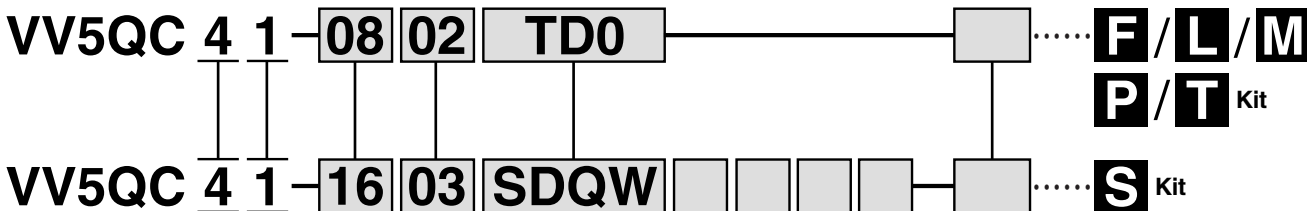


# Series VQC4000

## Base Mounted Plug-in Unit

### How to Order Manifold



**Series**  
4 VQC4000

**Manifold model**  
1 Plug-in unit

**Stations**  
01 1 station  
⋮ ⋮

The maximum number of stations differs depending on the electrical entry.

**Cylinder port size**

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

Note 1) Indicate the size in the specification order sheet in the case of "CM".  
Note 2) Symbols for inch sizes are as follows:  
N7: ø1/4"  
N9: ø5/16"  
N11: ø3/8"  
NM: Mixed

**Option**

Nil	None
K	Special wiring specifications (except for double wiring) <sup>Note 1)</sup>
N	With name plate (available for T kit only) <sup>Note 2)</sup>

\* When specifying more than one option, enter symbols in alphabetical order. Example: -KN  
Note 1) Be sure to indicate the wiring specifications on the specification order sheet.  
Note 2) The mounting position of the name plate is on the top face of the cover for the terminal block box.

**Input block COM. (Fill out for I/O unit only)**

Nil	PNP (+) or without SI unit/input block
N	NPN (-)

**Input block (Fill out for I/O unit only)**

Nil	Without SI unit/input block (SD0(W))
0	Without input block
1	With 1 input block
⋮	⋮
8	With 8 input blocks

Note) Max. 4 for EX240 and max 8 for EX250.

**SI unit COM.**

SI unit COM	EX240			EX250				EX500				EX126
	DeviceNet	PROFIBUS-DP	DeviceNet	PROFIBUS-DP	CC-LINK	AS-i	CANopen	DeviceNet	PROFIBUS-DP	CC-LINK	Remote I/O	CC-LINK
Nil +COM	○	—	—	—	○	—	—	○	○	○	○	○
N -COM	—	○	○	○	—	○	○	○	○	○	○	—

Note) Leave the box blank for the SI unit COM. without SI unit (SD0).

**Input block type (Fill out for I/O unit only)**

Nil	Without input block
0	M12, 8 inputs (EX240)
1	M12, 2 inputs (EX250)
2	M12, 4 inputs (EX250)
3	M8, 4 inputs (EX250)

**Kit Designation/Electrical Entry/Cable Length**

S Kit (Decentralized wiring type serial kit)		S Kit (I/O serial kit)		S Kit (I/O serial transmission kit)		S Kit (Serial output kit)	
Serial unit: EX500 IP67 compliant		Serial unit: EX250 IP67 compliant		Serial unit: EX240 IP65 compliant		Serial unit: EX126 IP67 compliant	
SD0	Serial kit without SI unit	SD0	Serial kit without SI unit	SD0W	Serial kit without SI unit	SDVB	Serial kit for CC-LINK
SDA1	Serial kit for Remote I/O	SDY	Serial kit for CANopen	SDQW	Serial kit for DeviceNet		
SDA2	Serial kit for DeviceNet/PROFIBUS-DP/CC-LINK	SDQ	Serial kit for DeviceNet	SDNW	Serial kit for PROFIBUS-DP		
	1 to 8 stations (16 stations)	SDN	Serial kit for PROFIBUS-DP				
		SDV	Serial kit for CC-LINK				
		SDTA	AS-i, 8 in/out, 31 slave modes, 2 power supply systems				
		SDTB	AS-i, 4 in/out, 31 slave modes, 2 power supply systems				
		SDTC	AS-i, 8 in/out, 31 slave modes, 1 power supply systems				
		SDTD	AS-i, 4 in/out, 31 slave modes, 1 power supply systems				
			1 to 12 stations (24 stations)		1 to 12 stations (16 stations)		1 to 8 stations (16 stations)

## How to Order Valves

**VQC 4 1 0 0**    **5**      

**Series**

**4** VQC4000

**Type of actuation**

<b>1</b>	2 position single (A)(B)  (R1)(P)(R2)	<b>4</b>	3 position exhaust center (A)(B)  (R1)(P)(R2)
	<b>2</b>		2 position double (metal) (A)(B)  (R1)(P)(R2)
<b>2</b>	2 position double (rubber) (A)(B)  (R1)(P)(R2)	<b>5</b>	3 position pressure center (A)(B)  (R1)(P)(R2)
	<b>3</b>		3 position closed center (A)(B)  (R1)(P)(R2)
<b>3</b>	3 position perfect (A)(B)  (R1)(P)(R2)	<b>6</b>	3 position perfect (A)(B)  (R1)(P)(R2)

**Light/Surge voltage suppressor**

Nil	With
<b>E</b>	Without light, with surge voltage suppressor

**Coil voltage**

<b>5</b>	24 VDC <small>Note</small>
<b>6</b>	12 VDC

Note) S kit is only available for 24 VDC.

**Function**

Nil	Standard type (1 W)
<b>R</b>	External pilot
<b>Y</b>	Low wattage type (0.5 W)

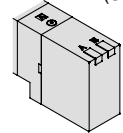
Note) \* When specifying more than one option, enter symbols in alphabetical order.

**Seal type**

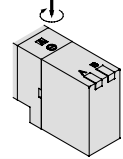
<b>0</b>	Metal seal
<b>1</b>	Rubber seal

**Manual override**

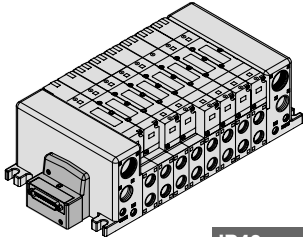
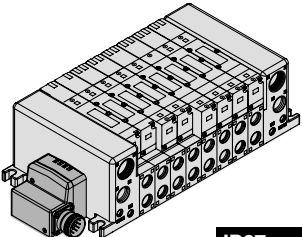
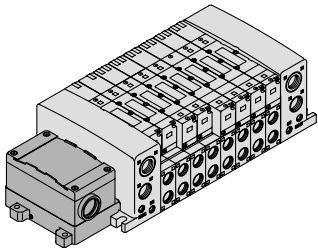
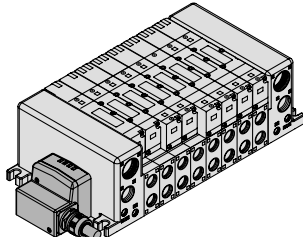
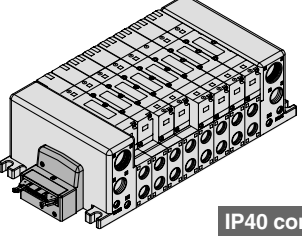
**Nil:** Non-locking push type (Slotted)



**B:** Locking type (Slotted)

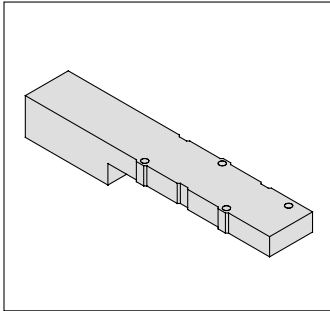


**Kit Designation/Electrical Entry/Cable Length**

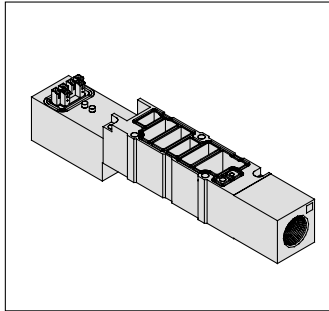
<p><b>F</b> Kit (D-sub connector kit)</p>  <p><b>IP40 compliant</b></p>	<p><b>M</b> Kit (Multiple connector kit)</p>  <p><b>IP67 compliant</b></p>	<p><b>T</b> Kit (Terminal block box kit)</p>  <p><b>IP67 compliant</b></p>			
			<p><b>FD0</b> D-sub connector kit (25P) without cable</p>	<p><b>MD0</b> Multiple connector kit (26P) without cable</p>	<p><b>TD0</b> Terminal block box kit   1 to 10 stations (16 stations)</p>
			<p><b>FD1</b> D-sub connector kit (25P) with 1.5 m cable</p>	<p><b>MD1</b> Multiple connector kit (26P) with 1.5 m cable</p>	<p><small>Note</small>) P kit: when using the flat ribbon cable kit (20P), order cable assemblies separately.</p>
			<p><b>FD2</b> D-sub connector kit (25P) with 3.0 m cable</p>	<p><b>MD2</b> Multiple connector kit (26P) with 3.0 m cable</p>	
<p><b>FD3</b> D-sub connector kit (25P) with 5.0 m cable</p>	<p><b>MD3</b> Multiple connector kit (26P) with 5.0 m cable</p>				
<p><b>L</b> Kit (Lead wire kit)</p>  <p><b>IP67 compliant</b></p>	<p><b>P</b> Kit (Flat ribbon cable kit)</p>  <p><b>IP40 compliant</b></p> <p><small>Note</small>) For a 20P flat ribbon cable, the cable assembly must be ordered separately.</p>				
		<p><b>LD0</b> Lead wire kit 0.6 m lead wire</p>	<p><b>PD0</b> Flat ribbon cable kit (26P) without cable</p>		
		<p><b>LD1</b> Lead wire kit 1.5 m lead wire</p>	<p><b>PD1</b> Flat ribbon cable kit (26P) with 1.5 m cable</p>		
		<p><b>LD2</b> Lead wire kit 3.0 m lead wire</p>	<p><b>PD2</b> Flat ribbon cable kit (26P) with 3.0 m cable</p>		
	<p><b>LD3</b> Lead wire kit 5.0 m lead wire</p>	<p><b>PD3</b> Flat ribbon cable kit (26P) with 5.0 m cable</p>			
	<p><b>PDC</b> Flat ribbon cable kit (20P) without cable <small>Note</small>)</p>	<p><b>PD4</b> Flat ribbon cable kit (20P) with 1.5 m cable</p>			
		<p><b>PD5</b> Flat ribbon cable kit (20P) with 3.0 m cable</p>			
		<p><b>PD6</b> Flat ribbon cable kit (20P) with 5.0 m cable</p>			

**Manifold Option**

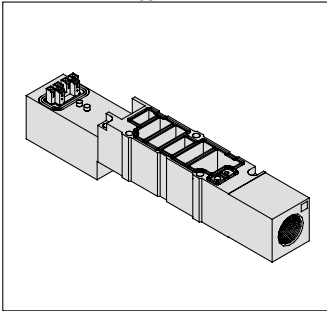
Blanking plate assembly  
VVQ4000-10A-1



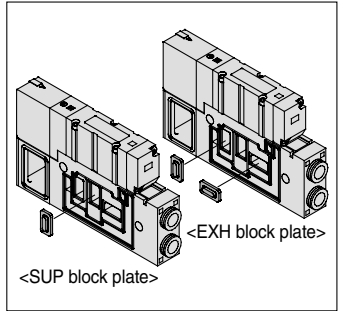
Individual SUP spacer  
VVQ4000-P-1-02  
03



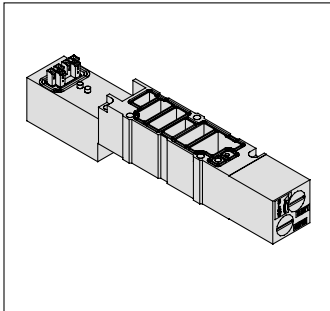
Individual EXH spacer  
VVQ4000-R-1-02  
03



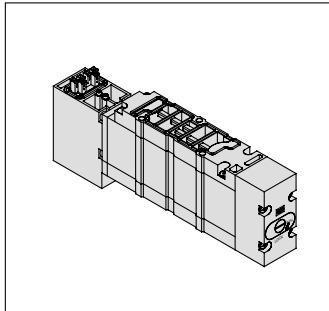
SUP/EXH block plate  
VVQ4000-16A



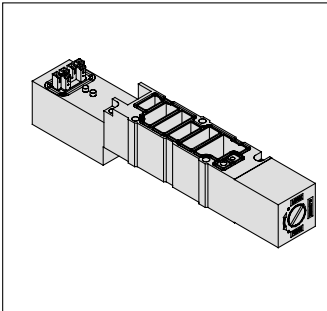
Throttle valve spacer  
VVQ4000-20A-1



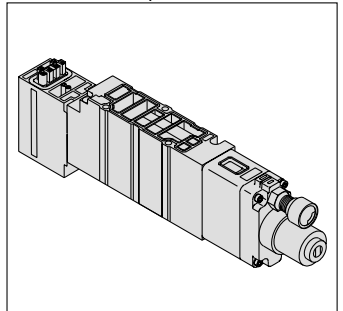
Residual pressure release valve  
perfect spacer  
VVQ4000-25A-1 (Note 1)




SUP stop valve spacer  
VVQ4000-37A-1



Interface regulator  
ARBQ4000-00-0-1



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

 Note 1) Perfect spacers with residual pressure release valve cannot be combined with external pilot specifications.

# Series VQC

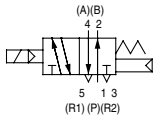
## Base Mounted

# Plug-in Unit

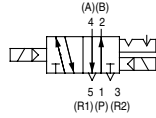


### JIS Symbol

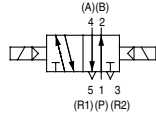
2 position single



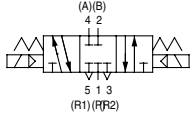
2 position double (metal)



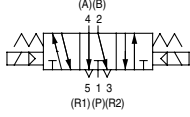
2 position double (rubber)



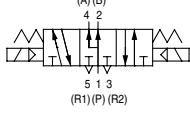
3 position closed center



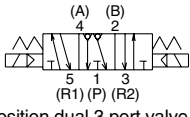
3 position exhaust center



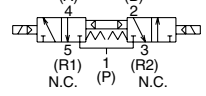
3 position pressure center



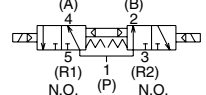
3 position exhaust center with pressure release valves



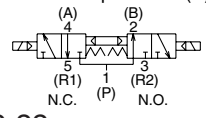
4 position dual 3 port valve (A)



4 position dual 3 port valve (B)



4 position dual 3 port valve (C)



### Model

Series	No. of solenoids	Model	Flow characteristics						Response time (ms) <sup>Note 2)</sup>		Weight (g)			
			1 → 4, 2 (P → A, B)			4, 2 → 5, 3 (A, B → R1, R2)			Standard: 1 W	Low wattage				
			C[dm <sup>3</sup> /(s·bar)]	b	C <sub>v</sub>	C[dm <sup>3</sup> /(s·bar)]	b	C <sub>v</sub>						
VQC1000	2 position	Single	Metal seal	VQC1100	0.70	0.15	0.16	0.72	0.25	0.18	12 or less	15 or less	64	
			Rubber seal	VQC1101	0.85	0.20	0.21	1.0	0.30	0.25	15 or less	20 or less		
		Double	Metal seal	VQC1200	0.70	0.15	0.16	0.72	0.25	0.18	10 or less	13 or less		
			Rubber seal	VQC1201	0.85	0.20	0.21	1.0	0.30	0.25	15 or less	20 or less		
	3 position	Closed center	Metal seal	VQC1300	0.68	0.15	0.16	0.72	0.25	0.18	20 or less	26 or less		78
			Rubber seal	VQC1301	0.70	0.20	0.16	0.65	0.42	0.18	25 or less	33 or less		
		Exhaust center	Metal seal	VQC1400	0.68	0.15	0.16	0.72	0.25	0.18	20 or less	26 or less		
			Rubber seal	VQC1401	0.70	0.20	0.16	1.0	0.30	0.25	25 or less	33 or less		
		Pressure center	Metal seal	VQC1500	0.70	0.15	0.16	0.72	0.25	0.18	20 or less	26 or less		
			Rubber seal	VQC1501	0.85	0.20	0.21	0.65	0.42	0.18	25 or less	33 or less		
4 position	Dual 3 port valve	Rubber seal	VQC1 <sup>A</sup> <sub>C</sub> 01	0.70	0.20	0.16	0.70	0.20	0.16	25 or less	33 or less			
VQC2000	2 position	Single	Metal seal	VQC2100	2.0	0.15	0.46	2.6	0.15	0.60	22 or less	29 or less	90	
			Rubber seal	VQC2101	2.2	0.28	0.55	3.2	0.30	0.80	24 or less	31 or less		
		Double	Metal seal	VQC2200	2.0	0.15	0.46	2.6	0.15	0.60	15 or less	20 or less		
			Rubber seal	VQC2201	2.2	0.28	0.55	3.2	0.30	0.80	20 or less	26 or less		
	3 position	Closed center	Metal seal	VQC2300	2.0	0.15	0.46	2.0	0.18	0.46	29 or less	38 or less		110
			Rubber seal	VQC2301	2.0	0.28	0.49	2.2	0.31	0.60	34 or less	44 or less		
		Exhaust center	Metal seal	VQC2400	2.0	0.15	0.46	2.6	0.15	0.60	29 or less	38 or less		
			Rubber seal	VQC2401	2.0	0.28	0.49	3.2	0.30	0.80	34 or less	44 or less		
		Pressure center	Metal seal	VQC2500	2.4	0.17	0.57	2.0	0.18	0.46	29 or less	38 or less		
			Rubber seal	VQC2501	3.2	0.28	0.80	2.2	0.31	0.60	34 or less	44 or less		
4 position	Dual 3 port valve	Rubber seal	VQC2 <sup>A</sup> <sub>C</sub> 01	1.8	0.28	0.46	1.8	0.28	0.46	34 or less	44 or less			
VQC4000	2 position	Single	Metal seal	VQC4100	6.2	0.19	1.5	6.9	0.17	1.7	20 or less	22 or less	230	
			Rubber seal	VQC4101	7.2	0.43	2.1	7.3	0.38	2.0	25 or less	27 or less		
		Double	Metal seal	VQC4200	6.2	0.19	1.5	6.9	0.17	1.7	12 or less	12 or less		
			Rubber seal	VQC4201	7.2	0.43	2.1	7.3	0.38	2.0	15 or less	15 or less		
	3 position	Closed center	Metal seal	VQC4300	5.9	0.23	1.5	6.3	0.18	1.6	45 or less	47 or less	280	
			Rubber seal	VQC4301	7.0	0.34	1.9	6.4	0.42	1.9	50 or less	52 or less		
		Exhaust center	Metal seal	VQC4400	6.2	0.18	1.5	6.9	0.17	1.7	45 or less	47 or less		
			Rubber seal	VQC4401	7.0	0.38	1.9	7.3	0.38	2.0	50 or less	52 or less		
		Pressure center	Metal seal	VQC4500	6.2	0.18	1.9	6.4	0.18	1.6	45 or less	47 or less		
			Rubber seal	VQC4501	7.0	0.38	1.9	7.1	0.38	2.0	50 or less	52 or less		
Perfect	Metal seal	VQC4600	2.7	—	—	3.7	—	—	55 or less	57 or less	500			
	Rubber seal	VQC4601	2.8	—	—	3.9	—	—	62 or less	64 or less				



Note 1) Values represented in this column are in the following conditions:

VQC1000: Cylinder port size C6 without a back pressure check valve

VQC2000: Cylinder port size C8 without a back pressure check valve

VQC4000: Cylinder port size Rc 3/8

Note 2) Values represented in this column are based on JIS B 8375-1981 (operating with clean air and a supply pressure of 0.5 MPa. Equipped with light/surge voltage suppressor. Values vary depending on the pressure as well as the air quality.) Values for double types are when the switch is ON.

### Standard Specifications

Valve Configuration		Metal seal		Rubber seal		
		Air/Inert gas				
Valve specifications	VQC1000/2000	Max. operating pressure		0.7 MPa (High pressure type: 1.0 MPa) <sup>Note 4)</sup>		
		Min. operating pressure	Single	0.1 MPa	0.15 MPa	
			Double	0.1 MPa		
			3 position	0.1 MPa	0.2 MPa	
			4 position	—	0.15 MPa	
	VQC4000	Max. operating pressure <sup>Note 3)</sup>		1.0 MPa (0.7 MPa)		
		Min. operating pressure	Single	0.15 MPa	0.2 MPa	
			Double	0.15 MPa		
	3 position	0.15 MPa	0.2 MPa			
	Proof pressure		1.5 MPa			
Ambient and fluid temperature		-10 to 50°C <sup>Note 1)</sup>				
Lubrication		Not required				
Manual override		Push type/Locking type (tool required)/Locking type (Manual override) <sup>Note 5)</sup> /Slide locking type <sup>Note 5)</sup>				
Impact resistance/Vibration resistance		150/30 m/s <sup>2</sup> <sup>Note 2)</sup>				
Enclosure		Dust proof (IP67 compliant)				
Electrical specifications	Rated coil voltage		24 VDC			
	Allowable voltage fluctuation		±10% of rated voltage			
	Coil insulation type		Equivalent to B type			
	Power consumption (Current)	24 VDC	1 W DC (42 mA), 0.5 W DC (21 mA)			
		12 VDC	1 W DC (83 mA), 0.5 W DC (42 mA)			

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

Note 1) Use dry air to prevent condensation at low temperatures.  
 Note 2) **Impact resistance:** No malfunction resulted from the impact test using a drop impact tester. The test was performed one time each in the axial and right angle directions of the main valve and armature, for both energized and de-energized states.  
**Vibration resistance:** No malfunction occurred in a one-sweep test between 45 and 2000Hz. Test was performed in the axial and right angle directions of the main valve and armature for both energized and de-energized states.  
 Note 3) Values in ( ) are for the low wattage (0.5 W) specification.  
 Note 4) Metal seal type only.  
 Note 5) Only for VQC1000/2000.

### Manifold Specifications

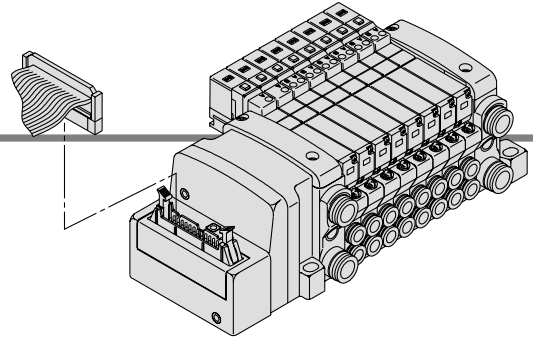
Series	Base model	Connection type	Piping specifications		Applicable stations <sup>Note 2)</sup>	Applicable solenoid valves	5 station weight (g)		
			Port direction	Port size <sup>Note 1)</sup>					
VQC1000	VV5QC11-□□□	<ul style="list-style-type: none"> <li>■ F Kit: D-sub connector</li> <li>■ P Kit: Flat cable</li> <li>■ T Kit: Terminal block box</li> <li>■ S Kit: Serial transmission</li> <li>■ L Kit: Lead wire</li> <li>■ M Kit: Multiple connector</li> </ul>	Side	1, 3 (P, R)	C8 (For ø8) Options Direct outlet with built-in silencer	C3 (For ø3.2) C4 (For ø4) C6 (For ø6) M5 (M5 threads)	(F, L, M and P kits) 1 to 12 stations (T kit) 1 to 10 stations (S kit) 1 to 8 stations: EX500 1 to 12 stations: EX250 1 to 8 stations: EX126	VQC1□00-5 VQC1□01-5	628 (Single) 759 (Double, 3P)
VQC2000	VV5QC21-□□□			Side	C10 (For ø10) Options Direct outlet with built-in silencer Branch type C12 (for ø12)	C4 (For ø4) C6 (For ø6) C8 (For ø8)	VQC2□00-5 VQC2□01-5	1051 (Single) 1144 (Double, 3P)	
VQC4000	VV5QC41-□□□		Side	P: Rc 1/2 R: Rc 3/4	C8 (For ø8) C10 (For ø10) C12 (For ø12) Rc 1/4 Rc 3/8	(F, L, M and P kits) 1 to 12 stations (T kit) 1 to 10 stations (S kit) 1 to 12 stations: EX240, EX250 1 to 8 stations: EX500 1 to 8 stations: EX126	VQC4□00-5 VQC4□01-5	4150 • S kit (without unit) • Solenoid weight is not included.	
			Bottom	Rc 1/4					

Note 1) One-touch fittings in inch sizes are also available.  
 Note 2) An optional specification for special wiring is available to increase the maximum number of stations.

Series VQC

**P** VQC1000/2000/4000  
Kit (Flat ribbon cable kit) IP40 compliant

- Using our flat ribbon cable for electrical connections greatly reduces labour, while it also minimizes wiring and saves space.
- We use flat ribbon cables whose connectors (26P and 20P) conform to MIL standards, and are therefore widely compatible with many standard commercial models.
- Top or side entry for the connector can be changed freely, allowing for changes even after mounting, to meet any changing needs for space.



Electrical Wiring Specifications

**Flat ribbon cable connector**

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 are available as options. Refer to special wiring specifications (options) below.

Connector terminal number

Triangle mark indicator position

<26P>			<20P>		
Station	Terminal no.	Polarity	Station	Terminal no.	Polarity
Station 1	SOL. A 1	(-) (+)	Station 1	SOL. A 1	(-) (+)
	SOL. B 2	(-) (+)		SOL. B 2	(-) (+)
Station 2	SOL. A 3	(-) (+)	Station 2	SOL. A 3	(-) (+)
	SOL. B 4	(-) (+)		SOL. B 4	(-) (+)
Station 3	SOL. A 5	(-) (+)	Station 3	SOL. A 5	(-) (+)
	SOL. B 6	(-) (+)		SOL. B 6	(-) (+)
Station 4	SOL. A 7	(-) (+)	Station 4	SOL. A 7	(-) (+)
	SOL. B 8	(-) (+)		SOL. B 8	(-) (+)
Station 5	SOL. A 9	(-) (+)	Station 5	SOL. A 9	(-) (+)
	SOL. B 10	(-) (+)		SOL. B 10	(-) (+)
Station 6	SOL. A 11	(-) (+)	Station 6	SOL. A 11	(-) (+)
	SOL. B 12	(-) (+)		SOL. B 12	(-) (+)
Station 7	SOL. A 13	(-) (+)	Station 7	SOL. A 13	(-) (+)
	SOL. B 14	(-) (+)		SOL. B 14	(-) (+)
Station 8	SOL. A 15	(-) (+)	Station 8	SOL. A 15	(-) (+)
	SOL. B 16	(-) (+)		SOL. B 16	(-) (+)
Station 9	SOL. A 17	(-) (+)	Station 9	SOL. A 17	(-) (+)
	SOL. B 18	(-) (+)		SOL. B 18	(-) (+)
Station 10	SOL. A 19	(-) (+)	Station 10	COM 19	(+) (-)
	SOL. B 20	(-) (+)		COM 20	(+) (-)
Station 11	SOL. A 21	(-) (+)			
	SOL. B 22	(-) (+)			
Station 12	SOL. A 23	(-) (+)			
	SOL. B 24	(-) (+)			
	COM 25	(+) (-)			
	COM 26	(+) (-)			

Positive COM. spec. Negative COM. spec.

Note) When using the negative COM. specification for VQC1000/2000, use valves for negative COM.

Cable Assembly

AXT100-FC<sup>1</sup><sub>26-2</sub><sup>3</sup>

(Type 26P flat ribbon cable connector assemblies can be ordered with manifolds. Refer to manifold ordering.)

Terminal no. Red 28AWG

30 (20P) 37.5 (26P)

6 (15.6) L

**Flat ribbon cable connector assemblies (Option)**

Cable length (L)	Part no.	
	26P	20P
1.5 m	AXT100-FC26-1	AXT100-FC20-1
3 m	AXT100-FC26-2	AXT100-FC20-2
5 m	AXT100-FC26-3	AXT100-FC20-3

\* When using a standard commercial connector, use a type 26P connector conforming to MIL-C-83503 or a type 20P with strain relief.  
\* Cannot be used for transfer wiring.

**Connector Manufacturers Example:**

- Hirose Electric CO., Ltd.
- Sumitomo/3-M Limited
- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

Special Wiring Specifications (Option)

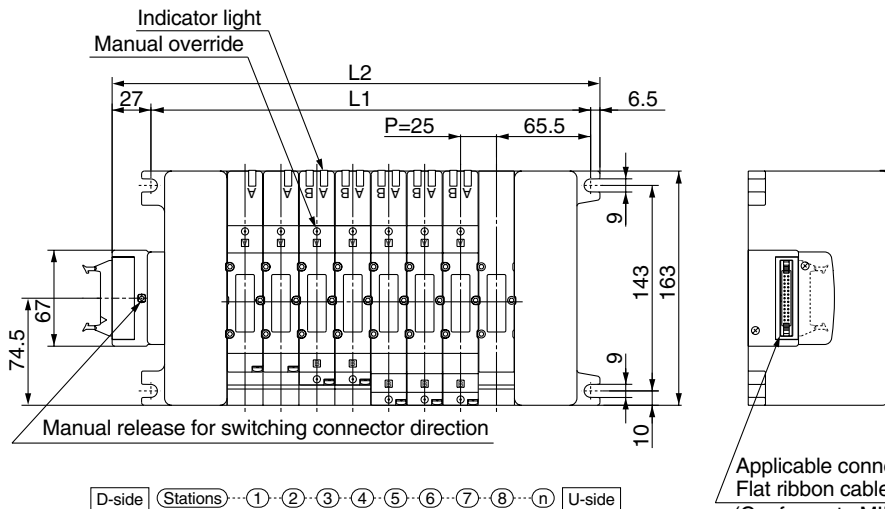
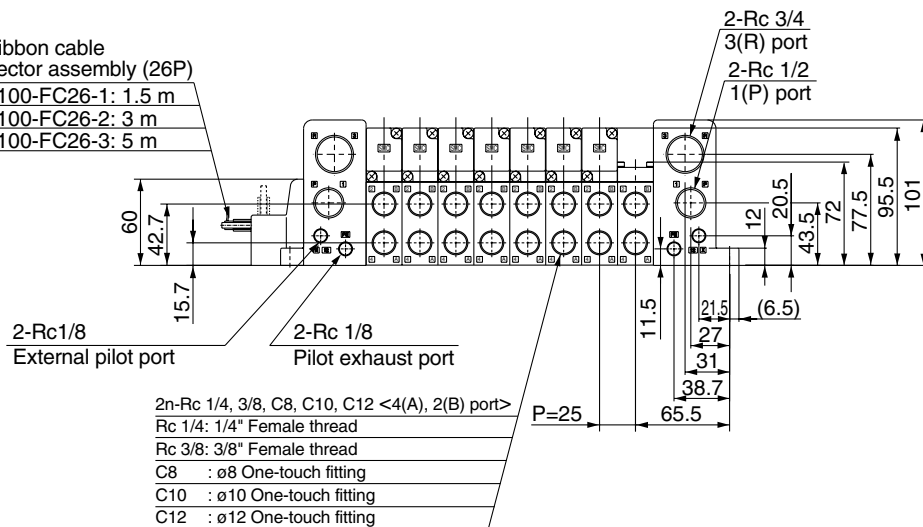
COM. COM. COM. COM.

(For 26P) (For 20P)

Mixed single and double wiring are available as options. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 24.

VV5QC41

Flat ribbon cable  
connector assembly (26P)  
AXT100-FC26-1: 1.5 m  
AXT100-FC26-2: 3 m  
AXT100-FC26-3: 5 m



Formulas

$L1 = 25n + 106$  (Maximum 16 single wiring stations)

$L2 = 25n + 139.5$

n: Stations

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2	164.5	189.5	214.5	239.5	264.5	289.5	314.5	339.5	364.5	389.5	414.5	439.5	464.5	489.5	514.5	539.5

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD