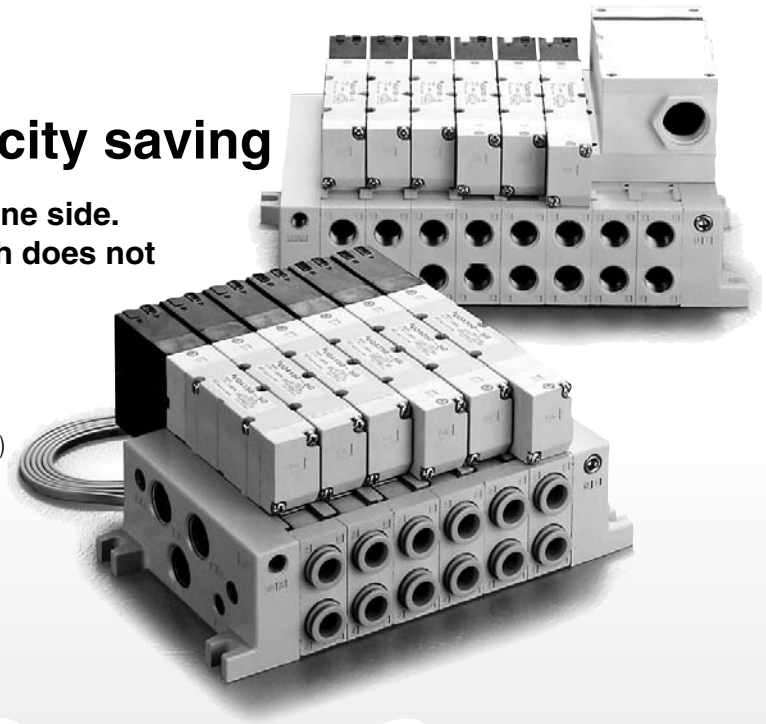
5 Port Solenoid Valve: Base Mounted
Metal Seal/Rubber Seal
Series VQ4000



Space and capacity saving

Pilot valve is gathered at one side.
Space saving design which does not have any protrusions.

Space saving ——— 40% less
Capacity saving ——— 50% less
(In house comparison)

Compact design with

Large flow capacity

(Suitable for cylinders up to ø140)

Built-in One-touch fitting for easier piping

High speed & Long life

(Metal seal, with light and surge suppressor)

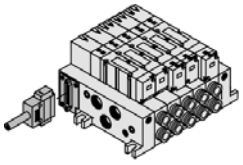
VQ4100 (Single) 17mS
VQ4200 (Double) 12mS
— 100 million cycles
* According to SMC life test conditions

Dispersion accuracy ±3mS

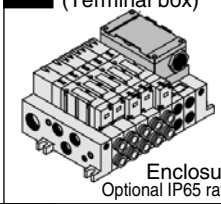
Various centralized wiring options

<Plug-in>

F kit (D-sub connector)

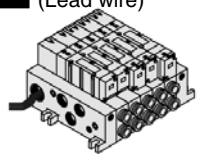


T kit (Terminal box)



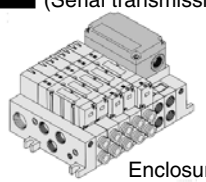
Enclosure: Optional IP65 rating

L kit (Lead wire)



Enclosure: Optional IP65 rating

S kit (Serial transmission)



Enclosure: Optional IP65 rating

Optional IP65 is available. Dust-tight, Jet-proof

Cylinder operation speed

Valve width mm	Nℓ/min Rubber seal (Metal seal)	Cylinder speed mm/s	Cylinder bore size mm						
			40	50	63	80	100	125	140
24.5	2160 (1963)	150	■	■	■	■	■	■	■
		300	■	■	■	■	■	■	
		450	■	■	■	■	■		
		600	■	■	■	■	■		
		750	■	■	■	■			

Pressure: 0.5MPa, Load rate: 50%

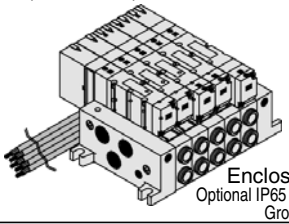
Note) Cylinder speed varies according to piping construction equipment. So this Table is for your reference only.

Performance value shown on catalogue is typical value, this is not for performance guarantee.

Individual wiring style

<Plug lead>

C kit (Connector)



Enclosure: Optional IP65 rating Grommet

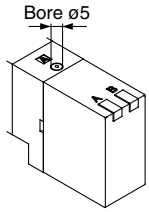
⚠Caution 1: Series VQ4000

⚠Warning

Manual Override

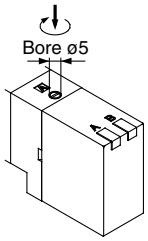
When manual override is used, the connected equipment starts operating. Make sure that there is no danger. Non-locking style (push style) is available as standard, locking slotted style is optional style.

Non-locking push style

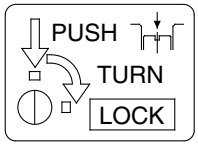


Push down on the manual override button with a small screwdriver until it stops.
Release the screwdriver and the manual override will return.

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.

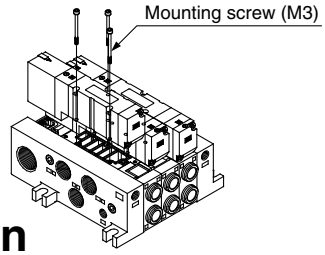


⚠Caution

Valve Mounting

After confirming the gasket is correctly placed under the valve, tighten the mounting screws with the appropriate torque listed below.

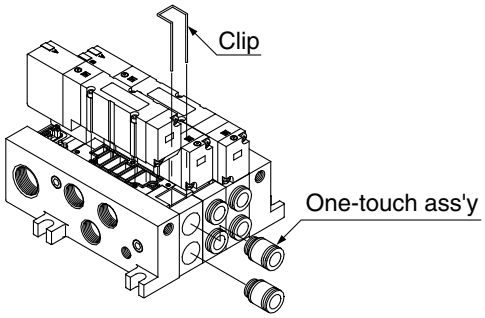
Suitable tightening torque Nm
0.8 to 1.2



⚠Caution

Changing the One-touch Fittings

The built-in fittings on the manifold can be changed easily. Simply remove the corresponding valve and take out the fitting clip underneath. Then remove the affected fitting and replace with a new one. Finally, replace the fitting clip and remount the valve.

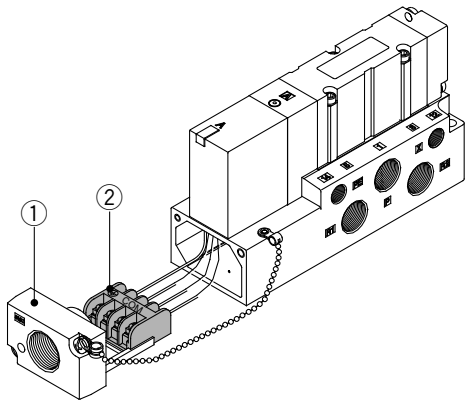


⚠Caution

Connection of Lead Wire

Plug-in sub-plate (With terminal block)

- Remove junction cover ① of sub-plate where terminal block box ② is mounted.



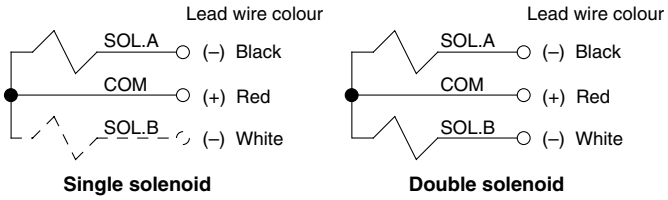
- Markings shown below are on terminal block box, connect each power supply.

Model \ Terminal block marking	A	COM	B	$\bar{\bar{T}}$
VQ410$^{0}_{1}$	A side	COM	—	—
VQ420$^{0}_{1}$	A side	COM	B side	—
VQ4$^{3}_{4}_{5}_{6}$0$^{0}_{1}$	A side	COM	B side	—

Note 1) Not polar, possible to use as –COM.
Note 2) Double wiring is used on sub-plate VQ410$^{0}_{1}$.

Plug lead: Grommet

Connect each corresponding wire.



	Single solenoid	Double solenoid
Standard	Black: A side solenoid (–) Red: COM (+)	Black: A side solenoid (–) Red: COM (+) White: B side solenoid (–)
Enclosure (IP65)	Black: A side solenoid (–) Red: COM (+) White: B side solenoid (–) (It is not used in case of single.) Green: (It is not used in case of either single or double.)	

Note) No polarity. Possible to use as –COM.

⚠Caution

Installation/Removal of Light Cover

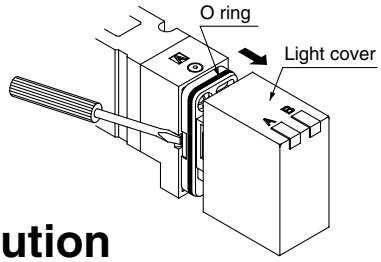
Removal of light cover

- **Removal**

  Open the cover by inserting a small flat head screw driver into the slot on the side of the pilot assembly(see drawing below), lift the cover out about 1 mm and then pull off. (If the cover is pulled off at a angle, damage could be done to the O ring and/or the pilot valve.)

- **Installation**

  Insert the cover straight onto the pilot assembly making sure not to contact the pilot valve and lock into place.

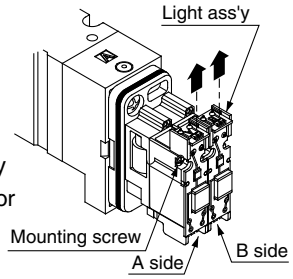


⚠Caution

Changing the Pilot Valve

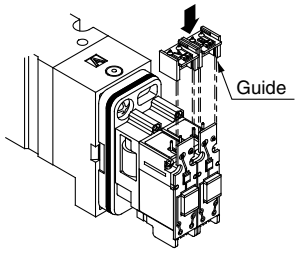
- **Removal of Pilot Valve**

1. Remove the light cover. (See above) Then remove the mounting screws that attach the valve to the pilot assembly.
2. Remove the light circuit board by pulling it straight off the connector pins.



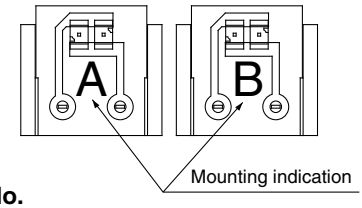
- **Installing Pilot Valve**

1. Insert the light circiut board onto the connector pins on the pilot valve.
2. Confirm that the gasket is on the pilot valve and tighten the mounting screws with the torque listed below.



Suitable tightening torque Nm
0.1 to 0.13

Note) Pilot valves can be mounted on either direction.
Make sure that the light circuit board is mounted correctly on the pilot valve. It is marked with an "A" or "B". (A side is orange and B side is green.) If mounted on the wrong side, the light will be darker.



Light circuit No.

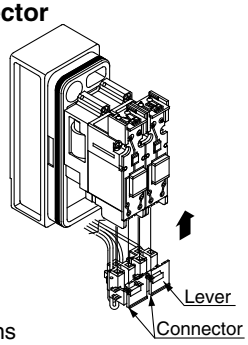
SOL. A	VQZ100-47-A
SOL. B	VQZ100-47-B

Plug Lead

Installation/Removal Plug connector with lead wires

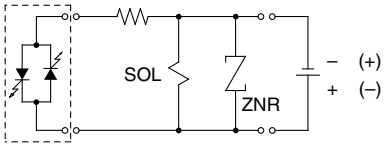
- To install the connector simply insert it onto the pins, push the lever hook into the groove and lock into place.
- To remove the connector, push down on the lever and remove the hook from the groove.

Note) Do not use excessive force to remove the connector as this might loosen the wire connections inside the connector.



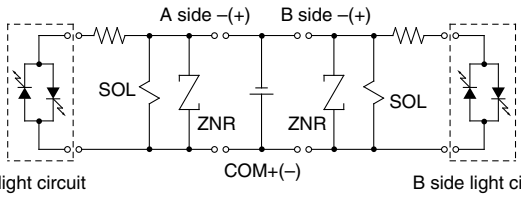
⚠Caution

Internal Wiring Specifications



Light circuit ass'y (Orange)

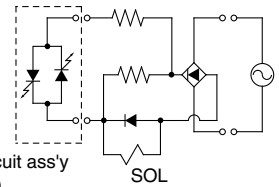
DC: Single



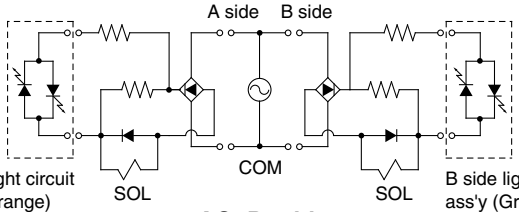
A side light circuit ass'y (Orange)

DC: Double

B side light circuit ass'y (Green)



AC: Single



A side light circuit ass'y (Orange)

B side light circuit ass'y (Green)

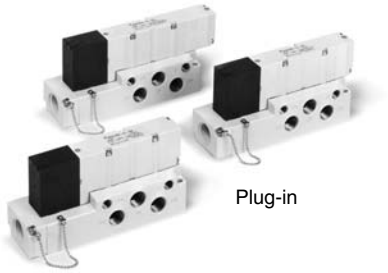
AC: Double

⚠Caution

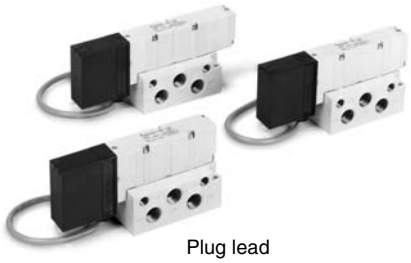
Enclosure IP65

Wires, cables, connectors, etc. used for models conforming to IP65 should also have enclosures equivalent to or stricter rating than IP65.

Series VQ4000
Base Mounted Valve
Plug-in, Plug Lead/Single Unit



Plug-in



Plug lead

Model

Series	Configuration		Model		Effective area (1) (mm²) (Nℓ/min)	Response time ms (2)		Weight (3) (kg)
						Standard: 1W	Low wattage and AC	
VQ4000	2 position	Single	Metal seal	VQ41$^{0}_{5}$0	36.0 (1963)	20 or less	22 or less	0.23 (0.29)
			Rubber seal	VQ41$^{0}_{5}$1	39.6 (2159)	25 or less	27 or less	
		Double	Metal seal	VQ42$^{0}_{5}$0	36.0 (1963)	12 or less	12 or less	0.26 (0.32)
			Rubber seal	VQ42$^{0}_{5}$1	39.6 (2159)	15 or less	15 or less	
	3 position	Closed centre	Metal seal	VQ43$^{0}_{5}$0	32.4 (1766)	45 or less	47 or less	0.28 (0.34)
			Rubber seal	VQ43$^{0}_{5}$1	36.0 (1963)	50 or less	52 or less	
		Exhaust centre	Metal seal	VQ44$^{0}_{5}$0	36.0 (1963)	45 or less	47 or less	0.28 (0.34)
			Rubber seal	VQ44$^{0}_{5}$1	39.6 (2159)	50 or less	52 or less	
		Pressure centre	Metal seal	VQ45$^{0}_{5}$0	36.0 (1963)	45 or less	47 or less	0.28 (0.34)
			Rubber seal	VQ45$^{0}_{5}$1	39.6 (2159)	50 or less	52 or less	
		Double check	Metal seal	VQ46$^{0}_{5}$0	19.8 (1079)	55 or less	57 or less	0.50 (0.56)
			Rubber seal	VQ46$^{0}_{5}$1	21.6 (1177)	62 or less	64 or less	

Note 1) Value for valve on sub-plate and cylinder port 3/8
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.

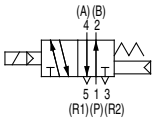
Standard Specifications

Valve specifications	Seal		Metal seal	Rubber seal
	Fluid		Air, Inert gas	Air, Inert gas
	Max. operating pressure (3)		1.0MPa	
	Min. operating pressure	Single	0.15MPa	0.20MPa
		Double	0.15MPa	0.15MPa
		3 position	0.15MPa	0.20MPa
	Ambient and fluid temperature		–10 to 50°C (1)	–5 to 50°C (1)
	Lubrication		Not required	
	Manual override		Non-locking push style/Locking slotted style (Option)	
	Shock/Vibration resistance		150/30 m/s² (2)	
	Enclosure		Dust proof (Available IP65 style)	
	Coil rated voltage		12, 24V DCand100, 110, 200, 220V AC (50/60Hz)	
Solenoid specifications	Allowable voltage		±10% of rated voltage	
	Coil insulation		Class B or equivalent	
	Power cnsumption (Curent value)	24V DC	1W DC (42mA), 0.5W DC (21mA) (3)	
		12V DC	1W DC (83mA), 0.5W DC (42mA) (3)	
		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)	

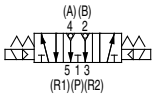
Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Shock resistance: No malfunction resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle direction of the main valve and armature, for both energized and de-energized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

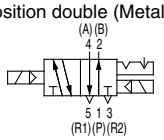
2 position single



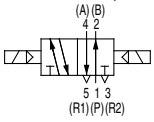
3 position double check



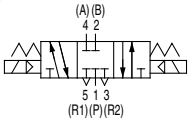
2 position double (Metal)



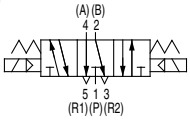
2 position double (Rubber)



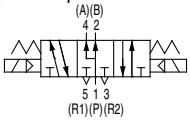
3 position closed centre



3 position exhaust centre



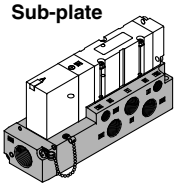
3 position pressure centre



How to Order Valve

Body style

O: Plug-in Sub-plate



Port size

–	Without sub-plate (for manifold)
02	1/4
03	3/8

Piping

–	Side piping
B	Bottom piping

Plug-in	VQ4	1	0	0									Q
Plug lead	VQ4	2	5	1									Q

Configuration

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

Note) Refer to p.1-844 for double check style.

Enclosure

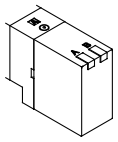
–	Dust-proof
W	Dust tight, jet proof (IP 65)

Thread

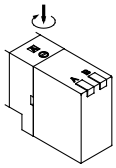
—	Rc (PT)
N	NPT
T	NPTF
F	G (PF)

Manual override

– : Non-locking push style



B: Locking slotted style

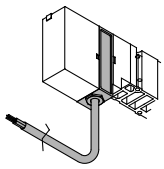


Light and surge voltage suppressor

–	With
E	W/o light/With surge suppressor

Electrical entry

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



Coil voltage

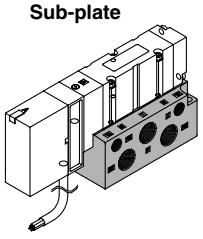
1	100V AC (50/60Hz)
2	200V AC (50/60Hz)
3	110V AC (50/60Hz)
4	220V AC (50/60Hz)
5	24V DC
6	12V DC
9	240V or less

Order Made Contact SMC for other voltages (9)

Protective class
class I (Mark: ⏚)..... DIN terminal type

Body style

5: Plug lead Sub-plate



Seal

0	Metal seal
1	Rubber seal

Function

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

Note 1) Applicable to DC specification.
Note 2) Refer to p1-854 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 replace pilot valve ass'y (Voltage)
- Refer to p.1-850 and p.1-851 for part no. of pilot valve ass'y
- Refer to p.1-809 for "How to Replace".

How to Order Sub-plate

VQ4000 – □ □ – □ □ □ – Q

Electrical entry

P	Plug-in conduit terminal
S	Plug lead

Enclosure

–	Dust proof
W	Dust tight, splash proof

Piping

–	Side piping
B	Bottom piping

Thread

—	Rc (PT)
N	NPT
T	NPTF
F	G (PF)

Note 1) Bottom piping type is applicable to only 1/4.

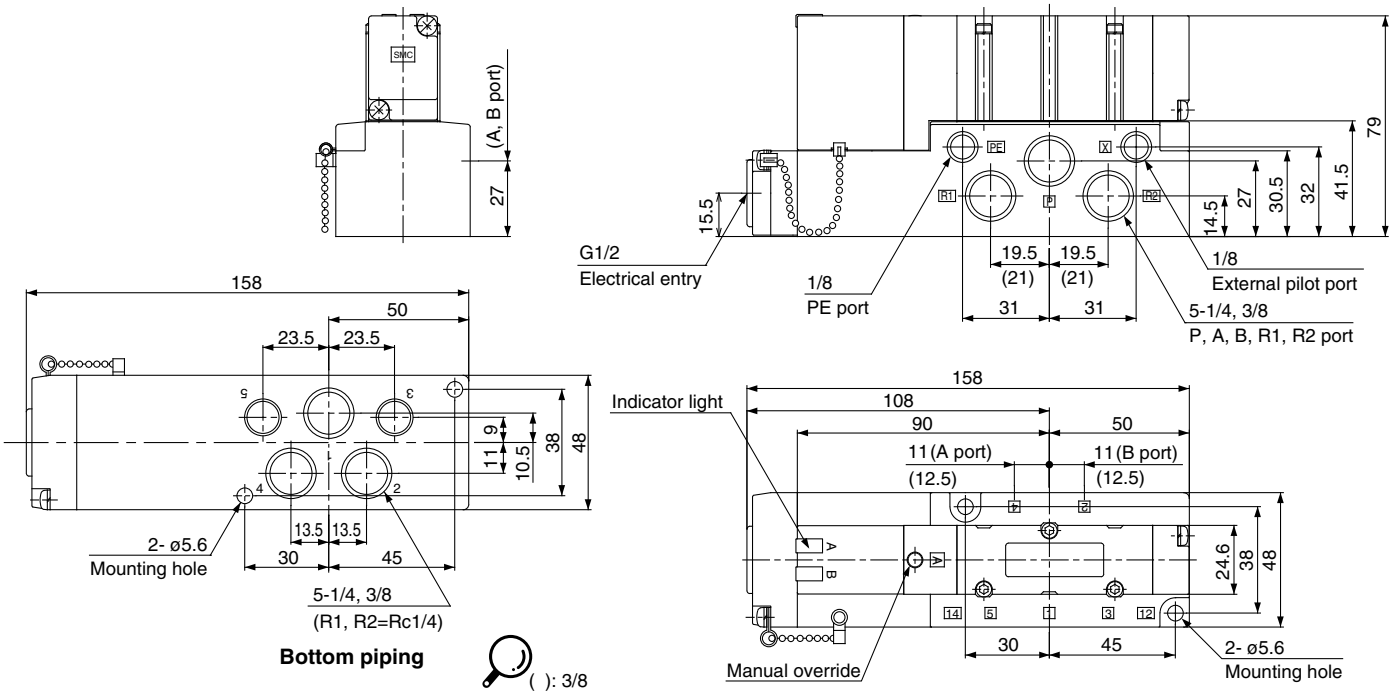
Port size

02	1/4
03	3/8

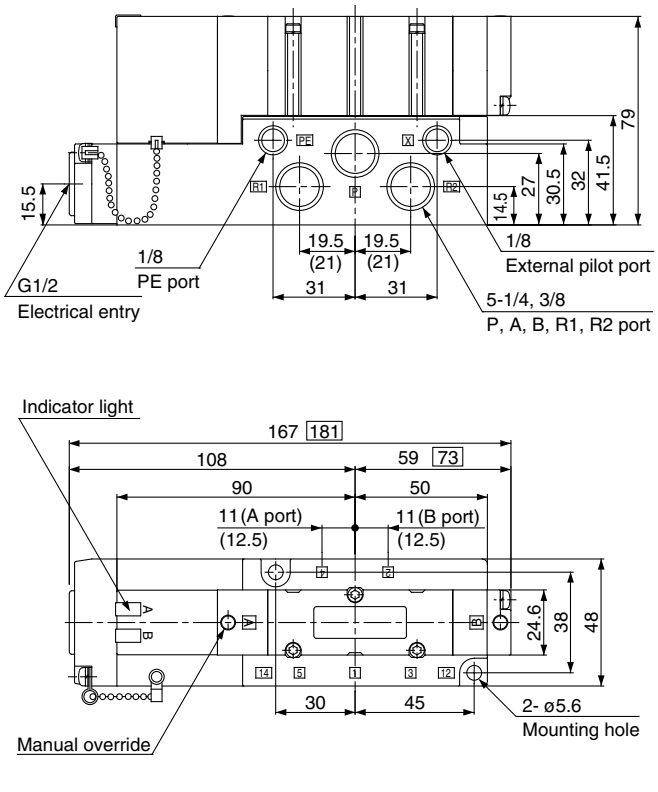
Plug-in

Conduit terminal

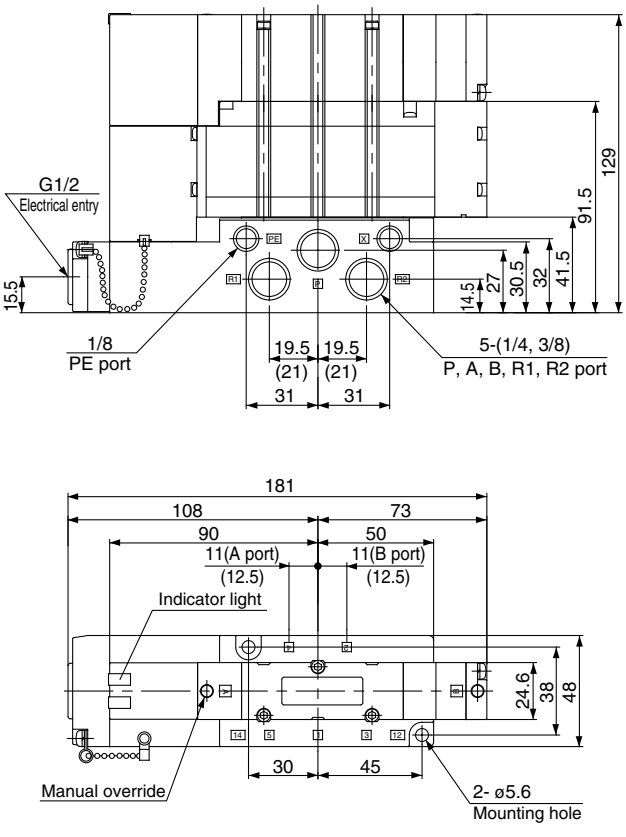
2 position single: VQ410$^{0}_{1}$–□



2 position double: VQ420$^{0}_{1}$–□
3 position closed centre: VQ430$^{0}_{1}$–□
3 position exhaust centre: VQ440$^{0}_{1}$–□
3 position pressure centre: VQ450$^{0}_{1}$–□



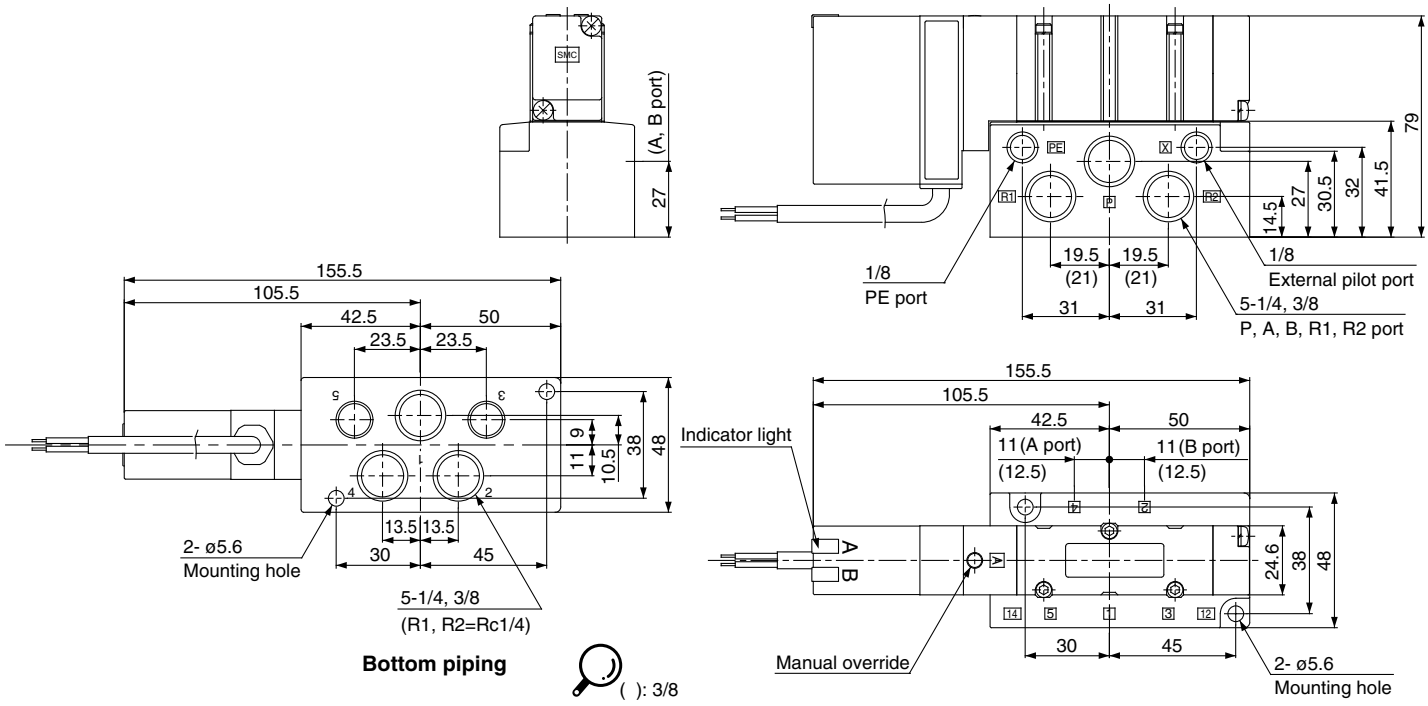
3 position double check: VQ460$^{0}_{1}$–□



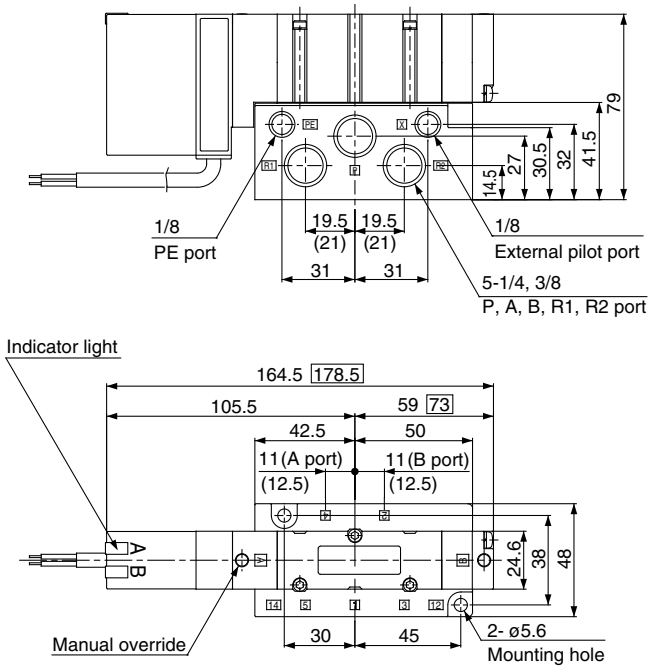
Plug Lead

Grommet

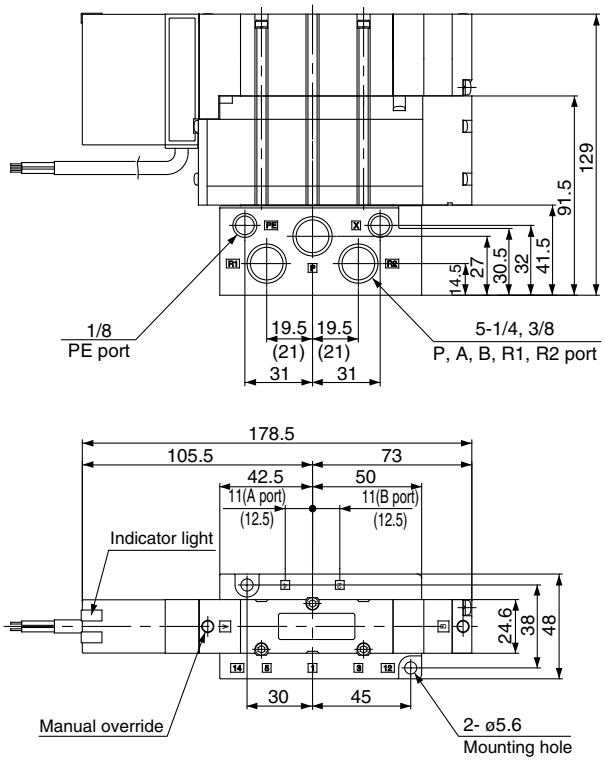
2 position single: VQ415$^{0}_{1}$–□ $^{G}_{H}$



2 position double: VQ425$^{0}_{1}$–□ $^{G}_{H}$
3 position closed centre: VQ435$^{0}_{1}$–□ $^{G}_{H}$
3 position exhaust centre: VQ445$^{0}_{1}$–□ $^{G}_{H}$
3 position pressure centre: VQ455$^{0}_{1}$–□ $^{G}_{H}$



3 position double check: VQ465$^{0}_{1}$



□: 3 position
( ):3/8

Series VQ4000
Base Mounted
Plug-in Manifold

How to Order Manifold

VV5Q 4 1 – 08 C8 [ ] F U1 [ ] – K – Q

Series

4	VQ4000

Manifold

1	Plug-in unit

Stations

02	2 stations
⋮	⋮

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

Thread

—	Rc (PT)
N	NPT
T	NPTF
F	G (PF)

Kit

Control unit

Refer to p.1-846 to p.1-849

Option

Symbol	Option
–	None
CD(2)	Exhaust cleaner: For D side mounting
CU(2, 3)	Exhaust cleaner: For U side mounting
K (4)	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	IP65 (except F kit)

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

Note 2) Combination of [C$^{U}_{D}$] and [S$^{U}_{D}$] is not possible.

Note 3) Combination of T and S kit is not available.

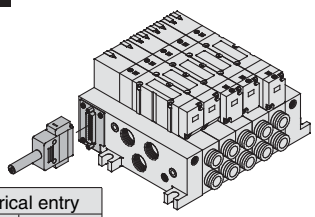
Note 4) Specify the wiring specifications by means of the manifold specification form. (except L kit)

Port size

C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12
02	1/4
03	3/8
B	Bottom piping 1/4
CM	Mixed size
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"
N11	One-touch fitting for ø3/8"
NM	Mixed size

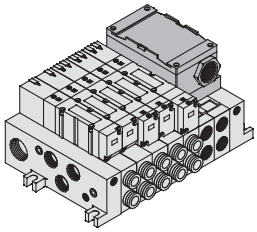
Kit/Electrical entry/Cable length

F Kit (D-sub connector)



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

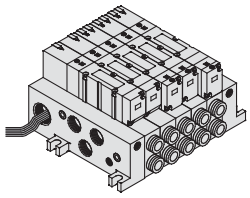
T Kit (Terminal box kit)



Applicable to IP65

Kit T	0	Terminal box	3 to 18 stations

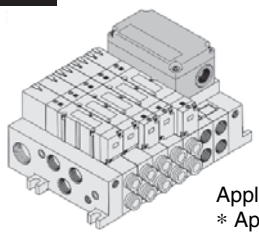
L Kit (Lead wire kit)



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

Applicable to IP65

S Kit (Serial interface kit)

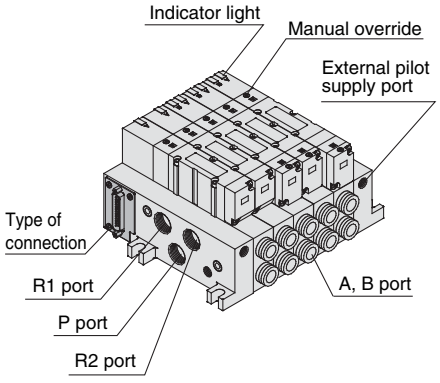


The valve is equipped with a lamp/surge suppressor, and the voltage is 24V DC.

Applicable to IP65

∗ Applicable to INPUT and OUTPUT styles.

Kit S	B	SI for MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)	3 to 18 stations
	BB	SI for MELSECNET/MINI-S3 Data Link System (2 power supply systems)(Mitsubishi Electric)	
	C	SI for SYSBUS Wire System (OMRON)	



Note) Shown VV5Q41-05C12FD0-Q

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–□□□	■ F kit-D-sub connector ■ T kit-Terminal box ■ L kit-Lead wire ■ S kit-Serial transmission	Side	1/2 Option Built-in silencer (Direct exhaust)	C8 (For ø8) C10 (For ø10) C12 (For ø12) 1/4 3/8	F, T kit 12 stations L kit 16 stations S kit 10 stations	VQ4□00 VQ4□01	2.24 · L kit · Except solenoid valve weight
			Bottom		1/4			

Note 1) Refer to P.1-854 for further information on One-touch fittings for inch sizes and thread standards.

Number of Manifold Stations/Effective Area (mm² (N*ℓ*/min)) at Individual Operation

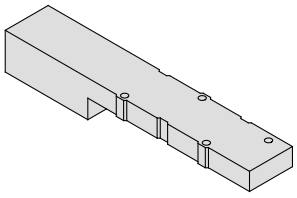
Model	Passage/Stations	1 station	5 stations	10 stations	15 stations
2 position metal seal **VQ4$^{1}_{2}$00**	P→A or B	28.8 (1570)	28.8 (1570)	28.8 (1570)	28.8 (1570)
	A→R1, B→R2	32.4 (1766)	32.4 (1766)	32.4 (1766)	32.4 (1766)
2 position rubber seal **VQ4$^{1}_{2}$01**	P→A or B	36.0 (1963)	36.0 (1963)	36.0 (1963)	36.0 (1963)
	A→R1, B→R2	37.8 (2061)	37.8 (2061)	37.8 (2061)	37.8 (2061)

Note) Port size. 3/8

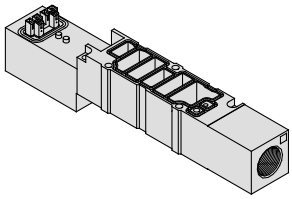
Manifold Options

- Refer to p.1-840 to p.1-845 for detail dimensions of each option.
- Refer to p.1-853 for spare parts no.
- Refer to p.1-846 to p.1-849 for control unit.

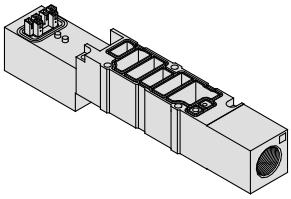
Blank plate assembly
VVQ4000–10A–1



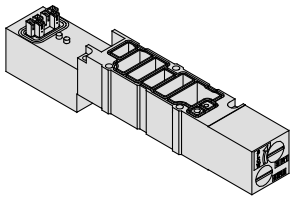
Individual SUP spacer
VVQ4000–P–1–03



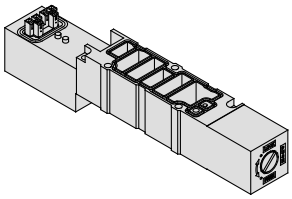
Individual EXH spacer
VVQ4000–R–1–03



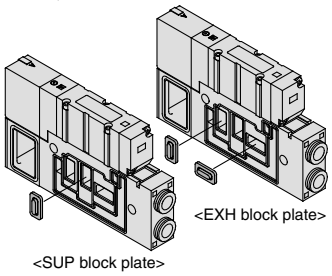
Interface speed control
VVQ4000–20A–1



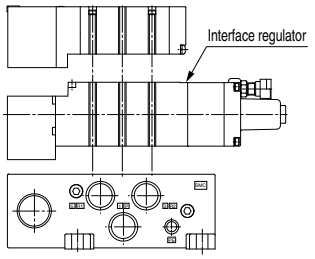
SUP stop valve spacer
VVQ4000–37A–1



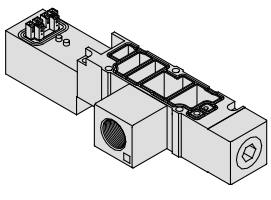
SUP EXH block plate
VVQ4000–16A



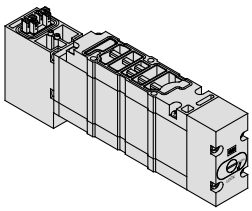
Interface regulator
ARBQ4000



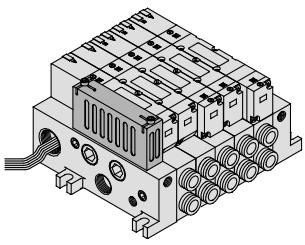
Release valve spacer
VVQ4000–24A–1D(1, 2)



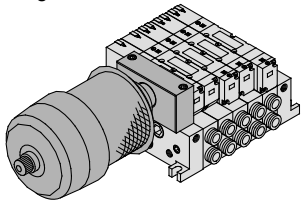
Double check spacer with residual pressure exhaust
VVQ4000–25A–1(1)



Built-in silencer (Direct exhaust)
[–S$^{D}_{U}$](1)



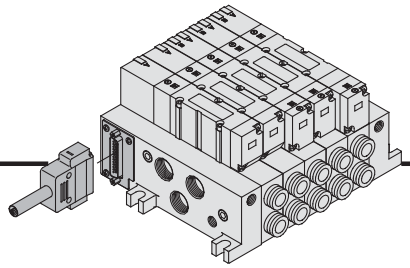
For exhaust cleaner mounting
[–S$^{D}_{U}$](1)



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.1-846 to 1-849)

Series VQ4000

F Kit (D-sub connector)



- **The D-sub connector permits simple rationalization and installation labour 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

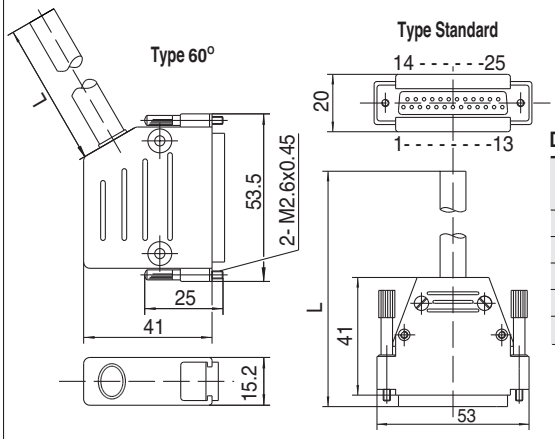
Series	Porting specifications			Applicable Max. stations
	Port location	Port size		
		P, R	A, B	
VQ4000	Side	1/2	C8, 10, 12 1/4, 3/8	16 stations
	Bottom		1/4	

D-sub Connector (25 pin)

Cable Assembly

GVVZS3000-21A- 1/2/3/4/5 **-** S/60

(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

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

Model

Standard	—
Shielded	S
60°	60

Electric characteristics

Item	Characteristics
Conductor resistance /km, 20°C	57 or less
Voltage limit V, 5min, AC	1500
Insulation resistance M/km	20

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

Terminal No.	Lead wire colour	Dot marking
1	White	–
2	Brown	–
3	Green	–
4	Yellow	–
5	Grey	–
6	Pink	–
7	Blue	–
8	Red	–
9	Black	–
10	Violet	–
11	Grey	Pink
12	Red	Blue
13	White	Green
14	Brown	Green
15	White	Yelow
16	Yelow	Brown
17	White	Grey
18	Grey	Brown
19	White	Pink
20	Pink	Brown
21	White	Blue
22	Brown	Blue
23	White	Red
24	Brown	Red
25	White	Black

* Connector made in conformity with DIN47100.

How to Order Manifold

VV5Q 4 1 – 08 C8 [ ] F U 1 – K – Q

Series

4	VQ4000

Manifold

1	Plug-in

Stations

02	2 stations
⋮	⋮
18	18 stations

Cylinder ports

C8	With One-touch fitting for ø8
C10	With One-touch fitting for ø10
C12	With One-touch fitting for ø12
02	1/4
03	3/8
B	Bottom piping 1/4
CM	Mixed size

* As optional specifications, the maximum number of stations can be increased based on special wiring specifications. See p.1-817 for details.

Thread

—	Rc(PT)
N	NPT
T	NPTF
F	G (PF)

Connector location

D	D side
U	U side

Cable (length)

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

Options

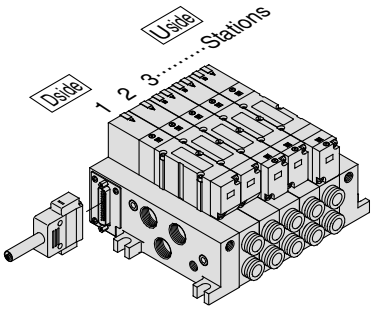
Symbol	Option
–	None
CD (2)	Exhaust cleaner: For D side mountig
CU (2)	Exhaust cleaner: For U side mountig
K (3)	Special wiring specification (Other than double wiring)
SB	Built-in silencer (Direct exhaust from both sides) F/L kits only
SD	Built-in silencer (Direct exhaust from D side)
SU	Built-in silencer (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 U/D] and [S U/D] is not possible.

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

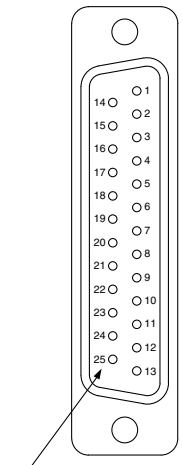
Note 4) Refer to P.1-846 to p.1-849 for with control unit.



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

● Electrical Wiring Specifications

D-sub connector



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.

	Standard wiring Terminal No.		Wiring with control unit Terminal No.	Polarity	D–sub connector ass'y AXT100-DS25-015/030/050 Lead wire colour	Wire color table Dot marking
1 station	SOL.A	1	Release valve 1	(–)	(+) White	—
	SOL.B	14	14	(–)	(+) Brown	Green
2 stations	SOL.A	2	Pressure switch 2	(–)	(+) Brown	—
	SOL.B	15	15	(–)	(+) White	Yellow
3 stations	SOL.A	3	SOL.A 3	(–)	(+) Green	—
	SOL.B	16	SOL.B 16	(–)	(+) Yellow	Brown
4 stations	SOL.A	4	SOL.A 4	(–)	(+) Yellow	—
	SOL.B	17	SOL.B 17	(–)	(+) White	Grey
5 stations	SOL.A	5	SOL.A 5	(–)	(+) Grey	—
	SOL.B	18	SOL.B 18	(–)	(+) Grey	Brown
6 stations	SOL.A	6	SOL.A 6	(–)	(+) Pink	—
	SOL.B	19	SOL.B 19	(–)	(+) White	Pink
7 stations	SOL.A	7	SOL.A 7	(–)	(+) Blue	—
	SOL.B	20	SOL.B 20	(–)	(+) Pink	Brown
8 stations	SOL.A	8	SOL.A 8	(–)	(+) Red	—
	SOL.B	21	SOL.B 21	(–)	(+) White	Blue
9 stations	SOL.A	9	SOL.A 9	(–)	(+) Black	—
	SOL.B	22	SOL.B 22	(–)	(+) Brown	Blue
10 stations	SOL.A	10	SOL.A 10	(–)	(+) Violet	—
	SOL.B	23	SOL.B 23	(–)	(+) White	Red
11 stations	SOL.A	11	SOL.A 11	(–)	(+) Grey	Pink
	SOL.B	24	SOL.B 24	(–)	(+) Brown	Red
12 stations	SOL.A	12	SOL.A 12	(–)	(+) Red	Blue
	SOL.B	25	SOL.B 25	(–)	(+) White	Black
	COM.	13	COM. 13	(+)	(–) White(1)	Green
					Positive common	Negative common

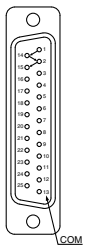
Note 1) No polarity. Possible to use as negative common.

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 □ □ — Q

Series

4	VQ4000

Configration

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

Seal

0	Metal
1	Rubber

Function (1, 2)

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

Note 1) Refer to p.1-854 for external pilot specification. Combination of external pilot and perfect interface is not possible.
Note 2) When specifying more than one option, indicate symbols 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
9	240V or less

Order Made Contact SMC for other voltages (9)

Protective class
class I (Mark: ⏚)

SMC ..... DIN terminal type

Light and surge voltage suppressor

–	With
E	W/o light, with surge suppressor

Manual override

–	Non-locking push style
B	Locking slotted style

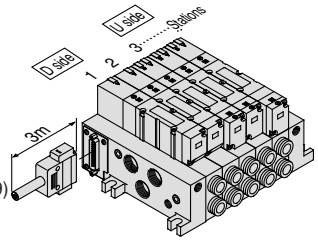
How to Order Manifold Ass'y

Addsuffix valve and option numbers to the manifold base number.

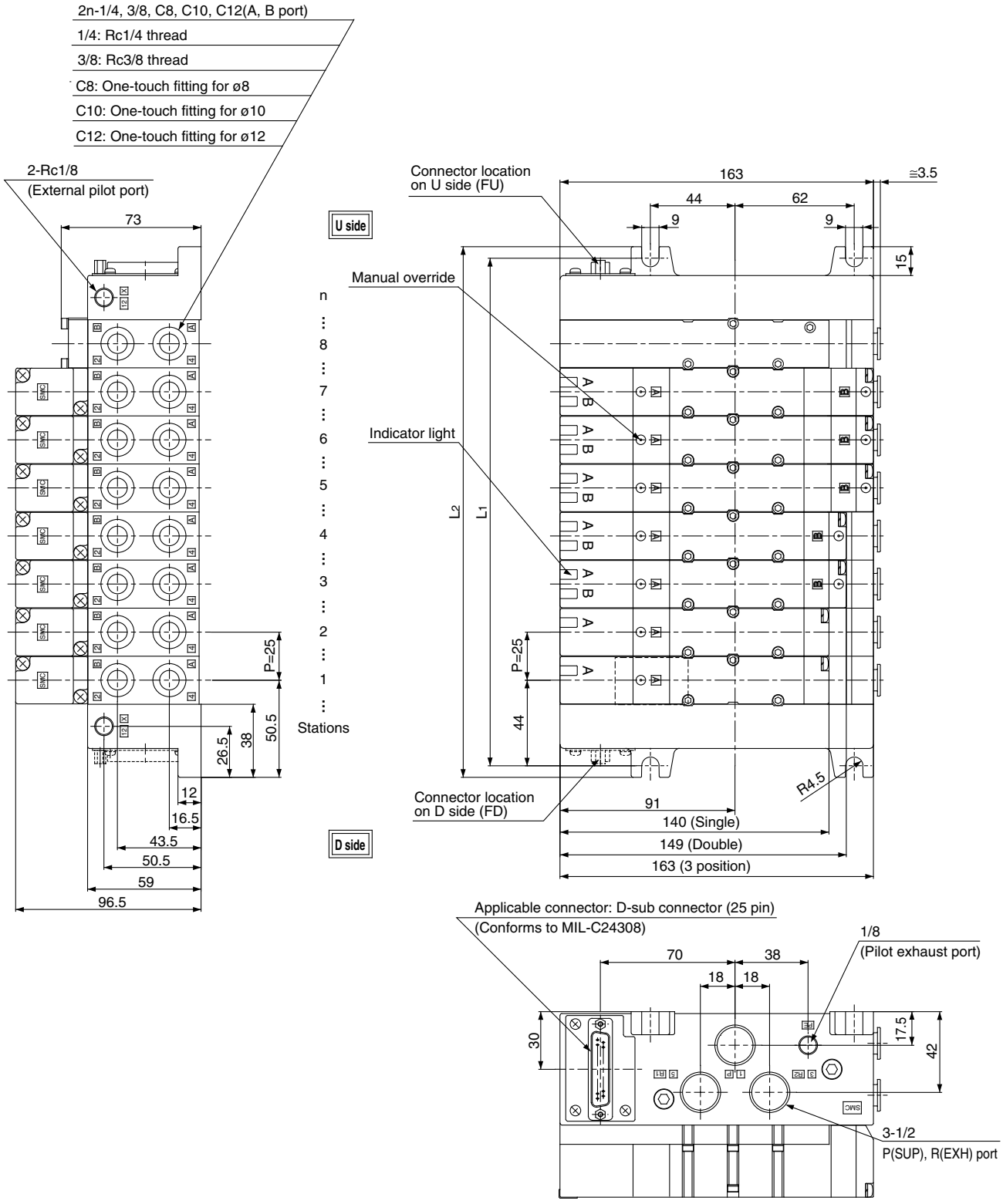
<Example>
With D-sub connector kit and cable (3m)

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

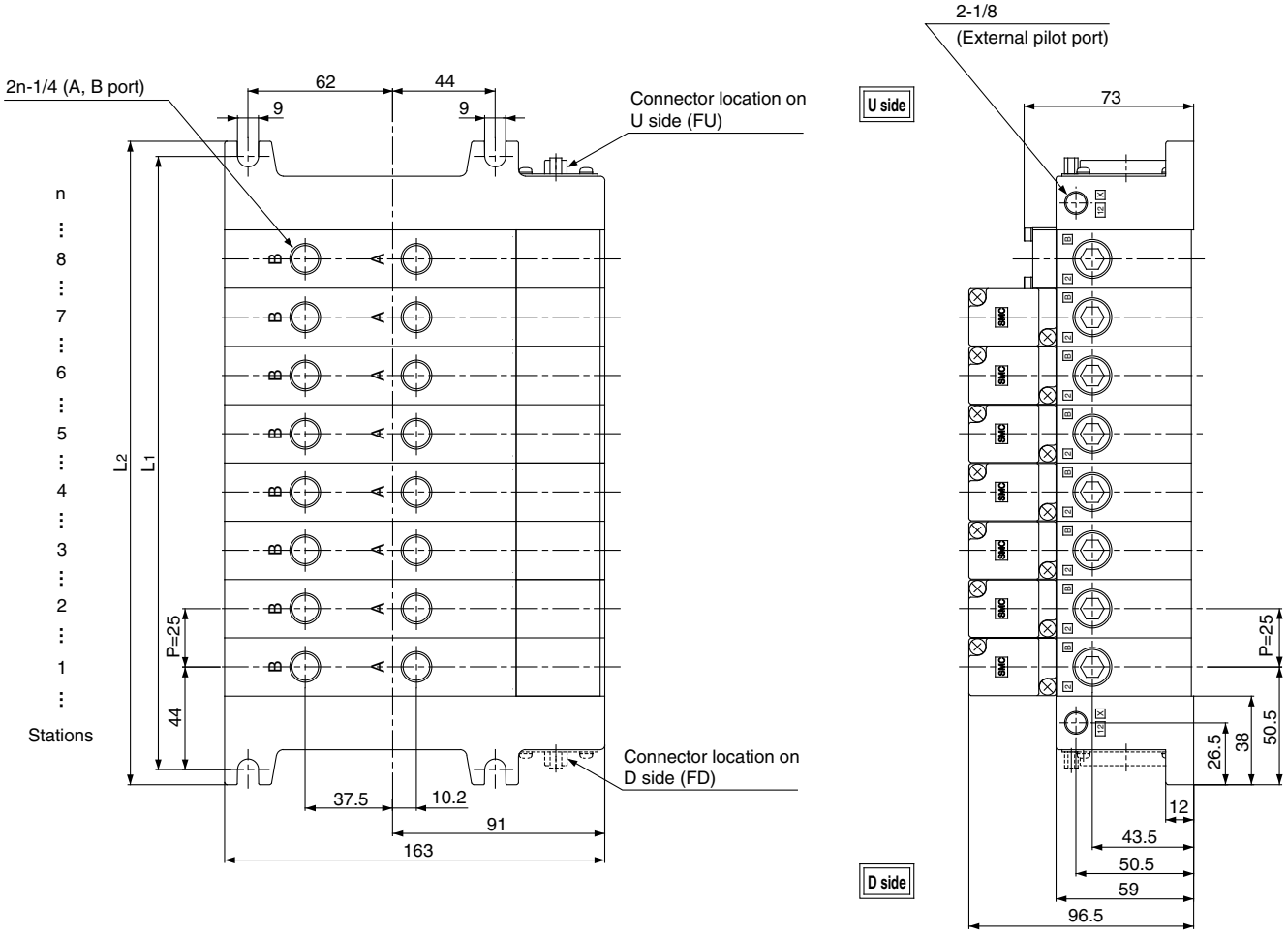
Write sequentially from the 1st station on the D side. When part numbers written collectively are complicated, specify by using a manifold specification form.



F Kit (D-Sub Connector)



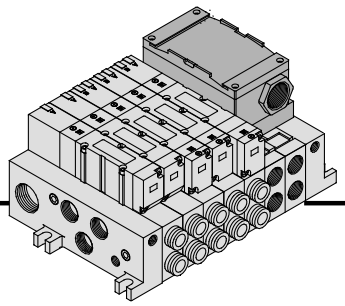
Bottom piping



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

T Kit (Terminal box)



IP65 is possible.

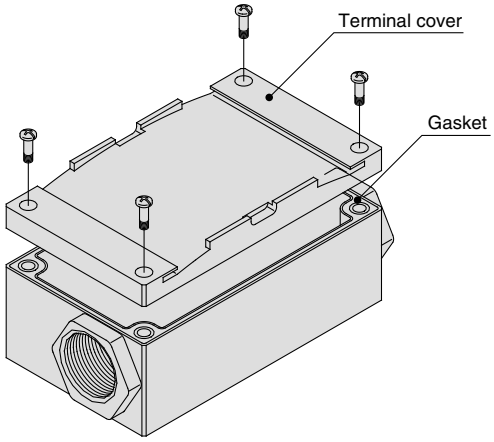
- **Enclosure: Possible to be IP65**
- **This kit has a small terminal block inside a junction box. The electrical entry port G3/4 permits connection of bracket of electrical wire pipe.**
- **Max. 18 stations**
- **2 stations are used for terminal box mounting.**

Manifold specifications

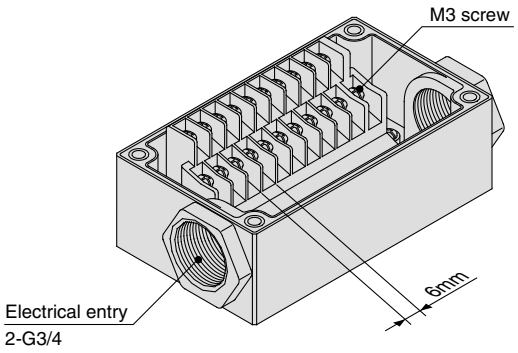
Series	Porting specifications			Applicable Max. stations
	Port location	Port size		
		P, R	A, B	
VQ4000	Side	1/2	C8, 10, 12 1/4, 3/8	18 stations
	Bottom		1/4	

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 connnected 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 – Q

Series

4	VQ4000

Manifold

1	Plug-in unit

Stations

03	3 stations
⋮	⋮
18	18 stations

Note) Add 2 stations for terminal block box mounting.

Thread

–	Rc(PT)
N	NPT
T	NPTF
F	G (PF)

Cylinder ports

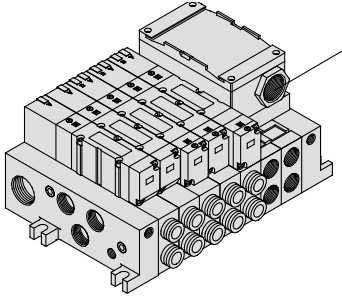
C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12
02	1/4
03	3/8
B	Bottom piping 1/4
CM	Mixed size

Note) As optional specifications, the maximum number of stations can be increased based on special wiring specifications. Refer to p.1-821 for further information.

Options

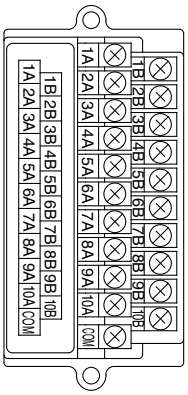
Symbol	Option
–	None
CD	Exhaust cleaner for D side mounting
K(2)	Special wiring specification (Other than double wiring)
N	With name plate
SD	Built-in silencer (Direct-exhaust from D side)
W	Enclosure IP65

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.1-846 to p.1-849 for with control unit.

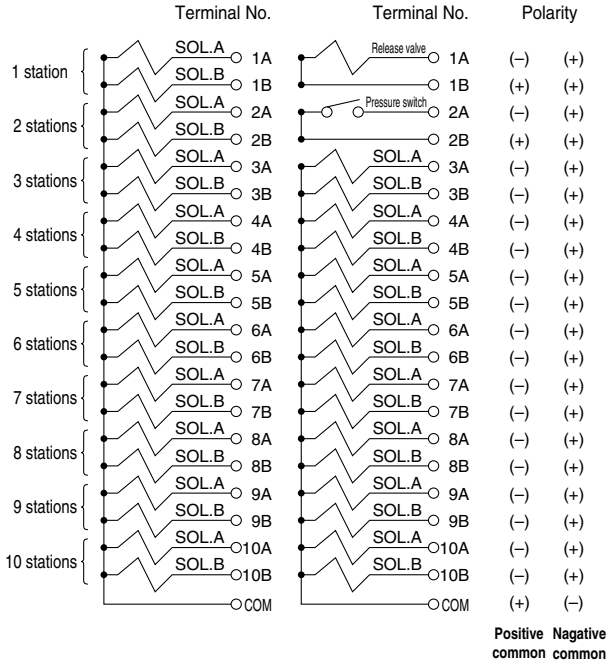


The total number of stations is tabulated starting from station one at the D side.

● 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

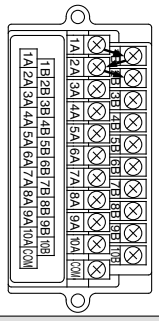
Regardless of the valve or option, the standard internal wiring for double solenoid capability is provided to each station. As option specifications type of single and double wiring (connected to SOL.A, B) is available.

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

VQ 4 1 0 0 □ — 5 □ □ □ — Q

Series

4	VQ4000

Configuration

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

Seal

0	Metal
1	Rubber

Function (1, 2)

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

Note 1) Refer to p.1-854 for external pilot specification. Combination of external pilot and perfect interface is not possible.

Note 2) When specifying more than one option, indicate symbols 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
9	240V or less

Order Made Contact SMC for other voltages (9)

Protective class
class I (Mark:⏚)
..... DIN terminal type

Light and surge voltage suppressor

–	With
E	Without light, with surge suppressor

Manual override

–	Non-locking push style
B	Locking slotted style

Enclosure

–	Dust proof
W	Dust tight/Jet proof (IP65)

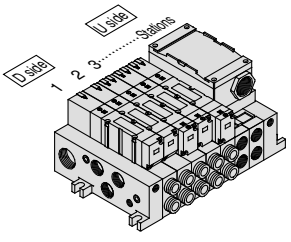
How to Order Manifold Ass'y

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

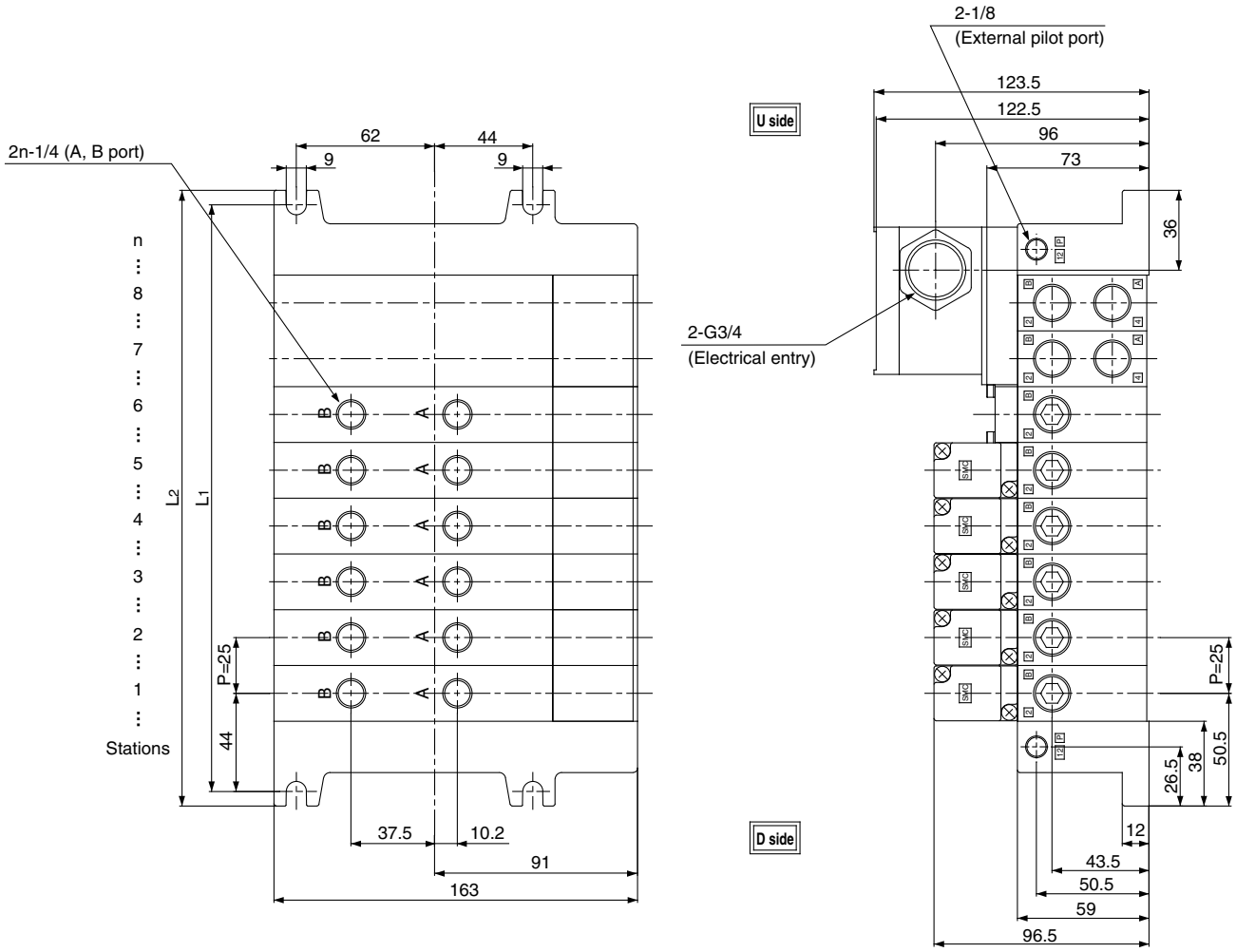
<Example>
With D sub–connector kit and cable (3m)

VV5Q41-07C8TO-Q·····1 set – Manifold base part number
VQ4100-5-Q·····2 set – Valve part No. (Station 1 to 2)
VQ4200-5-Q·····2 set – Valve part No. (Station 3 to 4)
VQ4300-5-Q·····1 set – Valve part No. (Station 5)

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



Bottom piping

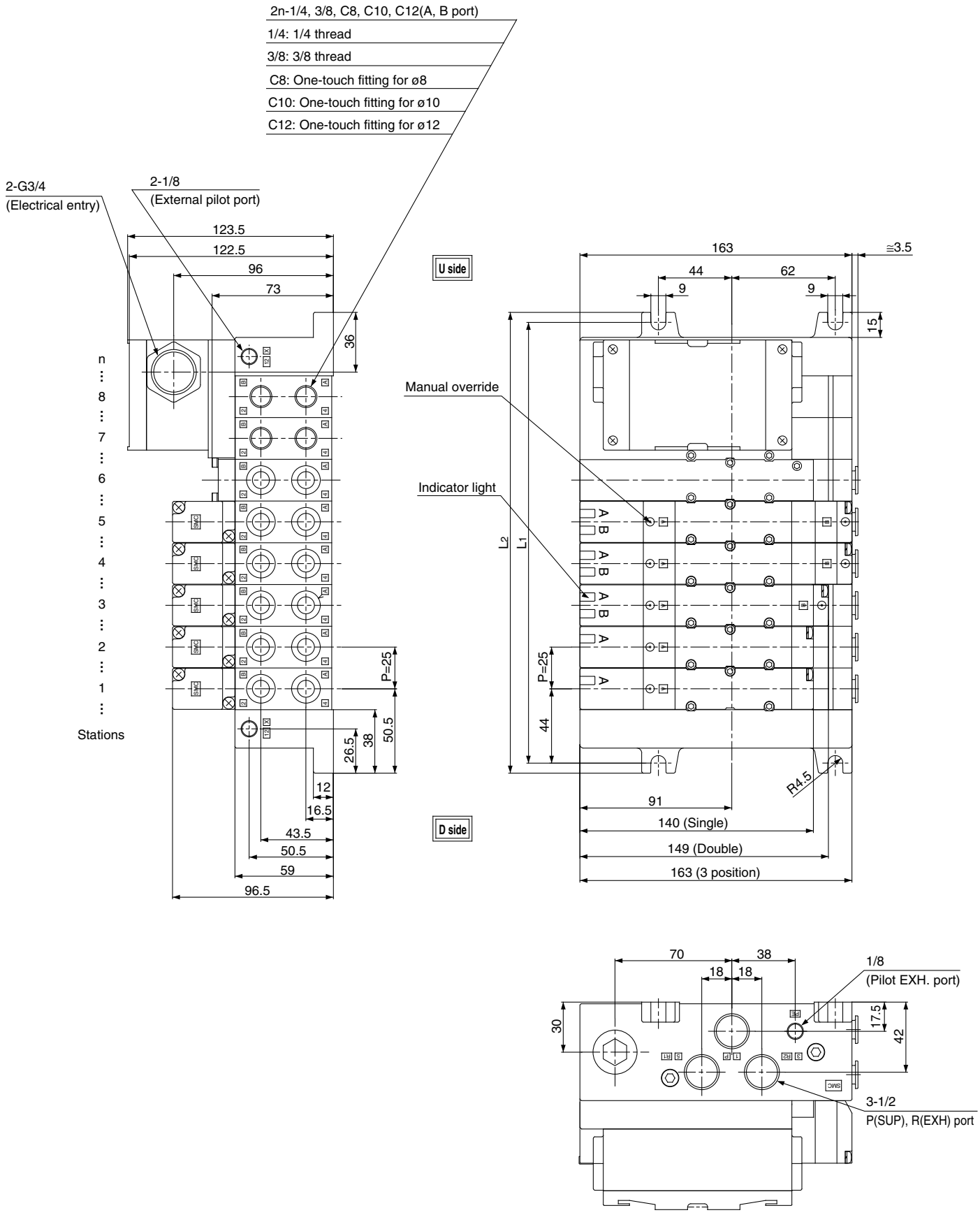


Dimensions Equation L1=25n+63 L2=25n+76

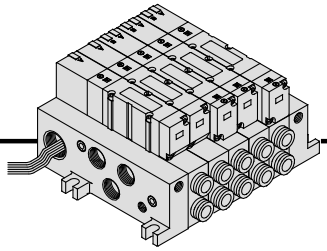
n: Station (Max. standard 18 stations)
* Including 2 stations for terminal box.

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

T Kit (Terminal box)



L Kit (Lead wire cable)



IP65 is possible.

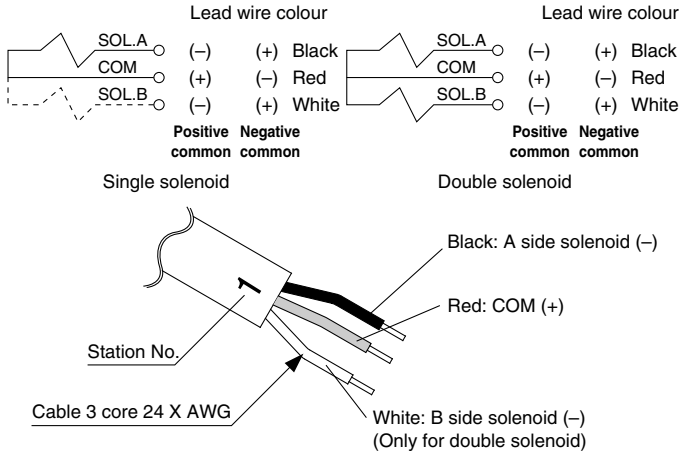
- **Possible to be IP65.**
- **Direct electrical entry. Models with two or more stations are available.**
- **Electrical entry is provided on D and U sides.**
- **Max. 16 stations.**

Manifold specification

Series	Porting location			Applicable stations
	Port location	Port size		
		P, R	A, B	
VQ4000	Side	1/2	C8, 10, 12 1/4, 3/8	Max. 16 stations
	Bottom		1/4	

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

VV5Q 4 1 – 08 C8 ☐ L U ☐ – ☐ – Q

Series

4	VQ4000

Manifold

1	Plug-in

Stations

02	2 stations
⋮	⋮
16	16 stations

Cylinder ports

C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12
02	1/4
03	3/8
B	Bottom piping 1/4
CM	Mixed size

Thread

—	Rc(PT)
N	NPT
T	NPTF
F	G (PF)

Connector locations

D	D side
U	U side

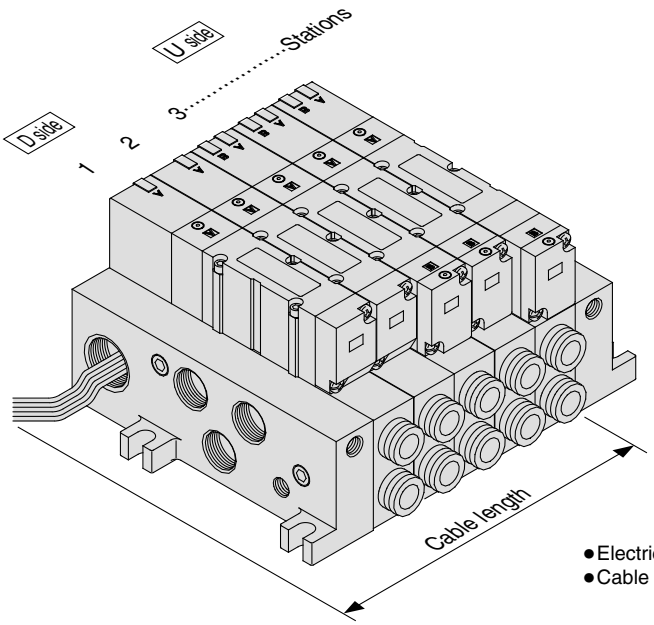
Cable (length)

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

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.

How to Order Valve

VQ 4 1 0 0 ☐ — 5 ☐ ☐ ☐ — Q

Series

4	VQ4000

Configuration

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

Seal

0	Metal
1	Rubber

Function (1, 2)

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

Note 1) Refer to p.1-854 for external pilot specification. Combination of external pilot and perfect interface is not possible.

Note 2) When specifying more than one option, indicate symbols alphabetically.

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
9	240V or less

Order Made Contact SMC for other voltages (9)

Protective class
class I (Mark: ⏚)
..... DIN terminal type

Light and surge voltage suppressor

–	With
E	Without light, with surge suppressor

Manual override

–	Non-locking push style
B	Locking slotted style

Enclosure

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

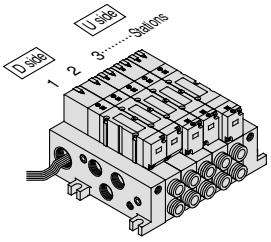
How to Order Manifold Ass'y

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

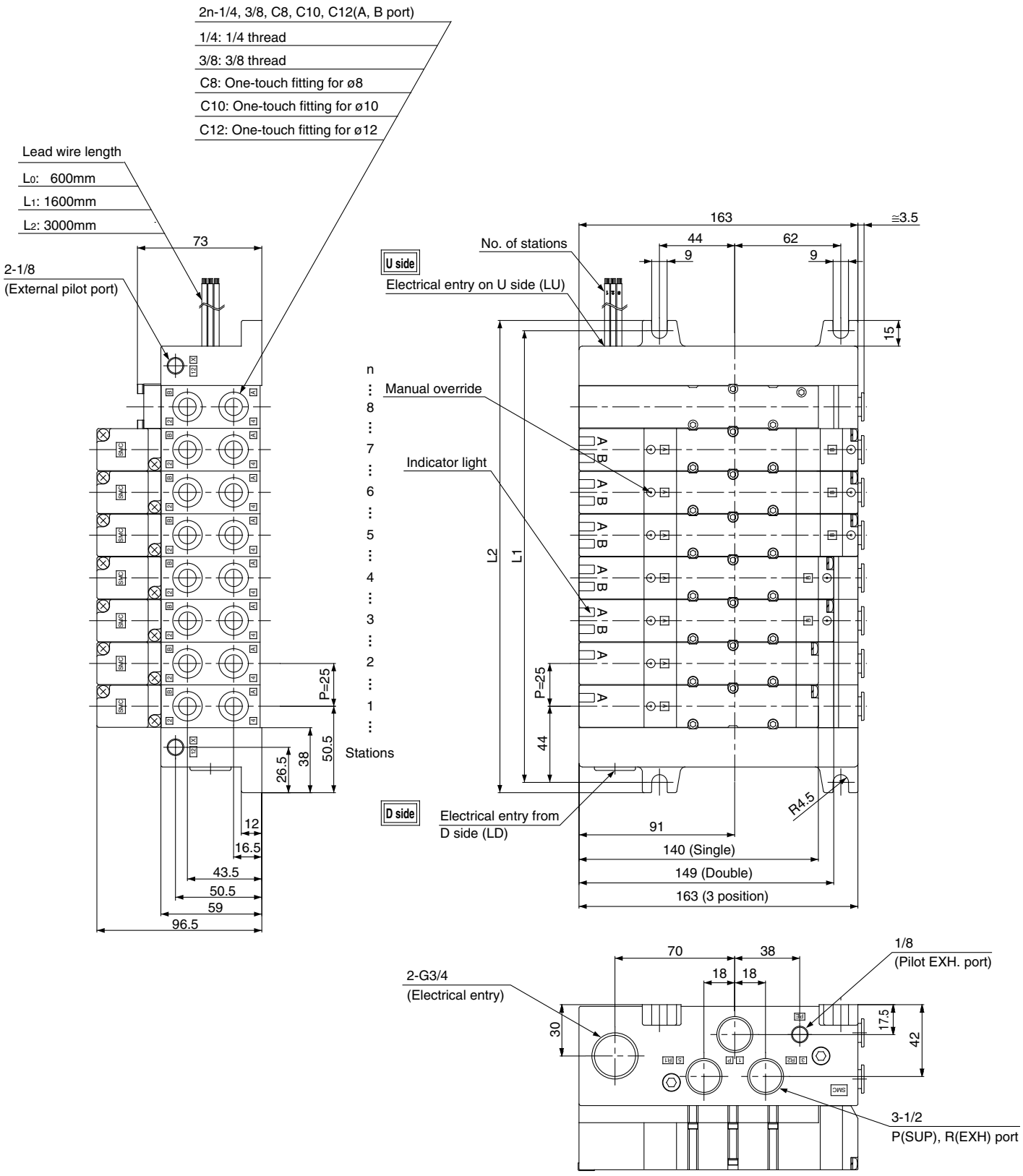
<Example>
With lead wire kit, cable (3m)

VV5Q41-05C8LDZ-Q···1 set – Manifold base part number
VQ4100-5-Q·····2 set – Valve part No. (Station 1 to 2)
VQ4200-5-Q·····2 set – Valve part No. (Station 3 to 4)
VQ4300-5-Q·····1 set – Valve part No. (Station 5)

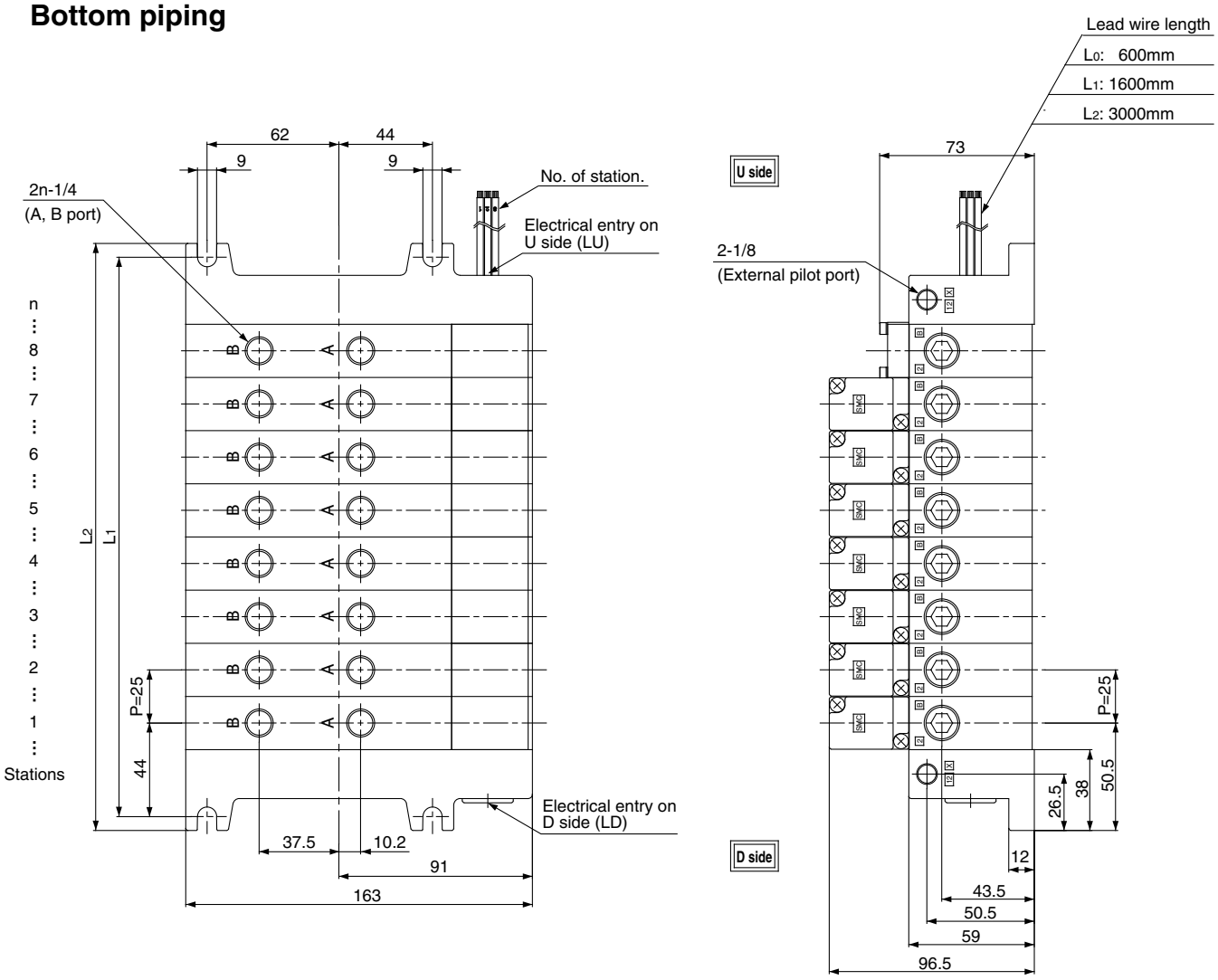
Write sequentially from the 1st station on the D side. When part numbers written collectively are complicated, specify by using the manifold specification form.



L Kit (Lead wire cable)



Bottom piping



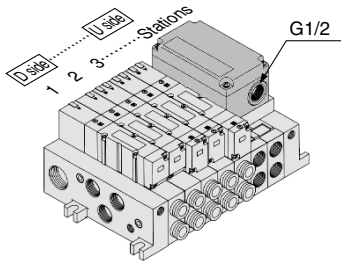
Dimensions Equation L_1=25n+63 L_2=25n+76 n: Station (Max. 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L_1	88	113	138	163	188	213	238	263	288	313	338	363	388	413	438	463
L_2	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 labour 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.**

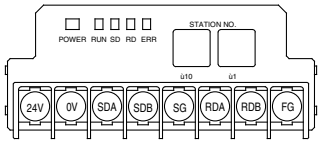


- **Stations are sequentially numbered from the D side.**
- **Regardless of the valve or option, the internal wiring is made double (connected to SOL.A and SOL.B) for respective stations of the manifold. The standard specification permits mixture of single and double wiring.**

Item	Specification
External power supply	24V DC +10%, −5%
Current consumption (Internal unit)	SA, SB, SBB, SD, SF, SH, SJ, SK, SQ, SR, SV: 01A 0.3A

Manifold specifications

Series	Porting specifications			Applicable Max. stations
	A, B port location	Port size		
		P, R	A, B	
VQ4000	Side	1/2	C8,10,12 1/4, 3/8	18 stations
	Bottom		1/4	

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

LED name	Details
POWER	Lighting when power is turned ON.
RUN	Lighting when data transmission is normal.
RD	Lighting during data reception.
SD	Lighting during data transmission
ERR.	Lighting when reception error occurs. Light turns off when corrected.

Note

- 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).
- 16 outputs, 2 stations occupied.

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

How to Order Manifold

VV5Q 4 1 − 08 C8 S A − □ − Q

Series

4	VQ4000

Manifold

1	Plug-in unit

Stations

03	3 stations
⋮	⋮
18	18 stations

Note) Add 2 stations for serial unit mounting.

Style

B	Without SI units
BB	SI for MELSECNET/MINI Data Link System (2 power supply systems)(Mitsubishi Electric)
C	SI for SYSBUS Wire System (OMRON)

Cylinder ports

C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12
02	1/4
03	3/8
B	Bottom piping 1/4
CM	Mixed size

Options

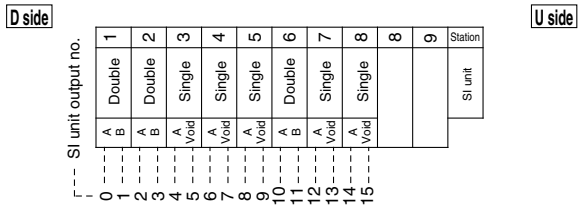
Symbol	Option
–	None
CD	Exhaust cleaner: For D side mounting
K (2)	Special wiring specification (Except double wiring)
SD	Built-in silencer (Direct exhaust from D side)
W	Enclosure: IP65

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.1-846 to p.1-849 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.

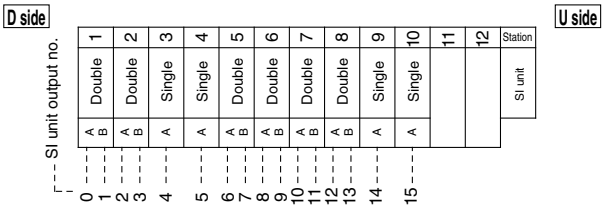
● SI unit output and coil numbering

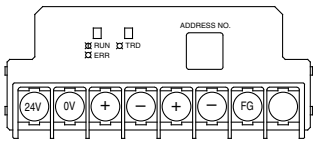
Mixed wiring is optional. Use the manifold specification form to specify.

<Wiring example 1> Double wiring (Standard)



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



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

How to Order Valve

VQ 4 1 0 0 ☐ — 5 ☐ ☐ — Q

Series

4	VQ4000

Configuration

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

Seal

0	Metal
1	Rubber

Function

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

Coil voltage

5	24V DC

Manual override

–	Non-locking push style
B	Locking slotted style

Enclosure

–	Dust-proof
W	Dust tight, Jet proof (IP65)

Note 1) Applicable to DC specification.
Note 2) Refer to p.1-854 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.

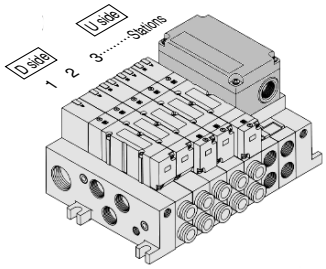
How to Order Manifold Ass'y

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

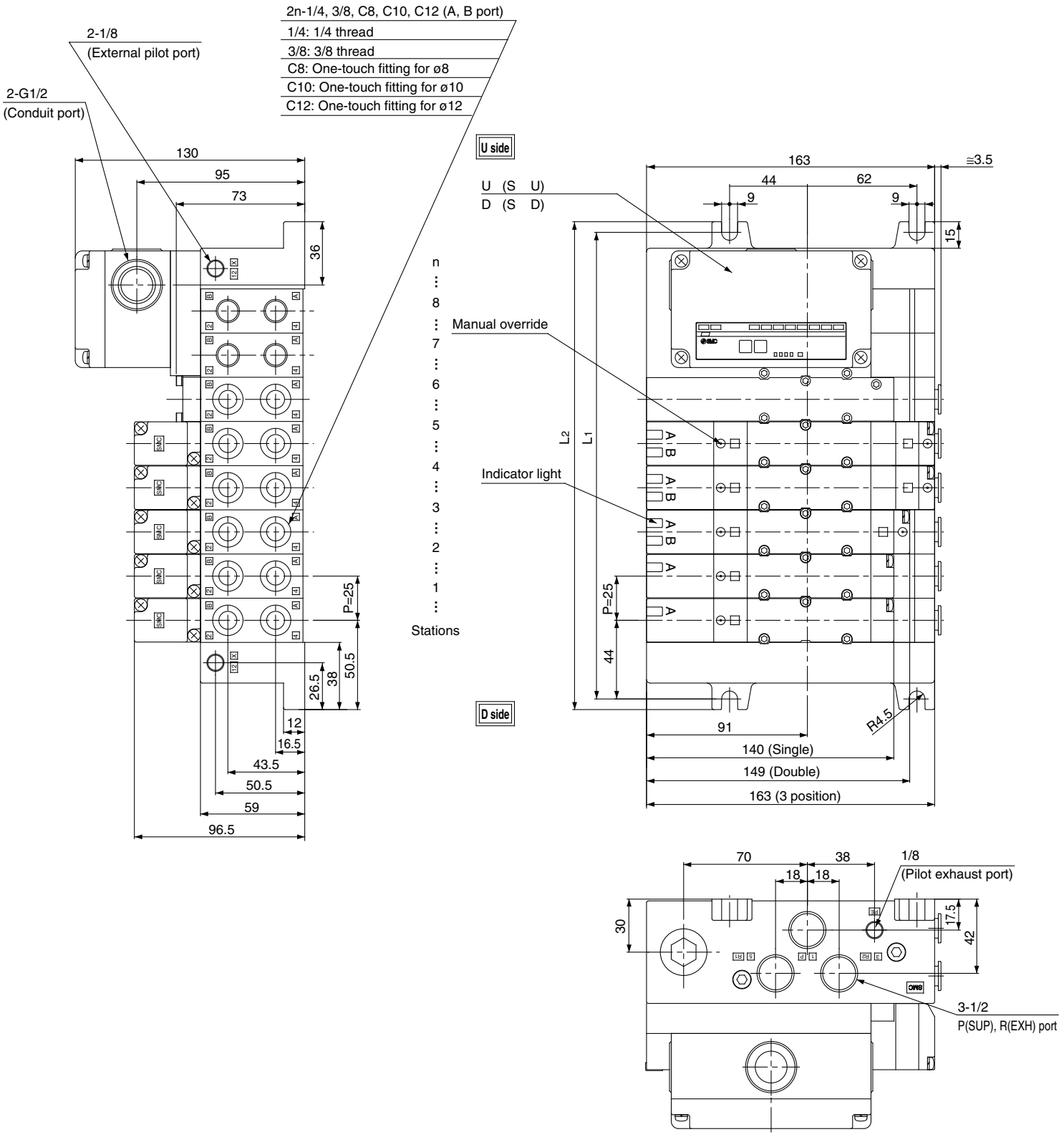
<Example>
Serial transmission unit

VV5Q41-07C8SA-Q···1 set – Manifold base part number
VQ4100-5-Q·····2 set – Valve part No. (Station 1 to 2)
VQ4200-5-Q·····2 set – Valve part No. (Station 3 to 4)
VQ4300-5-Q·····1 set – Valve part No. (Station 5)

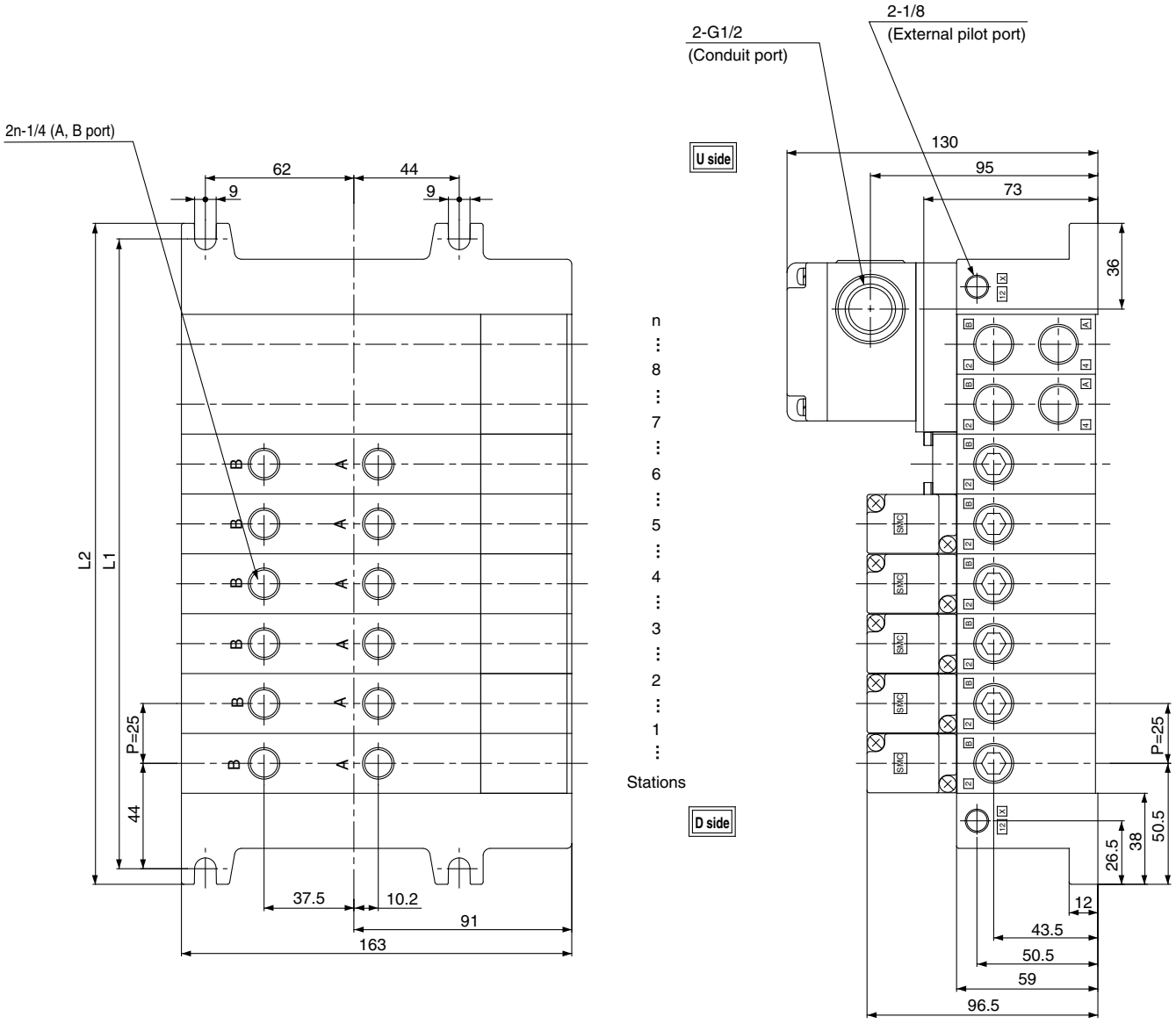
Write sequentially from the 1st station on the D side. When part numbers written collectively are complicated, specify by using a manifold specification form.



S Kit (Serial interface)



Bottom piping



Dimensions Equation L1=25n+63 L2=25n+76

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

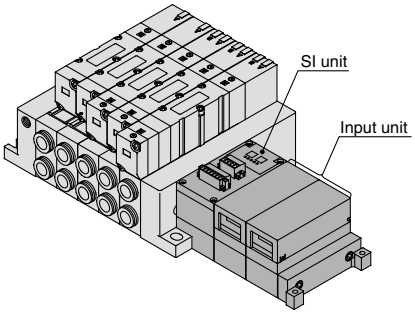
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L1	88	113	138	163	188	213	238	263	288	313	338	363	388	413	438	463	488	513
L2	101	126	151	176	201	226	251	276	301	326	351	376	401	426	451	476	501	526

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 labour.**
- **This SBM type can be applicable to Mitsubishi MELSECNET/MINI-S3 data link system.**
- **16 stations max.**

Manifold specification

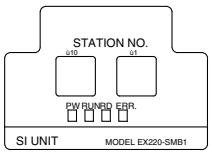
Series	Porting specification			Applicable max. stations
	Port location	Port size		
		P, R	A, B	
VQ4000	Side	1/2	C8, 10, 12 1/4, 3/8	16 stations
	Bottom		1/4	



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

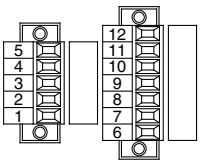
SBM type applicable to MELSECNET/MINI-S3 Data Link System (Mitsubishi Electric)

Name of indication



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.

Name of connector terminal



	Connector name	Details
1	24V	SI unit, Input unit power voltage connection terminal
2	0V	
3	24V	Power voltage connection terminal for solenoid valve
4	0V	
5	FG	Frame ground
6	RDA	Signal connection terminal from before terminal
7	RDB	
8	SG	
9	FG	Frame ground
10	SDA	Signal connection terminal from next terminal
11	SDB	
12	SG	

Note

- MELSECNET-MINI-S3 data link system
- Master unit: AJ71PT32-S3
  AJ71T32-S3
  A1SJ71PT32-S3

- 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.
- 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.

How to Order Manifold

VV5Q 4 1 – 08 C8 S BM □ – □ – Q

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	1/4
03	3/8
B	Bottom piping 1/4
CM	Mixed size

Number of input units

0	Without unit
1	1
2	2

Options

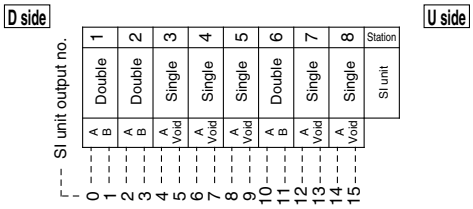
Symbol	Option
–	None
CD	Exhaust cleaner: For D side mountig
K(2)	Special wiring specification (Except double wiring)
SD	Built-in silencer (Direct exhaust from D side)

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.1-846 to p.1-849 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.

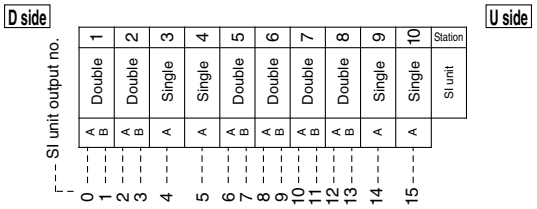
• SI unit output and coil numbering

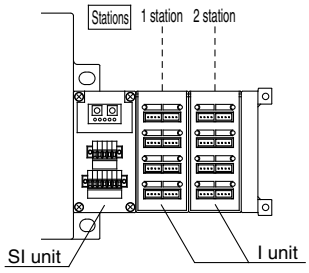
Mixed wiring is optional. Use the manifold specification form.

<Wiring example 1> Double wiring (Standard)



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





Input I unit (Input unit)

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

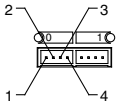
Stations	No. connector terminals	No. of inputs
1	0	0
	1	1
	2	2
	3	3
	4	4
	5	5
	6	6
	7	7
2	0	8
	1	9
	2	A
	3	B
	4	C
	5	D
	6	E
	7	F

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 responce time	OFF-ON	10ms or less
	ON-OFF	10ms or less
Input indication		LED indication (Red)
Common connection		16 points/1 common

I unit: How to connect input terminal

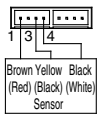
External input terminal

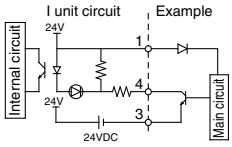


	Terminal	Details
1	24V	Power supply for external input equipment
2	—	None
3	0V	Power supply for external input equipment
4	Input signal	External input equipment signal

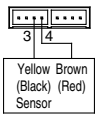
Wiring of external input wiring

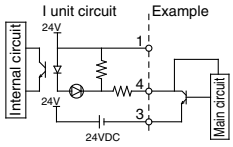
• 3 wire





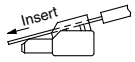
• 2 wire



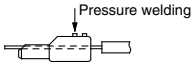


How to connect attached pressed plug

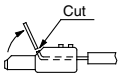
1.Pass electrical wire into insertion hole of plug wire.



2.Do pressure welding with pliers. When pressure welding, press the cover till it is locked.



3.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 ø0.4mm, ø0.5mm, ø0.65mm, Each cover≤ø2.0mm.**

How to Order Valve

VQ 4 1 0 0 — 5 — Q

Series

4	VQ4000

Configuration

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

Seal

0	Metal
1	Rubber

Function (1, 2)

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

Note 1) Refer to p.1-854 for external pilot specification.

Note 2) Combination of external pilot and perfect interface is not possible. When specifying more than one option, indicate symbols alphabetically.

Coil voltage

5	24V DC

Manual override

–	Non-locking push style
B	Locking slotted style

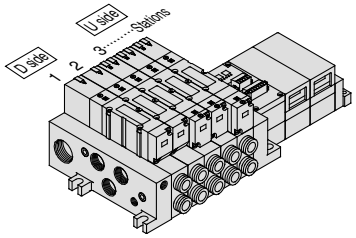
How to Order Manifold Ass'y

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

<Example>
Serial transmission unit

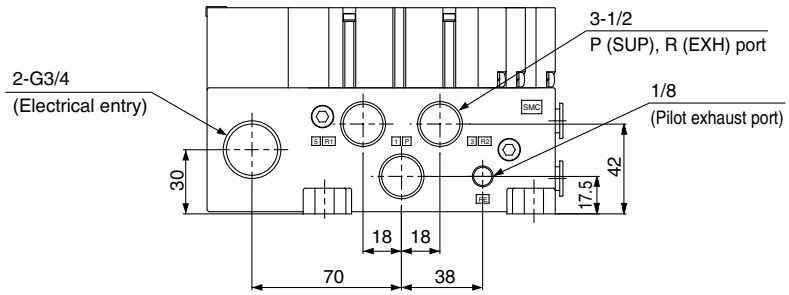
VV5Q41-05C8SBMZ-Q···1 set — Manifold base part number
VQ4100-5-Q·····2 set – Valve part No. (Station 1 to 2)
VQ4200-5-Q·····2 set – Valve part No. (Station 3 to 4)
VQ4300-5-Q·····1 set – Valve part No. (Station 5)

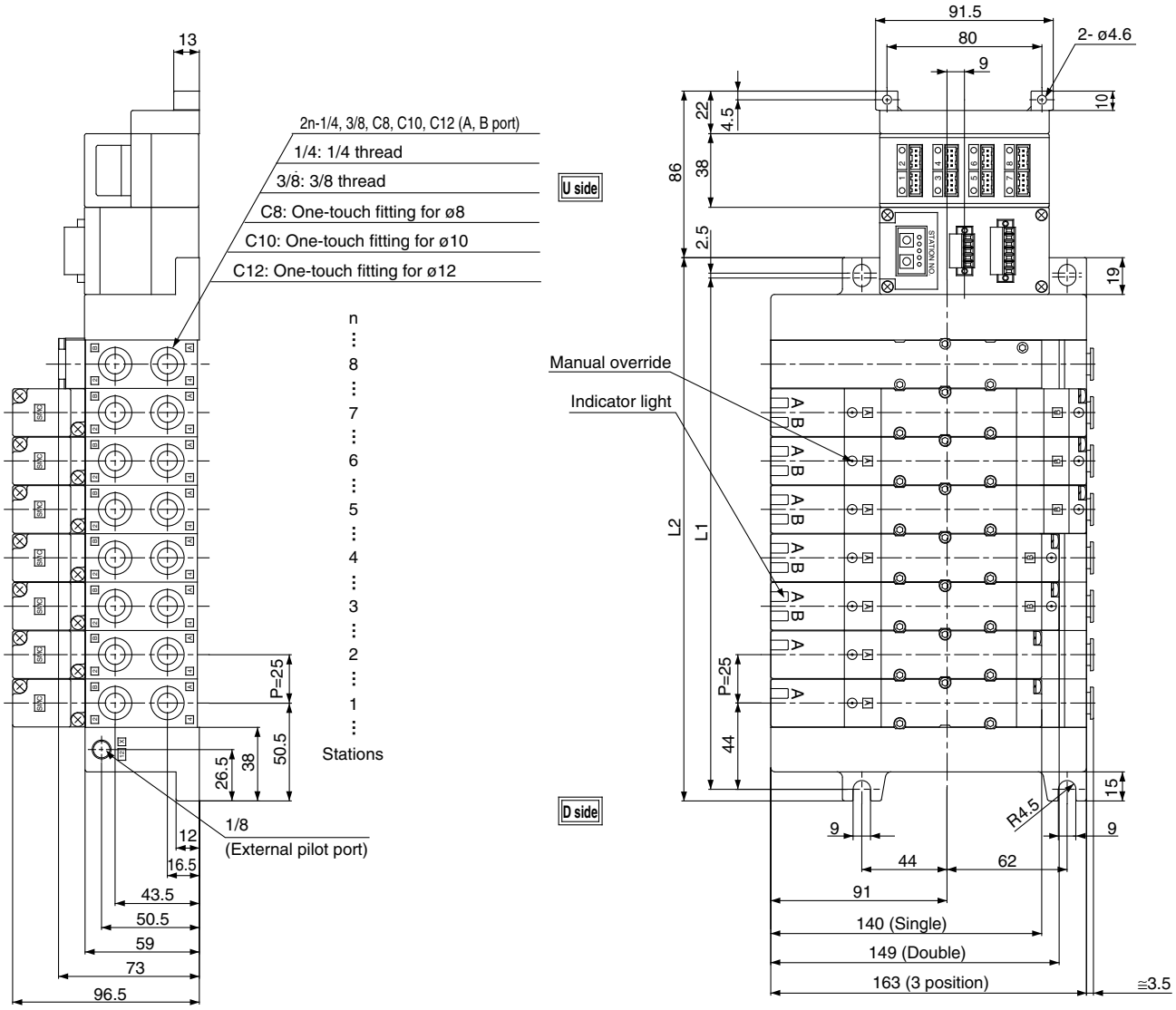
Write sequentially from the 1st station on the D side. When part numbers written collectively are complicated, specify by using a manifold specification form.



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

One input unit

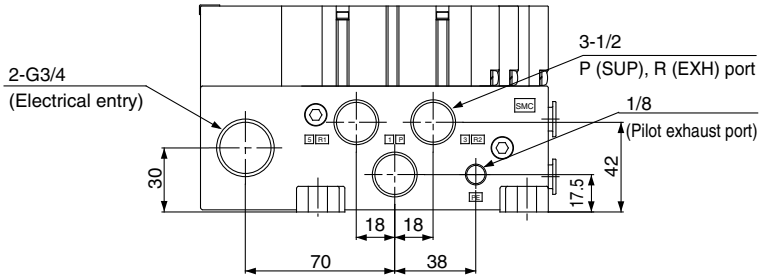


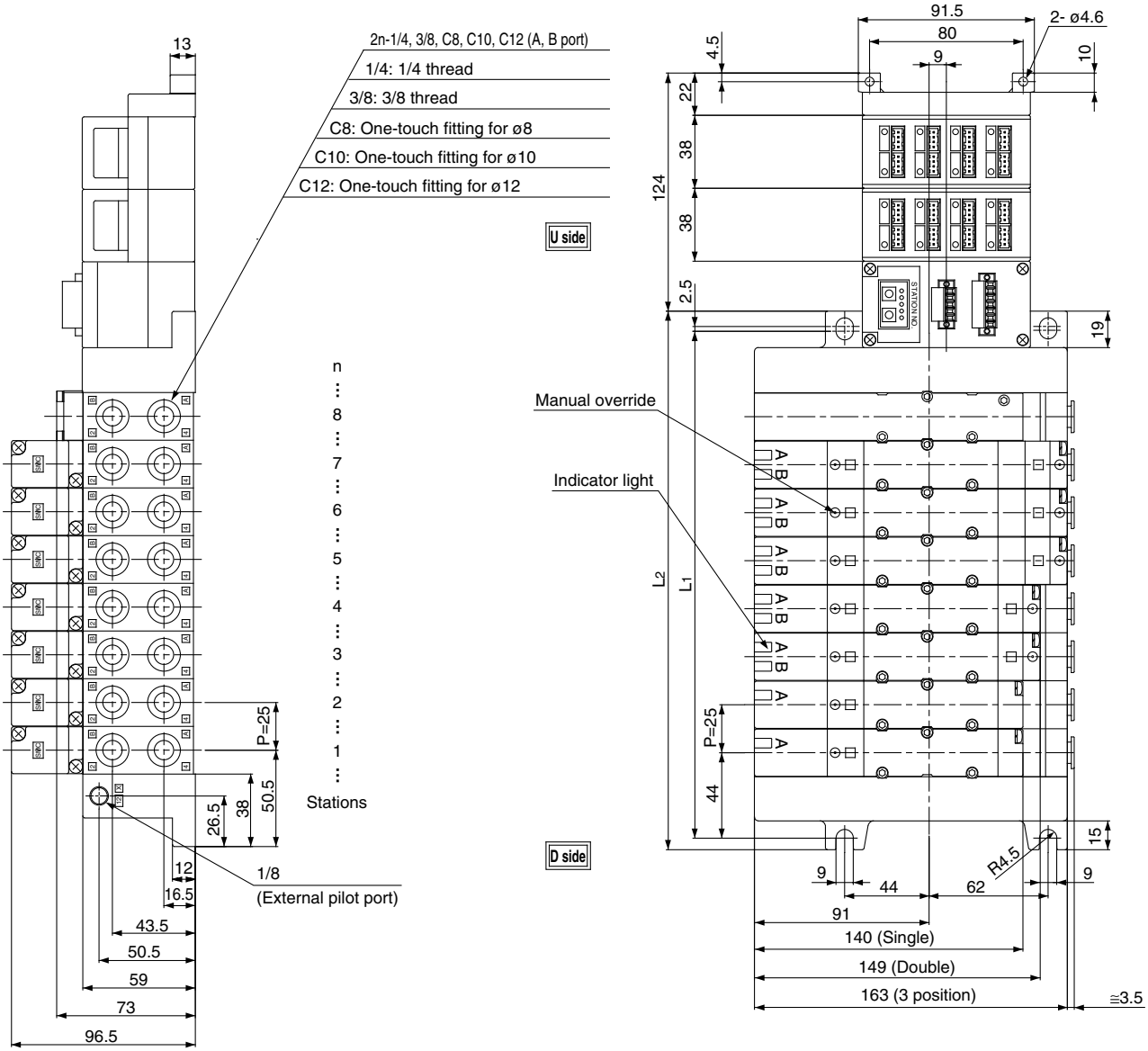


Dimensions Equation L_1=25n+63.5 L_2=25n+80.5 n: Station (Max. standard 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L_1	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_2	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

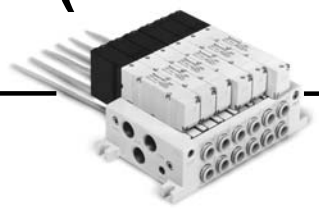




Dimensions Equation L_1=25n+63.5 L_2=25n+80.5 n: Station (Max. standard 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L_1	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_2	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
Base Mounted
Plug Lead Manifold: C Kit (Connector)



How to Order Manifold

VV5Q 4 5 — 08 C8 — C — W — Q

Series

4	VQ4000

Manifold

5	Plug lead unit

Stations

02	2 stations
⋮	⋮
16	16 stations

Port size

C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12
02	1/4
03	3/8
B	Bottom piping 1/4
CM	Mixed size
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"
N11	One-touch fitting for ø3/8"
NM	Mixed size

Thread

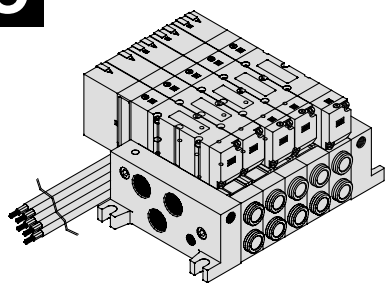
—	Rc (PT)
N	NPT
T	NPTF
F	G (PF)

Control unit

Refer to p.1-846 to p.1-849

Kit

C Kit (Connector)



C	Connector kit	Max. 16 stations

Options

Symbol	Option
—	None
CD (2)	Exhaust cleaner: D side mounting
CU (2)	Exhaust cleaner: 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	IP65

Note 1) When specifying more than one option, combine symbols in alphabetical order. Examlpe) -CDW
Note 2) Combination of [CU/D] and [SU/D] is not available.

Refer to p.1-808 (Grommet style) for wiring specification.

How to Order Valve

VQ 4 1 5 0 — 5 G — — — Q

Series

4	VQ4000

Configuration

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

Seal

0	Metal
1	Rubber

Function

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

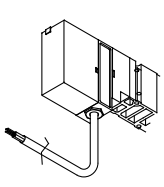
Note 1) Applicable to DC specification.
Note 2) Refer to p.1-854 for external pilot specification. Combination of external pilot and perfect interface is not possible.
Note 3) When specifying more than one option, indicate symbols alphabetically.

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
9	240V or less

Electrical entry

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

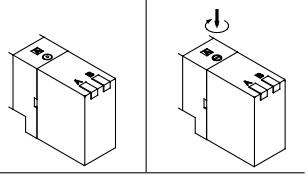


Light and surge voltage suppressor

–	With
E	Without light, with suge suppressor

Manual override

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



Enclosure

–	Dust proof
W	Dust tight, Jet proof (IP65)

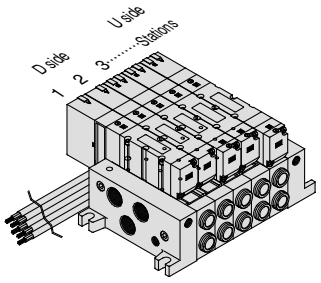
How to Order Manifold Ass'y

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

<Example>
Connector kit

VV5Q45-05C12C-Q···1 set Manifold base part number
VQ4150-5G-Q·····2 set– Valve part No. (Station 1 to 2)
VQ4250-5G-Q·····2 set– Valve part No. (Station 3 to 4)
VQ4350-5G-Q·····1 set– Valve part No. (Station 5)

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



Order Made Contact SMC for other voltages (9)

Protective class
class I (Mark: ⏚)
..... DIN terminal type

Manifold Specifications

Series	Base No.	Connection	Porting specifications			Applicable stations	Applicable valve	Weights 5 station (kg)
			Port location	Port size (1)				
				P, R	A, B			
VQ4000	VV5Q45-□□□	■ C kit-Grommet	Side	1/2 Optional (Built-in silencer, direct exhaust)	C8 (For ø8) C10 (For ø10) C12 (For ø12) 1/4 3/8	2 to 16 stations	VQ4□50 VQ4□51	2.0 · Except solenoid valve weight
			Bottom		1/4			

Note 1) Refer to p.1-854 for One-touch fittings for inch sizes and other thread standards.

Number of Manifold Stations/Effective Area (mm² (N*l*/min)) at Individual Operation

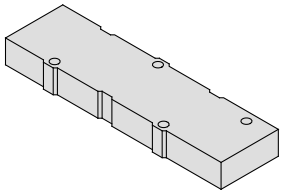
Model	Passage/Stations	1 station	5 stations	10 stations	15 stations
2 position metal seal **VQ4150/VQ4250**	P→A or B	28.8 (1570)	28.8 (1570)	28.8 (1570)	28.8 (1570)
	A→R1, B→R2	32.4 (1766)	32.4 (1766)	32.4 (1766)	32.4 (1766)
2 position rubber seal **VQ4151/4251**	P→A or B	36.0 (1963)	36.0 (1963)	36.0 (1963)	36.0 (1963)
	A→R1, B→R2	37.8 (2061)	37.8 (2061)	37.8 (2061)	37.8 (2061)

Note) Port size: 3/8

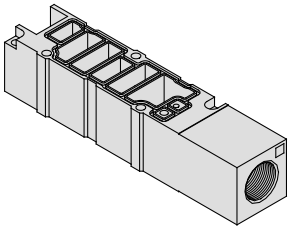
Manifold Options

- Refer to p.1-840 to p.1-845 for detail dimensions of each option.
- Refer to p.1-853 for spare parts no.
- Refer to p.1-846 to p.1-849 for control unit.

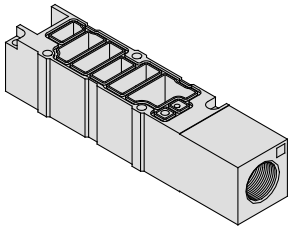
Blank plate assembly
VVQ4000–10A–5



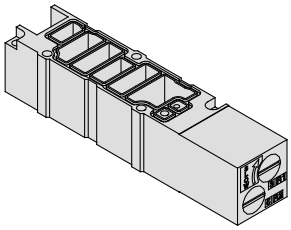
Individual SUP spacer
VVQ4000–P–5–03



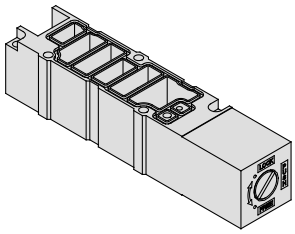
Individual EXH spacer
VVQ4000–R–5–03



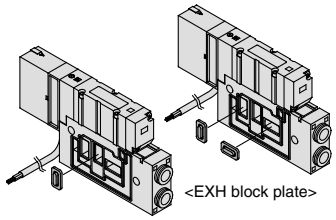
Interface speed control
VVQ4000–20A–5



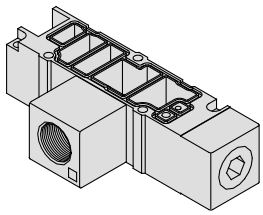
SUP stop valve spacer
VVQ4000–37A–5



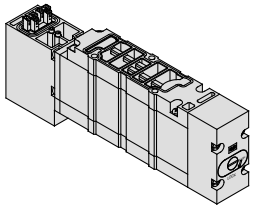
SUP/EXH block plate
VVQ4000–16A



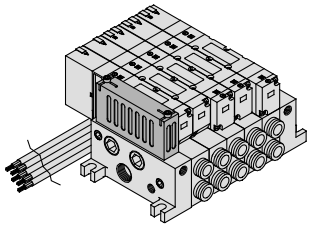
Release valve spacer
VVQ4000–24A–5D (1)



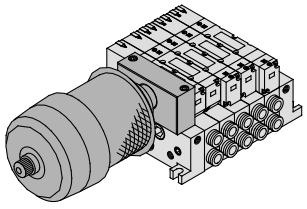
Double check spacer with residual pressure exhaust
VVQ4000–25A–5 (1)



Built-in silencer direct exhaust [–SD, –SU] (1)

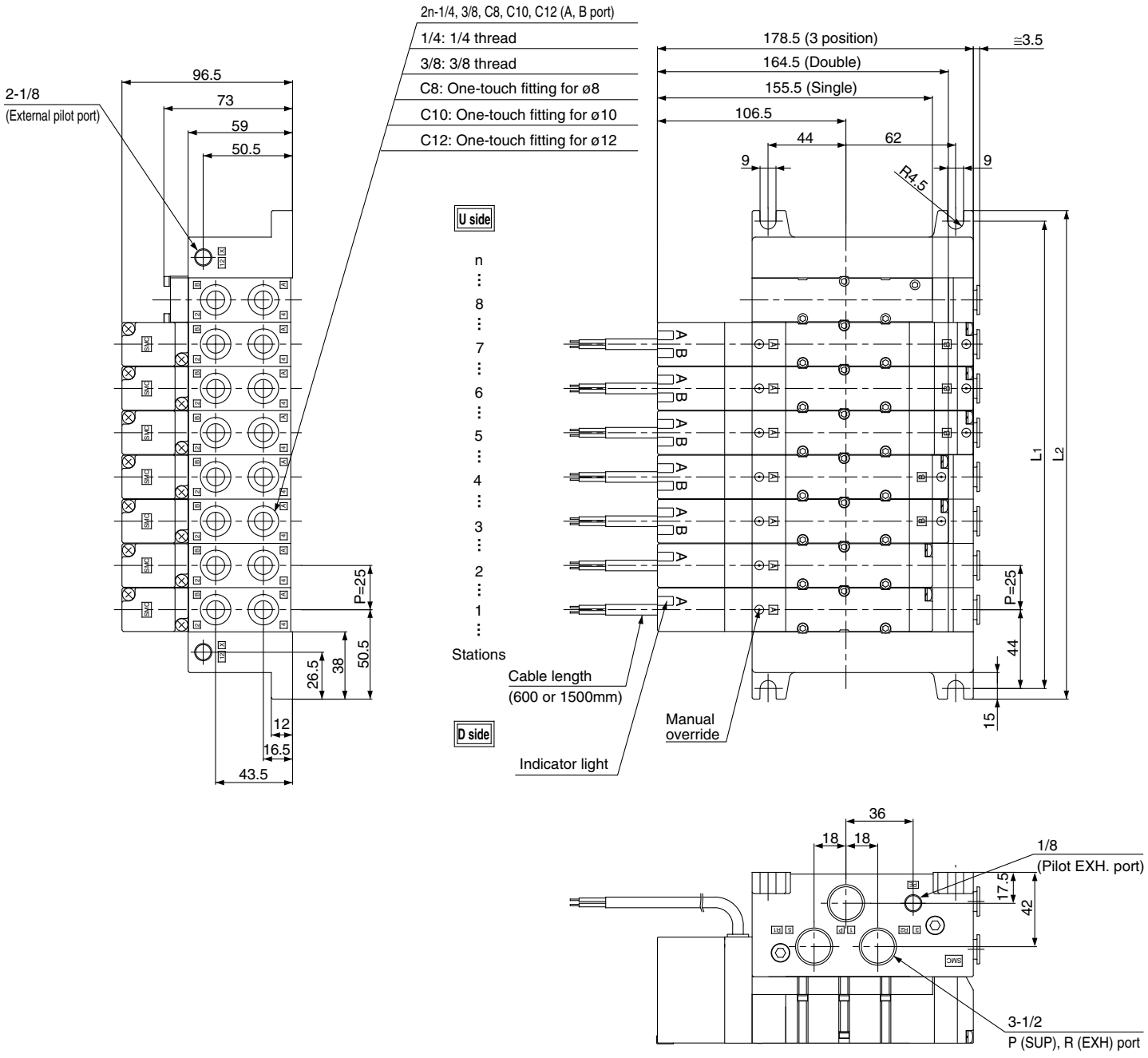


For exhaust cleaner mounting [–CD, –CU] (1)

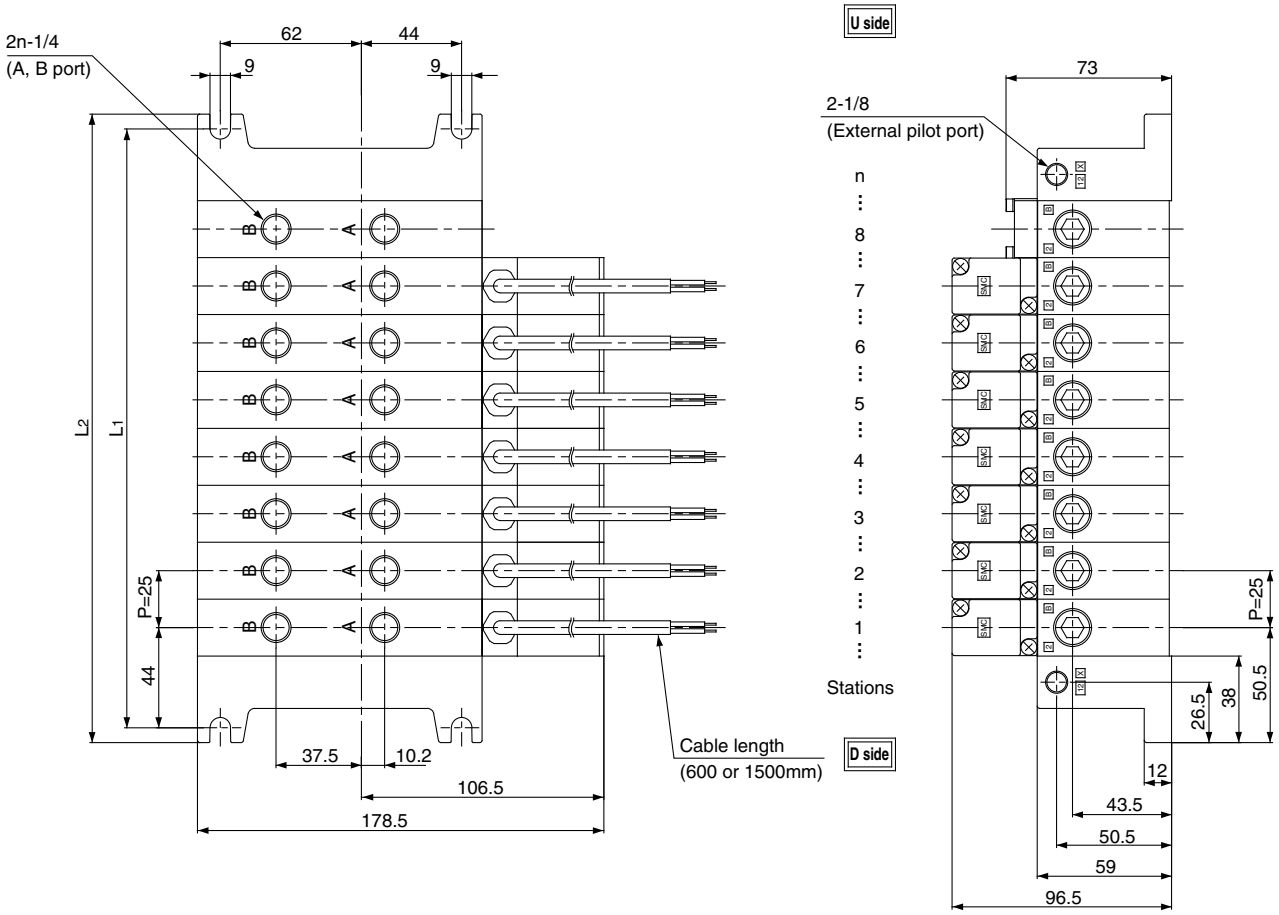


Note 1) Release valve spacer, built-in silencer (direct exhaust), exhaust cleaner mounting style and perfect double check spacer for residual pressure exhaust cannot be combined with external pilot.

C Kit (Connector)



Bottom piping



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

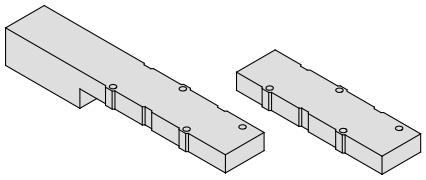
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	88	113	138	163	188	213	238	263	288	313	338	363	388	413	438	463
L2	101	126	151	176	201	226	251	276	301	326	351	376	401	426	451	476

Manifold Options

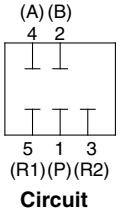
Blank plate assembly

VVQ4000–10A–1 (Plug-in)
VVQ4000–10A–5 (Plug lead)

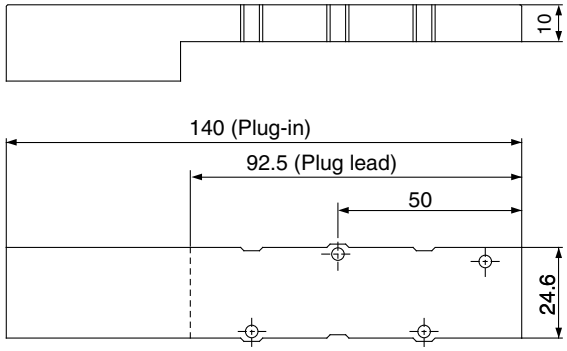
This is mounted on the manifold block when removing the valve for maintenance or reserving space for future use.



Plug-in Plug lead



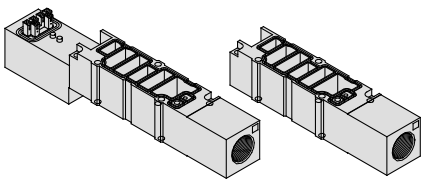
Circuit



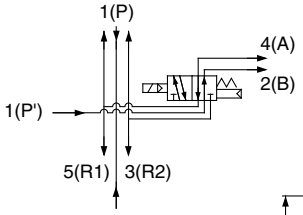
Individual SUP spacer

VVQ4000–P–1–03 (Plug-in)
VVQ4000–P–5–03 (Plug lead)

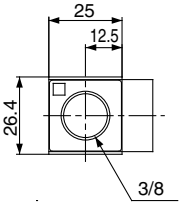
Individual SUP spacer is mounted on the manifold block to provide individual supply port for each valve.

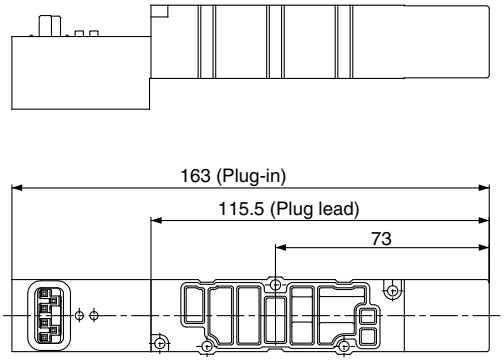


Plug-in Plug lead



Circuit

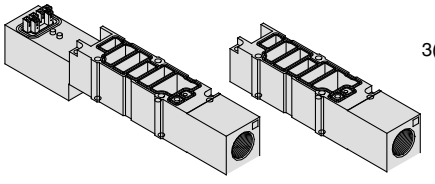




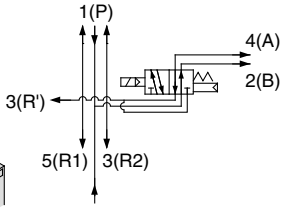
Individual EXH spacer

VVQ4000–R–1–03 (Plug-in)
VVQ4000–R–5–03 (Plug lead)

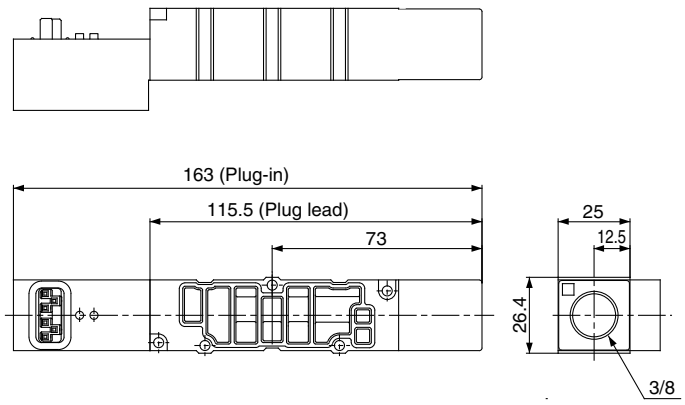
Individual EXH spacer is mounted on the manifold block to provide individual exhaust port for each valve. (Common EXH)



Plug-in Plug lead



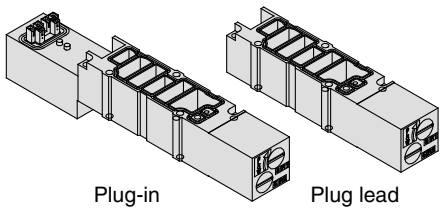
Circuit



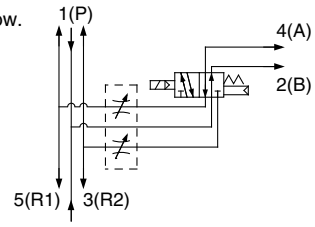
Interface speed control

VVQ4000–20A–1 (Plug-in)
VVQ4000–20A–5 (Plug lead)

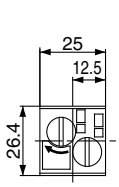
Actuator speed is controlled by throttling exhaust air flow.

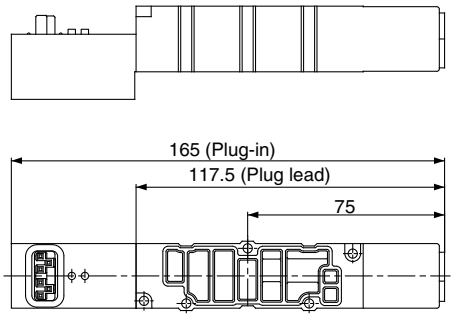


Plug-in Plug lead



Circuit

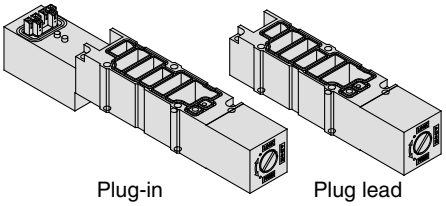




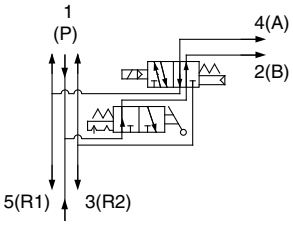
SUP stop valve spacer

VVQ4000–37A–1 (Plug-in)
VVQ4000–37A–5 (Plug lead)

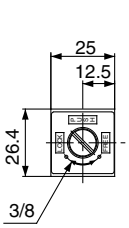
Supply air to each valve is blocked individually by SUP stop valve interface.

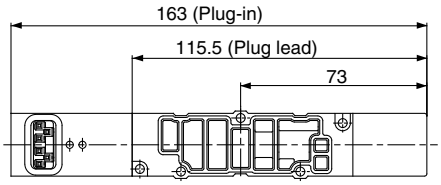


Plug-in Plug lead



Circuit

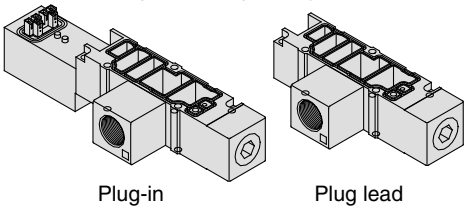




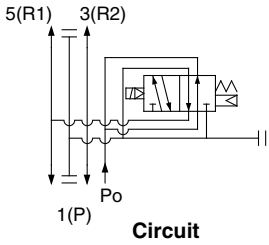
Release valve spacer: For D side mounting

VVQ4000–24A–1D (Plug-in)
VVQ4000–24A–5D (Plug lead)

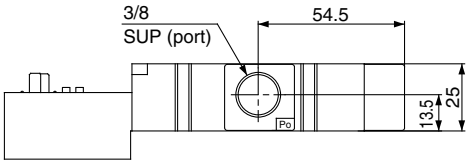
Combination of VQ41□□ (Single) and release valve spacer can be used as air release valve.
Note 1) Mounting on 2 position double and 3 position valve is not possible.
Note 2) Can be mounted on L kit only. For other kits, order E type control unit. (Refer to p.1-846 to p.1-849)

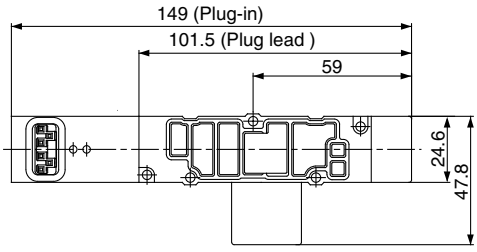


Plug-in Plug lead



Circuit

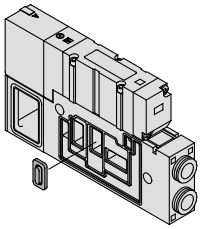




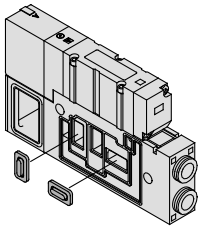
SUP/EXH block station

VVQ4000–16A

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



<SUP block plate>



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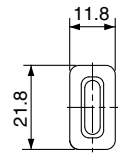
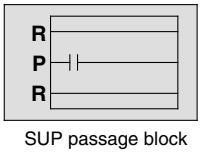
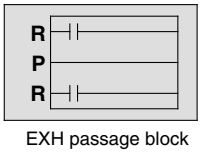
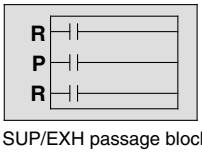




SUP passage block



EXH passage block



SUP/EXH passage block

Manifold Options

Interface regulator for VQ4000 series 5 port solenoid valve: Series ARBQ

Piping work is unnecessary

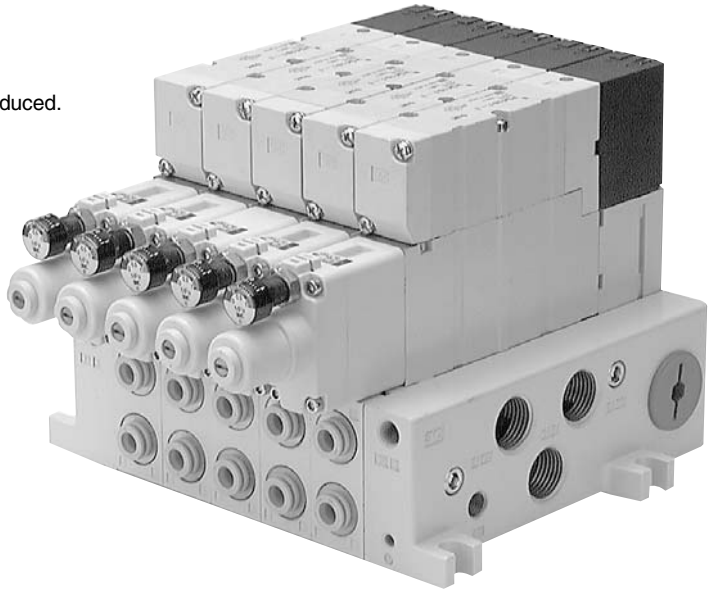
Ideal pressures can be supplied by simply installing interface regulators on a manifold base.

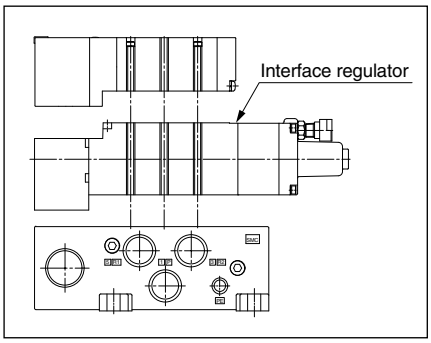
Space savings

The space required to mount regulators in circuits can be reduced.

Two pressure control simplified

Two pressure actuator control can be easily performed.

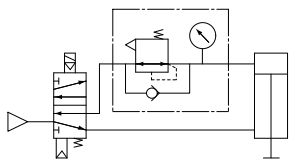
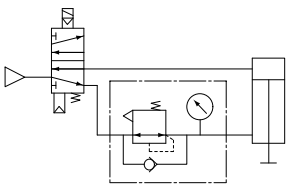
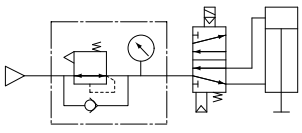




How to Order

Solenoid valve model	Applicable interface regulator model	Reduced pressure port
VQ4□0□ (plug-in type)	ARBQ4000-00-A-1	A
	ARBQ4000-00-B-1	B
	ARBQ4000-00-P-1	P
VQ4□5□ (plug lead type)	ARBQ4000-00-A-5	A
	ARBQ4000-00-B-5	B
	ARBQ4000-00-P-5	P

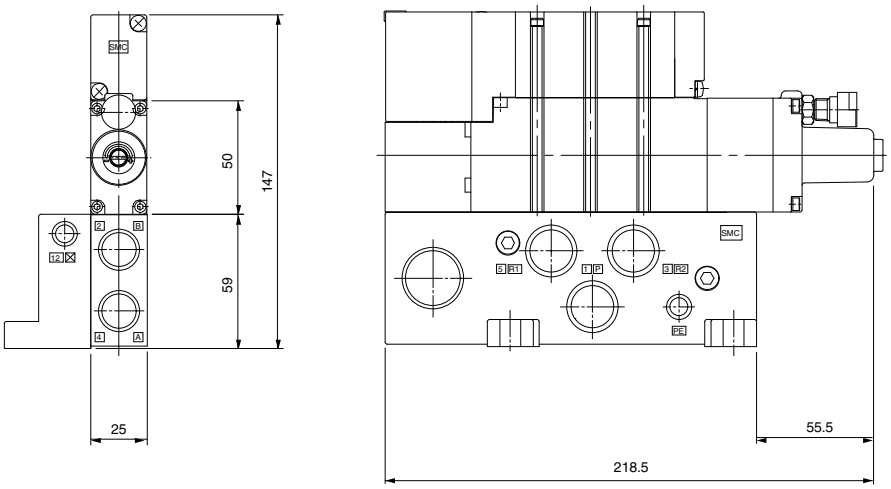
Circuit Diagrams

Reduced pressure port: A	Reduced pressure port: B	Reduced pressure port: P
		

Specifications

Interface regulator model		ARBQ4000						
Reduced pressure port		A		B		P		
Applicable solenoid valve		Plug-in	Plug lead	Plug-in	Plug lead	Plug-in	Plug lead	
Maximum operating pressure		1.0MPa						
Regulating pressure range		0.05 to 0.85MPa						
Fluid		Air						
Proof pressure		1.5MPa						
Ambient and fluid temperature		–5 to 60°C (with no freezing)						
Pressure gauge port size		M5						
Weight (kg)		0.33	0.30	0.33	0.30	0.33	0.30	
Supply side effective area (mm^2) when P_1 = 0.7MPa, P_2 = 0.5MPa	P→A	15		31		14		
	P→B	35		16		15		
Exhaust side effective area (mm^2) when P_2 = 0.5MPa	A→EA	18		40		40		
	B→EB	37		19		37		

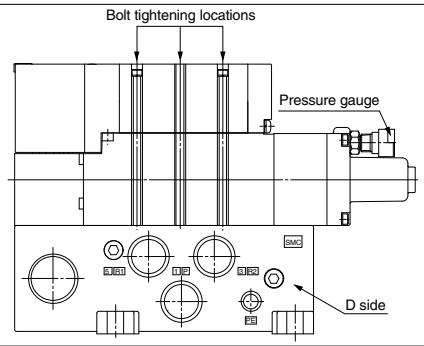
Dimensions



Mounting

⚠ Caution

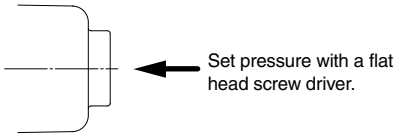
1. **With the P port on the manifold's D side in front, mount the interface regulator so that the position of its pressure gauge is as shown in the figure to the right.**
2. **When mounting an interface regulator, tighten the bolts with a torque of 0.9N·m.**

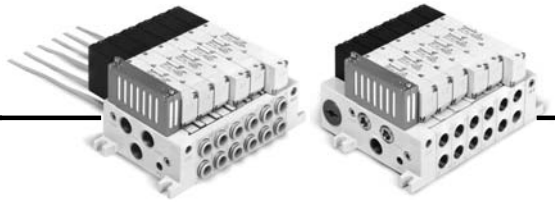


Pressure Setting

⚠ Caution

1. **Set the pressure of an interface regulator using a flat head screw driver.**
2. **The pressure adjustment is increased by turning to the right and decreased by turning to the left. Perform pressure setting by increasing from low pressure to the desired setting.**
3. **Perform the setting after carefully confirming the upstream pressure.**
4. **Set the downstream pressure to no more than 85% of the upstream pressure.**





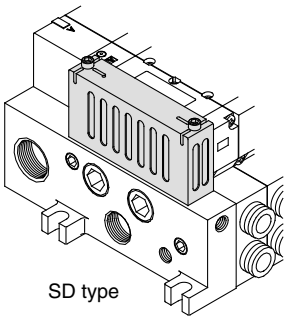
Manifold Options

Built-in silencer, Direct exhaust

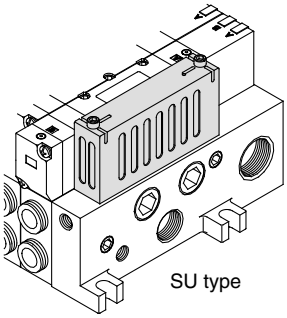
VV5Q4 1/5 –□□□–SB (Both sides exhaust)
VV5Q4 1/5 –□□□–SD (D side exhaust)
VV5Q4 1/5 –□□□–SU (U side exhaust)

Exhaust port is located on top side of end plate of manifold. Silencer is built-in, it is effective for fine noise reduction. (Noise reduction 35dB or more).

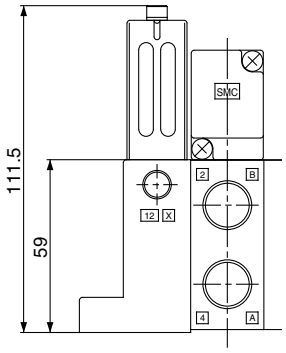
Note) If a lot of drainage is generated at air supply source, both of exhaust air and drainage are exhausted.

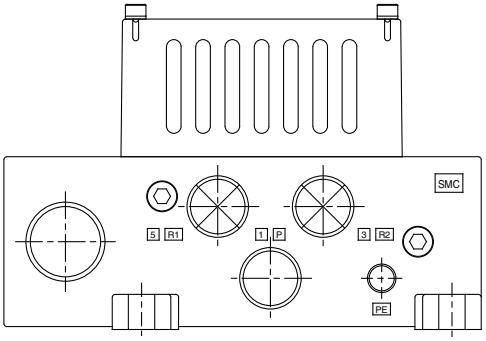


SD type

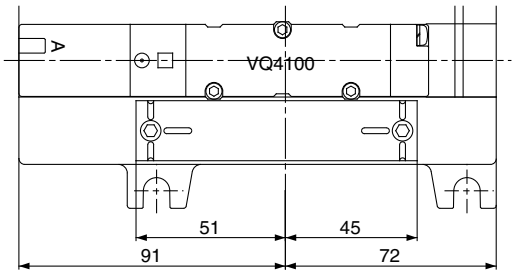


SU type





Note) Figure shows VV5Q41-□□□-SD.



Double check spacer with residual pressure exhaust

VVQ4000–25A–1 (Plug–in)
VVQ4000–25A–5 (Plug lead)

Keeping the cylinder in the middle position for a long time
Using the double check spacer with a built-in double check valve will enable the cylinder to stop and maintain its position in the middle for a long time, regardless of air leakage between spools. Combination with a two-position single/double solenoid valve will prevent the dropping at the cylinder stroke end.

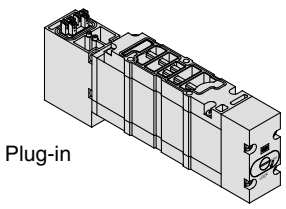
Specifications

Double check spacer part no.	VVQ4000-25A-1			
	Stop in the middle	Drop prevention		
Applicable solenoid valve	VQ44□□	VQ4 1/2 □□		
Leakage * Ncm³/min	Solenoid on one side energized	P	EA	230 or less
			EB	
	Solenoids on both sides de-energized	P	EA	230 or less
			EB	
		A	EA	0
		B	EB	

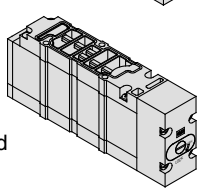
* Supply pressure: 0.5MPa

⚠ Caution

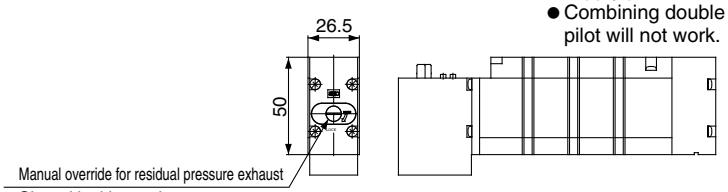
- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping in the middle for a long time. Check for the leakage using neutral household detergent, such as dish washing soap. Also, check the cylinder sealing and piston seal for leakage.
- Since One-touch fittings allow slight air leakage, screw piping is recommended when stopping the cylinder in the middle for a long time.
- If exhaust side of double check spacer is narrowed down, this causes a decrease in intermediate stop accuracy and may malfunction.
- Combining perfect interface with 3 position valves "VQ4 3/5□□" will not work.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
- Combining double check spacer with external pilot will not work.

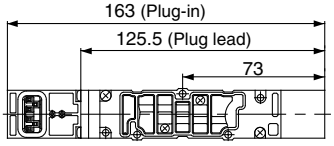


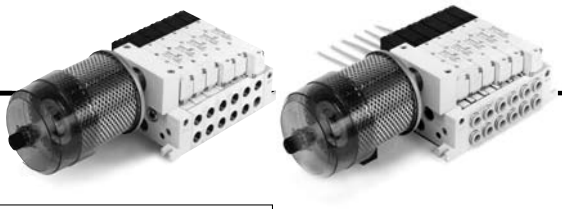
Plug-in



Plug lead







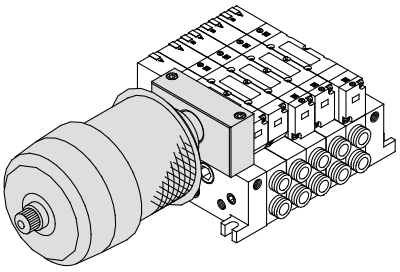
Manifold mounted exhaust cleaner

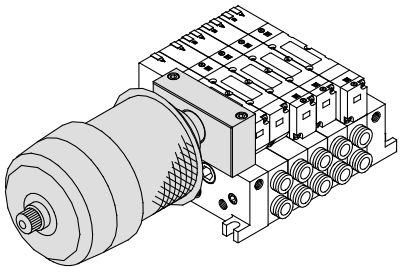
VV5Q4 $\frac{1}{5}$–□□□–CD (D side mounting)
VV5Q4 $\frac{1}{5}$–□□□–CU (U side mounting)

Adapter plate for exhaust cleaner mounting is attached on end plate of manifold. Drainage and mist are collected (99.9% or more), it has high reduction effect. (Noise reduction: 35dB or more).

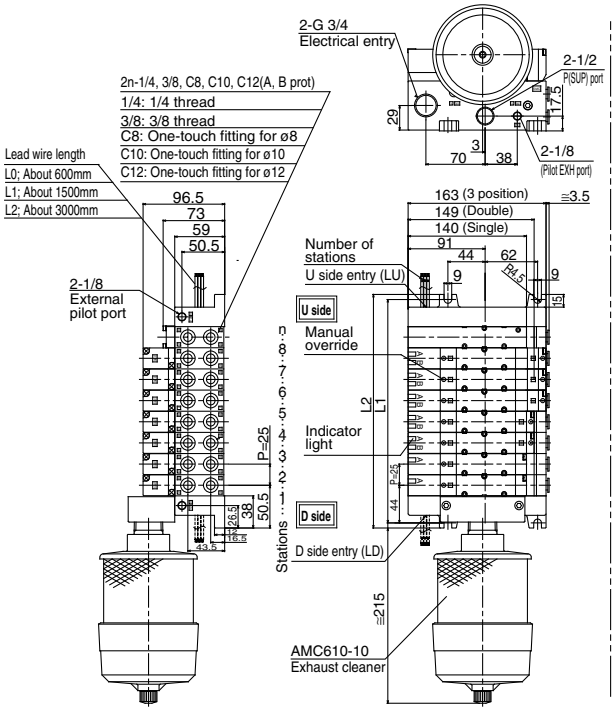
Applicable exhaust cleaner
AMC610–10 (Port size Rc1)

Note 1) Exhaust cleaner AMC610-10 is not attached. (Order it separately.)
Note 2) Mount the exhaust cleaner underneath.



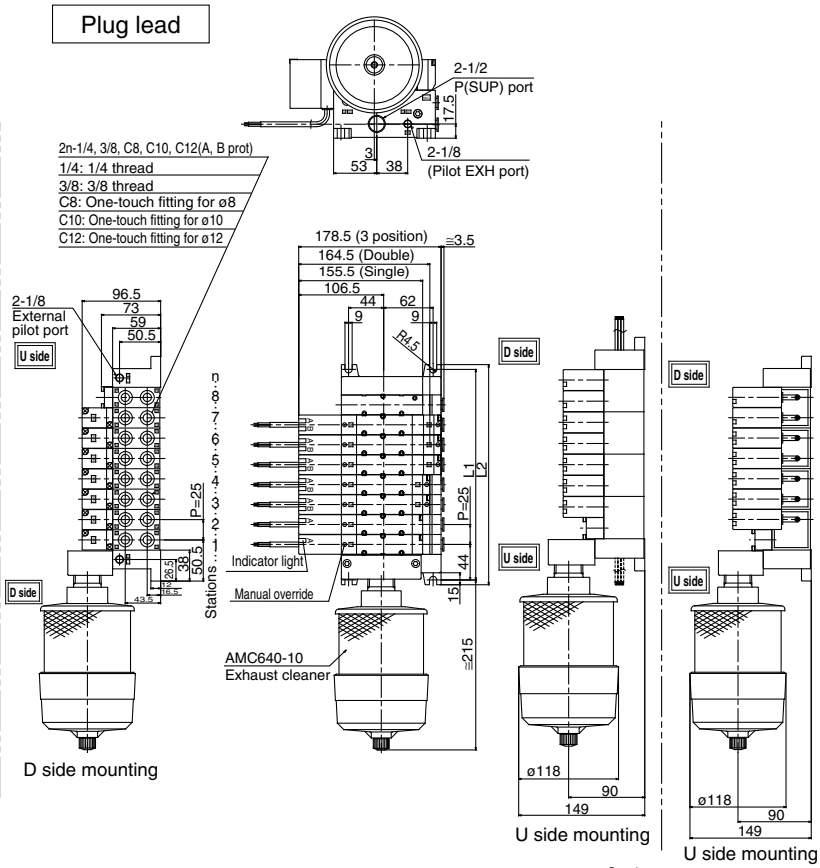


Plug-in



D side mounting

Plug lead



D side mounting

U side mounting

U side mounting

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

n: Station

L \ n	1	2	3	4	5	6	7	8
L1	88	113	138	163	188	213	238	263
L2	101	126	151	176	201	226	251	276

L \ n	9	10	11	12	13	14	15	16
L1	288	313	338	363	388	413	463	463
L2	301	326	351	376	401	426	476	476

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

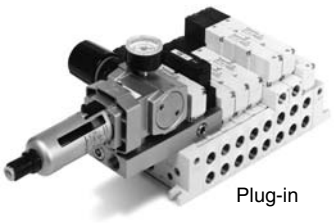
n: Station

L \ n	1	2	3	4	5	6	7	8
L1	88	113	138	163	188	213	238	263
L2	101	126	151	176	201	226	251	276

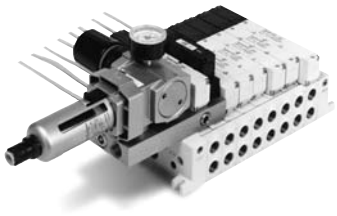
L \ n	9	10	11	12	13	14	15	16
L1	288	313	338	363	388	413	463	463
L2	301	326	351	376	401	426	476	476

Manifold with Control Unit

- **Mounting air filter, regulator, pressure switch for air release valve on manifold as unit is possible and permits piping labour 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 (1)	Applicable valve
		Port location	Port size			
			P, R	A, B		
VV5Q41 -□□□	F kit - D-sub connector T kit - Terminal block box L kit - Lead wire	Side	1/2 Option Built-in silencer (Direct eject)	C8 (For ø8) C10 (For ø10) C12 (For ø12) 1/4,Rc3/8	F, T kit 14 stations (13 stations)	VQ4□00 VQ4□01
VV5Q45 -□□□	C kit - Connector	Bottom		1/4	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 (1)	
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 (2) release valve	<Plug-in> **VVQ4000-24A-1D**	
	<Plug lead> **VVQ4000-24A-5D**	
Pressure switch	IS1000P-2-1	
Blank plate (3)	Regulator with filter	MP2-3
	Pressure switch	MP3-2
	Release valve: Plug-in	VVQ4000-24A-10
	Release valve: Plug lead	VVQ4000-24A-15
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 □ □ □ – Q

Series

4	VQ4000

Manifold

1	Plug-in
5	Plug lead

Stations

02	2 stations
⋮	⋮

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

Thread

–	Rc (PT)
N	NPT
T	NPTF
F	G (PF)

Cylinder ports

C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12
02	1/4
03	3/8
B	Bottom piping 1/4
CM	Mixed size
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"
N11	One-touch fitting for ø3/8"
NM	Mixed size

Kit (5)

Coil rated voltage of air release valve

–	Without air release valve (only F.G type)
1	100V AC 50/60Hz
5	24V DC
9	240V or less

Order Made Contact SMC for other voltages (9)

Protective class
class I (Mark:⏚)..... DIN terminal type

Options

Symbol	Option
–	None
K (2)	Special wiring specification (Except double wiring)
N	Name plate (Applicable to T kit)
SU (3)	Built-in silencer (Direct exhaust from U side)
W (4)	IP65

Note 1) When specifying more than one option, indicate symbols alphabetically. Ex.) -KN
Note 2) Specify wiring on manifold specification form.
Note 3) Mounting on S and T kits is not possible.
Note 4) Combination with pressure switch (AP and MP type) is not possible.
Note 5) The release valve and the pressure switch on S kit are connected to another power supply. Cable length is 0.6m.

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>

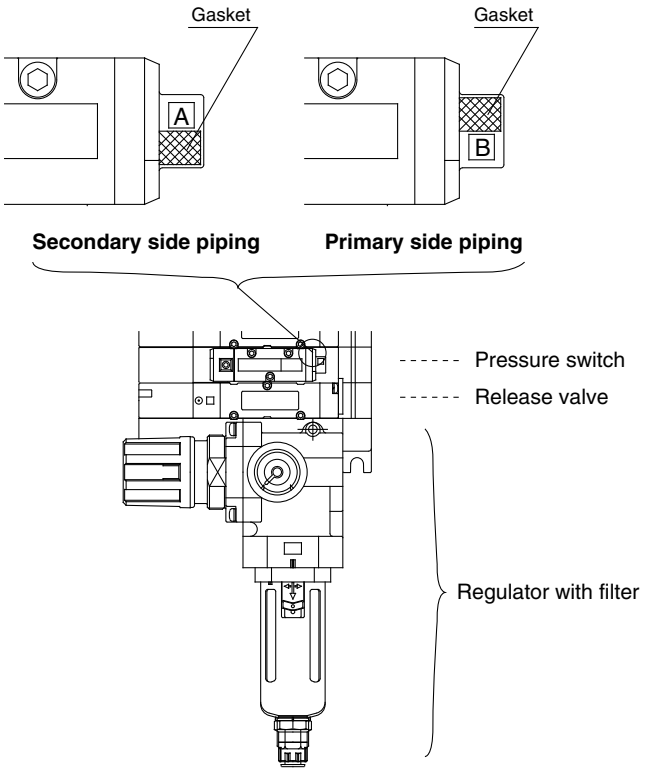
1) Supply pressure (Po) is adjusted through regulator with filter, it is supplied to manifold base side through release valve 2 (Normally ON, this is for release secondary side residual pressure).
2) Supply pressure from Po port is blocked when release valve 2 is OFF. Air supplied to manifold side P port is exhausted to R1 port through release valve 2.
3) Pressure switch is pipied 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.

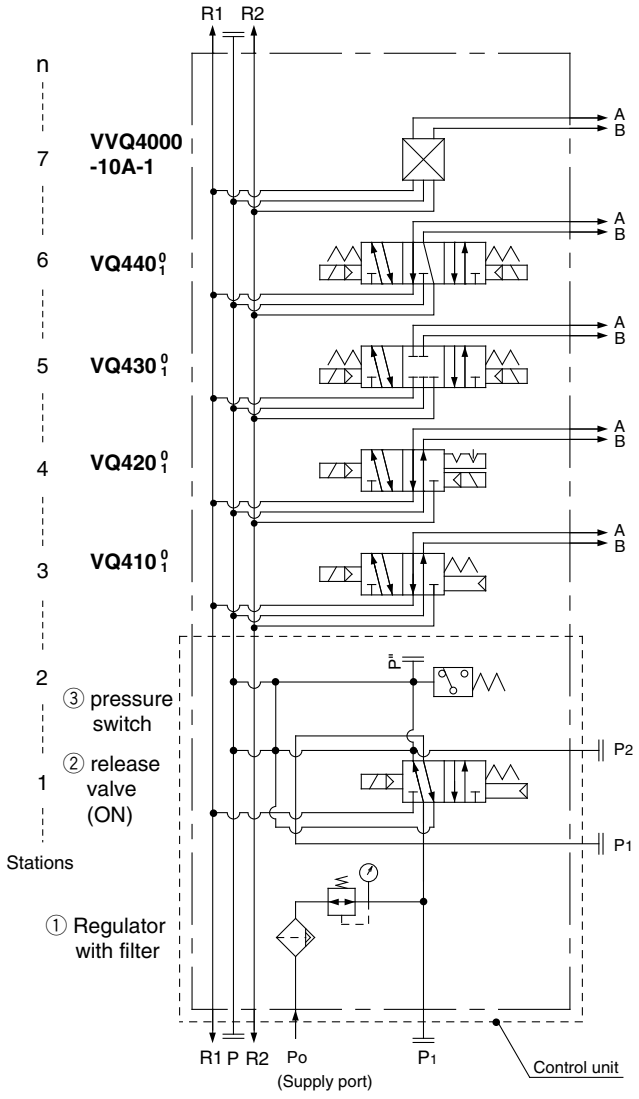
<Wiring>

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 1 mark.
2) When pressure switch is mounted, tightening torque of bolt is 0.8 to 1.2Nm.

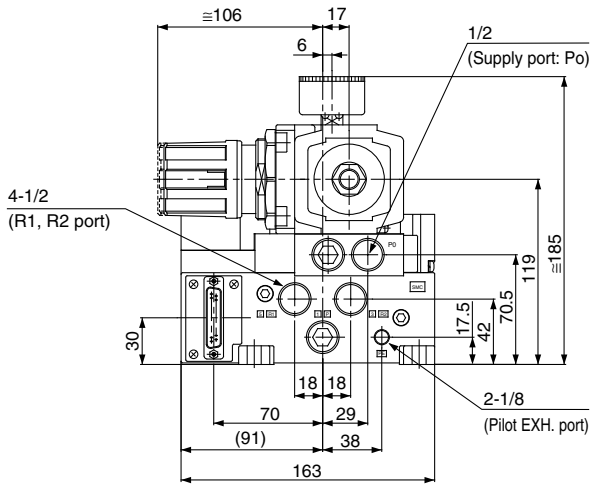


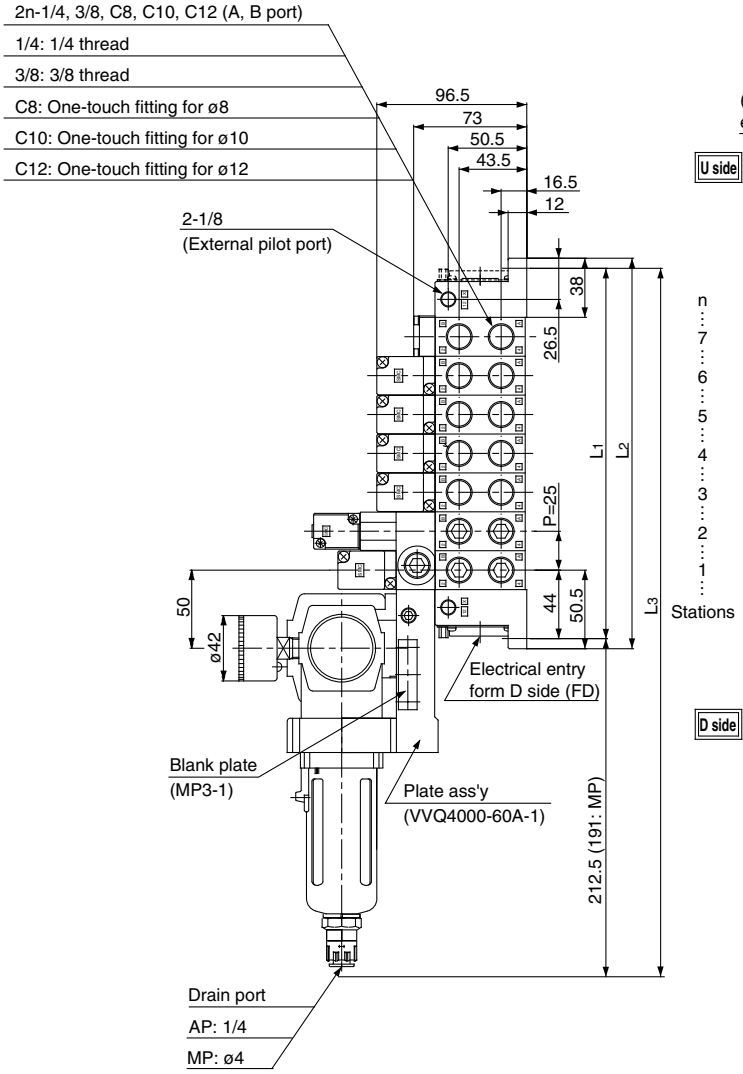


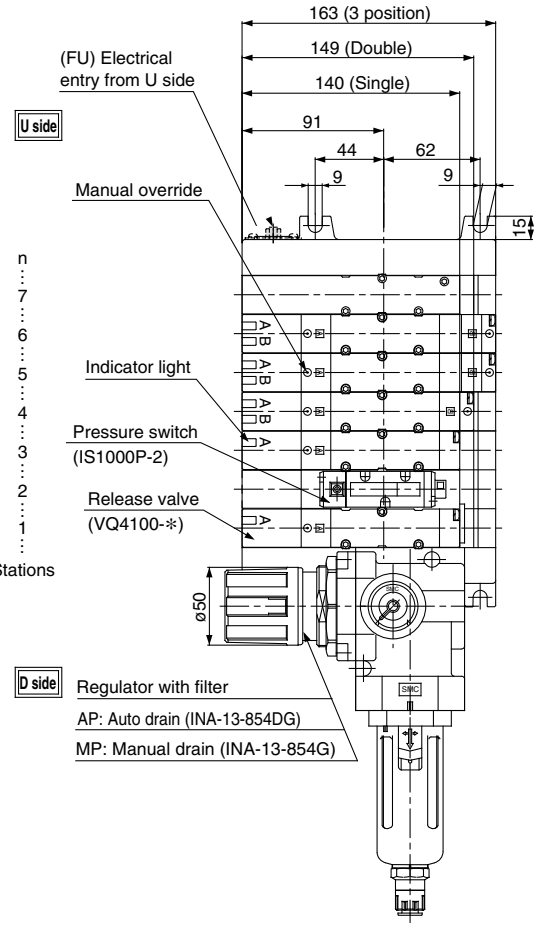
Circuit of control unit manifold

Manifold with Control Unit

Plug-in





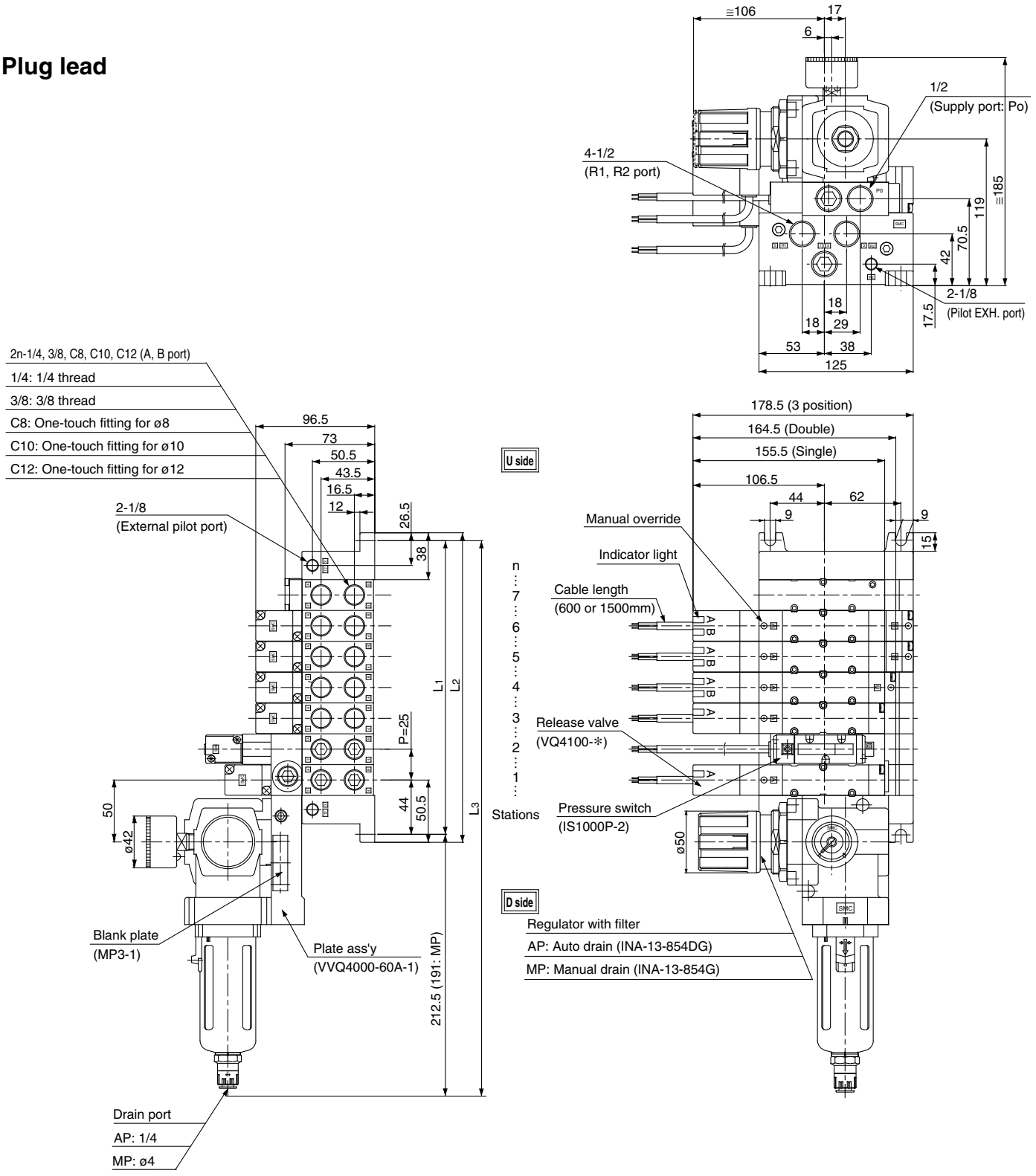


Dimensions Equation L1=25n+63 L2=25n+76 L3=25n+269.5 (262.5) n: Station

L \ n	1	2	3	4	5	6	7	8	9	10	11	12
L1	88	113	138	163	188	213	238	263	288	313	338	363
L2	101	126	151	176	201	226	251	276	301	326	351	376
L3	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

Plug lead



Dimensions Equation L1=25n+63 L2=25n+76 L3=25n+269.5 (262.5) n: Station

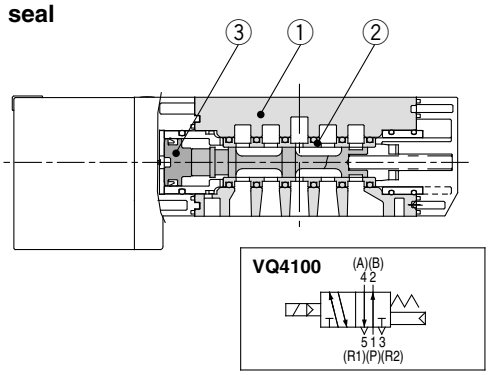
L \ n	1	2	3	4	5	6	7	8	9	10	11	12
L1	88	113	138	163	188	213	238	263	288	313	338	363
L2	101	126	151	176	201	226	251	276	301	326	351	376
L3	307	332	357	382	407	432	457	482	507	532	557	582
	(285.5)	(310.5)	(335.5)	(360.5)	(385.5)	(410.5)	(435.5)	(460.5)	(485.5)	(510.5)	(535.5)	(560.5)

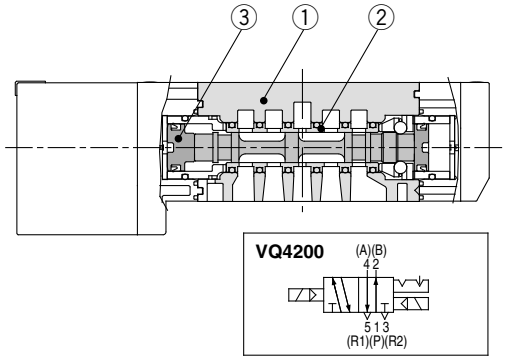
∗ L3( ): MP type

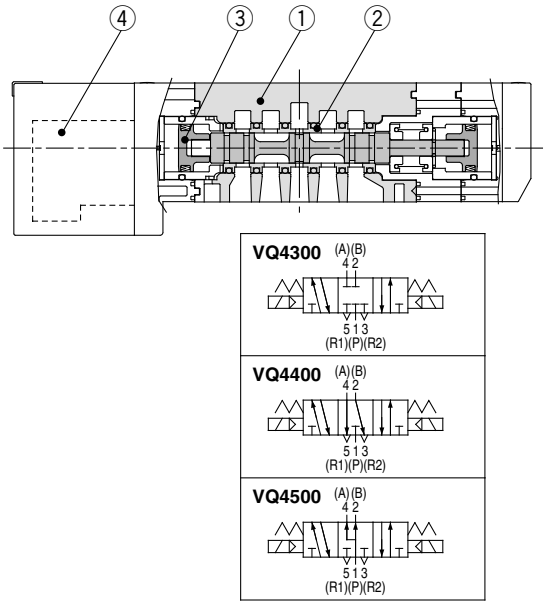
Series VQ4000
Construction

Plug-in Unit

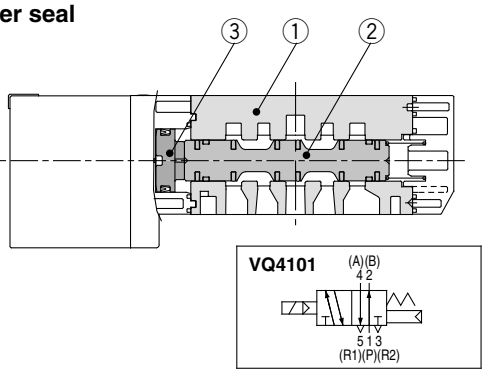
Metal seal

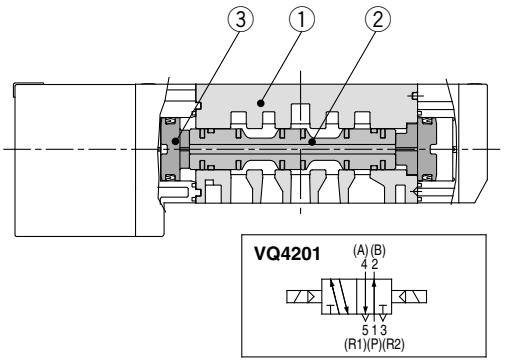


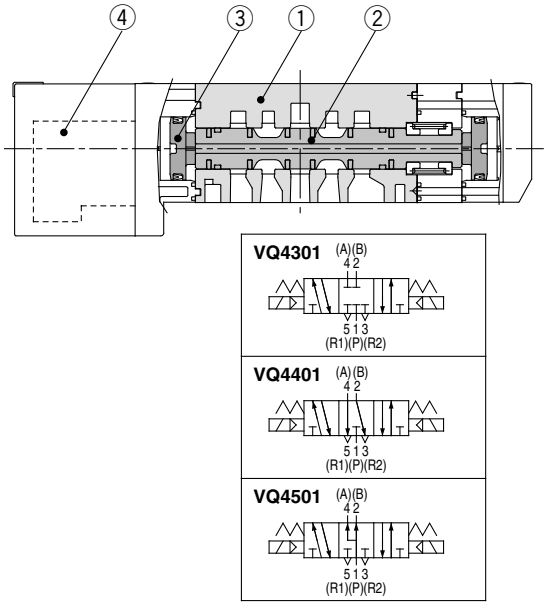




Rubber seal







Component Part

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

Replacement Parts

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

Component Parts

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

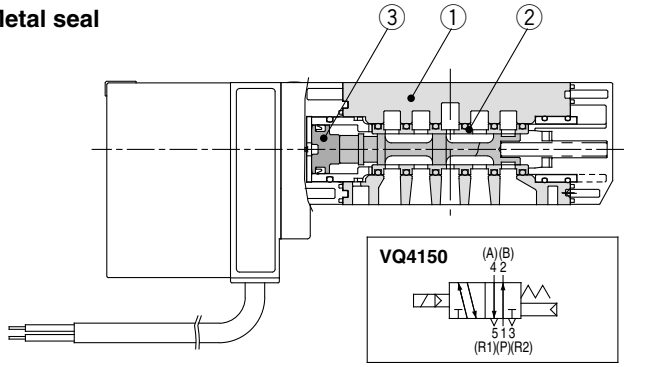
Replacement Parts

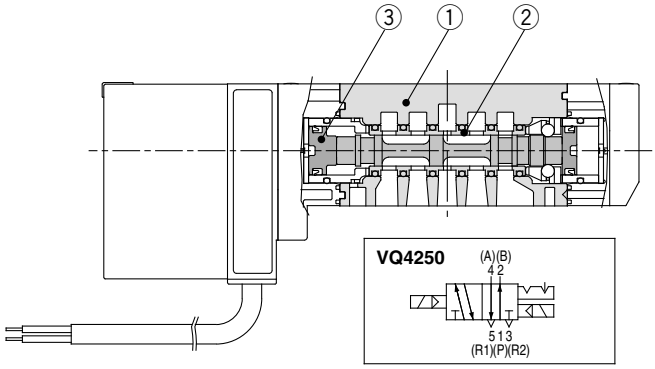
④	Pilot valve ass'y	VQZ111P-□-Q	∗: Coil rated voltage Example) 24V DC: 5

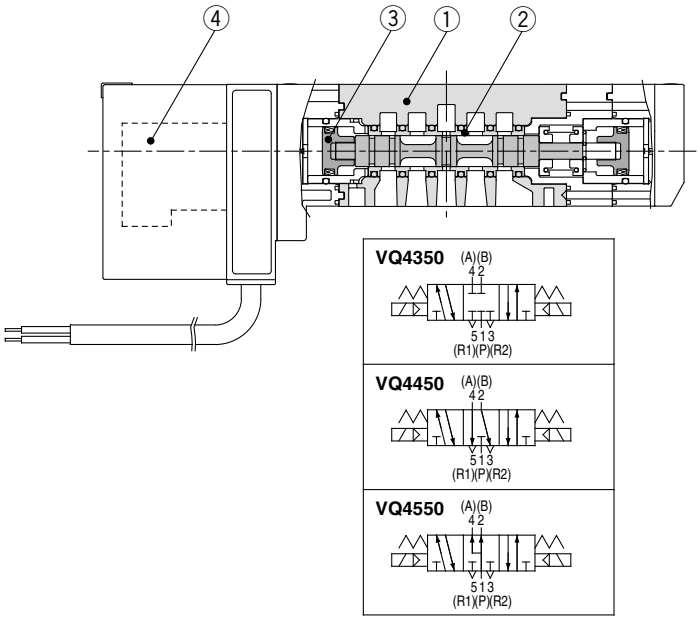
Construction

Plug Lead Unit

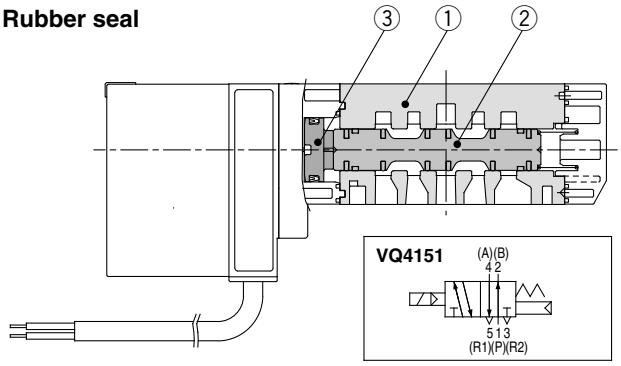
Metal seal

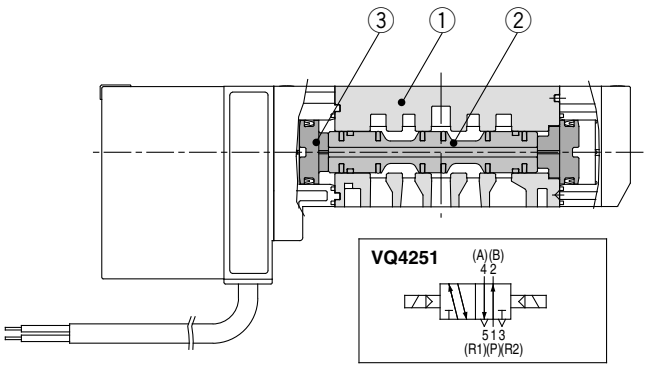


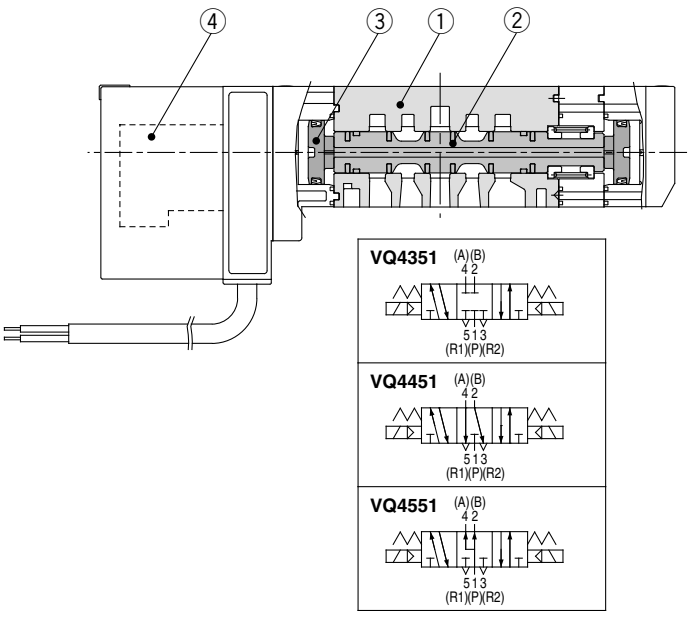




Rubber seal







Component Parts

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

Replacement Parts

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

Component Parts

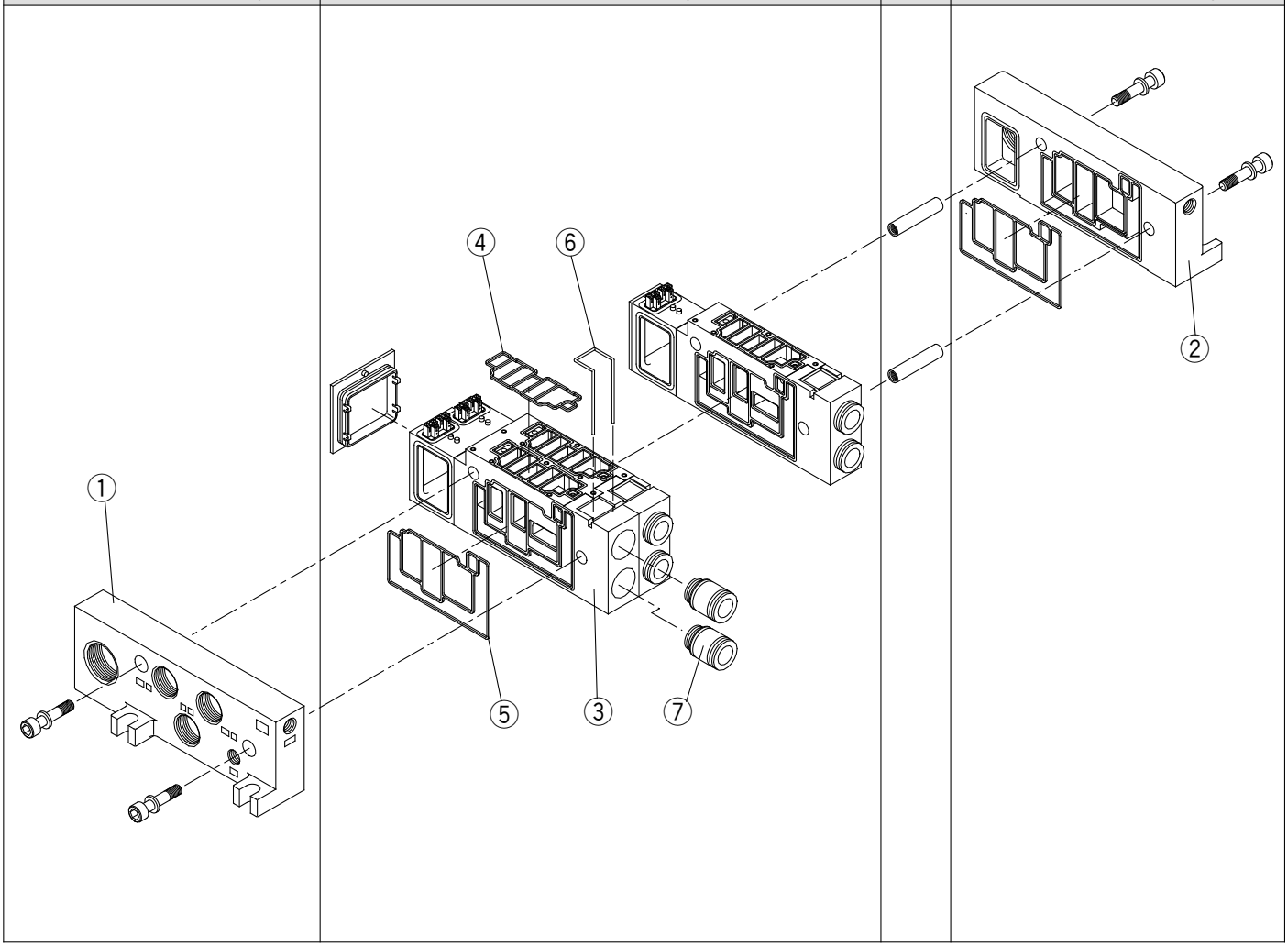
No.	Description	Material	Note
①	Body	Aluminium die-cast	
②	Spool valve	Aluminium, NBR	
③	Piston	Resin	

Replacement Parts

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

Exploded View of Manifold

D side end plate ass'y	Manifold block ass'y	Tie rod	U side end plate ass'y



Shown plug-in style

Note 1) Electrical entry can not be changed.
Note 2) Manifold block used is 2-station integrated 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>

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

VVQ4000 — 3A — 1

Electrical entry

L	F, L, T, S kit
F (1)	F kit (Connector side)
C	C kit (Plug lead)

Option

—	Standard
W (2)	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>

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

VVQ4000 — 2A — 1

Electrical entry

L	F, L, T, S kit
F (1)	F kit (Connector side)
C	C kit (Plug lead)

Option

—	Standard
W(2)	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>

③Manifold block ass'y No.

VVQ4000 — 1

STyle

A	One station manifold block
C	Two station manifold block

Option

—	Standard
W (2)	Enclosure IP65

Electrical entry

F1	F kit Double wiring
F2	F kit Single wiring
T1	T kit Double wiring
T2	T kit Single wiring
S1	S kit Double wiring
S2	S kit Single wiring
L0□	L0 kit □: Stations (1 to 16)
L1□	L1 kit □: Stations (1 to 16)
L2□	L2 kit □: Stations (1 to 16)
C	C kit (Plug lead)

Port size

02	1/4
03	3/8
B	Bottom piping 1/4
C8	One-touch fitting for ø8
C10	One-touch fitting for ø10
C12	One-touch fitting for ø12
N7	One-touch fitting 1/4
N9	One-touch fitting 5/16
N11	One-touch fitting 3/8

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>

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

VVQ4000 — 50A —

Port size

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	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)	
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)	

Optional Specifications

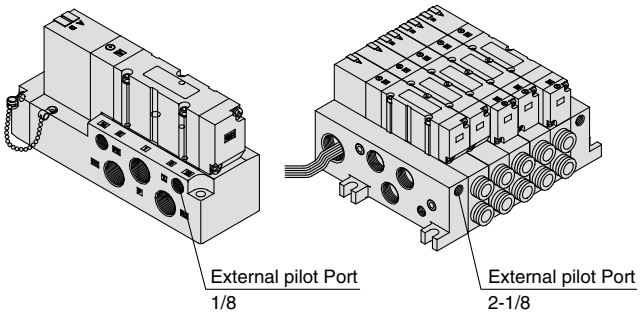
External Pilot Specifications

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 — Q

External pilot specification



<Sub-plate> **<Manifold>**

Note) Possible to mix mounting of internal and external pilot

Pressure Specifications

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$^{U}_{D}$
For exhaust cleaner mounting	VV5Q4□-□□□-C$^{U}_{D}$
Manifold with control unit	VV5Q4□-□□□ Control unit model No.
Double check spacer with residual pressure exhaust	VVQ4000-25A-$^{1}_{5}$

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 — Q

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 — Q

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 — Q

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 — B 02 N (Sub-plate)

VVQ4000 — P — 1 — 03 T (Option)

Port size **Type of thread**

–	Rc
N	NPT
T	NPTF
F	G