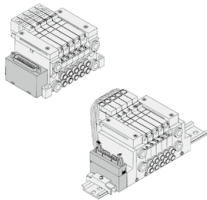


Series ¹⁰⁻₂₁₋VQ1000/2000

5 Port Solenoid Valve

Base Mounted

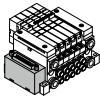


| Manifold type | Series | D-sub connector | Flat ribbon cable | Connector | Serial |
|---------------|---------------|-----------------|-------------------|-----------|--------|
| Plug-in | 10-/21-VQ1000 | ● | ● | — | ● |
| | 10-/21-VQ2000 | ● | ● | — | ● |

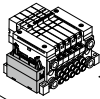
¹⁰⁻₂₁₋**VQ1000** How to Order, Manifold Options P. 515

¹⁰⁻₂₁₋**VQ2000** How to Order, Manifold Options P. 517

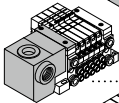
¹⁰⁻₂₁₋**VQ1000/2000** Model, Standard/Manifold Specifications P. 521



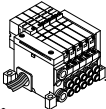
¹⁰⁻₂₁₋**VQ1000/2000**
F kit (D-sub connector) P. 523



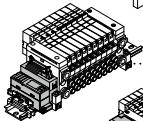
¹⁰⁻₂₁₋**VQ1000/2000**
P kit (Flat ribbon cable) P. 527



¹⁰⁻₂₁₋**VQ1000/2000**
T kit (Terminal block box) P. 539



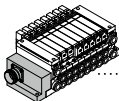
¹⁰⁻₂₁₋**VQ1000/2000**
L kit (Lead wire) P. 543



¹⁰⁻₂₁₋**VQ1000/2000**
S kit (Serial transmission) EX510 P. 547



¹⁰⁻₂₁₋**VQ1000/2000**
S kit (Serial transmission) EX120/124 P. 551



¹⁰⁻₂₁₋**VQ2000**
M kit (Circular connector) P. 557

¹⁰⁻₂₁₋**VQ2000** Sub-plate Single Unit P. 560

¹⁰⁻₂₁₋**VQ1000/2000** Semi-standard P. 561

¹⁰⁻₂₁₋**VQ1000/2000** Construction P. 564

¹⁰⁻₂₁₋**VQ1000/2000** Exploded View of Manifold P. 567

¹⁰⁻₂₁₋**VQ1000/2000** Manifold Optional Parts P. 571

¹⁰⁻₂₁₋**VQ1000/2000** Specific Product Precautions P. 575

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

Fittings & Tubing

Flow Control Equipment

Pressure Switches/ Pressure Sensors

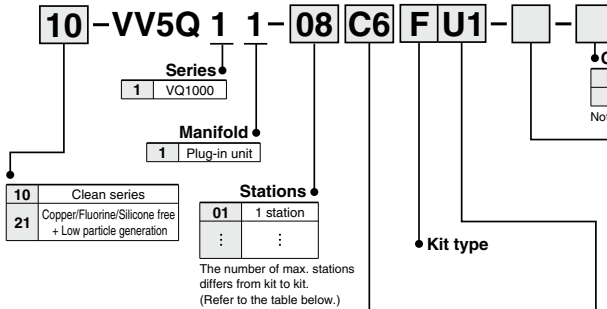
Series ¹⁰⁻₂₁₋VQ1000

Base Mounted Plug-in Unit

Note) For CE compliant models, DC-type only.



How to Order Manifold



Cylinder port

| Symbol | Port size | Symbol | Port size |
|--------------------|--|--------------------|--|
| C3 | With ø3.2 One-touch fitting | L5 | Top ported elbow M5 thread |
| C4 | With ø4 One-touch fitting | B3 | Bottom ported elbow with ø3.2 One-touch fitting |
| C6 | With ø6 One-touch fitting | B4 | Bottom ported elbow with ø4 One-touch fitting |
| M5 | M5 thread | B6 | Bottom ported elbow with ø6 One-touch fitting |
| CM (Note 1) | Mixed sizes and with port plug | B5 | Bottom ported elbow M5 thread |
| L3 | Top ported elbow with ø3.2 One-touch fitting | LM (Note 1) | Elbow port, mixed sizes |
| L4 | Top ported elbow with ø4 One-touch fitting | MM (Note 2) | Mixed size for different types of piping, option installed |
| L6 | Top ported elbow with ø6 One-touch fitting | | |

- Note 1) Indicate "Mixed sizes and with port plug" by means of the manifold specification sheet.
 Note 2) When selecting the mixed size for different types of piping or dual flow fitting assembly, enter "MM" and give instructions on the manifold specification sheet.
 Note 3) Inch-size One-touch fittings are also available. Refer to page 563 for details.
 Note 4) M5 fittings for M5 thread are attached without being incorporated.

Simple specials are available with SMC Simple Specials System. Refer to the **WEB catalog** for details on applicable models.

Kit type/Electrical entry/Cable length

F kit (D-sub connector)

Note 1) 25P

| Connector entry direction | | P. 523 | |
|---------------------------|------------|--------------------|--------------------------|
| Top entry | Side entry | | |
| U0 | S0 | Without cable | Note 2) 2 to 24 stations |
| U1 | S1 | With cable (1.5 m) | |
| U2 | S2 | With cable (3 m) | |
| U3 | S3 | With cable (5 m) | |

P kit (Flat ribbon cable)

Note 1) 26P

| Connector entry direction | | P. 527 | |
|---------------------------|------------|--------------------|--------------------------|
| Top entry | Side entry | | |
| U0 | S0 | Without cable | Note 2) 2 to 24 stations |
| U1 | S1 | With cable (1.5 m) | |
| U2 | S2 | With cable (3 m) | |
| U3 | S3 | With cable (5 m) | |

- Note 1) Besides the above, F/P kit with different number of pins are available. Refer to page 561 for details.
 Note 2) Refer to page 562 for details.

(Note) For CE compliant models, DC-type only. **CE** [Option]

How to Order Valve

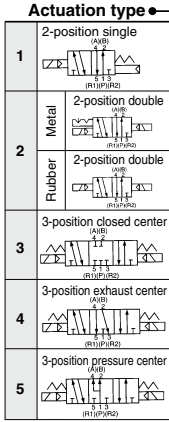
How to Order Manifold Assembly

10-VQ 1 1 0 0 - 5 - 1 -

Series
1 VQ1000

10 Clean series
21 Copper/Fluorine/Silicone free + Low particle generation

Seal
0 Metal seal
1 Rubber seal



Function

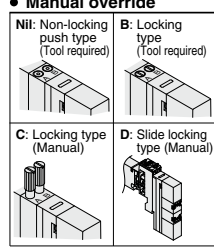
| Symbol | Specifications | DC | AC |
|-------------------|------------------------------|--------------------------------|--------------------------------|
| Nil | Standard | (0.4 W) <input type="radio"/> | (Note 1) <input type="radio"/> |
| B | High-speed response type | (0.95 W) <input type="radio"/> | <input type="checkbox"/> |
| K (Note 2) | High-pressure type (1.0 MPa) | (0.95 W) <input type="radio"/> | <input type="checkbox"/> |
| N (Note 3) | Negative common | <input type="radio"/> | <input type="checkbox"/> |
| R (Note 3) | External pilot | <input type="radio"/> | <input type="radio"/> |

Note 1) Refer to page 522 for power consumption of AC type.
 Note 2) Metal seal only
 Note 3) For external pilot and negative common specifications, refer to "Semi-standard" on pages 562 to 563.
 Note 4) When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible.

CE compliant

| | |
|------------|--------------|
| Nil | — |
| Q | CE compliant |

(Note) For CE compliant models, DC-type only.



Light/surge voltage suppressor

| | |
|-----------------|------|
| Nil | Yes |
| E (Note) | None |

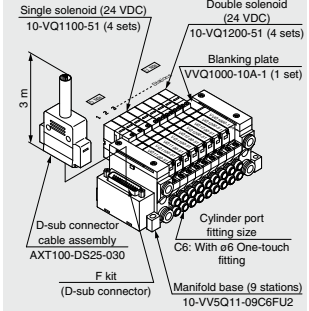
(Note) Not applicable to the S kit.

Coil voltage

| | DC compliant |
|-----------------|----------------------|
| 1 | 100 VAC (50/60 Hz) — |
| 2 (Note) | 200 VAC (50/60 Hz) — |
| 3 | 110 VAC (50/60 Hz) — |
| 4 (Note) | 220 VAC (50/60 Hz) — |
| 5 | 24 VDC ● |
| 6 | 12 VDC ● |

(Note) 200 and 220 VAC: F/L kit only

Example



10-VV5Q11-09C6FU2 ... 1 set (F kit 9-station manifold base part no.)
 ***10-VQ1100-51** ... 4 sets (Single solenoid part no.)
 ***10-VQ1200-51** ... 4 sets (Double solenoid part no.)
 ***VVQ1000-10A-1** ... 1 set (Blanking plate part no.)

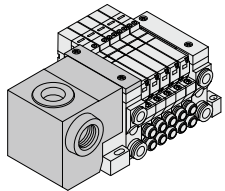
The asterisk denotes the symbol for assembly. Prefix it to the part no. of the solenoid valve, etc.

Specify the part numbers for valves and options together beneath the manifold base part number. Besides, when the arrangement will be complicated, specify them by means of the manifold specification sheet.

Caution

Use the standard (DC) specification when continuously energizing for long periods of time.

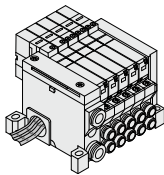
T kit (Terminal block box)



P. 539

T kit | 0 Terminal block box | 2 to 24 stations (Note 2)

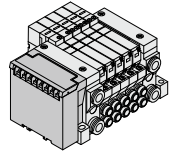
L kit (Lead wire)



P. 543

| L kit | | 1 to 8 stations |
|-------|--------------------|-----------------|
| 0 | With cable (0.6 m) | |
| 1 | With cable (1.5 m) | |
| 2 | With cable (3 m) | |

S kit (Serial transmission)



The valve is equipped with an indicator light and surge voltage suppressor, and the voltage is 24 VDC. The dust proof SI unit is also available. Refer to page 551 for details.

(Note) Refer to "SI Unit Part No." on page 551 when ordering the CE-compliant SI unit.

P. 551

| | | |
|------------|--------------------------------------|------------------|
| 0 | Without SI unit | (Note 2) |
| H | NKE Corp.: Fieldbus H System | Max. 16 stations |
| Q | DeviceNet® | Max. 16 stations |
| R1 | OMRON Corp.: CompoBus/S (16 outputs) | Max. 8 stations |
| R2 | OMRON Corp.: CompoBus/S (8 outputs) | Max. 8 stations |
| V | CC-Link | |
| ZB | CompoNet® (Positive common) | Max. 16 stations |
| ZBN | CompoNet® (Negative common) | |

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

Fittings & Tubing

Flow Control Equipment

Pressure Switches/Pressure Sensors

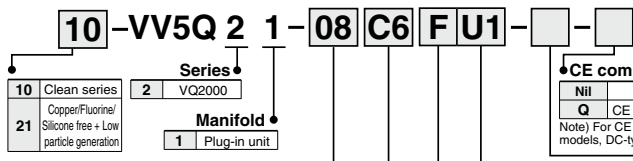
Series 10-21-VQ2000

Base Mounted Plug-in Unit

Note) For CE compliant models, DC-type only.



How to Order Manifold



Series

| | |
|----|---|
| 10 | Clean series |
| 21 | Copper/Fluorine/Silicone free + Low particle generation |

Series

2 VQ2000

Manifold

1 Plug-in unit

CE compliant

| | |
|-----|--------------|
| NII | — |
| Q | CE compliant |

Note) For CE compliant models, DC-type only.

Option

| Symbol | Option |
|------------|---|
| NII | None |
| 2 | 200/220 VAC models (F/L kit only) |
| B (Note 2) | With back pressure check valve |
| D | DIN rail mounting |
| DO | With DIN rail bracket (Without DIN rail) |
| D (Note 5) | DIN rail length specified |
| K (Note 3) | Special wiring spec. (Except double wiring) |
| N | With name plate |
| R (Note 4) | External pilot |

Stations

| | |
|----|-----------|
| 01 | 1 station |
| ⋮ | ⋮ |

The maximum and minimum number of stations are varied depending on kit. (Refer to the below table.)

Cylinder port

| Symbol | Port size |
|-------------|--|
| C4 | With ø4 One-touch fitting |
| C6 | With ø6 One-touch fitting |
| C8 | With ø8 One-touch fitting |
| CM (Note 1) | Mixed sizes and with port plug |
| L4 | Top ported elbow with ø4 One-touch fitting |
| L6 | Top ported elbow with ø6 One-touch fitting |

Note 1) Indicate "Mixed size and with port plug" by means of the manifold specification sheet.

Note 2) When selecting the mixed size for different types of piping, dual flow fitting assembly, or double check block (direct mounting), enter "MM" and give instructions on the manifold specification sheet.

Note 3) Inch-size One-touch fittings are also available. Refer to page 563 for details.

Kit type

| Symbol | Port size |
|-------------|--|
| L8 | Top ported elbow with ø8 One-touch fitting |
| B4 | Bottom ported elbow with ø4 One-touch fitting |
| B6 | Bottom ported elbow with ø6 One-touch fitting |
| B8 | Bottom ported elbow with ø8 One-touch fitting |
| LM (Note 1) | Elbow port, mixed sizes |
| MM (Note 2) | Mixed size for different types of piping, option installed |

Simple specials are available with SMC Simple Specials System. Refer to the **WEB catalog** for details on applicable models.

Kit type/Electrical entry/Cable length

F kit (D-sub connector)

Note 1) 25P

| | | | |
|----|----|--------------------|--------------------------|
| U0 | S0 | Without cable | Note 2) 2 to 24 stations |
| U1 | S1 | With cable (1.5 m) | |
| U2 | S2 | With cable (3 m) | |
| U3 | S3 | With cable (5 m) | |

Connector entry direction: Top entry, Side entry

P. 523

P kit (Flat ribbon cable)

Note 1) 26P

| | | | |
|----|----|--------------------|--------------------------|
| U0 | S0 | Without cable | Note 2) 2 to 24 stations |
| U1 | S1 | With cable (1.5 m) | |
| U2 | S2 | With cable (3 m) | |
| U3 | S3 | With cable (5 m) | |

Connector entry direction: Top entry, Side entry

P. 527

T kit (Terminal block box)

Dust-tight/Water-jet-proof (IP65) compatible Note 3)

P. 539

| | | | |
|-------|---|--------------------|--------------------------|
| T kit | O | Terminal block box | Note 2) 2 to 20 stations |
|-------|---|--------------------|--------------------------|

L kit (Lead wire)

Dust-tight/Water-jet-proof (IP65) compatible Note 3)

P. 543

| | | | |
|-------|---|--------------------|-----------------|
| L kit | 0 | With cable (0.6 m) | 1 to 3 stations |
| | 1 | With cable (1.5 m) | |
| | 2 | With cable (3 m) | |

S kit (Serial transmission)

Note 4)

The valve is equipped with an indicator light and surge voltage suppressor, and the voltage is 24 VDC. The dusttight SI unit is available. Refer to page 551 for details. Dust-tight, Water-jet-proof (IP65) is available. Note 3)

P. 551

| | | |
|-----|--------------------------------------|--------------------------|
| 0 | Without SI unit | Note 2) Max. 16 stations |
| H | NKE Corp.: Fieldbus H System | |
| Q | DeviceNet® | Max. 16 stations |
| R1 | OMRON Corp.: CompoBus/S (16 outputs) | Max. 16 stations |
| R2 | OMRON Corp.: CompoBus/S (8 outputs) | Max. 8 stations |
| V | CC-Link | Max. 16 stations |
| ZB | CompoNet® (Positive common) | |
| ZBN | CompoNet® (Negative common) | |

M kit (Circular connector)

Dust-tight/Water-jet-proof (IP65) compatible Note 3)

P. 557

| | | | |
|-------|---|--------------------|--------------------------|
| M kit | 0 | Without cable | Note 2) 2 to 24 stations |
| | 1 | With cable (1.5 m) | |
| | 2 | With cable (3 m) | |
| | 3 | With cable (5 m) | |

Note 1) Besides the above, F/P kit with different number of pins are available.

Refer to page 561 for details.

Note 2) Refer to page 562 for details.

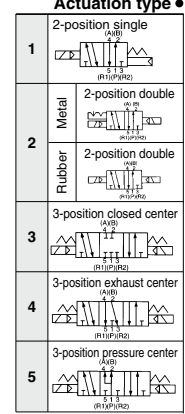
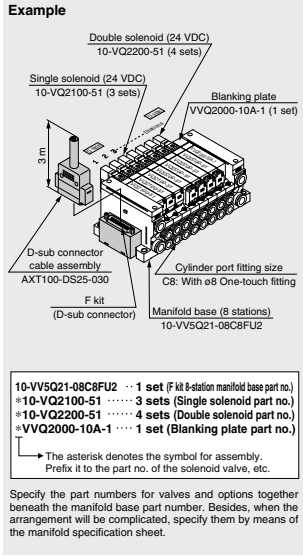
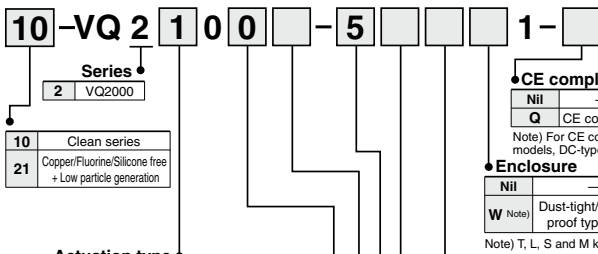
Note 3) Refer to the pages on respective kits for IP65 type. (T/L/S/M kit)

Note 4) Serial transmission system with IP65 enclosure applicable to input/output is also available. Refer to page 555 for details.

Note) For CE compliant models, DC-type only. **CE** [Option]

How to Order Valve

How to Order Manifold Assembly



Seal

| | |
|---|-------------|
| 0 | Metal seal |
| 1 | Rubber seal |

Light/surge voltage suppressor

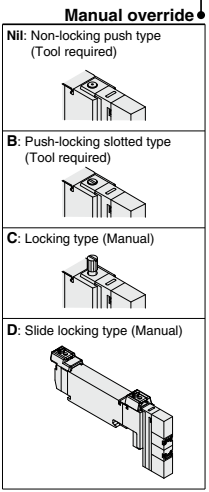
| | |
|----------|------|
| Nil | Yes |
| E (Note) | None |

Note) Not applicable to the S kit.

Coil voltage

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

Note) 200 and 220 VAC: F/L kit only



Note) For sub-plate single unit type, refer to page 560.

Function

| Symbol | Specifications | DC | AC |
|-----------|------------------------------|------------|-----------|
| Nil | Standard | (0.4 W) ○ | ○ Note 1) |
| B | High-speed response type | (0.95 W) ○ | — |
| K Note 2) | High-pressure type (1.0 MPa) | (0.95 W) ○ | — |
| N Note 3) | Negative common | ○ | — |
| R Note 3) | External pilot | ○ | ○ |

Note 1) For power consumption of AC type, refer to page 522.

Note 2) Metal seal only

Note 3) For external pilot and negative common specifications, refer to "Semi-standard" on pages 562 to 563.

Note 4) When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible.

Caution
Use the standard (DC) specification when continuously energizing for long periods of time.

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

Fittings & Tubing

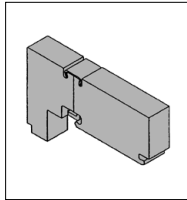
Flow Control Equipment

Pressure Switches/ Pressure Sensors

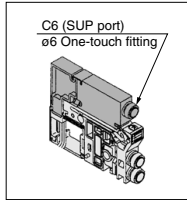
10-**VQ1000: Manifold Options**

P. 571 to 572

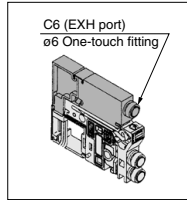
Blanking plate assembly
VVQ1000-10A-1



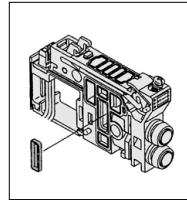
Individual SUP spacer
VVQ1000-P-1-N₇



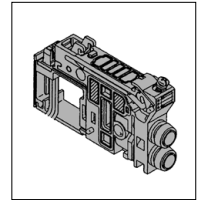
Individual EXH spacer
VVQ1000-R-1-N₇



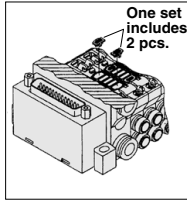
SUP block plate
VVQ1000-16A



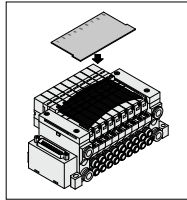
EXH block base assembly
VVQ1000-19A-
P₁ C₃ C₄
C₆ M₅
N₁ N₃
N₇



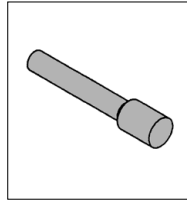
Back pressure check valve
assembly [-B]
VVQ1000-18A



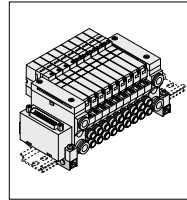
Name plate [-N]
VVQ1000-N-Station
(1 to Max. stations)



Blanking plug
KQ2P-□



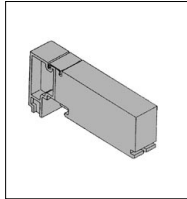
DIN rail mounting bracket
[-D/-D0/-D□]
VVQ1000-57A



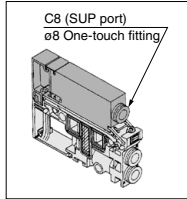
10-**VQ2000: Manifold Options**

P. 573 to 574

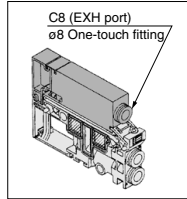
Blanking plate assembly
VVQ2000-10A-1



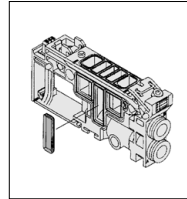
Individual SUP spacer
VVQ2000-P-1-N₉



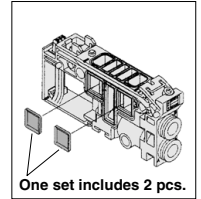
Individual EXH spacer
VVQ2000-R-1-N₉



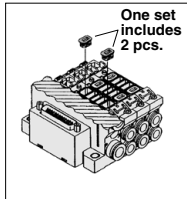
SUP block plate
VVQ2000-16A



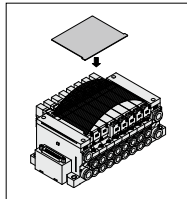
EXH block plate
VVQ2000-19A



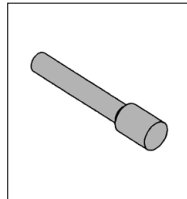
Back pressure check valve
assembly [-B]
VVQ2000-18A



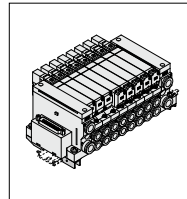
Name plate [-N]
VVQ2000-N-Station
(1 to Max. stations)



Blanking plug
KQ2P-□



DIN rail mounting bracket
[-D/-D0/-D□]
VVQ2000-57A



Pressure Switches/
Pressure Sensors

Flow Control
Equipment

Fittings & Tubing

Pressure Control
Equipment

Modular F. R.

Air Preparation
Equipment

Air Grippers

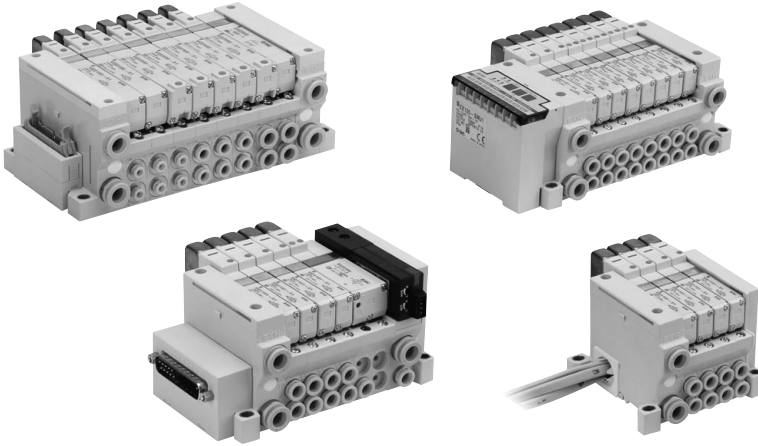
Rotary Actuators

Air Cylinders

Directional
Control Valves

Series 10-21-VQ1000/2000

Base Mounted
Plug-in Unit



Model

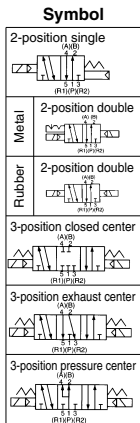
| Series | Actuation type | Model | Flow rate characteristics ^{Note 1)} | | | | | | Response time (ms) ^{Note 2)} | | | Weight (g) | |
|--------|----------------|-----------------|--|------|------|------------------------------|------|------|---------------------------------------|-----------------------------------|------------|------------|-----|
| | | | 1 → 2/4 (P → A/B) | | | 2/4 → 3/5 (A/B → R1/R2) | | | Standard: 0.4 W | High-speed response: 0.95 W | AC | | |
| | | | C [dm ³ /(s·bar)] | b | Cv | C [dm ³ /(s·bar)] | b | Cv | | | | | |
| VQ1000 | 2-position | Single | Metal seal 10-21-VQ1100 | 0.70 | 0.15 | 0.16 | 0.72 | 0.25 | 0.18 | 15 or less | 12 or less | 29 or less | 67 |
| | | | Rubber seal 10-21-VQ1101 | 0.85 | 0.20 | 0.21 | 1.0 | 0.30 | 0.25 | 20 or less | 15 or less | 34 or less | |
| | | Double | Metal seal 10-21-VQ1200 | 0.70 | 0.15 | 0.16 | 0.72 | 0.25 | 0.18 | 13 or less | 10 or less | 13 or less | |
| | | | Rubber seal 10-21-VQ1201 | 0.85 | 0.20 | 0.21 | 1.0 | 0.30 | 0.25 | 20 or less | 15 or less | 20 or less | |
| | 3-position | Closed center | Metal seal 10-21-VQ1300 | 0.68 | 0.15 | 0.16 | 0.72 | 0.25 | 0.18 | 26 or less | 20 or less | 40 or less | 77 |
| | | | Rubber seal 10-21-VQ1301 | 0.70 | 0.20 | 0.16 | 0.65 | 0.42 | 0.18 | 33 or less | 25 or less | 47 or less | |
| | | Exhaust center | Metal seal 10-21-VQ1400 | 0.68 | 0.15 | 0.16 | 0.72 | 0.25 | 0.18 | 26 or less | 20 or less | 40 or less | |
| | | | Rubber seal 10-21-VQ1401 | 0.70 | 0.20 | 0.16 | 1.0 | 0.30 | 0.25 | 33 or less | 25 or less | 47 or less | |
| | | Pressure center | Metal seal 10-21-VQ1500 | 0.70 | 0.15 | 0.16 | 0.72 | 0.25 | 0.18 | 26 or less | 20 or less | 40 or less | |
| | | | Rubber seal 10-21-VQ1501 | 0.85 | 0.20 | 0.21 | 0.65 | 0.42 | 0.18 | 33 or less | 25 or less | 47 or less | |
| VQ2000 | 2-position | Single | Metal seal 10-21-VQ2100 | 2.0 | 0.15 | 0.46 | 2.6 | 0.15 | 0.60 | 29 or less | 22 or less | 49 or less | 95 |
| | | | Rubber seal 10-21-VQ2101 | 2.2 | 0.28 | 0.55 | 3.2 | 0.30 | 0.80 | 31 or less | 24 or less | 51 or less | |
| | | Double | Metal seal 10-21-VQ2200 | 2.0 | 0.15 | 0.46 | 2.6 | 0.15 | 0.60 | 20 or less | 15 or less | 20 or less | |
| | | | Rubber seal 10-21-VQ2201 | 2.2 | 0.28 | 0.55 | 3.2 | 0.30 | 0.80 | 26 or less | 20 or less | 26 or less | |
| | 3-position | Closed center | Metal seal 10-21-VQ2300 | 2.0 | 0.15 | 0.46 | 2.0 | 0.18 | 0.46 | 38 or less | 29 or less | 58 or less | 105 |
| | | | Rubber seal 10-21-VQ2301 | 2.0 | 0.28 | 0.49 | 2.2 | 0.31 | 0.60 | 44 or less | 34 or less | 64 or less | |
| | | Exhaust center | Metal seal 10-21-VQ2400 | 2.0 | 0.15 | 0.46 | 2.6 | 0.15 | 0.60 | 38 or less | 29 or less | 58 or less | |
| | | | Rubber seal 10-21-VQ2401 | 2.0 | 0.28 | 0.49 | 3.2 | 0.30 | 0.80 | 44 or less | 34 or less | 64 or less | |
| | | Pressure center | Metal seal 10-21-VQ2500 | 2.4 | 0.17 | 0.57 | 2.0 | 0.18 | 0.46 | 38 or less | 29 or less | 58 or less | |
| | | | Rubber seal 10-21-VQ2501 | 3.2 | 0.28 | 0.80 | 2.2 | 0.31 | 0.60 | 44 or less | 34 or less | 64 or less | |

Note 1) The values are given for port size C6: (10-VQ1000), C8: (10-VQ2000) without back pressure check valve.

Note 2) As per JIS B 8375-1981 (Supply pressure 0.5 MPa; with indicator light/surge voltage suppressor; clean air

The response time is subject to the pressure and quality of the air.) The values at the time of ON are given for double types.

Standard Specifications



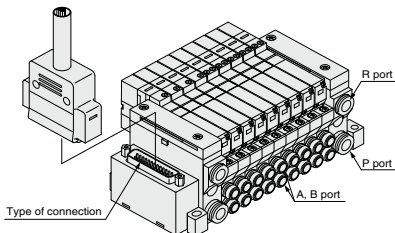
| | | | | |
|---|---|---|---|----------|
| Valve specifications | Valve type | Metal seal | Rubber seal | |
| | Fluid | Air, Inert gas | Air, Inert gas | |
| | Maximum operating pressure | 0.7 MPa (High-pressure type: 1.0 MPa) | | |
| | Minimum operating pressure | Single | 0.1 MPa | 0.15 MPa |
| | | Double | 0.1 MPa | 0.1 MPa |
| | | 3-position | 0.1 MPa | 0.2 MPa |
| | | 4-position | — | 0.15 MPa |
| | Ambient and fluid temperature | -10 to 50°C (Note 1) | | |
| | Lubrication | Not required | | |
| | Manual override | Push type, Locking type (Tool required, Manual) semi-standard | | |
| Impact/Vibration resistance (Note 2) | 150/30 m/s ² | | | |
| Enclosure | Dust-protected; Dust-tight, Water-jet-proof (IP65) (Note 4) | | | |
| Electrical specifications | Coil rated voltage | 12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz) | | |
| | Allowable voltage fluctuation | ±10% of rated voltage | | |
| | Coil insulation type | Equivalent to Class B | | |
| | Power consumption (Current) | 24 VDC | 0.4 W DC (17 mA), 0.95 W DC (40 mA) (Note 3) | |
| | | 12 VDC | 0.4 W DC (34 mA), 0.95 W DC (80 mA) (Note 3) | |
| | | 100 VAC | Inrush 0.96 VA (10 mA), Holding 0.96 VA (10 mA) | |
| | | 110 VAC | Inrush 1.0 VA (9 mA), Holding 1.0 VA (9 mA) | |
| | | 200 VAC | Inrush 1.26 VA (6 mA), Holding 1.26 VA (6 mA) | |
| 220 VAC | | Inrush 1.38 VA (6 mA), Holding 1.38 VA (6 mA) | | |

Note 1) Use dry air to prevent condensation when operating at low temperatures.
 Note 2) Impact resistance ----- No malfunction occurred when it was tested in the axial direction and at right angles to the main valve and armature in both energized and de-energized states once for each condition. (Default settings)
 Vibration resistance ... No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was energized in both energized and de-energized states in the axial direction and at right angles to the main valve and armature. (Default settings)
 Note 3) Value for high-speed response, high-voltage type (0.95 W)
 Note 4) Dust-tight, Water-jet-proof (IP65) is available on T/L/S/M kit of the VQ2000.

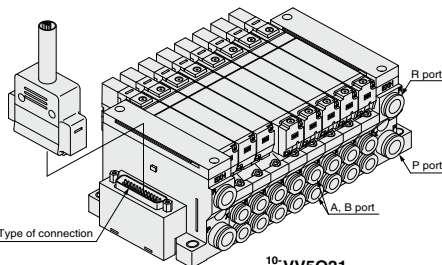
Manifold Specifications

| Series | Base model | Connection type | Piping specifications | | Applicable stations (Note 2) | Applicable solenoid valve | 5-station weight (g) | |
|--------------|------------|--|-----------------------|---|--|---|----------------------|--|
| | | | Piping direction | Port size (Note 1) | | | | |
| 10-21-VQ1000 | VV5Q11-□□□ | F kit-D-sub connector P kit-Flat ribbon cable T kit-Terminal block box L kit-Lead wire S kit-Serial transmission | Side | 1(P), 3(R) | 4(A), 2(B) | F/P/T kit (2 to 24 stations) J/G/S kit (2 to 16 stations) L kit (1 to 8 stations) | VQ1□00 VQ1□01 | 643 (Single) 754 (Double, 3-position) |
| | | | | Option: Direct EXH outlet with built-in silencer | C8 (ø8) C3 (ø3.2) C4 (ø4) C6 (ø6) M5 (M5 thread) | | | |
| 10-21-VQ2000 | VV5Q21-□□□ | F kit-D-sub connector P kit-Flat ribbon cable T kit-Terminal block box L kit-Lead wire S kit-Serial transmission M kit-Circular connector | Side | C10 (ø10) | C4 (ø4) C6 (ø6) C8 (ø8) | F/P kit (2 to 24 stations) J/G/S kit (2 to 16 stations) L kit (1 to 8 stations) T kit (2 to 20 stations) | VQ2□00 VQ2□01 | 1076 (Single) 1119 (Double, 3-position) |
| | | | | Option: Direct EXH outlet with built-in silencer | | | | |

Note 1) Inch-size One-touch fittings are also available. Refer to page 563 for details.
 Note 2) Refer to page 562 for details.



10-21-VV5Q11



10-21-VV5Q21

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

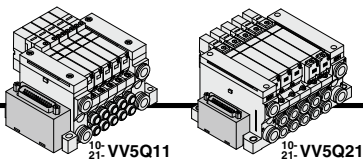
Pressure Control Equipment

Fittings & Tubing

Flow Control Equipment

Pressure Switches/Pressure Sensors

F Series 10-21-VQ1000/2000 Kit (D-sub connector)



- D-sub connector reduces installation labor for electrical connections.
- Using the D-sub connector (25P), (15P as semi-standard) conforming to MIL standard permits the use of commercial connectors and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 24.

Manifold Specifications

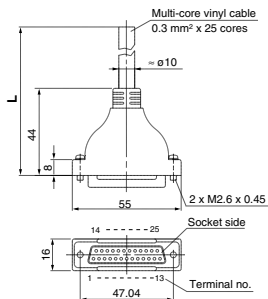
| Series | Piping specifications | | | Applicable stations |
|---------------|-----------------------|--------------|----------------|---------------------|
| | Piping direction | Port size | | |
| | | 1 (P), 3 (R) | 4 (A), 2 (B) | |
| 10-21: VQ1000 | Side | C8 | C3, C4, C6, M5 | Max. 24 stations |
| 10-21: VQ2000 | Side | C10 | C4, C6, C8 | Max. 24 stations |

D-sub Connector (25 Pins)

Cable Assembly

AXT100-DS25-015
030
050

(The D-sub connector cable assembly can be ordered individually or included in a specific manifold model no. 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.

Example of connector manufacturers

- Fujitsu Limited
- Japan Aviation Electronics Industry, Limited
- J.S.T. Mfg. Co., Ltd.
- HIROSE ELECTRIC CO., LTD.

Electrical characteristics

| Item | Property |
|-----------------------------------|------------|
| Conductor resistance Ω/km, 20°C | 65 or less |
| Voltage limit V, 1 minute, AC | 1000 |
| Insulation resistance MΩ/km, 20°C | 5 or more |

Note) The minimum bending radius of the D-sub connector cable is 20 mm.

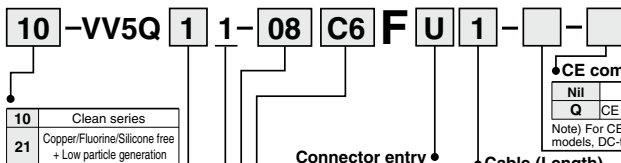
Wire color by terminal no. of D-sub connector cable assembly

| 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 1) Types with 15 pins are also available. Refer to page 561 for details.
Note 2) Lengths other than the above are also available. Please contact SMC for details.

How to Order Manifold

Note) For CE compliant models, DC-type only. [Option]



Connector entry direction

| | |
|---|------------|
| U | Top entry |
| S | Side entry |

Cable (Length)

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

Cylinder port

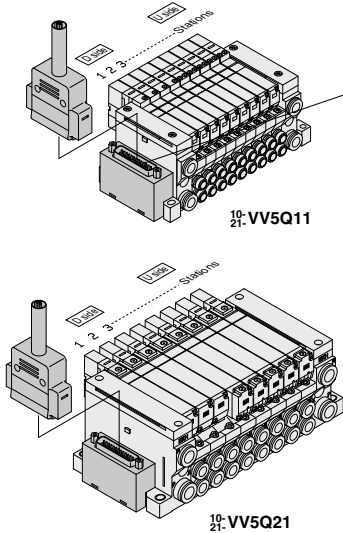
| Symbol | Port size | VQ1000 | VQ2000 |
|--------------------|--|--------|--------|
| C3 Note 1) | With ø3.2 One-touch fitting | ● | — |
| C4 Note 1) | With ø4 One-touch fitting | ● | ● |
| C6 Note 1) | With ø6 One-touch fitting | ● | ● |
| C8 Note 1) | With ø8 One-touch fitting | — | ● |
| M5 | M5 thread | ● | — |
| CM Note 2) Note 3) | Mixed sizes and with port plug | ● | ● |
| MM Note 4) | Mixed size for different types of piping, option installed | ● | ● |

- Note 1) Insert "L" (Top ported) or "B" (Bottom ported) for elbow type.
Example) B6 (Bottom ported elbow with ø6 One-touch fitting)
- Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
- Note 3) Indicate "Mixed sizes and with port plug" by means of the manifold specification sheet.
- Note 4) When selecting the mixed size for different types of piping, dual flow fitting assembly, or double check block (direct mounting), enter "MM" and give instructions on the manifold specification sheet.
- Note 5) Inch-size One-touch fittings are available. Refer to "Semi-standard" on page 563 for details.

Option

| Symbol | Option |
|------------|--|
| Nil | None |
| 2 | 200/220 VAC models (F/L kit only) |
| B Note 2) | With back pressure check valve |
| D | DIN rail mounting |
| DO | With DIN rail bracket (Without DIN rail) |
| D□ Note 3) | DIN rail length specified (□: Stations 02 to 24) |
| K Note 4) | Special wiring specifications (Except double wiring) |
| N | With name plate |
| R Note 5) | External pilot |

- Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -BNR
- Note 2) Models with a suffix "B" have check valves for prevention of back pressure at all manifold stations. When a back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position by means of the manifold specification sheet.
- Note 3) The number of stations that may be displayed is longer than the manifold number of stations.
- Note 4) Specify the wiring specifications by means of the manifold specification sheet.
- Note 5) Indicate "R" for the valve with external pilot.



Electrical Wiring Specifications

D-sub connector

D-sub connector assembly
015
AXT100-DS25-030 Wire color
050

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

As the standard electrical wiring specifications, double wiring (connected to SOL.A and SOL.B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types. Mixed single and double wiring is available as semi-standard. Refer to page 562 for details.

Note) When using the negative common specifications, use valves for negative common. (Refer to page 562.) Refer to "Semi-standard" on page 562 for details.

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

How to Order Valve

10-VQ 1 1 0 0 - 5 - 1 -

Series

| | |
|---|--------|
| 1 | VQ1000 |
| 2 | VQ2000 |

Actuation type

| | |
|---|----------------------------|
| 1 | 2-position single |
| 2 | 2-position double |
| 3 | 3-position closed center |
| 4 | 3-position exhaust center |
| 5 | 3-position pressure center |

Seal

| | |
|---|-------------|
| 0 | Metal seal |
| 1 | Rubber seal |

Function

| Symbol | Specifications | DC | AC |
|------------|------------------------------|----------|----------|
| Nil | Standard | (0.4 W) | (Note 1) |
| B | High-speed response type | (0.95 W) | — |
| K (Note 2) | High-pressure type (1.0 MPa) | (0.95 W) | — |
| N (Note 3) | Negative common | — | — |
| R (Note 3) | External pilot | — | — |

Note 1) Refer to page 562 for power consumption of AC type.
 Note 2) Metal seal only
 Note 3) For external pilot and negative common specifications, refer to "Semi-standard" on pages 562 to 563.
 Note 4) When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible.

CE compliant

| | |
|-----|--------------|
| Nil | — |
| Q | CE compliant |

Note) For CE compliant models, DC-type only.

Manual override

| | |
|-----|---------------------------------------|
| Nil | Non-locking push type (Tool required) |
| B | Locking type (Tool required) |
| C | Locking type (Manual) |
| D | Slide locking type (Manual) |

Light/surge voltage suppressor

| | |
|-----|------|
| Nil | Yes |
| E | None |

Coil voltage

| | DC | CE compliant |
|---|--------------------|--------------|
| 1 | 100 VAC (50/60 Hz) | — |
| 2 | 200 VAC (50/60 Hz) | — |
| 3 | 110 VAC (50/60 Hz) | — |
| 4 | 220 VAC (50/60 Hz) | — |
| 5 | 24 VDC | ● |
| 6 | 12 VDC | ● |

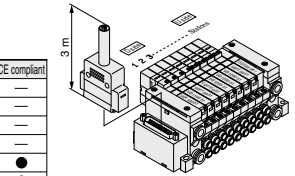
Note) For CE compliant models, DC-type only.

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)
 *10-VV5Q11-09C5FU2...1 set-Manifold base part no.
 *10-VQ1100-51...2 sets-Valve part no. (Stations 1 to 2)
 *10-VQ1200-51...4 sets-Valve part no. (Stations 3 to 6)
 *10-VQ1300-51...2 sets-Valve part no. (Stations 7 to 8)
 *VVQ1000-10A-1...2 sets-Blanking plate part no. (Station 9)

Write sequentially from the 1st station on the D-side. When part no. written collectively are complicated, specify them by means of the manifold specification sheet.



Caution
 Use the standard (DC) specification when continuously energizing for long periods of time.

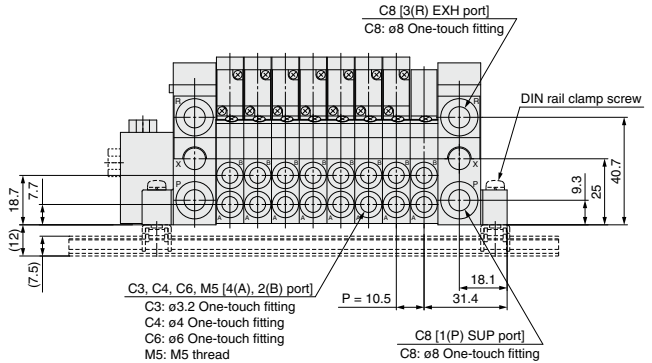
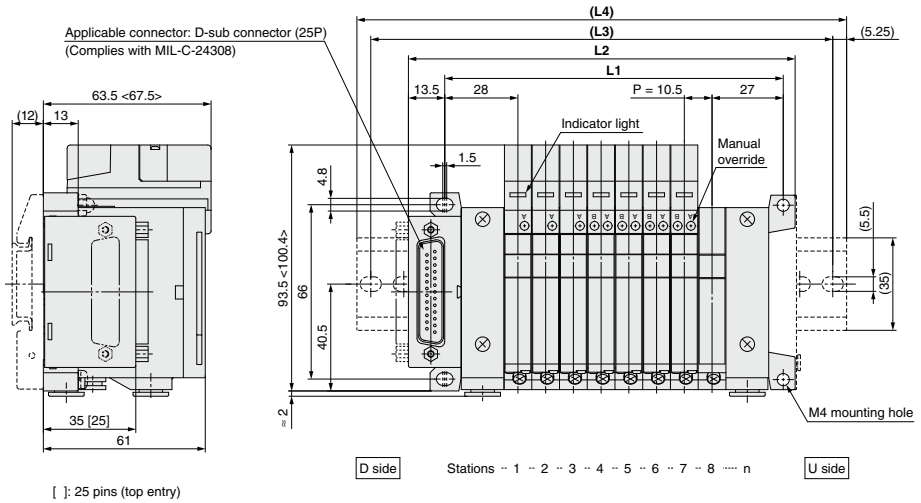
Directional Control Valves
 Air Cylinders
 Rotary Actuators
 Air Grippers
 Air Preparation Equipment
 Modular F. R.
 Pressure Control Equipment
 Fittings & Tubing
 Flow Control Equipment
 Pressure Switches/Pressure Sensors

F Series ¹⁰⁻₂₁₋VQ1000/2000 kit (D-sub connector)

10- 21-VV5Q11

< >: AC

The dashed lines indicate the DIN rail mounting [-D] and the side entry connection [-FS].



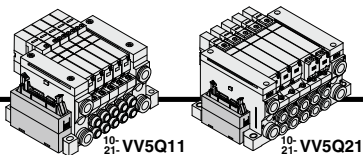
Dimensions

Formula L1 = 10.5n + 44.5, L2 = 10.5n + 62.5 n: Station (Maximum 24 stations)

| L | n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|-------------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1 | | 65.5 | 76 | 86.5 | 97 | 107.5 | 118 | 128.5 | 139 | 149.5 | 160 | 170.5 | 181 | 191.5 | 202 | 212.5 | 223 | 233.5 | 244 | 254.5 | 265 | 275.5 | 286 | 296.5 |
| L2 | | 83.5 | 94 | 104.5 | 115 | 125.5 | 136 | 146.5 | 157 | 167.5 | 178 | 188.5 | 199 | 209.5 | 220 | 230.5 | 241 | 251.5 | 262 | 272.5 | 283 | 293.5 | 304 | 314.5 |
| (L3) | | 112.5 | 125 | 125 | 137.5 | 150 | 162.5 | 175 | 187.5 | 187.5 | 200 | 212.5 | 225 | 237.5 | 250 | 250 | 262.5 | 275 | 287.5 | 300 | 312.5 | 325 | 325 | 337.5 |
| (L4) | | 123 | 135.5 | 135.5 | 148 | 160.5 | 173 | 185.5 | 198 | 198 | 210.5 | 223 | 235.5 | 248 | 260.5 | 260.5 | 273 | 285.5 | 298 | 310.5 | 323 | 335.5 | 335.5 | 348 |

With ejector unit: Formula L1 = 10.5n + 28.7 + (Number of ejector units x 26.7)
L2 = 10.5n + 46.3 + (Number of ejector units x 26.7)
L4 is L2 plus about 30.

P Series ¹⁰⁻₂₁₋VQ1000/2000 kit (Flat ribbon cable)



- MIL flat ribbon cable connector reduces installation labor for electrical connection.
- Using the connector for flat ribbon cable (26P) conforming to MIL standard permits the use of commercial connectors and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 24.

Manifold Specifications

| Series | Piping specifications | | Applicable stations |
|-------------------|-----------------------|-------------------|---------------------|
| | Piping direction | Port size | |
| 10- 21: VQ1000 | Side | C8 C3, C4, C6, M5 | Max. 24 stations |
| 10- 21: VQ2000 | Side | C10 C4, C6, C8 | Max. 24 stations |

Flat Ribbon Cable (26 Pins)

AXT100-FC26-¹₃
 (Flat ribbon cable connector assembly can be ordered individually or included in a specific manifold model no. Refer to "How to Order Manifold.")

Flat Ribbon Cable Connector Assembly

| Cable length (L) | Assembly part no. | Note |
|------------------|-------------------|------------------------|
| 1.5 m | AXT100-FC26-1 | Cable 26 cores x 28AWG |
| 3 m | AXT100-FC26-2 | |
| 5 m | AXT100-FC26-3 | |

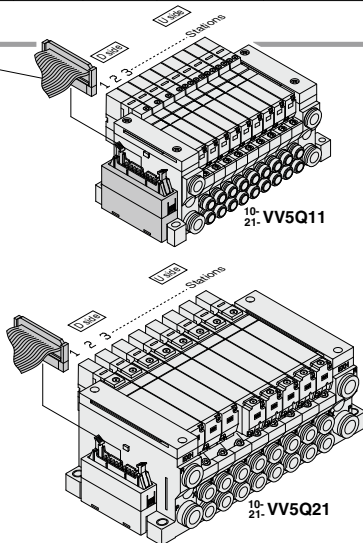
* For other commercial connectors, use a 26 pins type with strain relief conforming to MIL-C-83503.
 * Cannot be used for transfer wiring.

Connector manufacturers' example

- HIROSE ELECTRIC CO., LTD.
- FUJITSU Limited
- J.S.T. Mfg. Co., Ltd.
- 3M Japan Limited
- Japan Aviation Electronics Industry, Limited
- Oki Electric Cable Co., Ltd.

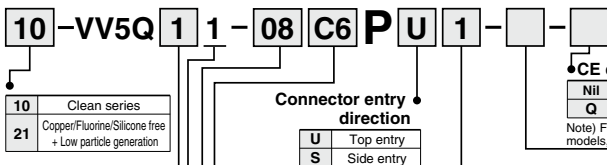
Note 1) Other than the above model, 10P, 16P, 20P are also available. Refer to page 561 for details.
 Note 2) Lengths other than the above are also available. Please contact SMC for details.

Cable Assembly



The total number of stations is tabulated starting from one on the D-side.

How to Order Manifold



Note) For CE compliant models, DC-type only. [Option]

Option

| Symbol | Option |
|----------------|--|
| Nil | None |
| B (Note 2) | With back pressure check valve |
| D | DIN rail mounting |
| D0 | With DIN rail bracket (Without DIN rail) |
| D [] (Note 3) | DIN rail length specified (□: Stations 02 to 24) |
| K (Note 4) | Special wiring specifications (Except double wiring) |
| N | With name plate |
| R (Note 5) | External pilot |

- Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -BNR
- Note 2) Models with a suffix "B" have check valves for prevention of back pressure at all manifold stations. When a back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position by means of the manifold specification sheet.
- Note 3) The number of stations that may be displayed is longer than the manifold number of stations.
- Note 4) Specify the wiring specifications by means of the manifold specification sheet.
- Note 5) Indicate "R" for the valve with external pilot.

● **Electrical Wiring Specifications**

Flat ribbon cable connector

| Terminal no. | Terminal no. | Polarity |
|--------------|--------------|----------|
| SOLA 1 | (-) | (+) |
| SOLB 2 | (-) | (+) |
| SOLA 3 | (-) | (+) |
| SOLB 4 | (-) | (+) |
| SOLA 5 | (-) | (+) |
| SOLB 6 | (-) | (+) |
| SOLA 7 | (-) | (+) |
| SOLB 8 | (-) | (+) |
| SOLA 9 | (-) | (+) |
| SOLB 10 | (-) | (+) |
| SOLA 11 | (-) | (+) |
| SOLB 12 | (-) | (+) |
| SOLA 13 | (-) | (+) |
| SOLB 14 | (-) | (+) |
| SOLA 15 | (-) | (+) |
| SOLB 16 | (-) | (+) |
| SOLA 17 | (-) | (+) |
| SOLB 18 | (-) | (+) |
| SOLA 19 | (-) | (+) |
| SOLB 20 | (-) | (+) |
| SOLA 21 | (-) | (+) |
| SOLB 22 | (-) | (+) |
| SOLA 23 | (-) | (+) |
| SOLB 24 | (-) | (+) |
| COM 25 | (+) | (-) |
| COM 26 | (+) | (-) |

Electrical wiring specifications

Positive COM spec. Negative COM spec. (Note)

As the standard electrical wiring specifications, double wiring (connected to SOLA and SOLB) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types. Mixed single and double wiring is available as semi-standard. Refer to page 562 for details.

Note) When using the negative common specifications, use valves for negative common. (Refer to page 562.) Refer to "Semi-standard" on page 562 for details.

How to Order Valve

Note) For CE compliant models, DC-type only. **CE** [Option]

10-VQ 1 1 0 0 - 5 - 1 -

Series

| | |
|---|--------|
| 1 | VQ1000 |
| 2 | VQ2000 |

10 Clean series

21 Copper/Fluorine/Silicone free + Low particulate generation

Actuation type

| | |
|---|----------------------------|
| 1 | 2-position single |
| 2 | 2-position double |
| 3 | 3-position closed center |
| 4 | 3-position exhaust center |
| 5 | 3-position pressure center |

Seal

| | |
|---|-------------|
| 0 | Metal seal |
| 1 | Rubber seal |

Function

| Symbol | Specifications | DC | AC |
|------------|------------------------------|------------|------------|
| NII | Standard | (0.4 W) ○ | (Note 1) ○ |
| B | High-speed response type | (0.95 W) ○ | — |
| K (Note 2) | High-pressure type (1.0 MPa) | (0.95 W) ○ | — |
| N (Note 3) | Negative common | ○ | — |
| R (Note 3) | External pilot | ○ | ○ |

Manual override

| | |
|-----|---------------------------------------|
| NII | Non-locking push type (Tool required) |
| B | Locking type (Tool required) |
| C | Locking type (Manual) |
| D | Slide locking type (Manual) |

Light/surge voltage suppressor

| | |
|-----|------|
| NII | Yes |
| E | None |

Coil voltage (CE compliant)

| | | |
|---|--------------------|---|
| 1 | 100 VAC (50/60 Hz) | — |
| 3 | 110 VAC (50/60 Hz) | — |
| 5 | 24 VDC | ● |
| 6 | 12 VDC | ● |

CE compliant

| | |
|-----|--------------|
| NII | — |
| Q | CE compliant |

Note) For CE compliant models, DC-type only.

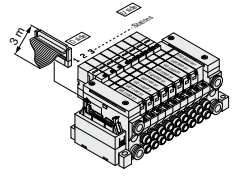
How to Order Manifold Assembly

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

<Example>
 Flat ribbon cable kit with cable (3 m)
 10-VV5Q11-09C6PU2-1 set—Manifold base part no.
 *10-VQ1100-51 2 sets—Valve part no. (Stations 1 to 2)
 *10-VQ1200-51 4 sets—Valve part no. (Stations 3 to 6)
 *10-VQ1300-51 2 sets—Valve part no. (Stations 7 to 8)
 *VVQ1000-10A-1 1 set—Blanking plate part no. (Station 9)

Prefix the asterisk to the part no. of the solenoid valve, etc.

Write sequentially from the 1st station on the D-side. When part no. written collectively are complicated, specify them by means of the manifold specification sheet.



Caution
 Use the standard (DC) specification when continuously energizing for long periods of time.

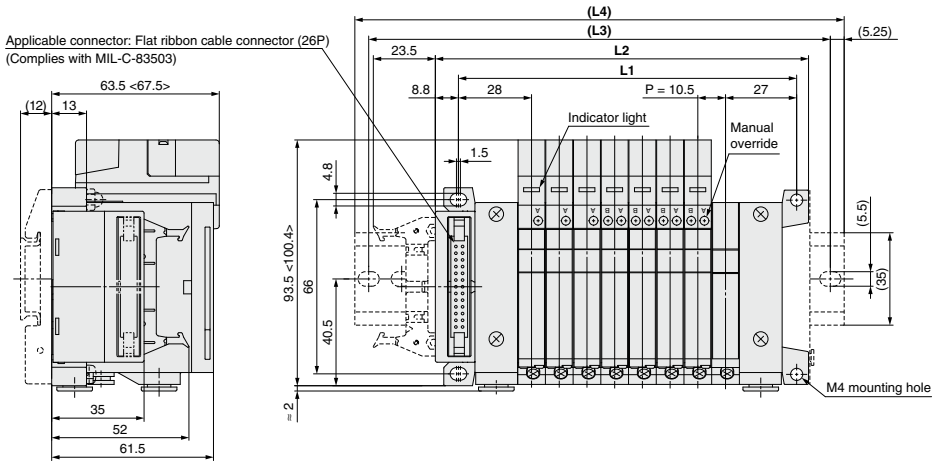
P Series ¹⁰⁻21-VQ1000/2000 kit (Flat ribbon cable)

10- 21-VV5Q11

< >: AC

The dashed lines indicate the DIN rail mounting [-D] and the side entry connection [-PS].

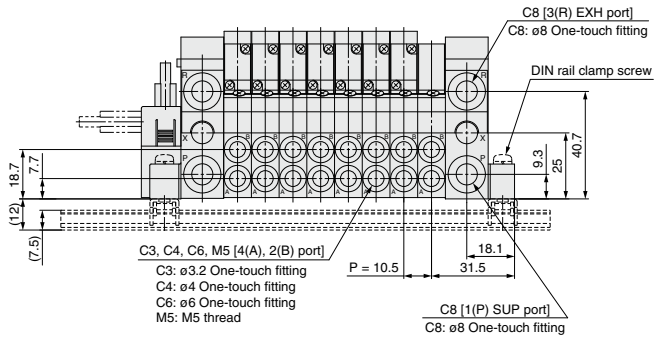
Applicable connector: Flat ribbon cable connector (26P)
(Complies with MIL-C-83503)



D side

Stations · 1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · ... · n

U side



C3, C4, C6, M5 (4(A), 2(B) port)
C3: ø3.2 One-touch fitting
C4: ø4 One-touch fitting
C6: ø6 One-touch fitting
M5: M5 thread

C8 (1(P) SUP port)
C8: ø8 One-touch fitting

Dimensions

Formula L1 = 10.5n + 44.5, L2 = 10.5n + 57.5 n: Station (Maximum 24 stations)

| L | n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|-------------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1 | | 65.5 | 76 | 86.5 | 97 | 107.5 | 118 | 128.5 | 139 | 149.5 | 160 | 170.5 | 181 | 191.5 | 202 | 212.5 | 223 | 233.5 | 244 | 254.5 | 265 | 275.5 | 286 | 296.5 |
| L2 | | 78.5 | 89 | 99.5 | 110 | 120.5 | 131 | 141.5 | 152 | 162.5 | 173 | 183.5 | 194 | 204.5 | 215 | 225.5 | 236 | 246.5 | 257 | 267.5 | 278 | 288.5 | 299 | 309.5 |
| (L3) | | 112.5 | 125 | 125 | 137.5 | 150 | 162.5 | 175 | 187.5 | 187.5 | 200 | 212.5 | 225 | 225 | 237.5 | 250 | 262.5 | 275 | 287.5 | 287.5 | 300 | 312.5 | 325 | 337.5 |
| (L4) | | 123 | 135.5 | 135.5 | 148 | 160.5 | 173 | 185.5 | 198 | 198 | 210.5 | 223 | 235.5 | 235.5 | 248 | 260.5 | 273 | 285.5 | 298 | 298 | 310.5 | 323 | 335.5 | 348 |

With ejector unit: Formula L1 = 10.5n + 28.7 + (Number of ejector units x 26.7)

L2 = 10.5n + 41.3 + (Number of ejector units x 26.7)

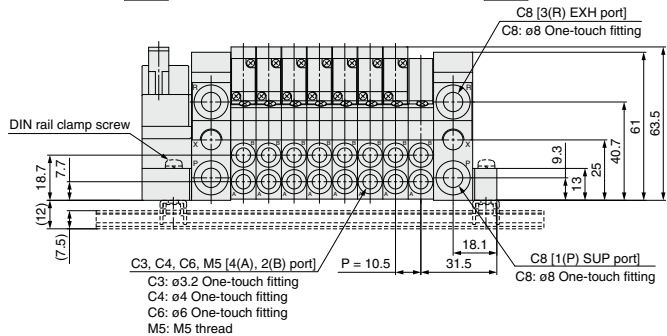
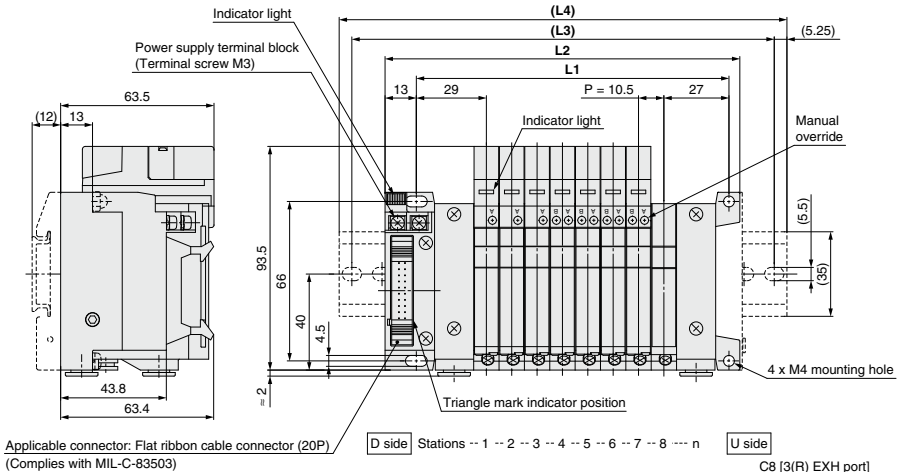
L4 is L2 plus about 30.



Series 10-21-VQ1000/2000 kit (Flat ribbon cable with terminal block)

10-21-VV5Q11

The dashed lines and dimensions in parentheses indicate DIN rail mounting [-D].



Dimensions

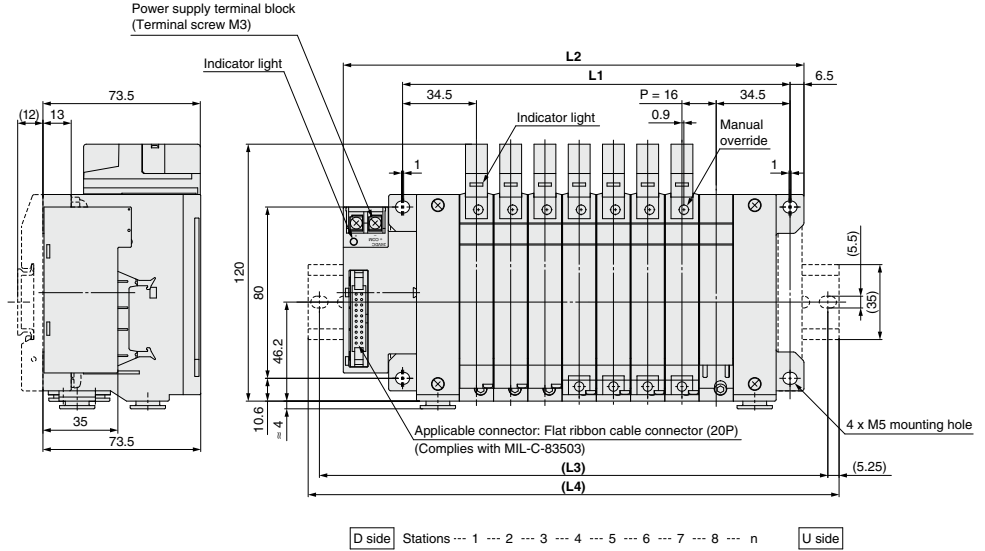
Formula L1 = 10.5n + 45.5, L2 = 10.5n + 63 n: Station (Maximum 16 stations)

| n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1 | 66.5 | 77 | 87.5 | 98 | 108.5 | 119 | 129.5 | 140 | 150.5 | 161 | 171.5 | 182 | 192.5 | 203 | 213.5 |
| L2 | 84 | 94.5 | 105 | 115.5 | 126 | 136.5 | 147 | 157.5 | 168 | 178.5 | 189 | 199.5 | 210 | 220.5 | 231 |
| (L3) | 112.5 | 125 | 125 | 137.5 | 150 | 162.5 | 175 | 187.5 | 187.5 | 200 | 212.5 | 225 | 237.5 | 250 | 262.5 |
| (L4) | 123 | 135.5 | 135.5 | 148 | 160.5 | 173 | 185.5 | 198 | 198 | 210.5 | 223 | 235.5 | 248 | 260.5 | 273 |

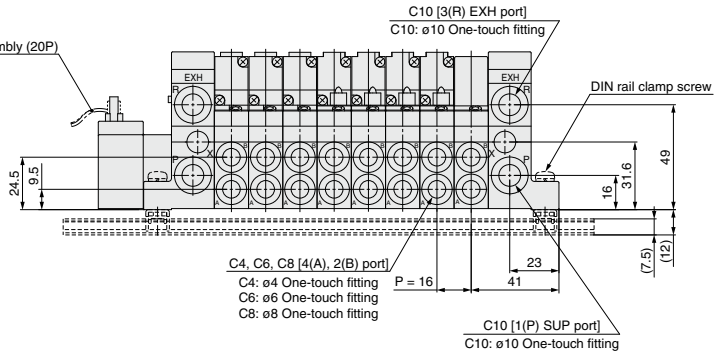
With ejector unit: Formula L1 = 10.5n + 29.7 + (Number of ejector units x 26.7)
L2 = 10.5n + 46.8 + (Number of ejector units x 26.7)
L4 is L2 plus about 30.

10-21-VV5Q21

The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).



Flat ribbon cable connector assembly (20P)
 AXT100-FC20-1: 1.5 m
 AXT100-FC20-2: 3 m
 AXT100-FC20-3: 5 m



Dimensions

Formula L1 = 16n + 53, L2 = 16n + 87 n: Station (Maximum 16 stations)

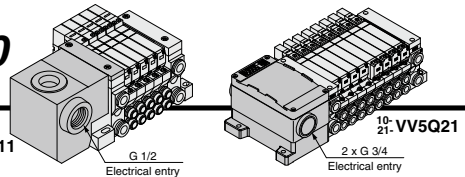
| L | n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1 | | 85 | 101 | 117 | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 | 261 | 277 | 293 | 309 |
| L2 | | 119 | 135 | 151 | 167 | 183 | 199 | 215 | 231 | 247 | 263 | 279 | 295 | 311 | 327 | 343 |
| (L3) | | 150 | 162.5 | 175 | 187.5 | 212.5 | 225 | 237.5 | 262.5 | 275 | 287.5 | 300 | 325 | 337.5 | 350 | 362.5 |
| (L4) | | 160.5 | 173 | 185.5 | 198 | 223 | 235.5 | 248 | 273 | 285.5 | 298 | 310.5 | 335.5 | 348 | 360.5 | 373 |

Directional Control Valves
 Air Cylinders
 Rotary Actuators
 Air Grippers
 Air Preparation Equipment
 Modular F. R.
 Pressure Control Equipment
 Fittings & Tubing
 Flow Control Equipment
 Pressure Switches/ Pressure Sensors

T Series ¹⁰⁻₂₁₋VQ1000/2000 kit (Terminal block box)

IP65 compliant

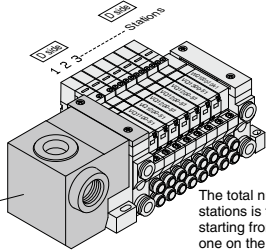
- This kit has a small terminal block inside a junction box. The electrical entry port (¹⁰⁻₂₁₋VQ1000: G 1/2, ¹⁰⁻₂₁₋VQ2000: G 3/4) permits connection of conduit fittings.
- Maximum stations: 24 (¹⁰⁻₂₁₋VQ1000), 20 (¹⁰⁻₂₁₋VQ2000)
- Enclosure: Dust-tight, Water-jet-proof (IP65) compatible (Series VQ2000)



Manifold Specifications

| Series | Piping direction | Piping specifications | | | Applicable stations |
|--------------------------------------|------------------|-----------------------|----------------|------------------|---------------------|
| | | Port size | | | |
| ¹⁰⁻ ₂₁₋ VQ1000 | Side | C8 | C3, C4, C6, M5 | Max. 24 stations | |
| ¹⁰⁻ ₂₁₋ VQ2000 | Side | C10 | C4, C6, C8 | Max. 20 stations | |

Terminal Block Connection (¹⁰⁻₂₁₋VQ1000)

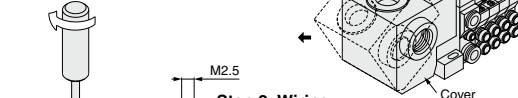


The total number of stations is tabulated starting from station one on the D-side.

Open the terminal block cover to connect the wires to the terminal block.

Step 1. Removing the terminal block cover

Loosen the screws on the terminal block cover and open it in the direction shown by the arrow. The cover can then be removed from the terminal block.



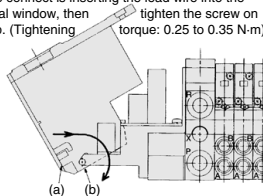
Step 2. Wiring

The diagram on the left shows the terminal block wiring schematic. All stations are provided with double solenoid wiring. Insert each lead wire into the terminal opening and tighten the screw directly above.

How to connect is inserting the lead wire into the terminal window, then tighten the screw on the top. (Tightening torque: 0.25 to 0.35 N-m)

Step 3. Mounting the terminal block cover

Hook groove (a) on shaft (b) and close the cover. Then tighten the screws.
• Drip proof plug assembly (for G 1/2): AXT100-B04A



Electrical Wiring Specifications: ¹⁰⁻₂₁₋VQ1000

| Terminal no. | Polarity |
|--------------|----------|
| COM | COM (+) |
| SOLA 1A | (-) |
| SOLA 1B | (+) |
| SOLA 2A | (-) |
| SOLA 2B | (+) |
| SOLA 3A | (-) |
| SOLA 3B | (+) |
| SOLA 4A | (-) |
| SOLA 4B | (+) |
| SOLA 5A | (-) |
| SOLA 5B | (+) |
| SOLA 6A | (-) |
| SOLA 6B | (+) |
| SOLA 7A | (-) |
| SOLA 7B | (+) |
| SOLA 8A | (-) |
| SOLA 8B | (+) |
| SOLA 9A | (-) |
| SOLA 9B | (+) |
| SOLA 10A | (-) |
| SOLA 10B | (+) |
| SOLA 11A | (-) |
| SOLA 11B | (+) |
| SOLA 12A | (-) |
| SOLA 12B | (+) |
| COM | COM (+) |

1st row - 2nd row - 3rd row
The quantity of terminal blocks used depends on the number of manifold stations.

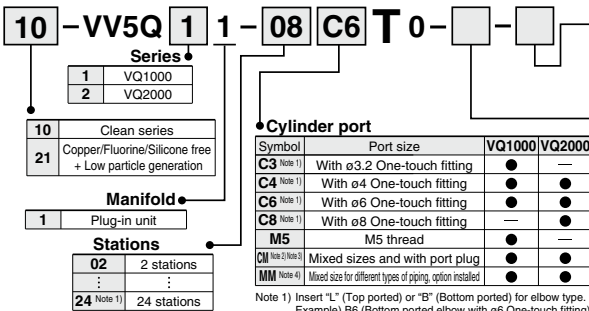
| Manifold | Terminal block |
|------------------|----------------|
| 2 to 8 stations | 2 rows |
| 9 to 12 stations | 3 rows |

As the standard electrical wiring specifications, double wiring (connected to SOLA and SOLB) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types. Mixed single and double wiring is available as semi-standard. Refer to page 562 for details.

Note) When using the negative common specifications, use valves for negative common. Refer to "Semi-standard" on page 562 for details.

Note) For CE compliant models, DC-type only. [Option]

How to Order Manifold



| Symbol | Option | VQ1000 | VQ2000 |
|----------------|--|--------|--------|
| NH | None | ● | ● |
| B | With back pressure check valve | ● | ● |
| D | DIN rail mounting | ● | ● |
| DO | With DIN rail bracket (Without DIN rail) | ● | ● |
| D _L | DIN rail length specified (□: Stations 02 to 24) | ● | ● |
| K | Special wiring spec. (Except double wiring) | ● | ● |
| N | With name plate | ● | ● |
| R | External pilot | ● | ● |
| W | Enclosure: Dust-tight, Water-jet-proof (IP65) | — | ● |

•CE compliant
NH CE compliant

Note) For CE compliant models, DC-type only.

Option

| Symbol | Option | VQ1000 | VQ2000 |
|----------------|--|--------|--------|
| NH | None | ● | ● |
| B | With back pressure check valve | ● | ● |
| D | DIN rail mounting | ● | ● |
| DO | With DIN rail bracket (Without DIN rail) | ● | ● |
| D _L | DIN rail length specified (□: Stations 02 to 24) | ● | ● |
| K | Special wiring spec. (Except double wiring) | ● | ● |
| N | With name plate | ● | ● |
| R | External pilot | ● | ● |
| W | Enclosure: Dust-tight, Water-jet-proof (IP65) | — | ● |

- Note 1) When two or more symbols are specified, indicate them alphabetically. Example) BNH
- Note 2) Models with a suffix "B" have check valves for prevention of back pressure at all manifold stations. When a back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position by means of the manifold specification sheet.
- Note 3) The number of stations that may be displayed is longer than the manifold number of stations.
- Note 4) Specify the wiring specifications by means of the manifold specification sheet.
- Note 5) Indicate "R" for the valve with external pilot.

Note 1) VQ2000: Max. 20 stations
Refer to page 562 for details.
For negative common specifications of series VQ1000, refer to "Semi-standard" on page 562.
For series VQ2000 the standard manifold can be used.

● **Terminal Block Wiring (10-21-VQ2000)**

Open the terminal block cover to connect the wires to the terminal block.

Step 1. Removing the terminal block cover

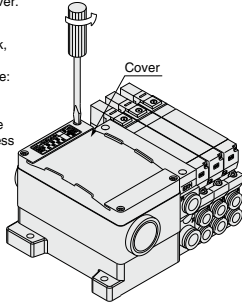
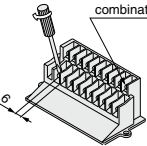
Loosen mounting screws (4 pcs.) on the terminal block cover and remove the cover.

Step 2. Wiring

Loosen screws on the terminal block, connect wiring and complete it by tightening screws. (Tightening torque: 0.5 to 0.7 N·m)

The diagram on the right shows the terminal block wiring. All stations are provided with double wiring regardless of the valves which are mounted.

M3 Round head combination screw

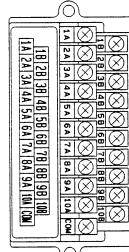


Step 3. Mounting the terminal block cover

Securely tighten the screws after confirming that the gasket is installed correctly. (Tightening torque: 0.7 to 1.2 N·m)

- Applicable crimped 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

● **Special Wiring Specifications: 10-21-VQ2000**



| Station | Terminal no. | Polarity |
|------------|--------------|----------|
| Station 1 | SOL_A_1A | (-) (+) |
| | SOL_B_1B | (-) (+) |
| Station 2 | SOL_A_2A | (-) (+) |
| | SOL_B_2B | (-) (+) |
| Station 3 | SOL_A_3A | (-) (+) |
| | SOL_B_3B | (-) (+) |
| Station 4 | SOL_A_4A | (-) (+) |
| | SOL_B_4B | (-) (+) |
| Station 5 | SOL_A_5A | (-) (+) |
| | SOL_B_5B | (-) (+) |
| Station 6 | SOL_A_6A | (-) (+) |
| | SOL_B_6B | (-) (+) |
| Station 7 | SOL_A_7A | (-) (+) |
| | SOL_B_7B | (-) (+) |
| Station 8 | SOL_A_8A | (-) (+) |
| | SOL_B_8B | (-) (+) |
| Station 9 | SOL_A_9A | (-) (+) |
| | SOL_B_9B | (-) (+) |
| Station 10 | SOL_A_10A | (-) (+) |
| | SOL_B_10B | (-) (+) |
| | COM. | (+) (-) |

As the standard electrical wiring specifications, double wiring (connected to SOL_A and SOL_B) is adopted for the internal wiring of each station for 10 stations or less, regardless of valve and option types. Mixed single and double wiring is available as semi-standard. Refer to page 562 for details.

Note) When using the negative common specifications, use valves for negative common.

Refer to "Semi-standard" on page 562 for details.

How to Order Valve

Note) For CE compliant models, DC-type only.



Series

| | |
|---|--------|
| 1 | VQ1000 |
| 2 | VQ2000 |

10 Clean series

21 Copper/Fluorine/Silicone free + Low particle generation

Actuation type

| | |
|---|----------------------------|
| 1 | 2-position single |
| 2 | 2-position double |
| 3 | 3-position closed center |
| 4 | 3-position exhaust center |
| 5 | 3-position pressure center |

Seal

| | |
|---|-------------|
| 0 | Metal seal |
| 1 | Rubber seal |

CE compliant

| | |
|-----|--------------|
| Nil | — |
| Q | CE compliant |

Note) For CE compliant models, DC-type only.

Enclosure

| | |
|---------|------------------------------------|
| Nil | Dust-protected |
| W Note) | Dust-tight, Water-jet-proof (IP65) |

Note) VQ2000 only

Manual override

| | |
|-----|---------------------------------------|
| Nil | Non-locking push type (Tool required) |
| B | Locking type (Tool required) |
| C | Locking type (Manual) |
| D | Slide locking type (Manual) |

Light/surge voltage suppressor

| | |
|-----|------|
| Nil | Yes |
| E | None |

Function

| Symbol | Specifications | DC | AC |
|-----------|------------------------------|----------|----------|
| Nil | Standard | (0.4 W) | (Note 1) |
| B | High-speed response type | (0.95 W) | — |
| K Note 2) | High-pressure type (1.0 MPa) | (0.95 W) | — |
| N Note 3) | Negative common | ○ | — |
| R Note 3) | External pilot | ○ | ○ |

Coil voltage

| | CE compliant |
|---|--------------------|
| 1 | 100 VAC (50/60 Hz) |
| 3 | 110 VAC (50/60 Hz) |
| 5 | 24 VDC |
| 6 | 12 VDC |

Note 1) Refer to page 522 for power consumption of AC type.
 Note 2) Metal seal only
 Note 3) Refer to "Semi-standard" on pages 562 to 563 for external pilot and negative common specifications.
 Note 4) When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible.

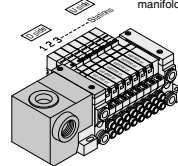
Caution
 Use the standard (DC) specification when continuously energizing for long periods of time.

How to Order Manifold Assembly

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

<Example>
 Terminal block box kit
 10-VVQ11-08C6T0-1 set—Manifold base part no.
 *10-VQ1100-51 ... 2 sets—Valve part no. (Stations 1 to 2)
 *10-VQ1200-51 ... 4 sets—Valve part no. (Stations 3 to 6)
 *10-VQ1300-51 ... 1 set—Valve part no. (Station 7)
 *VVQ1000-10A-1 ... 1 set—Blanking plate part no. (Station 8)

Prefix the asterisk to the part no. of the solenoid valve, etc.
 Write sequentially from the 1st station on the D-side. When part no. written collectively are complicated, specify them by means of the manifold specification sheet.



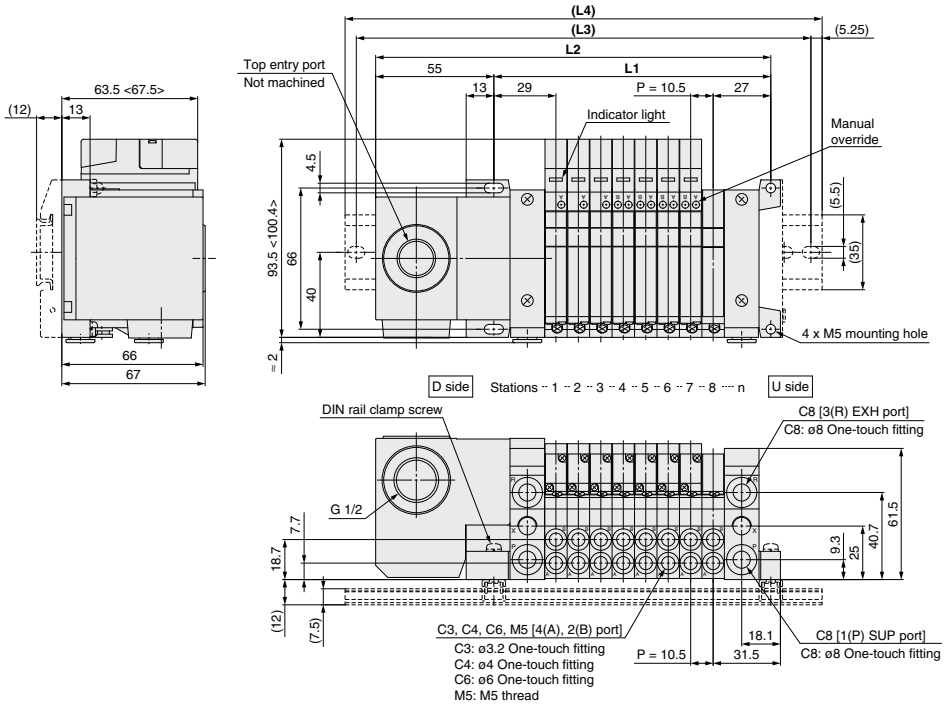
Directional Control Valves
 Air Cylinders
 Rotary Actuators
 Air Grippers
 Air Preparation Equipment
 Modular F. R.
 Pressure Control Equipment
 Fittings & Tubing
 Flow Control Equipment
 Pressure Switches/Pressure Sensors

T Series ¹⁰⁻₂₁₋VQ1000/2000 kit (Terminal block box)

10-₂₁₋VV5Q11

< >: AC

The dashed lines and dimensions in parentheses indicate DIN rail mounting [-D].



Dimensions

Formula L1 = 10.5n + 45.5, L2 = 10.5n + 105 n: Station (Maximum 24 stations)

| L | n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|-------------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1 | | 66.5 | 77 | 87.5 | 98 | 108.5 | 119 | 129.5 | 140 | 150.5 | 161 | 171.5 | 182 | 192.5 | 203 | 213.5 | 224 | 234.5 | 245 | 255.5 | 266 | 276.5 | 287 | 297.5 |
| L2 | | 126 | 136.5 | 147 | 157.5 | 168 | 178.5 | 189 | 199.5 | 210 | 220.5 | 231 | 241.5 | 252 | 262.5 | 273 | 283.5 | 294 | 304.5 | 315 | 325.5 | 336 | 346.5 | 357 |
| (L3) | | 150 | 162.5 | 175 | 187.5 | 187.5 | 200 | 212.5 | 225 | 237.5 | 250 | 262.5 | 262.5 | 275 | 287.5 | 300 | 312.5 | 325 | 325 | 337.5 | 350 | 362.5 | 375 | 387.5 |
| (L4) | | 160.5 | 173 | 185.5 | 198 | 198 | 210.5 | 223 | 235.5 | 248 | 260.5 | 273 | 273 | 285.5 | 298 | 310.5 | 323 | 335.5 | 335.5 | 348 | 360.5 | 373 | 385.5 | 398 |

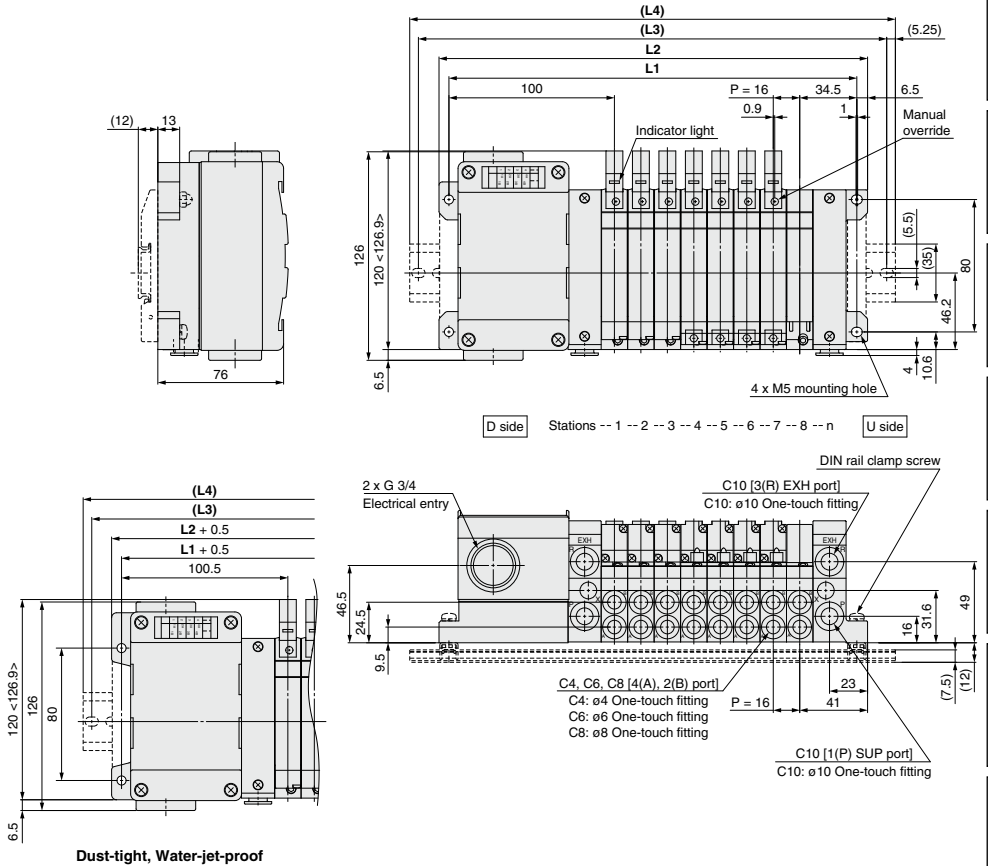
With ejector unit: Formula L1 = 10.5n + 29.7 + (Number of ejector units x 26.7)

L2 = 10.5n + 88.8 + (Number of ejector units x 26.7)

L4 is L2 plus about 30.

10-21-VV5Q21

< >: AC
The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).



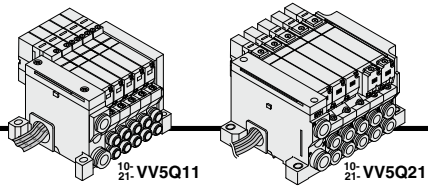
Dimensions

Formula $L1 = 16n + 118.5$, $L2 = 16n + 131$ n: Station (Maximum 20 stations)

| L | n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|-------------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1 | | 150.5 | 166.5 | 182.5 | 198.5 | 214.5 | 230.5 | 246.5 | 262.5 | 278.5 | 294.5 | 310.5 | 326.5 | 342.5 | 358.5 | 374.5 | 390.5 | 406.5 | 422.5 | 438.5 |
| L2 | | 163 | 179 | 195 | 211 | 227 | 243 | 259 | 275 | 291 | 307 | 323 | 339 | 355 | 371 | 387 | 403 | 419 | 435 | 451 |
| (L3) | | 187.5 | 200 | 225 | 237.5 | 250 | 262.5 | 287.5 | 300 | 312.5 | 337.5 | 350 | 362.5 | 375 | 400 | 412.5 | 425 | 450 | 462.5 | 475 |
| (L4) | | 198 | 210.5 | 235.5 | 248 | 260.5 | 273 | 298 | 310.5 | 323 | 348 | 360.5 | 373 | 385.5 | 410.5 | 423 | 435.5 | 460.5 | 473 | 485.5 |

Directional Control Valves
Air Cylinders
Rotary Actuators
Air Grippers
Air Preparation Equipment
Modular F. R.
Pressure Control Equipment
Fittings & Tubing
Flow Control Equipment
Pressure Switches/ Pressure Sensors

Series 10-21-VQ1000/2000 kit (Lead wire)

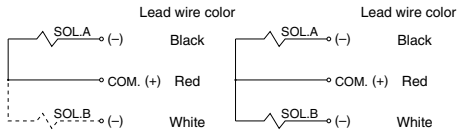


IP65 compliant

- Direct electrical entry. Models with one or more stations are available.
- SUP and EXH ports are provided on one side for further space savings.
- Maximum stations are 8.
- Enclosure: Dust-tight, Water-jet-proof (IP65) compatible (10-Series VQ2000)

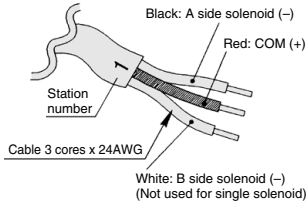
Wiring Specifications: Positive COM

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



Single solenoid

Double solenoid



Use any of the below cable lead wire assembly to change the lead wire length:

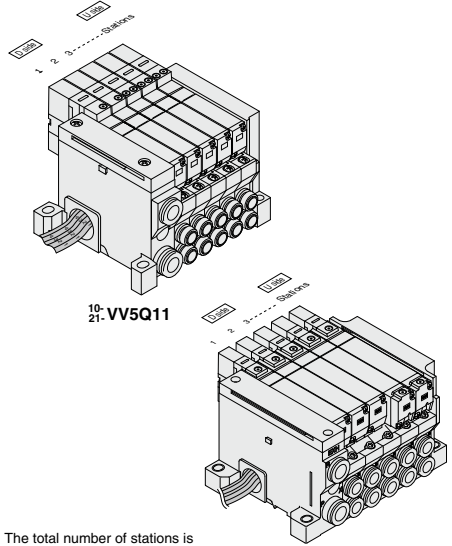
Lead wire assembly with connector

| Lead wire length | Part no. |
|------------------|------------------|
| 0.6 m | VVQ1000-84A-6-* |
| 1.5 m | VVQ1000-84A-15-* |
| 3 m | VVQ1000-84A-30-* |

* Station number 1 to 8

Manifold Specifications

| Series | Piping specifications | | | Applicable stations |
|---------------|-----------------------|------------|------------|---------------------|
| | Piping direction | Port size | | |
| 10-21: VQ1000 | Side | 1(P), 3(R) | 4(A), 2(B) | Max. 8 stations |
| 10-21: VQ2000 | Side | C10 | C6, C8 | Max. 8 stations |

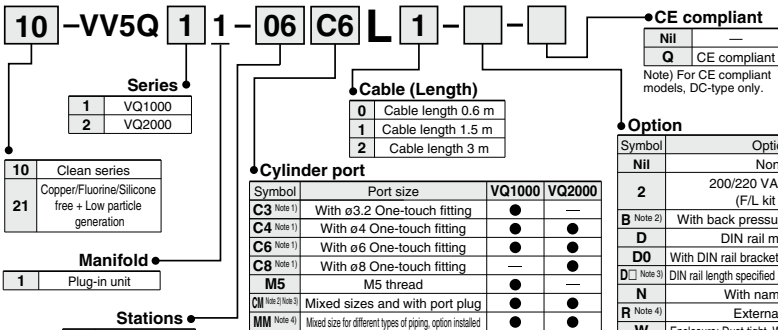


The total number of stations is tabulated on the D-side.

10-21: VV5Q21

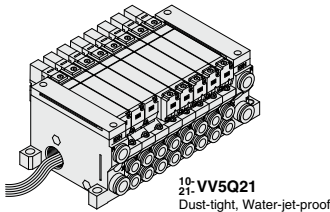
Note) For CE compliant models, DC-type only.

How to Order Manifold



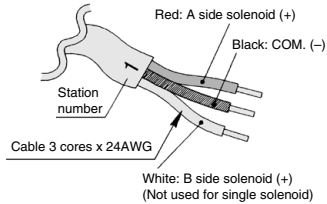
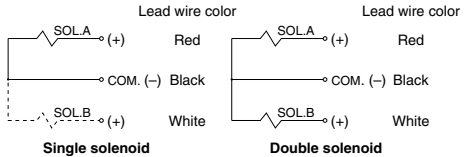
- Note 1) Insert "L" (Top ported) or "B" (Bottom ported) for elbow type. Example) B6 (Bottom ported elbow with ø6 One-touch fitting)
- Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
- Note 3) Indicate "Mixed sizes and with port plug" by means of the manifold specification sheet.
- Note 4) When selecting the mixed size for different types of piping, dual flow fitting assembly, or double check block (direct mounting), enter "MM" and give instructions on the manifold specification sheet.
- Note 5) Inch-size One-touch fittings are available. Refer to "Semi-standard" on page 563 for details.

- Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -BNR
- Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. When a back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position by means of the manifold specification sheet.
- Note 3) The number of stations that may be displayed is longer than the manifold number of stations.
- Note 4) Indicate "R" for the valve with external pilot.



• Wiring Specifications: Negative COM (Semi-standard)

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



Lead wire assembly with connector

| Lead wire length | Part no. |
|------------------|-------------------|
| 0.6 m | VVQ1000-84AN-6-* |
| 1.5 m | VVQ1000-84AN-15-* |
| 3 m | VVQ1000-84AN-30-* |

* Station number 1 to 8

Note) When using the negative common specifications, use valves for negative common. For negative common specifications, refer to "Semi-standard" on page 562.

How to Order Valve

10-VQ 1 1 0 0 - 5 - - - 1 -

Series

| | |
|---|--------|
| 1 | VQ1000 |
| 2 | VQ2000 |

Seal

| | |
|---|-------------|
| 0 | Metal seal |
| 1 | Rubber seal |

Actuation type

| | |
|---|----------------------------|
| 1 | 2-position single |
| 2 | 2-position double |
| 3 | 3-position closed center |
| 4 | 3-position exhaust center |
| 5 | 3-position pressure center |

Clean series

| | |
|----|---|
| 10 | Clean series |
| 21 | Copper/Fluorine/Silicone free + Low particle generation |

Function

| Symbol | Specifications | DC | AC |
|--------|------------------------------|----------|---------|
| Nil | Standard | (0.4 W) | Note 1) |
| B | High-speed response type | (0.95 W) | |
| K | High-pressure type (1.0 MPa) | (0.95 W) | |
| N | Negative common | | |
| R | External pilot | | |

CE compliant

| | |
|-----|--------------|
| Nil | |
| Q | CE compliant |

Note) For CE compliant models, DC-type only.

Enclosure

| | |
|-----|------------------------------------|
| Nil | Dust-protected |
| W | Dust-tight, Water-jet-proof (IP65) |

Note) VQ2000 only

Manual override

| | |
|-----|---------------------------------------|
| Nil | Non-locking push type (Tool required) |
| B | Locking type (Tool required) |
| C | Locking type (Manual) |
| D | Slide locking type (Manual) |

Light/surge voltage suppressor

| | |
|-----|------|
| Nil | Yes |
| E | None |

Coil voltage

| | DC compliant |
|---|----------------------|
| 1 | 100 VAC (50/60 Hz) — |
| 2 | 200 VAC (50/60 Hz) — |
| 3 | 110 VAC (50/60 Hz) — |
| 4 | 220 VAC (50/60 Hz) — |
| 5 | 24 VDC ● |
| 6 | 12 VDC ● |

Note) For CE compliant models, DC-type only.

Note 1) Refer to page 522 for power consumption of AC type.
Note 2) Metal seal only
Note 3) For external pilot and negative common specifications, refer to "Semi-standard" on pages 562 to 563.
Note 4) When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible.

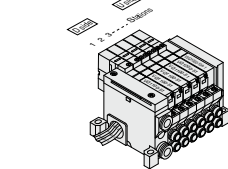
How to Order Manifold Assembly

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

<Example>

Lead wire kit with cable (3 m)
10-VV5Q11-06C6L2-...1 set-Manifold base part no.
*10-VQ1100-51...2 sets-Valve part no. (Stations 1 to 2)
*10-VQ1200-51...2 sets-Valve part no. (Stations 3 to 4)
*10-VQ1300-51...1 set-Valve part no. (Station 5)
*VVQ1000-10A-1...1 set-Blanking plate part no. (Station 6)

Write sequentially from the 1st station on the D-side.
When part no. written collectively are complicated, specify them by means of the manifold specification sheet.



⚠ Caution

Use the standard (DC) specification when continuously energizing for long periods of time.

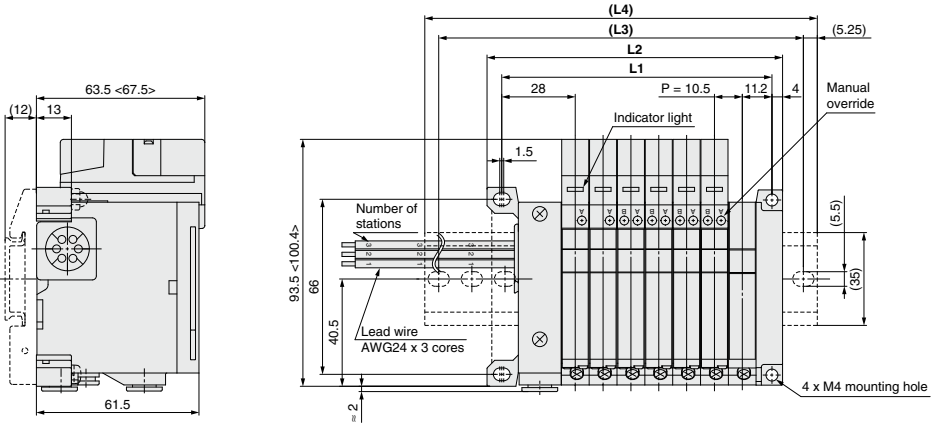
Directional Control Valves
Air Cylinders
Rotary Actuators
Air Grippers
Air Preparation Equipment
Modular F. R.
Pressure Control
Fittings & Tubing
Flow Control Equipment
Pressure Switches/Pressure Sensors

Series 10-21-VQ1000/2000 kit (Lead wire)

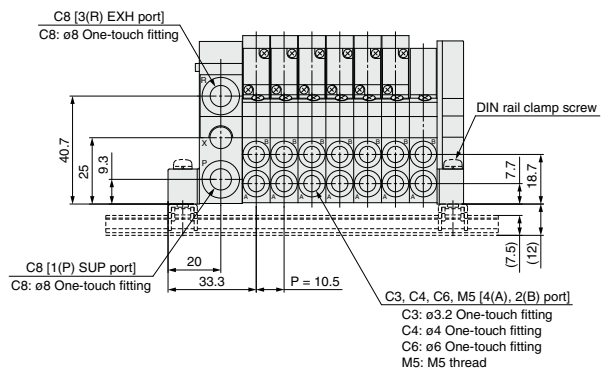
10-21-VV5Q11

< >: AC

The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).



[D side] Stations -- 1 -- 2 -- 3 -- 4 -- 5 -- 6 -- 7 -- n [U side]



Formula L1 = 10.5n + 28.5, L2 = 10.5n + 38
n: Station (Maximum 8 stations)

Dimensions

| n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------|------|------|------|-------|-------|-------|-------|-------|
| L1 | 39 | 49.5 | 60 | 70.5 | 81 | 91.5 | 102 | 112.5 |
| L2 | 48.5 | 59 | 69.5 | 80 | 90.5 | 101 | 111.5 | 122 |
| (L3) | 75 | 87.5 | 87.5 | 100 | 112.5 | 125 | 137.5 | 150 |
| (L4) | 85.5 | 98 | 98 | 110.5 | 123 | 135.5 | 148 | 160.5 |

With ejector unit: Formula L1 = 10.5n + 28.5 + (Number of ejector units x 26.7)
L2 = 10.5n + 38 + (Number of ejector units x 26.7)
L4 is L2 plus about 30.

The EX510 series is to be discontinued. When designing new equipment and facilities, consider using another series (EX260/EX600) instead.

S Series ¹⁰⁻²¹-VQ1000/2000

kit (Serial transmission) Base mounted plug-in manifold: For EX510 Gateway-type serial transmission system

How to Order Manifold

10 - VV5Q 1 1 - SB [] 08 [] - D [] - []

| | |
|----|---|
| 10 | Clean series |
| 21 | Copper/Fluorine/Silicone free + Low particle generation |

Manifold series

| | |
|---|--------|
| 1 | VQ1000 |
| 2 | VQ2000 |

SI unit specifications

| | |
|-----|--------------------|
| NII | NPN output (+COM.) |
| N | PNP output (-COM.) |

Valve stations

| Symbol | Stations |
|--------|------------|
| 01 | 1 station |
| ⋮ | ⋮ |
| 08 | 8 stations |

Note) Max. 16 stations. (Special wiring specifications)

SI unit part no.

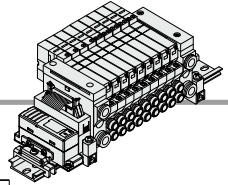
| Symbol | SI unit specifications | SI unit part no. |
|--------|------------------------|------------------|
| NII | NPN output (+COM.) | EX510-S002A |
| N | PNP output (-COM.) | EX510-S102A |

Cylinder port

| Symbol | Port size | VQ1000 | VQ2000 |
|------------------------|--|--------|--------|
| C3 | With ø3.2 One-touch fitting | ● | — |
| C4 | With ø4 One-touch fitting | ● | ● |
| C6 | With ø6 One-touch fitting | ● | ● |
| C8 | With ø8 One-touch fitting | — | ● |
| M5 | M5 thread | ● | — |
| CM ^{Note 1)} | With mixed sizes and with port plug | ● | ● |
| L3 | Top ported elbow with ø3.2 One-touch fitting | ● | — |
| L4 | Top ported elbow with ø4 One-touch fitting | ● | ● |
| L6 | Top ported elbow with ø6 One-touch fitting | ● | ● |
| L8 | Top ported elbow with ø8 One-touch fitting | — | ● |
| L5 | Top ported elbow M5 thread | ● | — |
| B3 | Bottom ported elbow with ø3.2 One-touch fitting | ● | — |
| B4 | Bottom ported elbow with ø4 One-touch fitting | ● | ● |
| B6 | Bottom ported elbow with ø6 One-touch fitting | ● | ● |
| B8 | Bottom ported elbow with ø8 One-touch fitting | — | ● |
| B5 | Bottom ported elbow M5 thread | ● | — |
| LM ^{Note 1)} | Elbow port, mixed sizes | ● | ● |
| N1 | ø1/8" with One-touch fitting | ● | — |
| N3 | ø5/32" with One-touch fitting | ● | ● |
| N7 | ø1/4" with One-touch fitting | ● | ● |
| N9 | ø5/16" with One-touch fitting | — | ● |
| M5T | UNF10-32 thread | ● | — |
| NM ^{Note 1)} | With mixed sizes and with port plug | ● | ● |
| LN1 | Top ported elbow with ø1/8" One-touch fitting | ● | — |
| LN3 | Top ported elbow with ø5/32" One-touch fitting | ● | ● |
| LN7 | Top ported elbow with ø1/4" One-touch fitting | ● | ● |
| LN9 | Top ported elbow with ø5/16" One-touch fitting | — | ● |
| L5T | Top ported elbow UNF10-32 thread | ● | — |
| BN1 | Bottom ported elbow with ø1/8" One-touch fitting | ● | — |
| BN3 | Bottom ported elbow with ø5/32" One-touch fitting | ● | ● |
| BN7 | Bottom ported elbow with ø1/4" One-touch fitting | ● | ● |
| BN9 | Bottom ported elbow with ø5/16" One-touch fitting | — | ● |
| B5T | Bottom ported elbow UNF10-32 thread | ● | — |
| LNM ^{Note 1)} | Elbow port, mixed sizes | ● | ● |
| MM ^{Note 2)} | Mixed size for different types of piping, option installed | ● | ● |

Note 1) Indicate "Mixed sizes and with port plug" in the manifold specification sheet.
 Note 2) When selecting the mixed size for different types of piping, dual flow fitting assembly, or double check block (direct mounting), enter "MM" and give instructions on the manifold specification sheet.

Refer to the **WEB catalog** for details on the EX510 gateway-type serial transmission system.



CE compliant

| | |
|-----|--------------|
| NII | — |
| Q | CE compliant |

Option

| | |
|-----------------------|--|
| NII | None |
| B ^{Note 2)} | With back pressure check valve |
| D□ ^{Note 5)} | DIN rail length specified (□: Stations 02 to 16) |
| K ^{Note 3)} | Special wiring spec. (Except double wiring) |
| N | With name plate |
| R ^{Note 4)} | with external pilot |

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

Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. When a back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position by means of the manifold specification sheet.

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

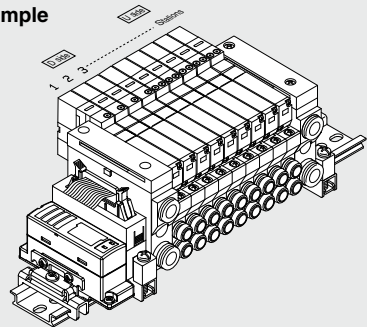
Note 4) Indicate "R" for the valve with external pilot.

Note 5) The number of stations that may be displayed is longer than the manifold number of stations.

DIN rail mounting

How to Order Manifold Assembly

Example



10-VV5011-SB08C6-D...1 set (SB kit, 8-station manifold part no.)
 *10-VQ1100-51 4 sets (Single type part no.)
 *10-VQ1200-51 3 sets (Double type part no.)
 *10-VQ1300-51 1 set (3 position type part no.)

—The asterisk denotes the symbol for assembly. Prefix it to the part no. of the solenoid valve, etc.

→ Enter in order starting from the first station on the D-side.

Add the valve and option part numbers under the manifold base part number. For complex arrangements, specify them by means of the manifold specification sheet.



Directional Control Valves

How to Order Valve

10-VQ1100-51-

| | |
|----|---|
| 10 | Clean series |
| 21 | Copper/Fluorine/Silicone free + Low particle generation |

| | |
|---------------|--------|
| Series | |
| 1 | VQ1000 |
| 2 | VQ2000 |

| | |
|---------------------|--------------|
| CE compliant | |
| Nii | — |
| Q | CE compliant |

Actuation type

| | | |
|---|----------------------------|--|
| 1 | 2-position single | |
| | 2-position double | |
| 2 | Metal 2-position double | |
| | Rubber 2-position double | |
| 3 | 3-position closed center | |
| 4 | 3-position exhaust center | |
| 5 | 3-position pressure center | |

Manual override

Nii: Non-locking push type (Tool required)

B: Locking type (Tool required)

C: Locking type (Manual)

D: Slide locking type (Manual)

Rated voltage

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

Function

| Symbol | Specifications |
|----------------------|---------------------------------------|
| Nii | Standard (0.4 W) |
| B | High-speed response type (0.95 W) |
| K ^{Note 1)} | High-pressure type (1.0 MPa) [0.95 W] |
| N ^{Note 2)} | Negative common |
| R ^{Note 2)} | External pilot |

Note 1) Metal seal only
 Note 2) For external pilot and negative common specifications, refer to "Semi-standard" on pages 562 to 563.
 Note 3) When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible.

Seal

| | |
|---|-------------|
| 0 | Metal seal |
| 1 | Rubber seal |

Air Cylinders
 Rotary Actuators
 Air Grippers
 Air Preparation Equipment
 Modular F. R.
 Pressure Control Equipment
 Fittings & Tubing
 Flow Control Equipment
 Pressure Switches/ Pressure Sensors

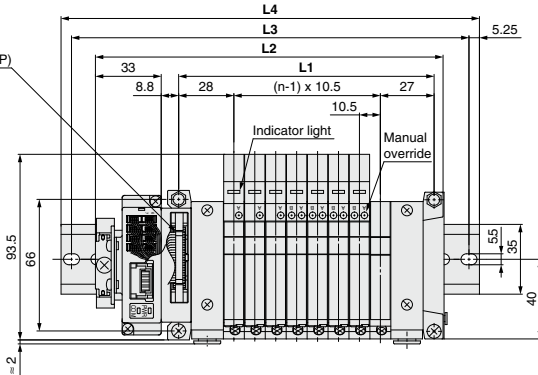
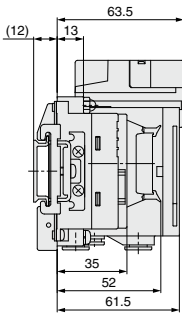


Series 10-21-VQ1000/2000

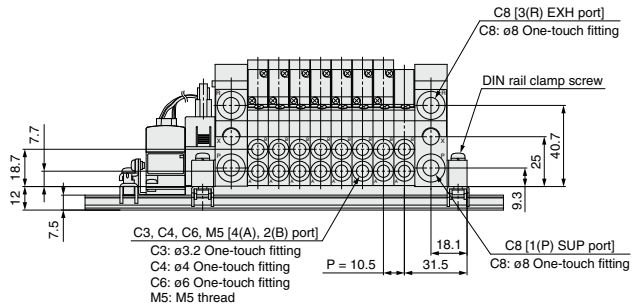
kit (Serial transmission) Base mounted plug-in manifold: For EX510 Gateway-type serial transmission system

10-21-VV5Q11

Applicable connector: Flat ribbon cable connector (20P)
(Complies with MIL-C-83503)



D side Stations 1 2 3 4 5 6 7 8 ... n U side

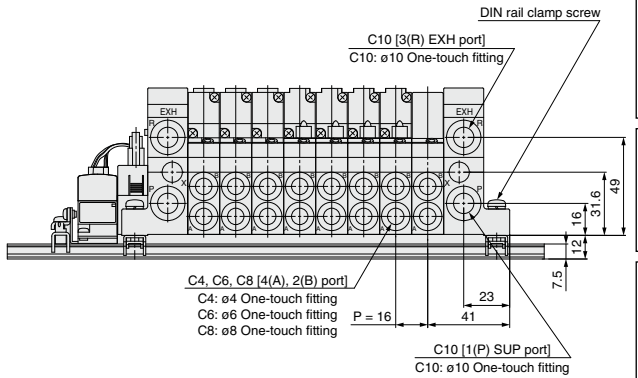
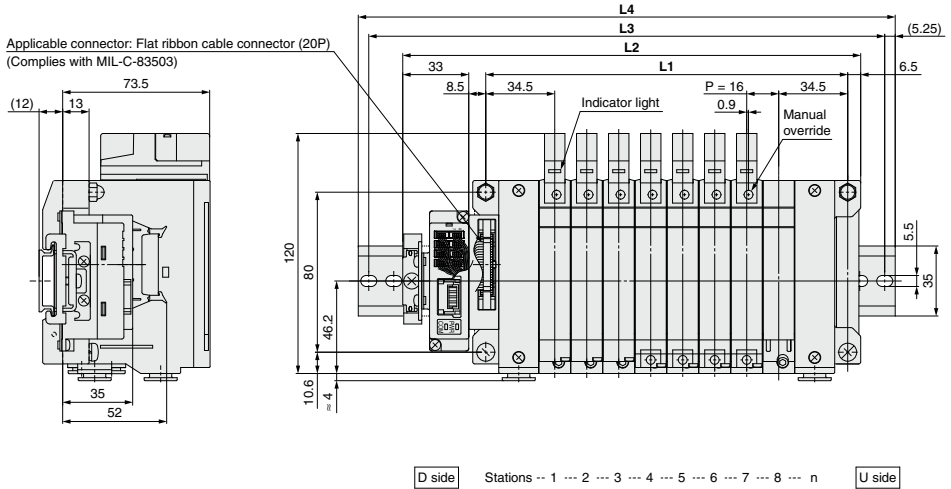


Dimensions

Formula L1 = 10.5n + 44.5, L2 = 10.5n + 91 n: Station (Maximum 16 stations)

| L | n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|----|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1 | | 55 | 65.5 | 76 | 86.5 | 97 | 107.5 | 118 | 128.5 | 139 | 149.5 | 160 | 170.5 | 181 | 191.5 | 202 | 212.5 |
| L2 | | 101.5 | 112 | 122.5 | 133 | 143.5 | 154 | 164.5 | 175 | 185.5 | 196 | 206.5 | 217 | 227.5 | 238 | 248.5 | 259 |
| L3 | | 125 | 137.5 | 150 | 162.5 | 175 | 187.5 | 200 | 212.5 | 225 | 237.5 | 250 | 262.5 | 275 | 287.5 | | |
| L4 | | 135.5 | 148 | 160.5 | 173 | 185.5 | 198.5 | 210.5 | 223 | 235.5 | 248 | 260.5 | 273 | 285.5 | 298 | | |

10-21-VV5Q21



Dimensions

Formula L1 = 16n + 53, L2 = 16n + 101 n: Station (Maximum 16 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1 | 69 | 85 | 101 | 117 | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 | 261 | 277 | 293 | 309 |
| L2 | 117 | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 | 261 | 277 | 293 | 309 | 325 | 341 | 357 |
| L3 | 137.5 | 162.5 | 175 | 187.5 | 212.5 | 225 | 237.5 | 250 | 275 | 287.5 | 300 | 312.5 | 337.5 | 350 | 362.5 | 387.5 |
| L4 | 148 | 173 | 185.5 | 198 | 223 | 235.5 | 248 | 260.5 | 285.5 | 298 | 310.5 | 323 | 348 | 360.5 | 373 | 398 |

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

Fittings & Tubing

Flow Control Equipment

Pressure Switches/ Pressure Sensors

S Series ¹⁰⁻²¹ VQ1000/2000

kit (Serial transmission): For EX120/124 Integrated-type (Output) serial transmission system

IP65 compliant

- The serial transmission system reduces wiring work, while minimizing wiring and saving space.
- Enclosure: Dust-tight, Water-jet-proof (IP65) compatible (Series VQ2000)

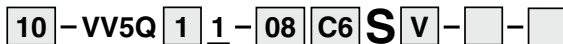
Manifold Specifications

| Series | Piping specifications | | | Applicable stations |
|--|-----------------------|------------|----------------|---------------------|
| | Piping direction | Port size | | |
| | | 1(P), 3(R) | 4(A), 2(B) | |
| ¹⁰ / ₂₁ : VQ1000 | Side | C8 | C3, C4, C6, M5 | Max. 16 stations |
| ¹⁰ / ₂₁ : VQ2000 | Side | C10 | C4, C6, C8 | Max. 16 stations |

Note) Refer to "SI Unit Part No." when ordering the CE-compliant SI unit.



How to Order Manifold



| | |
|----|---|
| 10 | Clean series |
| 21 | Copper/Fluorine/Silicone free + Low particle generation |

Series

| | |
|---|--------|
| 1 | VQ1000 |
| 2 | VQ2000 |

Manifold

| | |
|---|--------------|
| 1 | Plug-in unit |
|---|--------------|

Stations

| | |
|-----------|-------------|
| 02 | 2 stations |
| : | : |
| : | : |
| 16 (Note) | 16 stations |

- Note 1) Refer to page 562 for details.
 Note 2) Max. 16 stations. (Specify a model with 9 to 16 stations by means of the manifold specification sheet.)

CE compliant

| | |
|-----|--------------|
| Nil | — |
| Q | CE compliant |

Note) Refer to "SI Unit Part No." when ordering the CE-compliant SI unit.

SI unit specifications

| Symbol | Protocol | Stations |
|--------|--------------------------------------|------------------|
| 0 | Without SI unit | |
| H | NKE Corp.: Fieldbus H System | Max. 16 stations |
| Q | DeviceNet® | |
| R1 | OMRON Corp.: CompoBus/S (16 outputs) | |
| R2 | OMRON Corp.: CompoBus/S (8 outputs) | Max. 8 stations |
| V | CC-Link | |
| ZB | CompoNet® (Positive common) | Max. 16 stations |
| ZBN | CompoNet® (Negative common) | |

Option

| Symbol | Option | VQ1000 | VQ2000 |
|-------------|--|--------|--------|
| Nil | None | ● | ● |
| B (Note 2) | With back pressure check valve | ● | ● |
| D | DIN rail mounting | ● | ● |
| D□ (Note 3) | DIN rail mounting (□: Stations 02 to 16) | ● | ● |
| K (Note 4) | Special wiring specifications (Except double wiring) | ● | ● |
| N | With name plate | ● | ● |
| R (Note 5) | With external pilot | ● | ● |
| W | Enclosure: Dust-tight, Water-jet-proof (IP65) | — | ● |

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

Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. When a back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position by means of the manifold specification sheet.

Note 3) The number of stations that may be displayed is longer than the manifold number of stations.

Note 4) Specify the wiring specifications by means of the manifold specification sheet.

Note 5) Indicate "R" for the valve with external pilot.

Cylinder port

| Symbol | Port size | VQ1000 | VQ2000 |
|--------------------|--|--------|--------|
| C3 (Note 1) | With ø3.2 One-touch fitting | ● | — |
| C4 (Note 1) | With ø4 One-touch fitting | ● | ● |
| C6 (Note 1) | With ø6 One-touch fitting | ● | ● |
| C8 (Note 1) | With ø8 One-touch fitting | — | ● |
| M5 | M5 thread | ● | — |
| CM (Note 2/Note 3) | Mixed sizes and with port plug | ● | ● |
| MM (Note 4) | Mixed size for different types of piping, option installed | ● | ● |

Note 1) Insert "L" (Top ported) or "B" (Bottom ported) for elbow type.
 Example) B6 (Bottom ported elbow with ø6 One-touch fitting)

Note 2) Indicate as "LM" for models with elbow fittings and mixed cylinder port sizes.

Note 3) Indicate "Mixed sizes and with port plug" by means of the manifold specification sheet.

Note 4) When selecting the mixed size for different types of piping, dual flow fitting assembly, or double check block (direct mounting), enter "MM" and give instructions on the manifold specification sheet.

Note 5) Inch-size One-touch fittings are available. Refer to "Semi-standard" on page 563 for details.

SI Unit Part No.

(Without option W)

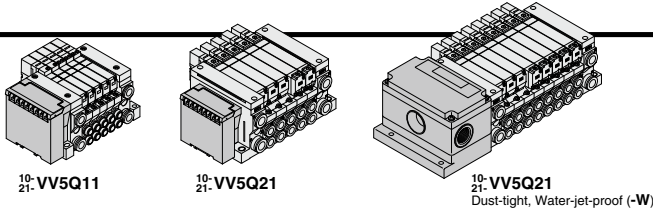
| Symbol | Protocol | SI unit part no. | CE compliant |
|--------|--------------------------------------|------------------|--------------|
| H | NKE Corp.: Fieldbus H System | EX120-SUH1 | — |
| Q | DeviceNet® | EX120-SDN1 | ● |
| R1 | OMRON Corp.: CompoBus/S (16 outputs) | EX120-SCS1 | ● |
| R2 | OMRON Corp.: CompoBus/S (8 outputs) | EX120-SCS2 | ● |
| V | CC-Link | EX120-SMJ1 | ● |
| ZB | CompoNet® (Positive common) | EX120-SCM1 | ● |
| ZBN | CompoNet® (Negative common) | EX120-SCM3 | ● |

SI Unit Part No. (With option W)

| Symbol | Protocol | SI unit part no. | CE compliant |
|--------|--------------------------------------|------------------|--------------|
| H | NKE Corp.: Fieldbus H System | EX123D-SUH1 | — |
| Q | DeviceNet® | EX124D-SDN1 | ● |
| R1 | OMRON Corp.: CompoBus/S (16 outputs) | EX124D-SCS1 | ● |
| R2 | OMRON Corp.: CompoBus/S (8 outputs) | EX124D-SCS2 | ● |
| V | CC-Link | EX124D-SMJ1 | ● |

Refer to the **WEB catalog** for details on the EX120/124 integrated-type (Output) serial transmission system.

* Refer to the **WEB catalog** for details on CompoNet®.



How to Order Valve

10 - **VQ** **1** **1** **0** **0** - **5** **1** -

Series

| | |
|---|--------|
| 1 | VQ1000 |
| 2 | VQ2000 |

10 Clean series

21 Copper/Fluorine/Silicone free + Low particle generation

Actuation type

| | |
|---|----------------------------|
| 1 | 2-position single |
| 2 | 2-position double |
| 3 | 3-position closed center |
| 4 | 3-position exhaust center |
| 5 | 3-position pressure center |

Seal

| | |
|---|-------------|
| 0 | Metal seal |
| 1 | Rubber seal |

CE compliant

| | |
|-----|--------------|
| Nil | — |
| Q | CE compliant |

Enclosure

| | |
|---------|------------------------------------|
| Nil | Dust-protected |
| W Note) | Dust-tight, Water-jet-proof (IP65) |

Note) ⌘ VQ2000 only

Manual override

| | |
|-----|---------------------------------------|
| Nil | Non-locking push type (Tool required) |
| B | Locking type (Tool required) |
| C | Locking type (Manual) |
| D | Slide locking type (Manual) |

Coil voltage

| | |
|---|---|
| 5 | 24 VDC With indicator light/ surge voltage suppressor |
|---|---|

Function

| Symbol | Specifications | DC |
|-----------|------------------------------|---------------|
| Nil | Standard | (0.4 W) ○ |
| B | High-speed response type | (0.95 W) ○ |
| K Note 1) | High-pressure type (1.0 MPa) | (0.95 W) ○ |
| N Note 2) | Negative common | ○ |
| R Note 2) | External pilot | ○ |

Note 1) Metal seal only
 Note 2) For external pilot and negative common specifications, refer to "Semi-standard" on pages 562 to 563.
 Note 3) When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible.

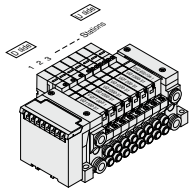
How to Order Manifold Assembly

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

<Example>
 10-VV5Q11-08C6SV-1 set—Manifold base part no.
 *10-VQ1100-51 ... 2 sets—Valve part no. (Stations 1 to 2)
 *10-VQ1200-51 ... 4 sets—Valve part no. (Stations 3 to 6)
 *10-VQ1300-51 ... 1 set—Valve part no. (Station 7)
 *VVQ1000-10A-1 ... 1 set—Blanking plate part no. (Station 8)

Write sequentially from the 1st station on the D-side.
 When part no. written collectively are complicated, specify them by means of the manifold specification sheet.

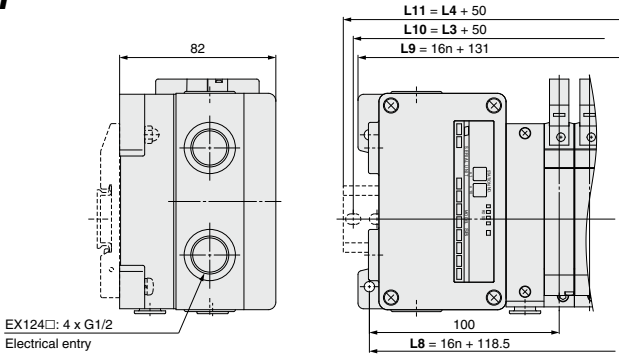
Prefix the asterisk to the part no. of the solenoid valve, etc.



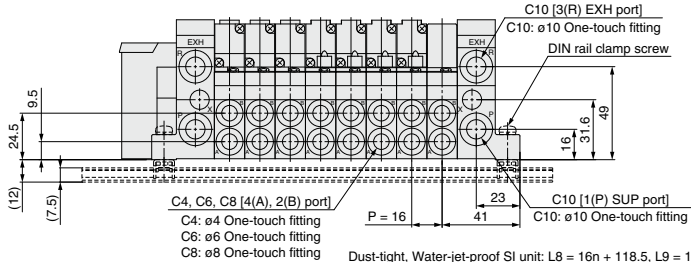
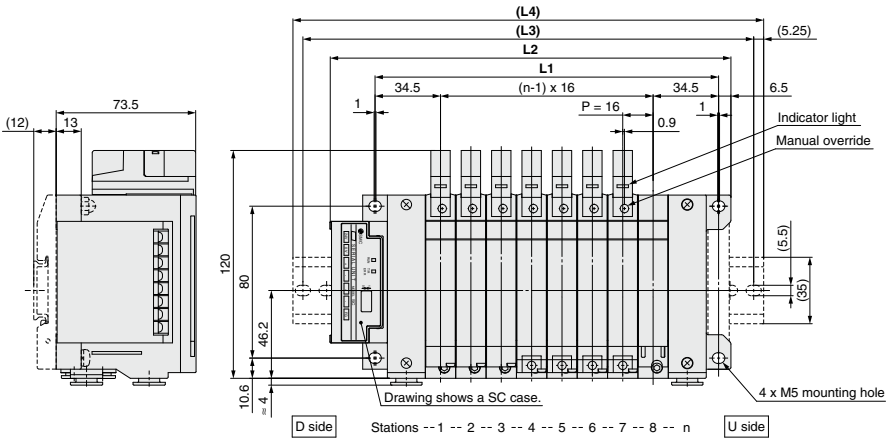
- Directional Control Valves
- Air Cylinders
- Rotary Actuators
- Air Grippers
- Air Preparation Equipment
- Modular F. R.
- Pressure Control Equipment
- Fittings & Tubing
- Flow Control Equipment
- Pressure Switches/Pressure Sensors

10-21-VV5Q21

The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).



Dust-tight, Water-jet-proof (IP65) SI unit
(EX124 Integrated-type (output) serial transmission system)

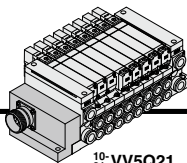


Dust-tight, Water-jet-proof SI unit: L8 = 16n + 118.5, L9 = 16n + 131
L10 = L3 + 50, L11 = L4 + 50
Formula L1 = 16n + 53, L2 = 16n + 83 n: Station (Maximum 16 stations)

Dimensions

| L | n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1 | | 85 | 101 | 117 | 133 | 149 | 165 | 181 | 197 | 213 | 229 | 245 | 261 | 277 | 293 | 309 |
| L2 | | 115 | 131 | 147 | 163 | 179 | 195 | 211 | 227 | 243 | 259 | 275 | 291 | 307 | 323 | 339 |
| (L3) | | 137.5 | 162.5 | 175 | 187.5 | 200 | 225 | 237.5 | 250 | 262.5 | 287.5 | 300 | 312.5 | 337.5 | 350 | 362.5 |
| (L4) | | 148 | 173 | 185.5 | 198 | 210.5 | 235.5 | 248 | 260.5 | 273 | 298 | 310.5 | 323 | 348 | 360.5 | 373 |

M Series ¹⁰⁻²¹-VQ2000 kit (Circular connector)



VQ2000 only

¹⁰⁻²¹-VV5Q21

- MIL flat cable connector reduces installation labor for electrical connection.
- Manifold and connectors, both compliant with the IP65 rating (Dust-tight, Water-jet-proof), provide a high-degree of protection for the electrical parts.
- Maximum stations are 24.

Manifold Specifications

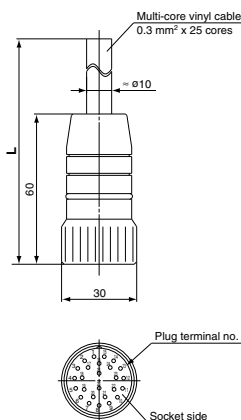
| Series | Piping specifications | | | Applicable stations |
|---------------------------|-----------------------|------------|------------|---------------------|
| | Piping direction | Port size | | |
| ¹⁰⁻²¹ : VQ2000 | Side | 1(P), 3(R) | 4(A), 2(B) | Max. 24 stations |

Circular Connector (26 Pins)

Cable Assembly ●

AXT100-MC26-⁰¹⁵
⁰³⁰
⁰⁵⁰

(Circular connector cable assembly included in a specific manifold model no.)
Refer to "How to Order Manifold."



Circular connector cable assembly

| Cable length (L) | Assembly part no. | Note |
|------------------|-------------------|-----------------------|
| 1.5 m | AXT100-MC26-015 | Cable 25-core x 24AWG |
| 3 m | AXT100-MC26-030 | |
| 5 m | AXT100-MC26-050 | |

* Cannot be used for transfer wiring.

Electrical characteristics

| Item | Property |
|--|------------|
| Conductor resistance Ω/km, 20°C | 65 or less |
| Voltage limit V, 1 minute, AC | 1000 |
| Insulation resistance MΩ/km, 20°C or more | 5 |

Note) The minimum bending radius of the circular connector cable is 20 mm.

Circular 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 |
| 26 | White | None |

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

How to Order Manifold

Note) For CE compliant models, DC-type only. [Option]



| | |
|----|---|
| 10 | Clean series |
| 21 | Copper/Fluorine/Silicone free + Low particle generation |

Series
2 VQ2000

Manifold
1 Plug-in unit

| | |
|----|-------------|
| 02 | 2 stations |
| ⋮ | ⋮ |
| 24 | 24 stations |

Note) Refer to page 562 for details.

Cylinder port

| Symbol | Port size |
|---------------------|---|
| C4 (Note 1) | With ø4 One-touch fitting |
| C6 (Note 1) | With ø6 One-touch fitting |
| C8 (Note 1) | With ø8 One-touch fitting |
| CM (Note 2, Note 3) | Mixed sizes and with port plug |
| MM (Note 4) | Mixed sizes for different types of piping, option installed |

Note 1) Insert "L" (Top ported) or "B" (Bottom ported) for elbow type. Example) B6 (Bottom ported elbow with ø6 One-touch fitting)

Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.

Note 3) Indicate "Mixed sizes and with port plug" by means of the manifold specification sheet.

Note 4) When selecting the mixed size for different types of piping, dual flow fitting assembly, or double check block (direct mounting), enter "MM" and give instructions on the manifold specification sheet.

Note 5) Inch-size One-touch fittings are available. Refer to "Semi-standard" on page 563 for details.

Cable (Length)

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

CE compliant

| | |
|-----|--------------|
| Nil | — |
| Q | CE compliant |

Note) For CE compliant models, DC-type only.

Option

| Symbol | Option |
|-------------|---|
| Nil | None |
| B (Note 2) | With back pressure check valve |
| D | DIN rail mounting |
| D0 | With DIN rail bracket (Without DIN rail) |
| D□ (Note 3) | DIN rail mounting (□: Stations 02 to 24) |
| K (Note 4) | Special wiring spec. (Except double wiring) |
| N | With name plate |
| R (Note 5) | External pilot |
| W | Enclosure: Dust-tight, Water-jet-proof (IP65) |

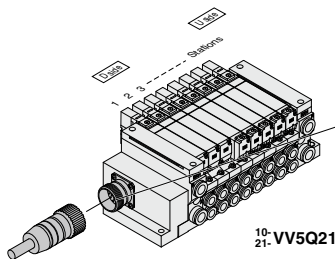
Note 1) When two or more symbols are specified, indicate them alphabetically. Example) BKR

Note 2) Models with a suffix "B" have check valves for prevention of back pressure at all manifold stations. When a back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position by means of the manifold specification sheet.

Note 3) The number of stations that may be displayed is longer than the manifold number of stations.

Note 4) Specify the wiring specifications by means of the manifold specification sheet.

Note 5) Indicate "R" for the valve with external pilot.



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

Electrical Wiring Specifications

Circular connector cable assembly
AXT100-MC26-030 Wire color
015
050

| Station | Terminal no. | Polarity | Lead wire color | Dot marking |
|------------|--------------|----------|-----------------|-------------|
| Station 1 | SOLA 1 | (-) | Black | None |
| | SOLB 2 | (+) | Brown | None |
| Station 2 | SOLA 3 | (-) | Red | None |
| | SOLB 4 | (+) | Orange | None |
| Station 3 | SOLA 5 | (-) | Yellow | None |
| | SOLB 6 | (+) | Pink | None |
| Station 4 | SOLA 7 | (-) | Blue | None |
| | SOLB 8 | (+) | Purple | White |
| Station 5 | SOLA 9 | (-) | Gray | Black |
| | SOLB 10 | (+) | White | Black |
| Station 6 | SOLA 11 | (-) | White | Red |
| | SOLB 12 | (+) | Yellow | Red |
| Station 7 | SOLA 13 | (-) | Orange | Red |
| | SOLB 14 | (+) | Yellow | Black |
| Station 8 | SOLA 15 | (-) | Pink | White |
| | SOLB 16 | (+) | Blue | Black |
| Station 9 | SOLA 17 | (-) | Purple | None |
| | SOLB 18 | (+) | Gray | None |
| Station 10 | SOLA 19 | (-) | Orange | Black |
| | SOLB 20 | (+) | Red | White |
| Station 11 | SOLA 21 | (-) | Brown | White |
| | SOLB 22 | (+) | Pink | Red |
| Station 12 | SOLA 23 | (-) | Gray | Red |
| | SOLB 24 | (+) | Black | White |
| (Max.) | COM 25 | (+) | White | None |
| | COM 26 | (-) | White | None |

Note) When using the negative common specifications, use valves for negative common. (Refer to page 562.)
 Refer to "Semi-standard" on page 562 for details.

How to Order Valve

10-VQ 2 1 0 0 - 5 - - - 1 -

Series
 2 VQ2000

Function

| Symbol | Specifications | DC | AC |
|-----------|-----------------------------------|-------------------------------|-------------------------------|
| Nil | Standard (0.4 W) | <input type="radio"/> Note 1) | <input type="radio"/> Note 1) |
| B | High-speed response type (0.95 W) | <input type="radio"/> | <input type="radio"/> |
| K Note 2) | High-pressure type (1.0 MPa) | <input type="radio"/> | <input type="radio"/> |
| N Note 3) | Negative common | <input type="radio"/> | <input type="radio"/> |
| R Note 3) | External pilot | <input type="radio"/> | <input type="radio"/> |

Actuation type

| | |
|---|----------------------------|
| 1 | 2-position single |
| 2 | 2-position double |
| 3 | 3-position closed center |
| 4 | 3-position exhaust center |
| 5 | 3-position pressure center |

Seal

| | |
|---|-------------|
| 0 | Metal seal |
| 1 | Rubber seal |

CE compliant

| | |
|-----|--------------|
| Nil | — |
| Q | CE compliant |

Note) For CE compliant models, DC-type only.

Enclosure

| | |
|-----|------------------------------------|
| Nil | Dust-protected |
| W | Dust-tight, Water-jet-proof (IP65) |

Manual override

| | |
|-----|---------------------------------------|
| Nil | Non-locking push type (Tool required) |
| B | Locking type (Tool required) |
| C | Locking type (Manual) |
| D | Slide locking type (Manual) |

Light/surge voltage suppressor

| | |
|-----|------|
| Nil | Yes |
| E | None |

Coil voltage

| | CE compliant |
|---|--------------------|
| 1 | 100 VAC (50/60 Hz) |
| 3 | 110 VAC (50/60 Hz) |
| 5 | 24 VDC |
| 6 | 12 VDC |

Note 1) For power consumption of AC type, refer to page 522.
 Note 2) Metal seal only
 Note 3) For external pilot and negative common specifications, refer to "Semi-standard" on pages 562 to 563.
 Note 4) When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible.

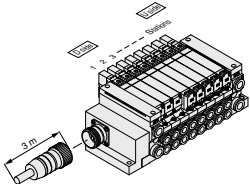
Caution
 Use the standard (DC) specification when continuously energizing for long periods of time.

How to Order Manifold Assembly

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

<Example>
 Circular connector kit with cable (3 m)
 10-VV5Q21-09C6M2-W-1 set-Manifold base part no.
 *10-VQ2100-51 ... 3 sets-Valve part no. (Stations 1 to 3)
 *10-VQ2200-51 ... 3 sets-Valve part no. (Stations 4 to 6)
 *10-VQ2300-51 ... 2 sets-Valve part no. (Stations 7 to 8)
 *VVQ2000-10A-1 ... 1 set-Blanking plate part no. (Station 9)

Prefix the asterisk to the part no. of the solenoid valve, etc.
 Write sequentially from the 1st station on the D-side.
 When part no. written collectively are complicated, specify them by means of the manifold specification sheet.



Directional Control Valves
 Air Cylinders
 Rotary Actuators
 Air Grippers
 Air Preparation Equipment
 Modular F. R.
 Pressure Control Equipment
 Fittings & Tubing
 Flow Control Equipment
 Pressure Switches/Pressure Sensors

Series ¹⁰⁻₂₁₋VQ2000

Sub-plate Single Unit

Note) For CE compliant models, DC-type only.



How to Order

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

Fittings & Tubing

Flow Control Equipment

Pressure Switches/ Pressure Sensors

IP65 enclosure in standard specifications

Easy-to-use terminal block

In the case of **Valve** + **Sub-plate**

10 - **VQ2** **1** **0** **0** - **5** **W** **1** - **02** **□** **□**

Entry is the same as standard products.

| | |
|-----------|---|
| 10 | Clean series |
| 21 | Copper/Fluorine/Silicone free + Low particle generation |

Enclosure

| | |
|---------------------------------|------------------------------------|
| Nil | Dust-protected |
| W <small>Note 1)</small> | IP65 (Dust-tight, Water-jet-proof) |

Note 1) Valves are IP65 specifications.
Note 2) When the valve is a standard (dust-protected) specification, it is not compatible with 200 or 220 VAC.

CE compliant

| | |
|------------|--------------|
| Nil | — |
| Q | CE compliant |

Note) For CE compliant models, DC-type only.

Thread type

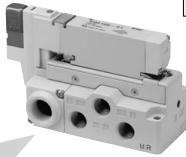
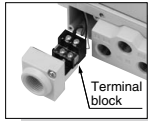
| | |
|------------|------|
| Nil | Rc |
| N | NPT |
| T | NPTF |
| F | G |

Port size

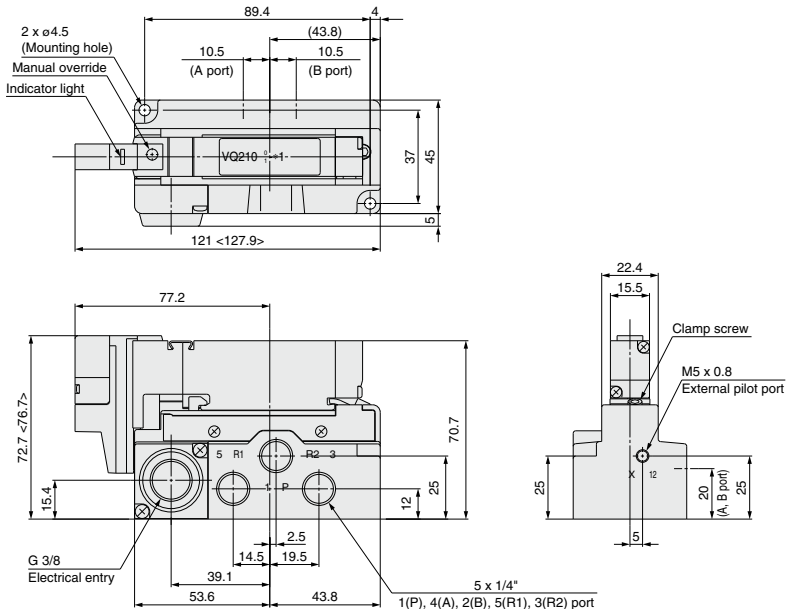
| | |
|-----------|-----|
| 02 | 1/4 |
|-----------|-----|

In the case of **Sub-plate** alone

VQ2000 - PW - 02



Dimensions



< >: AC

Note) When using this valve for IP65, mount a seal connector to the electrical entry.

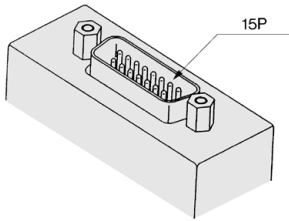


Semi-standard

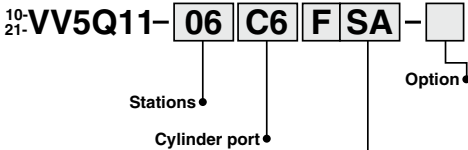
Different Number of Connector Pins

F and P kits with the following number of pins are available besides the standard number (F = 25P; P = 26P). Select the desired number of pins and cable length from the cable assembly list. Place an order for the cable assembly separately.

F kit (D-sub connector)
15 pins



How to Order Manifold



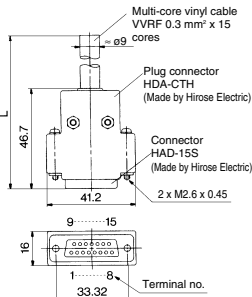
How to Order

D-sub connector, 15 pins
Connector location—Side
Without cable

Kit type/Electrical entry

| Pins | Location | Top entry | Side entry |
|-----------------------|----------|-----------|------------|
| 15P (Max. 7 stations) | | F kit | UA |
| | | | F kit |
| | | | SA |

* In the same way as the 25-pin models (standard), the terminal no. 1 is for SOL.A at the 1st station, the terminal no. 9 for SOL.B at the 1st station, and the terminal no. 8 for COM.



Wire Color Table by Terminal No. of D-sub Connector Cable Assembly

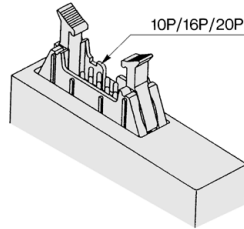
| Terminal no. | Lead wire color | Dot marking |
|--------------|-----------------|-------------|
| 1 | Black | None |
| 2 | Brown | None |
| 3 | Red | None |
| 4 | Orange | None |
| 5 | Yellow | None |
| 6 | Pink | None |
| 7 | Blue | None |
| 8 | Purple | White |
| 9 | Gray | Black |
| 10 | White | Black |
| 11 | White | Red |
| 12 | Yellow | Red |
| 13 | Orange | Red |
| 14 | Yellow | Black |
| 15 | Pink | Black |

D-sub Connector Cable Assembly

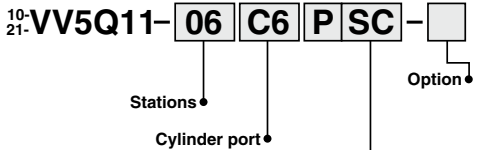
| Cable length (L) | Pins | 15P |
|------------------|------|---------------|
| 1.5 m | | AXT100-DS15-1 |
| 3 m | | AXT100-DS15-2 |
| 5 m | | AXT100-DS15-3 |

* For other commercial connectors, use a type conforming to MIL-C-24308.

P kit (Flat ribbon cable)
10/16/20 pins



How to Order Manifold



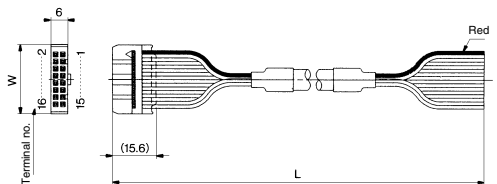
How to Order

Flat ribbon cable, 20 pins
Connector location—Side
Without cable

Kit type/Electrical entry

| Pins | Location | Top entry | Side entry |
|-----------------------|----------|-----------|------------|
| 10P (Max. 4 stations) | | P kit | UA |
| 16P (Max. 7 stations) | | | UB |
| 20P (Max. 9 stations) | | | UC |
| | | P kit | SA |
| | | | SB |
| | | | SC |

* In the same way as the 26-pin models (standard), the terminal no. 1 is for SOL.A at the 1st station, the terminal no. 2 for SOL.B at the 1st station, and two pins from the max. terminal numbers are for COM.



Flat Ribbon Cable Assembly

| Cable length (L) | Pins | 10P | 16P | 20P |
|---------------------|------|---------------|---------------|---------------|
| 1.5 m | | AXT100-FC10-1 | AXT100-FC16-1 | AXT100-FC20-1 |
| 3 m | | AXT100-FC10-2 | AXT100-FC16-2 | AXT100-FC20-2 |
| 5 m | | AXT100-FC10-3 | AXT100-FC16-3 | AXT100-FC20-3 |
| Connector width (W) | | 17.2 | 24.8 | 30 |

* For other commercial connectors, use a type with strain relief conforming to MIL-C-83503.

Special Wiring Specifications

In the internal wiring of F/P/J/G/T/S kit, double wiring (connected to SOLA and SOL.B) is adopted for each station regardless of the valve and option types. Mixed single and double wiring is available as an option.

1. How to Order

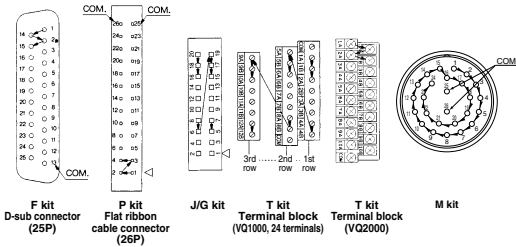
Indicate an option symbol "K", for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification sheet.

10-21-VV5Q11-08C6FU1-D K S

Others, option symbols: to be indicated alphabetically.

2. Wiring specifications

With the A side solenoid of the 1st station as no.1 (meaning, to be connected to no.1 terminal), without making any terminals vacant.



3. Max. number of stations

The maximum number of stations depends upon the number of solenoids. Assuming one for a single and two for a double, determine the number of stations so that the total number is not more than the max. number given in the following table.

| Kit | F kit (D-sub connector) | | P kit (Flat ribbon cable) | | | | J kit (Flat ribbon cable) | G kit (Flat ribbon cable with terminal block) |
|-------------|-------------------------|---------------------------------|---------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------|---|
| Type | F ₂₅ □ | F ₁₅ A ₁₅ | P ₂₆ □ | P ₂₀ C ₂₀ | P ₁₆ B ₁₆ | P ₁₀ A ₁₀ | J ₂₀ □ | G□ |
| Max. points | 24 | 14 | 24 | 18 | 14 | 8 | 16 | 16 |

| Kit | T kit (Terminal block box) | | S kit (Serial transmission) | M kit (Circular connector) | |
|-------------|----------------------------|---------------------------------|---------------------------------|----------------------------|----|
| Type | 10-21-VQ1000 | 2 rows of terminal blocks 16 | 3 rows of terminal blocks 24 | S□ | M□ |
| Max. points | 10-21-VQ2000 | 20 | | 16 | 24 |

Negative Common Specifications

Specify the valve model no. as shown below for negative common specification.

The manifold no. shown below is for the T (10-VQ1000) and L (10-VQ1000/2000) kits. For other kits the standard manifold can be used. However, negative common is not compatible with S (except EX510 gateway-type, EX240 integrated-type and EX120/121/122 integrated-type (CompoNet®)) and G kits.

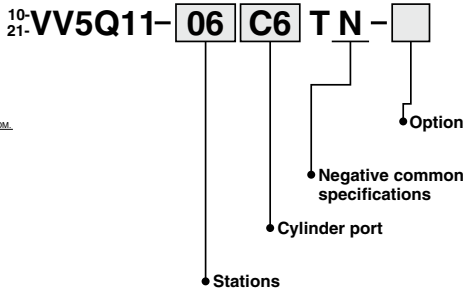
How to Order Valve

10-21-VQ1100 N -51

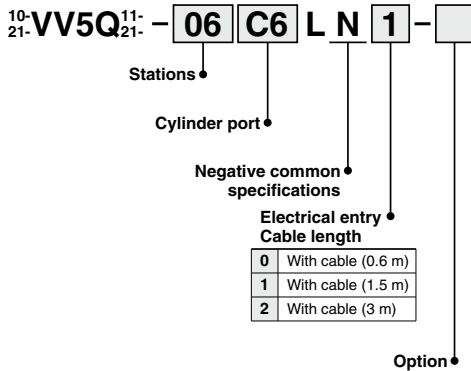
Negative common specifications

How to Order Manifold

T kit (VQ1000):



L kit (VQ1000/2000):



| Electrical entry Cable length | Option |
|-------------------------------|--------------------|
| 0 | With cable (0.6 m) |
| 1 | With cable (1.5 m) |
| 2 | With cable (3 m) |

Semi-standard

External Pilot Specifications

When the supply air pressure is lower than the required minimum operating pressure (0.1 to 0.2 MPa) for the solenoid valve (or when the valve is used for vacuum), specify an external pilot model. Order a manifold or valve by suffixing the external pilot specification, "R". The X-port of the manifold base is equipped with One-touch fittings for external pilot.

VQ1000: C4 (ø4 One-touch fitting)
VQ2000: C6 (ø6 One-touch fitting)

How to Order Manifold

10-
21-VV5Q11-08C6FU1-R S

External pilot specifications

Others, option symbols:
to be indicated alphabetically.

How to Order Valve

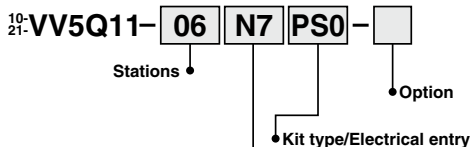
10-
21-VQ1100 R - 51

External pilot specifications

Note 1) When two or more functions are specified, indicate them alphabetically.
Note 2) Since the pilot EXH of this valve is released from the R1 passage, it is not possible to vacuum from a part other than EXH pressure and SUP ports.

Inch-size One-touch Fittings

The valve with inch-size One-touch fittings is shown below.



Cylinder port

| Symbol | N1 | N3 | N7 | N9 | M5T | NM |
|-------------------------------|--------|--------|-------|--------|----------------------|-------|
| Applicable tubing O.D. (Inch) | ø1/8" | ø5/32" | ø1/4" | ø5/16" | 10-32UNF (MS thread) | Mixed |
| 4(A), 2(B) port | VQ1000 | ● | ● | — | ● | ● |
| | VQ2000 | — | ● | ● | — | ● |

Note) When inch-size fittings are selected for the cylinder port, inch-size fittings are selected on 1(P), 3(R) port, too.

1(P), 3(R) port size
VQ1000 ø5/16" (N9)
VQ2000 ø3/8" (N11)

DIN Rail Mounting

Each manifold can be mounted on a DIN rail. Order it by indicating a DIN rail mounting option symbol, "-D". In this case, a DIN rail which is approx. 30 mm longer than the manifold with the specified number of stations is attached.

- When DIN rail is unnecessary (DIN rail mounting brackets only are attached.)
Indicate the option symbol, -D0, for the manifold part number.

How to Order Manifold

10-
21-VV5Q11-08C6FU1-D0S

Others, option symbols:
to be indicated alphabetically.

- When using DIN rail longer than the manifold with specified number of stations
Clearly indicate the necessary number of stations next to the option symbol "D" for the manifold part number.

How to Order Manifold

10-
21-VV5Q11-08C6FU1-D09S

DIN rail for 9 stations

Others, option symbols:
to be indicated alphabetically.

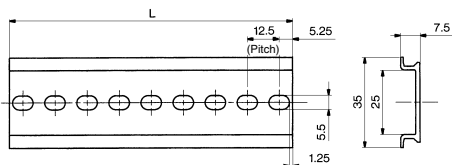
*The number of stations that may be displayed is longer than the manifold number of stations.

- When changing to a DIN rail mounting.
Order brackets for mounting a DIN rail. (Refer to "Manifold Optional Parts" on pages 572 and 574.)

No. VVQ1000-57A (For VQ1000)
VVQ2000-57A (For VQ2000)
2 pcs. per one set.

- When ordering DIN rail only
DIN rail no.: AXT100-DR-□

* As for □, specify the number from the DIN rail table.
Refer to the dimensions of each kit for L dimension.



L Dimension

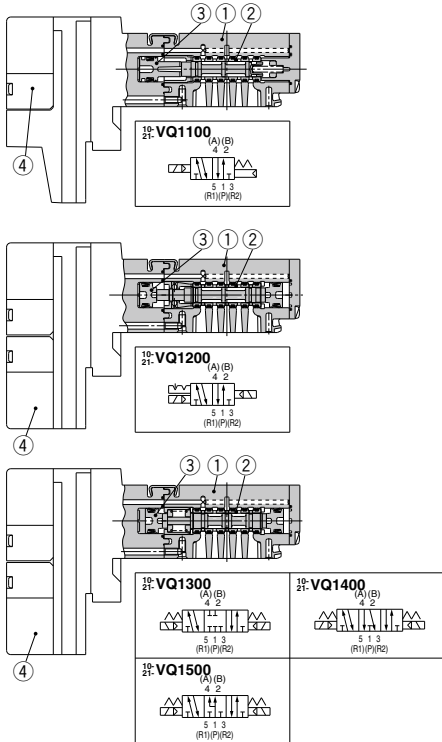
L = 12.5 x n + 10.5

| No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-------------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| L dimension | 23 | 35.5 | 48 | 60.5 | 73 | 85.5 | 98 | 110.5 | 123 | 135.5 |
| No. | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| L dimension | 148 | 160.5 | 173 | 185.5 | 198 | 210.5 | 223 | 235.5 | 248 | 260.5 |
| No. | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| L dimension | 273 | 285.5 | 298 | 310.5 | 323 | 335.5 | 348 | 360.5 | 373 | 385.5 |
| No. | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| L dimension | 398 | 410.5 | 423 | 435.5 | 448 | 460.5 | 473 | 485.5 | 498 | 510.5 |

Series 10-21-VQ1000/2000 Construction

10-21-VQ1000 Plug-in Unit: Main Parts/Replacement Parts

Metal seal

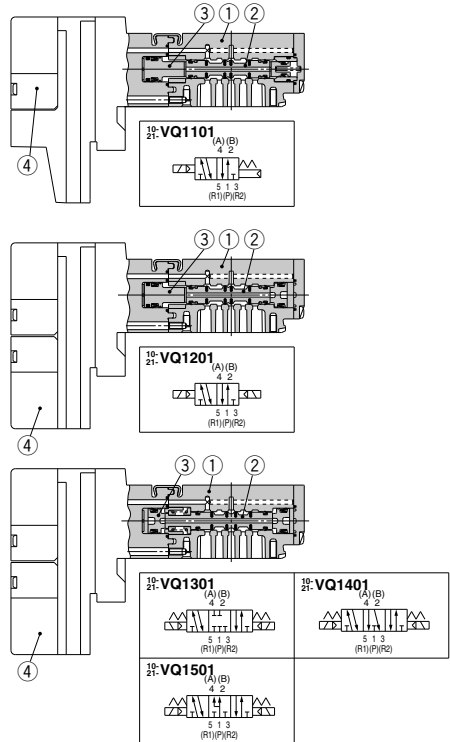


Component Parts

| No. | Description | Material | Note |
|-----|----------------------|-----------------|------|
| 1 | Body | Zinc die-casted | |
| 2 | Spool/Sleeve | Stainless steel | |
| 3 | Piston | Resin | |
| 4 | Pilot valve assembly | — | |

Note) Refer to page 568 for "How to Order Pilot Valve Assembly".

Rubber seal



Component Parts

| No. | Description | Material | Note |
|-----|----------------------|-----------------|------|
| 1 | Body | Zinc die-casted | |
| 2 | Spool valve | Aluminum, HNBR | |
| 3 | Piston | Resin | |
| 4 | Pilot valve assembly | — | |

Note) Refer to page 568 for "How to Order Pilot Valve Assembly".

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

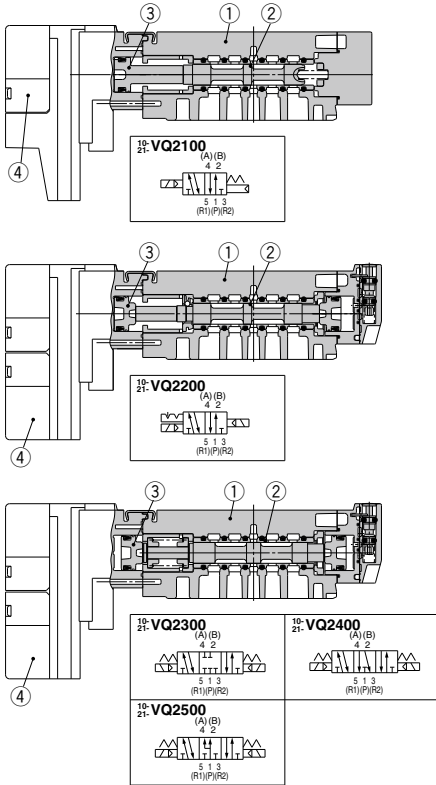
Fittings & Tubing

Flow Control Equipment

Pressure Switches/ Pressure Sensors

10-**VQ2000 Plug-in Unit: Main Parts/Replacement Parts**

Metal seal

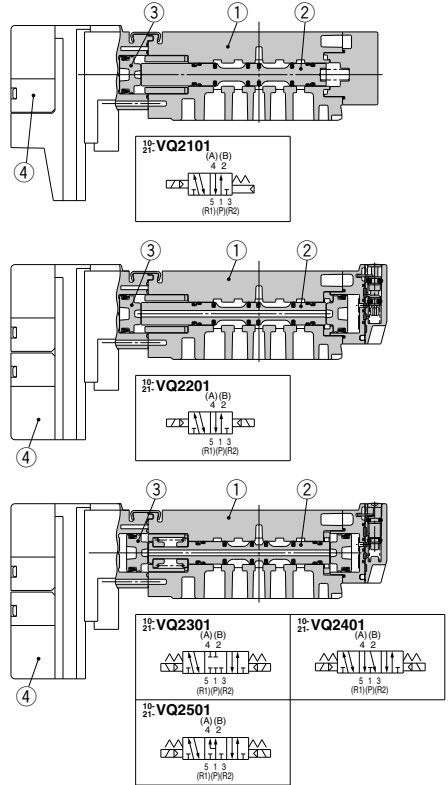


Component Parts

| No. | Description | Material | Note |
|-----|-----------------------------|-----------------|------|
| 1 | Body | Zinc die-casted | |
| 2 | Spool/Sleeve | Stainless steel | |
| 3 | Piston | Resin | |
| 4 | Pilot valve assembly | — | |

Note) Refer to page 568 for "How to Order Pilot Valve Assembly".

Rubber seal



Component Parts

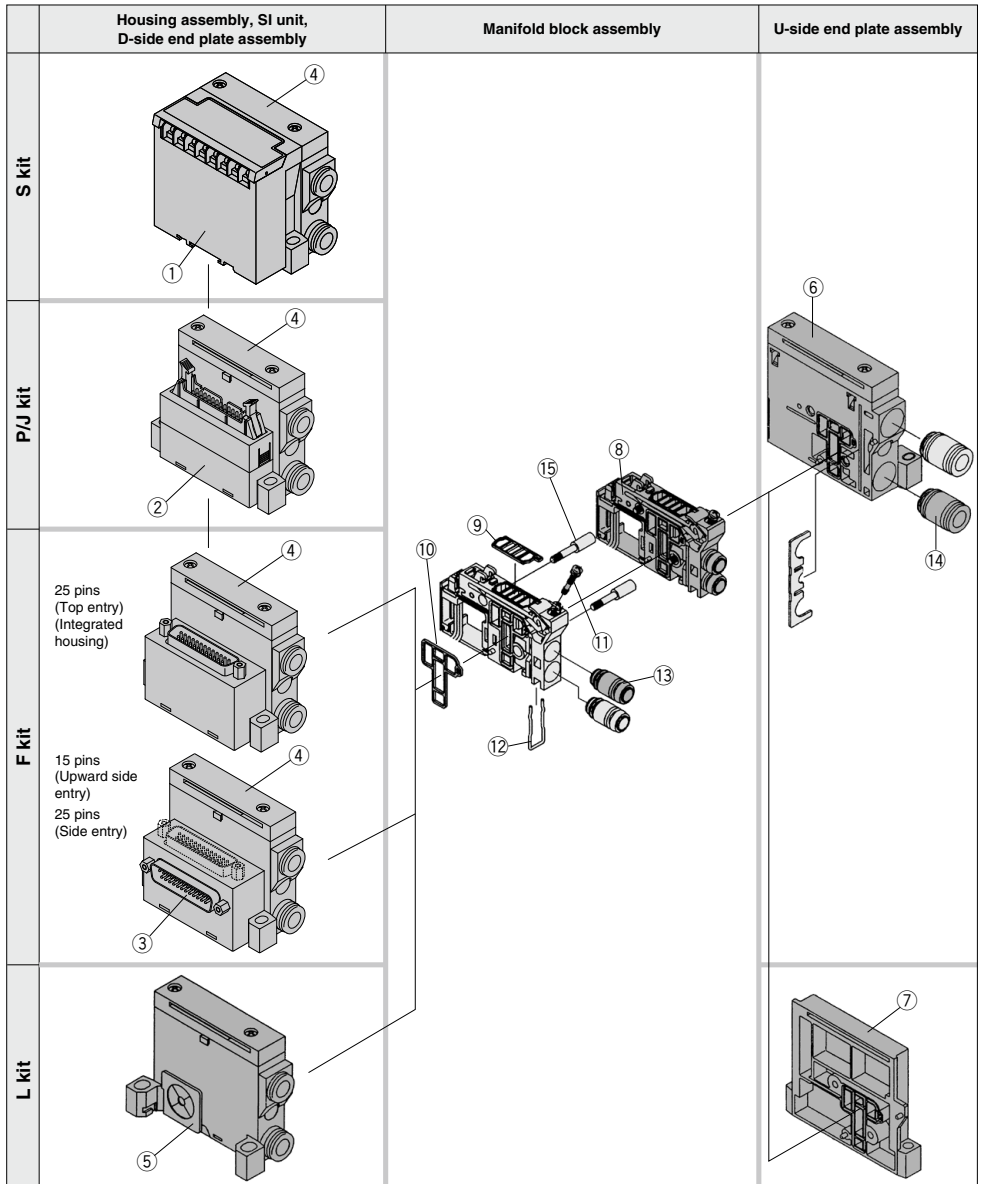
| No. | Description | Material | Note |
|-----|-----------------------------|-----------------|------|
| 1 | Body | Zinc die-casted | |
| 2 | Spool valve | Aluminum, HNBR | |
| 3 | Piston | Resin | |
| 4 | Pilot valve assembly | — | |

Note) Refer to page 568 for "How to Order Pilot Valve Assembly".

Exploded View of Manifold

10-
21-VQ1000 Plug-in Unit: Exploded View

(F/P/J/L/S kit)



<Housing Assembly and SI Unit>

Housing assembly and SI unit no.

| No. | Manifold | Part no. | Description |
|-----|---------------------|--|---|
| ① | (SH kit) | EX120-SUH1(-XP) <small>Note 2)</small> | NKE Corp.: Fieldbus H System (16 outputs) |
| | (SQ kit) | EX120-SDN1 | DeviceNet® |
| | (SR1 kit) | EX120-SCS1(-XP) <small>Note 2)</small> | OMRON Corp.: CompoBus/S (16 outputs) |
| | (SR2 kit) | EX120-SCS2(-XP) <small>Note 2)</small> | OMRON Corp.: CompoBus/S (8 outputs) |
| | (SV kit) | EX120-SMJ1(-XP) <small>Note 2)</small> | CC-Link |
| | (SZB kit) | EX120-SCM1 | CompoNet® (Positive common) |
| ② | (SZBN kit) | EX120-SCM3 | CompoNet® (Negative common) |
| | P $\frac{3}{8}$ kit | AXT100-1-P$\frac{3}{8}$ <small>Note 1)</small> | Flat ribbon cable housing assembly □ = Number of pins: 26/20/16/10 |
| ③ | J $\frac{3}{8}$ kit | AXT100-1-J$\frac{3}{8}$ <small>Note 1)</small> | Flat ribbon cable housing assembly |
| | FU kit | AXT100-1-FU15 | D-sub connector housing assembly (Top entry) Number of pins: 15 |
| | FS kit | AXT100-1-FS □ | D-sub connector housing assembly (Side entry) □ = Number of pins: 25/15 |

Note 1) Top entry connector for PU, JU while side entry connector for PS, JS.
 Note 2) Suffix "-XP" to the end of the part number for dust-protected SI unit. (Not available for S/SQ kit)

<D-Side End Plate Assembly>

④⑤ D-side end plate assembly no.

VVQ1000-3A-1-□-□

Electrical entry

| | |
|-------------|-----------------------------|
| FU25 | For F kit top entry 25 pins |
| F | For F kit other than above |
| P | For P kit |
| J | For J kit |
| L | For L kit |
| S | For S kit |

Option

| | |
|---------------------------------|--|
| Nil | Common EXH |
| R <small>Note 1)</small> | External pilot |
| S <small>Note 1)</small> | Direct EXH outlet with built-in silencer |

Note 1) When both options are specified, indicate as RS.
 Note 2) The housing assembly and SI unit of F/P/J/S kit are not included (except FU25). Separately place an order for ①, ②, ③.

<Manifold Block Assembly>

⑧ Manifold block assembly no.

VVQ1000-1A-□-□

Electrical entry

| | |
|-------------|---|
| F0 | Without lead wire |
| F1 | F kit for 2 to 12 stations/Double wiring |
| F2 | F kit for 13 to 24 stations/Double wiring |
| F3 | F kit for 2 to 24 stations/Single wiring |
| P1 | P/J/S kit for 2 to 12 stations/Double wiring |
| P2 | P/J/S kit for 13 to 24 stations/Double wiring |
| P3 | P/J/S kit for 2 to 24 stations/Single wiring |
| L0 □ | L0 kit □: Stations (1 to 8) |
| L1 □ | L1 kit □: Stations (1 to 8) |
| L2 □ | L2 kit □: Stations (1 to 8) |

Tie-rod (2 pcs.) and lead wire assembly for extensions are attached.

Port size

| | |
|-----------|---------------------------------------|
| C3 | With ø3.2 One-touch fitting |
| C4 | With ø4 One-touch fitting |
| C6 | With ø6 One-touch fitting |
| M5 | M5 thread |
| C0 | Without One-touch fitting (With clip) |

<Replacement Parts for Manifold Block>

Replacement Parts

| No. | Part no. | Description | Material | Quantity |
|-----|----------------------|-------------|-----------------|----------|
| ⑨ | VVQ1000-80A-1 | Gasket | HNBR | 12 |
| ⑩ | VVQ1000-80A-2 | Seal | HNBR | 12 |
| ⑪ | VVQ1000-80A-3 | Clamp screw | Carbon steel | 12 |
| ⑫ | VVQ1000-80A-4 | Clip | Stainless steel | 12 |

Note) A set of parts containing 12 pcs, each is enclosed.

<U-Side End Plate Assembly>

⑥ U-side end plate assembly no. (For F/P/J/S kit)

VVQ1000-2A-1-□

Option

| | |
|------------|--|
| Nil | Common EXH |
| R | External pilot |
| S | Direct EXH outlet with built-in silencer |

Note) The ⑬'s fitting assembly is included.

⑦ U-side end plate assembly no. (For L kit)

VVQ1000-2A-1-L

<Fitting Assembly>

⑬ Fitting assembly part no. (For cylinder port)

VVQ1000-50A-□

Port size

| | |
|-----------|------------------------|
| C3 | Applicable tubing ø3.2 |
| C4 | Applicable tubing ø4 |
| C6 | Applicable tubing ø6 |
| M5 | M5 thread |

Note) Purchase orders are available in units of 10 pieces.

⑭ Fitting assembly part no. (For 1(P), 3(R) port)

VVQ1000-51A-C8

Applicable tubing ø8

Note) Purchase orders are available in units of 10 pieces.

⑮ Tie-rod assembly part no. (2 pcs./set)

VVQ1000-TR-□

Note) Please order when eliminating manifold stations.
 When adding stations, tie-rods are attached to the manifold block assembly. Therefore, it is not necessary to order.

Note 2) □: Stations 02 to 24

Note 3) For S/P/J/F/L kit

Pilot valve assembly

10: **V112** □ - □ □

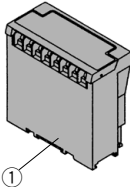
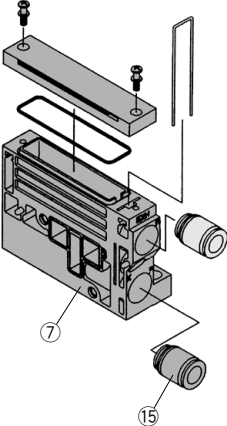
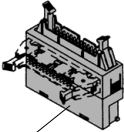
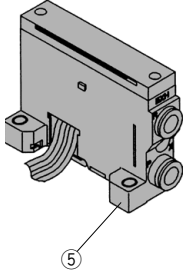
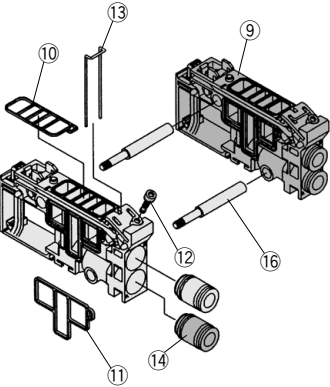
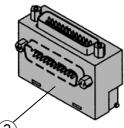
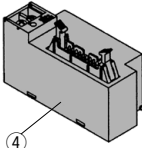
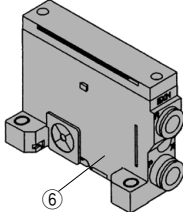
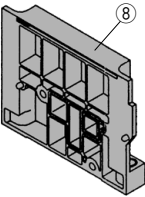
| Function | | | Coil voltage | | | Enclosure | |
|------------|------------------------------|----------|--------------|--------------------|--------------------|-----------|------------------------------------|
| Symbol | Specifications | DC | AC | 1 | 2 | A | B |
| Nil | Standard | (0.4 W) | (Note 1) | 1 | 100 VAC (50/60 Hz) | A | Dust-tight, Water-jet-proof (IP65) |
| B | High-speed response type | (0.95 W) | ○ | 2 | 200 VAC (50/60 Hz) | B | Dust-protected |
| | | ○ | 3 | 110 VAC (50/60 Hz) | | | |
| | | ○ | 4 | 220 VAC (50/60 Hz) | | | |
| K | High-pressure type (1.0 MPa) | (0.95 W) | ○ | 5 | 24 VDC | | |
| | | ○ | 6 | 12 VDC | | | |

Note 1) Refer to page 522 for power consumption of AC type.
 Note 2) Common to single solenoid and double solenoid

Exploded View of Manifold

10-21-VQ2000 Plug-in Unit: Exploded View

(F/P/J/L/G/S kit)

| | Housing assembly and SI unit | D-side end plate assembly | Manifold block assembly | U-side end plate assembly |
|---------|---|---|---|--|
| S kit |  | | |  |
| P/J kit |  |  |  | |
| F kit |  | | | |
| G kit |  | | | |
| L kit | |  | |  |

<Housing Assembly and SI Unit>
Housing assembly and SI unit no.

| No. | Manifold | Part no. | Description |
|-----|--------------------|---|---|
| ① | (SH kit) | EX120-SUH1(-XP) ^{Note 1} [EX123D-SUH1] ^{Note 2} | NKE Corp.: Fieldbus H System (16 outputs) |
| | (SQ kit) | EX120-SDN1 [EX124D-SDN1] ^{Note 2} | DeviceNet® |
| | (SR1 kit) | EX120-SCS1(-XP) ^{Note 1} [EX124D-SCS1] ^{Note 2} | OMRON Corp.: CompoBus/S (16 outputs) |
| | (SR2 kit) | EX120-SCS2(-XP) ^{Note 1} [EX124D-SCS2] ^{Note 2} | OMRON Corp.: CompoBus/S (8 outputs) |
| | (SV kit) | EX120-SMJ1(-XP) ^{Note 1} [EX124D-SMJ1] ^{Note 2} | CC-Link |
| | (SZB kit) | EX120-SCM1 | CompoNet® (Positive common) |
| ② | (SZBN kit) | EX120-SCM3 | CompoNet® (Negative common) |
| | P _S kit | AXT100-1-P _S ^{Note 3} | Flat ribbon cable housing assembly □: Number of pins: 26/20/16/10 |
| ③ | J _S kit | AXT100-1-J _S ^{Note 3} | Flat ribbon cable housing assembly |
| | F _S kit | AXT100-1-F _S ^{Note 3} | D-sub connector housing assembly □: Number of pins: 25/15 |
| ④ | G kit | AXT100-1-GU20 | Flat ribbon cable housing assembly with terminal block |

Note 1) Suffix "XP" to the end of the part number for dust-protected SI unit.
 Note 2) Dust-tight, Water-jet-proof (IP65)
 Note 3) Top entry connector for FU, PU, JU while side entry connector for FS, PS, JS.

<D-Side End Plate Assembly>

⑤ ⑥ D-side end plate assembly no.

VVQ2000-3A-1-□-□-□

Electrical entry

| | |
|---|-----------|
| F | For F kit |
| P | For P kit |
| J | For J kit |
| L | For L kit |
| G | For G kit |
| S | For S kit |

Enclosure

| | |
|-----|------------------------------------|
| Nil | Dust-protected |
| W | Dust-tight, Water-jet-proof (IP65) |

Note) F/P/J/G kit are available with "Nil" only.
 M kit is available with [W] only.
 S/L/T kit are selectable depending on the manifold type.

Option

| | |
|---------------------|--|
| Nil | Common EXH |
| R ^{Note 1} | External pilot |
| S ^{Note 1} | Direct EXH outlet with built-in silencer |

Note 1) When both options are specified, indicate as RS.
 Note 2) The housing assembly and SI unit of F/P/J/G/S kit are not included.
 Separately place an order for ①, ②, ③, ④.
 Note 3) "S" (Built-in silencer) and "W" (IP65) cannot be combined.

<Manifold Block Assembly>

⑨ Manifold block assembly no.

VVQ2000-1A-□-□-□

Tie-rod (2 pcs.) and lead wire assembly for extensions are attached.

Electrical entry

| | |
|-----|---|
| F0 | Without lead wire |
| F1 | F kit for 2 to 12 stations/Double wiring |
| F2 | F kit for 13 to 24 stations/Double wiring |
| F3 | F kit for 2 to 24 stations/Single wiring |
| P1 | P/J/G/S kit for 2 to 12 stations/Double wiring |
| P2 | P/J/G/S kit for 13 to 24 stations/Double wiring |
| P3 | P/J/G/S kit for 2 to 24 stations/Single wiring |
| L0□ | L0 kit □: Stations (1 to 8) |
| L1□ | L1 kit □: Stations (1 to 8) |
| L2□ | L2 kit □: Stations (1 to 8) |
| T1 | T kit for 2 to 20 stations/Double wiring |
| T3 | T kit for 2 to 20 stations/Single wiring |
| M1 | M kit for 2 to 12 stations/Double wiring |
| M2 | M kit for 13 to 24 stations/Double wiring |
| M3 | M kit for 2 to 24 stations/Single wiring |

Port size

| | |
|----|---------------------------------------|
| C4 | With ø4 One-touch fitting |
| C6 | With ø6 One-touch fitting |
| C8 | With ø8 One-touch fitting |
| C0 | Without One-touch fitting (With clip) |

Enclosure

| | |
|-----|------------------------------------|
| Nil | Dust-protected |
| W | Dust-tight, Water-jet-proof (IP65) |

Note) F/P/J/G kit are available with "Nil" only.
 M kit is available with [W] only.
 S/L/T kit are selectable depending on the manifold type.

<Replacement Parts for Manifold Block>

Replacement Parts

| No. | Part no. | Description | Material | Quantity |
|-----|---------------|-------------|-----------------|----------|
| ⑩ | VVQ2000-80A-1 | Gasket | HNBR | 12 |
| ⑪ | VVQ2000-80A-2 | Seal | HNBR | 12 |
| ⑫ | VVQ2000-80A-3 | Clamp screw | Carbon steel | 12 |
| ⑬ | VVQ2000-80A-4 | Clip | Stainless steel | 12 |

Note) A set of parts containing 12 pcs. each is enclosed.

<U-Side End Plate Assembly>

⑦ U-side end plate assembly no. (For F/P/J/G/T/S/M kit)

VVQ2000-2A-1-□-□

Option

| | |
|-----|--|
| Nil | Common EXH |
| R | External pilot |
| S | Direct EXH outlet with built-in silencer |

Enclosure

| | |
|-----|------------------------------------|
| Nil | Dust-protected |
| W | Dust-tight, Water-jet-proof (IP65) |

Note) F/P/J/G kit are available with "Nil" only.
 M kit is available with [W] only.
 S/T kit are selectable depending on the manifold type.

Note 1) The ⑩'s fitting assembly is included.
 Note 2) The housing assembly and SI unit of F/P/J/G/S kit are not included.
 Separately place an order for ①, ②, ③, ④.
 Note 3) "S" (Built-in silencer) and "W" (IP65) cannot be combined.

⑧ U-side end plate assembly no. (For L kit)

VVQ2000-2A-1-L-□

Enclosure

| | |
|-----|------------------------------------|
| Nil | Dust-protected |
| W | Dust-tight, Water-jet-proof (IP65) |

Note) Select it depending on the manifold type.

<Fitting Assembly>

⑭ Fitting assembly part no. (For cylinder port)

VVQ1000-51A-□

Note) Purchase orders are available in units of 10 pieces.

Port size

| | |
|----|----------------------|
| C4 | Applicable tubing ø4 |
| C6 | Applicable tubing ø6 |
| C8 | Applicable tubing ø8 |

⑮ Fitting assembly part no. (For 1(P), 3(R) port)

VVQ2000-51A-C10

Applicable tubing ø10

Note) Purchase orders are available in units of 10 pieces.

⑯ Tie-rod assembly part no. (2 pcs./set)

VVQ2000-TR-□

Note 1) Please order when eliminating manifold stations.

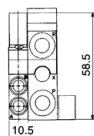
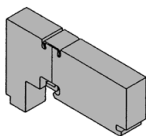
When adding stations, tie-rods are attached to the manifold block assembly. Therefore, it is not necessary to order.

Note 2) □: Stations 02 to 24
 Note 3) For S/P/J/F/L kit

Directional Control Valves
 Air Cylinders
 Rotary Actuators
 Air Grippers
 Air Preparation Equipment
 Modular F. R.
 Pressure Control
 Fittings & Tubing
 Flow Control Equipment
 Pressure Switches/Pressure Sensors

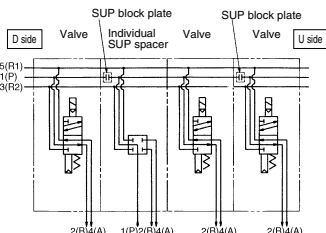
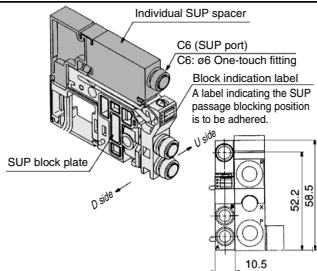
10-
21-VQ1000: Manifold Optional Parts

Blanking plate assembly
VVQ1000-10A-1



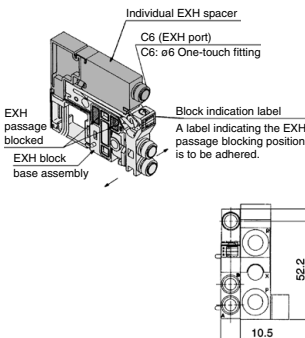
It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

Individual SUP spacer
VVQ1000-P-1-C6-N7

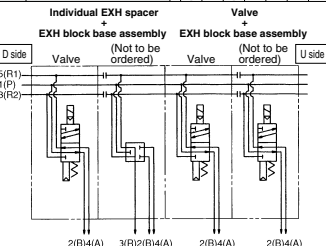


When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.) Block both sides of the station, for which the supply pressure from the individual SUP spacer is used, with SUP block plates. (Refer to the application example.)
 * Specify the spacer mounting position and SUP block plate position by means of the manifold specification sheet. The block plate is used in one or two places for one set. (Two SUP block plates for blocking SUP station are attached to the individual SUP spacer.)
 * As a standard, electric wiring is connected to the position of the manifold station where the individual SUP spacer is mounted.
 * If wiring is not required for stations equipped with spacers, enter "X" in the special wiring specifications column in the manifold specification sheet.

Individual EXH spacer
VVQ1000-R-1-C6-N7

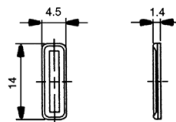
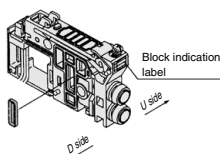


| Description/Model | | Stations | | | | | | |
|-------------------|--|----------|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Valve | Single | | ● | ● | ● | | | |
| Option | Individual EXH spacer VVQ1000-R-1-C6 | | | ● | | | | |
| | EXH blocking position: Specify 2 places. | | | ● | | | | |



When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (One station space is occupied.) Block both sides of the individual valve EXH station. (Refer to the application example.)
 * Specify the mounting position, as well as the EXH block base or EXH block plate position by means of the manifold specification sheet. The block plate is used in one or two places for one set.
 * An EXH block base assembly is used in the blocking position when ordering an EXH spacer incorporated with a manifold no. However, do not order an EXH block base assembly because it is attached to the spacer.
 When separately ordering an individual EXH spacer, separately order an EXH block base assembly because it is not attached to the spacer.
 * As a standard, electric wiring is connected to the position of the manifold station where the individual EXH spacer is mounted.
 * If wiring is not required for stations equipped with spacers, enter "X" in the special wiring specifications column in the manifold specification sheet.

SUP block plate
VVQ1000-16A



When different pressures are supplied to a manifold, a SUP block plate is used to block the stations under different pressures.
 * Specify the mounting position by means of the manifold specification sheet.

<Block indication label>

Indication labels to confirm the blocking position are attached (Each for SUP passage and SUP/EXH passage blocking positions).
 * When ordering a block plate incorporated with a manifold, a block indication label is attached to the manifold.



SUP passage blocked



SUP/EXH passage blocked

EXH block base assembly
VVQ1000-19A-F (C3/C4/C6/M5/N1/N3/N7)

Manifold block assembly

Electrical entry

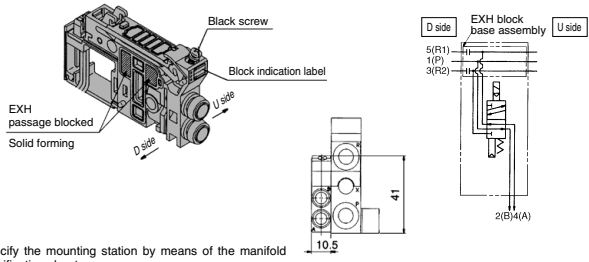
| | |
|------------|--|
| F0 | Without lead wire |
| F1 | For F kit (2 to 12 stations)/Double wiring |
| F2 | For F kit (13 to 24 stations)/Double wiring |
| F3 | For F kit (2 to 24 stations)/Single wiring |
| P1 | For P, G, T, S kit (2 to 12 stations)/Double wiring |
| P2 | For P, G, T, S kit (13 to 24 stations)/Double wiring |
| P3 | For P, G, T, S kit (2 to 24 stations)/Single wiring |
| L0* | L0 kit |
| L1* | L1 kit * 1 to 8 stations |
| L2* | L2 kit |

The manifold block assembly is used between stations for which exhaust is desired to be divided when valve exhaust affects other stations due to the circuit configuration. The EXH passage on the D-side is blocked in the EXH block base assembly. It is also used in combination with an individual EXH spacer for individual exhaust.

<Block indication label>

Indication labels to confirm the blocking position are attached. (Each for EXH passage and SUP/EXH passage blocking positions)

* When ordering a EXH block base incorporated with a manifold, a block indication label is attached to the manifold.



- * Specify the mounting station by means of the manifold specification sheet.
- * When ordering this option incorporated with a manifold, specify the EXH block base assembly part number with "*" in front of it beneath the manifold part number.



EXH passage blocked



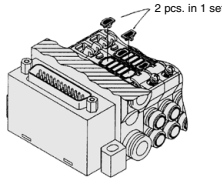
SUP/EXH passage blocked

Back pressure check valve assembly [-B]
VVQ1000-18A

It prevents cylinder malfunction caused by other valve exhaust entry. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single-acting cylinder is used or an exhaust center type solenoid valve is used.

* When ordering it being mounted on all manifold stations, suffix "B" to the end of the manifold part number.

Note) When a back pressure check valve is desired, and is to be installed only in certain manifold stations, clearly indicate the part number and specify the mounting station by means of the manifold specification sheet.



(Precautions)

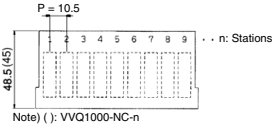
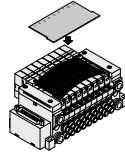
1. The back pressure check valve assembly is the parts with a check valve structure. However, since the valve has slight air leakage, take precautions for the exhaust air not to be restricted at the exhaust port.
2. When a back pressure check valve is mounted, the effective area of the valve will decrease by about 20%.

Name plate [-N]
VVQ1000-NC-N-Station (1 to Max. stations)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc. Insert it into the groove on the side of the end plate and bend it as shown in the figure.

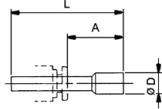
- * When the blanking plate with connector is mounted, it automatically will be "VVQ1000-NC-n"
- * When ordering this option incorporated with a manifold, suffix "-N" to the end of the manifold part number.

N: Standard
NC: For mounting blanking plate with connector



Blanking plug (For One-touch fittings)
KQ2P-□

It is inserted into an unused cylinder port and SUP/EXH ports.
 Purchase orders are available in units of 10 pieces.



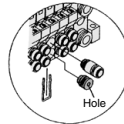
Dimensions

| Applicable fitting size ød | Model | A | L | D | Applicable fitting size ød | Model | A | L | D |
|-------------------------------|---------|------|------|-----|-------------------------------|---------|------|------|-----|
| 3.2 | KQ2P-23 | 16 | 31.5 | 3.2 | 1/8" | KQ2P-01 | 16 | 31.5 | 5 |
| 4 | KQ2P-04 | 16 | 32 | 6 | 5/32" | KQ2P-03 | 16 | 32 | 6 |
| 6 | KQ2P-06 | 18 | 35 | 8 | 1/4" | KQ2P-07 | 18 | 35 | 8.5 |
| 8 | KQ2P-08 | 20.5 | 39 | 10 | 5/16" | KQ2P-09 | 20.5 | 39 | 10 |

Port plug
VVQ0000-58A

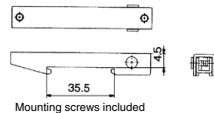
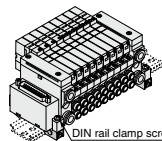
The plug is used to block the cylinder port.

- * When ordering this option incorporated with a manifold, indicate "CM" for the port size of the manifold part number, as well as, the mounting station and cylinder port mounting positions 4(A) and 2(B) by means of the manifold specification sheet.
- * Gently screw an M3 screw in the port plug hole and pull it for removal.



DIN rail mounting bracket [-D,-D0,-D□]
VVQ1000-57A

This bracket is used for mounting the manifold on the DIN rail.
 * When ordering this option incorporated with a manifold, suffix "-D" to the end of the manifold part number.

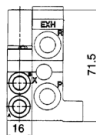
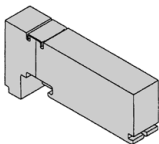


1 set of DIN rail mounting brackets for 1 manifold includes 2 brackets.

Directional Control Valves
 Air Cylinders
 Rotary Actuators
 Air Grippers
 Air Preparation Equipment
 Modular F. R.
 Pressure Control Equipment
 Fittings & Tubing
 Flow Control Equipment
 Pressure Switches/ Pressure Sensors

10-21-VQ2000: Manifold Optional Parts

Blanking plate assembly
VVQ2000-10A-1



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.

Individual SUP spacer
VVQ2000-P-1-C8_{N9}

When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.)

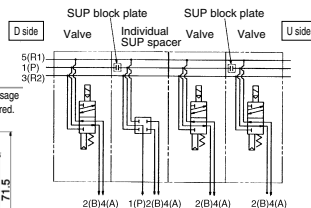
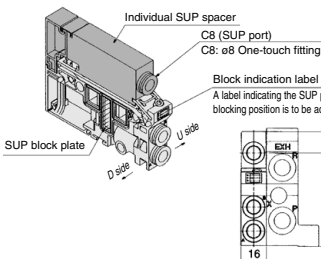
Block both sides of the station, for which the supply pressure from the individual SUP spacer is used, with SUP block plates. (Refer to the application example.)

* Specify the spacer mounting position and SUP block plate position by means of the manifold specification sheet. The block plate is used in one or two places for one set.

* (Two SUP block plates for blocking SUP station are attached to the individual SUP spacer.)

* As a standard, electric wiring is connected to the position of the manifold station where the individual SUP spacer is mounted.

* If wiring is not required for stations equipped with spacers, enter "X" in the special wiring specifications column in the manifold specification sheet.



Individual EXH spacer
VVQ2000-R-1-C8_{N9}

When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (One station space is occupied.)

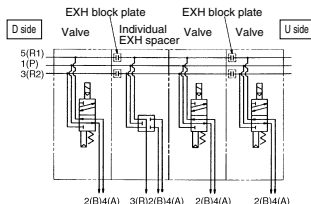
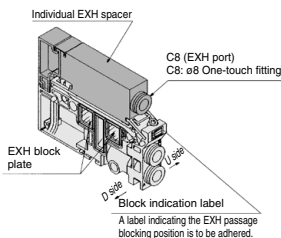
Block both sides of the individual valve EXH station. (Refer to the application example.)

* Specify the mounting position, as well as the EXH block base or EXH block plate position by means of the manifold specification sheet.

* The block plate is used in one or two places for one set. (Two EXH block plates for blocking EXH station are attached to the individual EXH spacer.)

* As a standard, electric wiring is connected to the position of the manifold station where the individual EXH spacer is mounted.

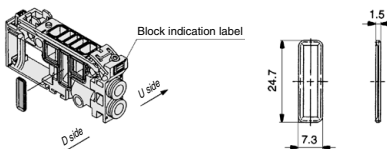
* If wiring is not required for stations equipped with spacers, enter "X" in the special wiring specifications column in the manifold specification sheet.



SUP block plate
VVQ2000-16A

When different pressures are supplied to a manifold, a SUP block plate is used to block the stations under different pressures.

* Specify the mounting position by means of the manifold specification sheet.



<Block indication label>

Indication labels to confirm the blocking position are attached. (Each for SUP passage and SUP/EXH passage blocking positions)



SUP passage blocked



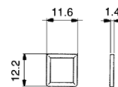
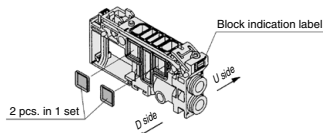
SUP/EXH passage blocked

* When ordering a block plate incorporated with a manifold, a block indication label is attached to the manifold.

EXH block plate
VVQ2000-19A

The EXH block plate is used between stations for which exhaust is desired to be divided when valve exhaust affects other stations configuration. It is also used in combination with an individual EXH spacer for individual exhaust.

* Specify the mounting position by means of the manifold specification sheet.



<Block indication label>

Indication labels to confirm the blocking position are attached. (Each for EXH passage and SUP/EXH passage blocking positions)



EXH passage blocked

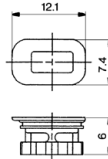
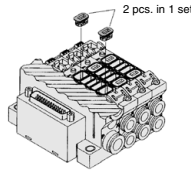


SUP/EXH passage blocked

* When ordering a block plate incorporated with a manifold, a block indication label is attached to the manifold.

**Back pressure check valve assembly [-B]
VVQ2000-18A**

It prevents cylinder malfunction caused by other valve exhaust entry. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single-acting cylinder is used or an exhaust center type solenoid valve is used.
 * When ordering assemblies incorporated with a manifold, add suffix "-B" to the end of the manifold part number.
 Note) When a check valve for back pressure prevention is desired and is to be installed only in certain manifold stations, clearly indicate the part number and specify the mounting position by means of the manifold specification sheet.

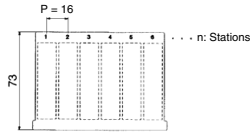
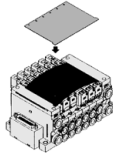


(Precautions)

1. The back pressure check valve assembly is assembly parts with a check valve structure. However, since the valve has slight air leakage, take precautions for the exhaust air not to be restricted at the exhaust port.
2. When a back pressure check valve is mounted, the effective area of the valve will decrease by about 20%.

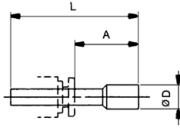
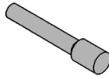
**Name plate [-N]
VVQ2000-N-Station (1 to Max. stations)**

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.
 Insert it into the groove on the side of the end plate and bend it as shown in the figure.
 * When ordering this option incorporated with a manifold, suffix "-N" to the end of the manifold part number.



**Blanking plug (For One-touch fittings)
KQ2P-□**

It is inserted into an unused cylinder port and SUP/EXH ports. Purchase orders are available in units of 10 pieces.

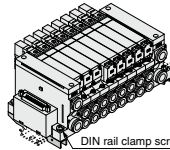


Dimensions

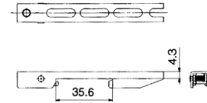
| Applicable fitting size ød | Model | A | L | D | Applicable fitting size ød | Model | A | L | D |
|-------------------------------|---------|------|----|----|-------------------------------|---------|------|----|------|
| 4 | KQ2P-04 | 16 | 32 | 6 | 5/32" | KQ2P-03 | 16 | 32 | 6 |
| 6 | KQ2P-06 | 18 | 35 | 8 | 1/4" | KQ2P-07 | 18 | 35 | 8.5 |
| 8 | KQ2P-08 | 20.5 | 39 | 10 | 5/16" | KQ2P-09 | 20.5 | 39 | 10 |
| 10 | KQ2P-10 | 22 | 43 | 12 | 3/8" | KQ2P-11 | 22 | 43 | 11.5 |

**DIN rail mounting bracket [-D,-D0,-D□]
VVQ2000-57A**

This bracket is used for mounting the manifold on the DIN rail.
 * When ordering this option incorporated with a manifold, suffix "-D" to the end of the manifold part number.



DIN rail clamp screw



1 set of DIN rail mounting brackets for 1 manifold includes 2 brackets.

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

Fittings & Tubing

Flow Control Equipment

Pressure Switches/ Pressure Sensors



Series 10-21-VQ1000/2000

Specific Product Precautions 1

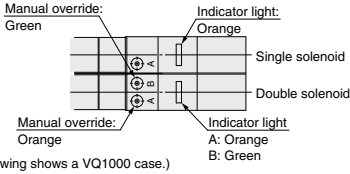
Be sure to read this before handling.

Refer to page 1382 for Safety Instructions and pages 677 to 683 for 3/4/5 Port Solenoid Valve Precautions.

Light/Surge Voltage Suppressor

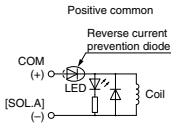
⚠ Caution

The lighting positions are concentrated on one side for both single solenoid type and double solenoid type. In the double solenoid type, A side and B side energization are indicated by two colors which match the colors of the manual overrides.

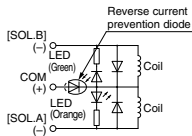


DC circuit diagram

Single solenoid



Double solenoid



Note) A-side energization:
A light (Orange) illuminates.
B-side energization:
B light (Green) illuminates.

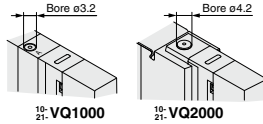
With wrong wiring prevention (stop diode) mechanism
With a surge absorption (surge absorption diode) mechanism

Manual Override

⚠ Warning

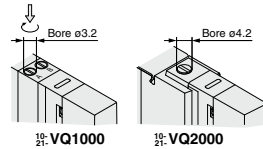
Without an electric signal for the solenoid valve the manual override is used for switching the main valve. Push type is standard. (Tool required) Locking type is semi-standard. (Tool required/Manual)

■ Push type (Tool required)



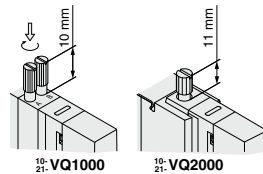
Push down on the manual override with a small screwdriver, etc. until it stops. Release the screwdriver and the manual override will return.

■ Locking type (Tool required) <Semi-standard>



Push down on the manual override with a flat head screwdriver until it stops. Turn it clockwise by 90° to lock it. Turn it counterclockwise to release it.

■ Locking type (Manual) <Semi-standard>



Push down on the manual override with a small flat screwdriver or with your fingers until it stops. Turn it clockwise by 90° to lock it. Turn it counterclockwise to release it.

⚠ Caution

Do not apply excessive torque when turning the locking type manual override. (0.1 N·m or less)



Series 10-21-VQ1000/2000

Specific Product Precautions 2

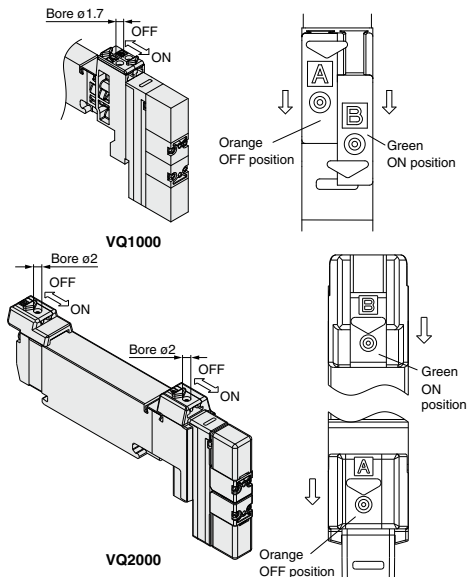
Be sure to read this before handling.

Refer to page 1382 for Safety Instructions and pages 677 to 683 for 3/4/5 Port Solenoid Valve Precautions.

Manual Override

Warning

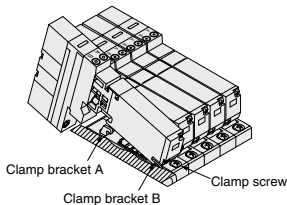
■ Slide locking type (Manual) <Semi-standard>



The manual override is locked by sliding it all the way to the pilot valve side (ON side) with a small flat head screwdriver or finger. Slide it to the fitting side (OFF side) to release it. In addition, it can also be used as a push type by using a screwdriver, etc., of $\phi 1.7$ or less. ($\phi 2$ or less for VQ2000).

How to Mount/Remove Solenoid Valves

Caution



Removing

1. Loosen the clamp screw until it turns freely. (The screw is captive.)
2. Lift the coil side of the valve body while pressing down slightly on the screw head and remove it from the clamp bracket B. When the screw head cannot be pressed easily, gently press the area near the manual override of the valve.

How to Mount/Remove Solenoid Valves

Caution

Mounting

1. Press down on the clamp screw. Clamp bracket A opens. Diagonally insert the hook on the valve end plate side into clamp B.
2. Press the valve body downward. (When the screw is released, it will be locked by clamp bracket A.)
3. Tighten the clamp screw. (Proper tightening torque: VQ1000, 0.25 to 0.35 N·m; VQ2000, 0.5 to 0.7 N·m.)

Caution

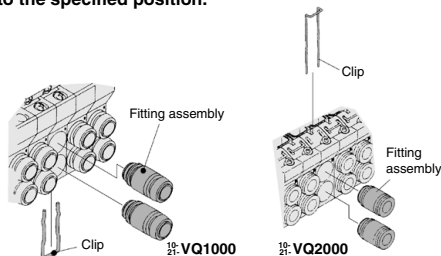
Dust on the sealing surface of the gasket or solenoid valve can cause air leakage.

Replacement of Cylinder Port Fittings

Caution

The cylinder port fittings are a cassette for easy replacement. The fittings are blocked by a clip. Take out the clip with a flat head screwdriver, etc., then replace the fittings.

For mounting, insert the fitting assembly until it strikes against the inside wall and then insert the clip to the specified position.



| Applicable tubing O.D. | Fitting assembly part no. | |
|--------------------------------|---------------------------|----------------|
| | 10-VQ1000 | 21-VQ2000 |
| Applicable tubing $\phi 3.2$ | VVQ1000-50A-C3 | — |
| Applicable tubing $\phi 4$ | VVQ1000-50A-C4 | VVQ1000-51A-C4 |
| Applicable tubing $\phi 6$ | VVQ1000-50A-C6 | VVQ1000-51A-C6 |
| Applicable tubing $\phi 8$ | — | VVQ1000-51A-C8 |
| M5 | VVQ1000-50A-M5 | — |
| Applicable tubing $\phi 1/8"$ | VVQ1000-50A-N1 | — |
| Applicable tubing $\phi 5/32"$ | VVQ1000-50A-N3 | VVQ1000-51A-N3 |
| Applicable tubing $\phi 1/4"$ | VVQ1000-50A-N7 | VVQ1000-51A-N7 |
| Applicable tubing $\phi 5/16"$ | — | VVQ1000-51A-N9 |

* Refer to "Manifold Optional Parts" on pages 572 for other types of fittings.

Caution

1. Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.
2. After screwing in the fittings, mount the M5 fitting assembly on the manifold base. (Tightening torque: 0.8 to 1.2 N·m)
3. Purchase orders are available in units of 10 pieces.



Series ¹⁰⁻~~21-~~VQ1000/2000

Specific Product Precautions 3

Be sure to read this before handling.

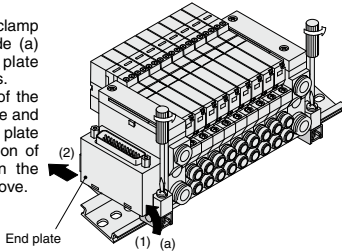
Refer to page 1382 for Safety Instructions and pages 677 to 683 for 3/4/5 Port Solenoid Valve Precautions.

How to Mount/Remove DIN Rail

Caution

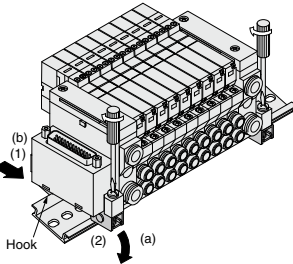
Removing

1. Loosen the clamp screw on side (a) of the end plate on both sides.
2. Lift side (a) of the manifold base and slide the end plate in the direction of (2) shown in the figure to remove.



Mounting

1. Hook side (b) of the manifold base on the DIN rail.
2. Press down side (a) and mount the end plate on the DIN rail. Tighten the clamp screw on side (a) of the end plate. The proper tightening torque for screws is 0.4 to 0.6 N·m.



IP65 Enclosure

Caution

Wiring connection for models conforming to IP65 should also have enclosures equivalent to or of stricter than IP65.

How to Calculate Flow Rate

Refer to the **WEB catalog** for obtaining the flow rate.