit (Applicable to input/output, Serial interface)

#### One input unit



L	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1		88.5	113.5	138.5	163.5	188.5	213.5	238.5	263.5	288.5	313.5	338.5	363.5	388.5	413.5	438.5	463.5
L2		105.5	130.5	155.5	180.5	205.5	230.5	255.5	280.5	305.5	330.5	355.5	380.5	405.5	430.5	455.5	480.5

## Two input units



SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VP4

VQ

VQ4

VQZ

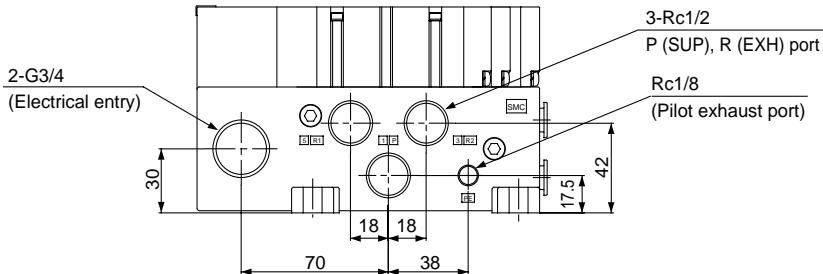
VQD

VZS

VFS

VS

VS7



**Dimensions** Equation  $L_1=25n+63.5$   $L_2=25n+80.5$  n: Station (Max. standard 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L <sub>1</sub>	88.5	113.5	138.5	163.5	188.5	213.5	238.5	263.5	288.5	313.5	338.5	363.5	388.5	413.5	438.5	463.5
L <sub>2</sub>	105.5	130.5	155.5	180.5	205.5	230.5	255.5	280.5	305.5	330.5	355.5	380.5	405.5	430.5	455.5	480.5

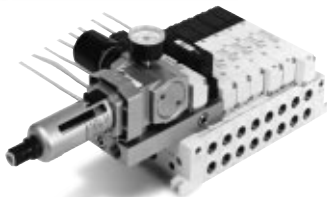
# Series VQ4000

## Manifold with Control Unit

- Mounting air filter, regulator, pressure switch for air release valve on manifold as unit is possible and permits piping labor savings.
- Maximum number of stations depends on each kit. Refer to manifold specifications.
- 2 stations are used for control unit mounting. (1 station is used for E type.)



Plug-in



Plug lead

### Caution

When installing air filter with auto drain /manual override drain, air filter should be mounted underneath.

### Manifold specifications

Manifold base type	Connection	Porting specification			Applicable max. stations <sup>(1)</sup>	Applicable valve
		Port location	Port size			
			P, R	A, B		
<b>VV5Q41</b> -□□□	F kit - D-sub connector T kit - Terminal block box L kit - Lead wire	Side	Rc1/2	C8 (For ø8) C10 (For ø10) C12 (For ø12) Rc1/4, Rc3/8	F, T kit 14 stations (13 stations)	VQ4□00 VQ4□01
<b>VV5Q45</b> -□□□	C kit - Connector	Bottom	Option (Built-in silencer (Direct eject))	Rc1/4	L, C kit 18 stations (17 stations)	VQ4□50 VQ4□51

Note 1) Manifold for mounting is included. ( ) : E type

### Control unit specification

Air filter (With auto drain/With manual override drain)	
Filtration	5µm
Regulator	
Set pressure (Secondary pressure)	0.05 to 0.85MPa
Pressure switch <sup>(1)</sup>	
Set press range (OFF)	0.1 to 0.6MPa
Hysteresis	0.08MPa or less
Contact	1a
Light	LED light red
Max. contact capacity	2VA AC, 2W DC
Max. operating current	50mA at 24V AC, DC or less 20mA at 100V AC, DC
Air release valve (Single only)	
Operating pressure range	0.15 to 1MPa (0.15 to 0.7MPa)

Note 1) ( ) : Low wattage

### Control unit option

Spacer for release valve <sup>(2)</sup>	<Plug-in> <b>VVQ4000-24A-1D</b>	
	<Plug lead> <b>VVQ4000-24A-5D</b>	
Pressure switch	IS1000P-2-1	
Blank plate <sup>(3)</sup>	Regulator with filter	MP2-3
	Pressure switch	MP3-2
	Release valve	Plug-in Plug lead
Filter element	11104-5B	

Note 1) Rated voltage: 24V DC to 100V AC  
Internal voltage drop: 4V  
Note 2) Combination of VQ41□□ (Single) and release valve spacer can be used as air release valve.  
Note 3) Plug lead type can not be mounted later.

### How to Order

**VV5Q 4 1 - 08 C8 F U1**

Series	
4	VQ4000
Manifold	
1	Plug-in
5	Plug lead

Stations	
02	2 stations
⋮	⋮

Min. or Max. number of stations depend on the kit.

Cylinder ports	
C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12
02	Rc1/4
03	Rc3/8
B	Bottom piping Rc1/4
CM	Mixed size

Kit <sup>(5)</sup>	
Coil rated voltage of air release valve	
-	Without air release valve (only F,G type)
1	100V AC 50/60Hz
5	24V DC
9	Others

### Style of control unit

Control equipment	Symbol	—	A	AP	M	MP	F	G	C	E
Air filter with auto drain			●	●			●			
Air filter with manual drain					●	●		●		
Regulator			●	●	●	●	●	●		
Air release valve			●	●	●	●			●	●
Pressure switch				●		●				
Blank plate (Air release valve)							●	●		
Blank plate (Filter, Regulator)									●	
Necessary number of manifold blocks for mounting			2	2	2	2	2	2	2	1

Electrical entry: Control unit can not be removed except L and C kits.

## How to Use Control Unit

### <Construction, Piping>

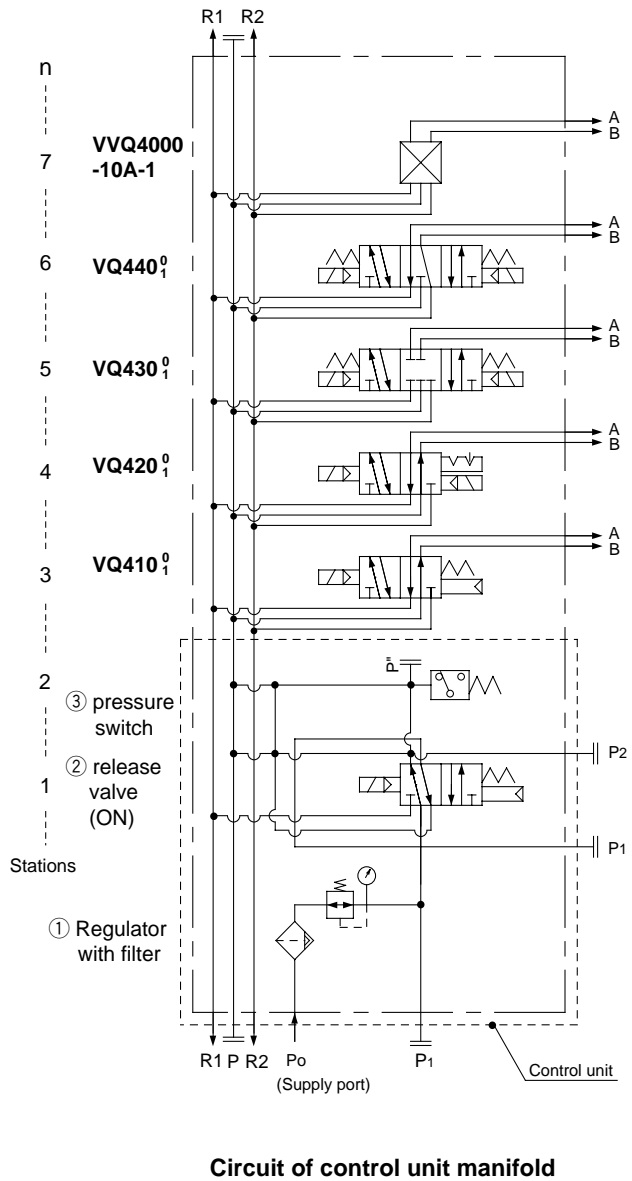
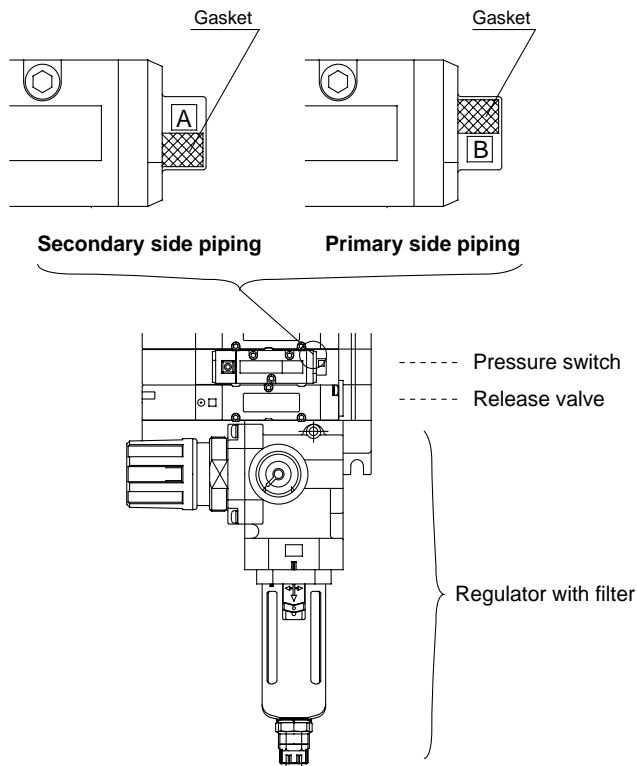
- 1) Supply pressure (Po) is adjusted through regulator with filter, it is supplied to manifold base side through release valve 2 (Normally ON, this is for release secondary side residual pressure).
- 2) Supply pressure from Po port is blocked when release valve 2 is OFF. Air supplied to manifold side P port is exhausted to R1 port through release valve 2.
- 3) Pressure switch is piped at secondary side of release valve 2. (Release valve 2 is operated at energizing.)  
Since there are 4V internal voltage drop, confirmation of ON, OFF by tester, etc. may not be done.

### <Wiring>

- 1) Electrical entry of manifold (Except L and C kit) is individual wiring. Refer to internal wiring figure of each kit for details.

### <Change of pressure switch piping>

- 1) Pressure switch 3 is changed to piping on primary side of release valve 2, remove the pressure switch, reverse the gasket up and down, and fix [B] mark.
- 2) When pressure switch is mouted, tightening torque of bolt is 0.8 to 1.2Nm.



SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VP4

VQ

VQ4

VQZ

VQD

VZS

VFS

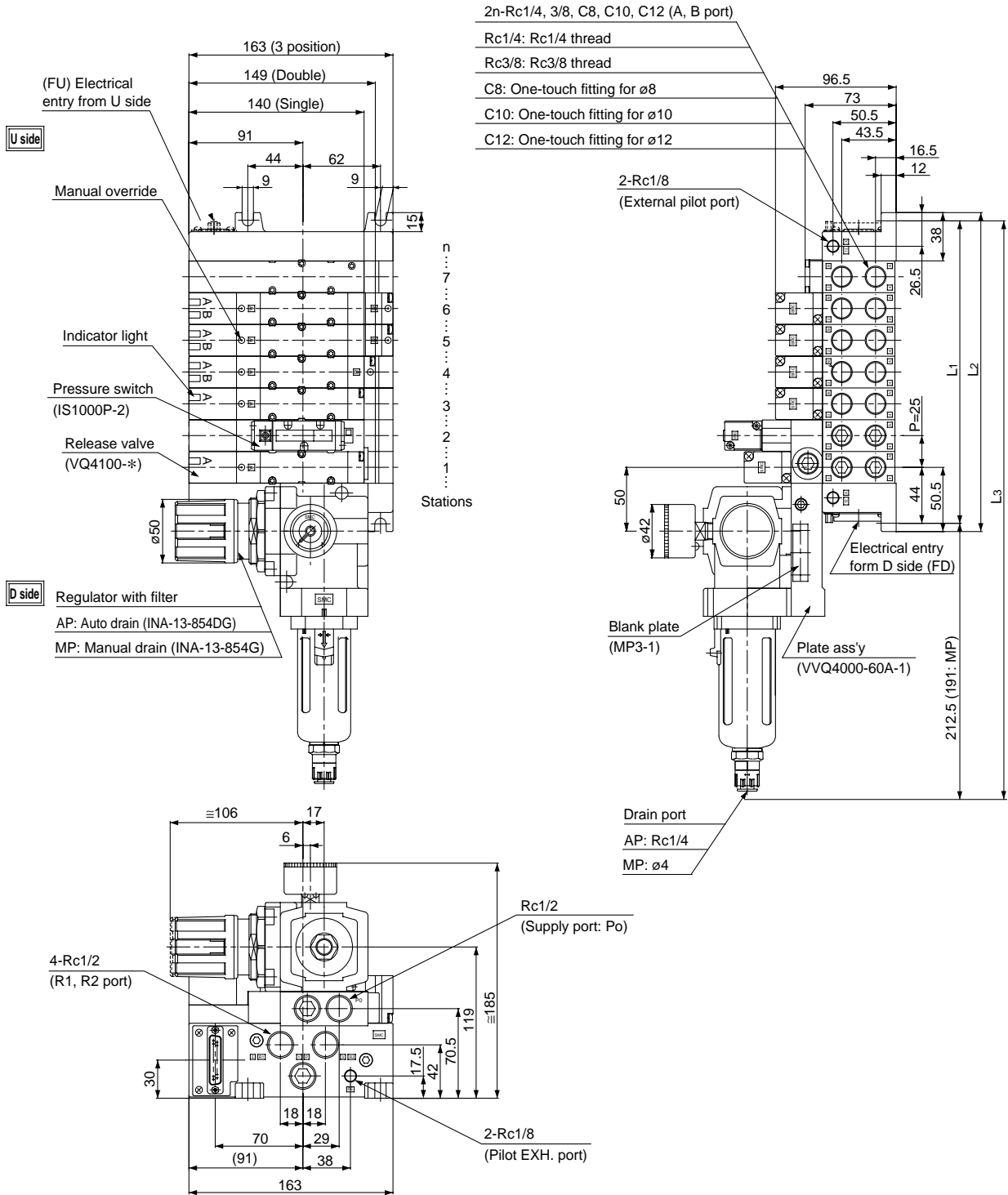
VS

VS7

# Series VQ4000

## Manifold with Control Unit

### Plug-in



**Dimensions** Equation  $L1=25n+63$   $L2=25n+76$   $L3=25n+269.5$  (262.5)

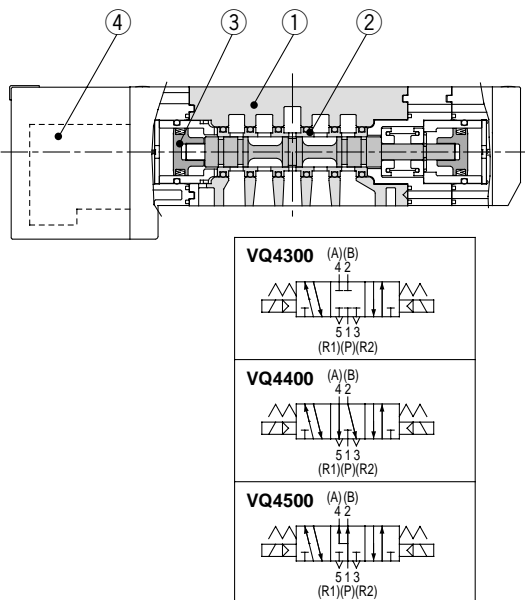
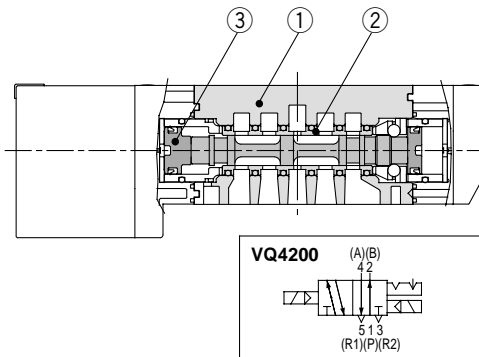
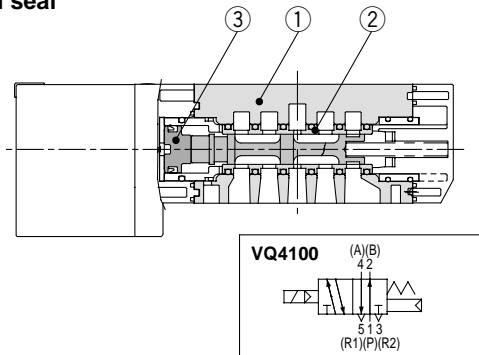
L	n	1	2	3	4	5	6	7	8	9	10	11	12
L1	n	88	113	138	163	188	213	238	263	288	313	338	363
L2	n	101	126	151	176	201	226	251	276	301	326	351	376
L3	n	307	332	357	382	407	432	457	482	507	532	557	582
		(285.5)	(310.5)	(335.5)	(360.5)	(385.5)	(410.5)	(435.5)	(460.5)	(485.5)	(510.5)	(535.5)	(560.5)

\* L3 ( ): MP type

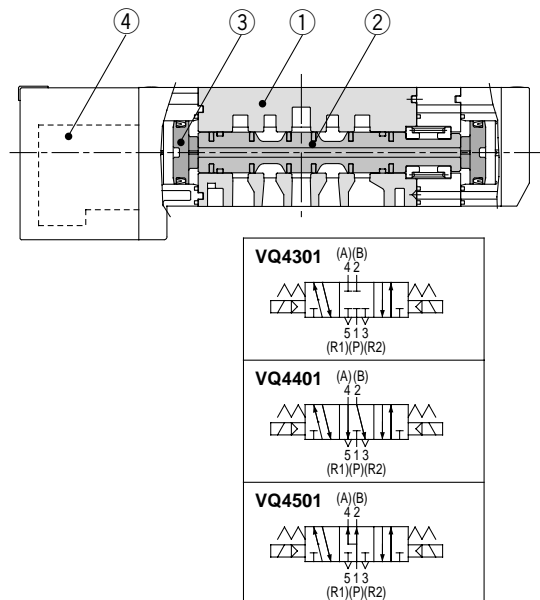
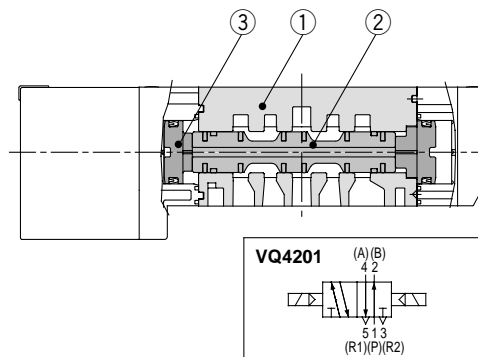
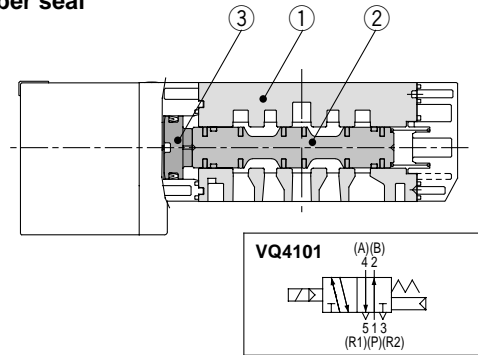
# Series VQ4000 Construction

## Plug-in Unit

### Metal seal



### Rubber seal



### Component Part

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

### Replacement Parts

④	Pilot valve ass'y	VQZ111P-□	*: Coil rated voltage Example) 24V DC: 5
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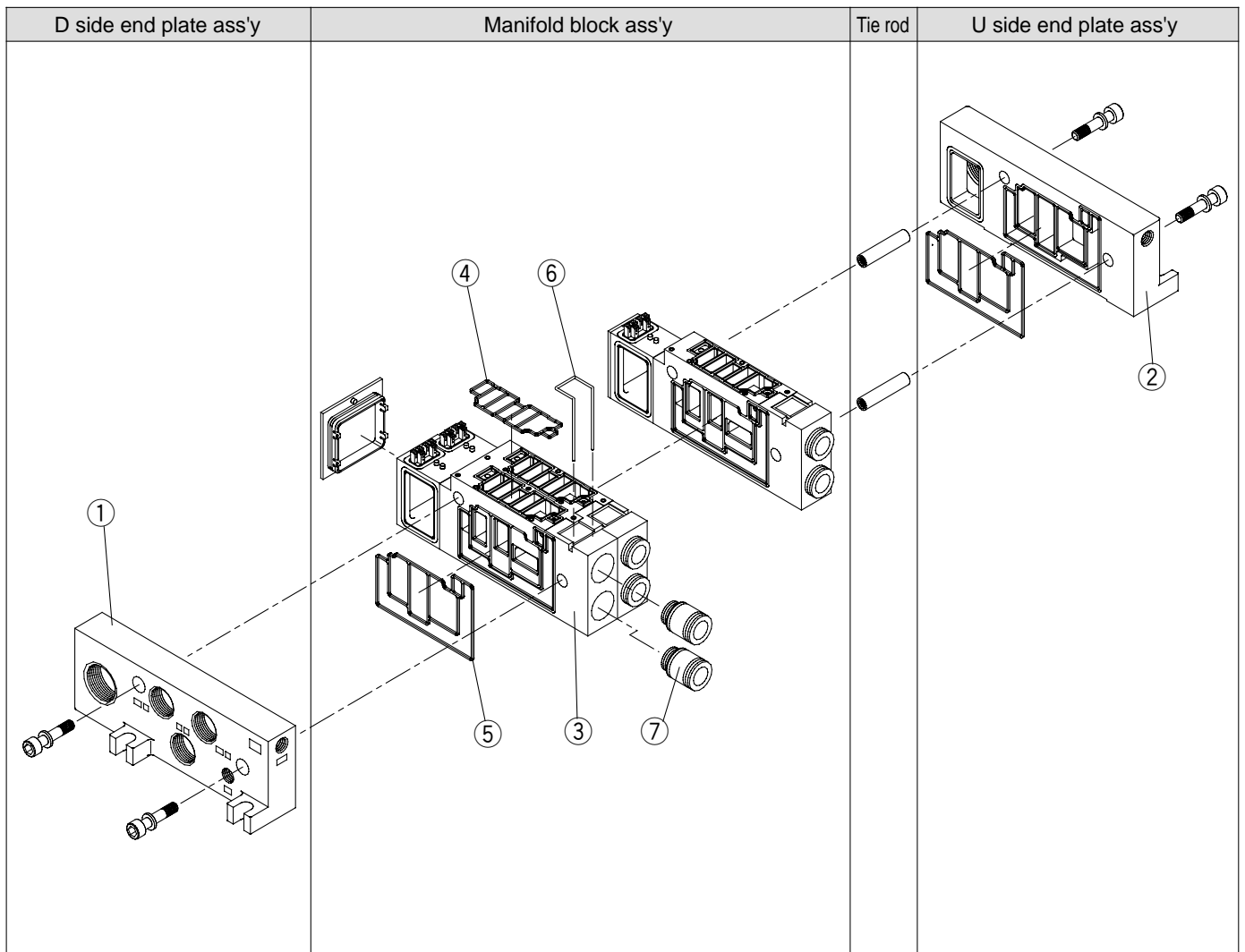
### Component Parts

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


### Replacement Parts

④	Pilot valve ass'y	VQZ111P-□	*: Coil rated voltage Example) 24V DC: 5
---	-------------------	-----------	---

# Exploded View of Manifold



Shown plug-in style

-  Note 1) Electrical entry can not be changed.  
 Note 2) Manifold block used is 2-station intergrated style. For odd number of stations, 1 pc. of one-station manifold block is combined at U side; for even number of stations, 2 pcs. are combined, therefore making the increase/decrease of stations possible.

D side

U side

Example) 1.....2.....3.....4.....5.....6.....Stations

5 stations (Odd number) 

2 stations	2 stations	1 station
------------	------------	-----------

6 stations (Even number) 

2 stations	2 stations	1 station	1 station
------------	------------	-----------	-----------

<D side end plate ass'y>

① D side end plate ass'y No. (For F, L, S, T kit)

VVQ4000 — 3A — 1

L	F, L, T, S kit
F <sup>(1)</sup>	F kit (Connector side)
C	C kit (Plug lead)

—	Standard
W <sup>(2)</sup>	Enclosure IP65
CD	For exhaust cleaner mounting
SD	Built-in silencer, Direct exhaust

Note 1) D-sub connector is not attached.  
Note 2) Drip proof specification of F kit is not available.

<U side end plate ass'y>

② U side end plate ass'y No. (For F, L, S, T kit)

VVQ4000 — 2A — 1

L	F, L, T, S kit
F <sup>(1)</sup>	F kit (Connector side)
C	C kit (Plug lead)

—	Standard
W <sup>(2)</sup>	Enclosure: IP65
CU	For mounting exhaust cleaner
SU	Built-in silencer box (Direct exhaust)

Note 1) D-sub connector is not attached.  
Note 2) Drip proof specification of F kit is not available.

<Manifold block ass'y>

③ Manifold block ass'y No.

VVQ4000 — 1

A	One station manifold block
C	Two station manifold block

—	Standard
W <sup>(2)</sup>	Enclosure IP65

F1	F kit Double wiring	02	Rc1/4
F2	F kit Single wiring	03	Rc3/8
T1	T kit Double wiring	B	Bottom piping Rc1/4
T2	T kit Single wiring	C8	One-touch fitting for ø8
S1	S kit Double wiring	C10	One-touch fitting for ø10
S2	S kit Single wiring	C12	One-touch fitting for ø12
L0□	L0 kit □: Stations (1 to 16)	N7	One-touch fitting 1/4
L1□	L1 kit □: Stations (1 to 16)	N9	One-touch fitting 5/16
L2□	L2 kit □: Stations (1 to 16)	N11	One-touch fitting 3/8
C	C kit (Plug lead)		

Note 1) Attached tie-rod for additional stations (2 pcs.) and lead wire ass'y  
Note 2) Drip proof F kit is not available.

<Replacement parts for manifold block>

Replacement parts

No.	Part No.	Description	Material	Qty.
④	VVQ4000-80A-1	Gasket	NBR	10
⑤	VVQ4000-80A-2	Gasket	NBR	10
⑥	VVQ4000-80A-4	Clip	Stainless steel	10

Note) A set of parts containing 10 pcs. each are enclosed.

<Fitting ass'y>

⑦ Fitting ass'y No. (For cylinder port)

VVQ4000 — 50A

C8	Applicable tube ø8
C10	Applicable tube ø10
C12	Applicable tube ø12
N7	Applicable tube ø1/4
N9	Applicable tube ø5/16
N11	Applicable tube ø3/8

Note) 10 pcs. per set.

<SI unit>

SI unit part number

Style	Used model symbol	SI unit model	Description	Note
For output	O	—	Without SI unit	
	A	EX323-S001	With general type SI unit	
	B	EX123-SMB1	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)	
	BB	EX124-SMB1	SI unit for MELSECNET/MINI-S3 Data Link System (2 power supply systems)(Mitsubishi Electric)	
	C	EX123-STA1	SI unit for SYSBUS Wire System (OMRON)	
	D	EX123-SSH1	SI unit for Satellite I/O Link System (Sharp)	
	F1	EX123-SUW1	SI unit for 16 point Uni-wire System (NKE)	
	H	EX123-SUH1	SI unit for 16 point Uni-wire H System (NKE)	
	J1	EX123-SSL1	SI unit for 16 point S-LINK System (Sunx)	
	J2	EX123-SSL2	SI unit for 8 point S-LINK System (Sunx)	
	K	EX123-SFU1	SI unit for T-LINK Mini System (Fuji Electric)	
	Q	EX124-SDN1	SI unit for Device Net and Compo Bus/D (OMRON)	
	R1	EX124-SCS1	SI unit for 16 point Compo Bus/S (OMRON)	
R2	EX124-SCS2	SI unit for 8 point Compo Bus/S (OMRON)		
V	EX124-SMJ1	SI unit for CC-LINK(2 power supply systems) (Mitsubishi Electric)		
For in/output	BM□	EX220-SMB1	SI unit for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)	For input/output
		EX220-IE1	Input unit (□: 0 to 2 stations)	



# Series VQ4000

## Optional Specifications

### External Pilot Specifications

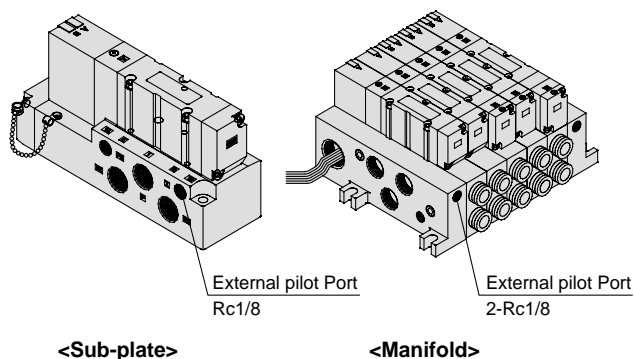
When the supply air pressure is:

- lower than the required minimum operating pressure 0.15 to 0.2MPa
- Opposite air supply (R port supply), cylinder supply (A and B port supply)
- Vacuum specification (In this case, contact SMC.) for the solenoid valve, specify an external pilot model. Order a manifold or valve by suffixing the external pilot specification, "R". For manifold and option, external pilot specification is standard.

### How to Order Valve

VQ4100 **R** — 5 — 03

● External pilot specification



### Pressure Specifications

Note) Possible to mix mounting of internal and external pilot

Valve construction		Metal seal	Rubber seal
Operating pressure range		Vacuum to 1.0MPa	
External pilot pressure range (1)	Single	0.15 to 1.0MPa (0.15 to 0.7MPa)	0.2 to 1.0MPa (0.2 to 0.7MPa)
	Double		0.15 to 1.0MPa (0.15 to 0.7MPa)
	3 position		0.2 to 1.0MPa (0.2 to 0.7MPa)

Note 1) ( ): Value for low wattage style (0.5W)

Combination of manifold options shown below and external pilot specification is not possible.

Release valve spacer	VVQ4000-24A-□D
Built-in silencer, direct exhaust	VV5Q4□-□□□-S <sub>D</sub> <sup>U</sup>
For exhaust cleaner mounting	VV5Q4□-□□□-C <sub>D</sub> <sup>U</sup>
Manifold with control unit	VV5Q4□-□□□ [Control unit model No.]
Double check spacer with residual pressure exhaust	VVQ4000-25A- <sup>1</sup> / <sub>5</sub>

### Inch-size One-touch Fittings

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

### How to Order Manifold

VV5Q41—06 **N11** SA—K

● Cylinder portsize

N7	ø1/4"
N9	ø5/16"
N11	ø3/8"

### Thread other than Rc

NPT, NPTF, G threads are available.

Suffix each symbol after model No.

### How to Order Valve

VQ4100 — 5 — 03 **T**

Cylinder port size ●

Type of thread ● (P, R and A, B port)

—	Rc
N	NPT
T	NPTF
F	G

### How to Order Manifold

VV5Q41—08 03 **T** FU1

Cylinder port size ●

Type of thread ● (P, R and A, B port)

—	Rc
N	NPT
T	NPTF
F	G

### How to Order Sub-plate and Option

VQ4000 — P — B02 **N** (Sub-plate)

VVQ4000 — P — 1 — 03 **T** (Option)

Port size ●

● Type of thread

—	Rc
N	NPT
T	NPTF
F	G