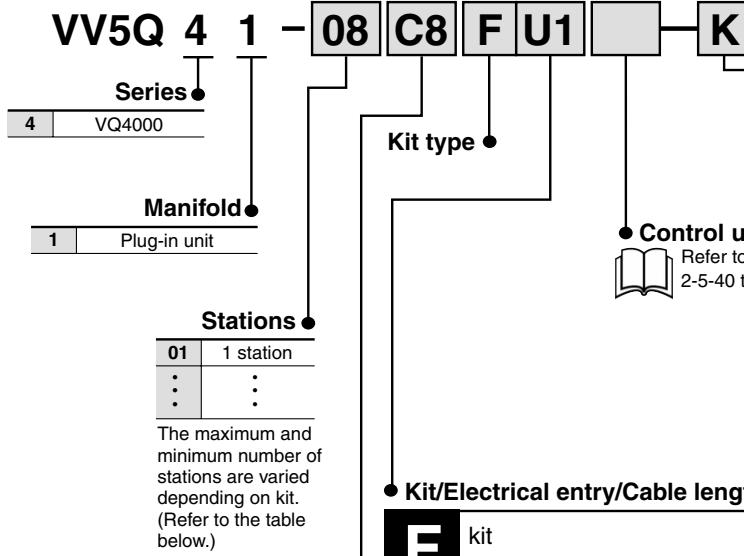
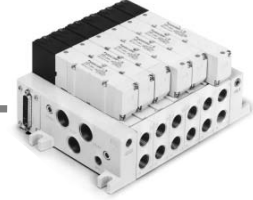


Series VQ4000

Base Mounted Plug-in Unit

How to Order Manifold



Cylinder port

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

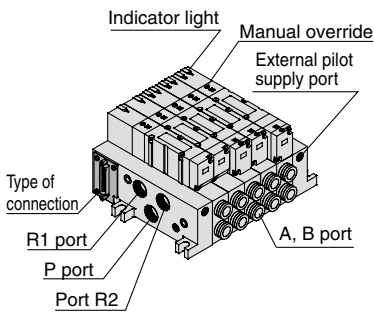
Connector entry direction

D side		U side		Cable length	Stations
Kit	Symbol	Kit	Symbol		
	D0		U0	Without cable	1 to 18 stations
F	D1	F	U1	Cable length 1.5 m	
	D2	F	U2	Cable length 3 m	
	D3		U3	Cable length 5 m	

Terminal block mounting position

D side		U side		Terminal block box	Stations
Kit	Symbol	Kit	Symbol		
	TD		TO	Terminal block box	3 to 18 stations

IP65 compatible



Note) Shown VV5Q41-05C12FD0

Electrical entry

D side		U side		Cable length	Stations
Kit	Symbol	Kit	Symbol		
L	D0	L	U0	Cable length 0.6 m	1 to 16 stations
	D1	L	U1	Cable length 1.5 m	
	D2	L	U2	Cable length 3 m	

IP65 compatible

Unit mounting position

D side		U side		Serial transmission unit	Stations
Kit	Symbol	Kit	Symbol		
	0			Without SI unit	3 to 18 stations
	A			With general type SI unit (Series EX300)	
	B			Mitsubishi Electric Corp.: MELSECNET/mini-S3 Data Link System	
	BB			Mitsubishi Electric Corp.: MELSECNET/mini-S3 Data Link System (2 power supply systems)	
	C			OMRON Corp.: SYSBUS Wire System	
	D			SHARP Corp.: Satellite I/O Link System	
	F1			NKE Corp.: Uni-wire System (16 output points)	
	J1			SUNX Corp.: S-LINK System (16 output points)	
	J2			SUNX Corp.: S-LINK System (8 output points)	
	K			Fuji Electric Co.: T-LINK Mini System	
	Q			DeviceNet, CompoBus/D (OMRON Corp.)	
	R1			OMRON Corp.: CompoBus/S System (16 output points)	
	R2			OMRON Corp.: CompoBus/S System (8 output points)	
	U			JEMANET (JPCN-1)	
	V			Mitsubishi Electric Corp.: CC-LINK System	
	G			Rockwell Automation: Allen Bradley Remote I/O (RIO) System	
	H			NKE Corp.: Uni-wire H System	

IP65 compatible
* Applicable to INPUT and OUTPUT type.

Simple specials are available with SMC Simple Special System. For details about applicable models, please contact SMC.

Manifold Specifications

Series	Base model	Type of connection	Porting specifications			Maximum applicable stations	Applicable solenoid valve	5 station weight (kg)
			4(A), 2(B) port location	Port size <small>Note)</small>				
				1(P), 5(R1), 3(R2)	4(A), 2(B)			
VQ4000	VV5Q41-□□□	<ul style="list-style-type: none"> ■ F kit-D-sub connector ■ T kit-Terminal block box ■ L kit-Lead wire ■ S kit-Serial transmission 	Side Bottom	Rc 1/2 Option (Direct exhaust with silencer box)	C8 (For ø8) C10 (For ø10) C12 (For ø12) Rc 1/4 Rc 3/8 Rc 1/4	F, T kit 12 stations L kit 16 stations S kit 10 stations	VQ4□00 VQ4□01	2.24 • L kit • Except solenoid valve weight



Note) For details about inch-size One-touch fittings and other thread standards, refer to page 2-5-39.

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

Model	Passage/Stations		Station 1	Station 5	Station 10	Station 15
2 position metal seal VQ4 ₂ 00	1 → 4/2 (P → A/B)	C [dm ³ /(s·bar)]	5.9	5.9	5.9	5.9
		b	0.23	0.23	0.23	0.23
		Cv	1.5	1.5	1.5	1.5
	4/2 → 5/3 (A/B → EA/EB)	C [dm ³ /(s·bar)]	6.2	6.2	6.2	6.2
		b	0.19	0.19	0.19	0.19
		Cv	1.5	1.5	1.5	1.5
2 position rubber seal VQ4 ₂ 01	1 → 4/2 (P → A/B)	C [dm ³ /(s·bar)]	6.8	6.8	6.8	6.8
		b	0.31	0.31	0.31	0.31
		Cv	1.8	1.8	1.8	1.8
	4/2 → 5/3 (A/B → EA/EB)	C [dm ³ /(s·bar)]	7.0	7.0	7.0	7.0
		b	0.38	0.38	0.38	0.38
		Cv	1.9	1.9	1.9	1.9



Note) Port size: Rc 3/8

Manifold Option

<p>Blanking plate assembly VVQ4000-10A-1</p>	<p>Individual SUP spacer VVQ4000-P-1-₀₂/₀₃</p>	<p>Individual EXH spacer VVQ4000-R-1-₀₂/₀₃</p>	<ul style="list-style-type: none"> • Refer to pages 2-5-34 to 2-5-38 for detailed dimensions of each option. For replacement parts, refer to page 2-5-47. • Refer to pages 2-5-40 to 2-5-43 for control unit. 	
<p>Throttle valve spacer VVQ4000-20A-1</p>	<p>SUP stop valve spacer VVQ4000-37A-1</p>	<p>SUP/EXH block plate VVQ4000-16A</p> <p>< SUP blocking plate > < EXH blocking plate ></p>		<p>Interface regulator ARBQ4000-00-_A/_B-1 _P</p>
<p>Release valve spacer VVQ4000-24A-1D ^(1, 2)</p>	<p>Double check spacer with residual pressure exhaust VVQ4000-25A-1 ⁽¹⁾</p>	<p>Direct exhaust with silencer box [-S_D[□]]⁽¹⁾</p>		<p>For exhaust cleaner mounting [-C_D[□]]⁽¹⁾</p>



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

Note 2) Can be mounted on L kit only. For other kits, order E type control unit.

(Refer to pages 2-5-40 to 2-5-43.)



VQC

SQ

VQ0

VQ4

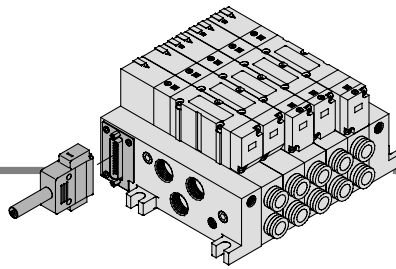
VQ5

VQZ

VQD

Series VQ4000

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 18.

Manifold Specifications

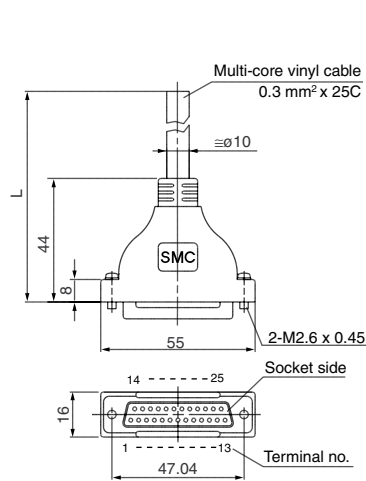
Series	Porting specifications		Applicable stations
	4(A), 2(B) port location	Port size	
VQ4000	Side	1(P), 5(R1), 3(R2)	Max. 18 stations
	Bottom	4(A), 2(B)	

D-Sub Connector Kit (25 pins)

Cable assembly ●

015
AXT100-DS25-030
050

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



D-sub Connector Cable Assembly (Option)

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.

Connector manufacturers' example

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

Electric Characteristics

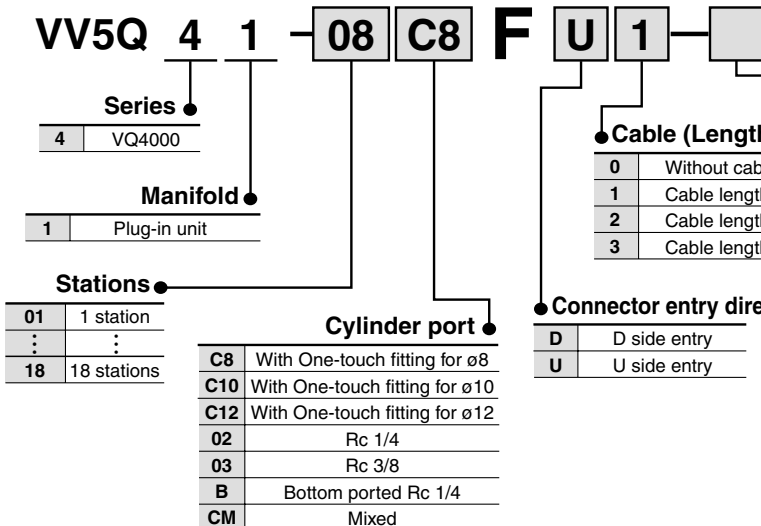
Item	Characteristics
Conductor resistance Ω/km , 20°C	65 or less
Voltage limit VAC, 1 min.	1000
Insulation resistance $M\Omega/\text{km}$, 20°C	5 or less

Note) The minimum bending radius for D-sub connector cables 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

How to Order Manifold



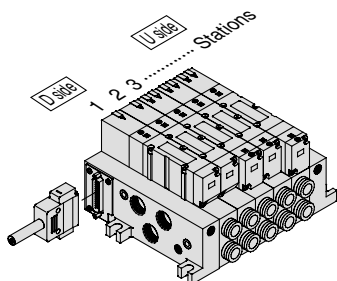
Option

Symbol	Option
Nil	None
CD ⁽²⁾	Exhaust cleaner: For D side mounting
CU ⁽²⁾	Exhaust cleaner: For U side mounting
K ⁽³⁾	Special wiring specifications (Except double wiring)
SB	Direct exhaust with silencer box: Exhaust from both sides
SD ⁽²⁾	Direct exhaust with silencer box: D side exhaust
SU ⁽²⁾	Direct exhaust with silencer box: U side exhaust

- Note 1) When two or more symbols are specified, indicate them alphabetically.
Example) -CDK
- Note 2) Combination of [C_D^U] and [S_D^U] is not possible.
- Note 3) Specify the wiring specifications on the manifold specification sheet.
- Note 4) Refer to pages 2-5-40 to 2-5-43 for with control unit.

Note) As an option, the maximum number of stations can be increased by special wiring specifications.
For details, refer to page 2-5-11.

● 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 an option. For details, refer to below.

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

Standard wiring	Wiring with control unit	D-sub connector assembly	Wire colors	Dot marking
Terminal no.	Terminal no.	Polarity	Lead wire color	
1 station SOL.A 1	Release valve 1 (-)	(+)	Black	None
1 station SOL.B 14	Pressure switch 14 (+)	(-)	Yellow	Black
2 stations SOL.A 2	2 (-)	(+)	Brown	None
2 stations SOL.B 15	15 (+)	(-)	Pink	Black
3 stations SOL.A 3	SOL.A 3 (-)	(+)	Red	None
3 stations SOL.B 16	SOL.B 16 (-)	(+)	Blue	White
4 stations SOL.A 4	SOL.A 4 (-)	(+)	Orange	None
4 stations SOL.B 17	SOL.B 17 (-)	(+)	Purple	None
5 stations SOL.A 5	SOL.A 5 (-)	(+)	Yellow	None
5 stations SOL.B 18	SOL.B 18 (-)	(+)	Gray	None
6 stations SOL.A 6	SOL.A 6 (-)	(+)	Pink	None
6 stations SOL.B 19	SOL.B 19 (-)	(+)	Orange	Black
7 stations SOL.A 7	SOL.A 7 (-)	(+)	Blue	None
7 stations SOL.B 20	SOL.B 20 (-)	(+)	Red	White
8 stations SOL.A 8	SOL.A 8 (-)	(+)	Purple	White
8 stations SOL.B 21	SOL.B 21 (-)	(+)	Brown	White
9 stations SOL.A 9	SOL.A 9 (-)	(+)	Gray	Black
9 stations SOL.B 22	SOL.B 22 (-)	(+)	Pink	Red
10 stations SOL.A 10	SOL.A 10 (-)	(+)	White	Black
10 stations SOL.B 23	SOL.B 23 (-)	(+)	Gray	Red
11 stations SOL.A 11	SOL.A 11 (-)	(+)	White	Red
11 stations SOL.B 24	SOL.B 24 (-)	(+)	Black	White
12 stations SOL.A 12	SOL.A 12 (-)	(+)	Yellow	Red
12 stations SOL.B 25	SOL.B 25 (-)	(+)	White	None
COM. 13	COM. 13 (+)	(-)	Orange	Red

Positive common specifications Negative common specifications

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

Special Wiring Specifications

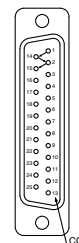
Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types. Mixed single and double wiring is available as an option.

1. How to order

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

2. Wiring specifications

Connections begin with the A side solenoid of the first station being connected to terminal no. 1, and continue in the order indicated by the arrows in the drawing without skipping any terminals. Maximum stations are 18.



D-sub connector

How to Order Valves

VQ 4 1 0 0 5

Series: VQ4000

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

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

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.
 Note 2) Refer to page 2-5-39 for external pilot specification. Combination of external pilot and perfect interface is not possible.
 Note 3) When two or more symbols are specified, indicate them alphabetically.

How to Order Manifold Assembly

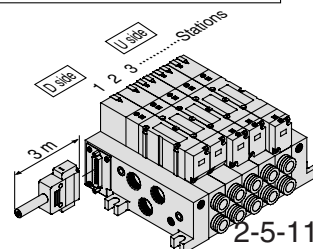
Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>

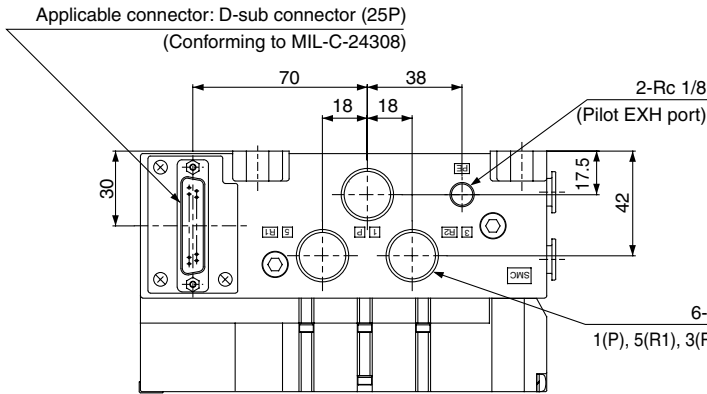
D-sub connector kit with cable (3 m)
 VV5Q41-05C8FD2....1 set — Manifold base part no.
 *VQ4100-5.....2 sets— Valve part no. (Stations 1 and 2)
 *VQ4200-5.....2 sets— Valve part no. (Stations 3 and 4)
 *VQ4300-5.....1 set — Valve part no. (Station 5)

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

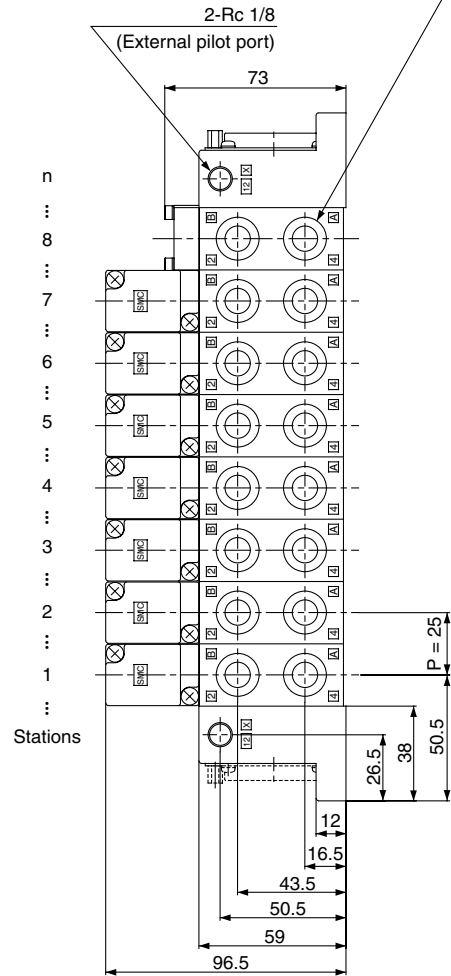
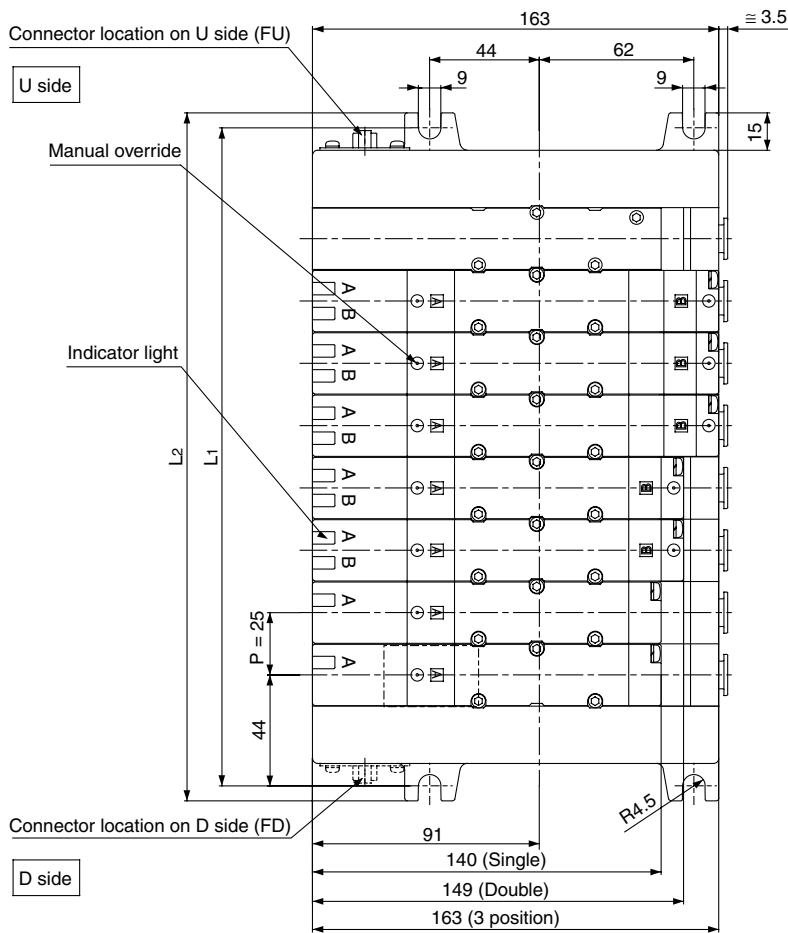
Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.



F Kit (D-sub connector kit)

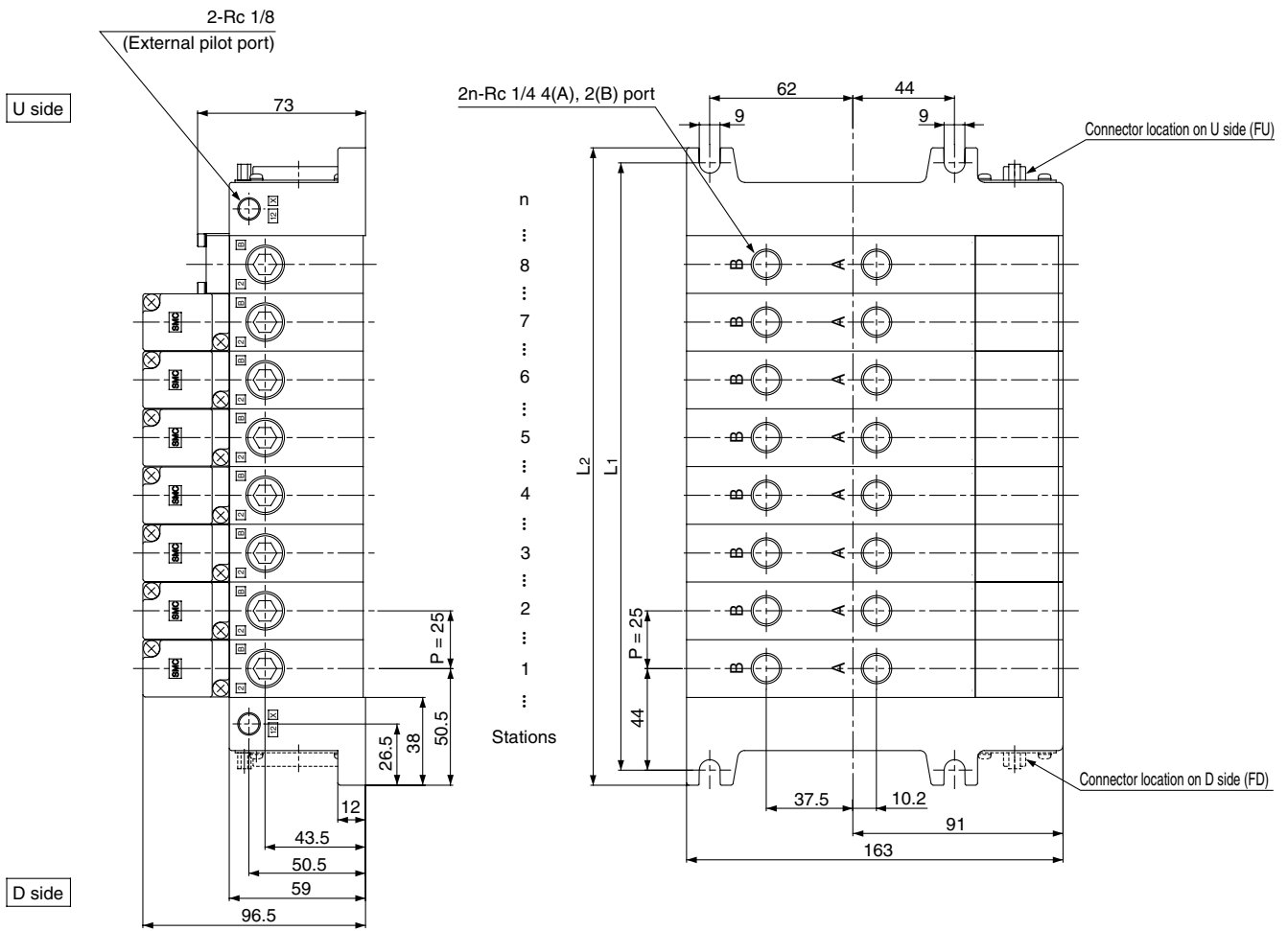


- 2n-Rc 1/4, 3/8, C8, C10, C12 4(A), 2(B) port
- Rc 1/4: Rc 1/4 thread
- Rc 3/8: Rc 3/8 thread
- C8: One-touch fitting for ø8
- C10: One-touch fitting for ø10
- C12: One-touch fitting for ø1



Bottom ported drawing

- VQC
- SQ
- VQ0
- VQ4**
- VQ5
- VQZ
- VQD



Dimensions

Formula L1 = 25n + 63, L2 = 25n + 76 n: Station (Maximum standard 18 stations)

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