

5 Port Solenoid Valve

Series VQ5000

Metal seal

Rubber Seal

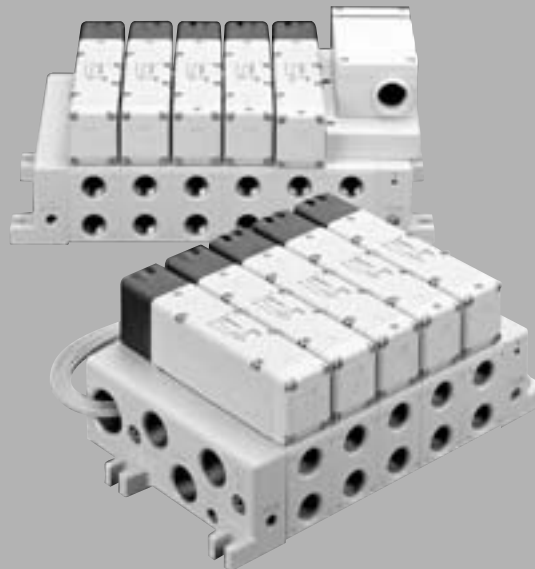
Space-saving profile

Clean space saving design with all pilot valves concentrated to one side with no protrusions in any direction

Space-saving — 40% less

Capacity-saving — 50% less

(In-house comparison)



Compact with large flow capacity

(Ideal for driving cylinders up to ø180)

Enclosure IP65 compliant Dust tight/Low jetproof type

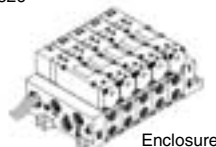
Outstanding response times and long service life

(Metal seal with light/surge suppressor)

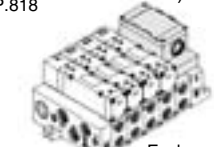
VQ5100 (Single)	32 mS	100 million cycles * According to SMC life test conditions
VQ5200 (Double)	17 mS	
Accuracy	±3 mS	

* For applications which demand high speed, high frequency, long life and a precise response time.

A variety of common wiring methods are standardized. <Plug-in type>

F kit (D-sub connector) P.814 	L kit (Lead wire) P.826 
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Enclosure IP65 compatible

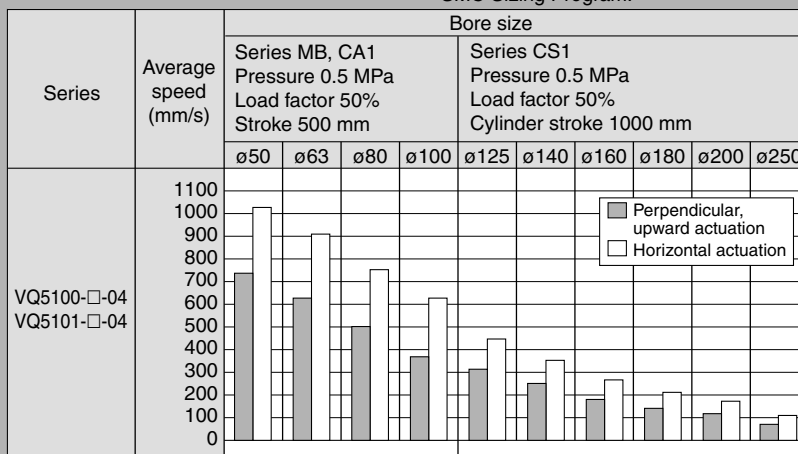
T kit (With individual terminal blocks) P.818 	S kit (Serial transmission) P.830 
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Enclosure IP65 compatible

T1 kit (Terminal block box) P.822 	● 5 wiring types have been standardized to facilitate easy wiring work and maintenance. In addition, 3 of the wiring types are available with IP65 enclosures.
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Cylinder Speed Chart

Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.



- * It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
- * The average velocity of the cylinder is what the stroke is divided by the total stroke time.
- * Load factor: ((Load weight x 9.8)/Theoretical force) x 100%

System Components

Speed controller	Silencer	SGP (Steel pipe) dia. x Length
AS420-04	AN400-04	10A x 1 m

Base Mounted

Plug-in/Plug Lead: Single Unit

Series VQ5000

Model

Series	Number of solenoids		Model		Port size	Flow Characteristics						Response time (ms)			Mass (kg)
						1 → 4/2(P → A/B)			4/2 → 5/3(A/B → EA/EB)			Standard 1 W	Low wattage 0.5 W	AC	
						C _d [dm³/(s·bar)]	b	C _v	C _d [dm³/(s·bar)]	b	C _v				
VQ5000	2 position	Single	Metal seal	VQ51 ⁰ ₅₀	Rc 1/2	12	0.14	2.9	14	0.18	3.4	35 or less	38 or less	38 or less	0.59(0.67)
			Rubber seal	VQ51 ⁰ ₅₁		16	0.33	4.4	17	0.31	4.7	40 or less	43 or less	43 or less	0.58(0.66)
		Double	Metal seal	VQ52 ⁰ ₅₀		12	0.14	2.9	14	0.18	3.4	20 or less	23 or less	23 or less	0.62(0.70)
			Rubber seal	VQ52 ⁰ ₅₁		16	0.33	4.4	17	0.31	4.7	25 or less	28 or less	28 or less	0.60(0.68)
	3 position	Closed center	Metal seal	VQ53 ⁰ ₅₀		11	0.24	2.6	11	0.23	2.8	50 or less	53 or less	53 or less	0.65(0.73)
			Rubber seal	VQ53 ⁰ ₅₁		12	0.33	3.4	13	0.37	3.7	60 or less	63 or less	63 or less	0.58(0.66)
		Exhaust center	Metal seal	VQ54 ⁰ ₅₀		12	0.13	2.9	14	0.18	3.4	50 or less	53 or less	53 or less	0.65(0.73)
			Rubber seal	VQ54 ⁰ ₅₁		14	0.39	3.9	16	0.35	4.5	60 or less	63 or less	63 or less	0.58(0.66)
		Pressure center	Metal seal	VQ55 ⁰ ₅₀		12	0.23	2.9	13	0.24	3.3	50 or less	53 or less	53 or less	0.65(0.73)
			Rubber seal	VQ55 ⁰ ₅₁		13	0.32	3.4	14	0.40	3.9	60 or less	63 or less	63 or less	0.58(0.66)
		Double check	Metal seal	VQ56 ⁰ ₅₀		8.0	—	—	8.5	—	—	62 or less	65 or less	65 or less	1.17(1.25)
			Rubber seal	VQ56 ⁰ ₅₁		8.3	—	—	9.0	—	—	75 or less	78 or less	78 or less	1.10(1.18)

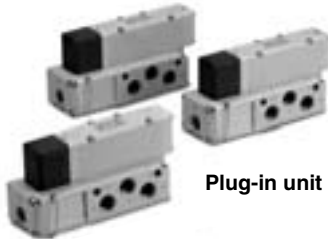
Note 1) Value for valve on sub-plate.

Note 2) Cylinder port Rc 1/2: Value for valve on sub-plate.

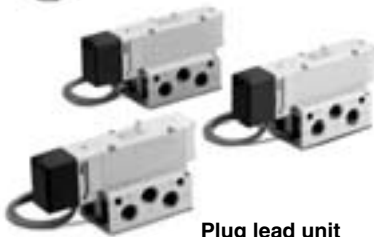
Note 3) Based on JISB8375-1981. (Supply pressure: 0.5 MPa {5.1 kgf/cm²}, with indicator light and surge voltage suppressor, clean air. This will change depending on pressure and air quality.) The value when ON for the double type.

Note 4) Values inside () indicate the mass of plug lead units.

Table: Without sub-plate, With sub-plate; Add 0.65 kg for plug-in type, 0.55 kg for plug lead type.

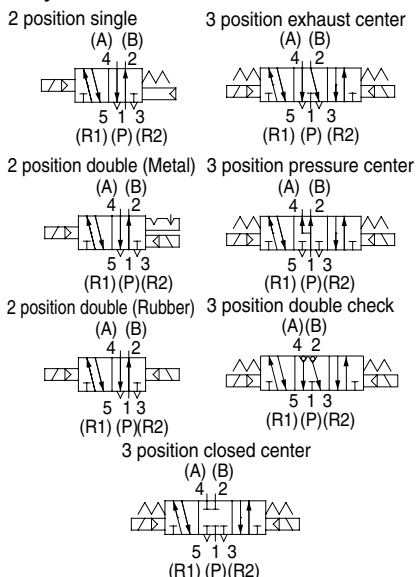


Plug-in unit



Plug lead unit

JIS Symbol



Standard Specifications

Valve specifications	Valve construction		Metal seal	Rubber seal
	Fluid		Air/Inert gas	
	Maximum operating pressure ⁽³⁾		1.0 MPa (0.7 MPa)	
	Min. operating pressure	Single	0.10 MPa	0.20 MPa
		Double	0.10 MPa	0.15 MPa
		3 position	0.15 MPa	0.20 MPa
	Proof pressure		1.5 MPa	
	Ambient and fluid temperature		-5 to 50°C ⁽¹⁾	
	Lubrication		Not required	
	Manual override		Push type/Locking type (Tool required) Option	
Solenoid specifications	Shock/Vibration resistance		150/30 m/s ² ⁽²⁾	
	Protection structure		Dust tight (IP65 compatible)	
	Coil rated voltage		12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz)	
	Allowable voltage fluctuation		±10% of rated voltage	
	Coil insulation type		Class B or equivalent	
	Power consumption (Current)	24 VDC	1 W DC (42 mA), 0.5 W DC (21 mA) ⁽³⁾	
		12 VDC	1 W DC (83 mA), 0.5 W DC (42 mA) Note ⁽³⁾	
		100 VAC	Inrush 1.2 VA (12 mA), Holding 1.2 VA (12 mA)	
		110 VAC	Inrush 1.3 VA (11.7 mA), Holding 1.3 VA (11.7 mA)	
		200 VAC	Inrush 2.4 VA (12 mA), Holding 2.4 VA (12 mA)	
		220 VAC	Inrush 2.6 VA (11.7 mA), Holding 2.6 VA (11.7 mA)	

Note 1) Use dry air to prevent condensation when operating at low temperatures.

Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

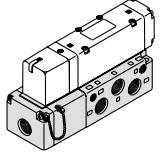
Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Note 3) Values inside () denote the low wattage (0.5 W) specifications.

How to Order Valves

Body

0: Plug-in sub-plate



Porting specifications

Nil	Side ported
B	Bottom ported

Port size

Nil	Without sub-plate (For manifold)
04	Rc 1/2

Note) For thread standard, refer to page 843.

Plug-in VQ5 1 0 0 - 5

Plug lead VQ5 2 5 1 - 5 G

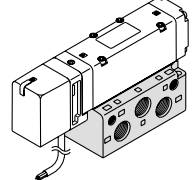
Type of actuation

1	2 position single (A)(B) 4 2	3	3 position closed center (A) (B) 4 2
	5 1 3 (R1)(P)(R2)		5 1 3 (R1)(P)(R2)
2	2 position double (A) (B) 4 2	4	3 position exhaust center (A) (B) 4 2
	5 1 3 (R1)(P)(R2)		5 1 3 (R1)(P)(R2)
2	2 position double (A) (B) 4 2	5	3 position pressure center (A) (B) 4 2
	5 1 3 (R1)(P)(R2)		5 1 3 (R1)(P)(R2)
		6	3 position double check (A)(B) 4 2
			5 1 3 (R1)(P)(R2)

Note) For details about the double check type, refer to page 840.

Body

5: Plug lead sub-plate



Enclosure

Nil	Dust-protected
W	Dusttight/Low jetproof type (IP65)

Manual override

Nil:	Non-locking push type (Tool required)	B:	Slotted locking type (Tool required)
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Bore ø6.1

Light/Surge voltage suppressor

Nil	Yes
E	Without light, With surge voltage suppressor

Electrical entry

Grommet	G	Lead wire length 0.6 m
	H	

Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

Seal

0	Metal seal
1	Rubber seal

Function

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

Note 1) Applicable to DC specifications. Please select when you expect to energize the unit for extended periods of time. Refer to page 3 for details.
 Note 2) For details about external pilot specifications, refer to page 843.
 Note 3) When two or more symbols are specified, indicate them alphabetically.

How to Order Sub-plates

VQ5000 - P - 04

Electrical entry

P	Plug-in conduit terminal
S	Plug lead

Enclosure

Nil	Dust-protected
W	Dusttight/Low jetproof type

Note) Not required for plug lead type.

Porting specifications

Nil	Side ported
B	Bottom ported

Port size

04	Rc 1/2
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Note1) For bottom ported, port size is Rc 1/2.
 Note2) For thread standard, refer to page 843.

Replacement of pilot valve assembly (Voltage)

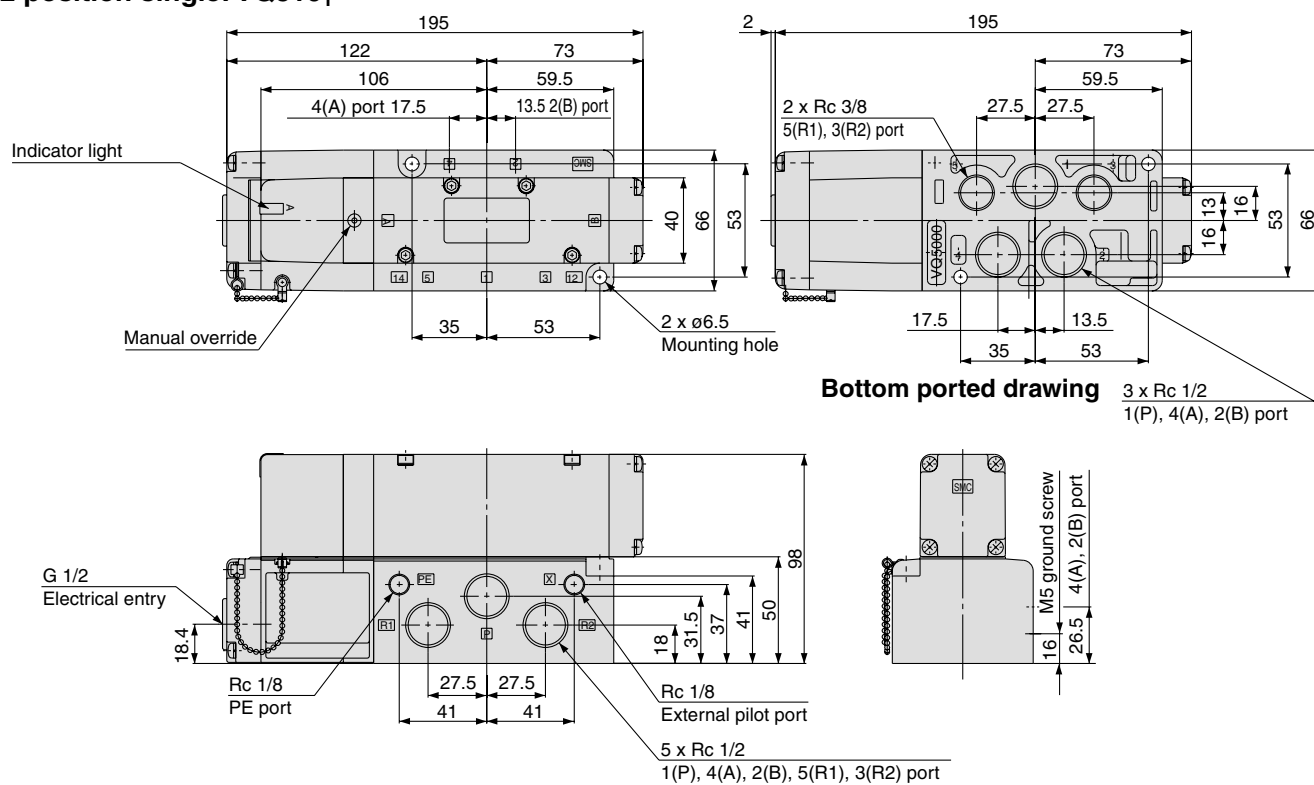
- Refer to pages 844 to 845 for pilot valve assembly part numbers.
- Refer to page 849 for replacement method.

Series VQ5000

Plug-in Type

Conduit terminal

2 position single: VQ510⁰

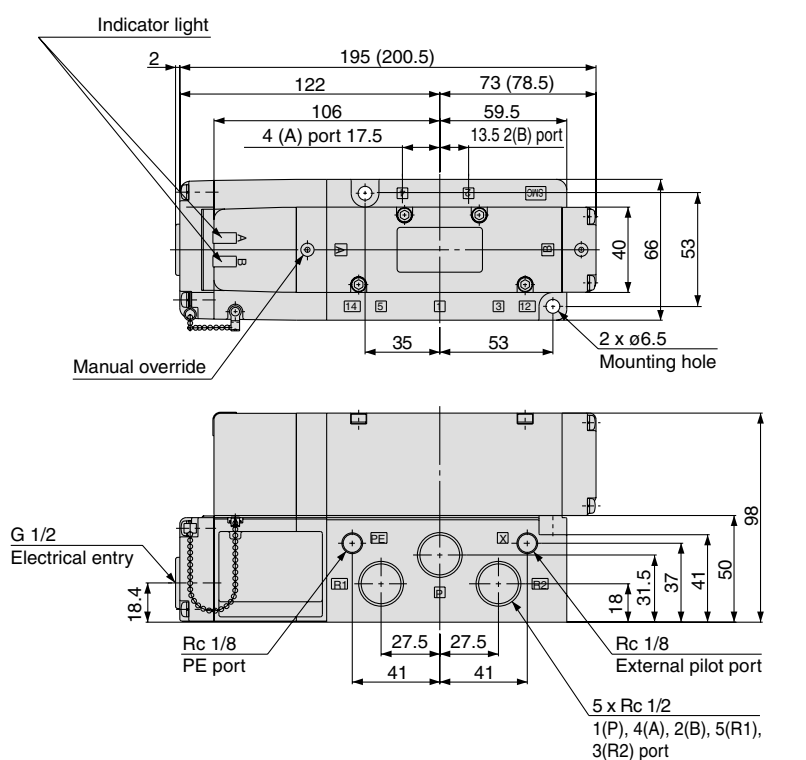


2 position double: VQ520⁰

3 position closed center: VQ530⁰

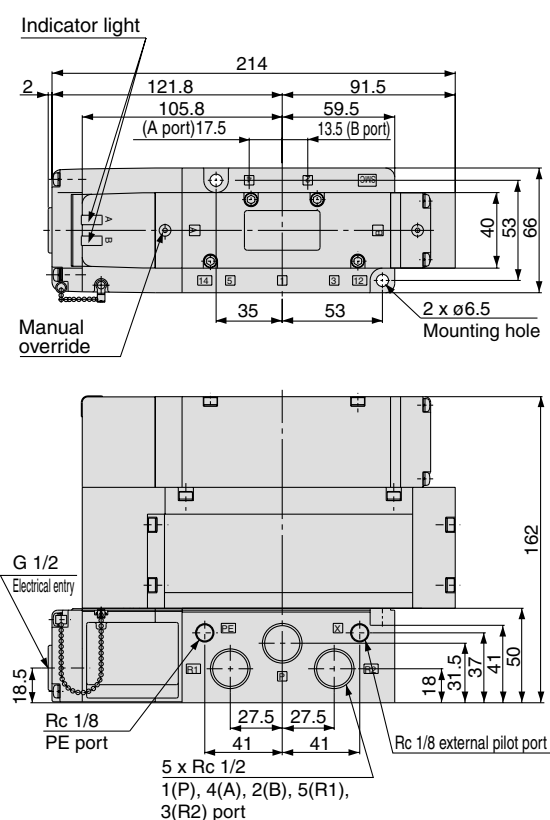
3 position exhaust center: VQ540⁰

3 position pressure center: VQ550⁰



Numbers inside () are for metal seal 3 position type

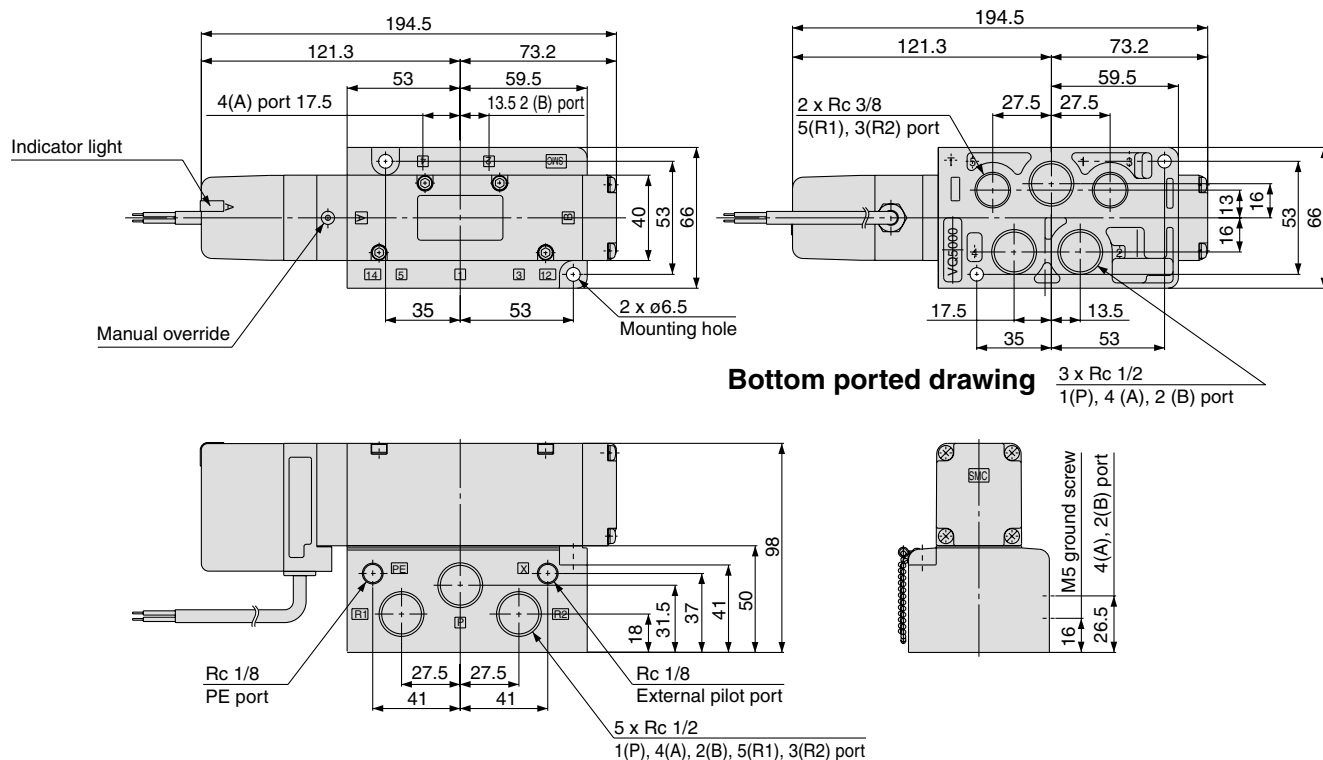
3 position double check: VQ560⁰



Plug Lead Type

Grommet

2 position single: VQ515⁰-□_G

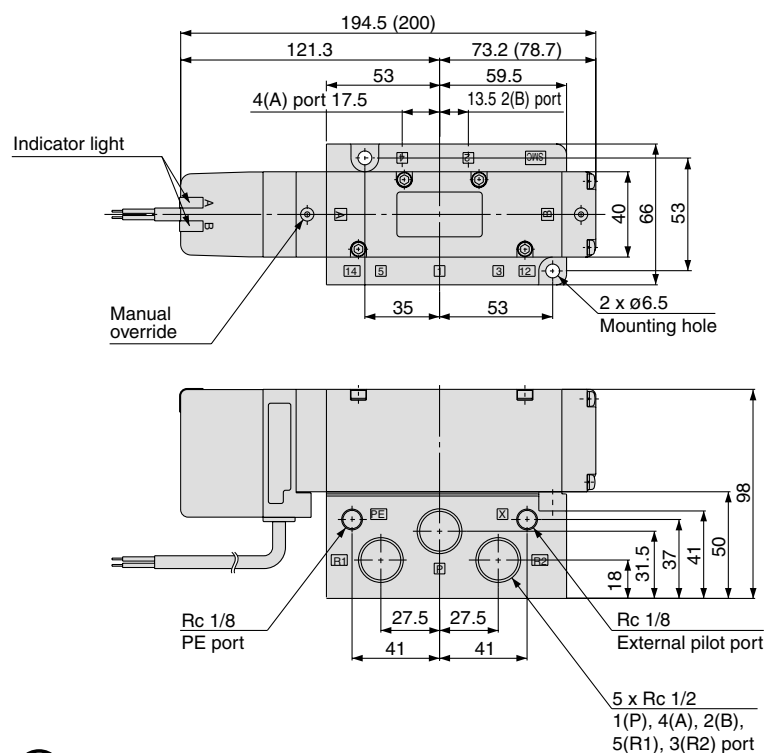


2 position double: VQ525⁰-□_G

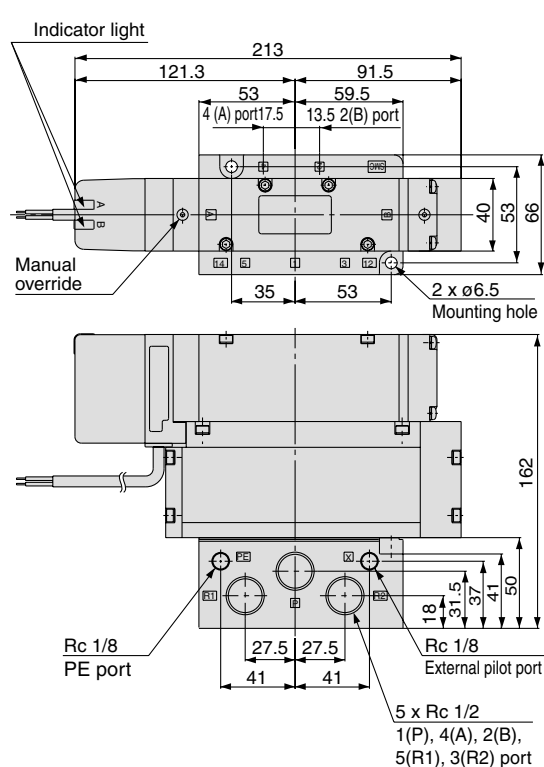
3 position closed center: VQ535⁰-□_G

3 position exhaust center: VQ545⁰-□_G

3 position pressure center: VQ555⁰-□_G

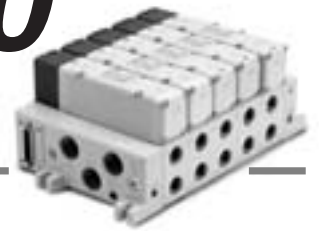


3 position double check: VQ565⁰-□_G

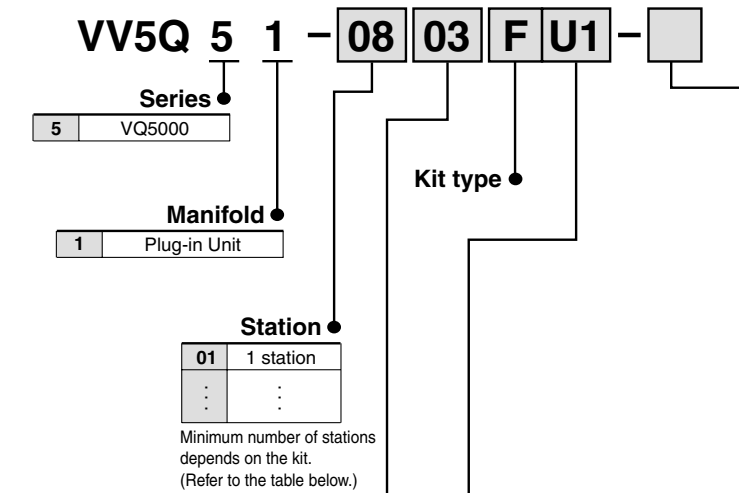


Numbers inside () are for metal seal 3 position type

Base Mounted Plug-in Unit Series VQ5000



How to Order Manifold



Option

Symbol	Option
Nil	None
CD1 ⁽²⁾	Exhaust cleaner for Rc 1: D side exhaust
CD2 ⁽²⁾	Exhaust cleaner for Rc 1 1/2: D side exhaust
CU1 ⁽²⁾	Exhaust cleaner for Rc 1: U side exhaust
CU2 ⁽²⁾	Exhaust cleaner for Rc 1 1/2: U side exhaust
K ⁽⁴⁾	Special wiring specifications (Except double wiring)
N	Name plate (T kit only)
SB ⁽³⁾	Direct exhaust with silencer box: Exhaust from both D and U sides
SD ⁽²⁾	Direct exhaust with silencer box: D side exhaust
SU ⁽²⁾	Direct exhaust with silencer box: U side exhaust
W	IP65 enclosure (except F and T1 kits)

Note 1) When two or more symbols are specified, indicate them alphabetically.
Example) -CD1K

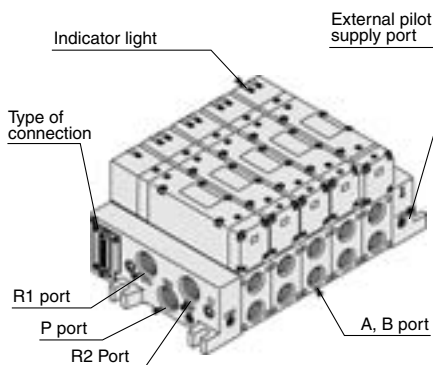
Note 2) Combination of [C_DU] and [S_DU] is not possible.

Note 3) Available only with F, L and T1 kits.

Note 4) Specify the wiring specifications on the manifold specification sheet. (Except L kit)

Kit/Electrical entry/Cable length

F kit (D-sub connector)				L kit (Lead wire cable)			
Connector entry direction D side U side				Connector entry direction D side U side			
Kit	D0	U0	Without cable	Kit	D0	U0	Cable length 0.6 m
	D1	U1	Cable length 1.5 m		D1	U1	Cable length 1.5 m
	D2	U2	Cable length 3 m		D2	U2	Cable length 3 m
	D3	U3	Cable length 5 m				
T kit (Terminal block box kit)				S kit (Serial transmission unit)			
Box mounting position D side U side				Unit mounting position D side U side			
T1 kit (Individual terminal block kit)				SD SU			
				The valve voltage is 24 VDC and it is equipped with light/surge voltage suppressor.			
Box mounting position D side U side				Unit mounting position D side U side			
T1				SD SU			
Kit T1 With terminal blocks				0 Without SI unit			
1 to 12 stations				F1 NKE Corp.: Uni-wire System (16 output points)			
				H NKE Corp.: Uni-wire H System			
				J1 SUNX Corp.: S-LINK (16 output points)			
				J2 SUNX Corp.: S-LINK (8 output points)			
				Q DeviceNet			
				R1 OMRON Corp.: CompoBus/S (16 output points)			
				R2 OMRON Corp.: CompoBus/S (8 output points)			
				V CC-LINK System			
				2 to 12 stations			



Note) The drawing shows a VV5Q51-0504FDO.

Manifold Specifications

Series	Base model	Type of connection	Porting specifications			Maximum applicable stations	Applicable solenoid valve	Mass (kg) (Formula)
			4(A), 2(B) port location	Port size Note)				
				1(P), 5(R1), 3(R2)	4(A), 2(B)			
VQ5000	VV5Q51-□□□	■ F kit—D-sub connector ■ T kit—Terminal block box ■ T1 kit—Individual terminal block kit ■ L kit—Lead wire ■ S kit—Serial transmission	Side	Rc 3/4 Option 〔Direct exhaust with silencer box〕	Rc 3/8 Rc 1/2	F, L, T1 kits 12 stations T kit 12 stations S kit 12 stations	VQ5□00 VQ5□01	F, L Kit: 0.62n+1.4 S,T Kit: 0.62(n-1)+2.6 • Not including solenoid valve mass.
			Bottom		Rc 1/2			

Note) For details about international standard threads other than Rc threads, refer to "Option" on page 843.

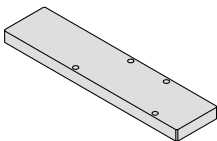
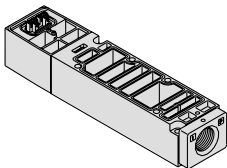
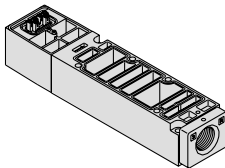
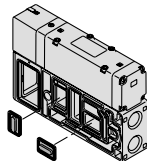
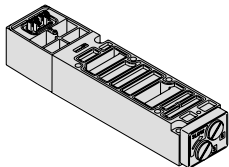
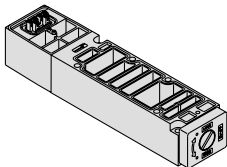
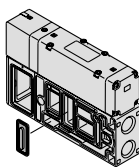
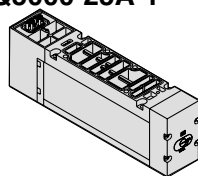
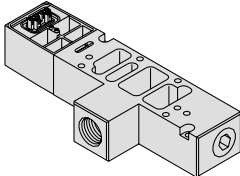
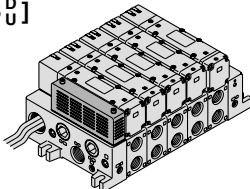
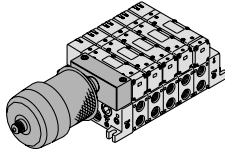
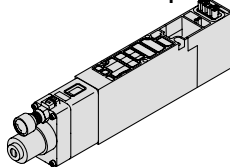
n: Stations

Flow Characteristics at the Number of Manifold Stations (Operated individually)

Model	Passage/Stations		Station 1	Station 5	Station 10
2 position metal seal VQ5 ₂ 00	1 → 4/2(P → A/B)	C [dm ³ /(s·bar)]	11	11	11
		b	0.24	0.24	0.24
		Cv	2.7	2.7	2.7
	4/2 → 5/3(A/B → EA/EB)	C [dm ³ /(s·bar)]	12	12	12
		b	0.14	0.14	0.14
		Cv	2.9	2.9	2.9
2 position rubber seal VQ5 ₂ 01	1 → 4/2(P → A/B)	C [dm ³ /(s·bar)]	12	12	12
		b	0.33	0.33	0.33
		Cv	3.4	3.4	3.4
	4/2 → 5/3(A/B → EA/EB)	C [dm ³ /(s·bar)]	16	16	16
		b	0.33	0.33	0.33
		Cv	4.4	4.4	4.4

Note) For port size Rc 1/2

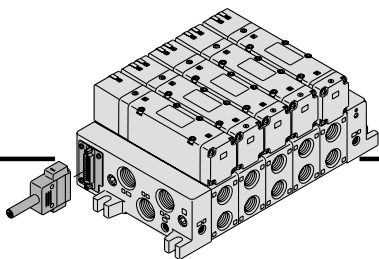
Manifold Option

Blanking plate assembly VVQ5000-10A-1 	Individual SUP spacer VVQ5000-P-1- ⁰³ ₀₄ 	Individual EXH spacer VVQ5000-R-1- ⁰³ ₀₄ 	EXH block plate VVQ5000-16A-2 
Throttle valve spacer VVQ5000-20A-1 	SUP stop valve spacer VVQ5000-37A-1 	SUP block plate VVQ5000-16A-1 	Double check spacer with residual pressure release valve VVQ5000-25A-1 
Release valve spacer VVQ5000-24A-1D 	Direct exhaust with silencer box [-S _D ⁰] 	For exhaust cleaner mounting [-C _D ⁰ □] 	Interface regulator ARBQ5000-00- ^A _P -1 


 • Refer to pages 838 to 842 for detailed dimensions of each option.
 • For replacement parts, refer to page 847.

Series VQ5000

F Kit (D-sub Connector kit)



- Simplification and labor savings for wiring work can be achieved by using a D-sub connector for the electrical connection.
- Using connector for flat ribbon cable (25P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Connector entry can be selected on either the U side or the D side according to the mounting orientation.
- Maximum stations are 12.

Manifold Specifications

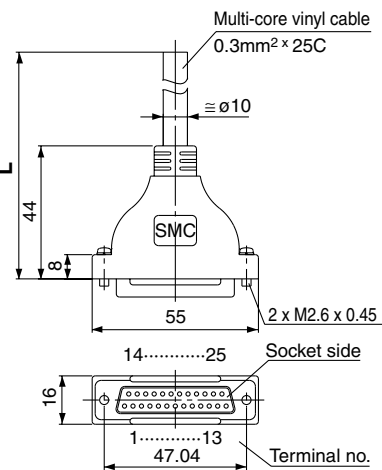
Series	Porting specifications		Applicable stations
	4(A), 2(B) port location	Port size	
VQ5000	Side	1(P), 5(R1), 3(R2)	4(A), 2(B)
	Bottom	Rc 3/4	Rc 3/8 Rc 1/2 Rc 1/2

D-Sub Connector Kit (25Pins)

Cable assembly ●

AXT100-DS25-015
030
050

(D-sub connector cable assemblies can be ordered with manifolds.)
Refer to How to Order Manifold.



D-sub Connector Cable Assembly

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-DS25-015	Cable 25 cores x 24AWG
3 m	AXT100-DS25-030	
5 m	AXT100-DS25-050	

* For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.
* Cannot be used for transfer wiring.

Connector manufacturers' example

- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Hirose Electric Co., Ltd.

Electric Characteristics

Item	Characteristics
Conductor resistance Ω/km, 20°C	65 or less
Voltage limit VAC, 1 min.	1000
Insulation resistance MΩ/km, 20°C	5 or less

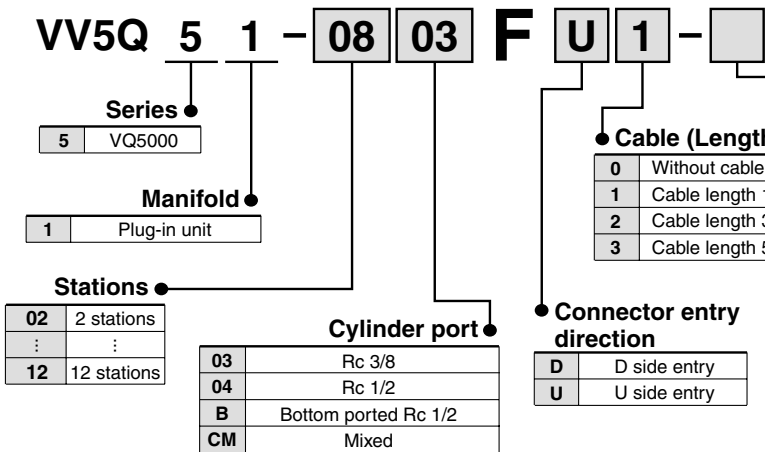
Note) The min. bending radius of D-sub cable is 20 mm.

D-sub Connector Cable Assembly Terminal No.

Terminal no.	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Gray	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	None

Note) Lengths other than the above is also available. Please contact SMC for details.

How to Order Manifold

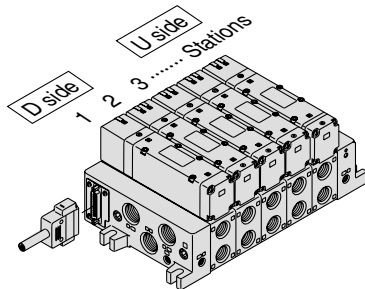


Option

Symbol	Option
Nil	None
CD1	Exhaust cleaner for Rc 1: D side exhaust
CD2	Exhaust cleaner for Rc 1 1/2: D side exhaust
CU1	Exhaust cleaner for Rc 1: U side exhaust
CU2	Exhaust cleaner for Rc 1 1/2: U side exhaust
K (3)	Special wiring specifications (Except double wiring)
SB	Direct exhaust with silencer box: For mounting on both D and U sides
SD	Direct exhaust with silencer box: D side exhaust
SU	Direct exhaust with silencer box: U side exhaust

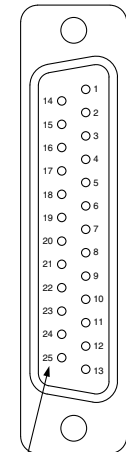
Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -CD1K.
Note 2) Combination of [C_D] and [S_D] is not possible.
Note 3) Specify the wiring specifications on the manifold specification sheet.

● Electrical wiring specifications



Stations are counted starting from the first station on the D side.

D-sub connector



Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to below.



Note) There is no polarity. It can also be used as a negative common.

Standard wiring

	Terminal no.	Polarity	Lead wire color	Dot marking
1 station	SOL.A 1	(-)	(+) Black	None
	SOL.B 14	(-)	(+) Yellow	Black
2 stations	SOL.A 2	(-)	(+) Brown	None
	SOL.B 15	(-)	(+) Pink	Black
3 stations	SOL.A 3	(-)	(+) Red	None
	SOL.B 16	(-)	(+) Blue	White
4 stations	SOL.A 4	(-)	(+) Orange	None
	SOL.B 17	(-)	(+) Purple	None
5 stations	SOL.A 5	(-)	(+) Yellow	None
	SOL.B 18	(-)	(+) Gray	None
6 stations	SOL.A 6	(-)	(+) Pink	None
	SOL.B 19	(-)	(+) Orange	Black
7 stations	SOL.A 7	(-)	(+) Blue	None
	SOL.B 20	(-)	(+) Red	White
8 stations	SOL.A 8	(-)	(+) Purple	White
	SOL.B 21	(-)	(+) Brown	White
9 stations	SOL.A 9	(-)	(+) Gray	Black
	SOL.B 22	(-)	(+) Pink	Red
10 stations	SOL.A 10	(-)	(+) White	Black
	SOL.B 23	(-)	(+) Gray	Red
11 stations	SOL.A 11	(-)	(+) White	Red
	SOL.B 24	(-)	(+) Black	White
12 stations	SOL.A 12	(-)	(+) Yellow	Red
	SOL.B 25	(-)	(+) White	None
	COM. 13	(+)	(-) Note) Orange	Red

Positive common specifications Negative common specifications

Special Wiring Specifications

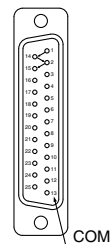
Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types. Mixed single and double wiring is available as an option.

1. How to Order

Indicate option symbol "K" in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet.

2. Wiring specifications

Connections begin with the A side solenoid of the first station being connected to terminal no. 1, and continue in the order indicated by the arrows in the drawing without skipping any terminals. However, the maximum number of stations is 12.



D-sub connector

How to Order Valves

VQ 5 1 0 0 - 5

Series
5 VQ5000

Type of actuation

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

Seal

0	Metal seal
1	Rubber seal

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)

Light/Surge voltage suppressor

Nil	Yes
E	Without light, with surge voltage suppressor

Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

Function

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

Note 1) Applicable to DC specifications. Please select when you expect to energize the unit for extended periods of time. Refer to page 3 for details.
Note 2) Refer to page 843 for details on external pilot specifications.
Note 3) When two or more symbols are specified, indicate them alphabetically.

How to Order Manifold Assembly [Order example]

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>

D-sub connector kit with cable (3 m)

VV5Q51-0503FD2 ..1 set - Manifold base part no.

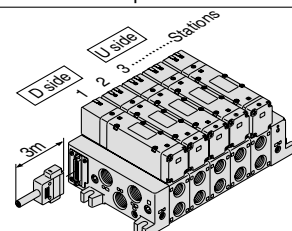
*VQ5100-5 2 sets- Valve part no. (Stations 1 and 2)

*VQ5200-5 2 sets- Valve part no. (Stations 3 and 4)

*VQ5300-5 1 set- Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

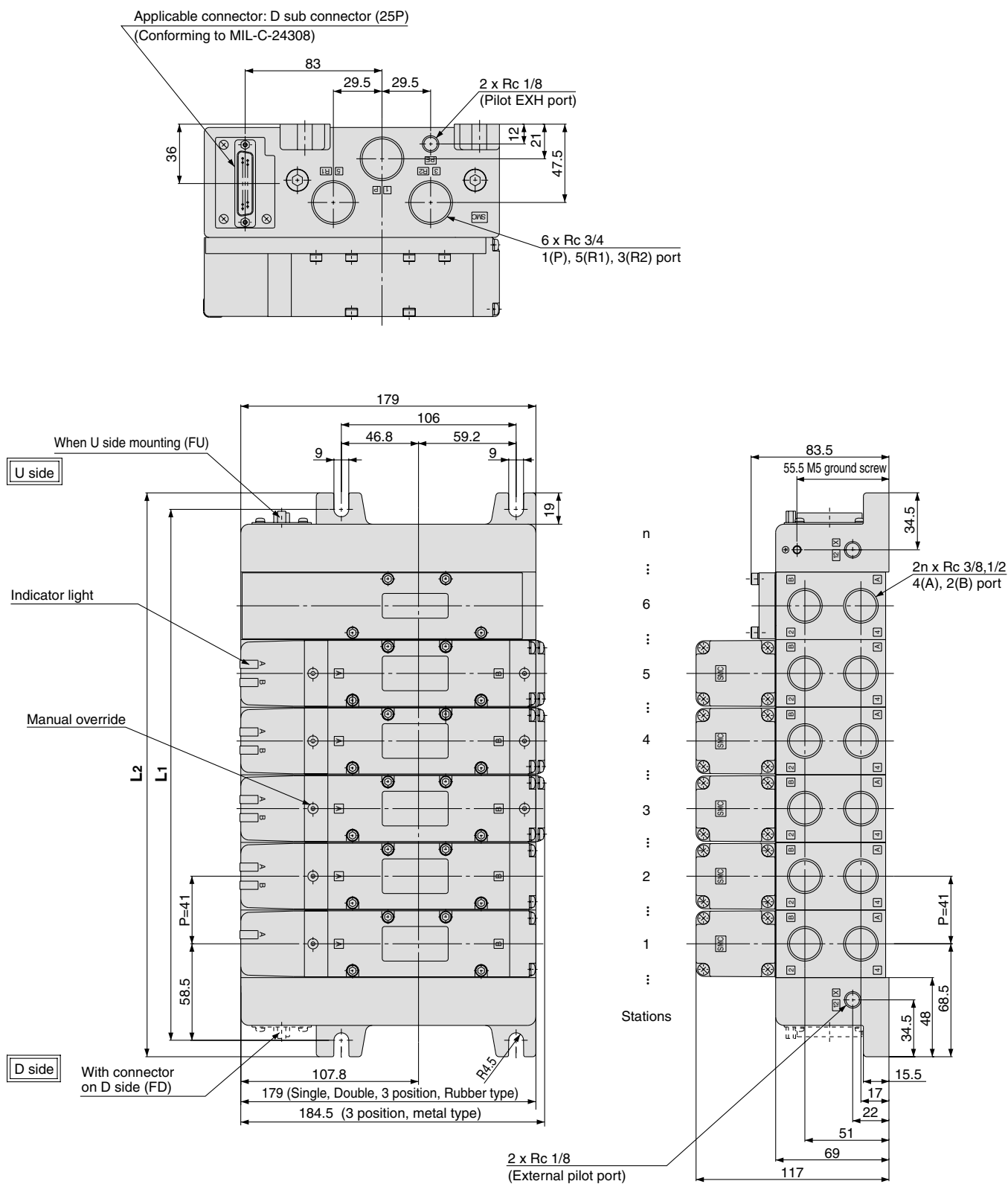
Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.



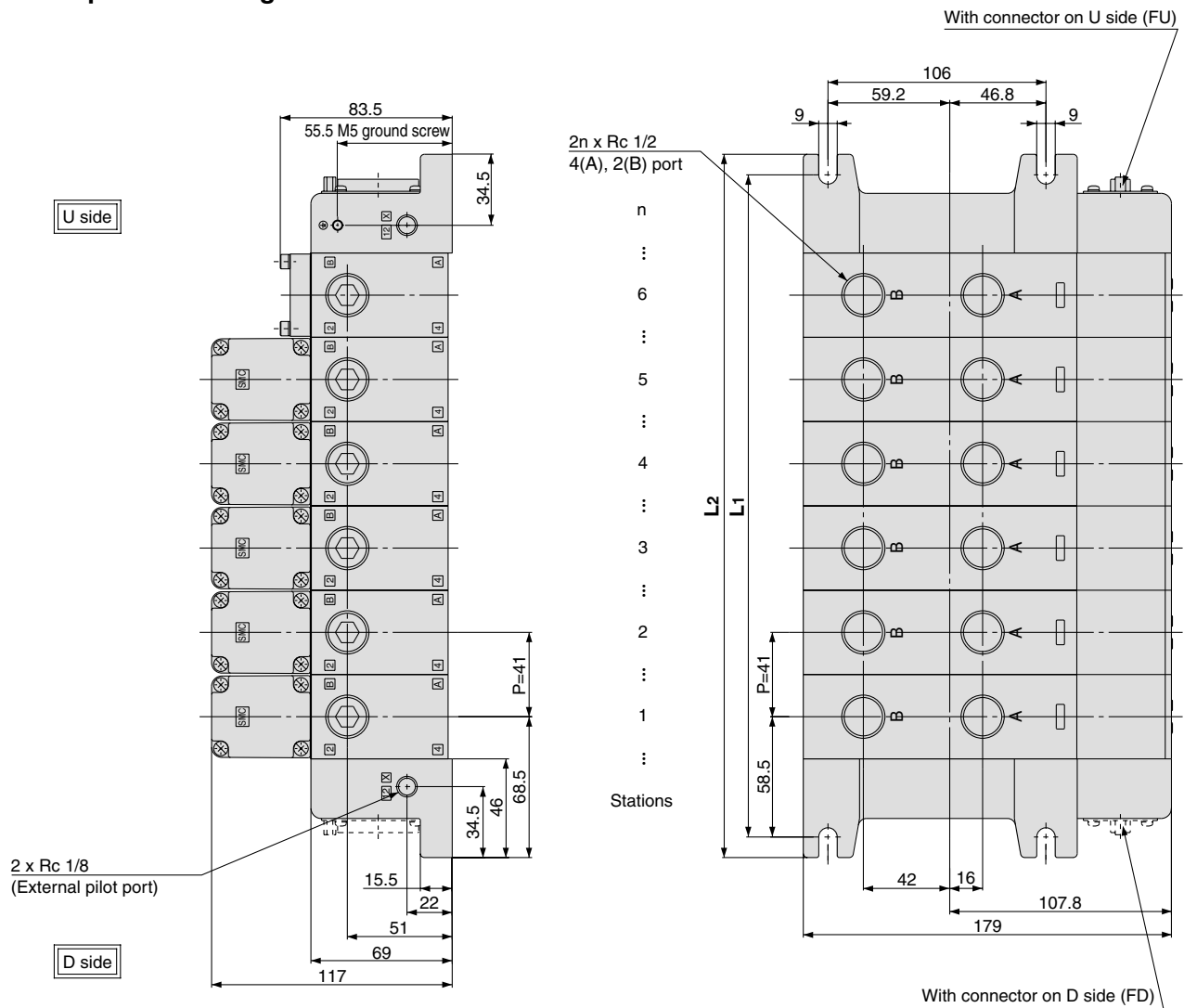
Series VQ5000

F

Kit (D-sub Connector kit)



Bottom ported drawing



SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Dimensions

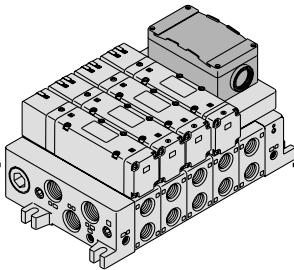
Formula: $L1 = 41n + 76$, $L2 = 41n + 96$
n: Stations (Maximum 12 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12
L₁	117	158	199	240	281	322	363	404	445	486	527	568
L₂	137	178	219	260	301	342	383	424	465	506	547	588

Series VQ5000

T Kit (Terminal block box kit)

IP65 compliant



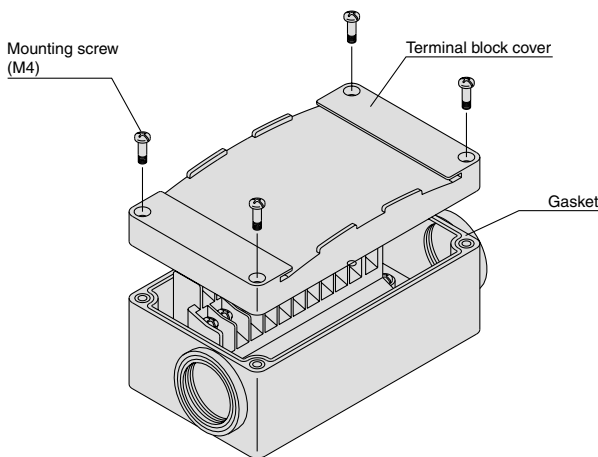
- Enclosure IP65 compliant
- This type has a small terminal block inside a junction box. The provision of a G 3/4 electrical entry allows connection of conduit fittings.
- Maximum stations are 11. (12 stations as an option)
- 1 station is used for terminal block box mounting.

Manifold Specifications

Series	4(A), 2(B) port location	Porting specifications		Applicable stations
		1(P), 5(R1), 3(R2)	4(A), 2(B)	
VQ5000	Side	Rc 3/4	Rc 3/8 Rc 1/2	Max. 12 stations
	Bottom		Rc 1/2	

Terminal Block Connections

Step 1. How to remove terminal block cover
Loosen the 4 mounting screws (M4) and open the terminal block cover.



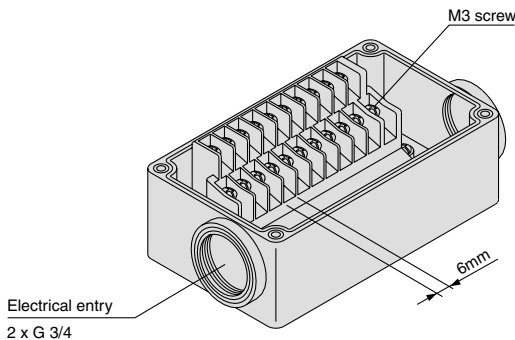
Step 3. How to attach the terminal block cover
Securely tighten the screws with the torque shown in the table below, after confirming that the gasket is installed correctly.

Proper tightening torque (N·m)
0.7 to 1.2

- Applicable terminal: 1.25-3s, 1.25Y-3, 1.25Y-3N, 1.25Y-3.5
- Name plate: VVQ5000-N-T
- Dripproof plug assembly (for G 3/4): AXT100-B06A

Step 2. The diagram on the right shows the terminal block wiring.

All stations are provided with double wiring regardless of the valves which are mounted. Connect each wire to the power supply side, according to the markings provided inside the terminal block.



How to Order Manifold

Ordering code: VV5Q 5 1 - 08 03 T - K

Series
5 VQ5000

Manifold
1 Plug-in unit

Stations
02 2 stations
...
12 12 stations

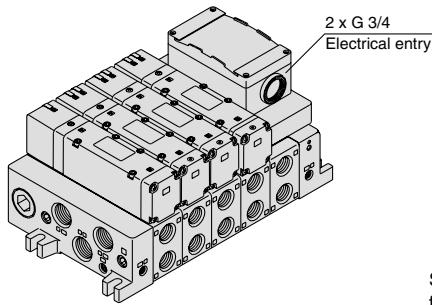
Cylinder port
03 Rc 3/8
04 Rc 1/2
B Bottom ported Rc 1/2
CM Mixed

Box mounting position
D D side mounting
U U side mounting

- Note 1) Add 1 station for terminal block box.
- Note 2) The maximum number of stations can be expanded with optional special wiring specifications. Refer to page 819 for details.

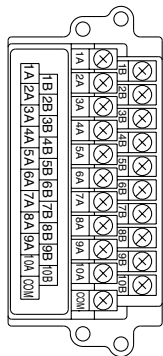
Symbol	Option
Nil	None
CD1 (2)	Exhaust cleaner for Rc 1: D side exhaust
CD2 (2)	Exhaust cleaner for Rc 1 1/2: D side exhaust
CU1 (2)	Exhaust cleaner for Rc 1: U side exhaust
CU2 (2)	Exhaust cleaner for Rc 1 1/2: U side exhaust
K (3)	Special wiring specification (Except double wiring)
N	Name plate
SD (2)	Direct exhaust with silencer box: D side exhaust
SU (2)	Direct exhaust with silencer box: U side exhaust
W	IP65 enclosure

- Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -CD1K.
- Note 2) Combination of [C] and [S] is not possible.
- Note 3) Specify the wiring specifications on the manifold specification sheet.



Stations are counted starting from the first station on the D side.

● Electrical wiring specifications (IP65 available)



Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option.



Note) There is no polarity. It can also be used as a negative common.

Standard wiring

	Terminal no.	Polarity
1 station	SOL. A 1A	(-) (+)
	SOL. B 1B	(-) (+)
2 stations	SOL. A 2A	(-) (+)
	SOL. B 2B	(-) (+)
3 stations	SOL. A 3A	(-) (+)
	SOL. B 3B	(-) (+)
4 stations	SOL. A 4A	(-) (+)
	SOL. B 4B	(-) (+)
5 stations	SOL. A 5A	(-) (+)
	SOL. B 5B	(-) (+)
6 stations	SOL. A 6A	(-) (+)
	SOL. B 6B	(-) (+)
7 stations	SOL. A 7A	(-) (+)
	SOL. B 7B	(-) (+)
8 stations	SOL. A 8A	(-) (+)
	SOL. B 8B	(-) (+)
9 stations	SOL. A 9A	(-) (+)
	SOL. B 9B	(-) (+)
10 stations	SOL. A 10A	(-) (+)
	SOL. B 10B	(-) (+)
	COM	(+) (-)

Positive Negative
common common

Special Wiring Specifications

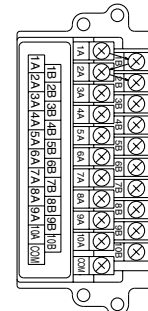
Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types. The optional specification permits mixture of single and double wiring. However, the maximum number of stations is 12.

1. How to Order

Indicate option symbol ("K") in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet.

2. Wiring specifications

Connections begin with the A side solenoid of the first station being connected to terminal no. 1, and continue in the order indicated by the arrows in the drawing without skipping any terminals.



How to Order Manifold Assembly [Order example]

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>

Terminal block box kit

VV5Q51-0603TU .. 1 set —Manifold base part no.

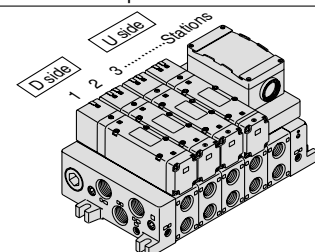
* VQ5100-5 2 sets—Valve part no. (Stations 1 and 2)

* VQ5200-5 2 sets—Valve part no. (Stations 3 and 4)

* VQ5300-5 1 set —Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.



How to Order Valves

VQ 5 1 0 0 - 5

Series
5 VQ5000

Type of actuation

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

Seal

0	Metal seal
1	Rubber seal

Function

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

Enclosure

Nil	Dusttight
W	Dusttight/Low jetproof type (IP65)

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)

Light/Surge voltage suppressor

Nil	Yes
E	Without light, with surge voltage suppressor

Coil voltage

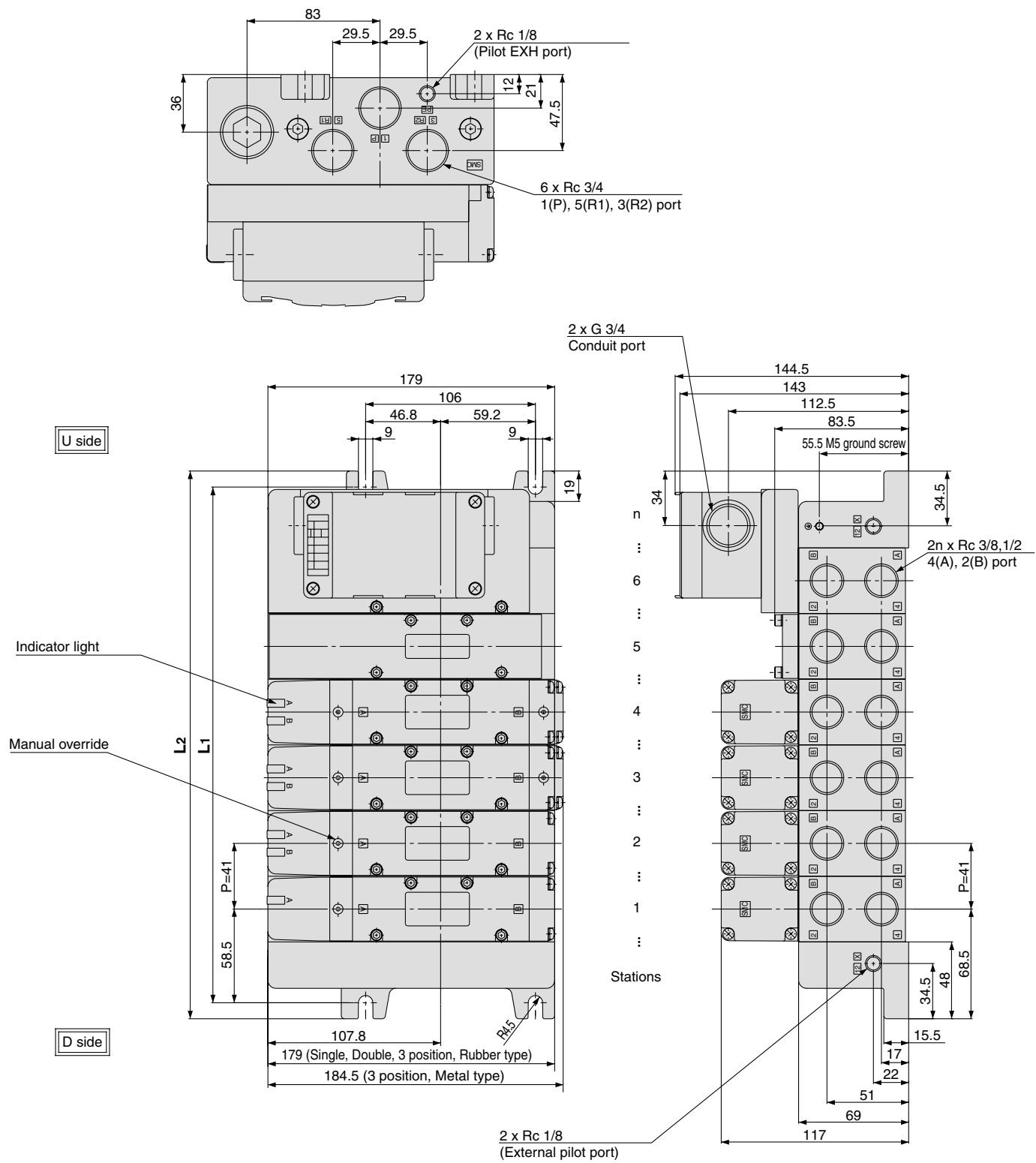
1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC



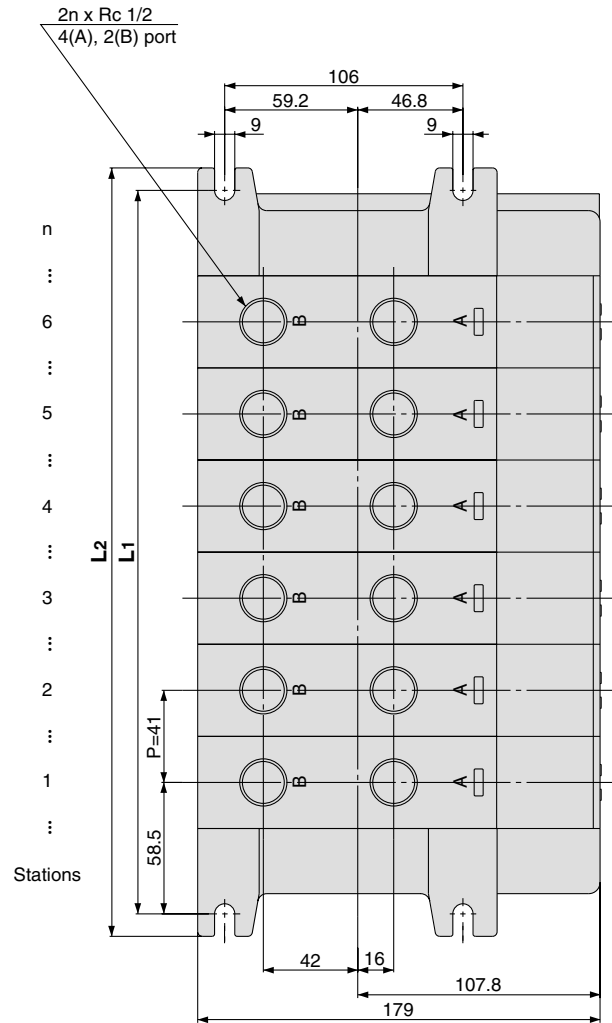
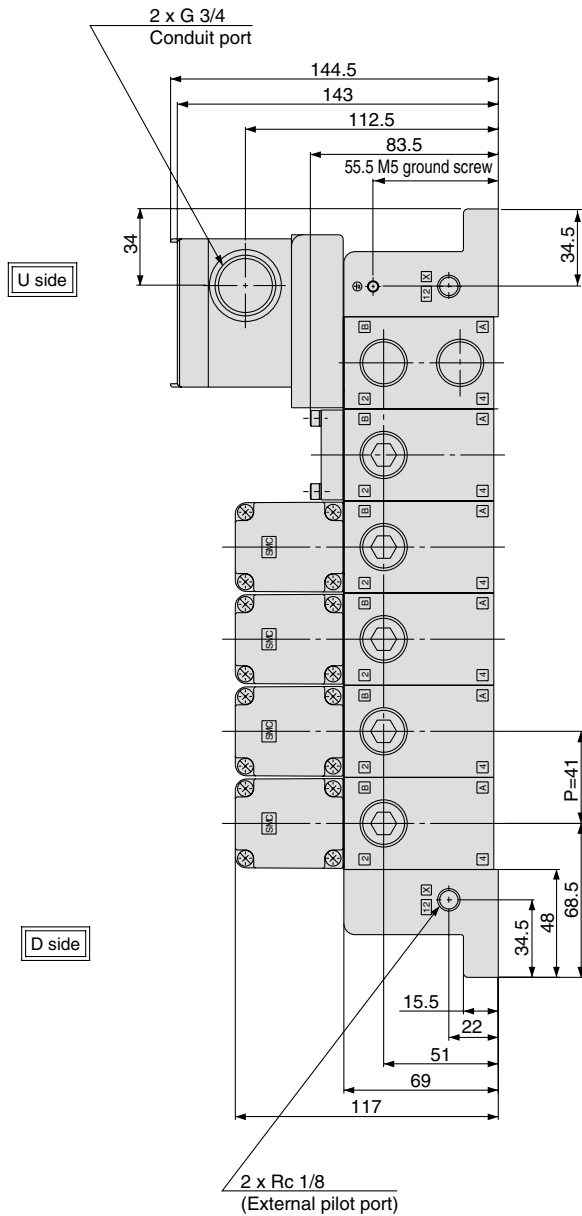
Note 1) Applicable to DC specifications. Please select when you expect to energize the unit for extended periods of time. Refer to page 3 for details.
Note 2) Refer to page 843 for details on external pilot specifications.
Note 3) When two or more symbols are specified, indicate them alphabetically.

T

Kit (Terminal block box kit)



Bottom ported drawing



SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Formula: $L1 = 41n + 76$, $L2 = 41n + 96$
n: Stations (Maximum 12 stations)

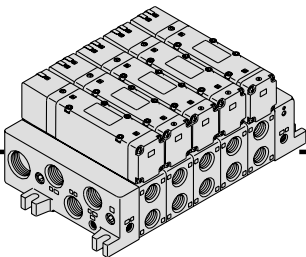
* Including 1 station for terminal box mounting.

Dimensions

L \ n	2	3	4	5	6	7	8	9	10	11	12
L1	158	199	240	281	322	363	404	445	486	527	568
L2	178	219	260	301	342	383	424	465	506	547	588

Series VQ5000

T1 Kit (Individual terminal block kit)



- When the junction cover on the manifold is opened, terminal box is installed in the manifold block. Lead wire from a solenoid is connected with the terminals on the terminal box in the bottom side. (The terminal box is connected with lead wire for both SOL. A and SOL. B and they correspond with the marking 1, 2, 3, 4 on the terminal box. Refer to how to connect with the terminal box.)
- Maximum stations are 12.

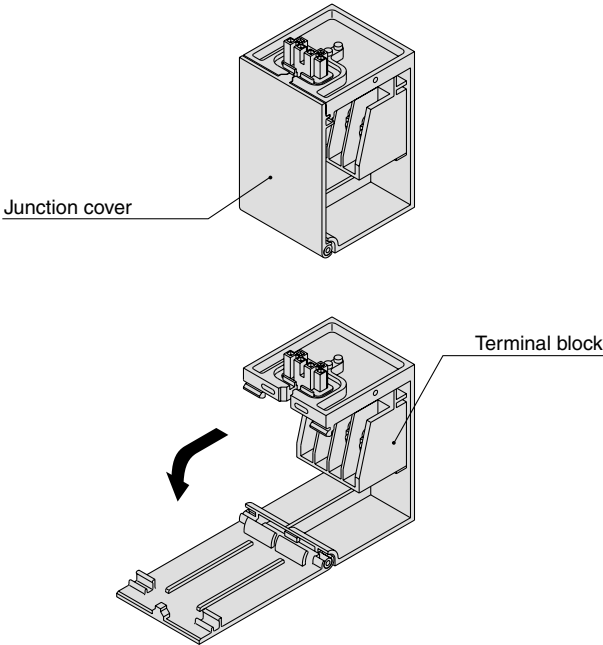
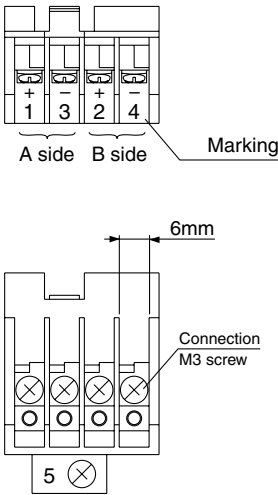
Manifold Specifications

Series	Porting specifications		Applicable stations
	4(A), 2(B) port location	Port size 1(P), 5(R1), 3(R2) 4(A), 2(B)	
VQ5000	Side	Rc 3/4	Max. 12 stations
	Bottom	Rc 1/2	

Terminal Block Connections

Model	Terminal block marking	1	3	2	4
VQ510 ⁰ ₁		A side +	A side -		
VQ520 ⁰ ₁		A side +	A side -	B side +	B side -
VQ540 ⁰ ₁ ³ ₅		A side +	A side -	B side +	B side -

- Compatible crimp terminals: 1.25-3S, 1.25Y-3, 1.25Y-3N, 1.25Y-3.5
- There is no polarity (+, -).



How to Order Manifold

VV5Q 5 1 - 08 03 T1 - SD

Series
5 VQ5000

Manifold
1 Plug-in unit

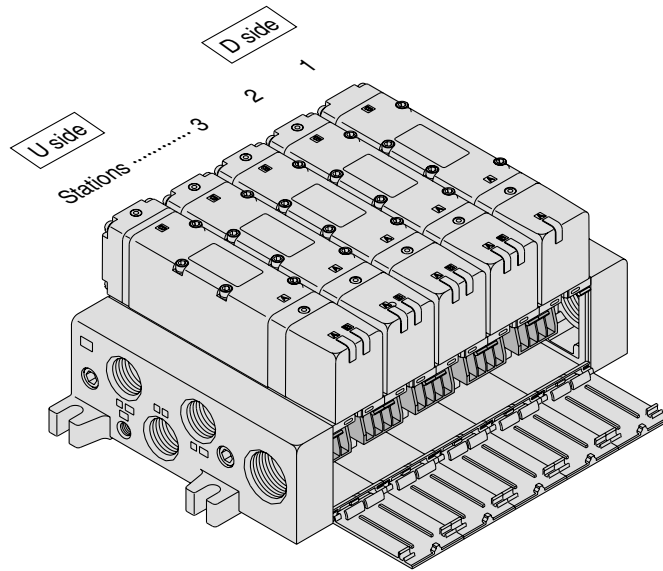
Stations	
1	1 station
⋮	⋮
12	12 stations

Cylinder port	
03	Rc 3/8
04	Rc 1/2
B	Bottom ported Rc 1/2
CM	Mixed

Option

Symbol	Option
Nil	None
CD1 ⁽¹⁾	Exhaust cleaner for Rc 1: D side exhaust
CD2 ⁽¹⁾	Exhaust cleaner for Rc 1 1/2: D side exhaust
CU1 ⁽¹⁾	Exhaust cleaner for Rc 1: U side exhaust
CU2 ⁽¹⁾	Exhaust cleaner for Rc 1 1/2: U side exhaust
SB	Direct exhaust with silencer box: Exhaust from both U and D sides
SD ⁽¹⁾	Direct exhaust with silencer box: D side exhaust
SU ⁽¹⁾	Direct exhaust with silencer box: U side exhaust

Note 1) Combination of [C_D^D] and [S_D^D] is not possible.



How to Order Valves

VQ 5 1 0 0 **5** **5**

Series
5 VQ5000

Type of actuation

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

Seal

0	Metal seal
1	Rubber seal

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)

Light/Surge voltage suppressor

Nil	Yes
E	Without light, with surge voltage suppressor

Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

Function

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



- Note 1) Applicable to DC specification. Please select when you expect to energize the unit for extended periods of time. Refer to page 3 for details.
- Note 2) Refer to page 843 for details on external pilot specifications.
- Note 3) When two or more symbols are specified, indicate them alphabetically.

How to Order Manifold Assembly [Order example]

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>

Individual terminal block kit

VV5Q51-0503T1.. 1 set —Manifold base part no.

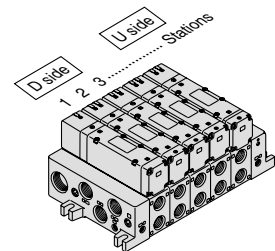
*VQ5100-5 2 sets—Valve part no. (Stations 1 and 2)

*VQ5200-5 2 sets—Valve no. (Stations 3 and 4)

*VQ5300-5 1 set —Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

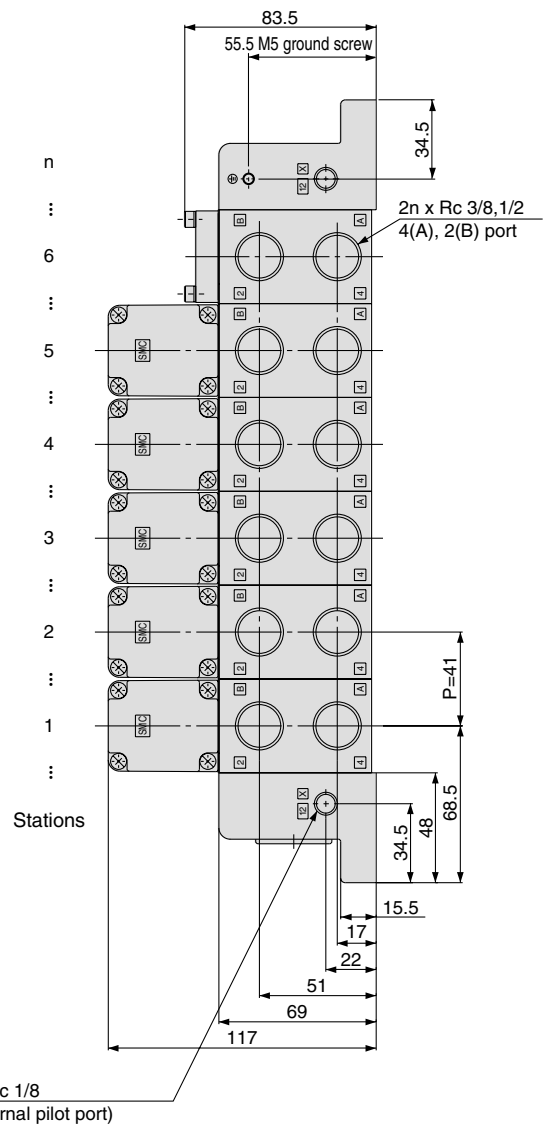
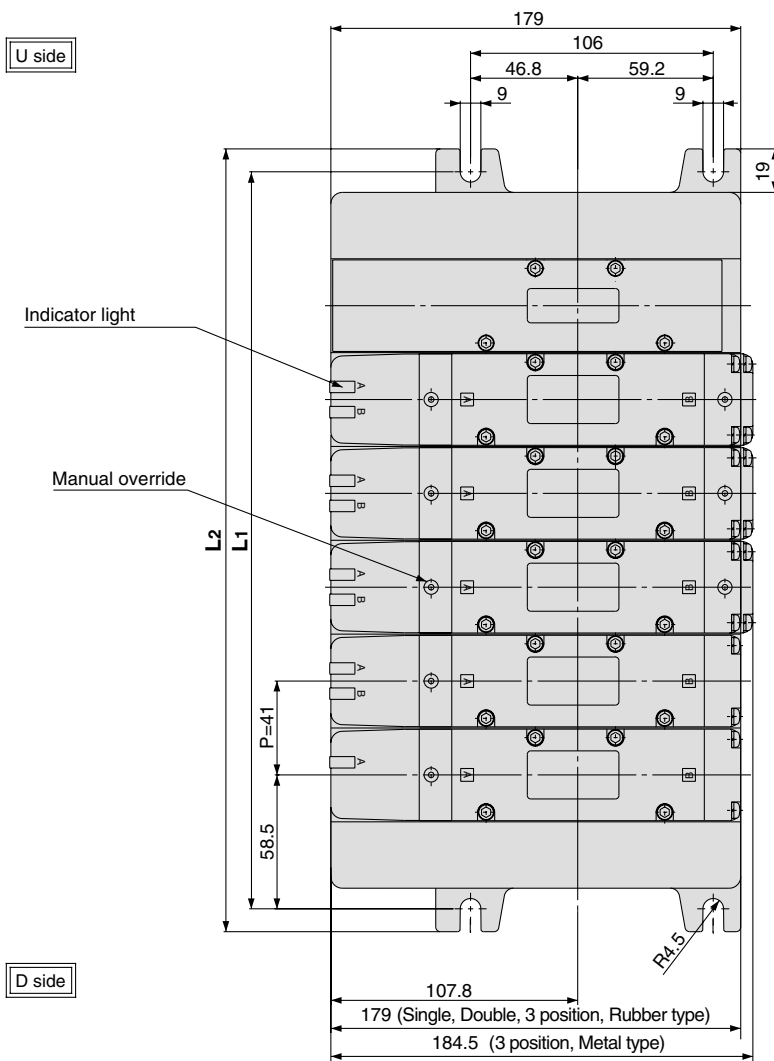
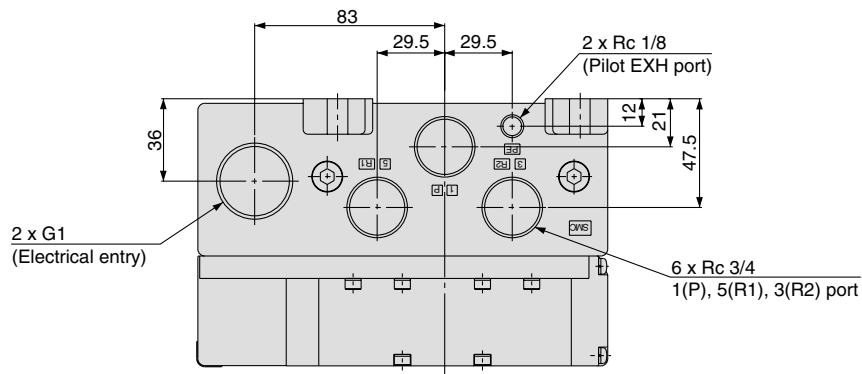


SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

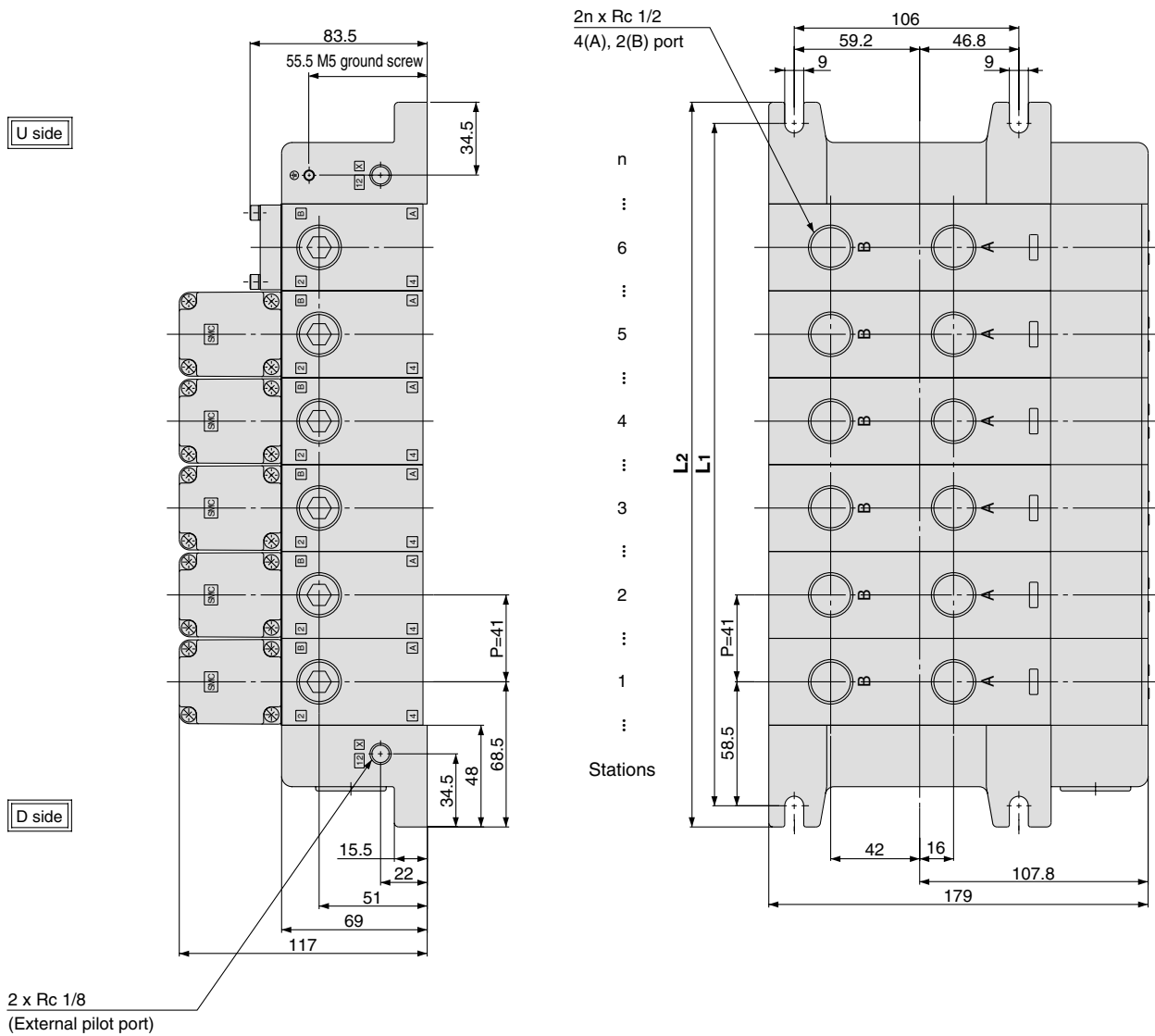
Series VQ5000

T1

Kit (Individual terminal block kit)



Bottom ported drawing



SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Dimensions

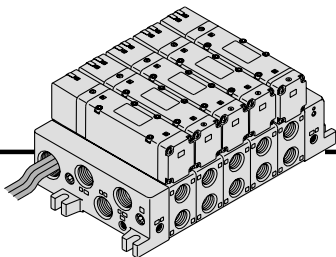
Formula: $L1 = 41n + 76$, $L2 = 41n + 96$
n: Stations (Maximum 12 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12
L1	117	158	199	240	281	322	363	404	445	486	527	568
L2	137	178	219	260	301	342	383	424	465	506	547	588

Series VQ5000

L Kit (Lead wire cable)

IP65 compliant



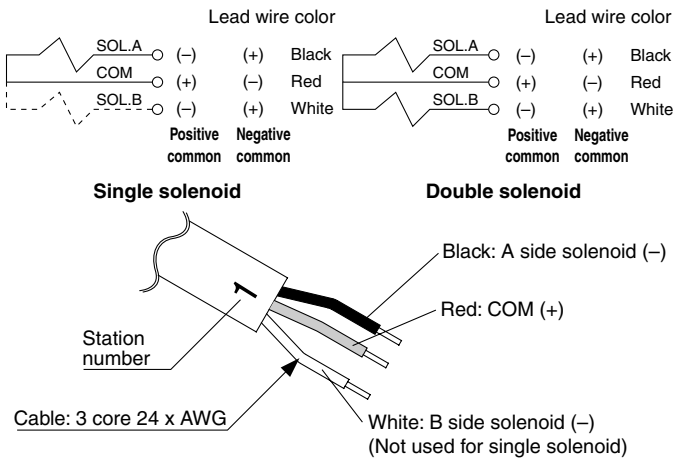
- Enclosure IP65 compliant
- Direct electrical entry type available with two or more stations.
- Electrical entry can be selected on either the U side or the D side according to the mounting orientation.
- Maximum stations are 12.

Manifold Specifications

Series	Porting specifications			Applicable stations
	4(A), 2(B) port location	Port size		
		1(P), 5(R1), 3(R2)	4(A), 2(B)	
VQ5000	Side	Rc 3/4	Rc 3/8	Max. 12 stations
			Rc 1/2	
	Bottom		Rc 1/2	

Wiring Specifications

Three lead wires are attached to each station regardless of the type of valve which is mounted.
The red wire is for COM connection.



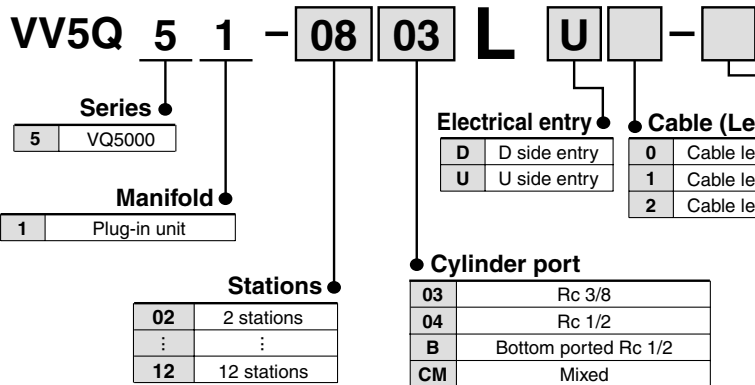
Lead Wire Assembly with Connector

Lead wire length	Part no.
0.6 m	VVQ5000-44A-8-□
1.5 m	VVQ5000-44A-15-□
3 m	VVQ5000-44A-30-□

□: Number of stations 1 to 12

For different lead wire lengths, order a lead wire assembly with connector shown in the table on the right.
Note) There is no polarity. It can also be used as a negative common.

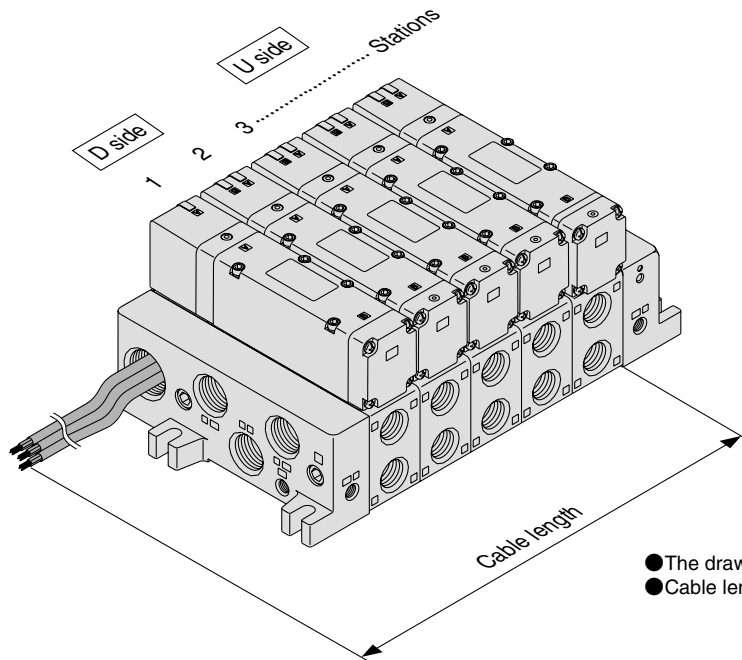
How to Order Manifold



Option

Symbol	Option
Nil	None
CD1 ⁽¹⁾	Exhaust cleaner for Rc 1: D side exhaust
CD2 ⁽¹⁾	Exhaust cleaner for Rc 1 1/2: D side exhaust
CU1 ⁽¹⁾	Exhaust cleaner for Rc 1: U side exhaust
CU2 ⁽¹⁾	Exhaust cleaner for Rc 1 1/2: U side exhaust
SB	Direct exhaust with silencer box: Exhaust from both U and D sides
SD ⁽¹⁾	Direct exhaust with silencer box: D side exhaust
SU ⁽¹⁾	Direct exhaust with silencer box: U side exhaust
W	IP65 enclosure

Note 1) Combination of [C_D⁰] and [S_D⁰] is not possible.



- The drawing shows the electrical entry on the D side.
- Cable length is measured from the solenoid valve body.

How to Order Valves

VQ 5 1 0 0 - 5

Series
5 VQ5000

Type of actuation

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

Seal

0	Metal seal
1	Rubber seal

Enclosure

Nil	Dusttight
W	Dusttight/Low jetproof type(IP65)

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)

Light/Surge voltage suppressor

Nil	Yes
E	Without light, with surge voltage suppressor

Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC

Function

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



Note 1) Applicable to DC specification. Please select when you expect to energize the unit for extended periods of time. Refer to page 3 for details.

Note 2) Refer to page 843 for details on external pilot specifications.

Note 3) When two or more symbols are specified, indicate them alphabetically.

How to Order Manifold Assembly [Order example]

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>

Lead wire kit with cable (3 m)

VV5Q51-0503LD2 ...1 set—Manifold base part no.

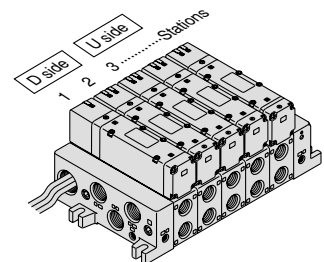
*VQ5100-52 sets—Valve part no. (Stations 1 and 2)

*VQ5200-52 sets—Valve part no. (Stations 3 and 4)

*VQ5300-51 set—Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.



SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

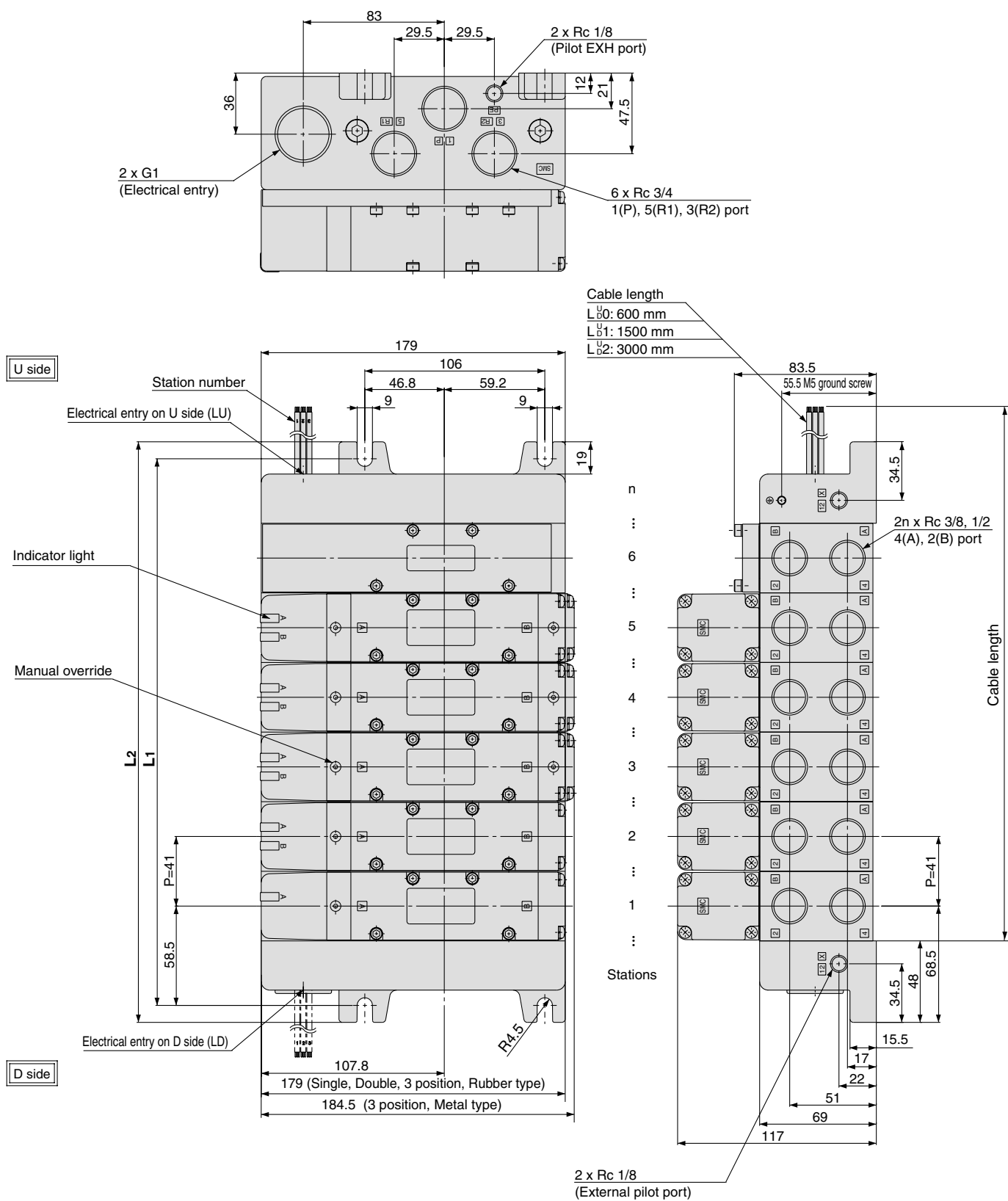
VFS

VFR

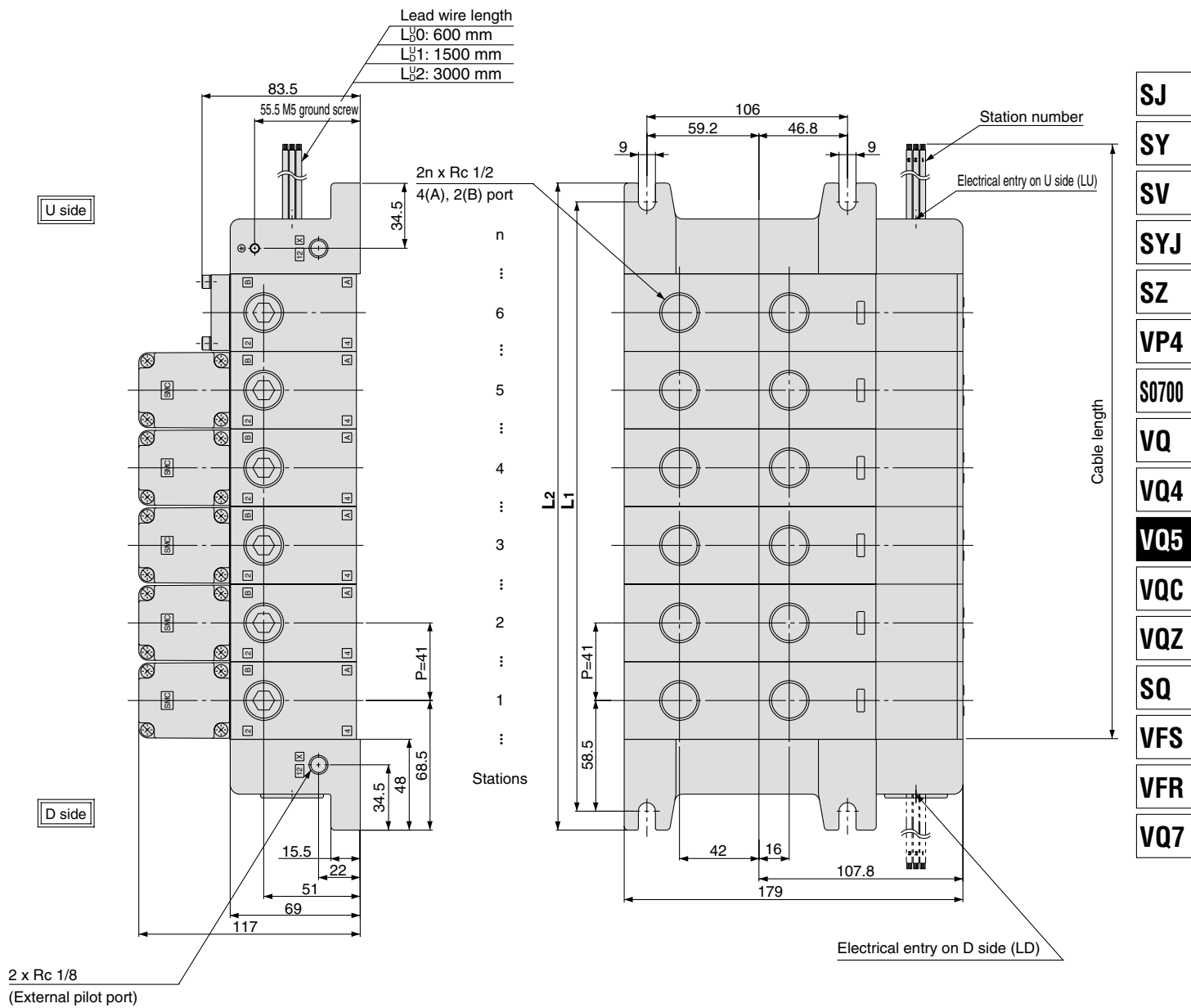
VQ7

Series VQ5000

L Kit (Lead wire cable)



Bottom ported drawing



Dimensions

Formula: $L_1 = 41n + 76$, $L_2 = 41n + 96$
 n: Stations (Maximum 12 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12
L1	117	158	199	240	281	322	363	404	445	486	527	568
L2	137	178	219	260	301	342	383	424	465	506	547	588

Series VQ5000

S

Kit (Serial transmission unit): EX123/124 Integrated Type (for Output) Serial Transmission System

IP65 compliant

●The serial transmission system reduces wiring work, while minimizing wiring and saving space.

Manifold Specifications

Series	Porting specifications			Applicable stations
	4(A), 2(B) port location	Port size		
		1(P), 5(R1), 3(R2)	4(A), 2(B)	
VQ5000	Side	Rc 3/4	Rc 3/8 Rc 1/2	Max. 12 stations
	Bottom		Rc 1/2	

●Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option.

Item	Specifications
External power supply	24 VDC +10%, -5%
Current consumption (Internal unit)	0.1 A

How to Order Manifold

VV5Q 5 1 - 08 03 S U Q -

Series

5 VQ5000

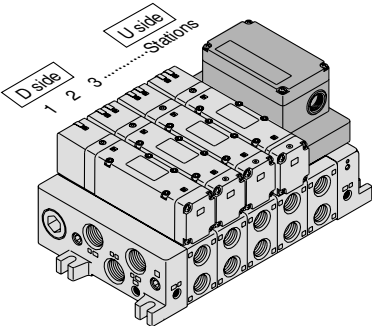
Manifold

1 Plug-in unit

Stations

02	2 stations
⋮	⋮
12	12 stations

Note) Add 1 station for serial unit mounting. Maximum stations are 9 (Option: 12 stations. Please use the manifold specification sheet for 10 to 12 stations.). 1 station is used for SI unit mounting.



* Stations are counted starting from the first station on the D side.

Cylinder port	
03	Rc 3/8
04	Rc 1/2
B	Bottom ported Rc 1/2
CM	Mixed

SI unit mounting position	
D	D side mounting
U	U side mounting

Option

Symbol	Option
Nil	None
CD1 ⁽²⁾	Exhaust cleaner for Rc 1: D side exhaust
CD2 ⁽²⁾	Exhaust cleaner for Rc 1 1/2: D side exhaust
CU1 ⁽²⁾	Exhaust cleaner for Rc 1: U side exhaust
CU2 ⁽²⁾	Exhaust cleaner for Rc 1 1/2: U side exhaust
K ⁽³⁾	Special wiring specifications (Except double wiring)
SD ⁽²⁾	Direct exhaust with silencer box: D side exhaust
SU ⁽²⁾	Direct exhaust with silencer box: U side exhaust
W	IP65 enclosure

Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -CD1K.
Note 2) Combination of [C_D□□] and [S_U□□] is not possible.
Note 3) Specify the wiring specifications on the manifold specification sheet.

SI unit

0	Without SI unit
F1	NKE Corp.: Uni-wire System
H	NKE Corp.: Uni-wire H System
J1	SUNX Corp.: S-LINK System (16 output points)
J2	SUNX Corp.: S-LINK System (8 output points)
Q	DeviceNet
R1	OMRON Corp.: CompoBus/S System (16 output points)
R2	OMRON Corp.: CompoBus/S System (8 output points)
V	CC-LINK System

SI Unit Part No.

Symbol	Protocol type	SI unit part no.	Page
F1	NKE Corp.: Uni-wire System	D side: EX123D-SUW1 U side: EX123U-SUW1	P.1653
H	NKE Corp.: Uni-wire H System	D side: EX123D-SUH1 U side: EX123U-SUH1	
J1	SUNX Corp.: S-LINK System (16 output points)	D side: EX123D-SSL1 U side: EX123U-SSL1	
J2	SUNX Corp.: S-LINK System (8 output points)	D side: EX123D-SSL2 U side: EX123U-SSL2	
Q	DeviceNet	D side: EX124D-SDN1 U side: EX124U-SDN1	
R1	OMRON Corp.: CompoBus/S System (16 output points)	D side: EX124D-SCS1 U side: EX124U-SCS1	
R2	OMRON Corp.: CompoBus/S System (8 output points)	D side: EX124D-SCS2 U side: EX124U-SCS2	
V	CC-Link	D side: EX124D-SMJ1 U side: EX124U-SMJ1	

Refer to pages 1653 to 1655 for EX123/124 integrated type (for output) serial transmission system.

How to Order Valves

VQ 5 1 0 0 - 5

Series

5	VQ5000
---	--------

Type of actuation

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

Seal

0	Metal seal
1	Rubber seal

Enclosure

Nil	Dusttight
W	Dusttight/Low jetproof type (IP65)

Manual override

Nil	Non-locking push type (Tool required)
B	Locking type (Tool required)

Coil voltage

5	24 VDC
---	--------

Function

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

Note 1) Applicable to DC specification. Please select when you expect to energize the unit for extended periods of time. Refer to page 3 for details.

Note 2) Refer to page 843 for details on external pilot specifications.

Note 3) When two or more symbols are specified, indicate them alphabetically.

How to Order Manifold Assembly [Order example]

Specify the part numbers for valves and options together beneath the manifold base part number.

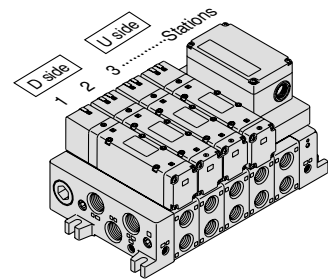
<Example>

VV5Q51-0603SUQ ... 1 set—Manifold base part no.

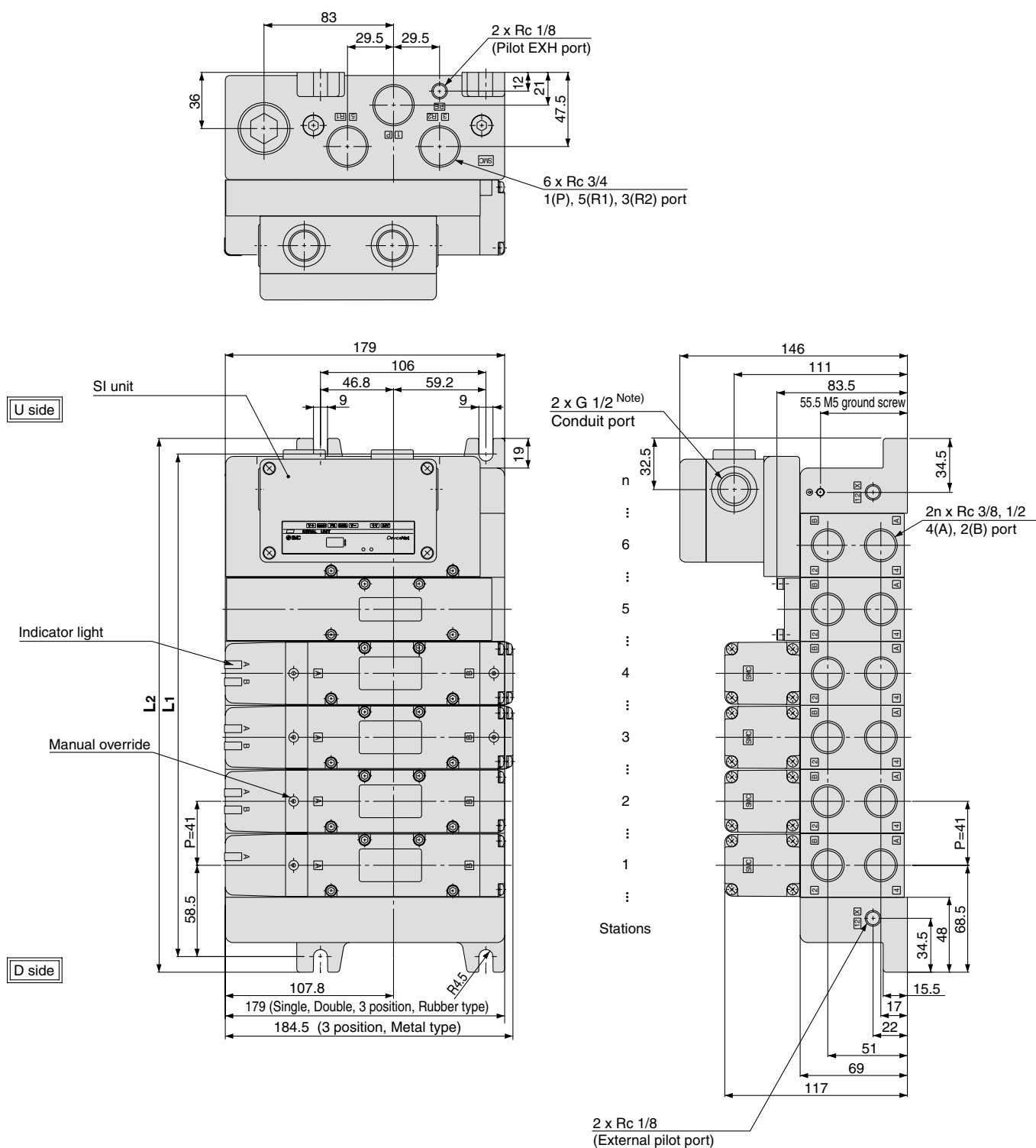
*VQ5100-5 2 sets—Valve part no. (Stations 1 and 2)
 *VQ5200-5 2 sets—Valve part no. (Stations 3 and 4)
 *VQ5300-5 1 set—Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

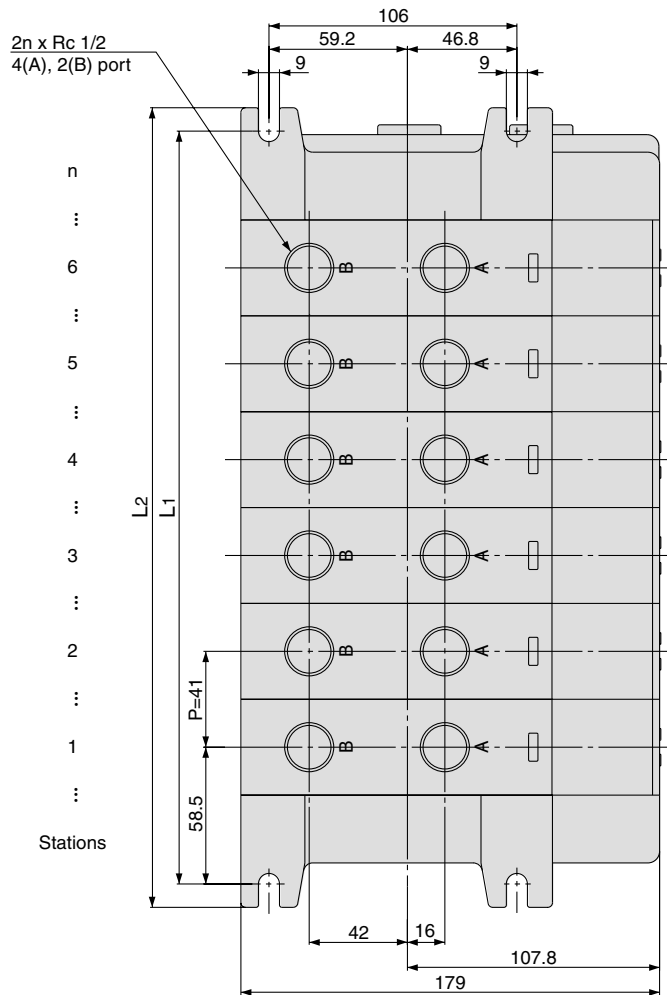
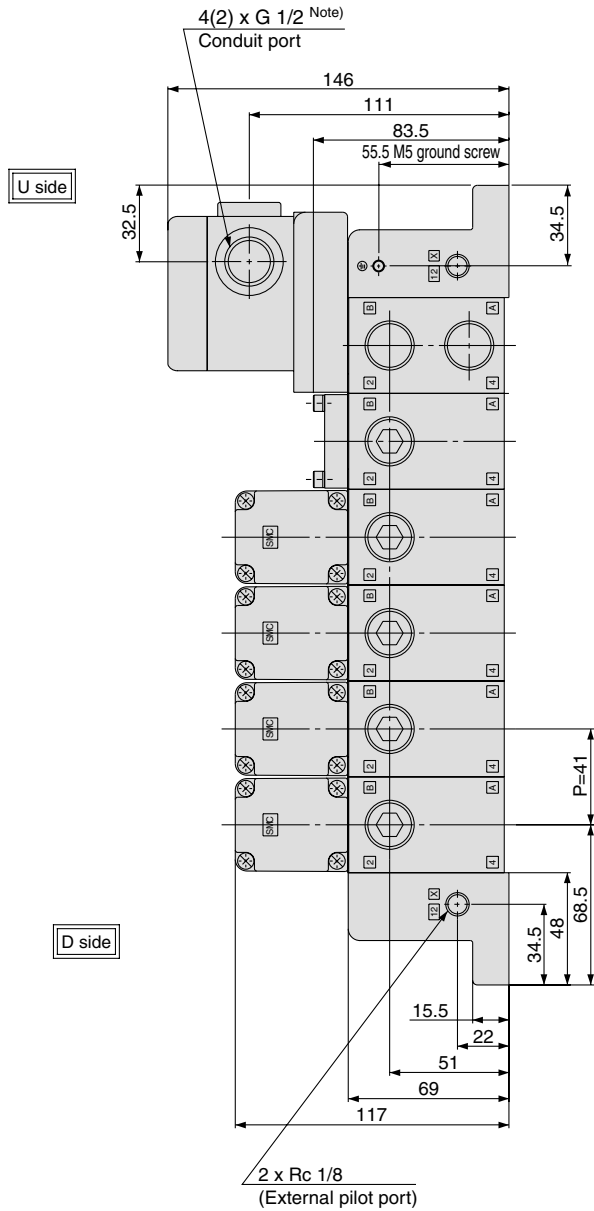


SJ
 SY
 SV
 SYJ
 SZ
 VP4
 S0700
 VQ
 VQ4
VQ5
 VQC
 VQZ
 SQ
 VFS
 VFR
 VQ7



Note) When the SI unit is EX124D (U), conduit port (G1/2) will be 4 locations. In the case of EX123D (U), conduit port will be 2 locations.

Bottom port drawing



SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Formula: $L1 = 41n + 76$, $L2 = 41n + 96$

n: Stations (Maximum 12 stations)

* Including 1 station for SI unit box mounting

Dimensions

L \ n	2	3	4	5	6	7	8	9	10	11	12
L1	158	199	240	281	322	363	404	445	486	527	568
L2	178	219	260	301	342	383	424	465	506	547	588

Base Mounted Plug Lead Unit: C Kit (Connector Kit) Series VQ5000

How to Order Manifold



VV5Q 5 5 - 08 03 C - W

Series

5	VQ5000
---	--------

Manifold

5	Plug lead unit
---	----------------

Stations

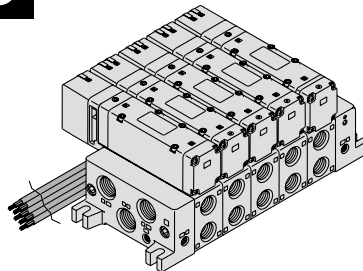
01	1 station
...	...
12	12 stations

Cylinder port

03	Rc 3/8
04	Rc 1/2
B	Bottom ported Rc 1/2
CM	Mixed

Kit type

C kit (Connector)



C Connector kit Max. 12 stations

Option

Symbol	Option
Nil	None
CD1 ⁽¹⁾	Exhaust cleaner for Rc 1: D side exhaust
CD2 ⁽¹⁾	Exhaust cleaner for Rc 1 1/2: D side exhaust
CU1 ⁽¹⁾	Exhaust cleaner for Rc 1: U side exhaust
CU2 ⁽¹⁾	Exhaust cleaner for Rc 1 1/2: U side exhaust
SB	Direct exhaust with silencer box: Exhaust from both U and D sides
SD ⁽¹⁾	Direct exhaust with silencer box: D side exhaust
SU ⁽¹⁾	Direct exhaust with silencer box: U side exhaust
W	IP65 enclosure

Note 1) Combination of [C□□] and [S□] is not possible.



Refer to page 848 (Grommet style) for wiring specifications.

How to Order Valves

VQ 5 1 5 0 - 5 G

Series

5	VQ5000
---	--------

Type of actuation

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

Seal

0	Metal seal
1	Rubber seal

Function

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



Note 1) Applicable to DC specification. Please select when you expect to energize the unit for extended periods of time. Refer to page 3 for details.

Note 2) Refer to page 843 for details on external pilot specifications.

Note 3) When two or more symbols are specified, indicate them alphabetically.

Coil voltage

1	100 VAC (50/60 Hz)	4	220 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)	5	24 VDC
3	110 VAC (50/60 Hz)	6	12 VDC

Enclosure

Nil	Dusttight
W	Dusttight/Low jetproof type (IP65)

Manual override

Nil: Non-locking push type (Tool required)	B: Locking type (Tool required)
---	--

Light/Surge voltage suppressor

Nil	Yes
E	Without light, with surge voltage suppressor

Electrical entry

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

How to Order Manifold Assembly [Order example]

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>

Connector kit

VV5Q55-05042C-1 set —Manifold base part no.

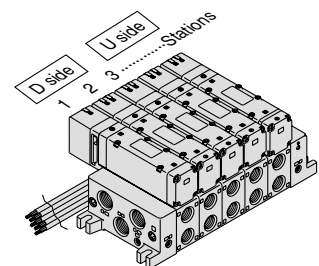
* VQ5150-5G 2 sets —Valve part no. (Stations 1 and 2)

* VQ5250-5G 2 sets —Valve part no. (Stations 3 and 4)

* VQ5350-5G 1 set — Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side.
When entry of part numbers becomes complicated, indicate in the manifold specification sheet.



Manifold Specifications

Series	Base model	Type of connection	Porting specifications			Maximum applicable stations	Applicable solenoid valve	Mass (kg) (Formula)
			4(A), 2(B) port location	Port size Note)				
				1(P), 5(R1), 3(R2)	4(A), 2(B)			
VQ5000	VV5Q55-□□□	■ C kit–Grommet	Side	Rc 3/4 Option (Direct exhaust with silencer box)	Rc 3/8 Rc 1/2	2 to 12 stations	VQ5□50 VQ5□51	0.58n+0.9 • Except solenoid valve mass
			Bottom		Rc 1/2			

Note) For details about international standard threads other than Rc threads, refer to "Option" on page 843.

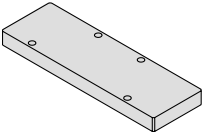
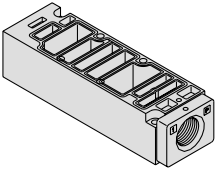
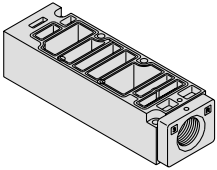
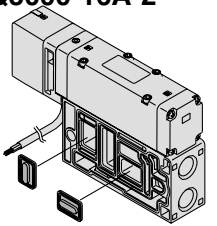
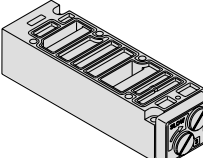
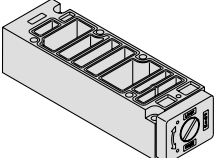
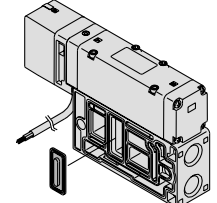
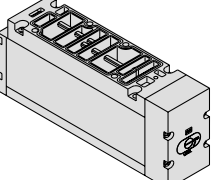
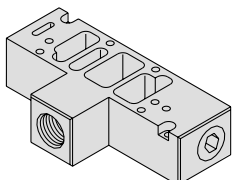
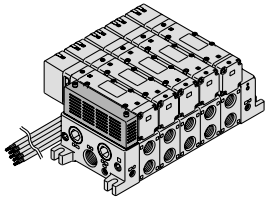
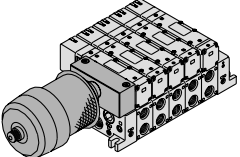
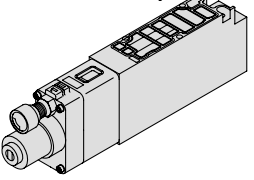
n: Stations

Flow Characteristics at the Number of Manifold Stations (Operated individually)

Model	Passage/Stations	Station 1	Station 5	Station 10
2 position metal seal VQ5 ₂ 00	1 → 4/2 (P → A/B)	C [dm ³ /(s·bar)]	11	11
		b	0.24	0.24
		Cv	2.7	2.7
	4/2 → 5/3 (A/B → EA/EB)	C [dm ³ /(s·bar)]	12	12
		b	0.14	0.14
		Cv	2.9	2.9
2 position rubber seal VQ5 ₂ 01	1 → 4/2 (P → A/B)	C [dm ³ /(s·bar)]	12	12
		b	0.33	0.33
		Cv	3.4	3.4
	4/2 → 5/3 (A/B → EA/EB)	C [dm ³ /(s·bar)]	16	16
		b	0.33	0.33
		Cv	4.4	4.4

Note) For port size Rc 1/2

Manifold Option

Blanking plate assembly VVQ5000-10A-5 	Individual SUP spacer VVQ5000-P-5- ₀₃ ₀₄ 	Individual EXH spacer VVQ5000-R-5- ₀₃ ₀₄ 	EXH block plate VVQ5000-16A-2 
Throttle valve spacer VVQ5000-20A-5 	SUP stop valve spacer VVQ5000-37A-5 	SUP block plate VVQ5000-16A-1 	Double check spacer with residual pressure release valve VVQ5000-25A-5 
Release valve spacer VVQ5000-24A-5D 	Direct exhaust with silencerbox [-S□] 	For exhaust cleaner mounting [-C□] 	Interface regulator ARBQ5000-00- _A _B -5 

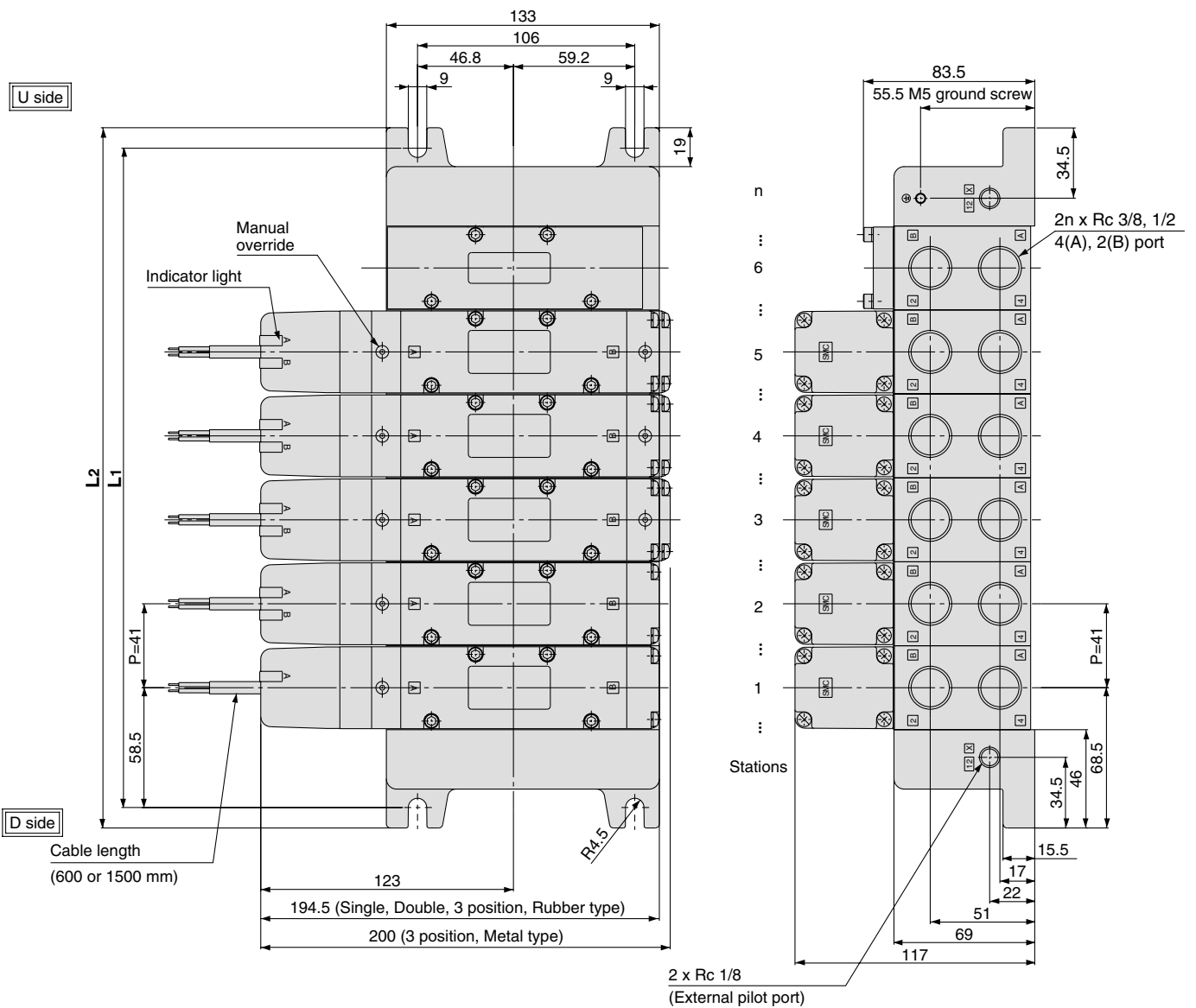
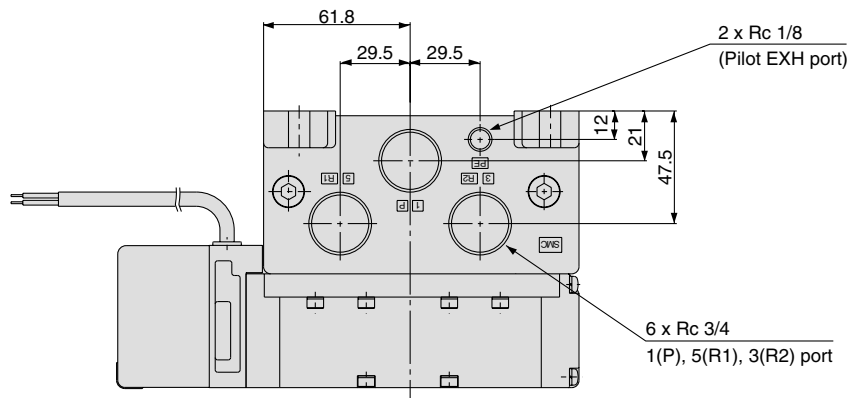


- Refer to pages 838 to 842 for detailed dimensions of each option.
- For replacement parts, refer to page 847.

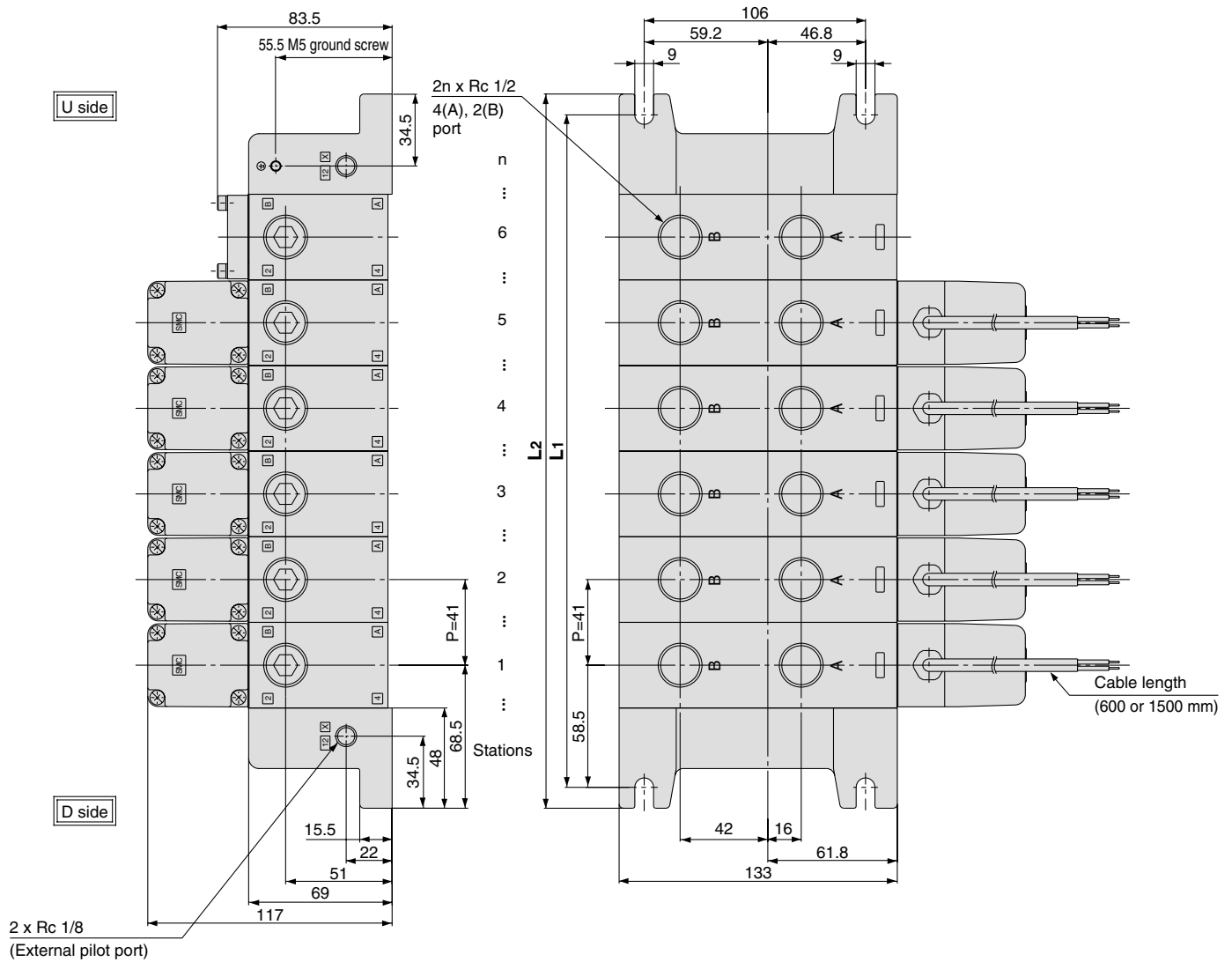
Series VQ5000

C

Kit (Connector)



Bottom ported drawing



SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Dimensions

Formula: $L1 = 41n + 76$, $L2 = 41n + 96$
n: Stations (Maximum 12 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12
L1	117	158	199	240	281	322	363	404	445	486	527	568
L2	137	178	219	260	301	342	383	424	465	506	547	588

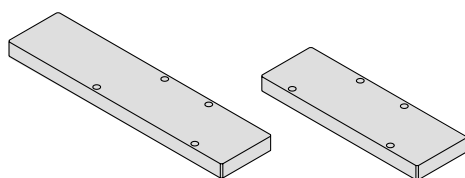
Series VQ5000

Manifold Option Parts

Blanking plate assembly

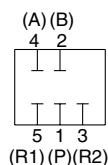
VVQ5000-10A-1 (Plug-in type) VVQ5000-10A-5 (Plug lead type)

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



Plug-in type

Plug lead type



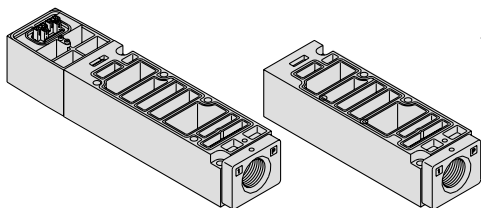
Circuit diagram



Individual SUP spacer

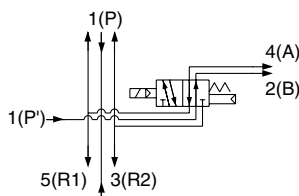
VVQ5000-P-1-⁰³/₀₄ (Plug-in type) VVQ5000-P-5-⁰³/₀₄ (Plug lead type)

By mounting individual SUP spacers on a manifold block, it is possible to provide individual supply ports for each valve.

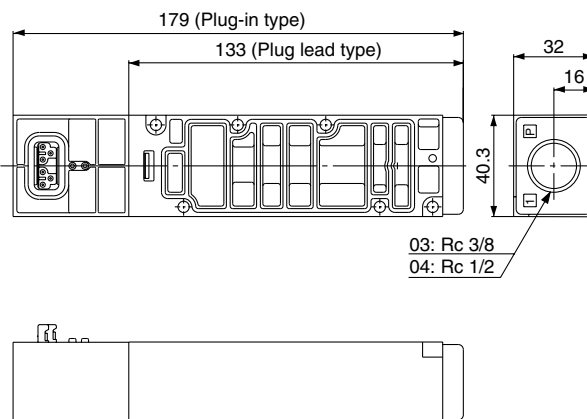


Plug-in type

Plug lead type



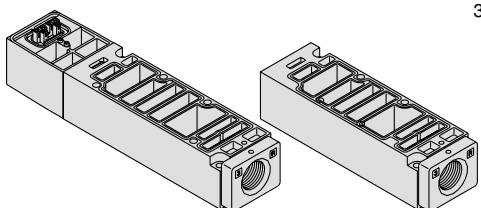
Circuit diagram



Individual EXH spacer

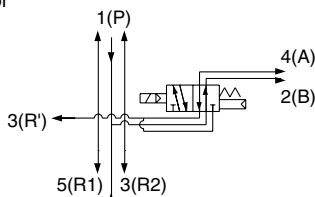
VVQ5000-R-1-⁰³/₀₄ (Plug-in type) VVQ5000-R-5-⁰³/₀₄ (Plug lead type)

By mounting individual EXH spacers on a manifold block, exhaust ports can be provided individually for each valve. (Common EXH type)

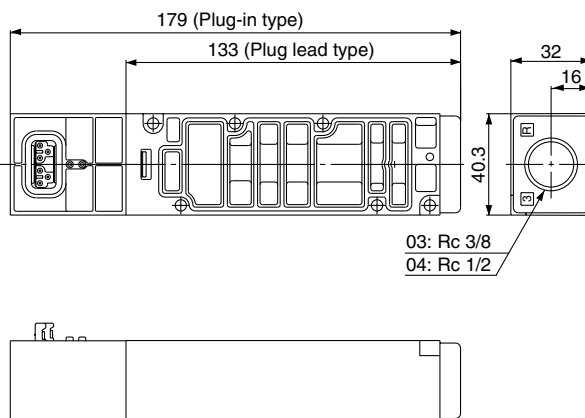


Plug-in type

Plug lead type



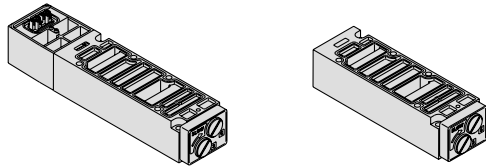
Circuit diagram



Throttle valve spacer

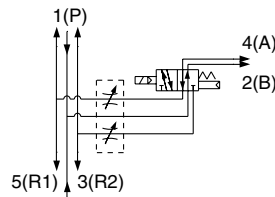
VVQ5000-20A-1 (Plug-in type)
VVQ5000-20A-5 (Plug lead type)

A throttle valve spacer is mounted on a manifold block to control cylinder speed by throttling exhaust air flow.

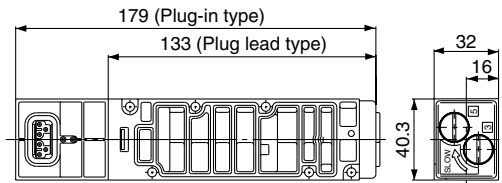


Plug-in type

Plug lead type



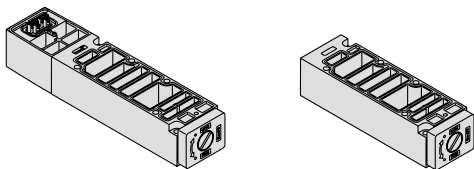
Circuit diagram



SUP stop valve spacer

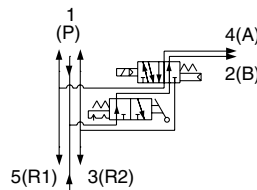
VVQ5000-37A-1 (Plug-in type)
VVQ5000-37A-5 (Plug lead type)

A SUP stop valve spacer is mounted on a manifold block, making it possible to individually shut off supply air to each valve.

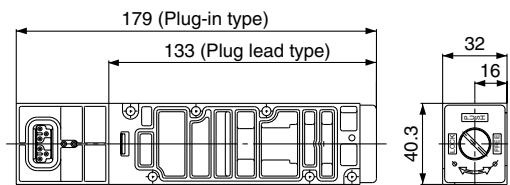


Plug-in type

Plug lead type



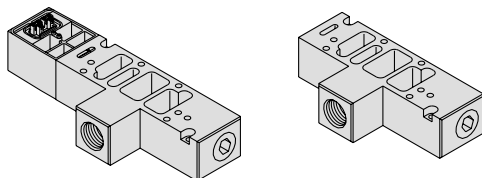
Circuit diagram



Release valve spacer: For D side mounting

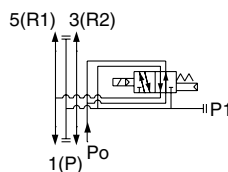
VVQ5000-24A-1D (Plug-in type)
VVQ5000-24A-5D (Plug lead type)

A VQ51□□ (single) valve can be used as an air release valve by combining it with a release valve spacer.
Note) 2 position double and 3 position cannot be mounted.

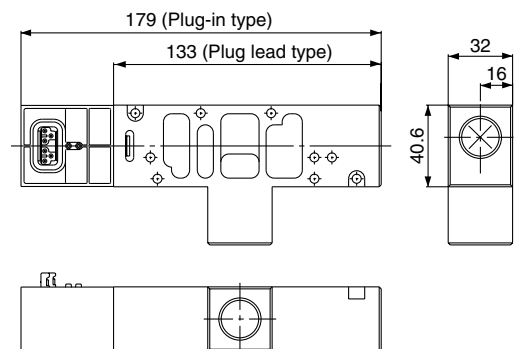


Plug-in type

Plug lead type



Circuit diagram



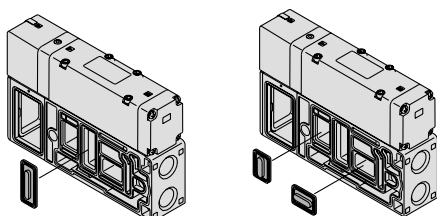
SUP block plate

VVQ5000-16A-1

EXH block plate

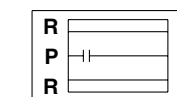
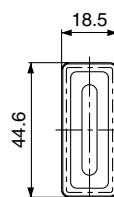
VVQ5000-16A-2

When supplying two different pressures to one manifold, this is used to shut off between stations with different pressures.

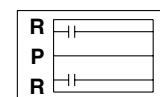
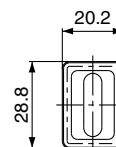


< SUP blocking plate >

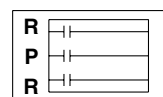
< EXH blocking plate >



SUP passage blocked



EXH passage blocked



SUP/EXH passage blocked

SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Manifold Option Parts

Double check spacer with residual pressure release valve

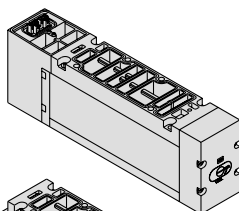
VVQ5000-25A-1 (Plug-in type) VVQ5000-25A-5 (Plug lead type)

Can hold an intermediate cylinder position for an extended time.

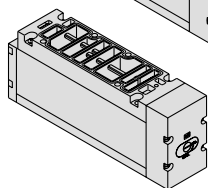
When combined with a double check spacer with built-in double check valve, it is unaffected by air leakage between the spool valves, making it possible to hold a cylinder at an intermediate stopping position for an extended time.

Further, a combination of a 2 position type (VQ5 $\frac{1}{2}$ □□) and a double check spacer can be used for drop prevention.

Plug-in type



Plug lead type



Specifications

Double check spacer part no.	VVQ5000-25A- $\frac{1}{5}$	
	Intermediate stop	Drop prevention
Applicable solenoid valve	VQ54□□	VQ5 $\frac{1}{2}$ □□

Caution

Handling Precautions

- In the case of 3 position double check (VZS56 $\frac{00}{51}$ 0), check the leakage from piping and fittings in between valve and cylinder by means of synthetic detergent solutions, and ensure that there is no such leakage found there. Also check the leakage from cylinder seal and piston seal. If there is any leakage, sometimes the cylinder, when valve is de-energized, can move without stopping at intermediate position.
- Use caution, as excessive throttling of the double check spacer exhaust can cause a loss of intermediate stopping accuracy and malfunction.
- Combination with a 3 position VQ5 $\frac{3}{8}$ □□ is not possible.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

Direct exhaust with silencer box

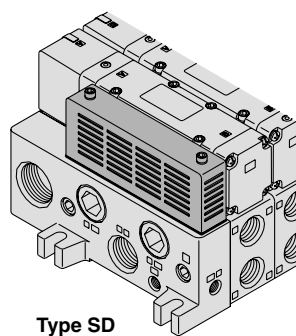
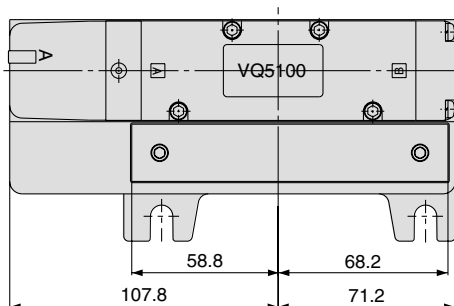
VV5Q5 $\frac{1}{2}$ -□□□-SD (D side exhaust)

VV5Q5 $\frac{1}{2}$ -□□□-SU (U side exhaust)

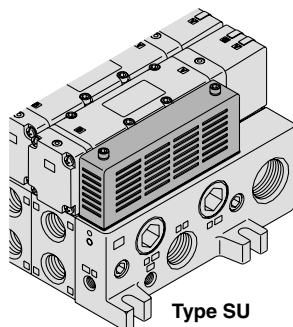
VV5Q5 $\frac{1}{2}$ -□□□-SB (Double side exhaust)

The EXH outlet is placed on the top side of the manifold end plate. The built-in silencer provides highly effective noise reduction. (Noise reduction of 35 dB or more)

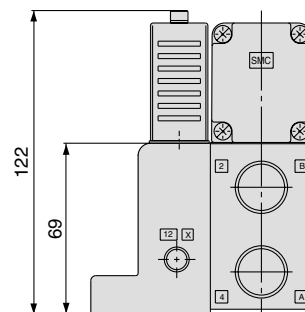
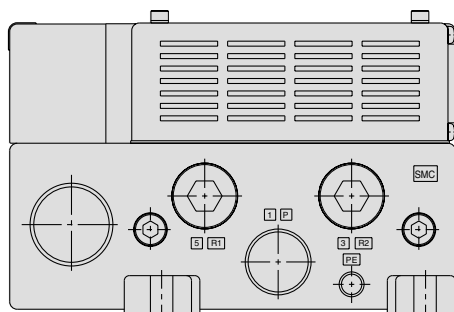
 Note) Note that when excessive drainage occurs in the air supply, the drainage will be released along with the exhaust.



Type SD



Type SU



Note) The drawing shows a VV5Q51-□□□-SD.

- Silencer box assembly: VVQ5000-75A (With gasket, screw)

Manifold Option Parts

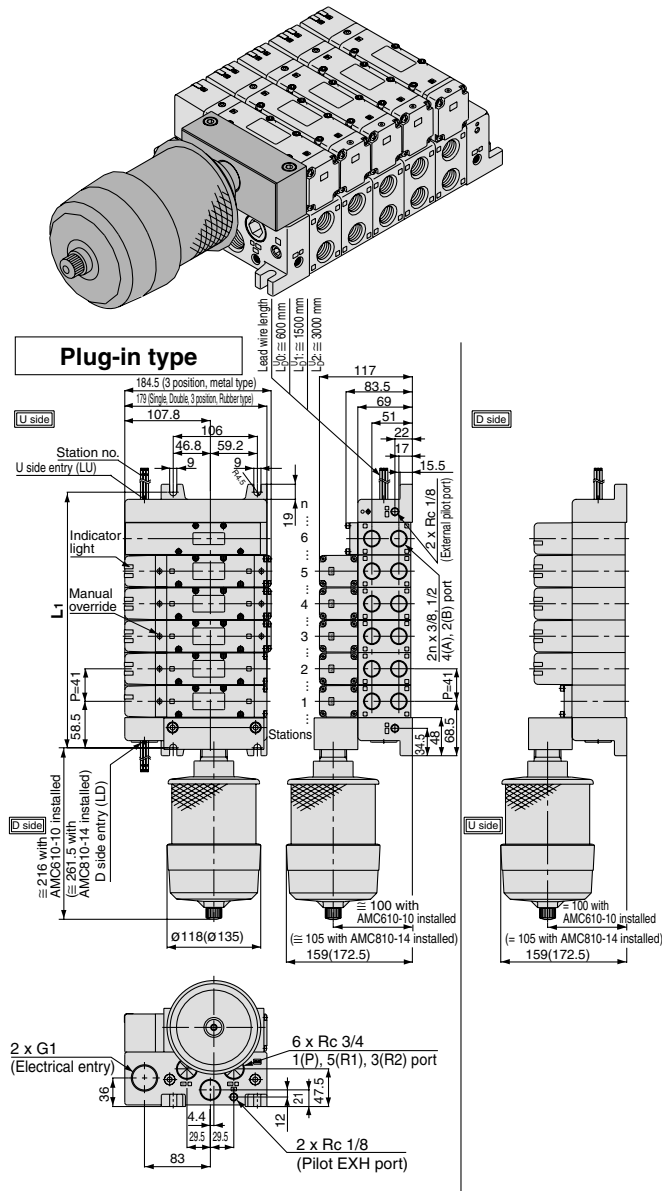
Manifold mounted exhaust cleaner

VV5Q5¹-□□□-CD¹ (D side mounting)

VV5Q5¹-□□□-CU¹ (U side mounting)

An adapter plate for exhaust cleaner mounting is provided on the top of the manifold end plate. The exhaust cleaner collects drainage and oil mist (99.9% or more) and is highly effective for noise reduction.

(Noise reduction of 35 dB or more)



Dimensions

L	n	2	3	4	5	6	7	8	9	10	11	12
L1		158	199	240	281	322	363	404	445	486	527	568
L2		178	219	260	301	342	383	424	465	506	547	588

Formula: $L1 = 41n + 76$, $L2 = 41n + 96$
n: Stations (Maximum 12 stations)

Applicable exhaust cleaners

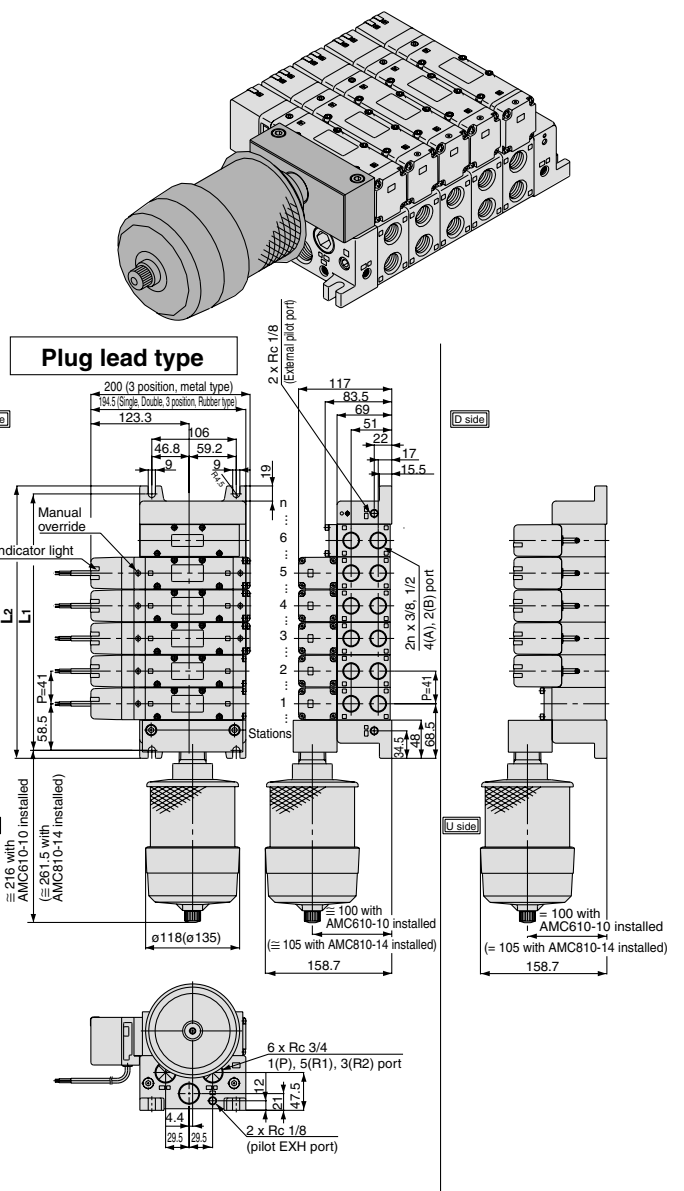
AMC610-10 (Port size Rc 1), AMC810-14 (Port size Rc 1 1/2)



Note 1) Exhaust cleaner: AMC610-10 and MC810-14 are not included. (Order separately)

Note 2) Mount so that the exhaust cleaner is at the lower side.

Note 3) For details about the exhaust cleaner, refer to Best Pneumatics No. 6.



Dimensions

L	n	2	3	4	5	6	7	8	9	10	11	12
L1		158	199	240	281	322	363	404	445	486	527	568
L2		178	219	260	301	342	383	424	465	506	547	588

Formula: $L1 = 41n + 76$, $L2 = 41n + 96$
n: Stations (Maximum 12 stations)

SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Series VQ5000

Manifold Option Parts

Interface regulator (P, A, B port regulation)

ARBQ5000-00-□-1 (Plug-in type)

ARBQ5000-00-□-5 (Plug lead type)

By mounting a spacer regulator on the manifold block, it enables to regulate pressure per every valve.

Specifications

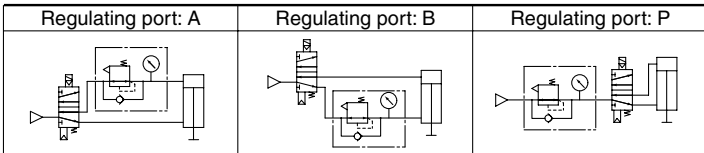
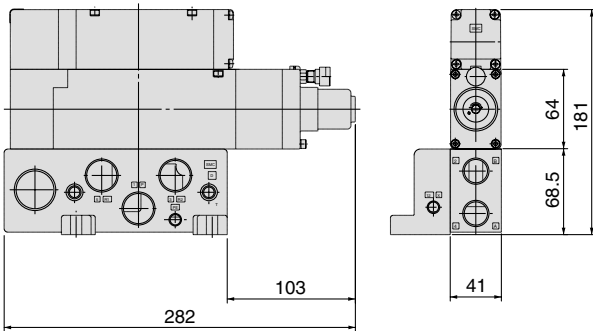
Interface regulator		ARBQ5000					
Regulating port		A		B		P	
Applicable solenoid valve		Plug-in	Plug lead	Plug-in	Plug lead	Plug-in	Plug lead
Maximum operating pressure		1.0 MPa					
Set pressure range		0.05 to 0.85 MPa					
Fluid		Air					
Ambient and fluid temperature		-5 to 60°C (No freezing)					
Port size for connection of pressure gauge		M5 x 0.8					
Weight (kg)		0.79	0.74	0.78	0.73	0.79	0.74
Effective area at supply side (mm ²) S at P1 = 0.7 MPa/P2 = 0.5 MPa	P→A	33		75		29	
	P→B	64		33		28	
Effective area at exhaust side (mm ²) S at P2 = 0.5 MPa	A→EA	36		75		78	
	B→EB	68		38		69	

- Note 1) Set the pressure within the operating pressure range of the solenoid valve.
- Note 2) Operate an interface regulator only by applying pressure from the P port of the base, except when using it as a reverse pressure valve. When using it as a reverse pressure valve, P port regulation is not allowed to use.
- Note 3) When using a perfect spacer, assemble a valve, a spacer regulator and a perfect spacer in this order to use it.
- Note 4) When using in A port regulation, B port regulation by closed center, since there is a problem in its operation, please contact SMC.
- Note 5) Dusttight/splash proof enclosure (IP65) is not available with interface regulator.

How to Order

Solenoid valve	Interface regulator	Regulating port
VQ5□0□ (Plug-in type)	ARBQ5000-00-A-1	A
	ARBQ5000-00-B-1	B
	ARBQ5000-00-P-1	P
VQ5□5□ (Plug lead type)	ARBQ5000-00-A-5	A
	ARBQ5000-00-B-5	B
	ARBQ5000-00-P-5	P

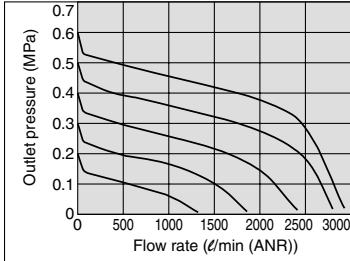
Dimensions



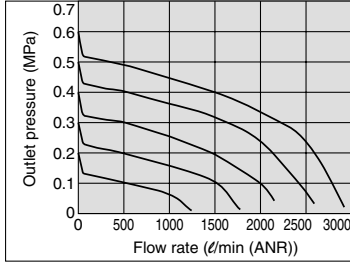
Flow Characteristics

Conditions Inlet pressure: 0.7 MPa

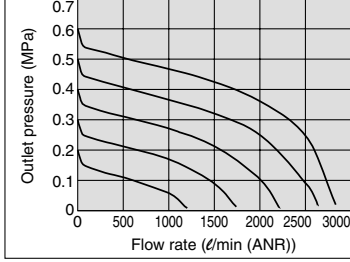
ARBQ5000-00-A (P→A)



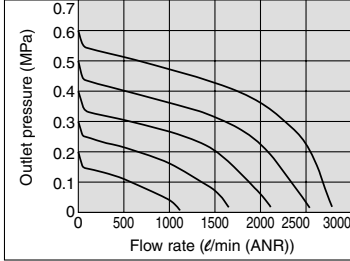
ARBQ5000-00-B (P→B)



ARBQ5000-00-P (P→A)

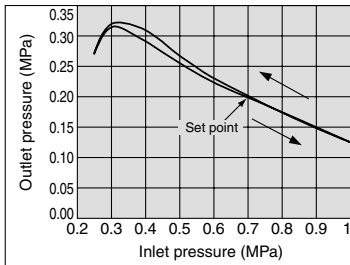


ARBQ5000-00-P (P→B)



Pressure Characteristics

Conditions
Inlet pressure: 0.7 MPa
Outlet pressure: 0.2 MPa
Flow rate: 20 l/min(ANR)



Option

External Pilot Specifications

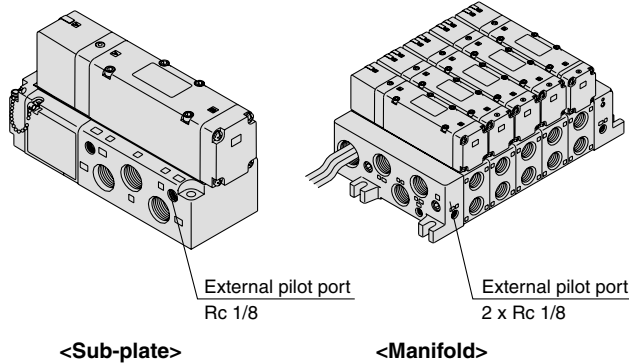
When the supply pressure is

- lower than the minimum solenoid valve operating pressure of 0.1 to 0.2 MPa, or when it drops below this level,
 - used for reverse pressure (R port pressure) or cylinder pressure (A, B port pressure),
 - used for vacuum specifications (please contact SMC), it can be used for external pilot specifications.
- Order a valve by adding the external pilot specification [R] to the part number.
- External pilot is available as standard for manifolds and options.
- Compatibility with universal porting is possible for the single, double and 3P (excluding perfect spacer) types.

How to Order Manifold

VQ5100 **R** - 5 - 04

• External pilot specifications



Note) Mixed mounting of internal and external pilots is possible

Pressure Specifications

Valve construction		Metal seal	Rubber seal
Operating pressure range		Vacuum to 1.0 MPa	
External pilot ^{Note)} pressure range	Single	0.1 to 1.0 MPa (0.1 to 0.7 MPa)	0.2 to 1.0 MPa (0.2 to 0.7 MPa)
	Double		0.15 to 1.0 MPa (0.15 to 0.7 MPa)
	3 position	0.15 to 1.0 MPa (0.15 to 0.7 MPa)	0.2 to 1.0 MPa (0.2 to 0.7 MPa)

Note) Values inside () denote the low wattage (0.5 W) specifications.

International Thread Standards Other than Rc

Rc specifications are standard for all ports, however, NPT, NPTF and G are available for international markets.

Add the appropriate symbol following the port size in the standard part number.

How to Order Single Valves (Example)

VQ5100 - 5 - 04

Cylinder port
Port size

Thread type
1(P), 5(R1), 3(R2) and 4(A),
2(B) port

Nil	Rc
N	NPT
T	NPTF
F	G

How to Order Manifold

VV5Q51 - 08 03 FU1

Cylinder port
Port size

Thread type
1(P), 5(R1), 3(R2) and 4(A),
2(B) port

Nil	Rc
N	NPT
T	NPTF
F	G

How to Order Sub-plates and Options (Example)

VQ5000 - P - B 04 (Sub-plate)

VVQ5000 - P - 1 - 04 (Option)

Port size

Thread type

Nil	Rc
N	NPT
T	NPTF
F	G

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

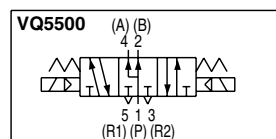
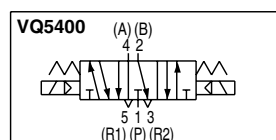
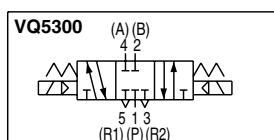
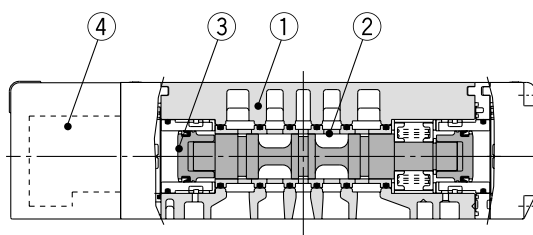
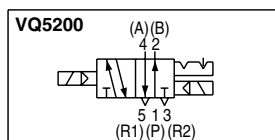
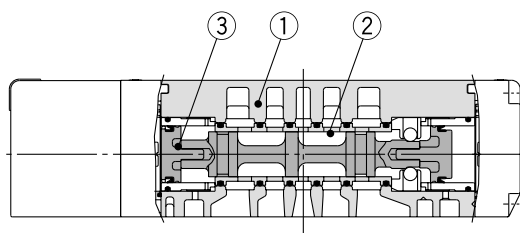
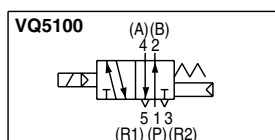
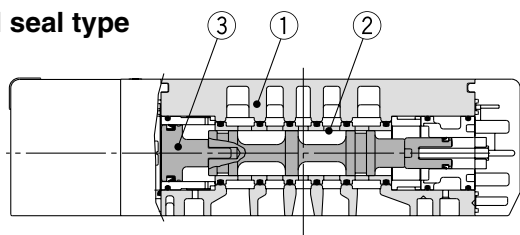
VFR

VQ7

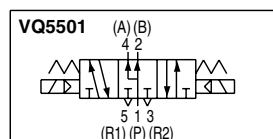
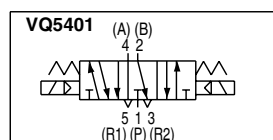
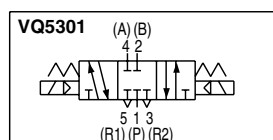
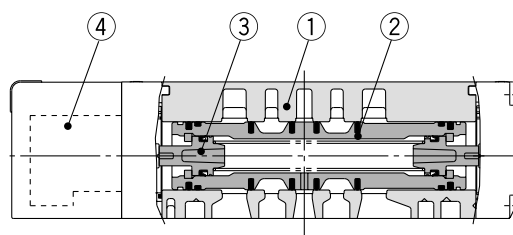
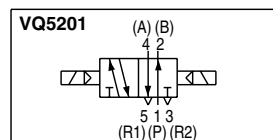
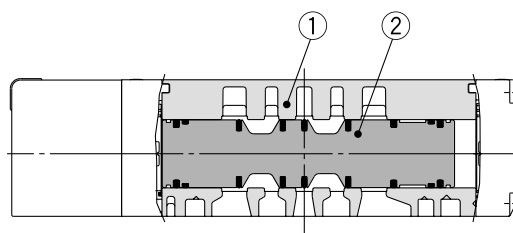
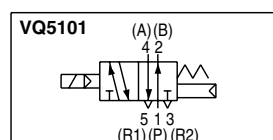
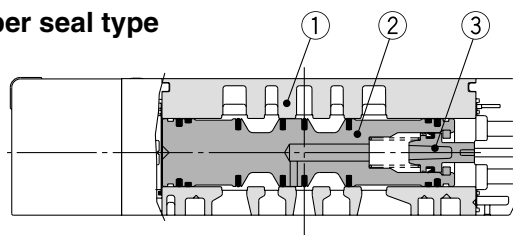
Series VQ5000 Construction

Plug-in Unit

Metal seal type



Rubber seal type



Component Parts

Number	Description	Material	Note
1	Body	Aluminum die-casted	
2	Spool/Sleeve	Stainless steel	
3	Piston	Resin	

Replacement Parts

4	Pilot valve assembly	VQZ111P-□- A B E	* Coil rated voltage Example) 24 VDC: 5 A: With A side light B: With B side light E: Without a light (Common for A and B)
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Component Parts

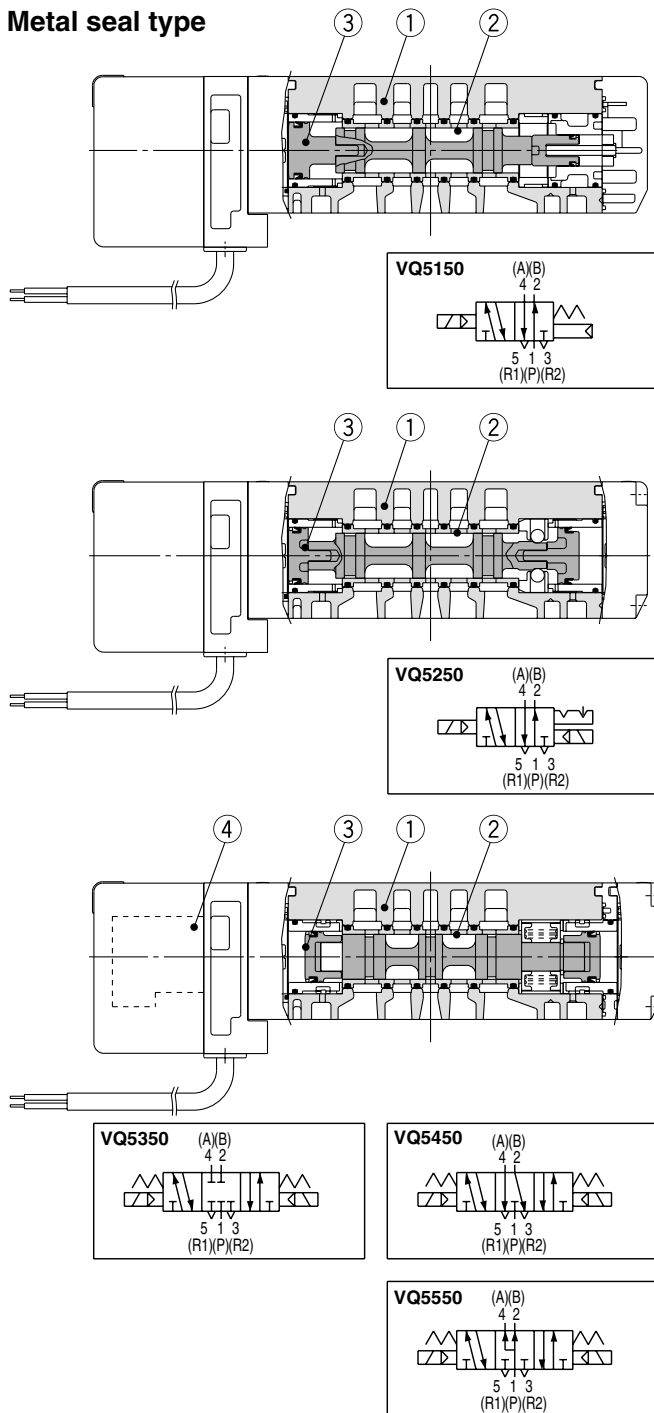
Number	Description	Material	Note
1	Body	Aluminum die-casted	
2	Spool valve	Aluminum, HNBR	
3	Piston	Resin	

Replacement Parts

4	Pilot valve assembly	VQZ111P-□- A B E	* Coil rated voltage Example) 24 VDC: 5 A: With A side light B: With B side light E: Without a light (Common for A and B)
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Plug Lead Unit

Metal seal type



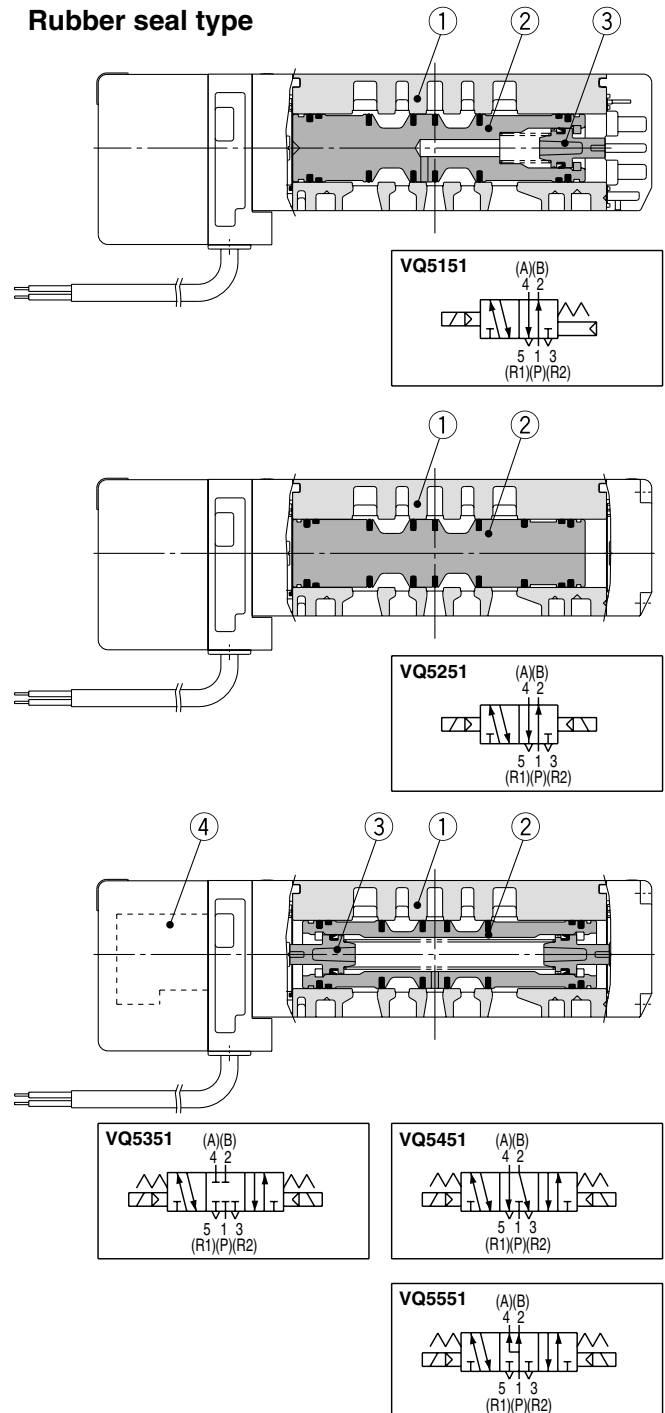
Component Parts

Number	Description	Material	Note
1	Body	Aluminum die-casted	
2	Spool/Sleeve	Stainless steel	
3	Piston	Resin	

Replacement Parts

4	Pilot valve assembly	VQZ111P-□-B A E	* Coil rated voltage Example) 24 VDC: 5 A: With A side light B: With B side light E: Without a light (Common for A and B)
---	----------------------	-----------------------	--

Rubber seal type



Component Parts

Number	Description	Material	Note
1	Body	Aluminum die-casted	
2	Spool valve	Aluminum, NBR	
3	Piston	Resin	

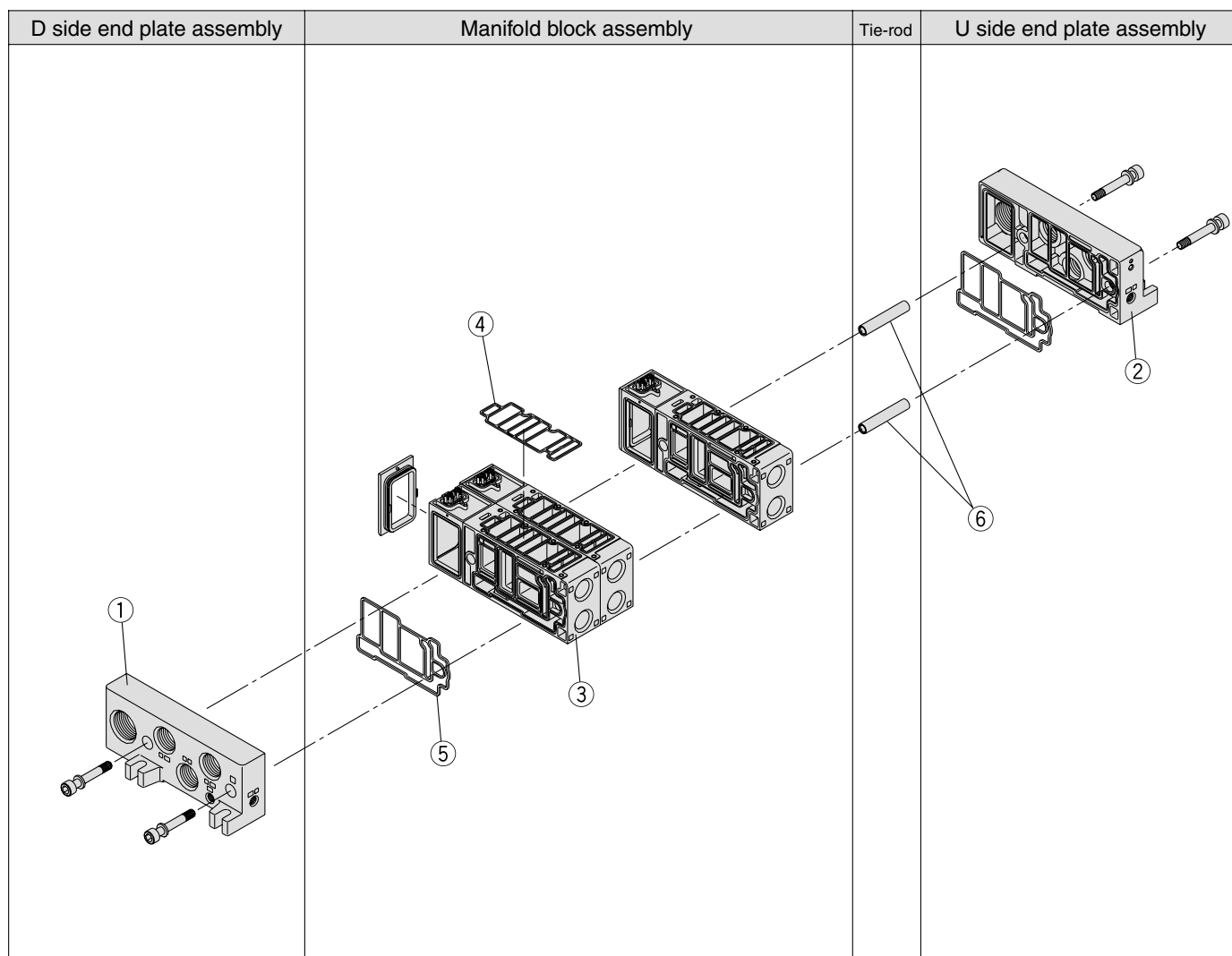
Replacement Parts

4	Pilot valve assembly	VQZ111P-□-B A E	* Coil rated voltage Example) 24 VDC: 5 A: With A side light B: With B side light E: Without a light (Common for A and B)
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SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

Series VQ5000

Exploded View of Manifold



Note) The electrical entry cannot be changed.

The drawing shows a plug-in type.

<D Side End Plate Assembly>

1. D side end plate assembly part no. (for F, L, S, T & T1 kits)

VVQ5000-3A-1-□-□-□

Electrical entry		Thread type		Option
L	T1, F, L, T, S kits	Nil	Rc	
F ⁽¹⁾	F kit (Connector side)	N	NPT	
C	C kit (plug lead type)	T	NPTF	
		F	G	

Nil	Standard
W ⁽²⁾	IP65 enclosure is dust
CD1	Exhaust cleaner mounting Rc 1
CD2	Exhaust cleaner mounting Rc 1 1/2
SD	Direct exhaust with silencer box

Note 1) D-sub connector for D side: VVQ4000-19A-D is not included. (Order separately)
 Note 2) Splashproof specifications is not available for F and T1.

<U Side End Plate Assembly Part No.>

2. U side end plate assembly part no. (for F, L, S, T & T1 kits)

VVQ5000-2A-1-□-□-□

Thread type		Electrical entry		Option
Nil	Rc	L	T1, F, L, T, S kits	
N	NPT	F ⁽¹⁾	F kit (Connector side)	
T	NPTF	C	C kit (plug lead type)	
F	G			

Nil	Standard
W ⁽²⁾	IP65 enclosure is dust
CU1	Exhaust cleaner mounting Rc 1
CU2	Exhaust cleaner mounting Rc 1 1/2
SU	Direct exhaust with silencer box

Note 1) D-sub connector for D side: VVQ4000-19A-D is not included. (Order separately)
 Note 2) Splashproof specifications is not available for F and T1.

<Manifold Block Assembly>

3. Manifold block assembly part no.

VVQ5000-1-□-□-□-□-□

Type		Option	
A	For 1 station	Nil	Standard
		W ⁽²⁾	Enclosure IP65 compliant

Electrical entry		Thread type		Port size
F1	F kit Double wiring	Nil	Rc	
F2	F kit Single wiring	N	NPT	
T0	T1 kit (Individual terminal block) Double wiring	T	NPTF	
T1	T kit (Terminal box) Double wiring	F	G	
T2	T kit (Terminal box) Single wiring			
S1	S kit Double wiring			
S2	S kit Single wiring			
L0	L0 kit □: Stations (1 to 12)			
L1	L1 kit □: Stations (1 to 12)			
L2	L2 kit □: Stations (1 to 12)			
C	C kit (Plug lead type)			

03	Rc 3/8
04	Rc 1/2
B	Bottom ported Rc 1/2

Note 1) Tie-rods (2 pcs.) and lead wire assembly for station addition included.
 Note 2) Splashproof specifications is not available for F and T1.

<Manifold Block Replacement Parts>

Replacement Parts

No.	Part no.	Description	Material	Number
④	VVQ5000-80A-1	Gasket	NBR	10
⑤	VVQ5000-80A-2	Gasket	NBR	10

Note) Spare parts consist of sets containing 10 pcs. each.

<D-sub connector assembly>

VVQ4000-19A-□

Electrical entry	
D	For D side entry
U	For U side entry

6. Tie-rods part no. (2 pcs.)

VVQ5000-TR-□

Stations: 02 to 12

Note) When eliminating manifold stations, order this separately. When increasing manifold stations, it is not necessary to order since tie-rods are included in the manifold block assembly.

<SI Unit>

SI Unit Part No.

Type	Model symbol	SI unit part no.		Description
		For U side mounting	For D side mounting	
Dedicated output model	F1	EX123U-SUW1	EX123D-SUW1	NKE Corp.: Uni-wire System
	H	EX123U-SUH1	EX123D-SUH1	NKE Corp.: Uni-wire H System
	J1	EX123U-SSL1	EX123D-SSL1	SUNX Corp.: S-LINK System (16 output points)
	J2	EX123U-SSL2	EX123D-SSL2	SUNX Corp.: S-LINK System (8 output points)
	Q	EX124U-SDN1	EX124D-SDN1	DeviceNet
	R1	EX124U-SCS1	EX124D-SCS1	OMRON Corp.: CompoBus/S (16 output points, 2 power supply systems)
	R2	EX124U-SCS2	EX124D-SCS2	OMRON Corp.: CompoBus/S (8 output points, 2 power supply systems)
	V	EX124U-SMJ1	EX124D-SMJ1	Mitsubishi Electric Corporation: CC-Link System (2 power supply systems)



Series VQ5000

Specific Product Precautions 1

Be sure to read before handling.

Refer to front matter 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

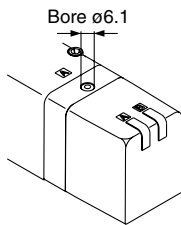
Manual Override Operation

⚠ Warning

Since connected equipment will be actuated when the manual override is operated, first confirm that conditions are safe.

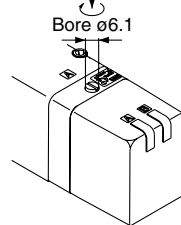
Non-locking push type (Tool required) is standard. As an option, slotted locking type (Tool required) is available.

Push type (Tool required)

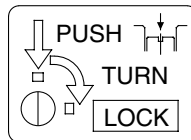


Push down the manual override button with a small screwdriver, etc.
Release the screwdriver and the manual override will return.

Locking type (Tool required)
<Option>



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



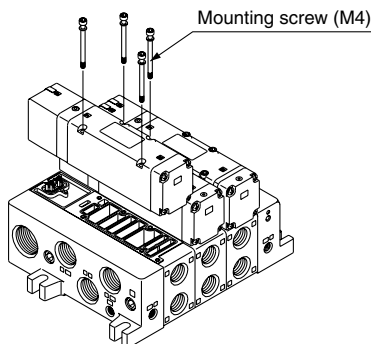
Mounting of Valves

⚠ Caution

After confirming the gasket is correctly placed under the valve, securely tighten the bolts with the proper torque shown in the table below.

Proper tightening torque (N·m)

1 to 1.8

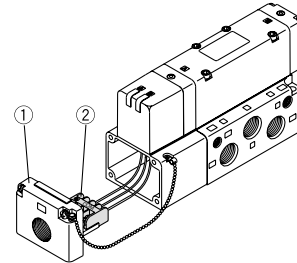


Lead Wire Connection

⚠ Caution

Plug-in sub-plate (With terminal block)

● If the junction cover ① of the sub-plate is removed, you can see the plug-in type terminal block ② mounted inside the sub-plate.



● The terminal block is marked as follows. Connect wiring to each of the power supply terminals.

Model	Terminal block marking	A	COM	B	⏏
VQ510 ⁰ ₁		A side	COM	—	—
VQ520 ⁰ ₁		A side	COM	B side	—
VQ5 ³ ₆ 4 ⁰ ₁		A side	COM	B side	—

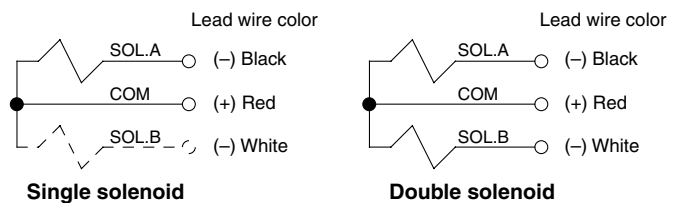
Note 1) There is no polarity. It can also be used as -COM.

Note 2) The sub-plate is double wired even for the VQ510⁰₁.

● Applicable terminal 1.25-3s, 1.25Y-3, 1.25Y-3N, 1.25Y-3.5.

Plug lead: Grommet type

Make connections to each corresponding wire.



Single solenoid

Double solenoid

	Single solenoid	Double solenoid
Standard	Black: A side solenoid (-) Red: COM (+)	Black: A side solenoid (-) Red: COM (+) White: B side solenoid (-)
Enclosure IP65 compliant	Black: A side solenoid (-) Red: COM (+) White: B side solenoid (-) (Not used for single solenoid) Green: (Not used for single or double.)	

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



Series VQ5000

Specific Product Precautions 2

Be sure to read before handling.

Refer to front matter 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Installation and Removal of Light Cover

⚠ Caution

Installation/Removal of light cover

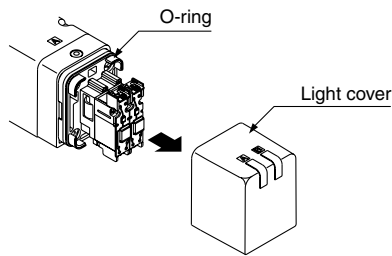
● Removal

To remove the pilot cover pull it straight off.

If it is pulled off at an angle, the pilot valve may be damaged or the protective O-ring may be scratched.

● Installation

Place the cover straight over the pilot assembly so that the pilot valve is not touched, and push it until the cover hook locks without twisting the protective O-ring. (When pushed in, the hook opens and locks automatically.)



Replacement of Pilot Valve

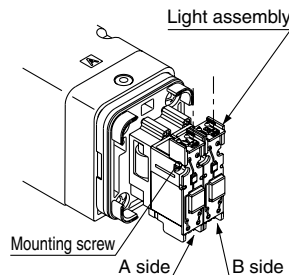
⚠ Caution

● Removal

1. Remove the mounting screw that holds the pilot valve using a small screwdriver.

● Installation

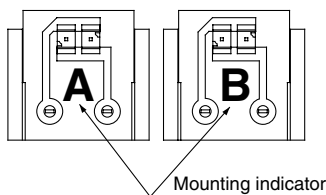
1. After confirming the gasket is correctly placed under the valve, securely tighten the bolts with the proper torque shown in the table below.



Proper tightening torque (N·m)

0.1 to 0.13

Note) The light circuit boards: A side is orange and the B side is green. It must be mounted on the pilot valve in accordance with the mounting indicators.

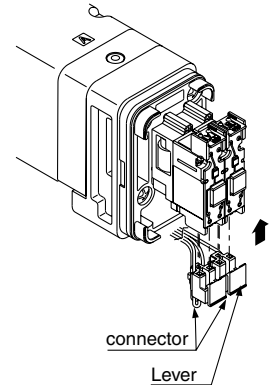


For Plug Lead Type

Attaching and detaching connectors

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

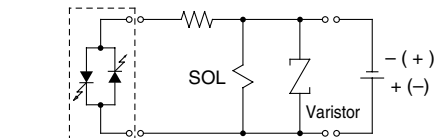
- To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.



Note) Do not pull on the lead wires with excessive force. This can cause faulty and/or broken contacts.

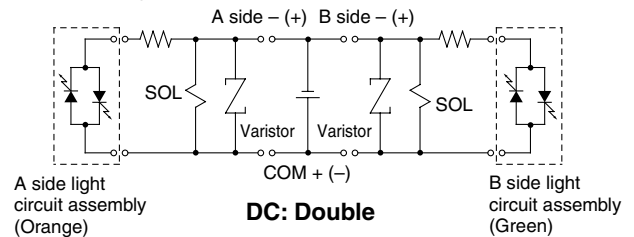
Internal Wiring Specifications

⚠ Caution



Light circuit assembly (Orange)

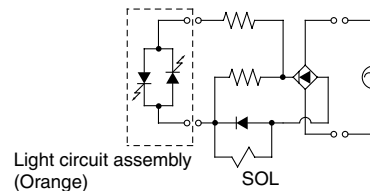
DC: Single



A side light circuit assembly (Orange)

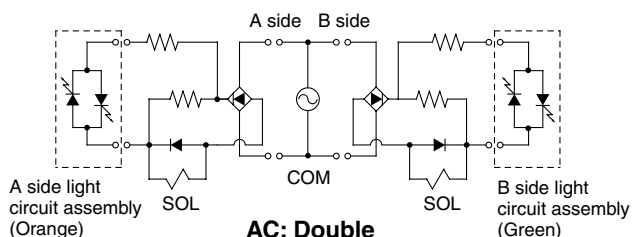
DC: Double

B side light circuit assembly (Green)



Light circuit assembly (Orange)

AC: Single



A side light circuit assembly (Orange)

AC: Double

B side light circuit assembly (Green)

How to Calculate the Flow Rate

For obtaining the flow rate, refer to pages 44 to 47.

