

5 Port Solenoid Valve

Series VQ5000

Metal Seal

Rubber Seal

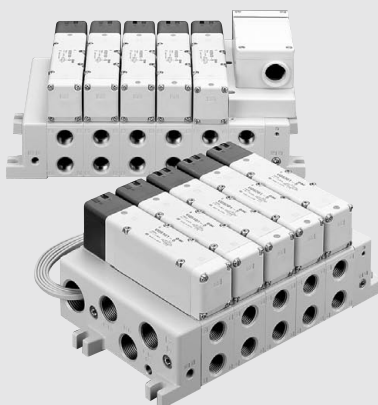
Space-saving profile

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.

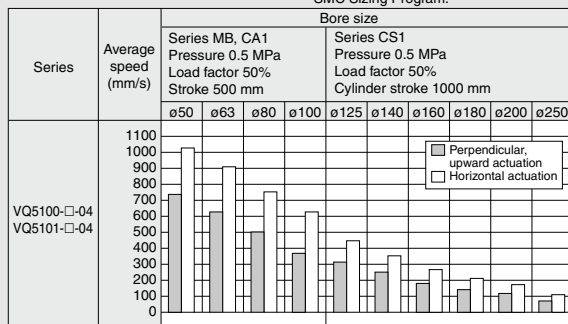
A variety of common wiring methods are standardized. <Plug-in type>

F kit (D-sub connector) P.1116 	L kit (Lead wire) P.1128
T kit (With individual terminal blocks) P.1120 	S kit (Serial transmission) P.1132

T1 kit (Terminal block box) P.1124 	<p>● 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.</p>
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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	AN40-04	10A x 1 m



SJ
SY
SY
SV
SYJ
SZ
VF
VP4
S0700
VQ
VQ4
VQ5
VQC
VQC4
VQZ
SQ
VFS
VFR
VQ7

Base Mounted

Plug-in/Plug Lead: Single Unit

Series VQ5000

Model

Series	Number of solenoids		Model	Port size	Flow Characteristics						Response time (ms)			Weight (kg)	
					1 → 4/2(P → A/B)			4/2 → 5/3(A/B → EA/EB)			Standard 1 W	Low wattage 0.5 W	AC		
					$C_{dmax}(l/s\cdot bar)$	b	Cv	$C_{dmin}(l/s\cdot bar)$	b	Cv					
VQ5000	2 position	Single	Metal seal	VQ51 ⁰ ₅ 0	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 ₅ 1		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 ₅ 0		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 ₅ 1		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 ₅ 0		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 ₅ 1		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 ₅ 0		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 ₅ 1		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 ₅ 0		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 ₅ 1		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 ₅ 0		8.0	—	—	8.5	—	—	62 or less	65 or less	65 or less	1.17(1.25)
			Rubber seal	VQ56 ⁰ ₅ 1		8.3	—	—	9.0	—	—	75 or less	78 or less	78 or less	1.10(1.18)

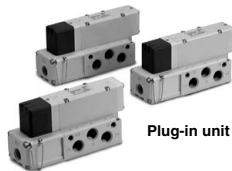
Note 1) Value for valve on sub-plate.

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 weight of plug lead units.

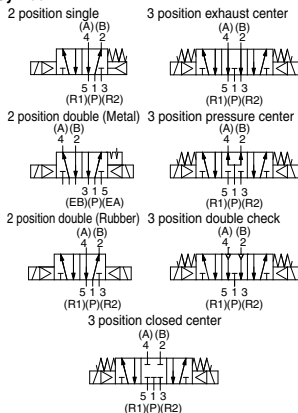
Table: Without sub-plate, With sub-plate; Add 0.65 kg for plug-in type, 0.55 kg for plug lead type.



Plug-in unit

Plug lead unit

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
		Double	0.10 MPa
		3 position	0.15 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	Impact/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)

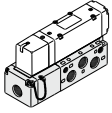
Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

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 1145.

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
5 1 3 (R1)(P)(R2)

2 2 position double (A)(B)
4 2
3 1 5 (EB)(P)(EA)

3 3 position closed center (A)(B)
4 2
5 1 3 (R1)(P)(R2)

4 3 position exhaust center (A)(B)
4 2
5 1 3 (R1)(P)(R2)

5 3 position pressure center (A)(B)
4 2
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 1142.

Enclosure

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

Manual override

Nil: Non-locking push type (Tool required)
Bore $\phi 6.1$

B: Slotted locking type (Tool required)
Bore $\phi 6.1$

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

Electrical entry

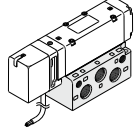
G	Lead wire length 0.6 m
H	Lead wire length 1.5 m

Seal

0	Metal seal
1	Rubber seal

Body

5: Plug lead sub-plate



CE-compliant

Nil	—
Q	CE-compliant

How to Order Sub-plates

VQ5000 - P — 04 -

Electrical entry

P	Plug-in conduit terminal
S	Plug lead

Enclosure

Nil	Dust-protected
W (Note)	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
----	--------

Note1) For bottom ported, port size is Rc 1/2.
Note2) For thread standard, refer to page 1145.

CE-compliant

Nil	—
Q	CE-compliant

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 1145.
Note 3) When two or more symbols are specified, indicate them alphabetically.

Replacement of pilot valve assembly (Voltage)

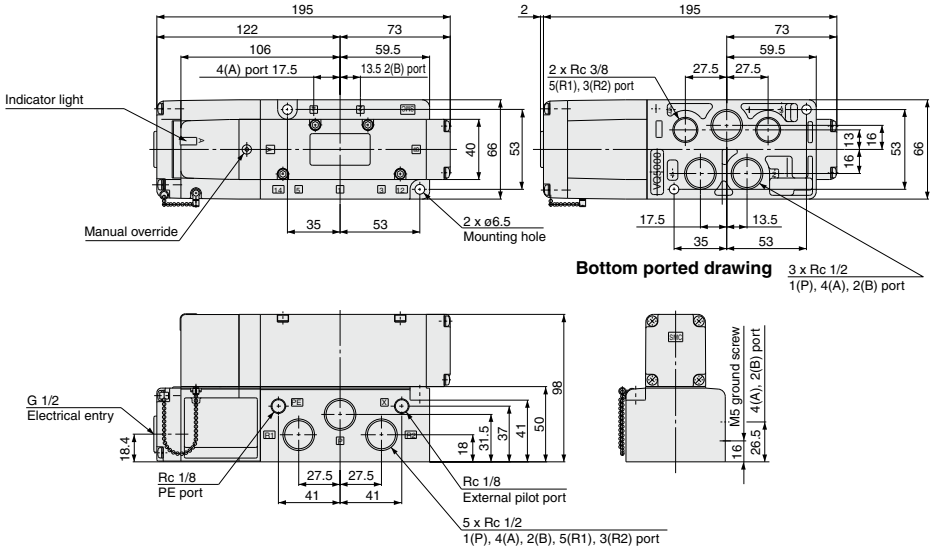
- Refer to pages 1146 to 1147 for pilot valve assembly part numbers.
- Refer to page 1152 for replacement method.

Series VQ5000

Plug-in Type

Conduit terminal

2 position single: VQ510⁰

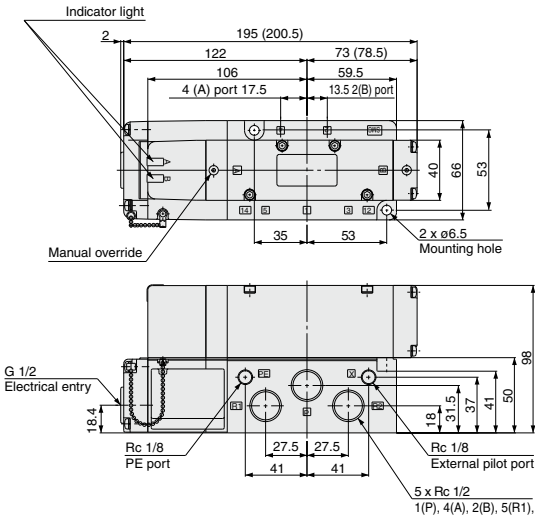


2 position double: VQ520⁰

3 position closed center: VQ530⁰

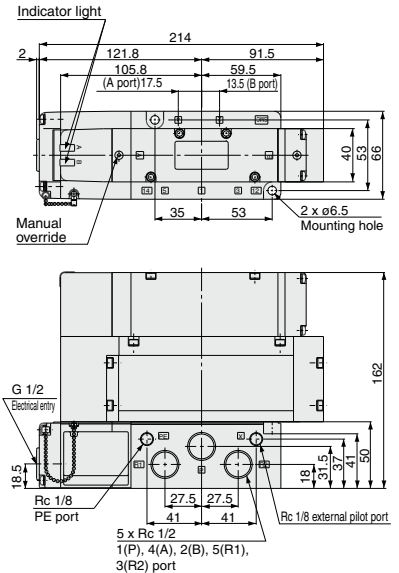
3 position exhaust center: VQ540⁰

3 position pressure center: VQ550⁰



Numbers inside () are for metal seal 3 position type

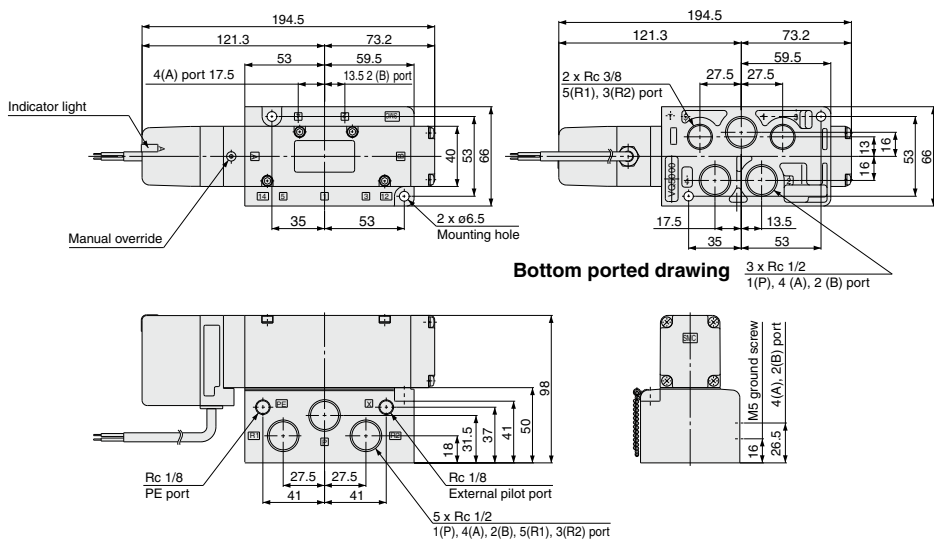
3 position double check: VQ560⁰



Plug Lead Type

Grommet

2 position single: VQ515⁰-□^G_H

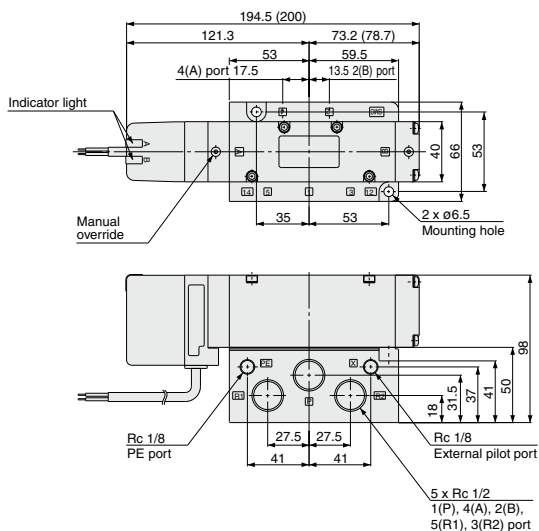


2 position double: VQ525⁰-□^G_H

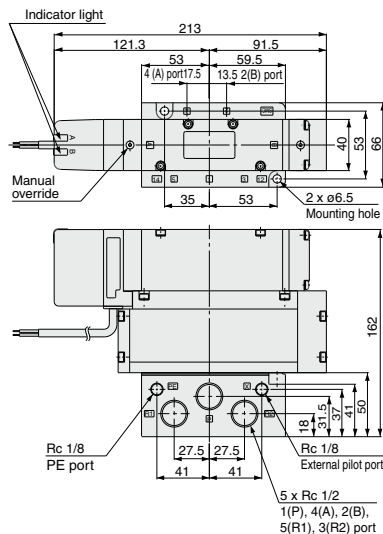
3 position closed center: VQ535⁰-□^G_H

3 position exhaust center: VQ545⁰-□^G_H

3 position pressure center: VQ555⁰-□^G_H



3 position double check: VQ565⁰-□^G_H



Numbers inside () are for metal seal 3 position type

Base Mounted Plug-in Unit



Series VQ5000



How to Order Manifold

VV5Q 5 1 - 08 03 F U1 - -

Series	
5	VQ5000

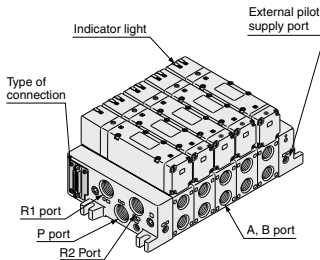
Manifold	
1	Plug-in Unit

Station	
01	1 station
.	.
.	.

Minimum number of stations depends on the kit.
(Refer to the table below.)

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

Note) In case of mixed specification, indicate on the manifold specification sheet.



Note) The drawing shows a VV5Q51-0504FD0.

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 [CD] and [SU] is not possible.

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

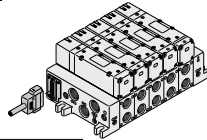
Note 4) Specify the wiring specifications on the manifold specification sheet. (Except L kit)

CE-compliant	
Nil	—
Q	CE-compliant

Kit type

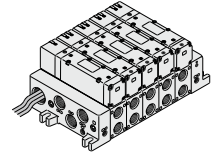
Kit/Electrical entry/Cable length

F kit (D-sub connector)



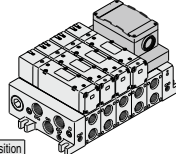
Connector entry direction				
D side	U side			
Kit D0	Kit U0	Without cable		1 to 12 stations
Kit D1	Kit U1	Cable length 1.5 m		
Kit D2	Kit U2	Cable length 3 m		
Kit D3	Kit U3	Cable length 5 m		

L kit (Lead wire cable)



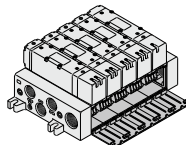
Connector entry direction				
D side	U side			
Kit D0	Kit U0	Cable length 0.6 m		1 to 12 stations
Kit D1	Kit U1	Cable length 1.5 m		
Kit D2	Kit U2	Cable length 3 m		

T kit (Terminal block box kit)



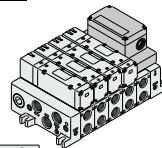
Box mounting position			
D side	U side		
Kit TD	Kit TU	Terminal block box	2 to 12 stations

T1 kit (Individual terminal block kit)



Kit T1	With terminal blocks	1 to 12 stations
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S kit (Serial transmission unit)



The valve voltage is 24 VDC and it is equipped with light/surge voltage suppressor.

Unit mounting position			
D side	U side		
Kit SD	Kit SU		

			CE-compliant
0	Without SI unit		●
F1	NKE Corp.: Fieldbus System		—
H	NKE Corp.: Fieldbus H System		—
J1	Panasonic Industrial Devices SUNX Co., Ltd.: S-LINK (16 output points)		—
J2	Panasonic Industrial Devices SUNX Co., Ltd.: 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		●

Note) 2 to 12 stations

Note) For the T kit and S kit, one station is required to mount the terminal block box or SI unit, so the minimum number of stations is 2 stations.

Manifold Specifications

Series	Base model	Type of connection	Porting specifications			Maximum applicable stations	Applicable solenoid valve	Weight (kg) (Formula)
			4(A), 2(B) port location	Port size <small>(Note)</small>				
				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 1145.

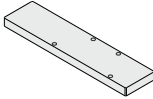
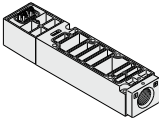
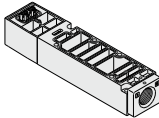
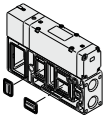
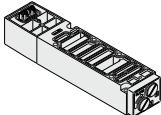
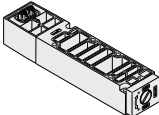
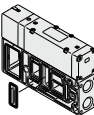
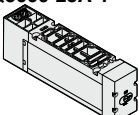
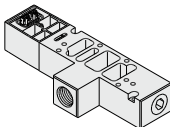
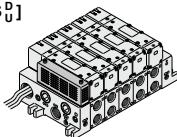
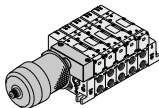
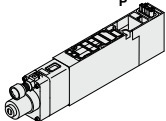
n: Stations

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

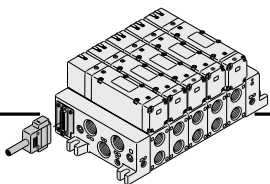
Manifold Options

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□] 	For exhaust cleaner mounting [-C□□] 	Interface regulator ARBQ5000-00- _A -1 

- Refer to pages 1140 to 1144 for detailed dimensions of each option.
- For replacement parts, refer to page 1149.

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

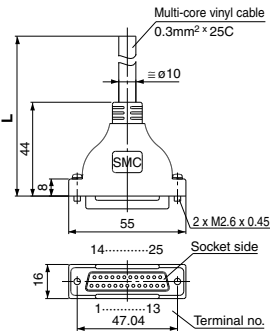
Series	Porting specifications			Applicable stations
	4(A), 2(B) port location	Port size		
		1(P), 5(R1), 3(R2)	4(A), 2(B)	
VQ5000	Side	Rc 3/4	Rc 3/8 Rc 1/2	Max. 12 stations
	Bottom		Rc 1/2	

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 $\Delta/km, 20^{\circ}C$	65 or less
Voltage limit VAC, 1 min.	1000
Insulation resistance $M\Omega/km, 20^{\circ}C$	5 or less

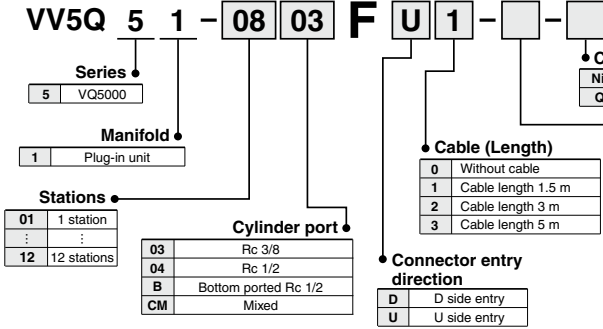
Note) The min. bending radius of D-sub cable is 20 mm.

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



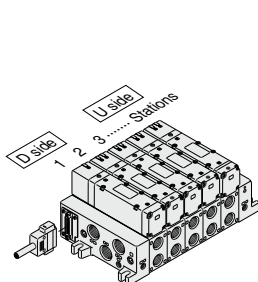
CE-compliant	
Nil	—
Q	CE-compliant

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] and [S] is not possible.
- Note 3) Specify the wiring specifications on the manifold specification sheet.

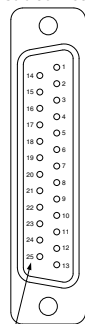


Electrical wiring specifications



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

D-sub connector



Connector terminal no.

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 a semi-standard specification. For details, refer to below.

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

D-sub connector assembly (AXT100-DS25-015 050) Wire colors

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

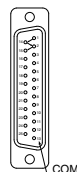
Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types. Mixed single and double wiring is available as a semi-standard specification.

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



[Option]

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

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

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

CE-compliant
Nil
Q CE-compliant

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 1145 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.

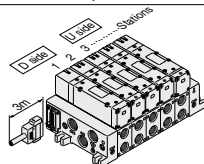
<Example>

D-sub connector kit with cable (3 m)

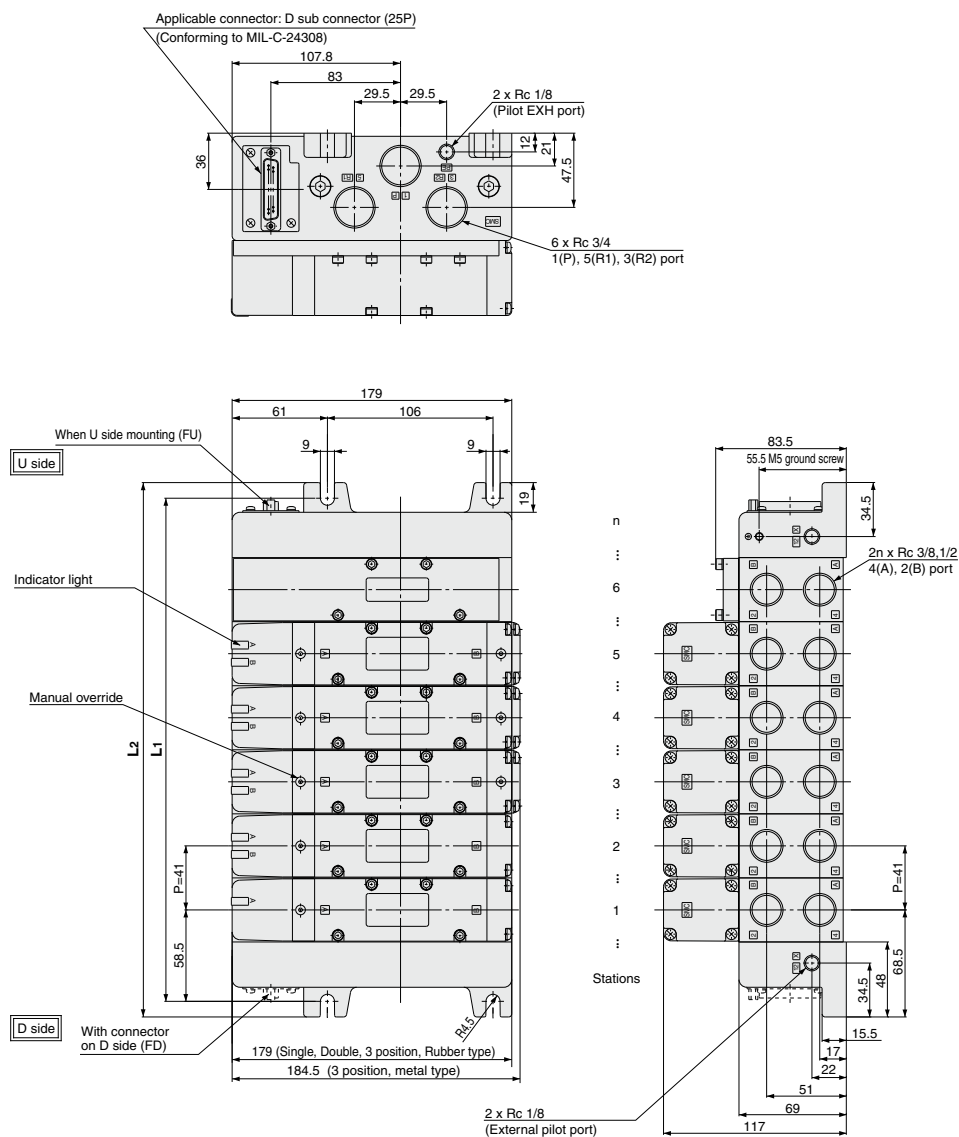
VV5051-0503FD2(Q) -1 set - Manifold base part no.
=VQ5100-5(Q) - 2 sets - Valve part no. (Stations 1 and 2)
=VQ5200-5(Q) - 2 sets - Valve part no. (Stations 3 and 4)
=VQ5300-5(Q) - 1 set - Valve part no. (Station 5)

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

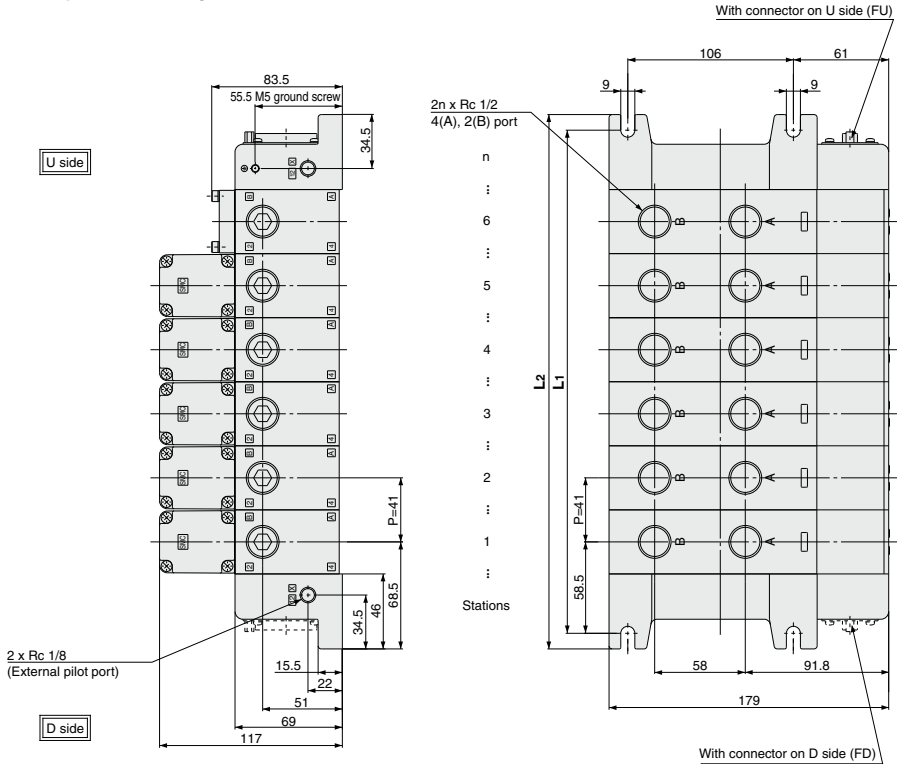
Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.



Kit (D-sub Connector kit)



Bottom ported drawing



SJ
SY
SY
SV
SYJ
SZ
VF
VP4
S0700
VQ
VQ4
VQ5
VQC
VQC4
VQZ
SQ
VFS
VFR
VQ7

Dimensions

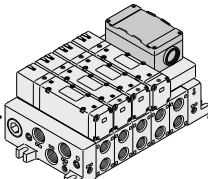
Formula: $L1 = 41n + 76$, $L2 = 41n + 96$
n: Stations (Maximum 12 stations)

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



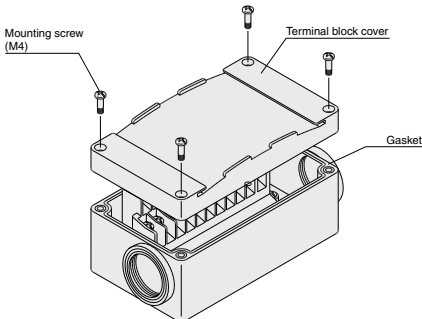
- Enclosure IP65 compliant
- This type has a small terminal block inside a junction box.
The provision of a G 3/4 electrical entry allows connection of conduit fittings.
- Maximum stations are 11. (12 stations as an option)
- 1 station is used for terminal block box mounting.

Manifold Specifications

Series	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	

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.

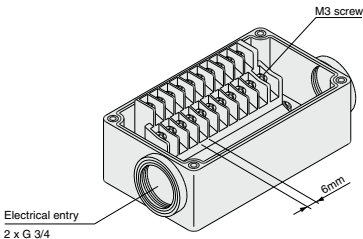
Proper tightening torque (N·m)
0.7 to 1.2

- Applicable terminal: 1.25-3s, 1.25Y-3, 1.25Y-3N, 1.25Y-3.5
- Name plate: VVQ5000-N-T
- Drip-proof 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



VV5Q 5 1 - 08 03 T - K -

Series
5 VQ5000

Manifold
1 Plug-in unit

Stations	
02	2 stations
...	...
12	12 stations

Note) One station is used for mounting the terminal block box. The number of stations is the number of manifold valves plus one station for the terminal block box. For 12 stations, specify the wiring specifications by means of the manifold specification sheet.

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

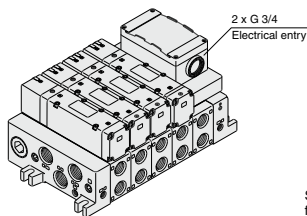
Box mounting position	
D	D side mounting
U	U side mounting

CE-compliant	
Nil	—
Q	CE-compliant

Option

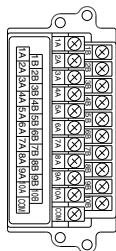
Symbol	Option
Nil	None
CD1 ⁽²⁾	Exhaust cleaner for Rc 1: D side exhaust
CD2 ⁽²⁾	Exhaust cleaner for Rc 1 1/2: D side exhaust
CU1 ⁽²⁾	Exhaust cleaner for Rc 1: U side exhaust
CU2 ⁽²⁾	Exhaust cleaner for Rc 1 1/2: U side exhaust
K ⁽³⁾	Special wiring specification (Except double wiring), 12 stations
N	Name 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_D⁽²⁾] and [S_D⁽²⁾] 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 a semi-standard specification.

Standard wiring			
Terminal no.		Polarity	
1 station	SOL A - 01A	(-) (+)	
	SOL B - 01B	(-) (+)	
2 stations	SOL A - 02A	(-) (+)	
	SOL B - 02B	(-) (+)	
3 stations	SOL A - 03A	(-) (+)	
	SOL B - 03B	(-) (+)	
4 stations	SOL A - 04A	(-) (+)	
	SOL B - 04B	(-) (+)	
5 stations	SOL A - 05A	(-) (+)	
	SOL B - 05B	(-) (+)	
6 stations	SOL A - 06A	(-) (+)	
	SOL B - 06B	(-) (+)	
7 stations	SOL A - 07A	(-) (+)	
	SOL B - 07B	(-) (+)	
8 stations	SOL A - 08A	(-) (+)	
	SOL B - 08B	(-) (+)	
9 stations	SOL A - 09A	(-) (+)	
	SOL B - 09B	(-) (+)	
10 stations	SOL A - 010A	(-) (+)	
	SOL B - 010B	(-) (+)	
	SOL A - 0COM	(+) (-)	
		Positive common	Negative common

Special Wiring Specifications

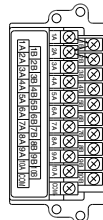
Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types. The optional specification permits mixture of single and double wiring. However, the maximum number of stations is 12.

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 Valves



[Option]

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

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 1145 for details on external pilot specifications.

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

CE-compliant	
Nil	—
Q	CE-compliant

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

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

VV5051-0603TU(-Q) - 1 set — Manifold base part no.

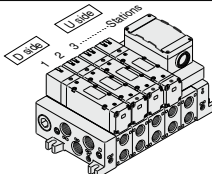
+ VQ5100-5(-Q) 2 sets — Valve part no. (Stations 1 and 2)

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

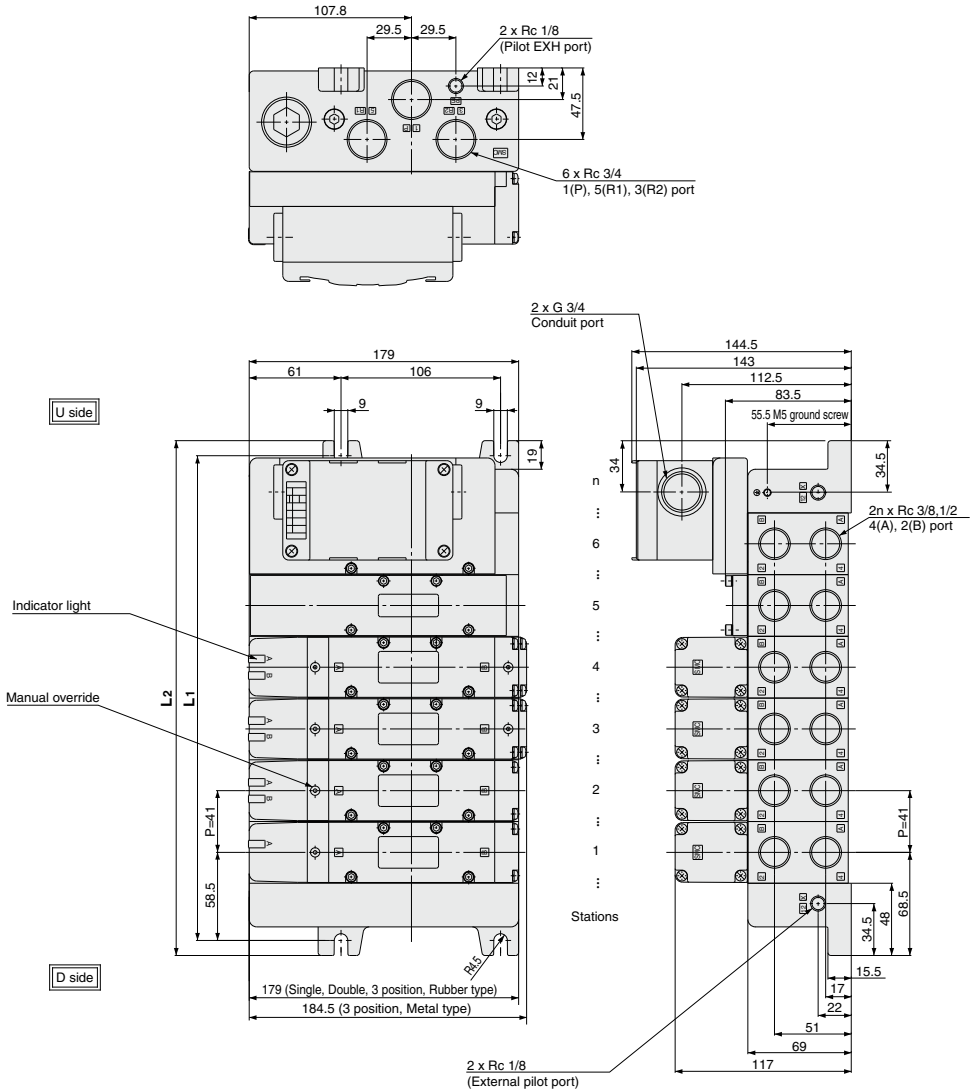
+ VQ5300-5(-Q) 1 set — Valve part no. (Station 5)

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

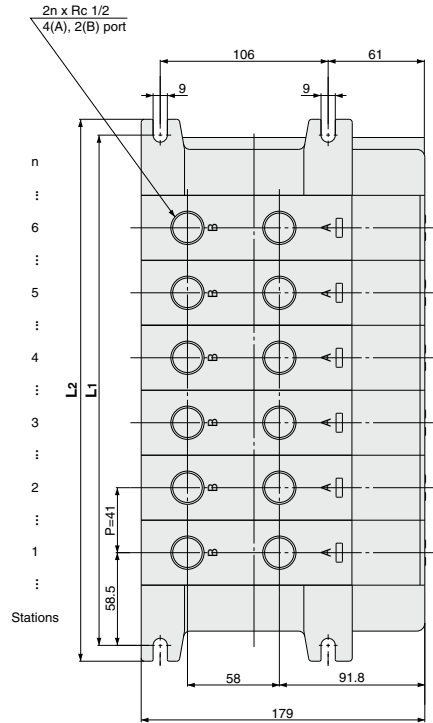
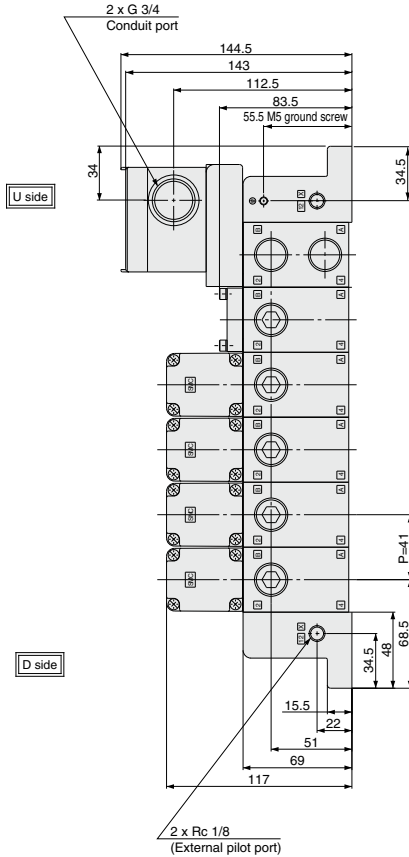
Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.



T Kit (Terminal block box kit)



Bottom ported drawing



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

n: Stations (Maximum 12 stations)

* Including 1 station for terminal box mounting.

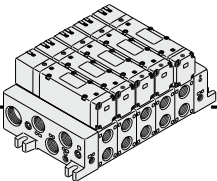
Dimensions

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

SJ
SY
SY
SV
SYJ
SZ
VF
VP4
S0700
VQ
VQ4
VQ5
VQC
VQC4
VQZ
SQ
VFS
VFR
VQ7

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.

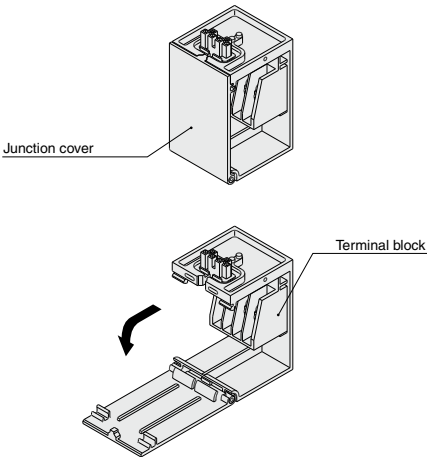
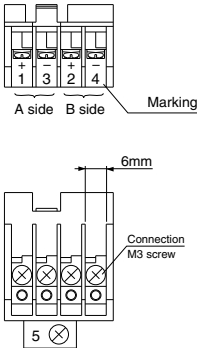
Manifold Specifications

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	Rc 3/8, 1/2	Max. 12 stations
	Bottom		Rc 1/2	

Terminal Block Connections

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

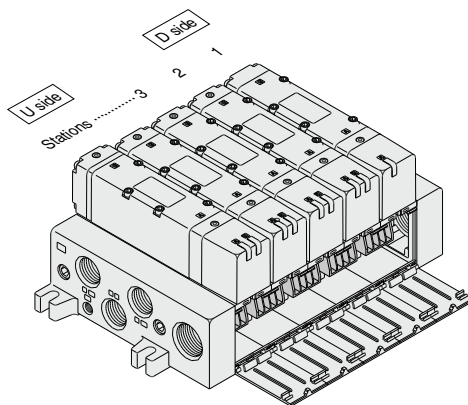
Cylinder port	
03	Rc 3/8
04	Rc 1/2
B	Bottom ported Rc 1/2
CM	Mixed

CE-compliant	
Nil	—
Q	CE-compliant

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_D⁰] and [S_D⁰] 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

CE-compliant

Nil	—
Q	CE-compliant

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 1145 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

VV5051-0503T1(-Q)-1 set — Manifold base part no.

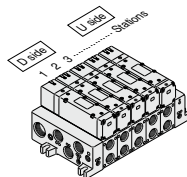
*VQ5100-5(-Q) ... 2 sets — Valve part no. (Stations 1 and 2)

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

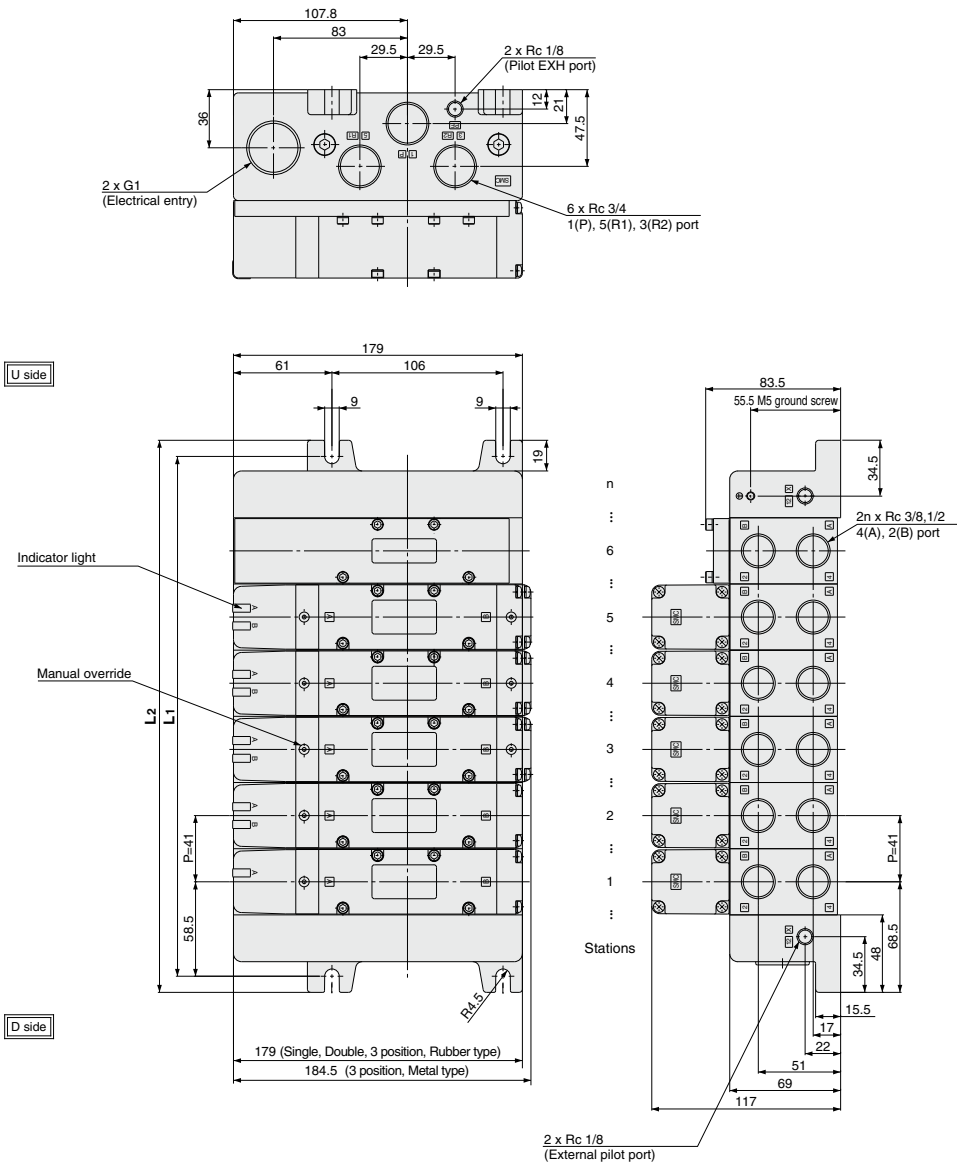
*VQ5300-5(-Q) ... 1 set — Valve part no. (Station 5)

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

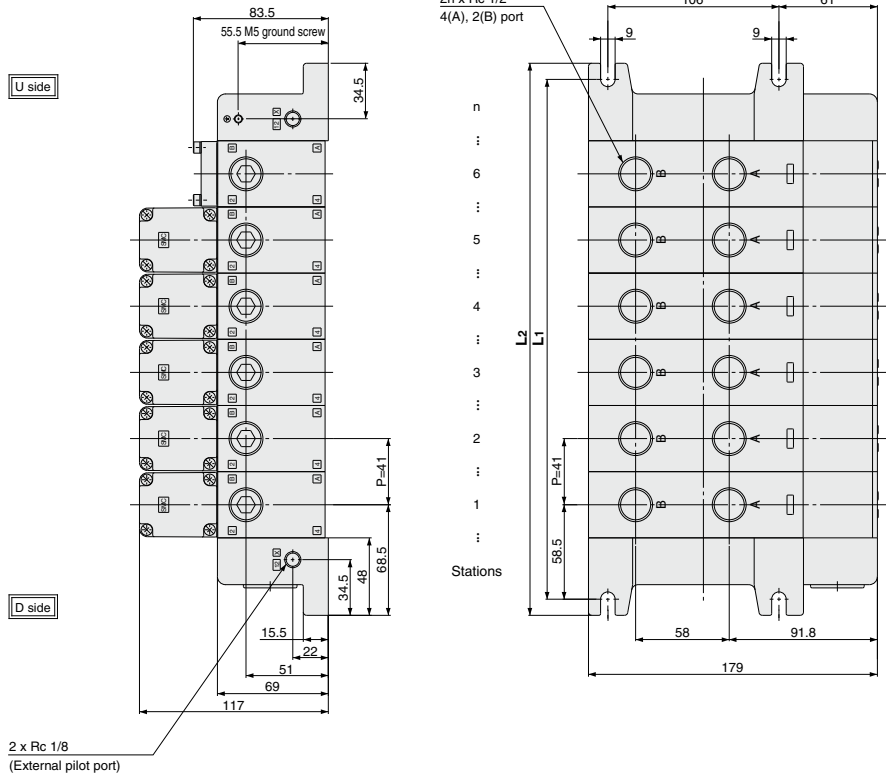
Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.



SJ
SY
SV
SYJ
SZ
VF
VP4
S0700
VQ
VQ4
VQ5
VQC
VQC4
VQZ
SQ
VFS
VFR
VQ7



Bottom ported drawing



SJ
SY
SY
SV
SYJ
SZ
VF
VP4
S0700
VQ
VQ4
VQ5
VQC
VQC4
VQZ
SQ
VFS
VFR
VQ7

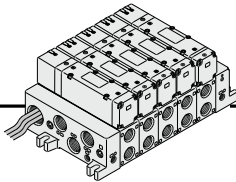
Dimensions

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 Rc 1/2	Max. 12 stations
	Bottom		Rc 1/2	

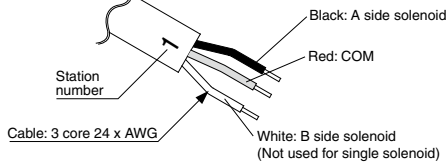
Wiring Specifications

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 color			Lead wire color		
SOL _A (-)	(+)	Black	SOL _A (-)	(+)	Black
COM _o (+)	(-)	Red	COM _o (+)	(-)	Red
SOL _B (-)	(+)	White	SOL _B (-)	(+)	White
Positive common			Positive common		
Negative common			Negative common		

Single solenoid

Double solenoid



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.

How to Order Manifold

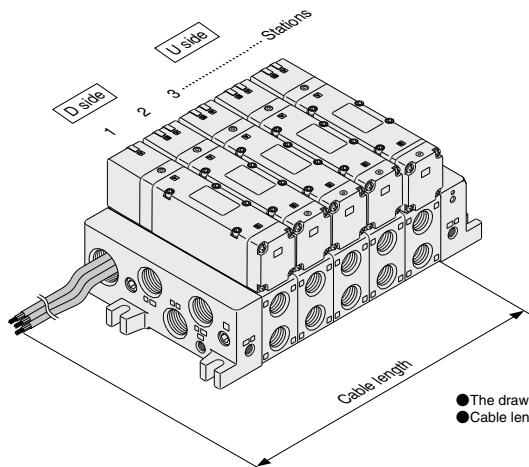
CE
[Option]

VV5Q 5 1 - 08 03 L U - - -

Series 5 VQ5000		Electrical entry D D side entry U U side entry		CE-compliant Nil Q CE-compliant	
Manifold 1 Plug-in unit		Option			
Stations 01 1 station : : 12 12 stations		Cable (Length) 0 Cable length 0.6 m 1 Cable length 1.5 m 2 Cable length 3 m			
Cylinder port 03 Rc 3/8 04 Rc 1/2 B Bottom ported Rc 1/2 CM Mixed					

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 [C₀□] and [S₀□] 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** **—** **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

CE-compliant

Nil	—
Q	CE-compliant

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 1145 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)

VV5051-0503LD2-Q) --1 set—Manifold base part no.

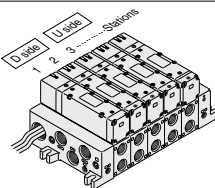
+VQ5100-5-(Q)2 sets—Valve part no. (Stations 1 and 2)

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

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

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

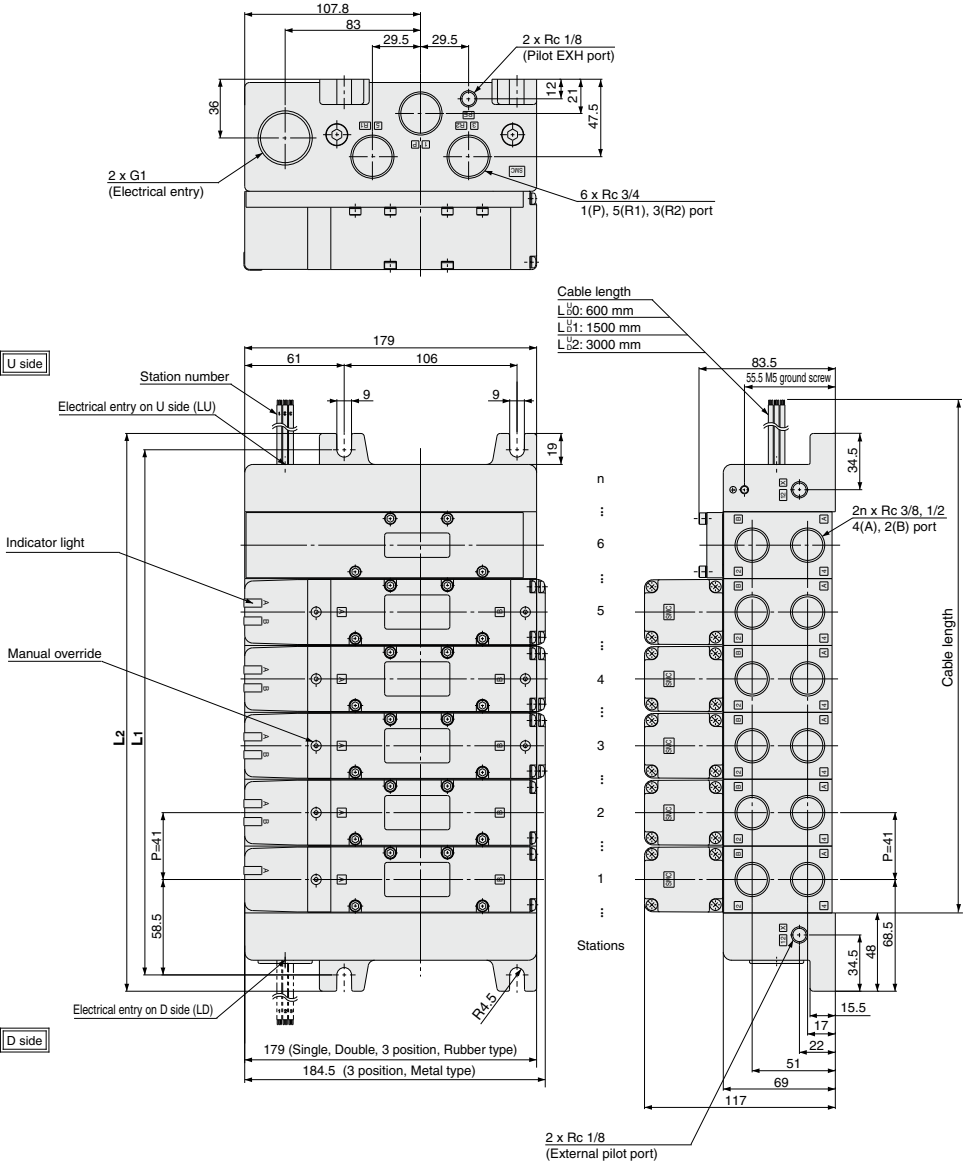
Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.



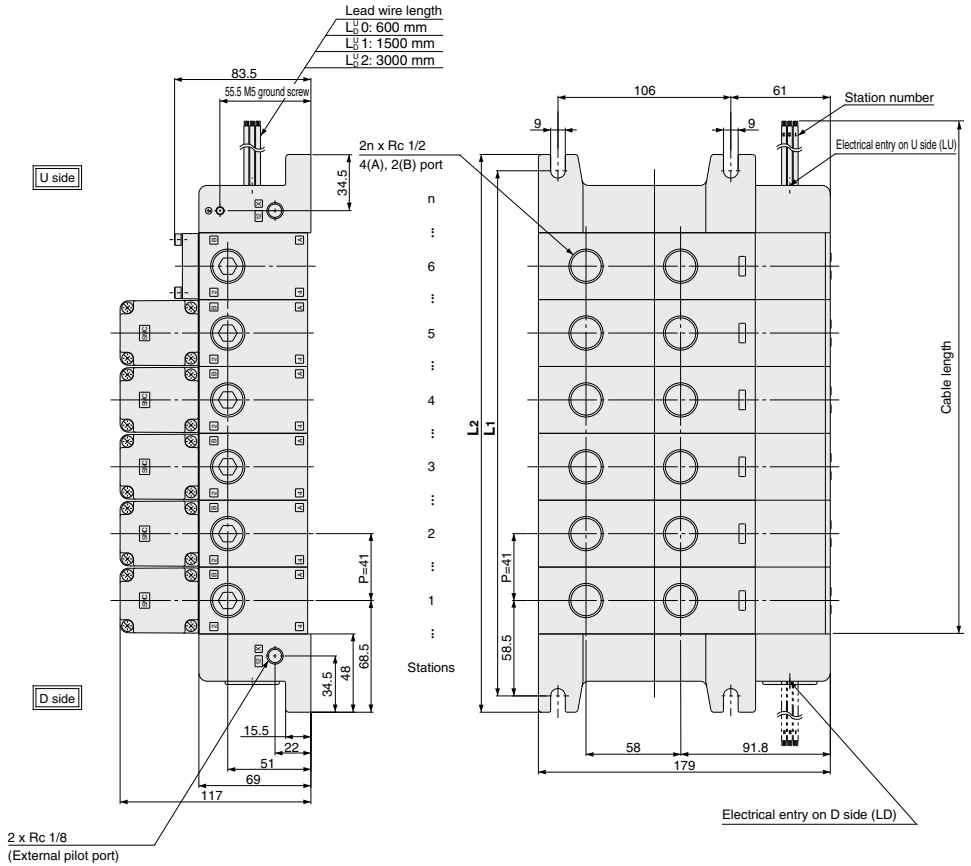
SJ
SY
SY
SV
SYJ
SZ
VF
VP4
S0700
VQ
VQ4
VQ5
VQC
VQC4
VQZ
SQ
VFS
VFR
VQ7

Series VQ5000

L Kit (Lead wire cable)



Bottom ported drawing



SJ
SY
SY
SV
SYJ
SZ
VF
VP4
S0700
VQ
VQ4
VQ5
VQC
VQC4
VQZ
SQ
VFS
VFR
VQ7

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
L_1	117	158	199	240	281	322	363	404	445	486	527	568	
L_2	137	178	219	260	301	342	383	424	465	506	547	588	

Series VQ5000

S

Kit (Serial transmission unit): EX123/124 (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

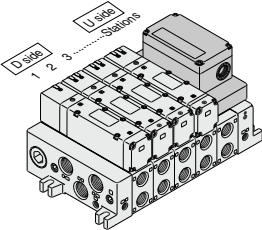
VV5Q 5 1 - 08 03 S U Q - -

Series
5 VQ5000

Manifold
1 Plug-in unit

Stations	
02	2 stations
:	:
12	12 stations

Note) One station is used for mounting SI unit.
The number of stations is the number of manifold valves plus one station for SI unit. For 10 stations or more, specify the wiring specifications by means of the manifold specification sheet.



* 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 11/2: D side exhaust
CU1 ⁽²⁾	Exhaust cleaner for Rc 1: U side exhaust
CU2 ⁽²⁾	Exhaust cleaner for Rc 11/2: U side exhaust
K ⁽³⁾	Special wiring specifications (except double wiring specification, 10 stations or more)
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⁽²⁾] and [S_D⁽²⁾] is not possible.

Note 3) Specify the wiring specifications on the manifold specification sheet.

CE-compliant

Nil	—
Q	CE-compliant

SI unit

		CE-compliant
0	Without SI unit	●
F1	NKE Corp.: Fieldbus System	—
H	NKE Corp.: Fieldbus H System	—
J1	Panasonic Industrial Devices SUNX Co., Ltd.: S-LINK System (16 output points)	—
J2	Panasonic Industrial Devices SUNX Co., Ltd.: 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.: Fieldbus System	D side: EX123D-SUW1 U side: EX123U-SUW1	P.1149
H	NKE Corp.: Fieldbus H System	D side: EX123D-SUH1 U side: EX123U-SUH1	
J1	Panasonic Industrial Devices SUNX Co., Ltd.: S-LINK System (16 output points)	D side: EX123D-SSL1 U side: EX123U-SSL1	
J2	Panasonic Industrial Devices SUNX Co., Ltd.: 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 page 2055 and the Operation Manual for the details of EX123/124 Integrated-type (For Output) Serial Transmission System.
Please download the Operation Manual via our website, <http://www.smcworld.com>



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

CE-compliant

Nil	—
Q	CE-compliant

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

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 1145 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.

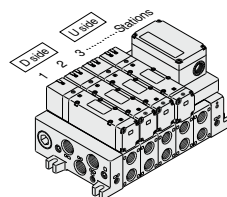
<Example>

VV5051-0603SUQ-Q) ... 1 set—Manifold base part no.

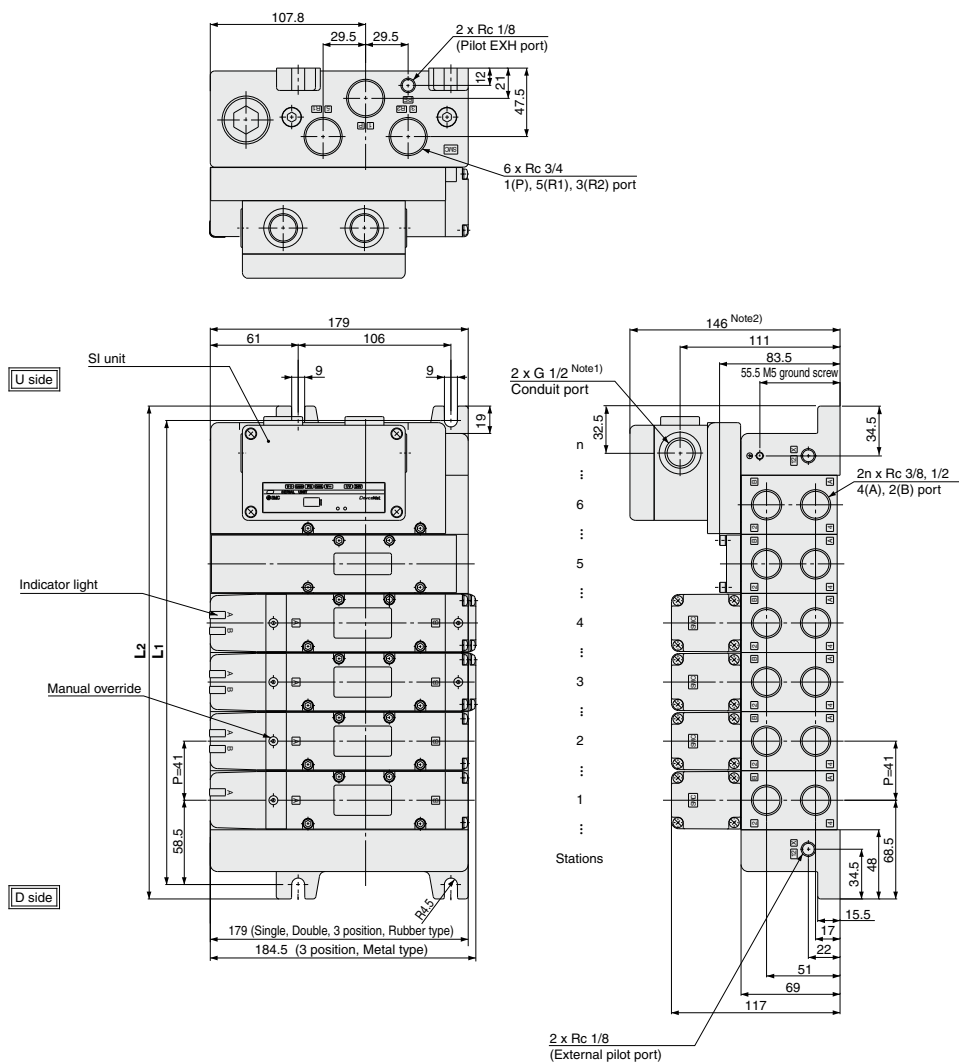
→VQ5100-5(-Q) 2 sets—Valve part no. (Stations 1 and 2)
→VQ5200-5(-Q) 2 sets—Valve part no. (Stations 3 and 4)
→VQ5300-5(-Q) 1 set—Valve part no. (Station 5)

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.



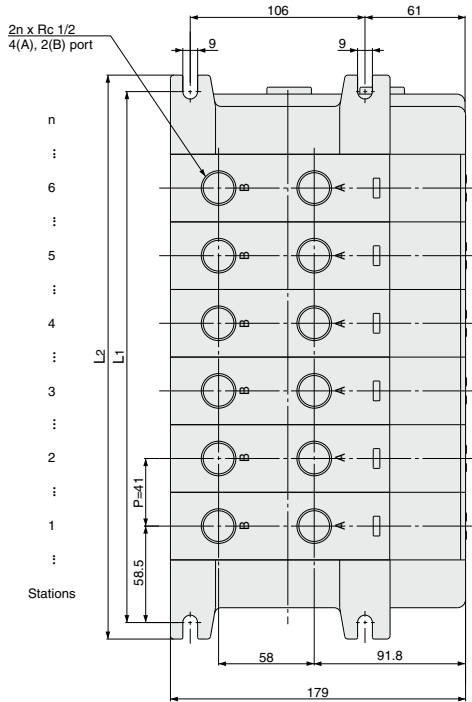
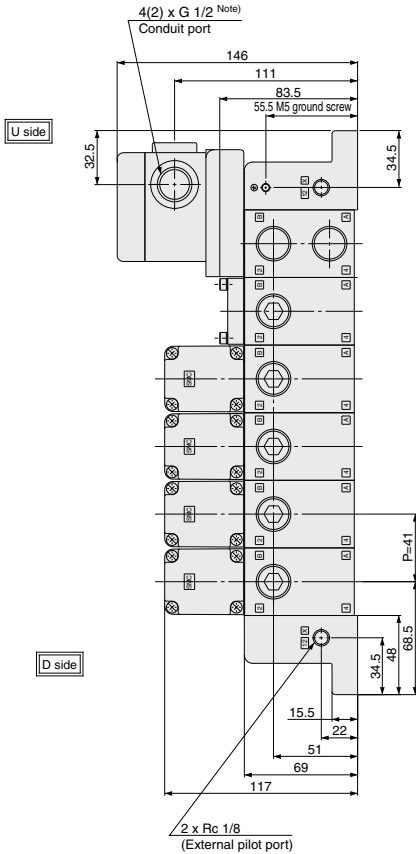
SJ
SY
SY
SV
SYJ
SZ
VF
VP4
S0700
VQ
VQ4
VQ5
VQC
VQC4
VQZ
SQ
VFS
VFR
VQ7



Note1) 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.

Note2) In the case of EX124D (U)-SMJI, this dimension becomes 149.

Bottom port drawing



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

n: Stations (Maximum 12 stations)

* Including 1 station for SI unit box mounting

Dimensions

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

SJ
SY
SY
SV
SYJ
SZ
VF
VP4
S0700
VQ
VQ4
VQ5
VQC
VQC4
VQZ
SQ
VFS
VFR
VQ7

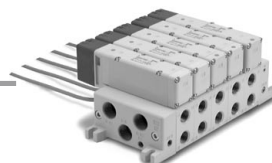
Base Mounted

Plug Lead Unit: C Kit (Connector Kit)

Series VQ5000



How to Order Manifold



VV5Q 5 5 - 08 03 C - W -

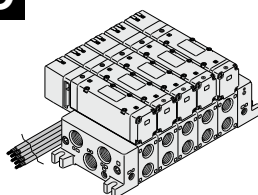
Series
5 VQ5000

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

CE-compliant
Nil —
Q CE-compliant

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 [CD] and [SD] is not possible.

Refer to page 1151 (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 1145 for details on external pilot specifications.

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

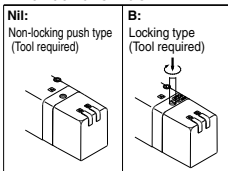
Coil voltage

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

CE-compliant
Nil —
Q CE-compliant

Enclosure
Nil Dusttight
W Dusttight/Low jetproof type (IP65)

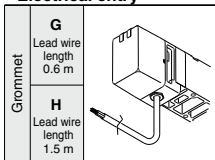
Manual override



Light/Surge voltage suppressor

Nil Yes
E Without light, with surge voltage suppressor

Electrical entry



How to Order Manifold Assembly [Order example]

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

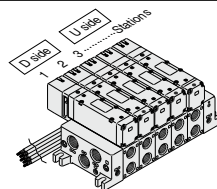
<Example>
Connector kit

VVQ55-05042C-Q-1 set—Manifold base part no.

+ VQ5150-5G-Q) ... 2 sets—Valve part no. (Stations 1 and 2)
+ VQ5250-5G-Q) ... 2 sets—Valve part no. (Stations 3 and 4)
+ VQ5350-5G-Q) ... 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	Weight (kg) (Formula)
			4(A), 2(B) port location	Port size <small>(Note)</small>				
				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 1145.

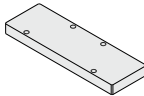
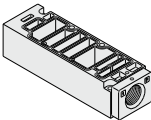
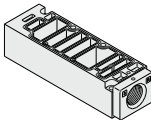
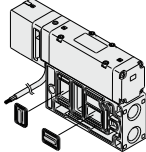
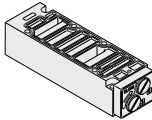
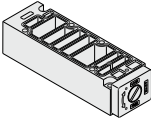
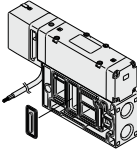
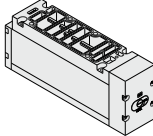
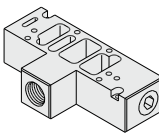
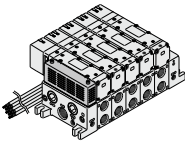
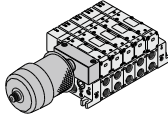
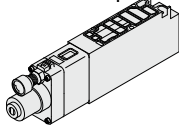
n: Stations

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

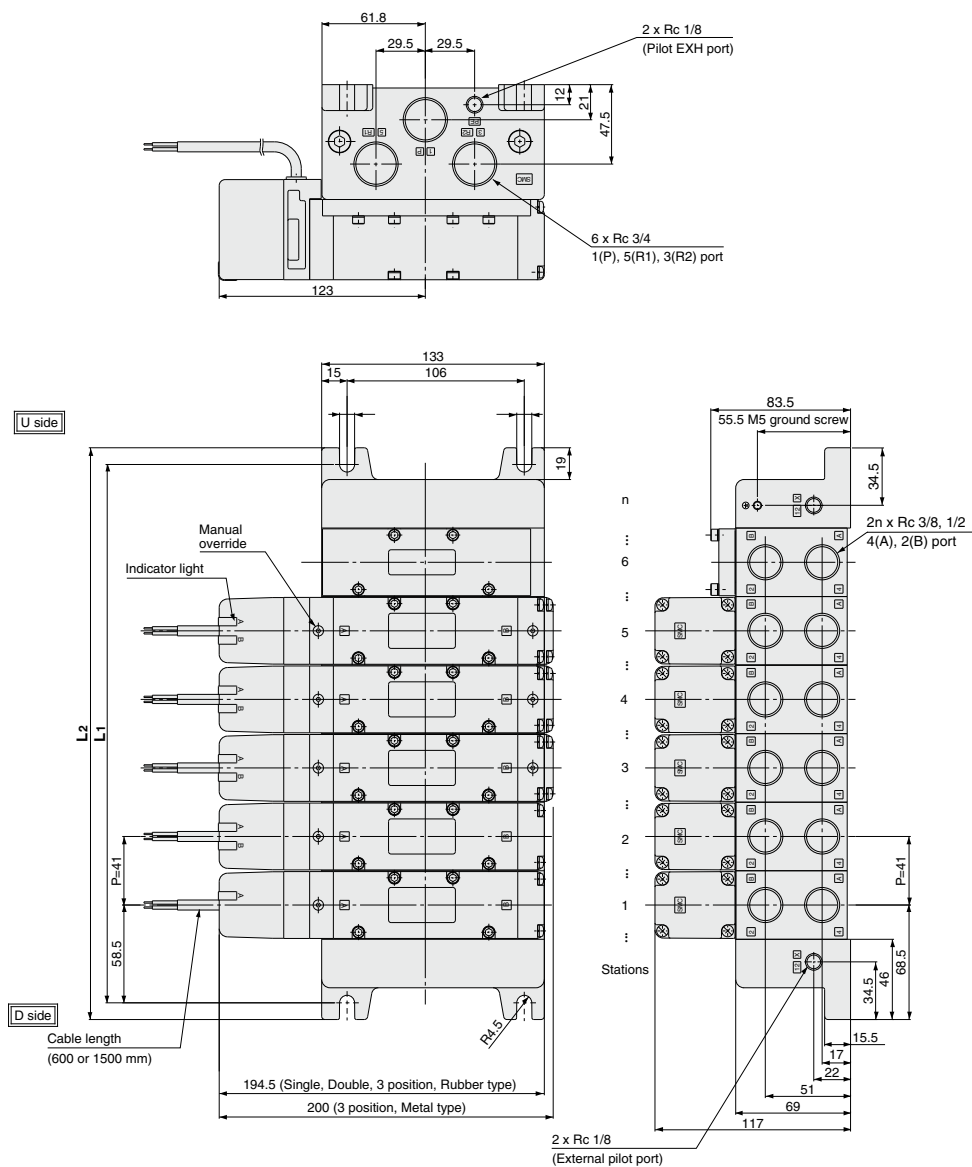
Note) For port size Rc 1/2

Manifold Options

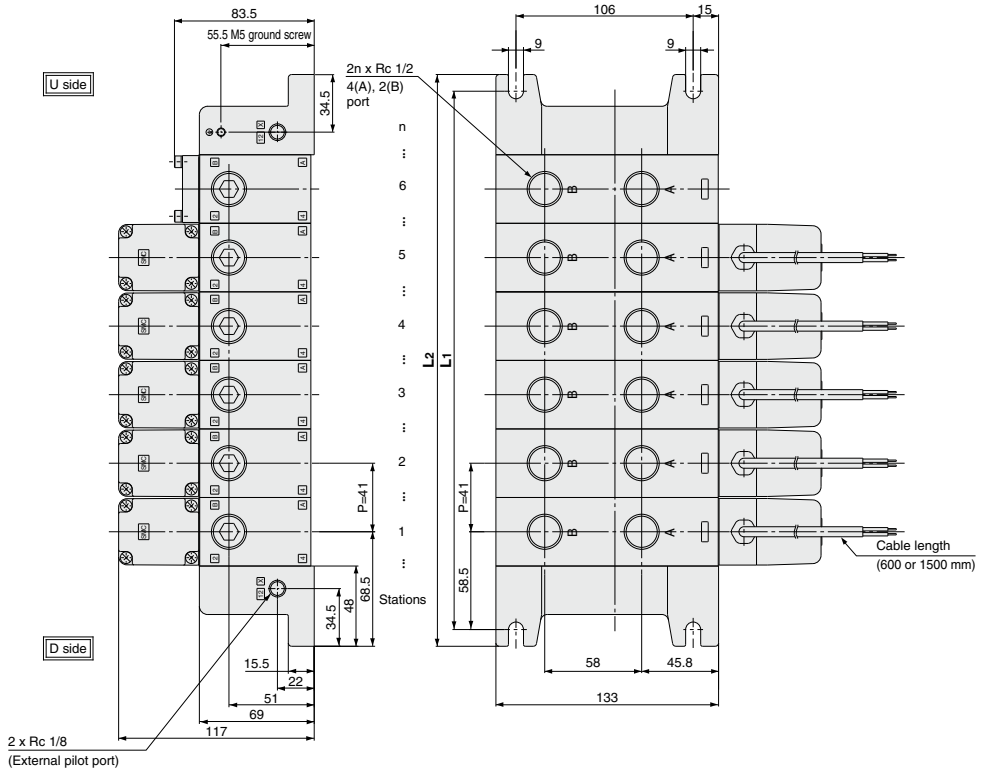
Blanking plate assembly VVQ5000-10A-5 	Individual SUP spacer VVQ5000-P-5 ₀₃ ⁰⁴ 	Individual EXH spacer VVQ5000-R-5 ₀₃ ⁰⁴ 	EXH block plate VVQ5000-16A-2 
Throttle valve spacer VVQ5000-20A-5 	SUP stop valve spacer VVQ5000-37A-5 	SUP block plate VVQ5000-16A-1 	Double check spacer with residual pressure release valve VVQ5000-25A-5 
Release valve spacer VVQ5000-24A-5D 	Direct exhaust with silencerbox [-S ₈] 	For exhaust cleaner mounting [-C ₈ □] 	Interface regulator ARBQ5000-00- _A 5 

• Refer to pages 1140 to 1144 for detailed dimensions of each option.
• For replacement parts, refer to page 1149.

Kit (Connector)



Bottom ported drawing



SJ
SY
SY
SV
SYJ
SZ
VF
VP4
S0700
VQ
VQ4
VQ5
VQC
VQC4
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

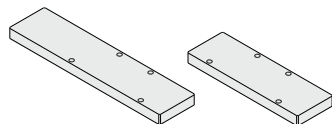
Manifold Option Parts

Blanking plate assembly

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

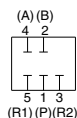
VVQ5000-10A-5 (Plug lead type)

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.

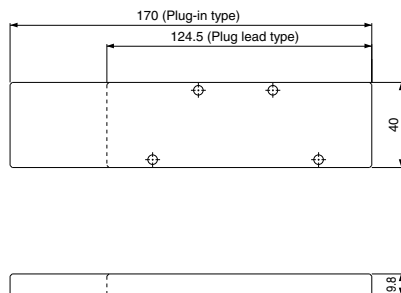


Plug-in type

Plug lead type



Circuit diagram

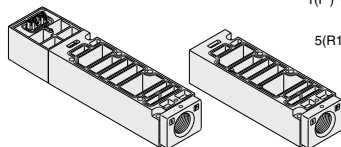


Individual SUP spacer

VVQ5000-P-1-⁰³₀₄ (Plug-in type)

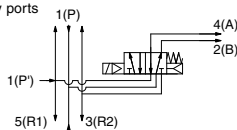
VVQ5000-P-5-⁰³/₀₄ (Plug lead type)

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

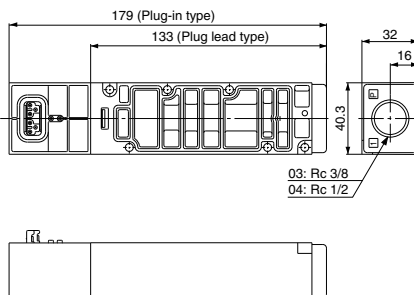


Plug-in type

Plug lead type



Circuit diagram

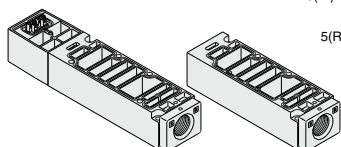


Individual EXH spacer

VVQ5000-R-1-⁰³₀₄ (Plug-in type)

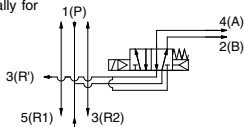
VVQ5000-R-5-⁰³₀₄ (Plug lead type)

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

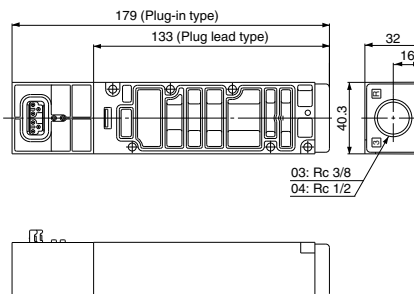


Plug-in type

Plug lead type



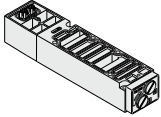
Circuit diagram



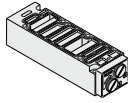
Throttle valve spacer

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

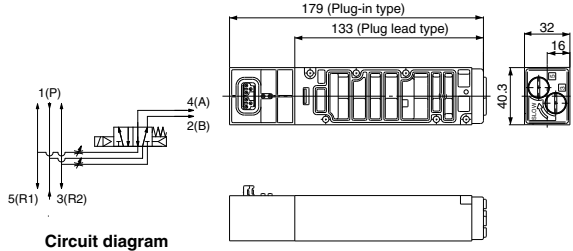
A throttle valve spacer is mounted on a manifold block to control cylinder speed by throttling exhaust air flow.



Plug-in type



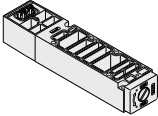
Plug lead type



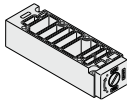
SUP stop valve spacer

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

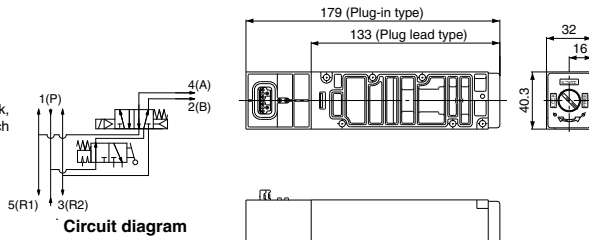
A SUP stop valve spacer is mounted on a manifold block, making it possible to individually shut off supply air to each valve.



Plug-in type



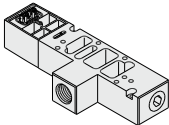
Plug lead type



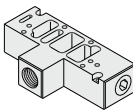
Release valve spacer: For D side mounting

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

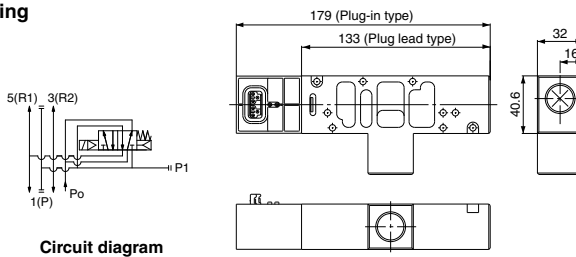
A VQ51□□ (single) valve can be used as an air release valve by combining it with a release valve spacer.
 (Note) 2 position double and 3 position cannot be mounted.



Plug-in type



Plug lead type



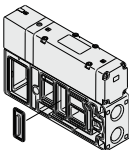
SUP block plate

VVQ5000-16A-1

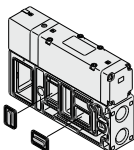
EXH block plate

VVQ5000-16A-2

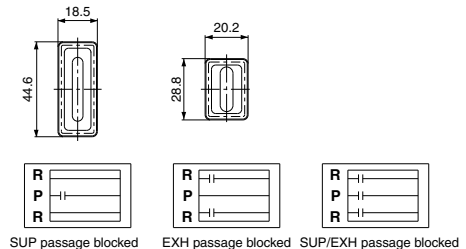
When supplying two different pressures to one manifold, this is used to shut off between stations with different pressures.



< SUP blocking plate >



< EXH blocking plate >



SJ
SY
SY
SV
SYJ
SZ
VF
VP4
S0700
VQ
VQ4
VQ5
VQC
VQC4
VQZ
SQ
VFS
VFR
VQ7

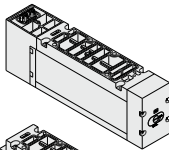
Manifold Option Parts

Double check spacer with residual pressure release valve

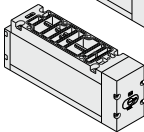
VVQ5000-25A-1 (Plug-in type)
VVQ5000-25A-5 (Plug lead type)

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 (VQ5₂ □□) and a double check spacer can be used for drop prevention.

Plug-in type



Plug lead type

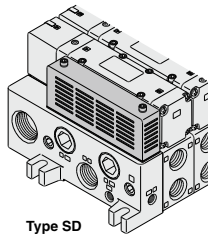


Direct exhaust with silencer box

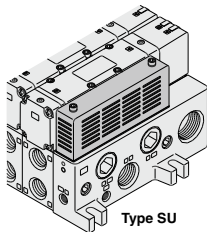
VV5Q5₂-□□□-SD (D side exhaust)
VV5Q5₁-□□□-SU (U side exhaust)
VV5Q5₂-□□□-SB (Double side exhaust)

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)

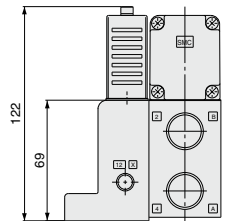
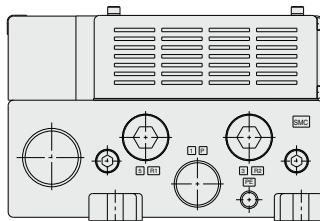
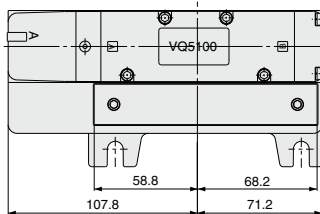
Note) Note that when excessive drainage occurs in the air supply, the drainage will be released along with the exhaust.



Type SD



Type SU



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

Specifications

Double check spacer part no.	VVQ5000-25A- ₁	
	Intermediate stop	Drop prevention
Applicable solenoid valve	VQ54□□	VQ5 ₂ □□

Caution

Handling Precautions

- In the case of 3 position double check (VZS56₃□□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 VQ5₂□□ is not possible.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

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

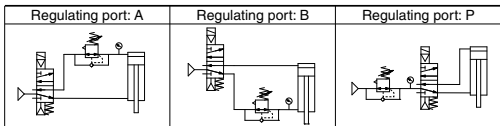
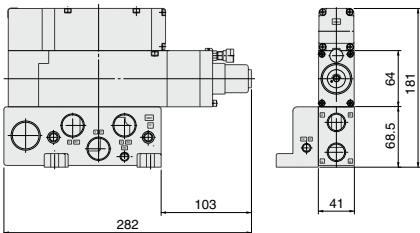
Interface regulator		ARBQ5000					
Regulating port		A		B		P	
Applicable solenoid valve		Plug-in	Plug lead	Plug-in	Plug lead	Plug-in	Plug lead
Maximum operating pressure		1.0 MPa					
Set pressure range		0.05 to 0.85 MPa					
Fluid		Air					
Ambient and fluid temperature		-5 to 60°C (No freezing)					
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□□ (Plug-in type)	ARBQ5000-00-A-1	A
	ARBQ5000-00-B-1	B
	ARBQ5000-00-P-1	P
VQ5□□ (Plug lead type)	ARBQ5000-00-A-5	A
	ARBQ5000-00-B-5	B
	ARBQ5000-00-P-5	P

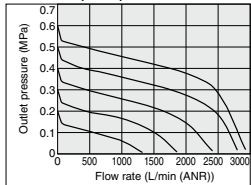
Dimensions



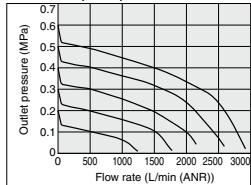
Flow Characteristics

Conditions Inlet pressure: 0.7 MPa

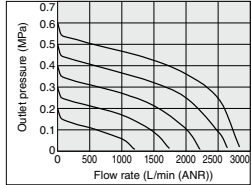
ARBQ5000-00-A (P → A)



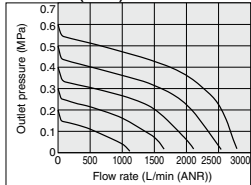
ARBQ5000-00-B (P → B)



ARBQ5000-00-P (P → A)



ARBQ5000-00-P (P → B)



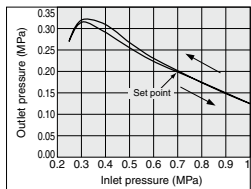
Pressure Characteristics

Conditions

Inlet pressure: 0.7 MPa

Outlet pressure: 0.2 MPa

Flow rate: 20 L/min(ANR)



Semi-standard Specifications

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.

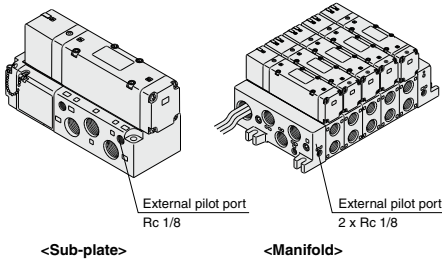
External pilot is available as standard for manifolds and options.

- 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

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

Nll	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

Nll	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

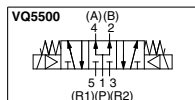
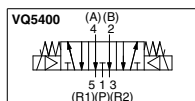
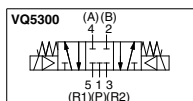
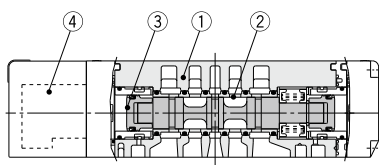
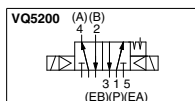
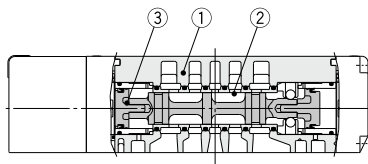
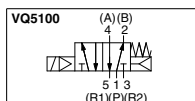
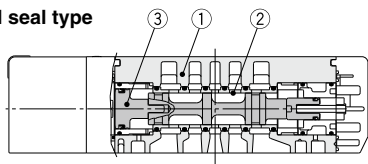
• Thread type

Nll	Rc
N	NPT
T	NPTF
F	G

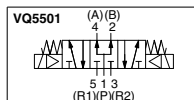
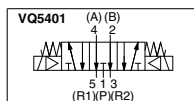
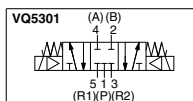
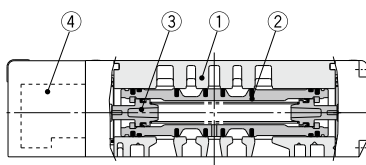
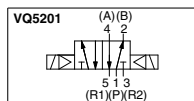
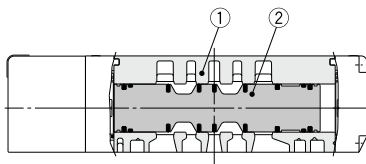
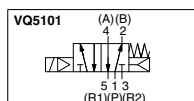
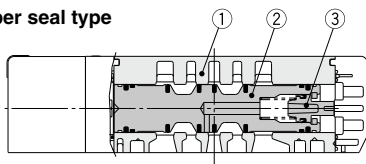
Series VQ5000 Construction

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-□-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

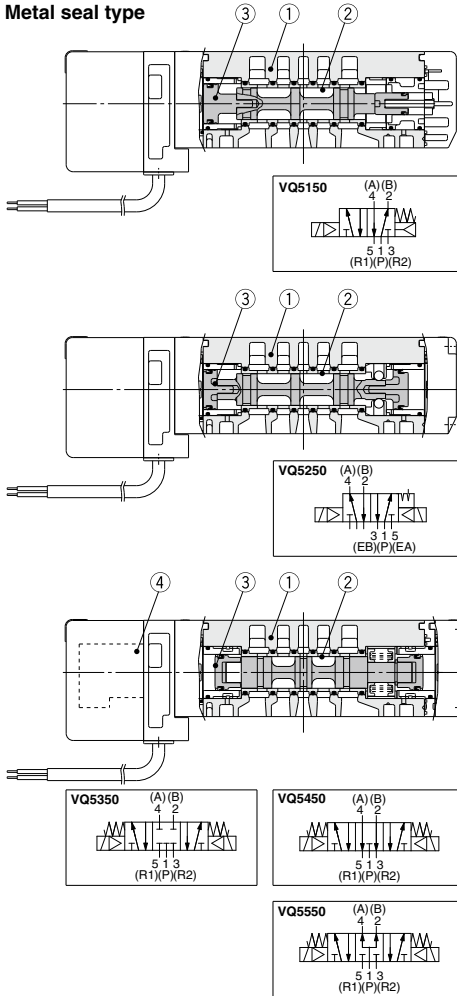
Number	Description	Material	Note
1	Body	Aluminum die-casted	
2	Spool valve	Aluminum, HNBR	
3	Piston	Resin	

Replacement Parts

4	Pilot valve assembly	VQZ111P-□-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



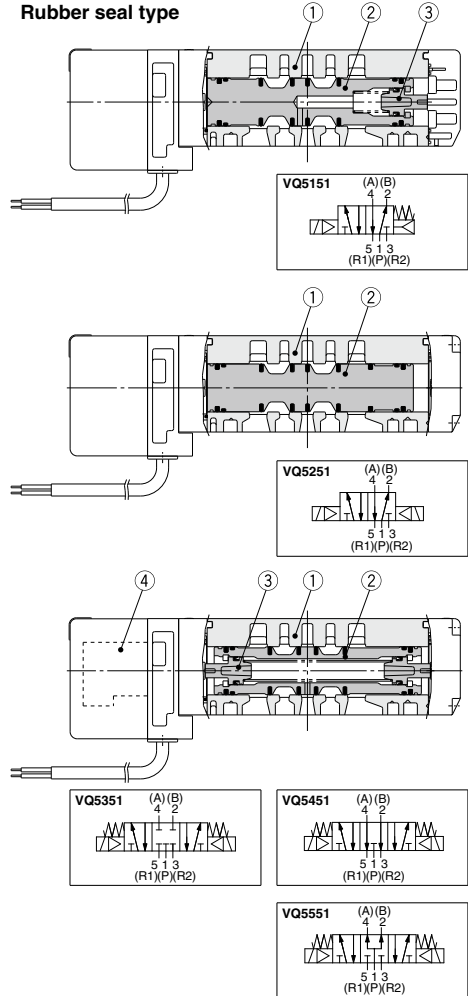
Component Parts

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)
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Rubber seal type



Component Parts

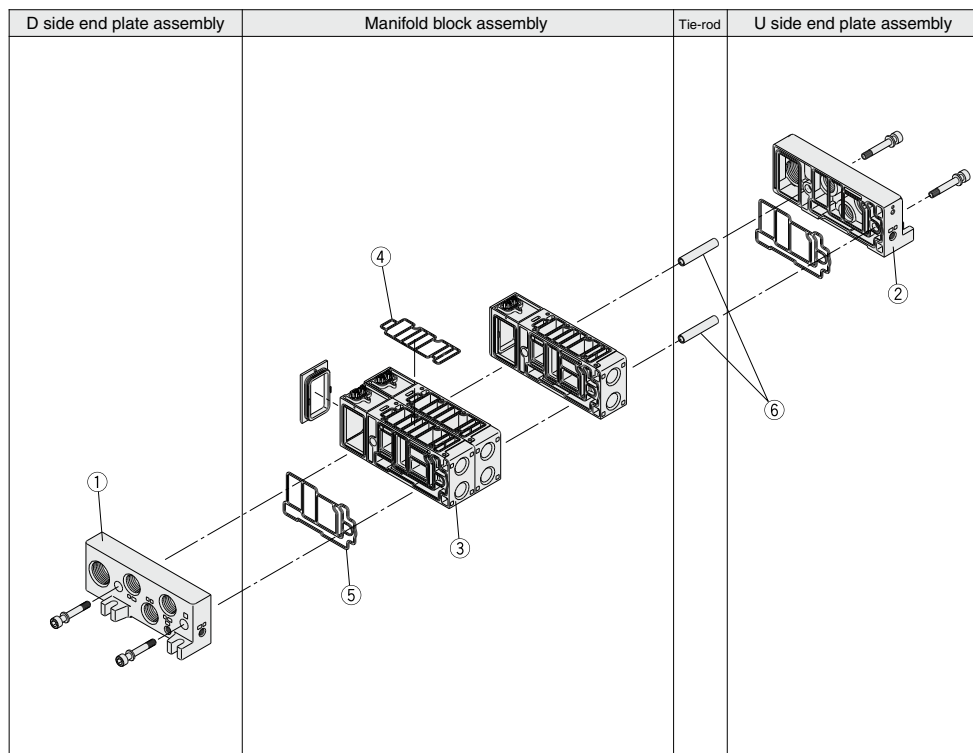
Number	Description	Material	Note
1	Body	Aluminum die-casted	
2	Spool valve	Aluminum, NBR	
3	Piston	Resin	

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
SY
SV
SYJ
SZ
VF
VP4
S0700
VQ
VQ4
VQ5
VQC
VQC4
VQZ
SQ
VFS
VFR
VQ7

Exploded View of Manifold

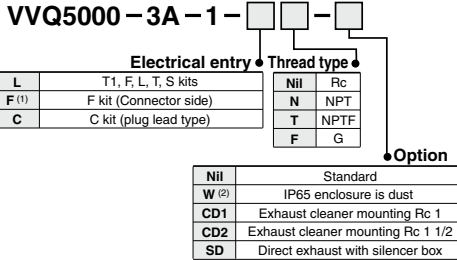


Note) The electrical entry cannot be changed.

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)

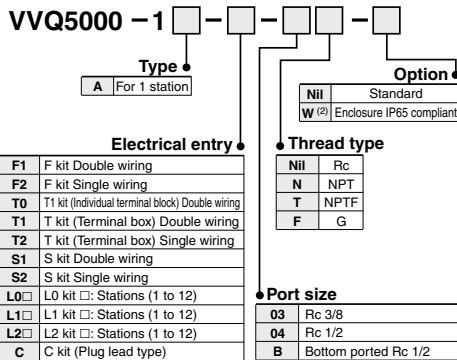


Note 1) D-sub connector for D side: VVQ4000-19A-D is not included. (Order separately)

Note 2) Splashproof specifications is not available for F and T1.

<Manifold Block Assembly>

3. Manifold block assembly part no.



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.

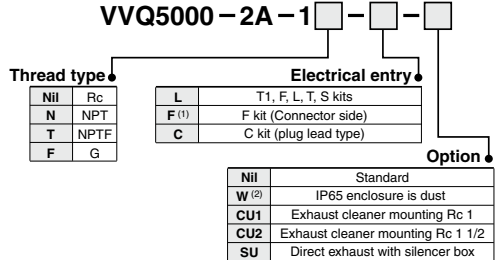
<SI Unit>

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.: Fieldbus System
	H	EX123U-SUH1	EX123D-SUH1	NKE Corp.: Fieldbus H System
	J1	EX123U-SSL1	EX123D-SSL1	Panasonic Industrial Devices SUNX Co., Ltd.: S-LINK System (16 output points)
	J2	EX123U-SSL2	EX123D-SSL2	Panasonic Industrial Devices SUNX Co., Ltd.: 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)

<U Side End Plate Assembly Part No.>

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



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 Replacement Parts>

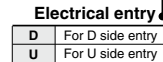
Replacement Parts

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 - []



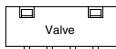
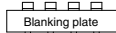
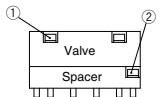
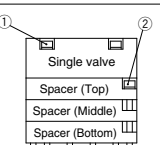
6. Tie-rods part no. (2 pcs.)

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.

List of Valves, Options, and Mounting Bolts

Number of options	Valve and options	Bolt part no.	Qty (pcs)	Note	Option mounting diagram
0	Single valve	AXT 632-25-4 (M4 x 50)	4		
	Blanking plate (VVQ5000-10A- $\frac{1}{5}$)	AXT 632-25-8 (M4 x 17)	4	For manifold	
1	Valve + Individual SUP spacer (VVQ5000-P- $\frac{1}{5}$ - $\frac{03}{04}$)	① AXT 632-25-5 (M4 x 82) ② AXT 632-25-10 (M4 x 34)	4 2	For manifold	
	Valve + Individual EXH spacer (VVQ5000-R- $\frac{1}{5}$ - $\frac{03}{04}$)	① AXT 632-25-5 (M4 x 82) ② AXT 632-25-10 (M4 x 34)	4 2	For manifold	
	Valve + Throttle valve spacer (VVQ5000-20A- $\frac{1}{5}$)	① AXT 632-25-5 (M4 x 82) ② AXT 632-25-10 (M4 x 34)	4 2	Not necessary when mounting the sub-plate.	
	Valve + Release valve spacer (VVQ5000-24A- $\frac{1}{5}$ D)	① AXT 632-25-5 (M4 x 82) ② AXT 632-25-10 (M4 x 34)	4 2	For manifold	
	Valve + Double check spacer with residual pressure release valve (VVQ5000-25A- $\frac{1}{5}$)	① AXT 632-25-6 (M4 x 114) ② AXT 632-66-1 (M4 x 64)	4 2	Not necessary when mounting the sub-plate.	
	Valve + SUP stop valve spacer (VVQ5000-37A- $\frac{1}{5}$)	① AXT 632-25-5 (M4 x 82) ② AXT 632-25-10 (M4 x 34)	4 2	Not necessary when mounting the sub-plate.	
	Valve + Interface regulator (ARBQ5000-00B- $\frac{1}{5}$)	① AXT 632-25-6 (M4 x 114) ② AXT 632-66-1 (M4 x 64)	4 2	Not necessary when mounting the sub-plate.	
	Blanking plate + SUP stop valve (Top) (Bottom)	① AXT 632-25-4 (M4 x 50)	4	For manifold	
		② AXT 632-25-10 (M4 x 34)	2		
	2	Valve + Individual SUP + Individual EXH (Top) (Bottom) (Bottom) (Top)	① AXT 632-25-6 (M4 x 114) ② AXT 632-25-11 (M4 x 66)	4 2	
Valve + Throttle valve + Individual SUP or Individual EXH (Top) (Top) (Bottom) (Bottom)		① AXT 632-25-6 (M4 x 114) ② AXT 632-25-11 (M4 x 66)	4 2	For manifold * The individual EXH cannot be mounted on the top.	
Valve + SUP stop valve + Individual SUP, Individual EXH or Throttle valve (Bottom)		① AXT 632-25-6 (M4 x 114) ② AXT 632-25-11 (M4 x 66)	4 2	For manifold	
Valve + Double check spacer with + Individual SUP or residual pressure release valve (Top) (Bottom)		① AXT 632-25-7 (M4 x 146) ② AXT 632-66-2 (M4 x 96)	4 2	For manifold	
Valve + Interface regulator + Double check spacer with residual pressure release valve (Top) (Bottom)		① AXT 632-25-14 (M4 x 178) ② AXT 632-66-3 (M4 x 128)	4 2	For manifold	
Valve + Interface regulator + Individual SUP, Individual EXH or Throttle valve (Bottom)		① AXT 632-25-7 (M4 x 146) ② AXT 632-66-2 (M4 x 96)	4 2	For manifold * The individual EXH and throttle valve cannot be mounted on the top.	
Blanking plate + SUP stop valve (Top) + Individual SUP (Bottom)		① AXT 632-25-5 (M4 x 82) ② AXT 632-25-11 (M4 x 66)	4 2	For manifold	
3	Valve + SUP stop valve (Top) + Individual SUP (Middle, Bottom) + Individual EXH (Middle, Bottom)	① AXT 632-25-7 (M4 x 146) ② AXT 632-25-12 (M4 x 98)	4 2	For manifold	
	Valve + Double check spacer with residual pressure release valve (Top) + Individual SUP (Middle, Bottom) + Individual EXH (Middle, Bottom)	① AXT 632-25-14 (M4 x 178) ② AXT 632-66-3 (M4 x 128)	4 2	For manifold	
	Valve + Spacer (Top): Interface regulator Spacer (Middle): Individual SUP or Individual EXH/Throttle valve Spacer (Bottom): Throttle valve/Individual SUP or Individual EXH	① AXT 632-25-14 (M4 x 178) ② AXT 632-66-3 (M4 x 128)	4 2	For manifold * The individual EXH and throttle valve cannot be mounted on the top.	

Note 1) When the SUP stop valve and individual SUP are mounted, the stop valve is mounted on the top of the individual SUP.



Series VQ5000

Specific Product Precautions 1

Be sure to read before handling.

Refer to front matter 53 for Safety Instructions and pages 3 to 8 for 3/4/5 Port Solenoid Valve Precautions.

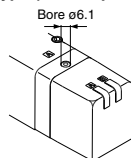
Manual Override Operation

Warning

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

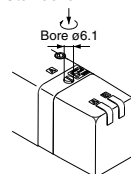
Non-locking push type (Tool required) is standard. As a semi-standard specification, slotted locking type (Tool required) is available.

Push type (Tool required)

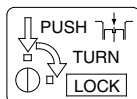


Push down the manual override button with a small screwdriver, etc.
Release the screwdriver and the manual override will return.

Locking type (Tool required) <Semi-standard>



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.



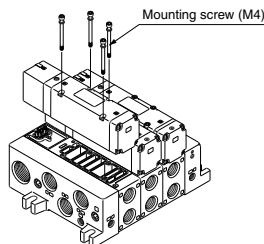
Mounting of Valves

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

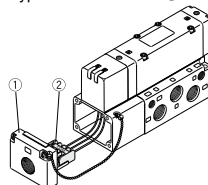


Lead Wire Connection

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		A side	COM	—	—
VQ520 ⁰		A side	COM	B side	—
VQ530 ⁰ VQ540 ⁰		A side	COM	B side	—

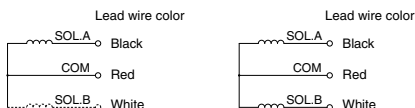
Note 1) There is no polarity. It can also be used as -COM.

Note 2) The sub-plate is double wired even for the VQ510⁰.

● 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	<p>Black: A side solenoid Red: COM</p>	<p>Black: A side solenoid Red: COM White: B side solenoid</p>
Enclosure IP65 compliant	<p>Black: A side solenoid Red: COM White: B side solenoid (Not used for single solenoid) Green: (Not used for single or double.)</p>	

Note) There is no polarity.



Series VQ5000

Specific Product Precautions 2

Be sure to read before handling.

Refer to front matter 53 for Safety Instructions and pages 3 to 8 for 3/4/5 Port Solenoid Valve Precautions.

Installation and Removal of Light Cover

⚠ Caution

Installation/Removal of light cover

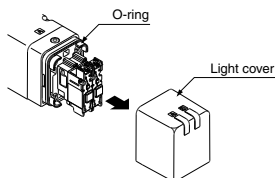
● Removal

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

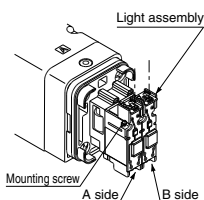
⚠ Caution

● Removal

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

● Installation

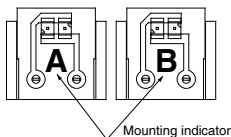
1. After confirming the gasket is correctly placed under the valve, securely tighten the bolts with the proper torque shown in the table below.



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.

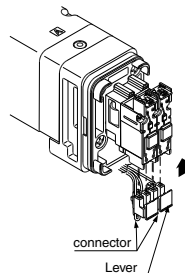


For Plug Lead Type

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.

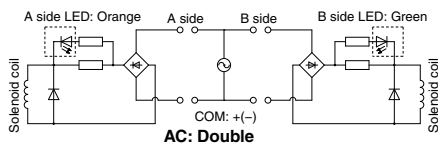
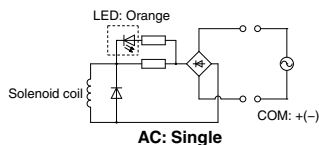
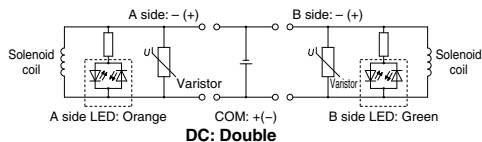
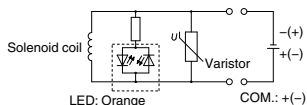
- To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.



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

Internal Wiring Specifications

⚠ Caution



How to Calculate the Flow Rate

For obtaining the flow rate, refer to front matters 42 to 45.

■ Trademark Information

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