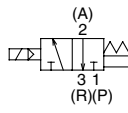
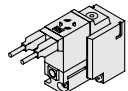
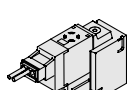
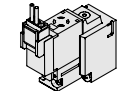
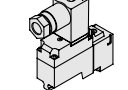
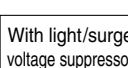
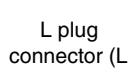
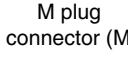


3 Port Solenoid Valve

Metal Seal/Rubber Seal, Body Ported

Series VQZ100/200/300

Series Variations

		Sonic conductance C [dm ³ /(s·bar)]		Type of actuation	Voltage	Electrical entry	With light/surge voltage suppressor	Manual override	
		Metal	Rubber						
Body Ported	3 port	VQZ100	Metal	Rubber	 N.C.	Grommet (G)  L plug connector (L)  M plug connector (M)  DIN terminal (Y)  (Except VQZ100)	With light/surge voltage suppressor  L plug connector (L)  M plug connector (M)  DIN terminal (YZ) (Except VQZ100)	Non-locking push type (Tool required) Locking type (Tool required)	
		VQZ200	1.3	1.7					(Option) 100 VAC 200 VAC 110 VAC 220 VAC
		VQZ300	2.4	3.0					(Except VQZ100)

- V100
- SY
- SYJ
- VK
- VZ
- VT
- VP
- VG
- VP
- S070
- VQ
- VKF
- VQZ**
- VZ
- VS
- VFN

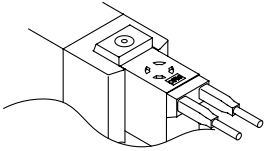
⚠ Precautions

Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 4-18-2.

Manual Override

⚠ Warning

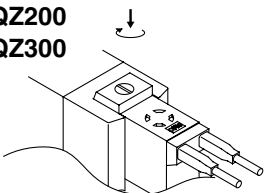
Without an electric signal for the solenoid valve the manual override is used for switching the main valve. Locking type (Tool required) is available as an option. Push type (Tool required)



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

Locking type (Tool required)

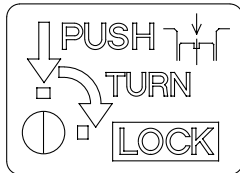
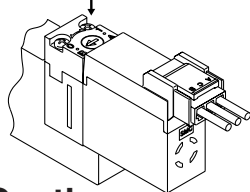
VQZ200
VQZ300



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

Locking type (Tool required)

VQZ100



If the manual override is turned by 180° clockwise and the ► mark is adjusted to 1, then pushed in the direction of an arrow (↓), it will be locked in the ON state. If the manual override is turned by 180° counterclockwise and ► mark is adjusted to 0, locking will be released and the manual override will return.

⚠ Caution

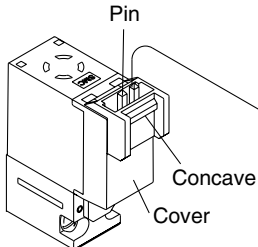
Do not apply excessive torque when turning the locking type manual override.

How to Use L/M Plug Connector

⚠ Caution

Attaching and detaching connectors

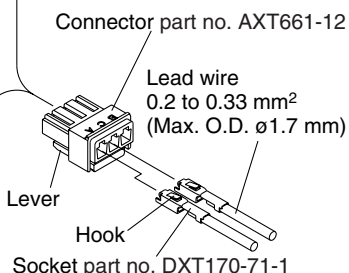
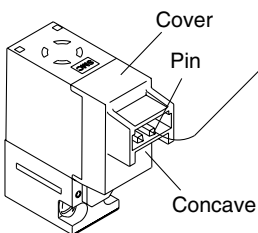
M plug connector



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

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

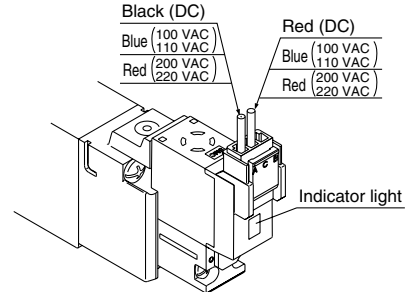
L plug connector



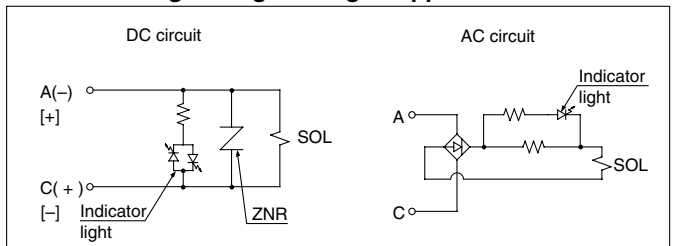
Refer to page 4-14-19 for part no. of plug connector assembly.

Connection and Electrical Circuit

Connect each lead wire to the power source side, because of no polarity for DC as well.



Circuit with Light/Surge Voltage Suppressor



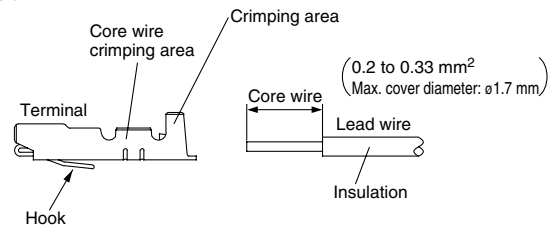
No polarity by adopting non-polar light.

Connection of Lead Wire

(Not necessary if ordering the lead wire pre-connected model.)

Crimping of lead wires and sockets

Peel 3.2 to 3.7 mm of the tip of lead wire, enter the core wires neatly into a socket and crimp it with a special crimp tool. Be careful so that the cover of lead wire does not enter into the crimping part.



Crimping tool: Part no. DXT170-75-1

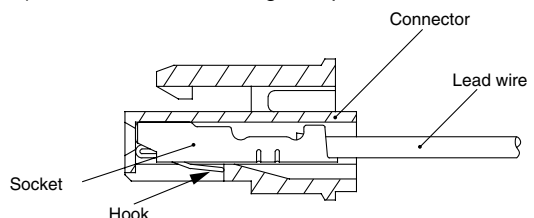
Attaching and detaching lead wires with sockets

Insert the sockets into the square holes of the connector (with ⊕ and ⊖ indication) and continue to push the sockets all the way in until the lock by hooking into the seats in the connector. (When they are pushed in, their hooks open and they are locked automatically.)

Then confirm that they are locked by lightly pulling on the lead wire.

Detaching

To remove the socket from the connector, pull out lead wire while depressing the hook of the socket with a fine screwdriver (or similar). If the socket is used again, spread the hook outward.



How to Wire DIN Terminal

Conforming to ISO#: DIN 43650 C (8 mm between pins) Connection

- Loosen the top screw and remove the connector housing from the terminal spades on the solenoid.
- Remove the housing screw and insert a screwdriver into the slot area on the underside of the DIN cap and carefully separate block and housing.
- Loosen the terminal screws (slotted screws) on the terminal block, insert the core of the lead wire into the terminal in accordance with the prescribed connection method, and attach securely with the terminal screws.
- Tighten the ground nut to secure the wire.

Change of electrical entry (Orientation)

After separating terminal block and housing, the cord entry direction can be changed by attaching the housing in the desired direction (4 directions in 90 increments).

* In the case of indicator light, avoid damaging the light with lead wire.

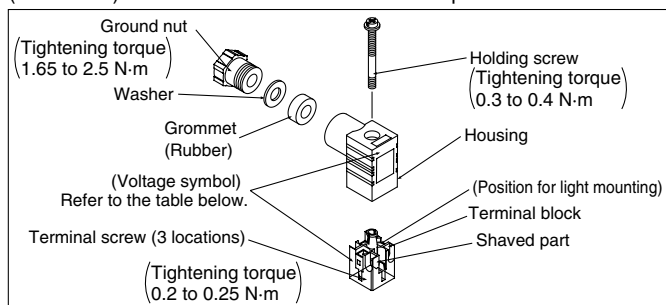
Precautions

Pull a connector out vertically, never at an angle.

Applicable cable

O.D.: $\phi 3.5$ to $\phi 7$

(Reference) 0.5 mm² 2 core and 3 core wires equivalent to JIS C 3306.



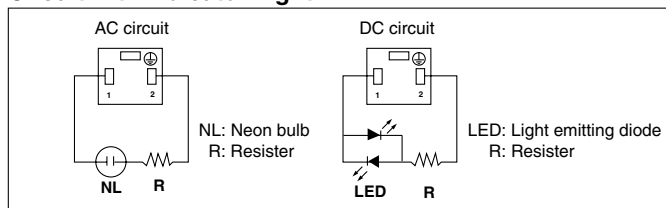
DIN Terminal Part No. (Conforming to DIN)

Without indicator light	AXT100-20-1
-------------------------	-------------

With indicator light

Rated voltage	Voltage symbol	Part no.
24 VDC	24V	AXT100-20-2-05
12 VDC	12V	AXT100-20-2-06
100 VAC	100V	AXT100-20-2-01
200 VAC	200V	AXT100-20-2-02
110 VAC	110V	AXT100-20-2-03
220 VAC	220V	AXT100-20-2-04

Circuit with Indicator Light

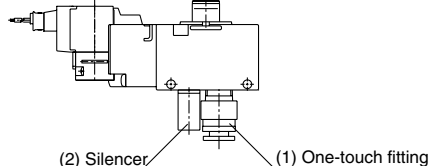


Fitting and Silencer Part No. for P, R Ports When Using Valve as an Individual Unit

Part no. for One-touch fitting for 1(P) port and Silencer for 3(R) port

Series	(1)	(2) For 3(R) port	
	One-touch fitting for 1(P) port	Silencer	One-touch fitting
VQZ100	KQH06-M5	AN120-M5-S	KJSO4-M5
VQZ200	KQH06-01S	INA-25-46	IN-457-32 (for $\phi 6$)
VQZ300	KQH08-02S	AN101-01	KQH08-01S

The diameter of the above fitting and silencer is the maximum diameter to in the EXH port.

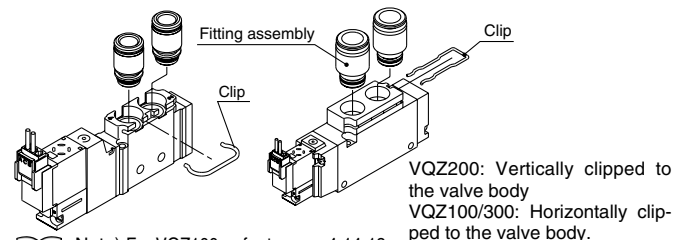


Changing the One-touch Fittings

The built-in fittings on the manifold can be changed easily.

Simply remove the corresponding valve and take out the fitting clip underneath.

Take out the clip with a screwdriver, etc., then replace the fittings. About mounting the fittings, after inserting the fitting until it stops, then put the clip into the prescribed position.



Note) For VQZ100, refer to page 4-14-13.

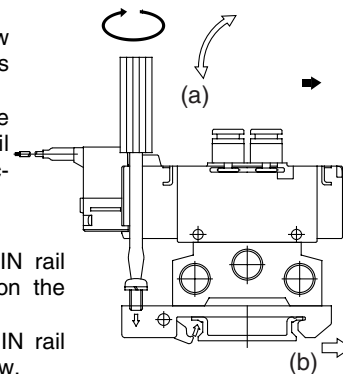
Precautions

When pulling the fitting assembly away from the valve base, remove the clip, then connect a tube or plug (KQP-□□) with the One-touch fitting and pull it out holding the tube or plug. Do not hold the release bushing to avoid damage.

DIN Rail Removing/Mounting

Removing

- Loosen the clamp screw on the (a) side of both ends of the manifold.
- Lift the (a) side of the manifold off the DIN rail and slide it in the direction of the (b) side.



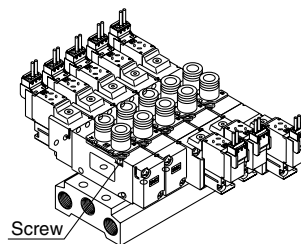
Mounting

- Catch the hook of the DIN rail bracket on the (b) side on the DIN rail.
- Push side (a) onto the DIN rail and tighten the clamp screw. The proper tightening torque for screws 0.3 to 0.4 N·m

Valve Mounting

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

Model	Proper tightening torque
VQZ100	0.13 to 0.19 N·m
VQZ200	0.25 to 0.35 N·m
VQZ300	0.5 to 0.7 N·m



How to Calculate the Flow Rate

For obtaining the flow rate, refer to page 4-1-6.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

3 Port Solenoid Valve



For details about the applicable products conforming to international standards, visit us at www.smcworld.com.

Metal/Rubber Seal, Body Ported, Plug Lead Unit Valve Single Unit

Series VQZ100/200/300

How to Order Valves: VQZ100

VQZ 1 1 5 — **5 M** — **C6** — **PR**

Series
1 VQZ100 Body width 10 mm

Type of actuation
1 N.C.

Body type

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) <input type="radio"/>	(3) <input type="radio"/>
K ⁽¹⁾	High pressure type	(1.0 W) <input type="radio"/>	
Y	Low wattage type	(0.5 W) <input type="radio"/>	
R ⁽²⁾	External pilot type	<input type="radio"/>	<input type="radio"/>

Note 1) Option
Note 2) For details about external pilot specifications, refer to page 4-14-18.
Note 3) For the power consumption of AC type, refer to page 4-14-6.
Note 4) When two or more symbols are specified, indicate them alphabetically.

Option

Option	Specification
Nil	None
F	With bracket

Port size {2(A) port}

C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
M5	M5 thread (Replaceable type)

Note) For the inch-size One-touch fittings, refer to page 4-14-18.

Manual override

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

Electrical entry

G: Grommet (DC specifications)	L: L plug connector With lead wire	LO: L plug connector Without connector	M: M plug connector With lead wire	MO: M plug connector Without connector
	With light/surge voltage suppressor	With light/surge voltage suppressor	With light/surge voltage suppressor	With light/surge voltage suppressor

Note) Standard lead wire length: 300 mm.

Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC
g ^{Note)}	Other

Note) For the special voltages, please consult with SMC.



For the One-touch fittings to be mounted on this valve and the silencer part no., refer to page 4-14-3.

3 Port Solenoid Valve (Valve Single Unit) Metal/Rubber Seal, Body Ported, Plug Lead Unit Series VQZ100/200/300

How to Order Valves: VQZ200/300

VQZ 2 1 2 5 M C6

Series

2	VQZ200 Body width 15 mm
3	VQZ300 Body width 18 mm

Type of actuation

1	N.C. (A) 2 3 1 (R)(P)	Metal seal	
	N.O. (A) 2 3 1 (R)(P)		
2	N.C. (A) 2 3 1 (R)(P)		Rubber seal
	N.O. (A) 2 3 1 (R)(P)		

Body type

2	Body ported
---	-------------

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	(3) ○
K ⁽¹⁾	High pressure type (Metal seal only)	(1.0 W) ○	
Y	Low wattage type	(0.5 W) ○	
R ⁽²⁾	External pilot type	○	○

- Note 1) Option
- Note 2) For details about external pilot specifications, refer to page 4-14-18.
- Note 3) For the power consumption of AC type, refer to page 4-14-6.
- Note 4) When two or more symbols are specified, indicate them alphabetically.

Option

Nil	None
F	With bracket

Port size {2(A) port}

Symbol	Port size	VQZ200	VQZ300
C4	One-touch fitting for ø4	○	—
C6	One-touch fitting for ø6	○	○
C8	One-touch fitting for ø8	—	○
C10	One-touch fitting for ø10	—	○
M5	M5 thread	○	—
02	Rc 1/4	—	○



Note) For the inch-size One-touch fittings, refer to page 4-14-18.

Manual override

<p>Nil: Non-locking push type (Tool required)</p>	<p>B: Locking type (Tool required)</p>
--	---

Electrical entry

G: Grommet (DC specifications)	L: L plug connector With lead wire	LO: L plug connector Without connector	M: M plug connector With lead wire	MO: M plug connector Without connector
	With light/surge voltage suppressor	With light/surge voltage suppressor	With light/surge voltage suppressor	With light/surge voltage suppressor
Y: DIN terminal	YO: DIN terminal Without connector	YZ: DIN terminal	YOS: DIN terminal Without connector	YS: DIN terminal
		With light/surge voltage suppressor	With surge voltage suppressor	With surge voltage suppressor

Note) Standard lead wire length: 300 mm.

Coil voltage

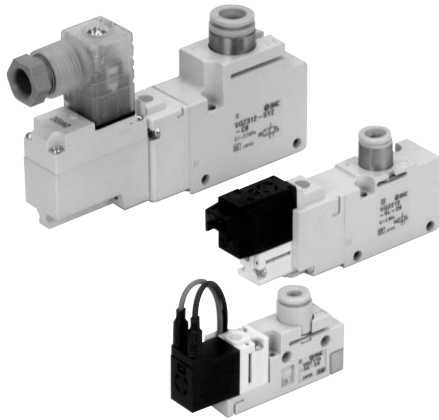
1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC
9	Other

Note) For the special voltages, please consult with SMC.



For the One-touch fittings to be mounted on this valve and the silencer part no., refer to page 4-14-3.

- V100
- SY
- SYJ
- VK
- VZ
- VT
- VP
- VG
- VP
- S070
- VQ
- VKF
- VQZ
- VZ
- VS
- VFN



Standard Specifications

		Metal seal	Rubber seal	VQZ100 (Poppet seal)	
Valve specifications	Valve construction	Air/Inert gas			
	Fluid	Air/Inert gas			
	Maximum operating pressure	0.7 MPa (High pressure type: 1.0 MPa)	0.7 MPa	0.7 MPa (High pressure type: 1.0 MPa)	
	Minimum operating pressure	0.1 MPa	0.15 MPa	0.15 MPa	
	Ambient and fluid temperature	-10 to 50°C ⁽¹⁾	-10 to 50°C ⁽¹⁾	-10 to 50°C ⁽¹⁾	
	Maximum operating frequency	20 Hz	5 Hz	20 Hz	
	Pilot valve EXH	Individual EXH		Common exhaust	
	Lubrication	Not required			
	Pilot valve manual override	Non-locking push type/Slotted locking type (tool required) as an option			
	Shock/Vibration resistance ⁽²⁾	150/30 m/s ²			
Enclosure		Dustproof			
Electricity specifications	Coil rated voltage	12, 24 VDC and 100, 110, 200, 220 VAC			
	Allowable voltage fluctuation	±10% of rated voltage			
	Coil insulation type	Equivalent to class B			
	Power consumption (Current)	24 VDC	1 W DC (42 mA), 0.5 W DC (21 mA)		
		12 VDC	1 W DC (83 mA), 0.5 W DC (42 mA)		
		100 VAC	Inrush 0.5 VA (5 mA), Holding 0.5 VA (5 mA)		
		110 VAC	Inrush 0.55 VA (5 mA), Holding 0.55 VA (5 mA)		
200 VAC		Inrush 1.0 VA (5 mA), Holding 1.0 VA (5 mA)			
220 VAC	Inrush 1.1 VA (5 mA), Holding 1.1 VA (5 mA)				

- Note 1) Use dry air to prevent condensation when operating at low temperatures.
- Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)
- Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Flow Characteristics/Weight

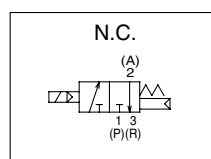
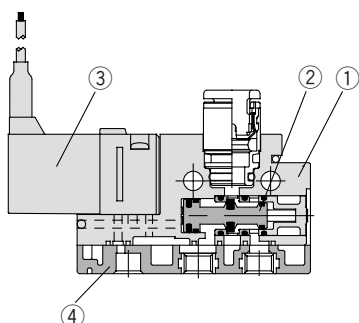
Series	Valve construction	Model		Flow characteristics						Response time (ms) ⁽¹⁾			Weight ⁽²⁾ (g)
				1 → 2 (P → A)			2 → 3 (A → R)			Standard type: 1 W	High pressure type: 1.0 W Low wattage type: 0.5 W	AC	
				C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv				
VQZ100	N.C. valve	Poppet	VQZ115	0.59	0.44	0.17	0.56	0.30	0.14	10 or less	13 or less	22 or less	25
VQZ200	N.C. valve	Metal seal	VQZ212	1.2	0.21	0.30	1.3	0.24	0.33	14 or less	18 or less	34 or less	58
		Rubber seal	VQZ232	1.6	0.33	0.39	1.7	0.37	0.45	15 or less	20 or less	36 or less	
	N.O. valve	Metal seal	VQZ222	1.2	0.25	0.31	1.3	0.20	0.31	14 or less	18 or less	34 or less	
		Rubber seal	VQZ242	1.6	0.36	0.40	1.7	0.36	0.45	15 or less	20 or less	36 or less	
VQZ300	N.C. valve	Metal seal	VQZ312	2.7	0.18	0.62	2.4	0.28	0.56	17 or less	22 or less	34 or less	92
		Rubber seal	VQZ332	3.5	0.34	0.87	3.0	0.33	0.72	25 or less	33 or less	57 or less	
	N.O. valve	Metal seal	VQZ322	2.6	0.21	0.59	2.2	0.16	0.49	17 or less	22 or less	34 or less	
		Rubber seal	VQZ342	3.5	0.38	0.88	2.9	0.27	0.69	25 or less	33 or less	57 or less	

- Note 1) Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa; with light/surge voltage suppressor; clean air) The response time is subject to the pressure and the air quality. Response time values will change depending on pressure and air quality.
- Note 2) Weight without sub-plate

3 Port Solenoid Valve (Valve Single Unit) Metal/Rubber Seal, Body Ported, Plug Lead Unit Series VQZ100/200/300

Construction

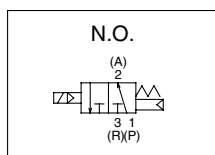
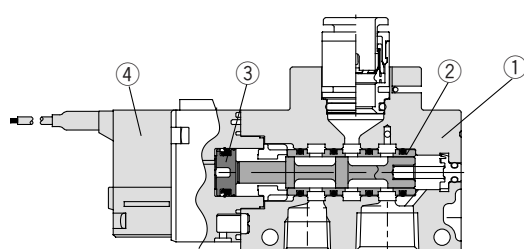
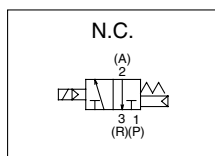
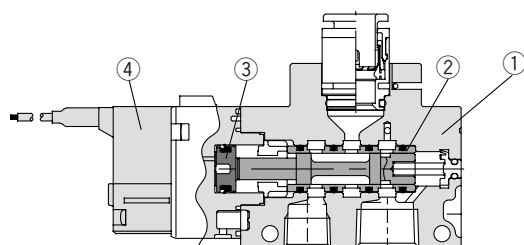
VQZ100 Poppet type



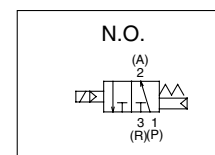
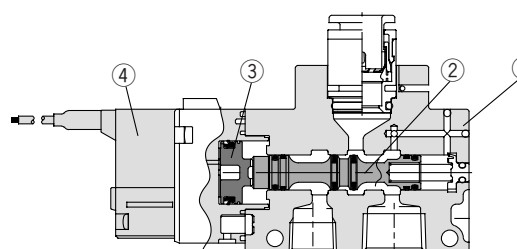
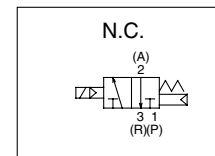
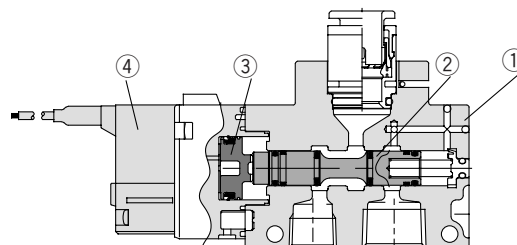
Component Parts

No.	Description	Material	Note
①	Body	Resin	
②	Spool valve	Aluminum/HNBR	
③	Pilot valve assembly	—	
④	P/R plate	Resin/Aluminum	VQZ100-12A (Standard) VQZ100-12B (External pilot)

VQZ200/300 Metal seal type



Rubber seal type



Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted	
②	Spool/Sleeve	Stainless steel	Metal seal
	Spool valve	Aluminum/HNBR	Rubber seal
③	Piston	Resin	
④	Pilot valve assembly	—	



For "How to Order Pilot Valve Assembly", refer to page 4-14-19.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

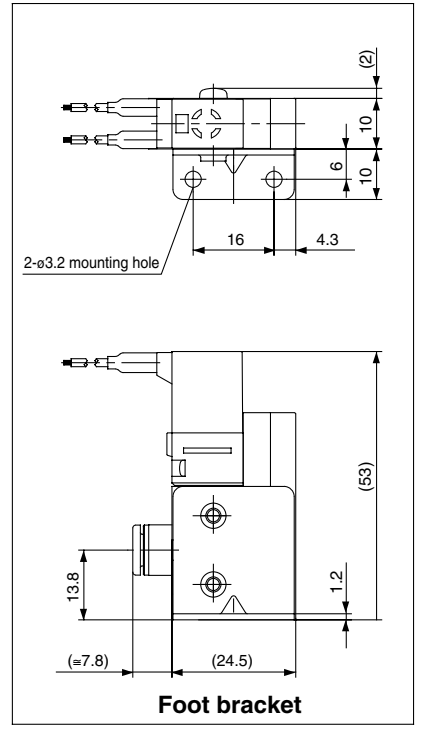
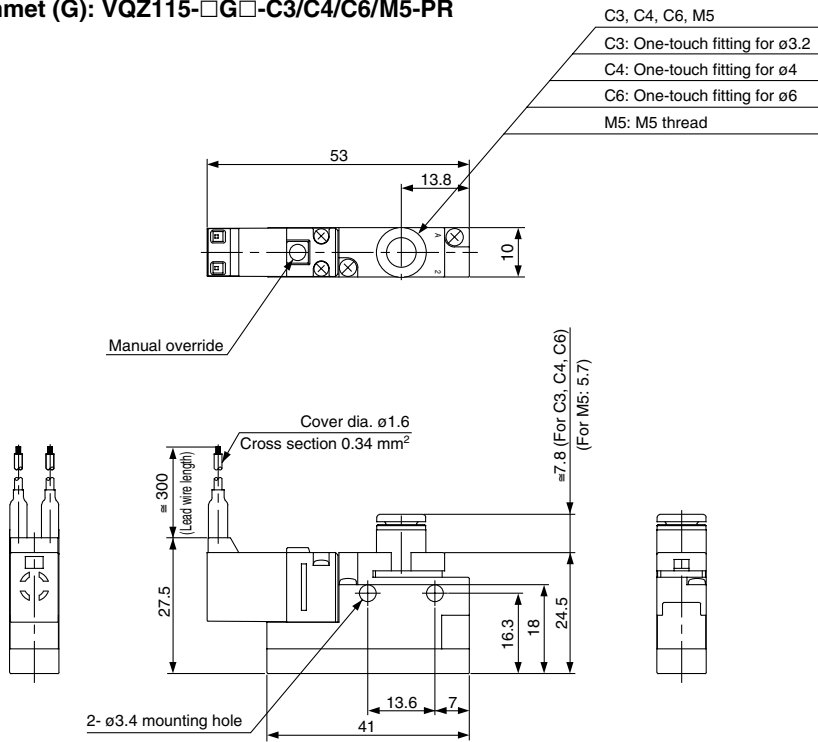
VFN

Series VQZ100/200/300

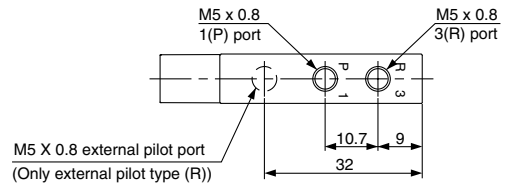
Dimensions: VQZ100

Single unit

Grommet (G): VQZ115-□G□-C3/C4/C6/M5-PR

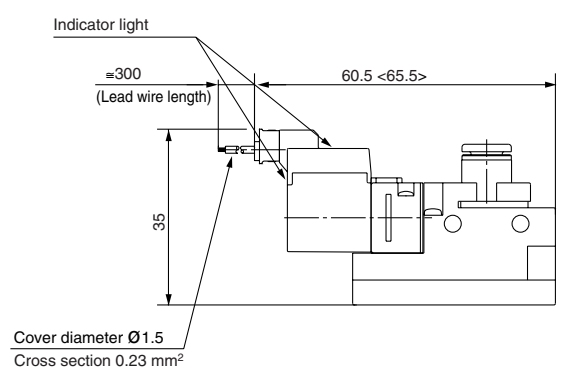


For the bracket assembly model, refer to page 4-14-19.

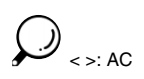
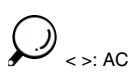
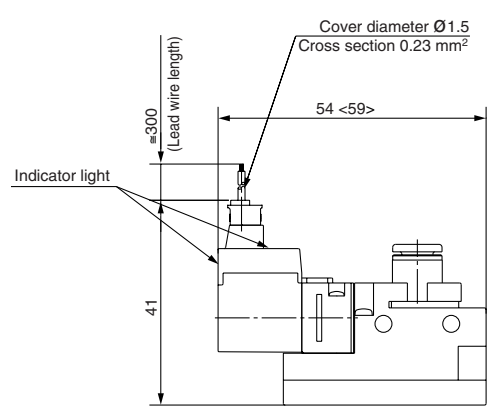


For the One-touch fittings for P/R port and silencer model no., refer to page 4-14-3.

L plug connector (L): VQZ115-□L□-C3/C4/C6/M5-PR



M plug connector (M): VQZ115-□M□-C3/C4/C6/M5-PR

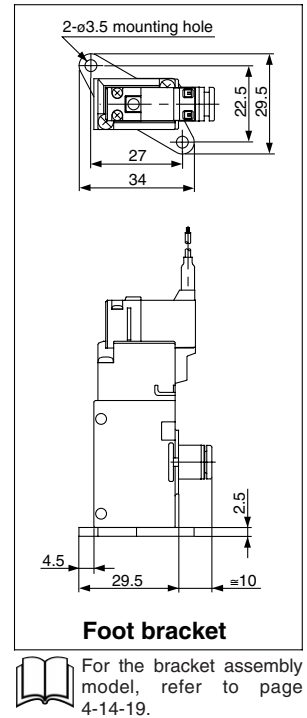
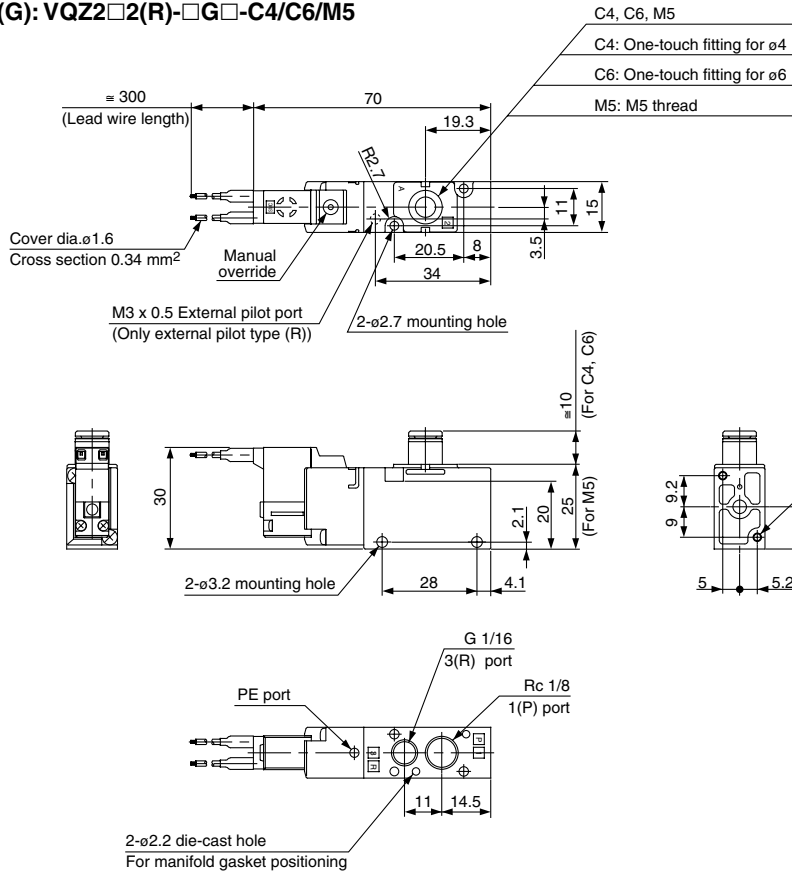


3 Port Solenoid Valve (Valve Single Unit)
Metal/Rubber Seal, Body Ported, Plug Lead Unit Series VQZ100/200/300

Dimensions: VQZ200

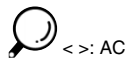
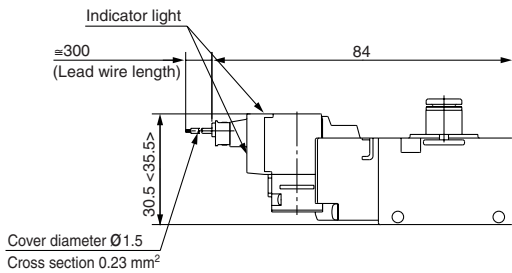
Single unit

Grommet (G): VQZ2□2(R)-□G□-C4/C6/M5

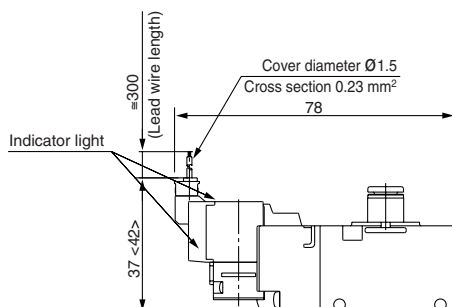


For the One-touch fittings for P/R port and silencer model no., refer to page 4-14-3.

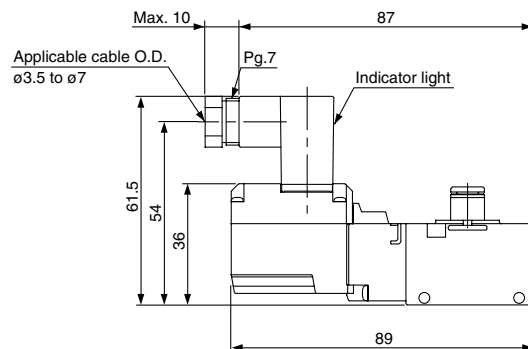
L plug connector (L): VQZ2□2(R)-□L□-C4/C6/M5



M plug connector (M): VQZ2□2(R)-□M□-C4/C6/M5



DIN terminal (Y): VQZ2□2(R)-□Y□-C4/C6/M5



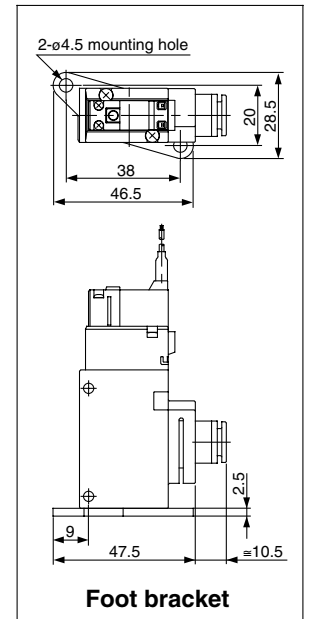
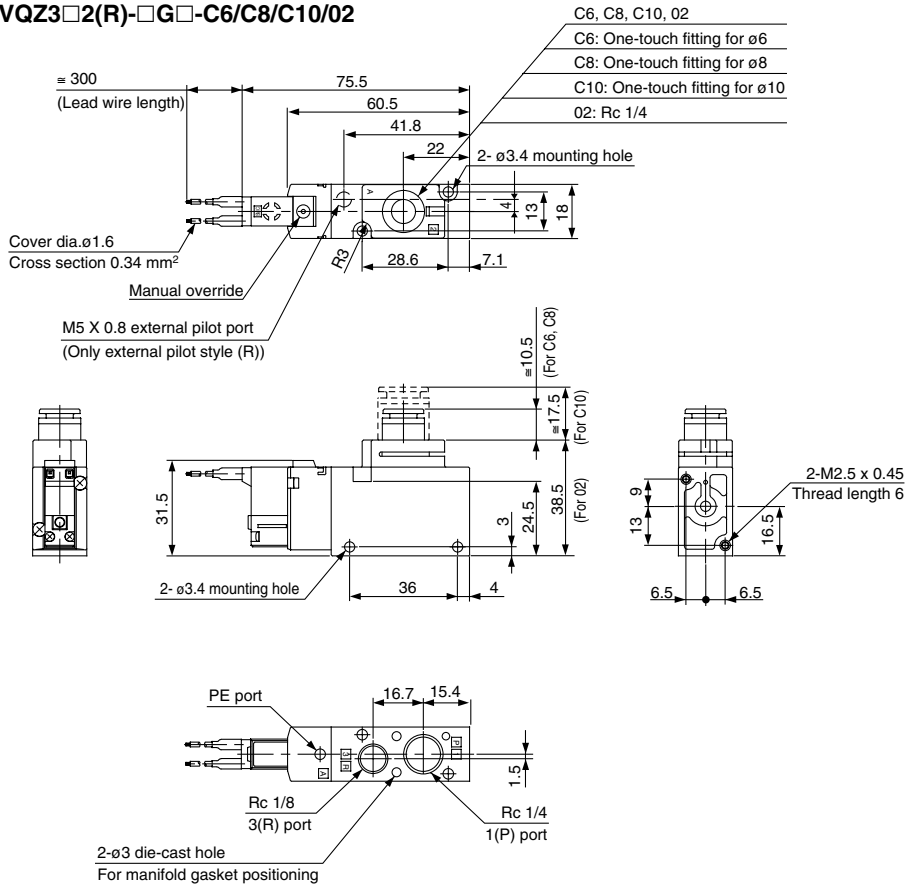
- V100
- SY
- SYJ
- VK
- VZ
- VT
- VP
- VG
- VP
- S070
- VQ
- VKF
- VQZ**
- VZ
- VS
- VFN

Series VQZ100/200/300

Dimensions: VQZ300

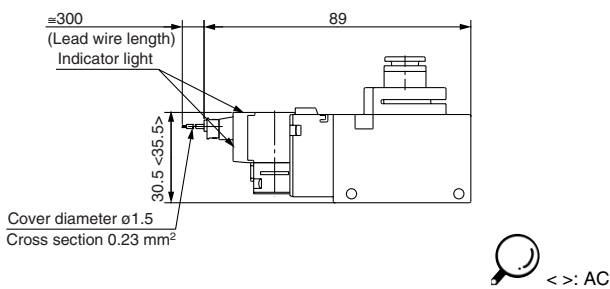
Single unit

Grommet (G): VQZ3□2(R)-□G□-C6/C8/C10/02

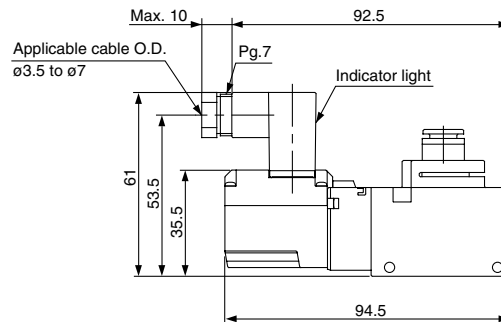


For the bracket assembly model, refer to page 4-14-19.

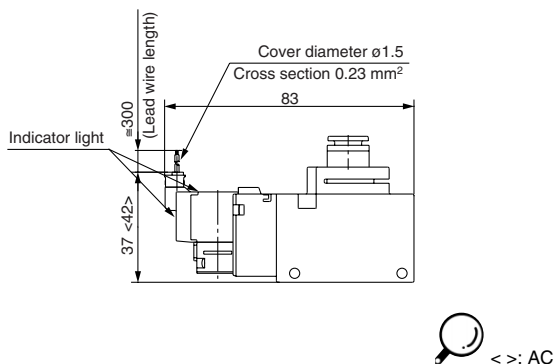
L plug connector (L): VQZ3□2(R)-□L□-C6/C8/C10/02



DIN terminal (Y): VQZ3□2(R)-□Y□-C6/C8/C10/02



M plug connector (M): VQZ3□2(R)-□M□-C6/C8/C10/02



3 Port Solenoid Valve

Metal/Rubber Seal, Body Ported, Plug Lead Unit Manifold (Connector Kit)

Series VQZ100/200/300

How to Order Manifold: VQZ100

VV3QZ 1 2 — 08 C — D

Series

1	VQZ100
---	--------

Manifold

2	Body ported
---	-------------

Stations

02	2 stations
⋮	⋮
20	20 stations

Kit type

C	Connector
---	-----------

Option

Nil	None
D	DIN rail mounting style (With DIN rail in standard length)
DO ^(Note)	DIN rail mounting style (Without DIN rail)
R	External pilot specifications

Note) Order DIN rail separately.
For the DIN rail model number, refer to page 4-14-17.

How to Order Valves: VQZ100

VQZ 1 1 5 — 5 M — C3

Series

1	VQZ100 Body width 10 mm
---	-------------------------

Type of actuation

1	N.C. (Normal Closed)
---	----------------------

Body type

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○ ⁽³⁾	○ ⁽³⁾
K ⁽¹⁾	High pressure type	(1.0 W) ○	—
Y	Low wattage type	(0.5 W) ○	—
R ⁽²⁾	External pilot type	○	○

Note 1) Option
Note 2) For details about external pilot specifications, refer to page 4-14-18.
Note 3) For the power consumption of AC type, refer to page 4-14-6.
Note 4) When two or more symbols are specified, indicate them alphabetically.

Port size {2(A) port}

C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
M5	M5 thread (Replaceable type)

Note) For the inch-size One-touch fittings, refer to page 4-14-18.

Manual override

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

Electrical entry

Symbol	Electrical entry	Light/Surge voltage suppressor
G	Grommet (DC specifications)	No
L	L plug connector with lead wire	Yes
LO	L plug connector without connector	
M	M plug connector with lead wire	
MO	M plug connector without connector	

Note) Standard lead wire length: 300 mm.

Coil voltage

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

Note) For the special voltages, please consult with SMC.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

How to Order Manifold: VQZ200/300

VV3QZ **2** **2** — **08** **C** — **D**

Series

2	VQZ200
3	VQZ300

Manifold

2	Body ported
---	-------------

Stations

02	2 stations
⋮	⋮
20	20 stations

Kit type

C	Connector
---	-----------

Option

Nil	None
D	DIN rail mounting style (With DIN rail in standard length)
DO ^{Note)}	DIN rail mounting style (Without DIN rail)

Note) Order DIN rail separately.
For the DIN rail model number, refer to page 4-14-17.

How to Order Valves: VQZ200/300

VQZ **2** **1** **2** — **5** **M** —

Series

2	VQZ200 Body width 15 mm
3	VQZ300 Body width 18 mm

Type of actuation

1	N.C., Metal seal
2	N.O., Metal seal
3	N.C., Rubber seal
4	N.O., Rubber seal

Body type

2	Body ported
---	-------------

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	○ ⁽³⁾
K ⁽¹⁾	High pressure type (Metal seal only)	(1.0 W) ○	—
Y	Low wattage type	(0.5 W) ○	—
R ⁽²⁾	External pilot type	○	○

Note 1) Option
Note 2) For details about external pilot specifications, refer to page 4-14-18.

Note 3) For the power consumption of AC type, refer to page 4-14-6.

Note 4) When two or more symbols are specified, indicate them alphabetically.

Port size {2(A) port}

Symbol	Port size	VQZ200	VQZ300
C4	One-touch fitting for ø4	○	—
C6	One-touch fitting for ø6	○	○
C8	One-touch fitting for ø8	—	○
C10	One-touch fitting for ø10	—	○
M5	M5 thread	○	—
02	Rc 1/4	—	○

Note) For the inch-size One-touch fittings, refer to page 4-14-18.

Manual override

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

Electrical entry

Symbol	Electrical entry	Light/Surge voltage suppressor
G	Grommet (DC specifications)	No
L	L plug connector with lead wire	Yes
LO	L plug connector without connector	
M	M plug connector with lead wire	
MO	M plug connector without connector	
Y	DIN terminal	No
YO	DIN terminal without connector	
YZ	DIN terminal	Yes
YS	DIN terminal	(W/o indicator light) Yes
YOS	DIN terminal without connector	(W/o indicator light) Yes

Note) Standard lead wire length: 300 mm.

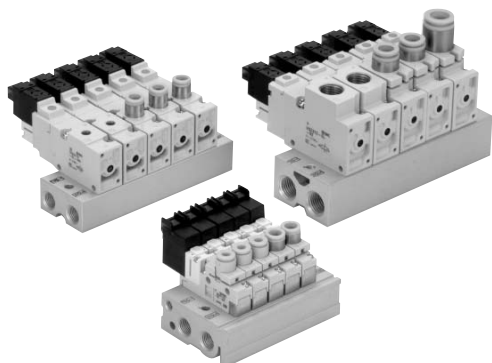
Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC
9 ^{Note)}	Other

Note) For the special voltages, please consult with SMC.

3 Port Solenoid Valve (Manifold: Connector Kit) Metal/Rubber Seal, Body Ported, Plug Lead Unit Series VQZ100/200/300

Manifold Specifications



Series	Base model	Porting specifications			Applicable valve model	Applicable stations	Manifold base weight (g)
		Port location	Port size				
			1(P), 3(R)	2(A)			
VQZ100	VV3QZ12-□□□	Top	Rc 1/8	C3 (For ø3.2) C4 (For ø4) C6 (For ø6) M5 (M5 thread)	VQZ115	2 to 20 stations	2 stations: 83 Addition per/station: 19
VQZ200	VV3QZ22-□□□	Top	Rc 1/8	C4 (For ø4) C6 (For ø6) M5 (M5 thread)	VQZ2□2	2 to 20 stations	2 stations: 68 Addition per/station: 20
VQZ300	VV3QZ32-□□□	Top	Rc 1/4	C6 (For ø6) C8 (For ø8) C10 (For ø10) Rc 1/4	VQZ3□2	2 to 20 stations	2 stations: 114 Addition per/station: 37

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

How to Order Valve Manifold Assembly (Example)

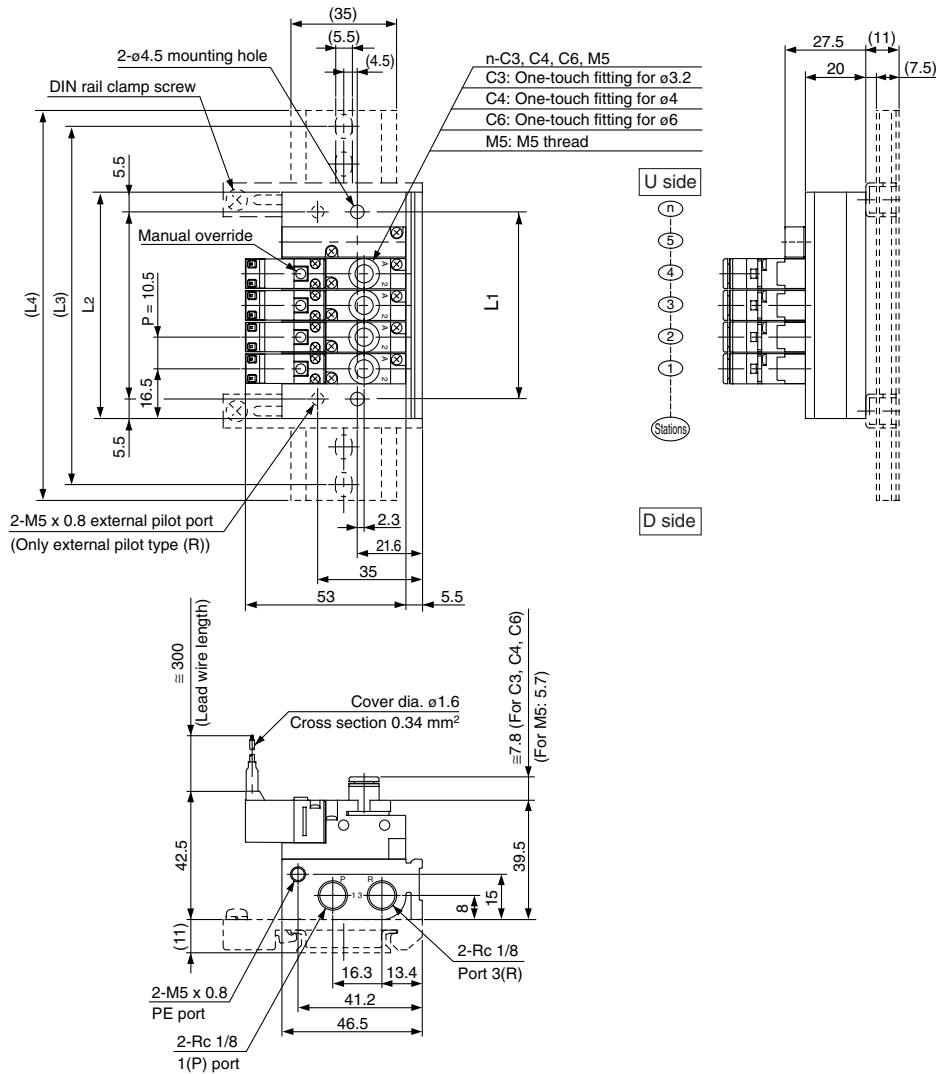
VV3QZ22-05C..... 1 set (C kit 5 stations manifold base)
 *VVQZ200-10A-2..... 1 set (Blanking plate assembly)
 *VQZ212-5M-C6..... 4 sets (N.C. type part no.)

→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.
 → Enter in order starting from the first station on the D side.

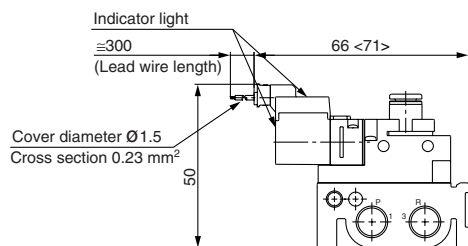
Specify the part numbers for valves and options together beneath the manifold base part number.
 When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

Dimensions: VQZ100

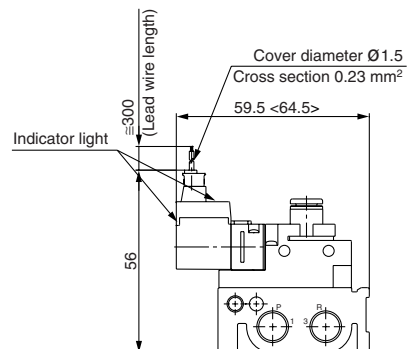
VV3QZ12- Stations C
Grommet (G)



L plug connector (L)



M plug connector (M)



Dimensions

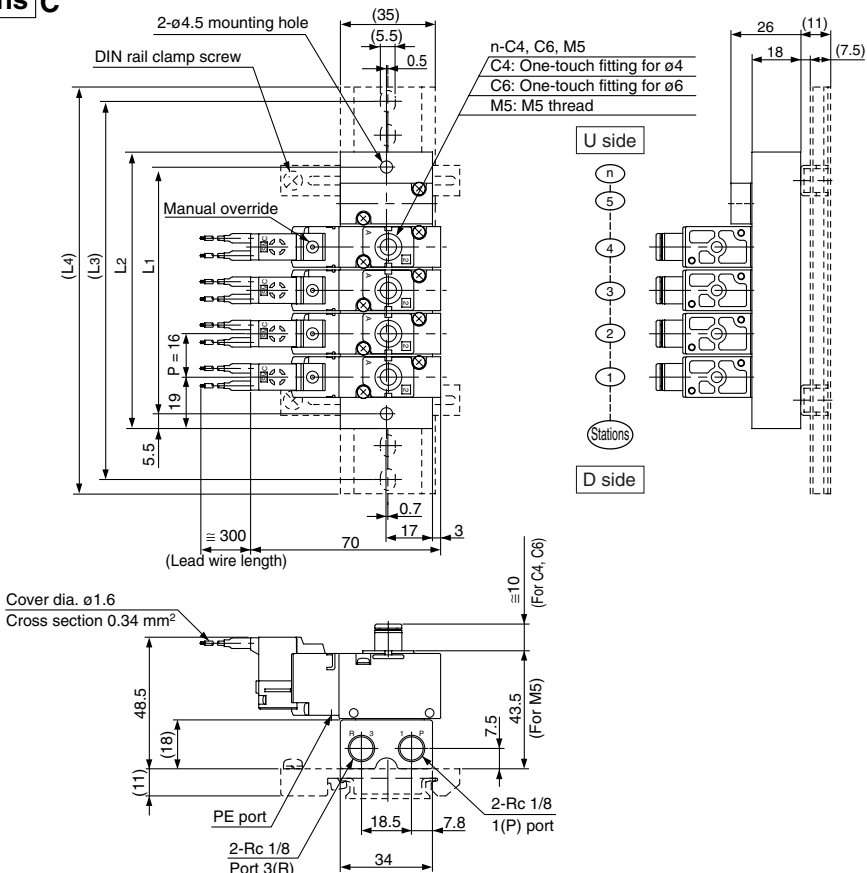
Formula $L1 = 10.5n + 9.5$ $L2 = 10.5n + 22.5$ n: Stations (Maximum 20 stations)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5
L2	43.5	54	64.5	75	85.5	96	106.5	117	127.5	138	148.5	159	169.5	180	190.5	201	211.5	222	232.5
L3	75	75	87.5	100	112.5	125	137.5	137.5	150	162.5	175	187.5	200	200	212.5	225	237.5	250	262.5
L4	85.5	85.5	98	110.5	123	135.5	148	148	160.5	173	185.5	198	210.5	210.5	223	235.5	248	260.5	273

3 Port Solenoid Valve (Manifold: Connector Kit) Metal/Rubber Seal, Body Ported, Plug Lead Unit Series VQZ100/200/300

Dimensions: VQZ200

VV3QZ22- Stations C Grommet (G)



V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

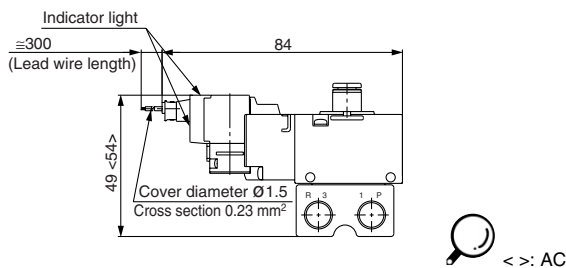
VQZ

VZ

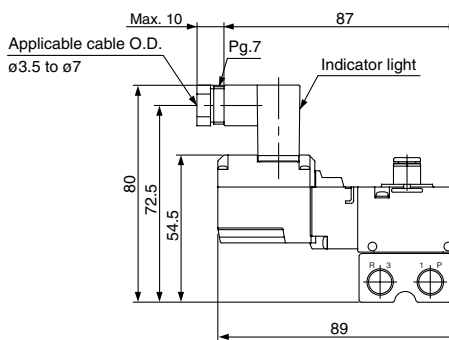
VS

VFN

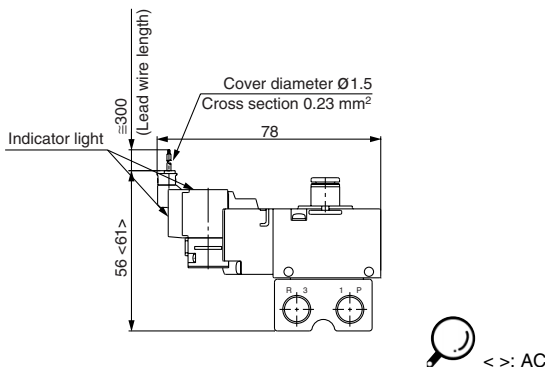
L plug connector (L)



DIN terminal (Y)



M plug connector (M)



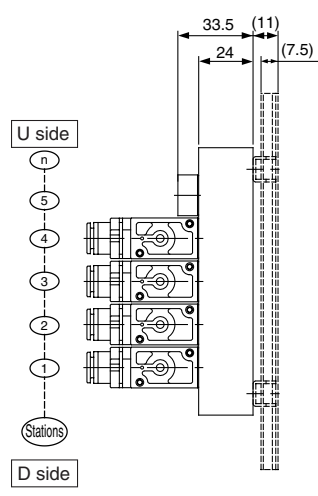
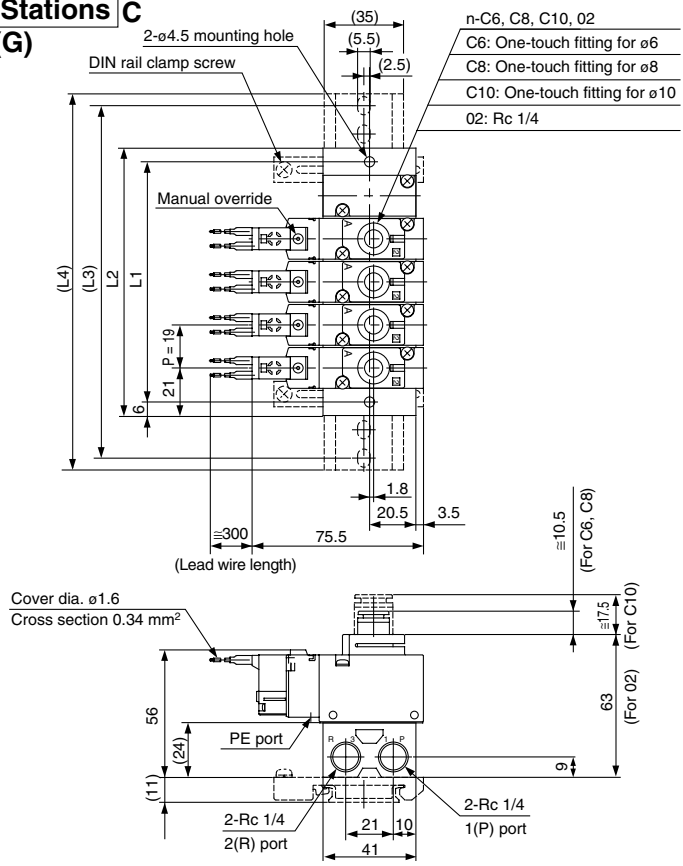
Dimensions

Formula L1 = 16n + 11 L2 = 16n + 22 n: Stations (Maximum 20 stations)

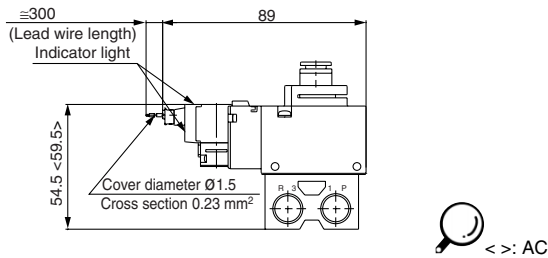
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331
L2	54	70	86	102	118	134	150	166	182	198	214	230	246	262	278	294	310	326	342
L3	75	100	112.5	125	137.5	162.5	175	187.5	212.5	225	237.5	250	275	287.5	300	325	337.5	350	362.5
L4	85.5	110.5	123	135.5	148	173	185.5	198	223	235.5	248	260.5	285.5	298	310.5	335.5	348	360.5	373

Dimensions: VQZ300

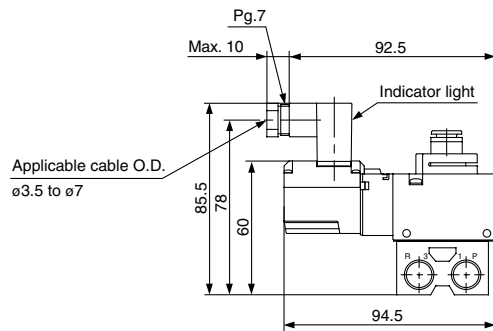
VV3QZ32- Stations C
Grommet (G)



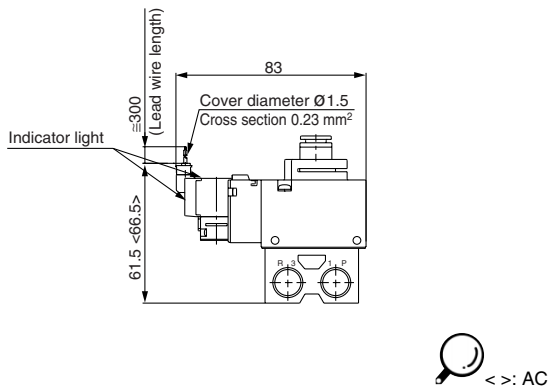
L plug connector (L)



DIN terminal (Y)



M plug connector (M)



Dimensions

Formula L1 = 19n + 11 L2 = 19n + 23 n: Stations (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		49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391
L2		61	80	99	118	137	156	175	194	213	232	251	270	289	308	327	346	365	384	403
L3		87.5	100	125	137.5	162.5	187.5	200	225	237.5	262.5	275	300	312.5	337.5	350	375	387.5	412.5	425
L4		98	110.5	135.5	148	173	198	210.5	235.5	248	273	285.5	310.5	323	348	360.5	385.5	398	423	435.5

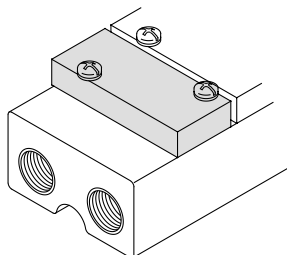
3 Port Solenoid Valve (Manifold: Connector Kit) Metal/Rubber Seal, Body Ported, Plug Lead Unit Series VQZ100/200/300

Manifold Option

Blanking plate

- VVQZ100-10A-5 (For VQZ100)
- VVQZ200-10A-2 (For VQZ200)
- VVQZ300-10A-2 (For VQZ300)

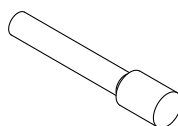
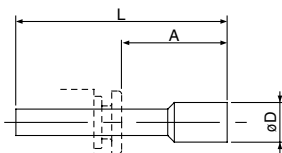
It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.



Blanking plug

- KQP-23-X19
- KQP-04-X19
- KQP-06-X19
- KQP-08-X19
- KQP-10-X19

● Color: White



Dimensions

Applicable fittings fitting ød	Model	A	L	D
3.2	KQP-23-X19	16	31.5	3.2
4	KQP-04-X19	16	32	6
6	KQP-06-X19	18	35	8
8	KQP-08-X19	20.5	39	10
10	KQP-10-X19	22	43	12

DIN rail

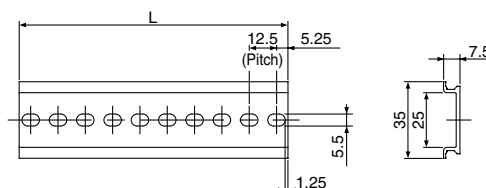
AXT100-DR-□

* As for □, enter the number from the DIN rail dimensions table.
For L dimension, refer to the dimensions of each kit.

Each manifold can be mounted on a DIN rail.

Order it by indicating an option symbol for DIN rail mounting style, -D.

In this case, a DIN rail which is approx. 30 mm longer than the manifold with the specified number of stations is attached.



L Dimension

$$L = 12.5n + 10.5$$

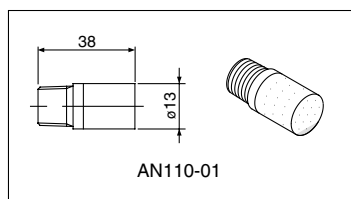
No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L dimension	23	35.5	48	60.5	73	85.5	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5

No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
L dimension	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

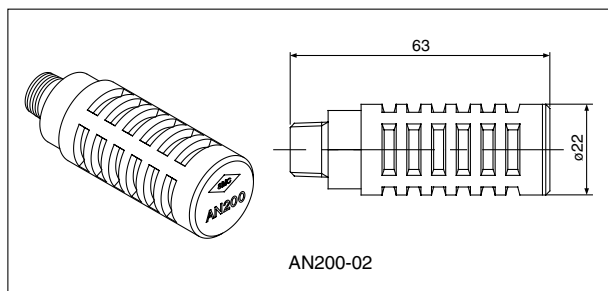
Silencer

(For manifold EXH port)

Silencer is installed in the EXH port.



AN110-01



AN200-02

Dimensions

Model	Silencer part no.
VQZ100	AN110-01
VQZ200	AN110-01
VQZ300	AN200-02



Refer to page 4-14-3 for silencer for single valve unit.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

Series VQZ Body Ported

Option

External Pilot Specifications

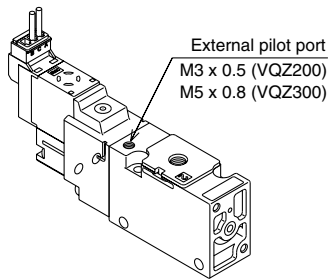
External pilot specifications are used when the operating pressure is below the minimum operating pressure 0.1 to 0.15 MPa or when valve is used for a vacuum application.

Order a valve by adding the external pilot specifications [R] to the part number.

How to order valves

VQZ212R—5M—C6

External pilot specifications



Pressure Specifications

Series		VQZ100 ⁽²⁾	VQZ200/300
External pilot pressure range ⁽¹⁾	Metal seal	—	0.1 to 0.7 MPa
	Rubber seal (VQZ100: Poppet)	0.2 to 0.7 MPa	0.15 to 0.7 MPa
Operating pressure range ⁽¹⁾		-100 kPa to 0.7 MPa	

Note 1) For the high pressure type, the upper limit of max. operating pressure and external pressure range is 1 MPa.

Note 2) If VQZ100 is applied in vacuum, vacuum from 1(P) port. When finishing the vacuum application, supply pressure from 3(R) port. Ensure the burst pressure is set to be less than half of the external pilot pressure.

Inch-size One-touch Fittings and Option Threads

Inch-size One-touch fittings and NPT/NPTF/G threads are available.

How to order valves

VQZ212—5M—N7 T

Thread type
(Cylinder port and
1(P), 3(R) port)

Nil	Rc
N	NPT
T	NPTF
F	G

Note 1) R port of VQZ200 is only PF 1/16.

Note 2) Except VQZ100

Cylinder port

Symbol	N1	N3	N7	N9	N11	M5	O2
Applicable tubing O.D. (Inch)	∅1/8"	∅5/32"	∅1/4"	∅5/16"	∅3/8"	M5 thread	1/4" thread
2(A) port	VQZ100	●	●	—	—	●	—
	VQZ200	—	●	●	—	—	—
	VQZ300	—	—	●	●	●	●

Note) Metric size of One-touch fittings (C□) are also available.

How to order manifold

(Suffix each symbol to the end of part number.)

VV3QZ22—05C—00T

Thread type
1(P), 3(R) port

Nil	Rc
00N	NPT
00T	NPTF
00F	G

Dusttight/Low Jetproof Type (IP65)

DIN terminal is available with dusttight/low jetproof (IP65) type.

How to order valves

(Applicable to VQZ200/300 rubber seal with the exception of the external pilot type)

VQZ332—5YZB W—02

IP65 compliant

Nil	No (Standard)
W ^{Note)}	Compliant

Note) The pilot exhaust of the IP65 valves is common with main valve exhaust. (The standard valve has an individual exhaust for the pilot valve.)

Replacement Parts

One-touch Fitting Assembly (For cylinder port)

Fitting size	C3	C4	C6	C8	C10	M5 (VQZ100 only)
VQZ100/200	VVQ1000-50A-C3	VVQ1000-50A-C4	VVQ1000-50A-C6	—	—	VVQ1000-50A-M5
VQZ300	—	—	VVQ1000-51A-C6	VVQ1000-51A-C8	VVQ1000-51A-C10	—

Note) Purchasing order is available in units of 10 pieces.

<Plug connector assembly>

For AC

AXT661-14A- □

For 100/110 VAC

AXT661-31A- □

For 200/220 VAC

AXT661-34A- □

Only connector and sockets (3 pcs.)

AXT661-12A

● Lead wire length

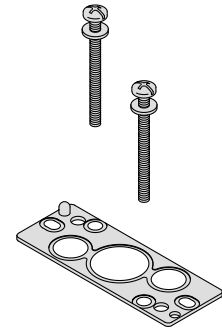
Nil	300 mm
6	600 mm
10	1000 mm
20	2000 mm
30	3000 mm
50	5000 mm

Standard wire length of valve with plug connector is 300 mm. When requiring valve with 600 mm length lead wire specify the model number of valve without plug connector and plug connector assembly.

Gasket and Screw Assembly Part No.

	Part no.
VQZ100	VQZ100-GS-2
VQZ200	VQZ200-GS-2
VQZ300	VQZ300-GS-2

Note) Above part number consists of 10 units. Each unit has one gasket and two screws. Purchasing order is available in units of 10 pieces.



<Pilot valve assembly>

VQ11 1 □ — 5 **G**

Series ●

0	VQZ100
1	VQZ200/300

Function ●

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	○
K ⁽¹⁾	High pressure type (Metal seal, VQZ100 only)	(1.0 W) ○	—
Y	Low wattage type	(0.5 W) ○	—



Note 1) Option
Note 2) When two or more symbols are specified, indicate them alphabetically.

Coil voltage ●

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC
9 ^{Note)}	Other

Note) For the special voltages, please consult with SMC.

● Electrical entry

Symbol	Electrical entry	Light/Surge voltage suppressor
G	Grommet (DC specifications)	No
L	L plug connector with lead wire	Yes
LO	L plug connector without connector	
M	M plug connector with lead wire	
MO	M plug connector without connector	No
Y ⁽¹⁾	DIN terminal	
YO ⁽¹⁾	DIN terminal without connector	
YZ ⁽¹⁾	DIN terminal with light/surge voltage suppressor	Yes
YS ⁽¹⁾	DIN terminal with surge voltage suppressor	Yes (W/o indicator light)
YOS ⁽¹⁾	DIN terminal with surge voltage suppressor Without connector	Yes (W/o indicator light)



Note 1) DIN is applicable to VQZ200 and 300.
Note 2) Electrical entry of pilot valve for VQZ100 ("L" and "M") is the opposite side of valve body part number.

Valve model	Pilot valve model
VQZ115 □-□L□	VQ110 □-□M□
VQZ115 □-□M□	VQ110 □-□L□

Bracket Assembly Part No.

	Part no.	Tightening torque (N·m) ^{Note)}
VQZ100	VQZ100-FB	0.45 to 0.55
VQZ200	VQZ200-FB	0.25 to 0.35
VQZ300	VQZ300-FB	0.25 to 0.35



Note) Tightening torque for mounting brackets on the valve.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

3 Port Solenoid Valve

Metal Seal/Rubber Seal, Base Mounted

Series VQZ100/200/300

Series Variations

		Sonic conductance C [dm ³ /(s·bar)]		Type of actuation	Voltage	Electrical entry	With light/surge voltage suppressor	Manual override		
Base Mounted	3 port	VQZ100	Metal — Rubber (Poppet) 1.0		(Standard) 12 VDC 24 VDC (Option) 100 VAC 200 VAC 110 VAC 220 VAC	Grommet (G) L plug connector (L) 	With light/surge voltage suppressor	Non-locking push type (Tool required)	V100	
		VQZ200	2.0 3.0			M plug connector (M) 	L plug connector (L)		Locking type (Tool required)	SY
		VQZ300	3.2 4.1	N.O. (Except VQZ100)		DIN terminal (Y) (Except VQZ100)	M plug connector (M)			(Except VQZ100)
								VK		
									VZ	
									VT	
									VP	
									VG	
									VP	
									S070	
									VQ	
									VKF	
									VQZ	
									VZ	
									VS	
									VFN	

⚠ Precautions

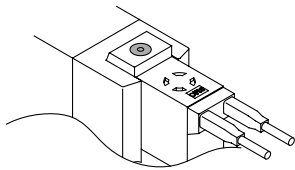
Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 4-18-2.

Manual Override

⚠ Warning

Without an electric signal for the solenoid valve the manual override is used for switching the main valve. Non-locking push type (tool required) is standard. Locking type (tool required) is available as an option.

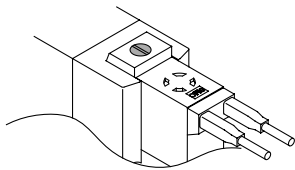
Push type (Tool required)



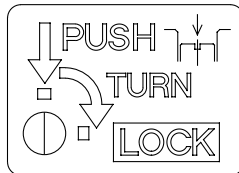
Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

Locking type (Tool required)

VQZ200
VQZ300

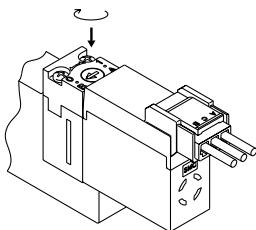


Push down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it. Turn it counterclockwise to release it.



Locking type (Tool required)

VQZ100



If the manual override is turned by 180° clockwise and the ► mark is adjusted to 1, then pushed in the direction of an arrow (↓), it will be locked in the ON state. If the manual override is turned by 180° counterclockwise and ► mark is adjusted to 0, locking will be released and the manual override will return.

⚠ Caution

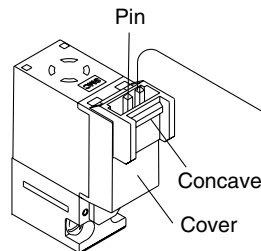
Do not apply excessive torque when turning the locking type manual override. (0.1 N·m or less)

How to Use L/M Plug Connector

⚠ Caution

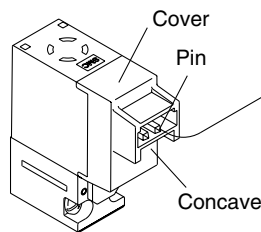
Attaching and detaching connectors

M plug connector



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

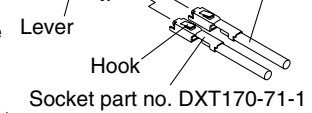
L plug connector



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

Connector part no. AXT661-12

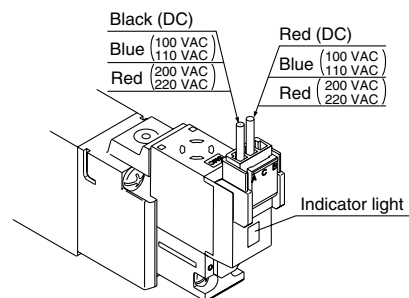
Lead wire
0.2 to 0.33 mm²
(Max. O.D. ø1.7 mm)



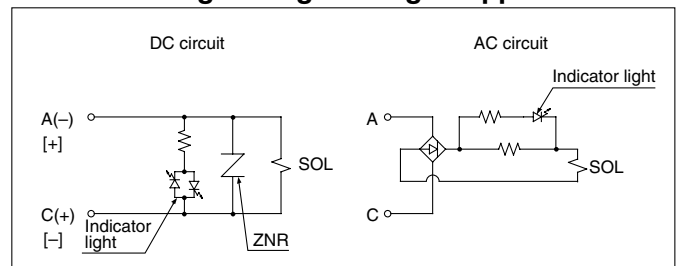
Refer to page 4-14-41 for part no. of plug connector assembly.

Connection and Electrical Circuit

Connect each lead wire to the power source side, because of no polarity for DC as well.



Circuit with Light/Surge Voltage Suppressor



⦿ No polarity by adopting non-polar light.

⚠ Precautions

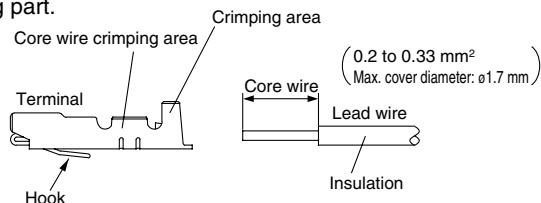
Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 4-18-2.

Connection of Lead Wire

(Not necessary if ordering the lead wire pre-connected model.)

Crimping of lead wires and sockets

Peel 3.2 to 3.7 mm of the tip of lead wire, enter the core wires neatly into a socket and crimp it with a special crimp tool. Be careful so that the cover of lead wire does not enter into the crimping part.



Tool for crimping: Part no. DXT170-75-1

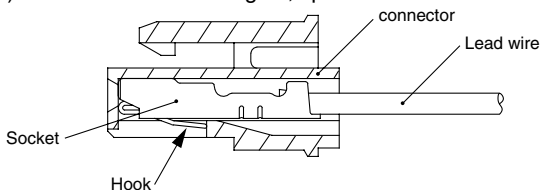
Attaching and detaching lead wires with sockets

Attaching

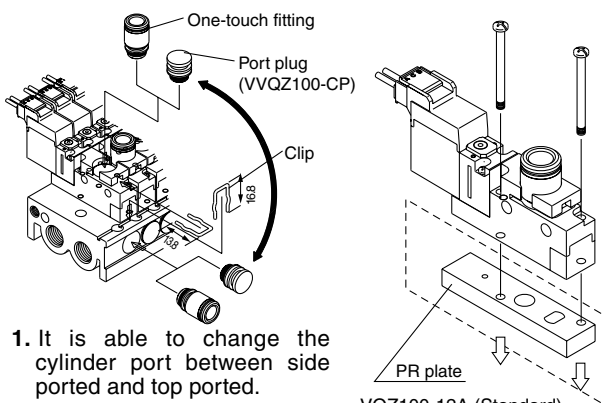
Insert the sockets into the square holes of the connector (with + and - indication) and, continue to push the sockets all the way in until the lock by hooking into the seats in the connector. (When they are pushed in, their hooks open and they are locked automatically.) Then confirm that they are locked by lightly pulling on the lead wire.

Detaching

To remove the socket from the connector, pull out lead wire while depressing the hook of the socket with a fine screwdriver (or similar). If the socket is used again, spread the hook outward.



How to Change Piping Direction for VQZ100



1. It is able to change the cylinder port between side ported and top ported.

Since the fittings and port plug are cassette style, first detach the clip with a flat head screwdriver, etc., and then remove the fittings and port plug.

Changing between side ported and top ported is possible by replacing fittings with port plug.

When mounting for replacement and installment, make sure to insert the fittings and port plug until they stop, and then put the clip into the prescribed position completely.

VQZ100-12A (Standard)
VQZ100-12B (External pilot)
* 2 mounting screws are included with each plate.

2. Abase mount VQZ100 valve can be converted to an individual in-line (body ported) valve by installing an adapter plate on the mounting surface of the valve.

⚠ Caution

Whole length of a clip is different from the one for valve and base. If mounting with wrong clips, fittings are likely to pull out. Use caution not to exchange from one to the other.

How to Wire DIN Terminal

Conforming to ISO#: DIN 43650 C (8 mm between pins) Connection

1. Loosen the set screw and pull out the connector from the terminal block of the solenoid.
2. Remove the housing screw and insert a screwdriver into the slot area on the underside of the DIN cap and carefully separate block and housing.
3. Loosen the terminal screws (slotted screws) on the terminal block, insert the core of the lead wire into the terminal in accordance with the prescribed connection method, and attach securely with the terminal screws.
4. Tighten the ground nut to secure the wire.

Change of electrical entry (Orientation)

After separating terminal block and housing, the cord entry direction can be changed by attaching the housing in the desired direction (4 directions in 90 increments).

* In the case of indicator light, avoid damaging the light with lead wire.

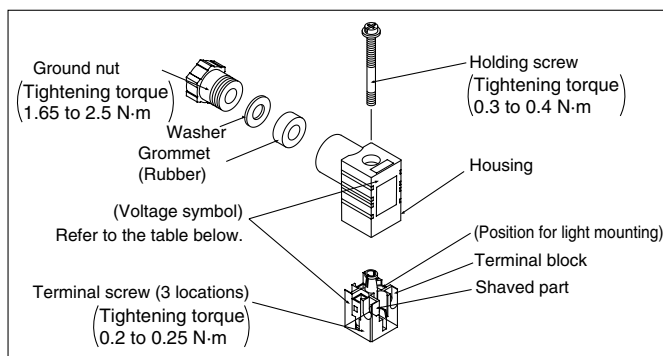
Precautions

Pull a connector out vertically, never at an angle.

Applicable cable

O.D.: ø3.5 to ø7

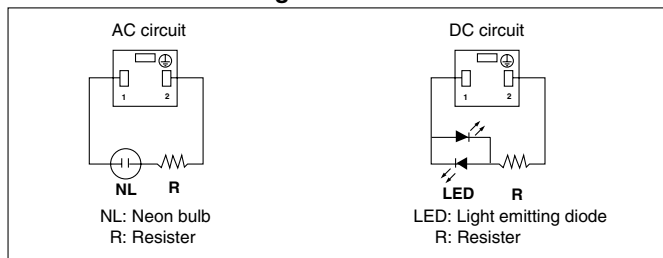
(Reference) 0.5 mm² 2 core and 3 core wires equivalent to JIS C 3306.



DIN Terminal Part No. (Conforming to DIN)

Without indicator light		AXT100-20-1
With indicator light		
Rated voltage	Voltage symbol	Part no.
24 VDC	24V	AXT100-20-2-05
12 VDC	12V	AXT100-20-2-06
100 VAC	100V	AXT100-20-2-01
200 VAC	200V	AXT100-20-2-02
110 VAC	110V	AXT100-20-2-03
220 VAC	220V	AXT100-20-2-04

Circuit with Indicator Light



V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

⚠ Precautions

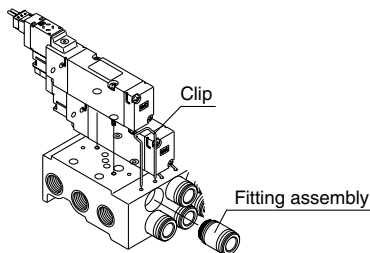
Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 4-18-2.

Changing the One-touch Fittings

⚠ Caution

The built-in fittings on the manifold can be changed easily.

Clip prevents the fittings to come off. After removing the corresponding valve and take out the clip with a screwdriver, etc., then replace the fittings. About mounting the fittings, after inserting the fitting until it stops, then put the clip into the prescribed position.



Precaution

When pulling the fitting assembly away from the manifold base, remove the clip, then connect a tube or plug (KQP-□□) with the One-touch fitting and pull it out holding the tube or plug. Do not hold the release bushing to avoid damage.

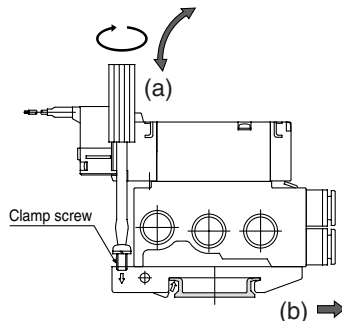
DIN Rail Removing/Mounting

Removing

1. Loosen the clamp screw on the (a) side of both ends of the manifold.
2. Lift the (a) side of the manifold off the DIN rail and slide it in the → direction of the (b) side.

Mounting

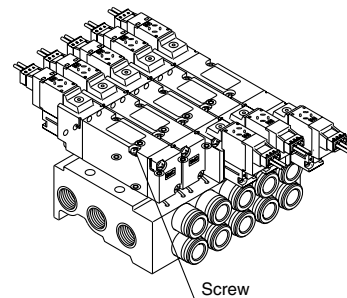
1. Catch the hook of the DIN rail bracket on the (b) side of the DIN rail.
2. Push side (a) onto the DIN rail and tighten the clamp screw.
The proper tightening torque for screws 0.3 to 0.4 N·m.



Valve Mounting

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

Model	Proper tightening torque
VQZ100	0.13 to 0.19 N·m
VQZ200	0.25 to 0.35 N·m
VQZ300	0.5 to 0.7 N·m



How to Calculate the Flow Rate

For obtaining the flow rate, refer to page 4-1-6.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

3 Port Solenoid Valve

For details about the applicable products conforming to international standards, visit us at www.smcworld.com.

Metal/Rubber Seal, Base Mounted, Plug Lead Unit Valve Single Unit

Series VQZ100/200/300

How to Order Valves: VQZ100

VQZ 1 1 5 [] - 5 M [] - 01

Series

1	VQZ100 Body width 10 mm
---	-------------------------

Type of actuation

1	N.C.
---	------

Body type

5	Base mounted
---	--------------

Port size {2(A) port}

CP	Without sub-plate
01	Rc 1/8

Manual override

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

Electrical entry

G: Grommet (DC specifications)	L: L plug connector With lead wire	LO: L plug connector Without connector	M: M plug connector With lead wire	MO: M plug connector Without connector
Standard type	With light/surge voltage suppressor	With light/surge voltage suppressor	With light/surge voltage suppressor	With light/surge voltage suppressor

Function

Symbol	Specifications	DC (1.0 W)	AC (3)
Nil	Standard type	○	○
K ⁽¹⁾	High pressure type	○	—
Y	Low wattage type	(0.5 W) ○	—
R ⁽²⁾	External pilot type	○	○

Note 1) Option
 Note 2) For details about external pilot specifications, refer to page 4-14-40.
 Note 3) For the power consumption of AC type, refer to page 4-14-28.
 Note 4) When two or more symbols are specified, indicate them alphabetically.

Note) Standard lead wire length: 300 mm.

Coil voltage

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

Note) For the sub-plate part no, refer to page 4-14-41.
 Note) For the special voltages, please consult with SMC.

3 Port Solenoid Valve (Valve Single Unit) Metal/Rubber Seal, Base Mounted, Plug Lead Unit Series VQZ100/200/300

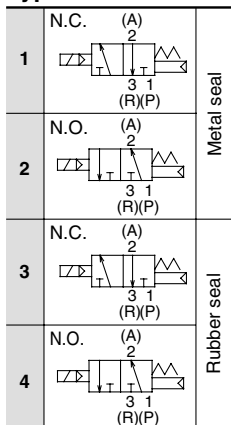
How to Order Valves: VQZ200/300

VQZ **2** **1** **5** **5** **M**

Series

2	VQZ200 Body width 15 mm
3	VQZ300 Body width 18 mm

Type of actuation



Body type

5	Base mounted
---	--------------

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W)	○ ⁽³⁾
K ⁽¹⁾	High pressure type (Metal seal only)	(1.0 W)	
Y	Low wattage type	(0.5 W)	
R ⁽²⁾	External pilot type	○	○



Note 1) Option
Note 2) For details about external pilot specifications, refer to page 4-14-40.



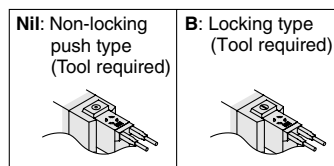
Note 3) For the power consumption of AC type, refer to page 4-14-28.

Note 4) When two or more symbols are specified, indicate them alphabetically.

Port size {2(A) port}

Symbol	Port size	VQZ200	VQZ300
Nil	Without sub-plate	○	○
01	Rc 1/8	○	—
02	Rc 1/4	○	○
03	Rc 3/8	—	○

Manual override



Electrical entry

G: Grommet (DC specifications)	L: L plug connector With lead wire	LO: L plug connector Without connector	M: M plug connector With lead wire	MO: M plug connector Without connector
	With light/surge voltage suppressor	With light/surge voltage suppressor	With light/surge voltage suppressor	With light/surge voltage suppressor
Y: DIN terminal	YO: DIN terminal Without connector	YZ: DIN terminal	YOS: DIN terminal Without connector	YS: DIN terminal
		With light/surge voltage suppressor	With surge voltage suppressor	With surge voltage suppressor

Note) Standard lead wire length: 300 mm.

Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC
9 ^{Note)}	Other

Note) For the special voltages, please consult with SMC.



Note) For the sub-plate part no, refer to page 4-14-41.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

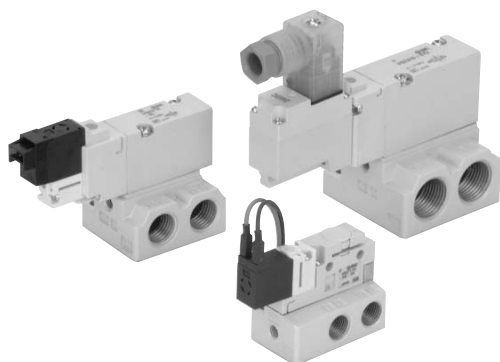
VQZ

VZ

VS

VFN

Standard Specifications



		Valve construction	Metal seal	Rubber seal	VQZ100 (Poppet seal)
		Fluid		Air/Inert gas	
Valve specifications	Maximum operating pressure	0.7 MPa (High pressure type: 1.0 MPa)	0.7 MPa	0.7 MPa	0.7 MPa (High pressure type: 1.0 MPa)
	Minimum operating pressure	0.1 MPa	0.15 MPa	0.15 MPa	0.15 MPa
	Ambient and fluid temperature	-10 to 50°C ⁽¹⁾	-10 to 50°C ⁽¹⁾	-10 to 50°C ⁽¹⁾	-10 to 50°C ⁽¹⁾
	Maximum operating frequency	20 Hz	5 Hz	20 Hz	20 Hz
	Pilot valve EXH	Individual EXH		Common exhaust	
	Lubrication	Not required			
	Pilot valve manual override	Non-locking push type/Slotted locking type (tool required) as an option			
	Shock/Vibration resistance (2)	150/30 m/s ²			
	Enclosure	Dustproof			
	Coil rated voltage		12, 24 VDC and 100, 110, 200, 220 VAC		
Allowable voltage fluctuation		±10% of rated voltage			
Coil insulation type		Equivalent to class B			
Electricity specifications	Power consumption (Current)	24 VDC	1 W DC (42 mA), 0.5 W DC (21 mA)		
		12 VDC	1 W DC (83 mA), 0.5 W DC (42 mA)		
		100 VAC	Inrush 0.5 VA (5 mA), Holding 0.5 VA (5 mA)		
		110 VAC	Inrush 0.55 VA (5 mA), Holding 0.55 VA (5 mA)		
		200 VAC	Inrush 1.0 VA (5 mA), Holding 1.0 VA (5 mA)		
		220 VAC	Inrush 1.1 VA (5 mA), Holding 1.1 VA (5 mA)		



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

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

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

Flow Characteristics/Weight

Series	Valve construction	Model		Flow characteristics						Response time (ms) ⁽¹⁾			Weight ⁽²⁾ (g)
				1 → 2 (P → A)			2 → 3 (A → R)			Standard type: 1 W	High pressure type: 1.0 W Low wattage type: 0.5 W	AC	
				C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv				
VQZ100	N.C. valve	Poppet	VQZ115	0.87	0.46	0.23	1.0	0.35	0.25	10 or less	13 or less	22 or less	25
VQZ200	N.C. valve	Metal seal	VQZ215	1.7	0.17	0.38	2.0	0.20	0.45	14 or less	18 or less	34 or less	53
		Rubber seal	VQZ235	2.3	0.46	0.65	3.0	0.40	0.80	15 or less	20 or less	36 or less	
	N.O. valve	Metal seal	VQZ225	1.7	0.18	0.38	1.8	0.21	0.39	14 or less	18 or less	34 or less	
		Rubber seal	VQZ245	2.5	0.43	0.67	3.0	0.30	0.74	15 or less	20 or less	36 or less	
VQZ300	N.C. valve	Metal seal	VQZ315	3.0	0.21	0.70	3.2	0.27	0.80	17 or less	22 or less	34 or less	77
		Rubber seal	VQZ335	4.5	0.42	1.3	4.1	0.36	1.0	25 or less	33 or less	57 or less	
	N.O. valve	Metal seal	VQZ325	2.9	0.21	0.72	2.9	0.16	0.69	17 or less	22 or less	34 or less	
		Rubber seal	VQZ345	4.4	0.45	1.2	4.5	0.38	1.2	25 or less	33 or less	57 or less	



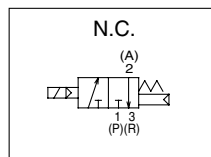
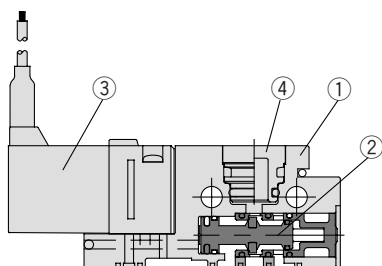
Note 1) Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa; with light/surge voltage suppressor; clean air) The response time is subject to the pressure and the air quality. Response time values will change depending on pressure and air quality.

Note 2) Weight without sub-plate.

3 Port Solenoid Valve (Valve Single Unit) Metal/Rubber Seal, Base Mounted, Plug Lead Unit Series VQZ100/200/300

Construction

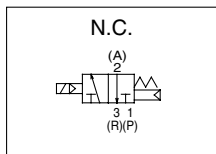
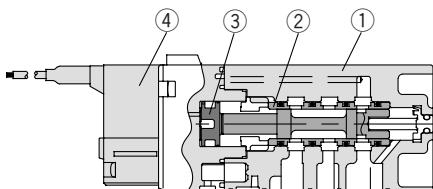
VQZ100 Poppet



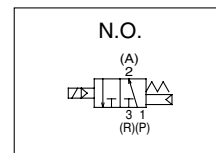
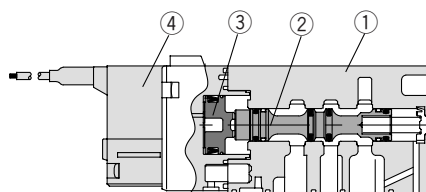
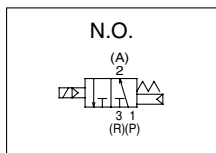
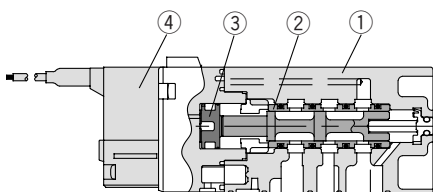
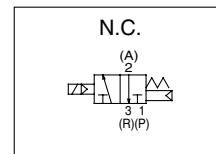
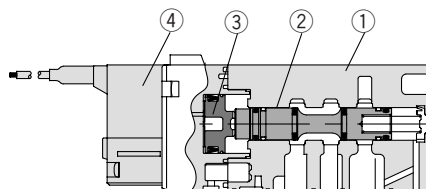
Component Parts

No.	Description	Material	Note
①	Body	Resin	
②	Spool valve	Aluminum/HNBR	
③	Pilot valve assembly	—	
④	Port plug	Resin/NBR	VVQZ100-CP

VQZ200/300 Metal seal type



Rubber seal type



Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted	
②	Spool/Sleeve	Stainless steel	Metal seal
	Spool valve	Aluminum/HNBR	Rubber seal
③	Piston	Resin	
④	Pilot valve assembly	—	



For "How to Order Pilot Valve Assembly", refer to page 4-14-41.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

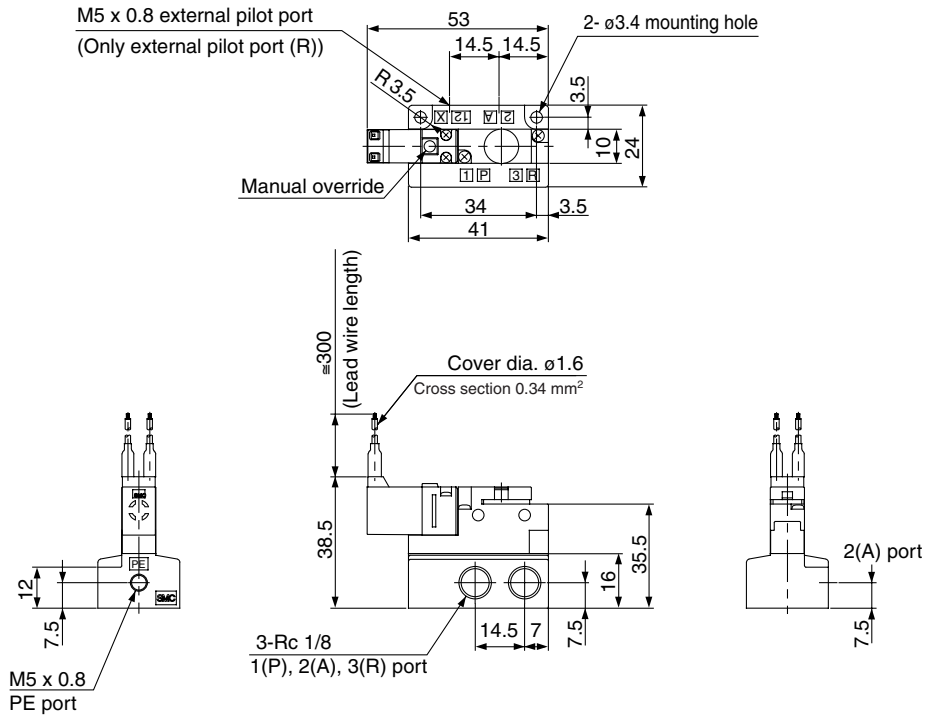
VS

VFN

Dimensions: VQZ100

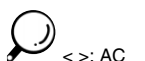
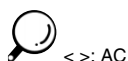
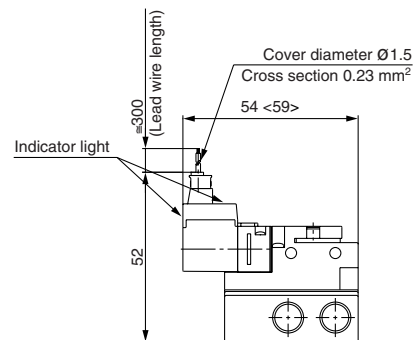
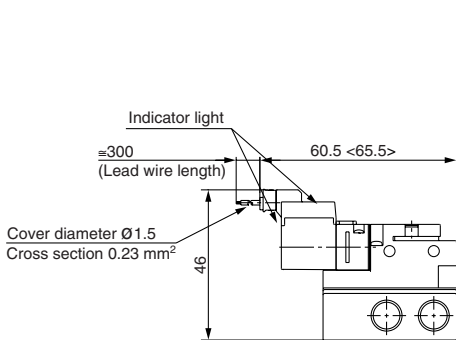
Single unit

Grommet (G): VQZ115(R)-□G□-01



L plug connector (L): VQZ115(R)-□L□-01

M plug connector (M): VQZ115(R)-□M□-01

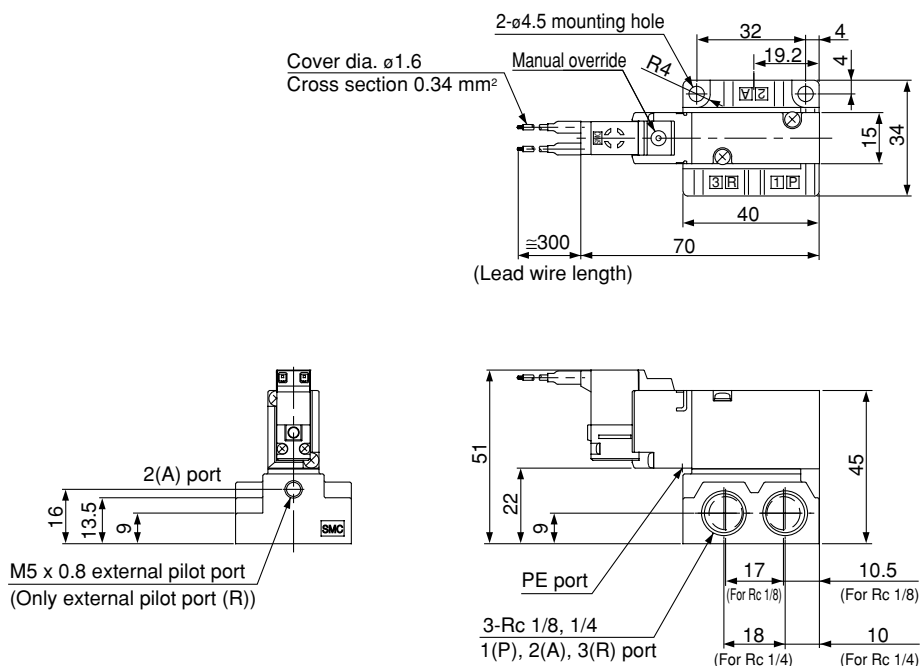


3 Port Solenoid Valve (Valve Single Unit) Metal/Rubber Seal, Base Mounted, Plug Lead Unit Series VQZ100/200/300

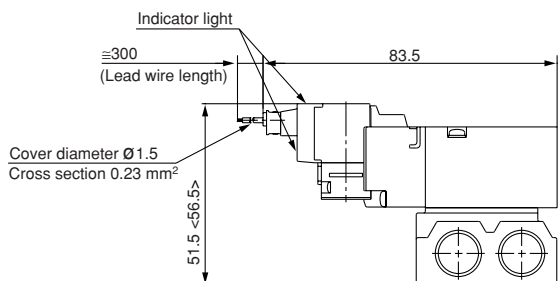
Dimensions: VQZ200

Single unit

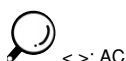
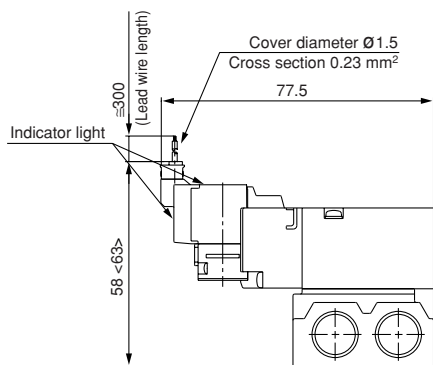
Grommet (G): VQZ2□5(R)-□G□-⁰¹₀₂



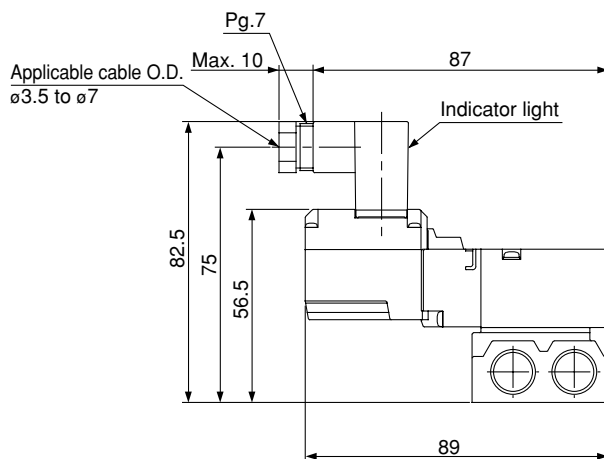
L plug connector (L): VQZ2□5(R)-□L□-⁰¹₀₂



M plug connector (M): VQZ2□5(R)-□M□-⁰¹₀₂



DIN terminal (Y): VQZ2□5(R)-□Y□-⁰¹₀₂



V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

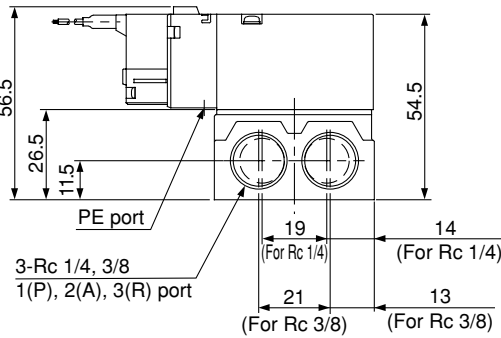
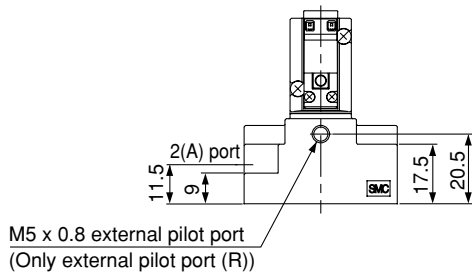
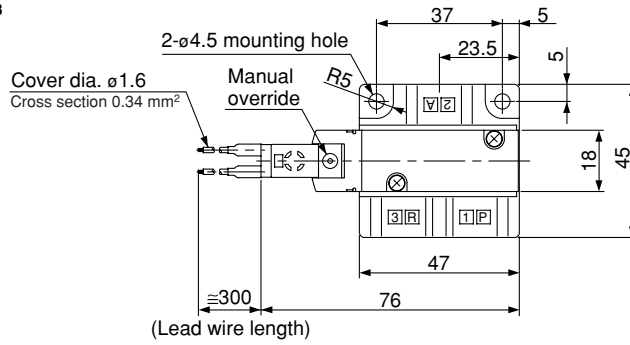
VS

VFN

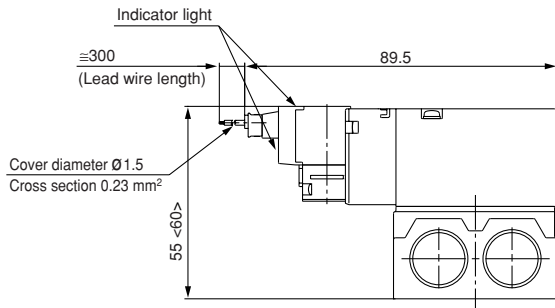
Dimensions: VQZ300

Single unit

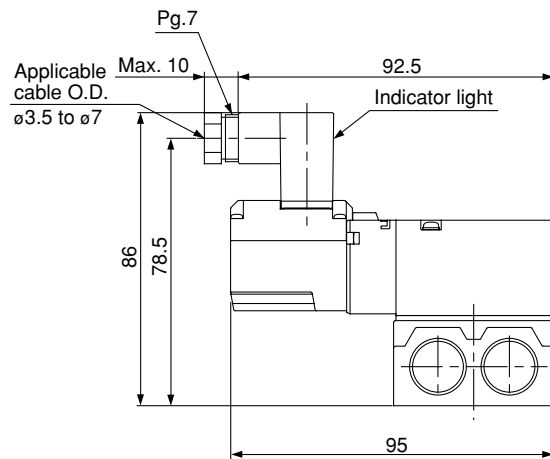
Grommet (G): VQZ3□5(R)-□G□⁰²/₀₃



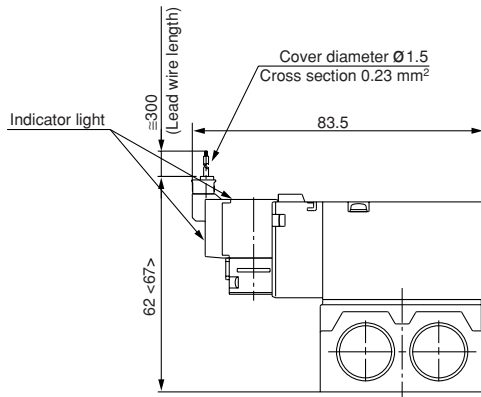
L plug connector (L): VQZ3□5(R)-□L□⁰²/₀₃



DIN terminal (Y): VQZ3□5(R)-□Y□⁰²/₀₃



M plug connector (M): VQZ3□5(R)-□M□⁰²/₀₃



3 Port Solenoid Valve

Metal/Rubber Seal, Base Mounted, Plug Lead Unit Manifold (Connector Kit)

Series VQZ100/200/300

How to Order Manifold: VQZ100

VV3QZ 1 5 — 08 C6 C — D

Series

1	VQZ100
---	--------

Manifold

5	Base mounted
---	--------------

Stations

02	2 stations
:	:
20	20 stations

Kit type

C	Connector
---	-----------

Option

Nil	None
D	DIN rail mounting style (With DIN rail in standard length)
DO ^{Note)}	DIN rail mounting style (Without DIN rail)
R	External pilot specifications

Note) Order DIN rail separately. For the DIN rail model number, refer to page 4-14-39.

Port size {2(A) port}

C3	One-touch fitting for ø3.2	Side ported
C4	One-touch fitting for ø4	
C6	One-touch fitting for ø6	
M5	M5 thread (Changeable type)	Top ported
CP ⁽¹⁾	With port plug	
CM ⁽²⁾	Mixture of port sizes	

Note 1) When CP port plug is attached on all 2(A) port. Valve on manifold is top ported.

Note 2) Specify the mixture port (including top and side piping) on the manifold specification sheet.

Note 3) For the inch-size One-touch fittings, refer to page 4-14-40.

How to Order Valves: VQZ100

VQZ 1 1 5 — 5 M —

Series

1	VQZ100 Body width 10 mm
---	-------------------------

Type of actuation

1	N.C. (Normally closed)
---	------------------------

Body type

5	Base mounted
---	--------------

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○ ⁽³⁾	○ ⁽³⁾
K ⁽¹⁾	High pressure type (Metal seal only)	(1.0 W) ○	—
Y	Low wattage type	(0.5 W) ○	—
R ⁽²⁾	External pilot type	○	○



Note 1) Option
Note 2) For details about external pilot specifications, refer to page 4-14-40.



Note 3) For the power consumption of AC type, refer to page 4-14-28.

Note 4) When two or more symbols are specified, indicate them alphabetically.

Port size

CP	With port plug	Side ported
C3	One-touch fitting for ø3.2	Top ported
C4	One-touch fitting for ø4	
C6	One-touch fitting for ø6	
M5	M5 thread	

Manual override

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

Electrical entry

Symbol	Electrical entry	Light/Surge voltage suppressor
G	Grommet (DC specifications)	No
L	L plug connector with lead wire	Yes
LO	L plug connector without connector	
M	M plug connector with lead wire	
MO	M plug connector without connector	

Note) Standard lead wire length: 300 mm.

Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC
9 ^{Note)}	Other



Note) For the special voltages, please consult with SMC.

How to Order Manifold: VQZ200/300

VV3QZ **2** **5** — **08** **C6** **C** — **D**

Series

2	VQZ200
3	VQZ300

Manifold

5	Base mounted
---	--------------

Stations

02	2 stations
:	:
20	20 stations

Kit type

C	Connector
---	-----------

Option

Nil	None
D	DIN rail mounting style (With DIN rail in standard length)
DO ^{Note)}	DIN rail mounting style (Without DIN rail)
R	External pilot specifications

Note) Order DIN rail separately.
For the DIN rail model number, refer to page 4-14-39.

Port size {2(A) port}

Symbol	Port size	VQZ200	VQZ300
C4	One-touch fitting for ø4	○	—
C6	One-touch fitting for ø6	○	○
C8	One-touch fitting for ø8	○	○
C10	One-touch fitting for ø10	—	○
01	Rc 1/8	○	—
02	Rc 1/4	—	○
CM ⁽¹⁾	Mixture of port sizes	○	○

Note 1) Specify port mixture/with port plug by means of the manifold specification sheet. Port mixture and port plug are available only for One-touch fitting type.

Note 2) For the inch-size One-touch fittings, refer to page 4-14-40.

How to Order Valves: VQZ200/300

VQZ **2** **1** **5** — **5** **M** —

Series

2	VQZ200 Body width 15 mm
3	VQZ300 Body width 18 mm

Type of actuation

1	N.C., Metal seal
2	N.O., Metal seal
3	N.C., Rubber seal
4	N.O., Rubber seal

Body type

5	Base mounted
---	--------------

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	○ ⁽³⁾
K ⁽¹⁾	High pressure type (Metal seal only)	(1.0 W) ○	—
Y	Low wattage type	(0.5 W) ○	—
R ⁽²⁾	External pilot type	○	○

Note 1) Option
Note 2) For details about external pilot specifications, refer to page 4-14-40.
Note 3) For the power consumption of AC type, refer to page 4-14-28.
Note 4) When two or more symbols are specified, indicate them alphabetically.

Manual override

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

Electrical entry

Symbol	Electrical entry	Light/Surge voltage suppressor
G	Grommet (DC specifications)	No
L	L plug connector with lead wire	Yes
LO	L plug connector without connector	
M	M plug connector with lead wire	
MO	M plug connector without connector	No
Y	DIN terminal	
YO	DIN terminal without connector	
YZ	DIN terminal	Yes
YS	DIN terminal	Yes (W/o indicator light)
YOS	DIN terminal without connector	Yes (W/o indicator light)

Note) Standard lead wire length: 300 mm.

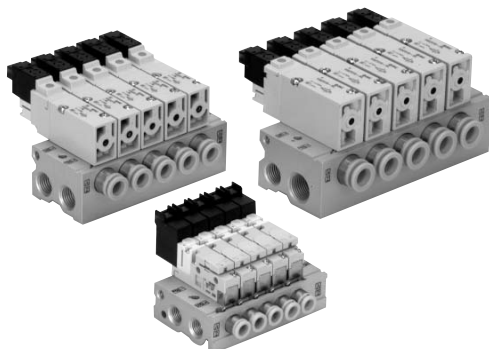
Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC
9 ^{Note)}	Other


Note) For the special voltages, please consult with SMC.

3 Port Solenoid Valve (Manifold: Connector Kit) Metal/Rubber Seal, Base Mounted, Plug Lead Unit Series VQZ100/200/300

Manifold Specifications



Series	Base model	Port location	Porting specifications		Applicable valve model	Applicable stations	Manifold base weight (g)
			1(P), 3(R)	2(A)			
VQZ100	VV3QZ15-□□□	Side Top	Rc 1/8	C3 (For ø3.2) C4 (For ø4) C6 (For ø6) M5 (M5 thread)	VQZ115	2 to 20 stations	2 stations: 83 Addition per/station: 19
VQZ200	VV3QZ25-□□□	Side	Rc 1/4	C4 (For ø4) C6 (For ø6) C8 (For ø8) Rc 1/8	VQZ2□5	2 to 20 stations	2 stations: 126 Addition per/station: 38
VQZ300	VV3QZ35-□□□	Side	1(P) port Rc 3/8 3(R) port Rc 1/4	C6 (For ø6) C8 (For ø8) C10 (For ø10) Rc 1/4	VQZ3□5	2 to 20 stations	2 stations: 209 Addition per/station: 60

 Note) Threaded port.

How to Order Valve Manifold Assembly (Example)

VV3QZ25-05C6C..... 1 set (C kit 5 stations manifold base)

*VVQZ200-10A-5..... 1 set (Blanking plate assembly)

*VQZ215-5L..... 4 sets (N.C. type part no.)

→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

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

Specify the part numbers for valves and options together beneath the manifold base part number.
When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

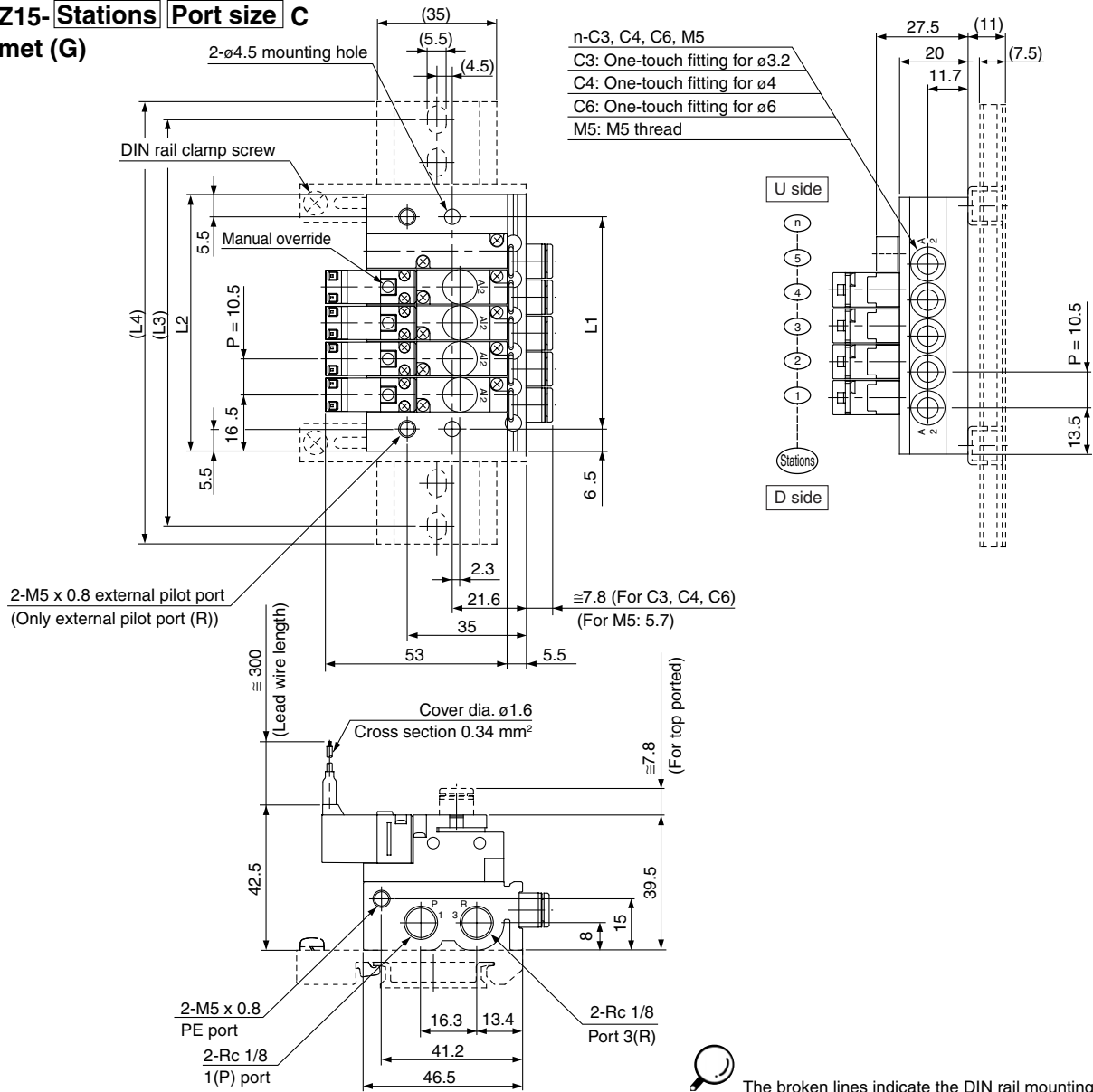
VZ

VS

VFN

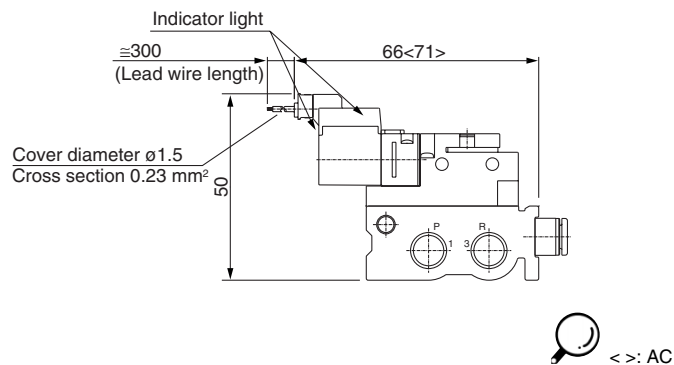
Dimensions: VQZ100

VV3QZ15- Stations Port size C
Grommet (G)

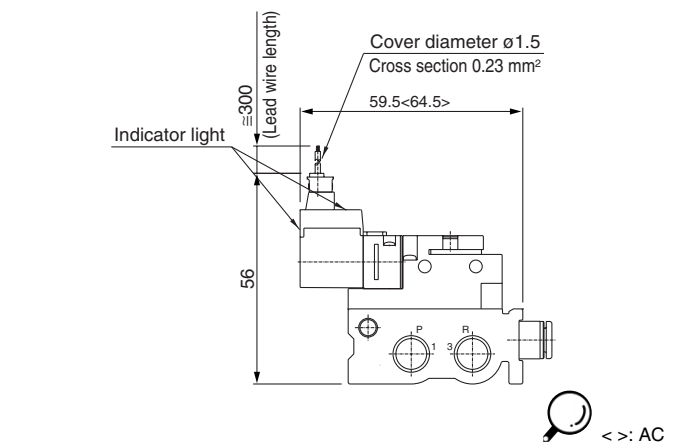


The broken lines indicate the DIN rail mounting style [-D].

L plug connector (L)



M plug connector (M)



Dimensions

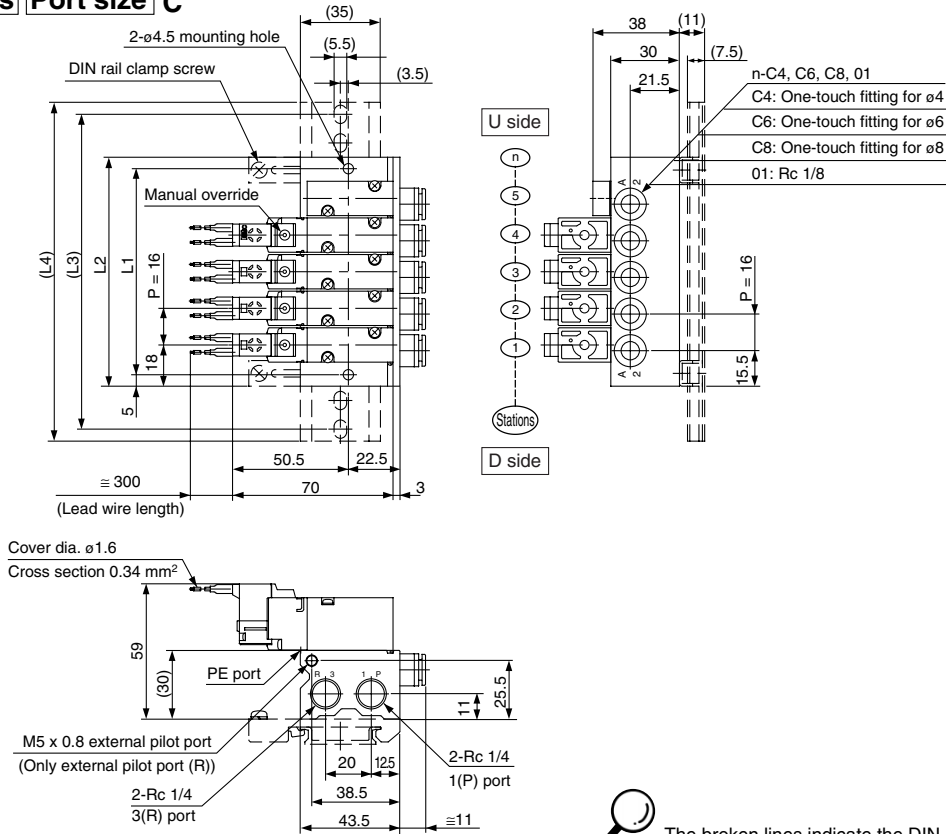
Formula L1 = 10.5n + 9.5 L2 = 10.5n + 22.5 n: Stations (Maximum 20 stations)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5
L2	43.5	54	64.5	75	85.5	96	106.5	117	127.5	138	148.5	159	169.5	180	190.5	201	211.5	222	232.5
L3	75	75	87.5	100	112.5	125	137.5	137.5	150	162.5	175	187.5	200	200	212.5	225	237.5	250	262.5
L4	85.5	85.5	98	110.5	123	135.5	148	148	160.5	173	185.5	198	210.5	210.5	223	235.5	248	260.5	273

3 Port Solenoid Valve (Manifold: Connector Kit) Metal/Rubber Seal, Base Mounted, Plug Lead Unit Series VQZ100/200/300

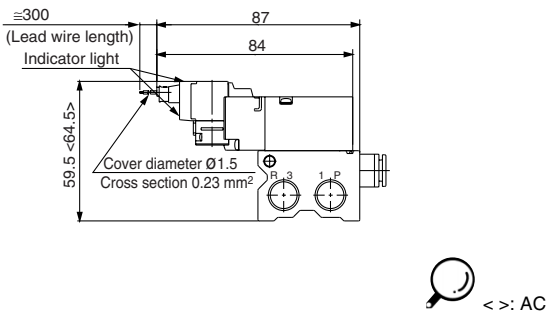
Dimensions: VQZ200

VV3QZ25- Stations Port size C Grommet (G)

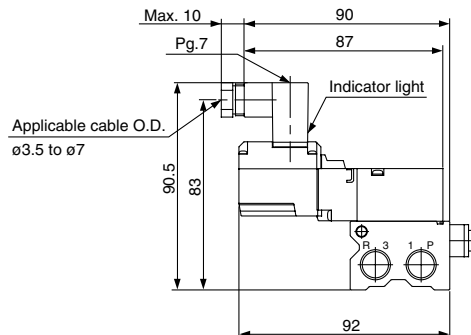


The broken lines indicate the DIN rail mounting style [-D].

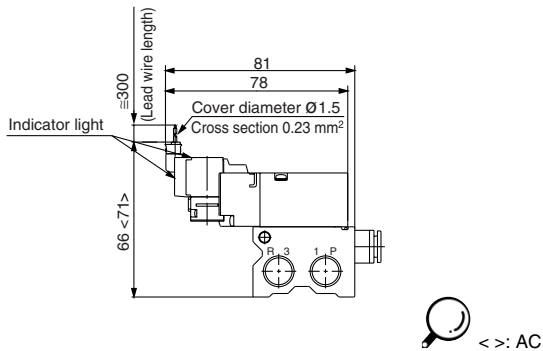
L plug connector (L)



DIN terminal (Y)



M plug connector (M)



Dimensions

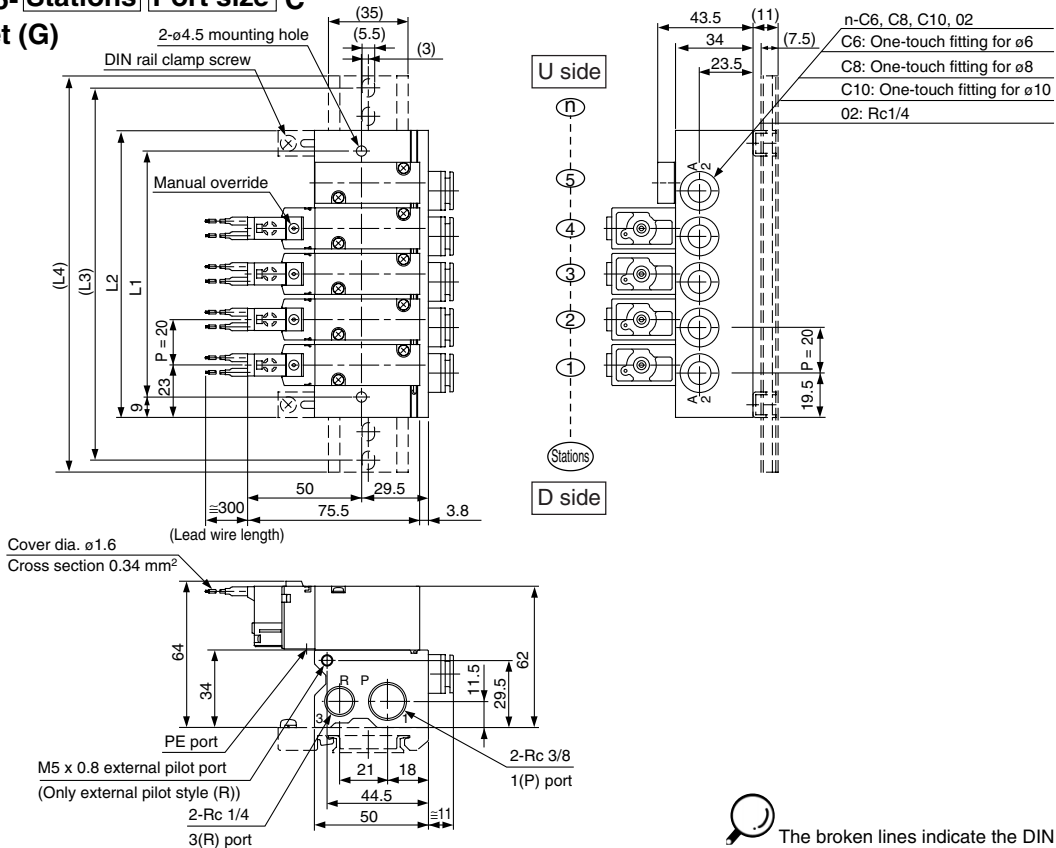
Formula L1 = 16n + 10 L2 = 16n + 20 n: Stations (Maximum 20 stations)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	42	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330
L2	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
L3	75	87.5	112.5	125	137.5	162.5	175	187.5	200	225	237.5	250	275	287.5	300	312.5	337.5	350	362.5
L4	85.5	98	123	135.5	148	173	185.5	198	210.5	235.5	248	260.5	285.5	298	310.5	323	348	360.5	373

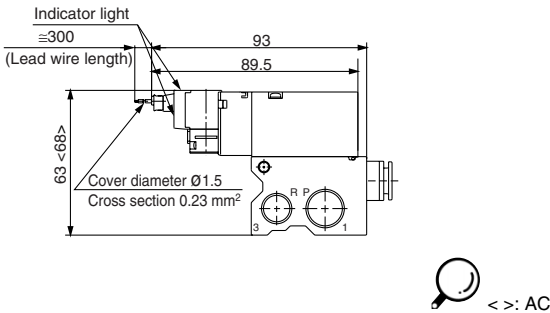
- V100
- SY
- SYJ
- VK
- VZ
- VT
- VP
- VG
- VP
- S070
- VQ
- VKF
- VQZ
- VZ
- VS
- VFN

Dimensions: VQZ300

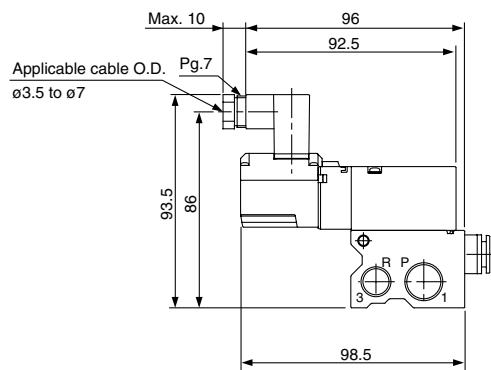
VV3QZ35- Stations Port size C
Grommet (G)



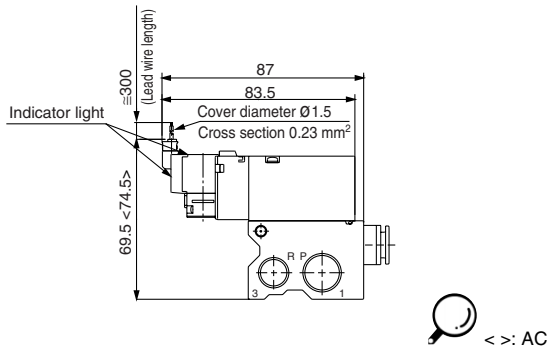
L plug connector (L)



DIN terminal (Y)



M plug connector (M)



Dimensions

Formula L1 = 20n + 8 L2 = 20n + 26 n: Stations (Maximum 20 stations)

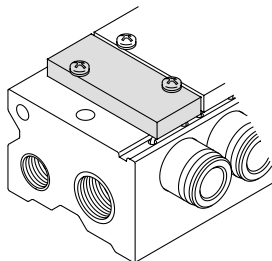
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	48	68	88	108	128	148	168	188	208	228	248	268	288	308	328	348	368	388	408
L2	66	86	106	126	146	166	186	206	226	246	266	286	306	326	346	366	386	406	426
L3	87.5	112.5	137.5	150	175	187.5	212.5	237.5	250	275	287.5	312.5	337.5	350	375	387.5	412.5	437.5	450
L4	98	123	148	160.5	185.5	198	223	248	260.5	285.5	298	323	348	360.5	385.5	398	423	448	460.5

Manifold Option

Blanking plate

VVQZ100-10A-5 (For VQZ100)
VVQZ200-10A-5 (For VQZ200)
VVQZ300-10A-5 (For VQZ300)

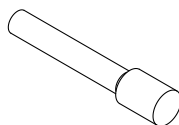
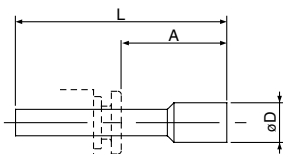
It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.



Blanking plug

KQP-23-X19
KQP-04-X19
KQP-06-X19
KQP-08-X19
KQP-10-X19

● Color: White



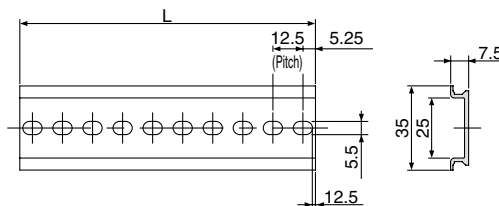
Dimensions

Applicable fittings fitting ød	Model	A	L	D
3.2	KQP-23-X19	16	31.5	3.2
4	KQP-04-X19	16	32	6
6	KQP-06-X19	18	35	8
8	KQP-08-X19	20.5	39	10
10	KQP-10-X19	22	43	12

DIN rail

AXT100-DR-□

* As for □, enter the number from the DIN rail dimensions table.



L Dimension

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L dimension	23	35.5	48	60.5	73	85.5	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5

L = 12.5n + 10.5

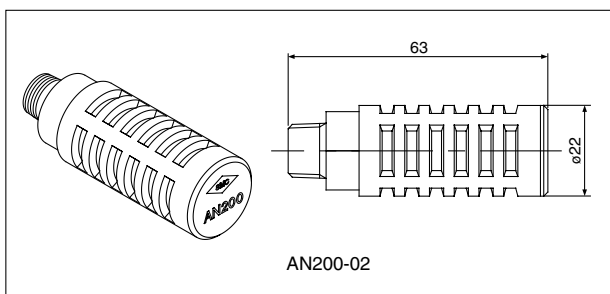
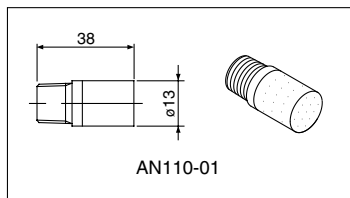
No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
L dimension	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

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

Silencer

(For manifold EXH port)

Silencer is installed in the EXH port.



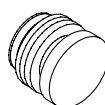
Dimensions

Model	Silencer part no.
VQZ100	AN110-01
VQZ200	AN200-02
VQZ300	AN200-02

Port plug

VVQZ100-CP (For VQZ100)

This is used when changing piping location. (Side or Top)



V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

Option

External Pilot Specifications

External pilot specifications are used when the operating pressure is below the minimum operating pressure 0.1 to 0.15 MPa or when valve is used for a vacuum application.

Order a valve by adding the external pilot specifications [R] to the part number.

How to order valves

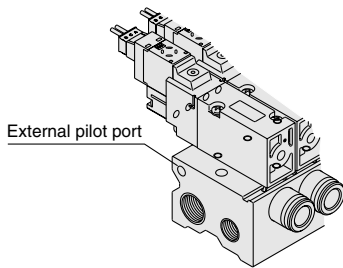
VQZ215R—5M—02

External pilot specifications

How to order manifold

VV3QZ25—06C6C—R

External pilot specifications



Pressure Specifications

Series		VQZ100 ⁽²⁾	VQZ200/300
External pilot pressure range ⁽¹⁾	Metal seal	—	0.1 to 0.7 MPa
	Rubber seal (VQZ100: Poppet)	0.2 to 0.7 MPa	0.15 to 0.7 MPa
Operating pressure range ⁽¹⁾		-100 kPa to 0.7 MPa	

Note 1) For the high pressure type, the upper limit of max. operating pressure and external pressure range is 1 MPa.

Note 2) If VQZ100 is applied in vacuum, vacuum from 1(P) port. When finishing the vacuum application, supply pressure from 3(R) port. Ensure the burst pressure is set to be less than half of the external pilot pressure.

Inch-size One-touch Fittings and Option Threads

Inch-size One-touch fittings and NPT/NPTF/G threads are available.

How to order manifold

VV3QZ15—08 N7 T C

Thread type
(Cylinder port and
1(P), 3(R) port)

Nil	Rc
N	NPT
T	NPTF
F	G

Cylinder port

Symbol	N1	N3	N7	N9	N11	NM ⁽¹⁾	M5	O1	O2
Applicable tubing O.D.	ø1/8"	ø5/32"	ø1/4"	ø5/16"	ø3/8"	Mixed	M5 threads	1/8 thread	1/4 thread
Cylinder port	VQZ100	●	●	●	—	—	●	—	—
	VQZ200	—	●	●	●	—	—	●	—
	VQZ300	—	—	●	●	●	—	—	●



Note 1) Mixing One-touch fittings and thread types is impossible except for VQZ100.

Note 2) Metric sizes of One-touch fittings (C□) are also available.

International Thread Standards Other than Rc

Rc specifications are standard for all ports, however, NPT, NPTF and G are available for international markets. Add the appropriate symbol following the port size in the standard part number.

How to order valves

VQZ215—5M—02 T

Thread type
(Cylinder port and
1(P), 3(R) port)

Nil	Rc
N	NPT
T	NPTF
F	G

Dusttight/Low Jetproof Type (IP65)

DIN terminal is available with dusttight/low jetproof (IP65) type.

How to order valves

(Applicable to VQZ200/300 rubber seal with the exception of the external pilot type)

VQZ335—5YZB W—03

IP65 compliant

Nil	No (Standard)
W ^(Note)	Compliant



Note) The pilot exhaust of the IP65 valves is common with main valve exhaust. (The standard valve has an individual exhaust for the pilot valve.)

Replacement Parts

One-touch Fitting Assembly (For cylinder port)

Fitting size	C3	C4	C6	C8	C10	M5 (VQZ100 only)
VQZ100	VVQ1000-50A-C3	VVQ1000-50A-C4	VVQ1000-50A-C6	—	—	VVQ1000-50A-M5
VQZ200	—	VVQ1000-51A-C4	VVQ1000-51A-C6	VVQ1000-51A-C8	—	—
VQZ300	—	—	VVQ2000-51A-C6	VVQ2000-51A-C8	VVQ2000-51A-C10	—

Note) Purchasing order is available in units of 10 pieces.

<Plug connector assembly>

For AC
AXT661-14A-

For 100/110 VAC
AXT661-31A-

For 200/220 VAC
AXT661-34A-

Only connector and sockets (3 pcs.)
AXT661-12A

● **Lead wire length**

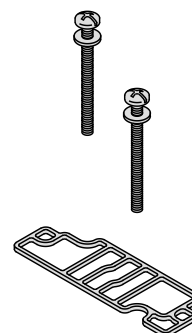
Nil	300 mm
6	600 mm
10	1000 mm
20	2000 mm
30	3000 mm
50	5000 mm

Standard wire length of valve with plug connector is 300 mm.
When requiring valve with 600 mm length lead wire specify the model number of valve without plug connector and plug connector assembly.

Gasket and Screw Assembly Part No.

	Part no.
VQZ100	VQZ100-GS-5
VQZ200	VQZ200-GS-5
VQZ300	VQZ300-GS-5

Note) Above part number consists of 10 units. Each unit has one gasket and two screws. Purchasing order is available in units of 10 pieces.



<Pilot valve assembly>

VQ11 **1** **5** **G**

Series

0	VQZ100
1	VQZ200/300

Function

Symbol	Specifications	DC	AC
Nil	Standard type	(1.0 W) ○	○
K ⁽¹⁾	High pressure type (Metal seal, VQZ100 only)	(1.0 W) ○	—
Y	Low wattage type	(0.5 W) ○	—

Note 1) Option
Note 2) When two or more symbols are specified, indicate them alphabetically.

Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC
9 ^{Note)}	Other

Note) For the special voltages, please consult with SMC.

● **Electrical entry**

G	Grommet (DC specifications)
L ⁽¹⁾	L plug connector with lead wire
LO ⁽¹⁾	L plug connector without connector
M ⁽¹⁾	M plug connector with lead wire
MO ⁽¹⁾	M plug connector without connector
Y ⁽²⁾	DIN terminal
YO ⁽²⁾	DIN terminal without connector
YZ ⁽²⁾	DIN terminal with light/surge voltage suppressor
YS ⁽²⁾	DIN terminal with surge voltage suppressor
YOS ⁽²⁾	DIN terminal with surge voltage suppressor Without connector

Note 1) "L", "LO", "M" and "MO" are attached with light and surge voltage suppressors as standard.
Note 2) DIN is applicable to VQZ200 and 300.
Note 3) Electrical entry of pilot valve for VQZ100 ("L" and "M") is the opposite side of valve body part number.

Valve model	Pilot valve model
VQZ115 □-□L□	VQ110 □-□M□
VQZ115 □-□M□	VQ110 □-□L□

Sub-plate Part No.

Model	Sub-plate part no.
VQZ100	VQZ100-S-01(R) ^{Note)}
VQZ200	VQZ200-S- ⁰¹ [Rc 1/8] ⁰² [Rc 1/4]
VQZ300	VQZ300-S- ⁰² [Rc 1/4] ⁰³ [Rc 3/8]

Note) Symbol "R" indicates an external pilot. The part no. is common to the external pilot and internal pilot type except VQZ100.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

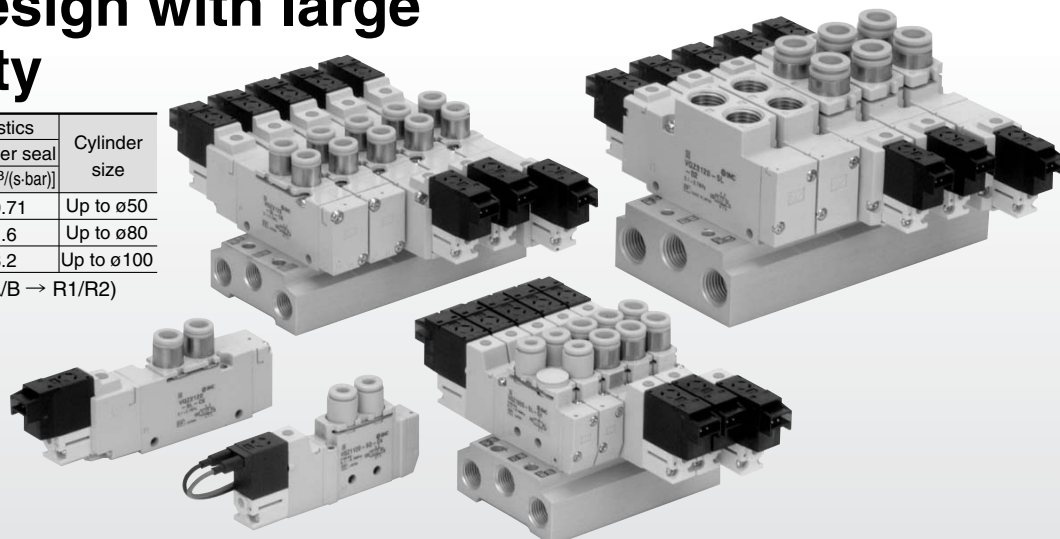
VFN

5 Port Solenoid Valve Metal Seal/Rubber Seal Body Ported **VQZ1000/2000/3000**

Compact design with large flow capacity

Model	Manifold pitch (mm)	Flow characteristics		Cylinder size
		Metal seal C [dm ³ /(s·bar)]	Rubber seal C [dm ³ /(s·bar)]	
VQZ1000	10	0.54	0.71	Up to ø50
VQZ2000	15	1.4	1.6	Up to ø80
VQZ3000	18	2.4	3.2	Up to ø100

* Flow characteristics: 4/2 → 5/3 (A/B → R1/R2)



VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

High speed and long service life

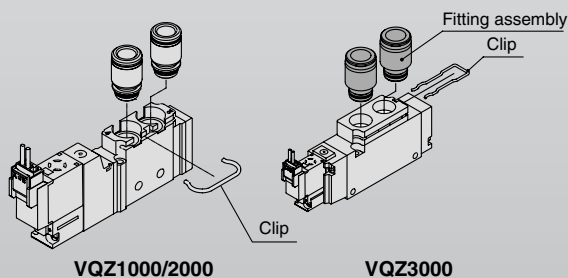
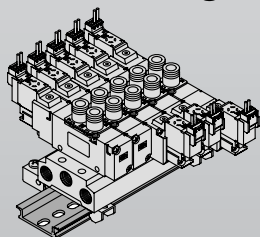
Response time	Life
VQZ1000 10 ms	200 million cycles
VQZ2000 12 ms	
VQZ3000 15 ms	
Dispersion accuracy ±2 ms	
* Metal seal, single solenoid with light/surge voltage suppressor, according to SMC life test conditions.	

DIN terminal is available with dust tight/low jetproof (IP65) type.

Built-in One-touch fittings for easier piping.

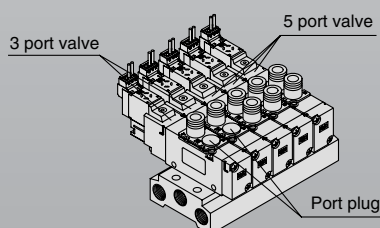
Integral One-touch fittings save on installation time and labor and can be easily removed if necessary.

DIN rail mounting is available.



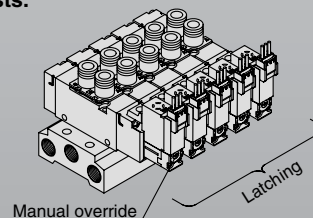
Choice of metal or rubber seal main valve construction

Both 3 and 5 port valves can be mounted on the same manifold.



All solenoids on one side

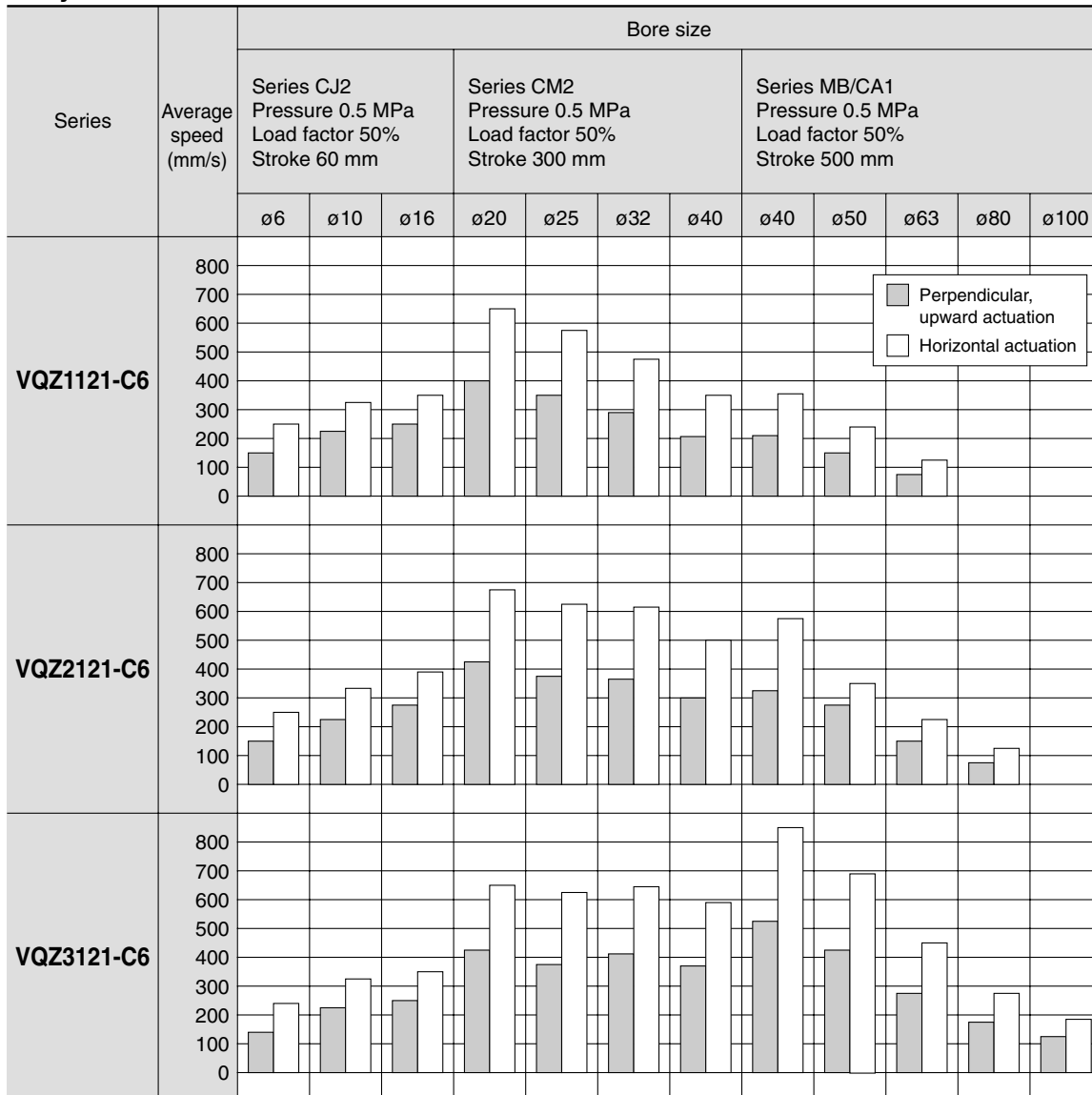
Optional latching coil valve operates the same as a 2 position/double solenoid valve but uses only one solenoid. This saves space and wiring costs.



Cylinder Speed Chart

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

Body Ported









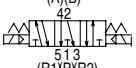
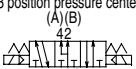

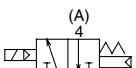
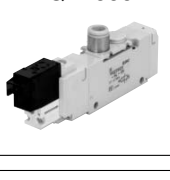

- * It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
- * The average velocity of the cylinder is what the stroke is divided by the total stroke time.
- * Load factor: ((Load weight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

Conditions

Body ported		Series CJ2	Series CM2	Series MB/CA1
VQZ1121-C6	Tube x Length	T0604 x 1 m		
	Speed controller	AS2051F-06		
	Silencer	AN120-M5		
VQZ2121-C6	Tube x Length	T0604 x 1 m		
	Speed controller	AS3001F-06		
	Silencer	INA-25-46		
VQZ3121-C6	Tube x Length	T1075 x 1 m		
	Speed controller	AS4001F-10		
	Silencer	AN101-01		

Series VQZ Body Ported

Model Selection

		Sonic conductance C [dm ³ /(s·bar)]		Type of actuation	Voltage	Electrical entry	Light/Surge voltage suppressor	Manual override							
Body Ported	5 port		0.54	0.71	2 position single (A)(B)  (R1)(P)(R2)	(Standard) 12 VDC 24 VDC (Option) 100 VAC 200 VAC 110 VAC 220 VAC	Grommet (G)	With light/surge voltage suppressor	Non-locking push type (Tool required)	VQC					
			1.4	1.6	2 position double (A)(B)  (R1)(P)(R2)					L plug connector (L)	L plug connector (L)	SQ			
			2.4	3.2	3 position closed center (A)(B)  (R1)(P)(R2) 3 position exhaust center (A)(B)  (R1)(P)(R2) 3 position pressure center (A)(B)  (R1)(P)(R2)							M plug connector (M)	M plug connector (M)	VQ0 VQ4 VQ5	
	3 port for mixture mounting		0.54	0.71	(A)  (R)(P)		(Except VQZ1000)	DIN terminal (Y)				DIN terminal (YZ) (Except VQZ1000)	Locking type (Tool required)	VQZ	
			1.4	1.6	N.C.					(Except VQZ1000)	DIN terminal (Y)			Locking type (Tool required)	VQD
			2.4	3.2	N.O.										

* Flow characteristics: 4/2 → 5/3 (A/B → R1/R2)

⚠ Precautions

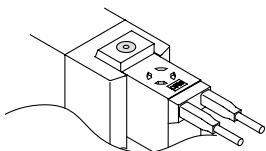
Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 2-9-2.

Manual Override

⚠ Warning

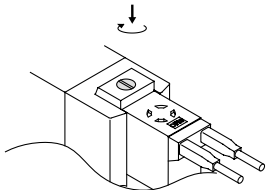
Without an electric signal for the solenoid valve the manual override is used for switching the main valve. Locking type (Tool required) is available as an option.

Push type (Tool required)

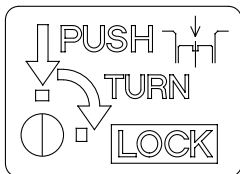


Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

Locking type (Tool required)



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



⚠ Caution

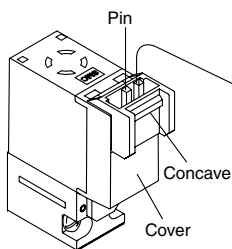
Do not apply excessive torque when turning the locking type manual override. (0.1 N·m or less)

How to Use L/M Plug Connector

⚠ Caution

Attaching and detaching connectors

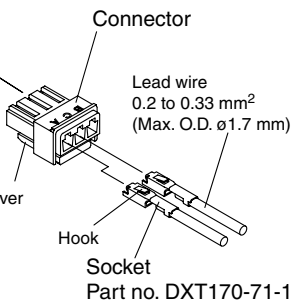
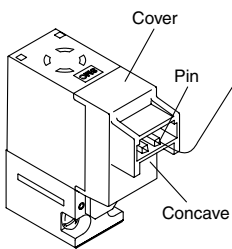
M plug connector



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

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

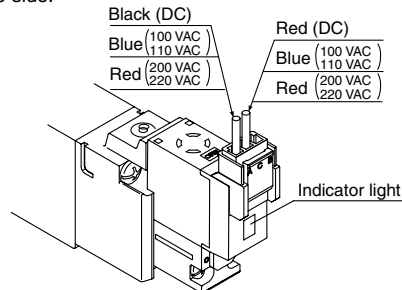
L plug connector



Refer to page 2-7-28 for part no. of plug connector assembly.

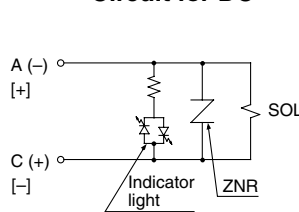
Connection and Electrical Circuit

Both DCs have no polarity, and then connect each lead wire with the power source side.

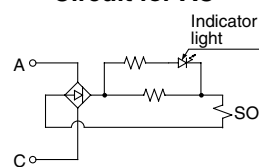


For with Light/Surge Voltage Suppressor

Circuit for DC



Circuit for AC



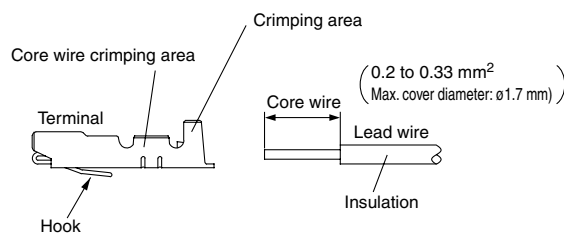
Due to the use of non-polar light, the VQZ series has no polarity. Refer to page 2-7-26 for latching style.

Connection of Lead Wire

(Not necessary if ordering the lead wire pre-connected model.)

Crimping of lead wires and sockets

Peel 3.2 to 3.7 mm of the tip of lead wire, enter the core wires neatly into a socket and crimp it with a special crimp tool. Be careful so that the cover of lead wire does not enter into the crimping part.



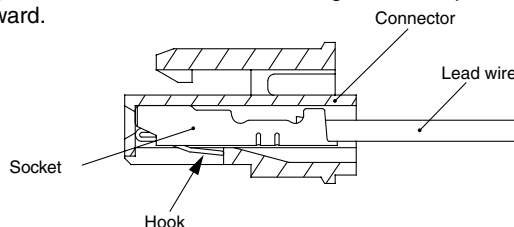
Crimping tool: Model no. DXT170-75-1

Attaching

Insert the sockets into the square holes of the connector (with ⊕ and ⊖ indication) and, continue to push the sockets all the way in until the lock by hooking into the seats in the connector. (When they are pushed in, their hooks open and they are locked automatically.) Then confirm that they are locked by pulling lightly on the lead wires.

Detaching

To detach a socket from a connector, pull out the lead wire while pressing the socket's hook with a stick having a thin tip (approx. 1 mm). If the socket will be used again, first spread the hook outward.



How to Wire DIN Terminal

Conforming to ISO#: DIN 43650 C (8 mm between pins)

Connection

- Loosen the top screw and remove the connector housing from the terminal spades on the solenoid.
- Remove the housing screw and insert a screwdriver into the slot area on the underside of the DIN cap and carefully separate block and housing.
- Loosen the terminal screws (slotted screws) on the terminal block, insert the core of the lead wire into the terminal in accordance with the prescribed connection method, and attach securely with the terminal screws.
- Tighten the ground nut to secure the wire.

Change of electrical entry (Orientation)

After separating terminal block and housing, the cord entry direction can be changed by attaching the housing in the desired direction (4 directions in 90° increments).

* In the case of indicator light, avoid damaging the light with lead wire.

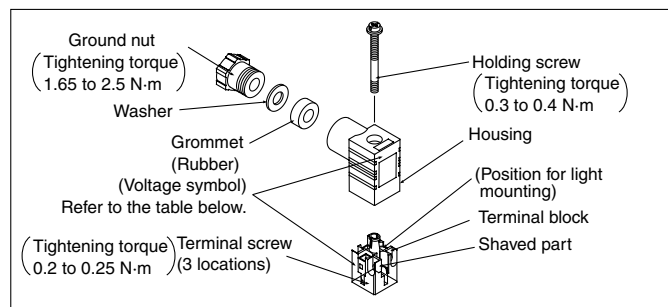
Precautions

Pull a connector out vertically, never at an angle.

Applicable cable

O.D.: $\phi 3.5$ to $\phi 7$

(Reference) 0.5 mm² 2 core and 3 core wires equivalent to JIS C 3306.



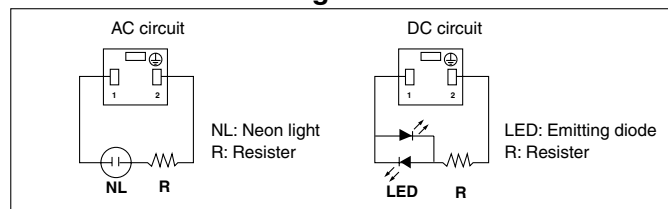
DIN Terminal Part No.

Without light	AXT100-20-1
---------------	-------------

With Indicator Light

Rated voltage	Voltage symbol	Part no.
24 VDC	24V	AXT100-20-2-05
12 VDC	12V	AXT100-20-2-06
100 VAC	100V	AXT100-20-2-01
200 VAC	200V	AXT100-20-2-02
110 VAC	110V	AXT100-20-2-03
220 VAC	220V	AXT100-20-2-04

Circuit with indicator light

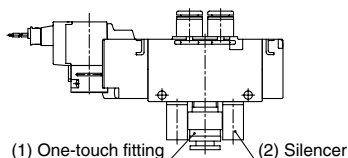


Fitting and Silencer Part No. for P, R Ports When Using Valve as an Individual Unit

Part no. for One-touch fitting for 1(P) port and Silencer for 3(R2, R), 5(R1) port

Series	(1) One-touch fitting for 1(P) port	(2) Silencer for 3(R2, R), 5(R1)	
		Silencer	One-touch fitting
VQZ1000	KQH06-M5	AN120-M5	KJSO4-M5
VQZ2000	KQH06-01S	INA-25-46	IN-457-32L (for $\phi 6$)
VQZ3000	KQH08-02S	AN101-01	KQH06-01S

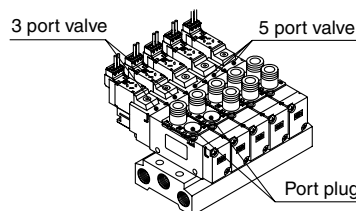
The diameter of the above fitting and silencer is the maximum diameter to in the EXH port.



Mounting 3 Port Valves on 5 Port Manifolds

(VQZ $\frac{1}{3}$ 82 $\frac{0}{1}$, N.C./VQZ $\frac{1}{3}$ 92 $\frac{0}{1}$, N.O.)

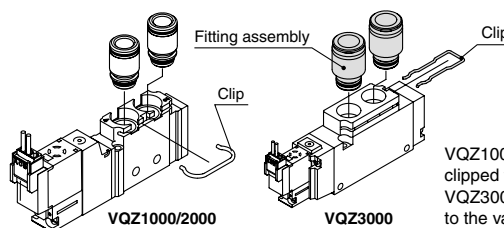
Even though 3 port valves have the same construction as the 5 port single solenoid valves, the port plug is installed in the 2(B) port for N.C. type, and 4(A) port or N.O. type. By changing the port plug into a fitting, it can be used as the 5 port single solenoid valves, too.



Changing the One-touch Fittings

The built-in fittings on the manifold can be changed easily. Simply remove the corresponding valve and take out the fitting clip underneath.

Take out the clip with a screwdriver, etc., then replace the fittings. About mounting the fittings, after inserting the fitting until it stops, then put the clip into the prescribed position.



VQZ1000/2000: Horizontally clipped to the valve body
VQZ3000: Vertically clipped to the valve body

Precautions

When pulling the fitting assembly away from the valve base, remove the clip, then connect a tube or plug (KQP-□□) with the One-touch fitting and pull it out holding the tube or plug. Do not hold the release bushing to avoid damage.

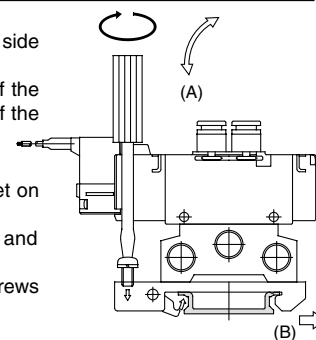
DIN Rail Removal/Mounting

Removing

- Loosen the clamp screw on the (A) side of both ends of the manifold.
- Lift the (A) side of the manifold off the DIN rail and slide it in the direction of the (B) side.

Mounting

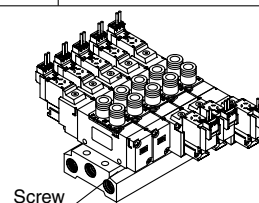
- Catch the hook of the DIN rail bracket on the (B) side on the DIN rail.
- Push side (A) onto the DIN rail and tighten the clamp screw.
The proper tightening torque for screws is 0.3 to 0.4 N-m.



Valve Mounting

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

Model	Proper tightening torque
VQZ1000	0.18 to 0.25 N-m
VQZ2000	0.25 to 0.35 N-m
VQZ3000	0.5 to 0.7 N-m



How to Calculate the Flow Rate

For obtaining the flow rate, refer to pages 2-1-8 to 2-1-11.

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

5 Port Solenoid Valve

Body Ported

Plug Lead Unit: Single Unit

VQZ1000/2000/3000

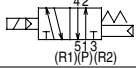
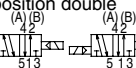
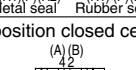
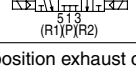
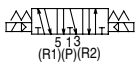
How to Order Valves

VQZ 1 1 2 1 5 M C6

Series

1	VQZ1000 body width 10 mm
2	VQZ2000 body width 15 mm
3	VQZ3000 body width 18 mm

Type of actuation

1	2 position single (A)(B)  (R1)(P)(R2)
2	2 position double (A)(B) (A)(B)  (R1)(P)(R2) (R1)(P)(R2) Metal seal Rubber seal
3	3 position closed center (A)(B)  (R1)(P)(R2)
4	3 position exhaust center  (R1)(P)(R2)
5	3 position pressure center (A)(B)  (R1)(P)(R2)

Note) Except VQZ1000 and metal seal type.

Body

2	Body ported
---	-------------

Seal

0	Metal seal
1	Rubber seal

Function

Symbol	Specifications	DC	AC
Nil	Standard	(1.0 W) ○	(3) ○
K ⁽¹⁾	High pressure (Metal seal only)	(1.0 W) ○	—
Y	Low wattage type	(0.5 W) ○	—
R ⁽²⁾	External pilot	○	○

Note 1) Option
Note 2) For details about external pilot specifications except VQZ1000, refer to page 2-7-27.

Note 3) For power consumption of AC type, refer to page 2-7-7.

Note 4) When two or more symbols are specified, indicate them alphabetically.

For One-touch fittings to be mounted on this valve and the silencer part no., refer to page 2-7-5.

Bracket

Nil	None
F	With bracket (Applicable to single)

Port size {4(A), 2(B) port}

Symbol	Port size	VQZ1000	VQZ2000	VQZ3000
C3	One-touch fitting for ø3.2	○	—	—
C4	One-touch fitting for ø4	○	○	—
C6	One-touch fitting for ø6	○	○	○
C8	One-touch fitting for ø8	—	—	○
C10	One-touch fitting for ø10	—	—	○
M5	M5 thread	○	○	—
Ø2	Rc 1/4	—	—	○

Note) For inch size and One-touch fittings, refer to page 2-7-27.

Manual override

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

Electrical entry

G: Grommet (DC specification)	L: L plug connector with lead wire	LO: L plug connector without connector	M: M plug connector with lead wire	MO: M plug connector without connector
	With light/surge voltage suppressor	With light/surge voltage suppressor	With light/surge voltage suppressor	With light/surge voltage suppressor
Y: DIN terminal	YO: DIN terminal without connector	YZ: DIN terminal ⁽¹⁾	YOS: DIN terminal ⁽¹⁾ without connector	YS: DIN terminal ⁽¹⁾
		With light/surge voltage suppressor	With surge voltage suppressor	With surge voltage suppressor

Note 1) Applicable to VQZ2000 and 3000.
Note 2) Standard lead wire length: 300 mm

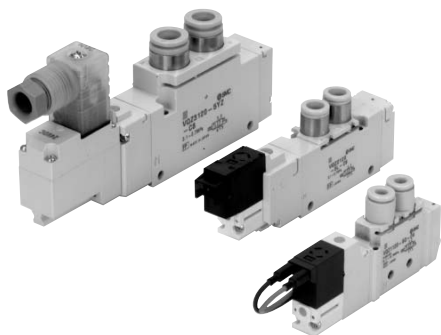
Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC
9 ^{Note)}	Other

Note) For the special voltages, please consult with SMC.

Plug Lead Unit: Single Unit Series VQZ1000/2000/3000

Standard Specifications



Note 1) Use dry air to prevent condensation when operating at low temperatures.
 Note 2) Impact resistance:
 No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)
 Vibration resistance:
 No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Valve specifications	Valve construction		Metal seal	Rubber seal	
	Fluid		Air/Inert gas	Air/Inert gas	
	Maximum operating pressure		0.7 MPa (High pressure type: 1.0 MPa)	0.7 MPa	
	Min. operating pressure	2 position	0.1 MPa Only for VQZ3000, 3 position 0.15 MPa	0.15 MPa	
		3 position		0.2 MPa	
	Ambient and fluid temperature		-10 to 50°C ⁽¹⁾	-10 to 50°C ⁽¹⁾	
	Max. operating frequency	2 position	20 Hz	5 Hz	
		3 position	10 Hz	3 Hz	
	Pilot valve EXH		Individual EXH		
	Lubrication		Not required		
Pilot valve manual override		Push type/Locking type (Tool required) Option			
Shock/Vibration resistance ⁽²⁾		150/30 m/s ²			
Enclosure		Dustproof			
Electricity specifications	Coil rated voltage		12, 24 VDC and 100, 110, 200, 220 VAC		
	Allowable voltage fluctuation		±10% of rated voltage		
	Coil insulation type		Equivalent to class B		
	Power consumption (Current)	24 VDC		1 W DC (42 mA), 0.5 W DC (21 mA)	
		12 VDC		1 W DC (83 mA), 0.5 W DC (42 mA)	
		100 VAC		Inrush 0.5 VA (5 mA), Holding 0.5 VA (5 mA)	
		110 VAC		Inrush 0.55 VA (5 mA), Holding 0.55 VA (5 mA)	
200 VAC		Inrush 1.0 VA (5 mA), Holding 1.0 VA (5 mA)			
220 VAC		Inrush 1.1 VA (5 mA), Holding 1.1 VA (5 mA)			

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

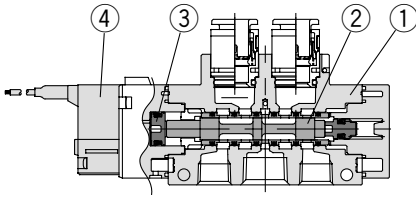
Model

Series	Configuration	Model	Flow characteristics							Response time (ms) ⁽¹⁾			Weight (g) ⁽²⁾	
			1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Standard: 1W	High pressure: 1W Low wattage: 0.5 W	AC			
			C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv						
VQZ1000	2 position	Single	Metal seal	VQZ1120	0.54	0.20	0.13	0.54	0.26	0.13	12 or less	15 or less	29 or less	42
			Rubber seal	VQZ1121	0.90	0.40	0.26	0.71	0.40	0.19	12 or less	15 or less	34 or less	
	3 position	Double	Metal seal	VQZ1220	0.54	0.20	0.13	0.54	0.26	0.13	10 or less	13 or less	13 or less	61
			Rubber seal	VQZ1221	0.90	0.40	0.26	0.71	0.40	0.19	10 or less	13 or less	13 or less	
		Closed center	Metal seal	VQZ1320	0.55	0.29	0.13	0.50	0.25	0.08	20 or less	26 or less	40 or less	
			Rubber seal	VQZ1321	0.87	0.38	0.23	0.68	0.39	0.18	25 or less	33 or less	47 or less	
Exhaust center	Metal seal	VQZ1420	0.55	0.28	0.13	0.54	0.26	0.13	20 or less	26 or less	40 or less			
	Rubber seal	VQZ1421	0.87	0.38	0.23	0.71	0.40	0.19	25 or less	33 or less	47 or less			
Pressure center	Rubber seal	VQZ1521	0.91	0.41	0.26	0.68	0.39	0.18	25 or less	33 or less	47 or less			
VQZ2000	2 position	Single	Metal seal	VQZ2120	1.2	0.21	0.30	1.4	0.20	0.32	14 or less	18 or less	34 or less	64
			Rubber seal	VQZ2121	1.7	0.39	0.45	1.6	0.35	0.44	15 or less	20 or less	36 or less	
	3 position	Double	Metal seal	VQZ2220	1.2	0.21	0.30	1.4	0.20	0.32	10 or less	13 or less	13 or less	88
			Rubber seal	VQZ2221	1.7	0.39	0.45	1.6	0.35	0.44	12 or less	15 or less	15 or less	
		Closed center	Metal seal	VQZ2320	1.1	0.21	0.26	1.1	0.24	0.26	23 or less	30 or less	44 or less	
			Rubber seal	VQZ2321	1.4	0.33	0.35	1.4	0.37	0.36	25 or less	33 or less	47 or less	
		Exhaust center	Metal seal	VQZ2420	1.1	0.23	0.28	1.4	0.20	0.32	23 or less	30 or less	44 or less	
			Rubber seal	VQZ2421	1.4	0.33	0.35	1.6	0.35	0.44	25 or less	33 or less	47 or less	
Pressure center	Metal seal	VQZ2520	1.3	0.28	0.34	1.2	0.27	0.30	23 or less	30 or less	44 or less			
Rubber seal	VQZ2521	1.7	0.34	0.44	1.4	0.37	0.36	25 or less	33 or less	47 or less				
VQZ3000	2 position	Single	Metal seal	VQZ3120	2.4	0.23	0.56	2.4	0.19	0.54	17 or less	22 or less	34 or less	109
			Rubber seal	VQZ3121	3.1	0.34	0.79	3.2	0.38	0.81	25 or less	33 or less	57 or less	
	3 position	Double	Metal seal	VQZ3220	2.4	0.23	0.56	2.4	0.19	0.54	10 or less	13 or less	13 or less	134
			Rubber seal	VQZ3221	3.1	0.34	0.79	3.2	0.38	0.81	15 or less	20 or less	20 or less	
		Closed center	Metal seal	VQZ3320	2.3	0.19	0.54	2.1	0.21	0.54	25 or less	33 or less	53 or less	
			Rubber seal	VQZ3321	2.7	0.30	0.66	2.4	0.33	0.62	30 or less	39 or less	59 or less	
		Exhaust center	Metal seal	VQZ3420	2.3	0.19	0.54	2.4	0.19	0.54	25 or less	33 or less	53 or less	
			Rubber seal	VQZ3421	2.7	0.30	0.66	3.2	0.38	0.81	30 or less	39 or less	59 or less	
		Pressure center	Metal seal	VQZ3520	2.5	0.25	0.60	2.1	0.18	0.47	25 or less	33 or less	53 or less	
			Rubber seal	VQZ3521	3.2	0.38	0.82	2.4	0.33	0.62	30 or less	39 or less	59 or less	

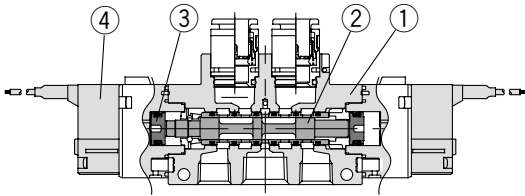
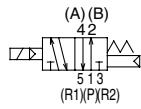
Note 1) Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa; with light/surge voltage suppressor; clean air)
 Response time values will change depending on pressure and air quality. The values at the time of ON are given for double types.
 Note 2) Weight without sub-plate

Construction: VQZ1000/2000/3000

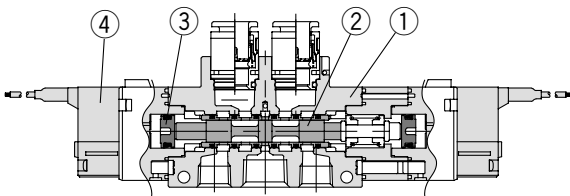
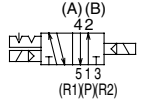
Metal seal type



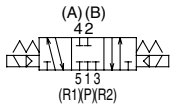
2 position single



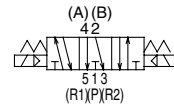
2 position double



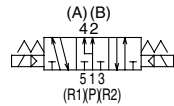
3 position closed center



3 position exhaust center

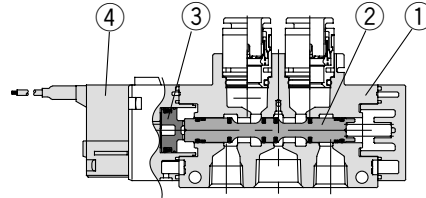


3 position pressure center ^{Note)}

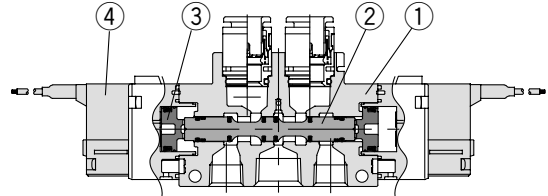
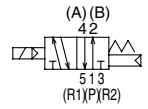


Note) Except VQZ1000 and metal seal type.

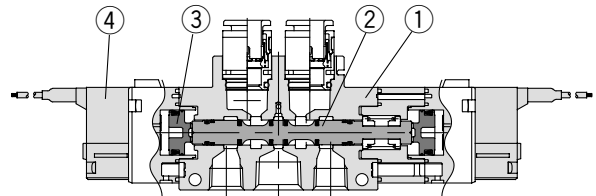
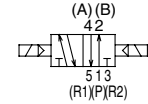
Rubber seal type



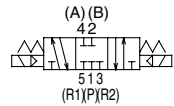
2 position single



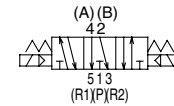
2 position double



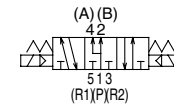
3 position closed center



3 position exhaust center



3 position pressure center



Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted	
②	Spool/Sleeve	Stainless steel	Metal seal
②	Spool valve	Aluminum/HNBR	Rubber seal
③	Piston	Resin	
④	Pilot valve assembly	—	



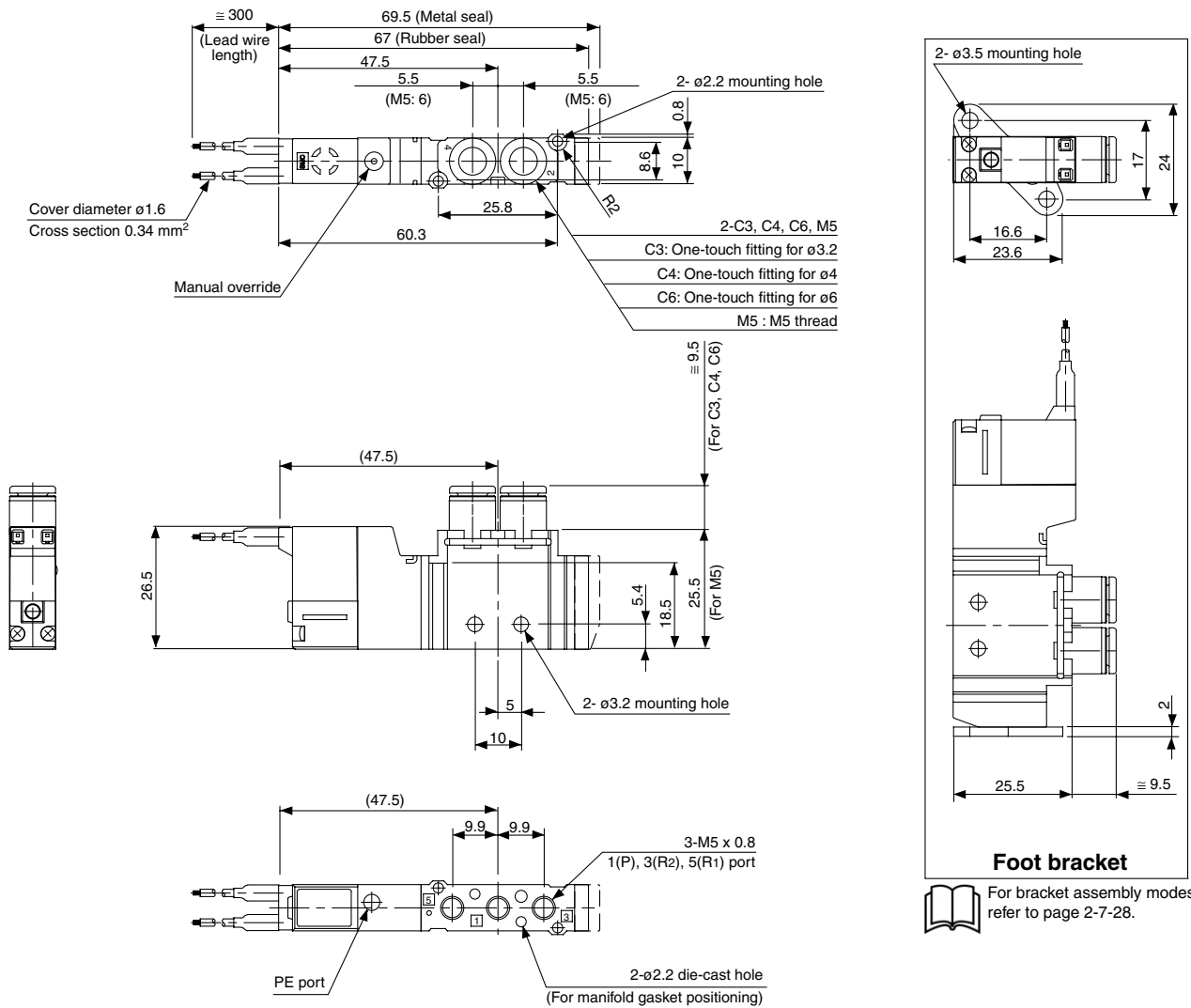
Refer to page 2-7-28 for Pilot Valve Assembly.

Plug Lead Unit: Single Unit Series VQZ1000/2000/3000

Dimensions: VQZ1000

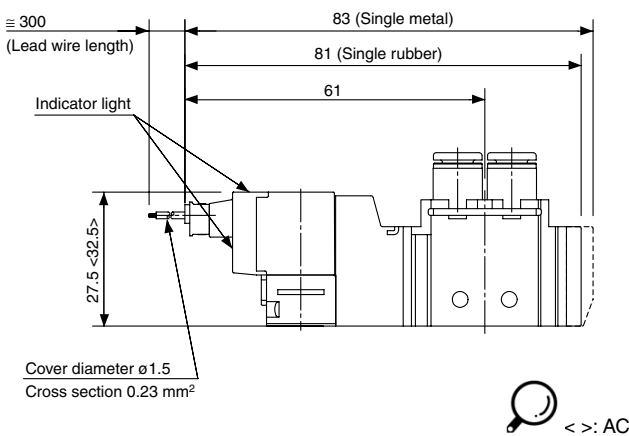
2 position single

Grommet (G): VQZ112⁰-□G□-C3/C4/C6/M5

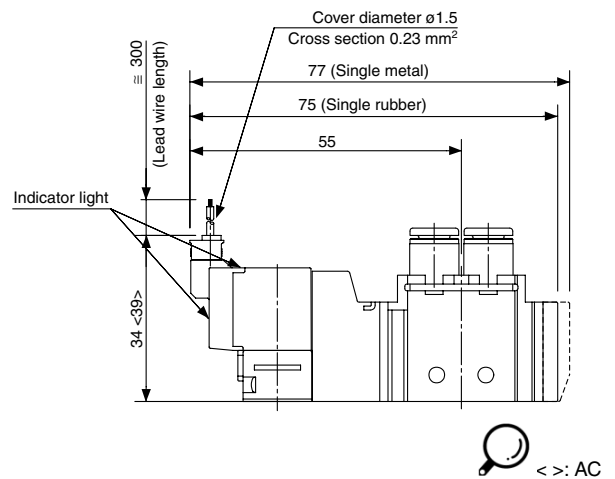


- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ**
- VQD

L plug connector (L): VQZ112⁰-□L□-C3/C4/C6/M5



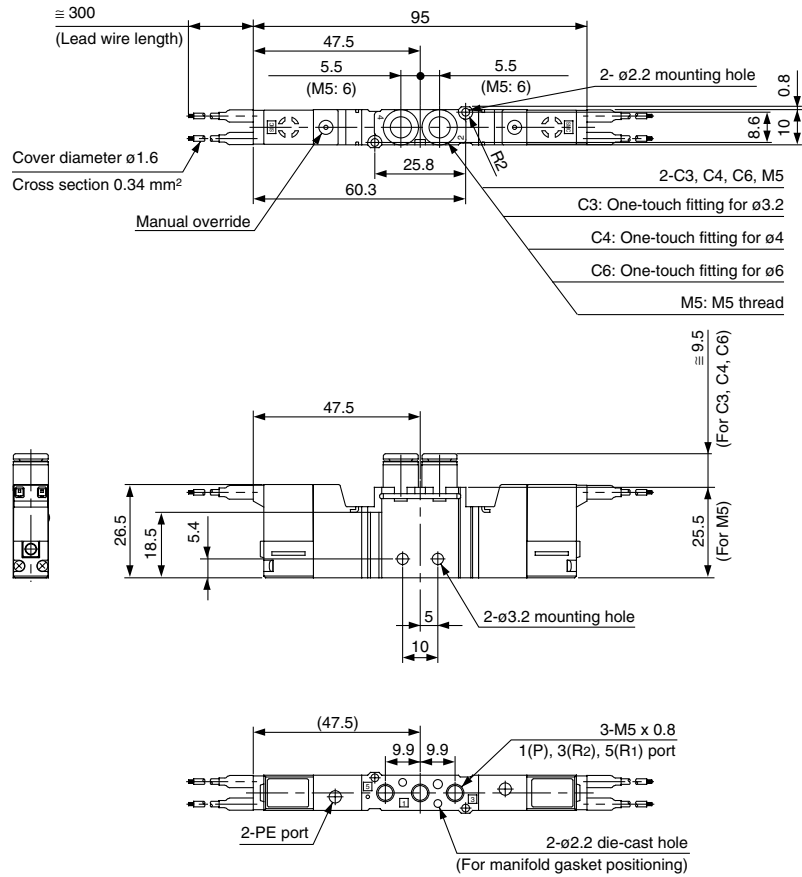
M plug connector (M): VQZ112⁰-□M□-C3/C4/C6/M5



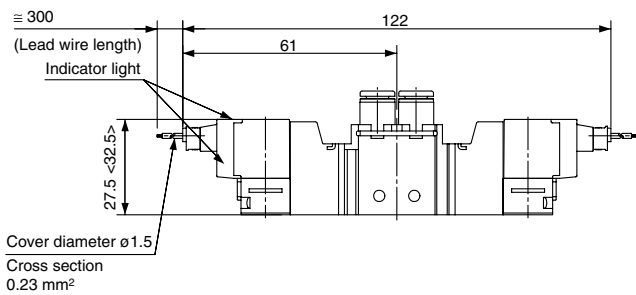
Dimensions: VQZ1000

2 position double

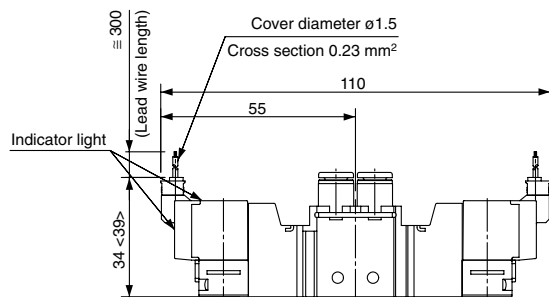
Grommet (G): VQZ122⁰-□G□-C3/C4/C6/M5



L plug connector (L): VQZ122⁰-□L□-C3/C4/C6/M5



M plug connector (M): VQZ122⁰-□M□-C3/C4/C6/M5

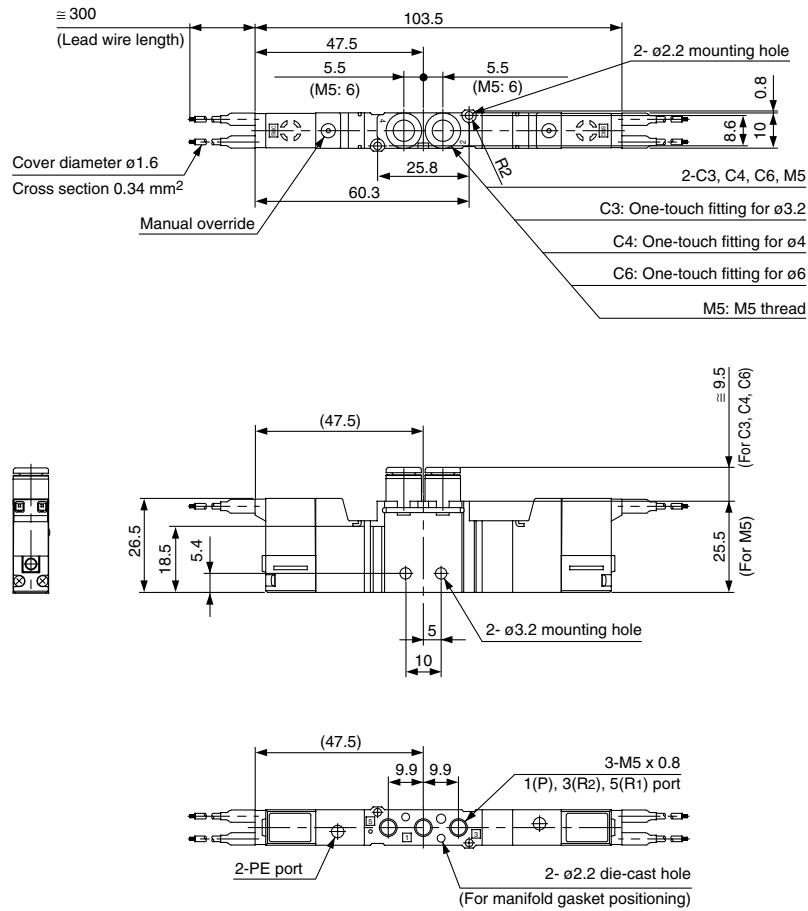


Plug Lead Unit: Single Unit Series VQZ1000/2000/3000

VQZ1000

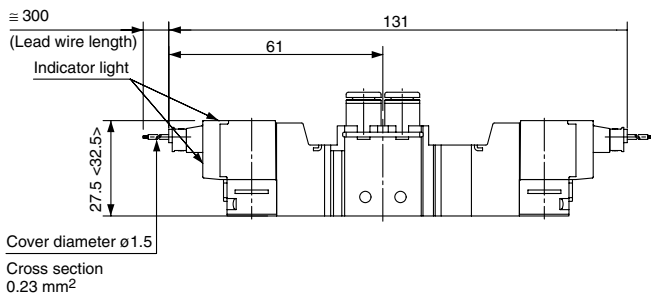
3 position closed center/exhaust center/pressure center (Except metal seal type)

Grommet (G): VQZ1 $\frac{3}{4}$ 2 $\frac{0}{1}$ -□G□-C3/C4/C6/M5

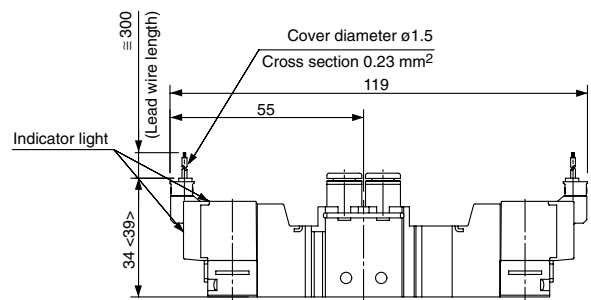


- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD

L plug connector (L): VQZ1 $\frac{3}{4}$ 2 $\frac{0}{1}$ -□L□-C3/C4/C6/M5



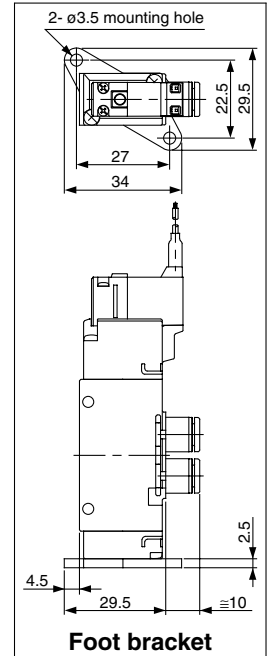
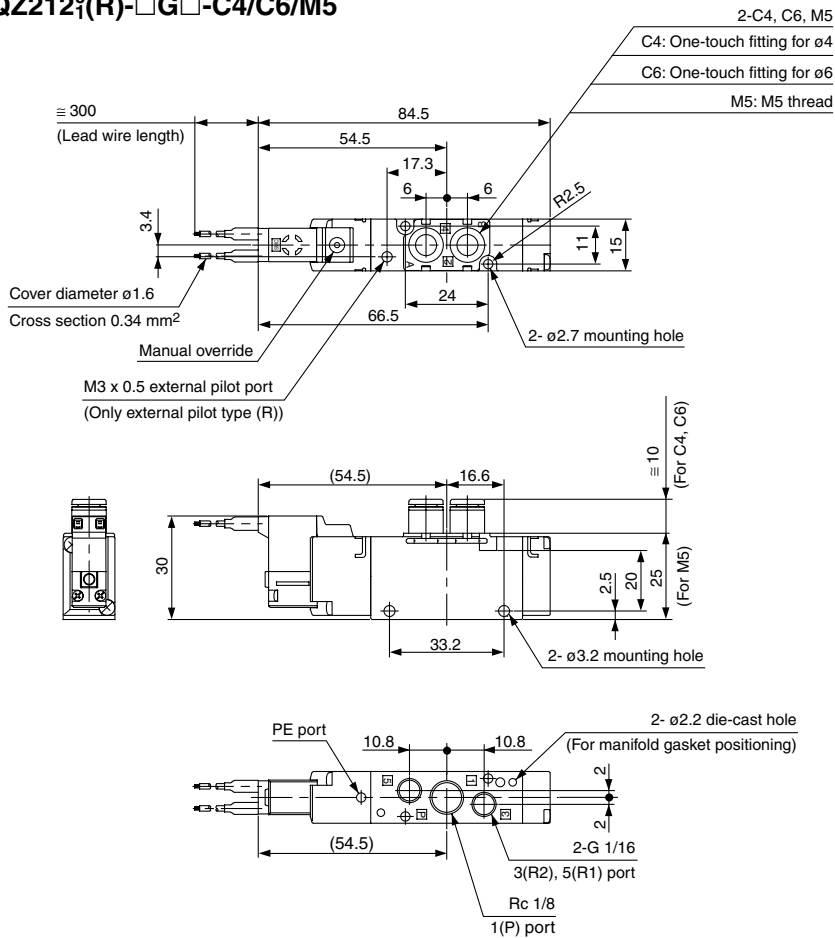
M plug connector (M): VQZ1 $\frac{3}{4}$ 2 $\frac{0}{1}$ -□M□-C3/C4/C6/M5



Dimensions: VQZ2000

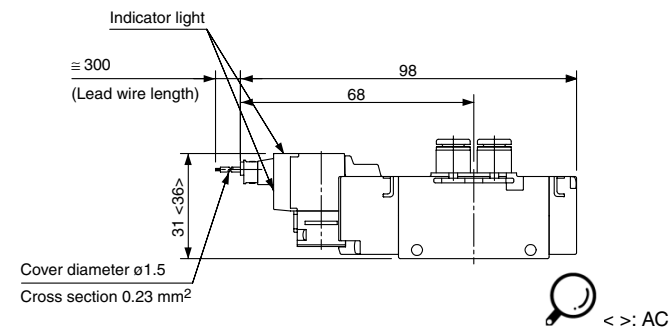
2 position single

Grommet (G): VQZ212⁰(R)-□G□-C4/C6/M5

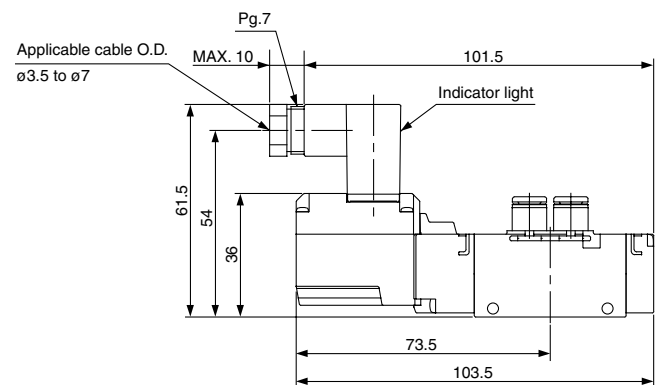


For bracket assembly modes, refer to page 2-7-28.
 For model no. for One-touch fittings for P, R port and silencer, refer to page 2-7-5.

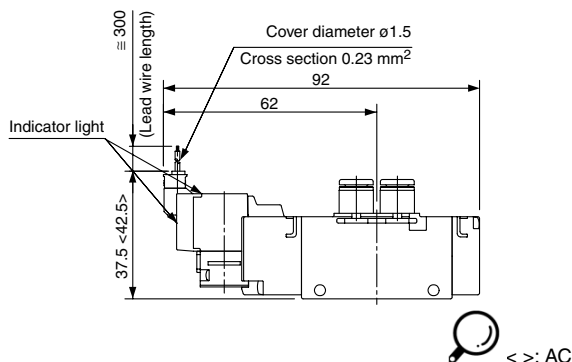
L plug connector (L): VQZ212⁰(R)-□L□-C4/C6/M5



DIN terminal (Y): VQZ212⁰(R)-□Y□-C4/C6/M5



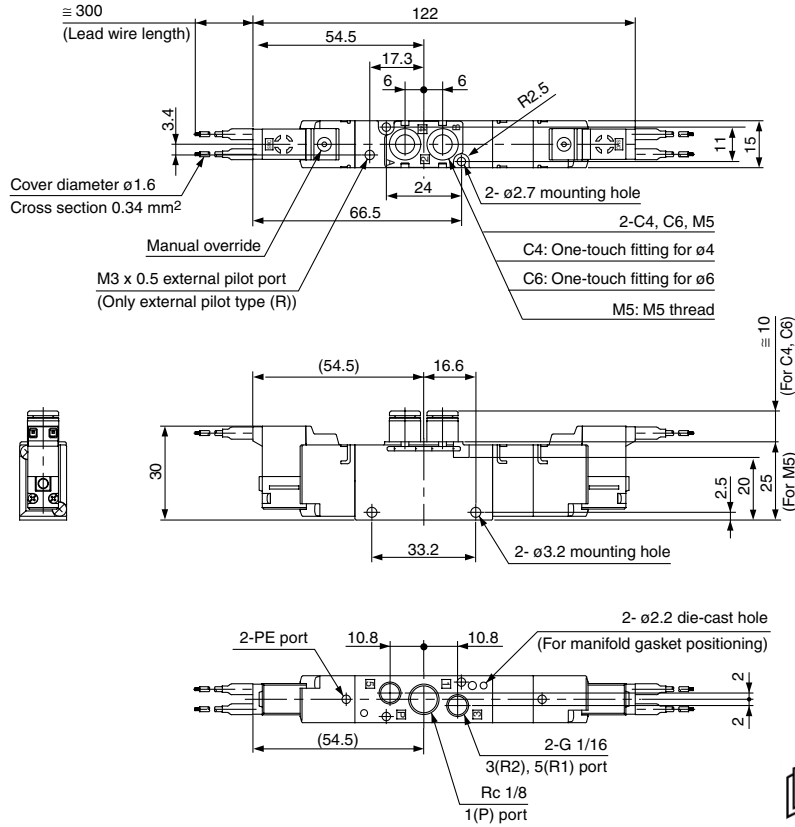
M plug connector (M): VQZ212⁰(R)-□M□-C4/C6/M5



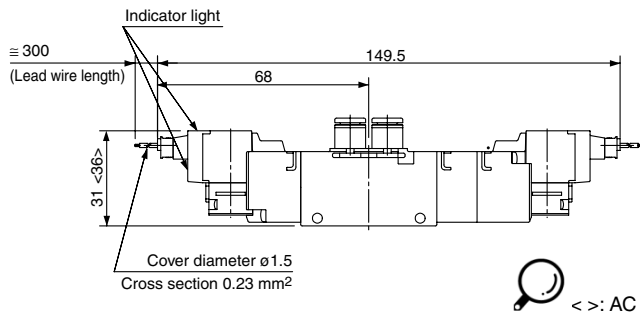
Dimensions: VQZ2000

3 position closed center/exhaust center/pressure center

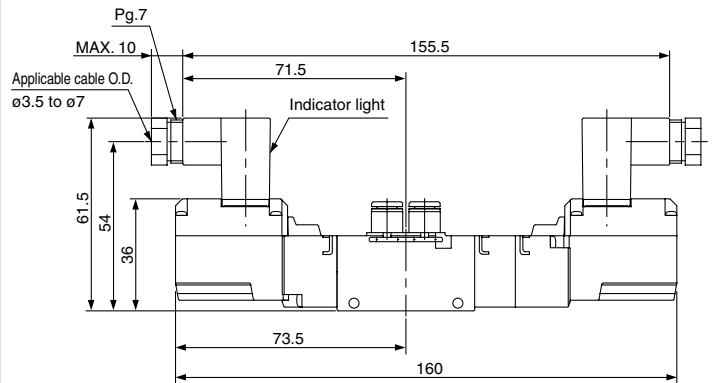
Grommet (G): VQZ2 $\frac{3}{4}$ 2 $\frac{0}{1}$ (R)-□G□-C4/C6/M5



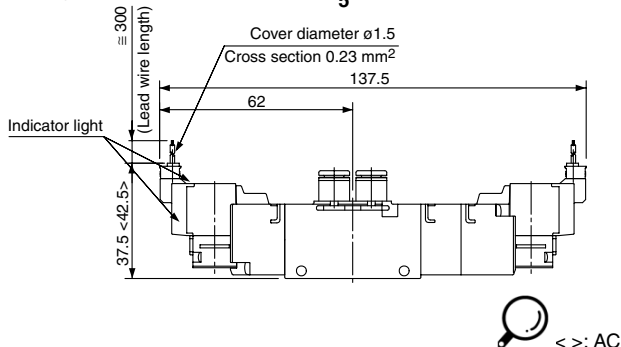
L plug connector (L): VQZ2 $\frac{3}{4}$ 2 $\frac{0}{1}$ (R)-□L□-C4/C6/M5



DIN terminal (Y): VQZ2 $\frac{3}{4}$ 2 $\frac{0}{1}$ (R)-□Y□-C4/C6/M5



M plug connector (M): VQZ2 $\frac{3}{4}$ 2 $\frac{0}{1}$ (R)-□M□-C4/C6/M5

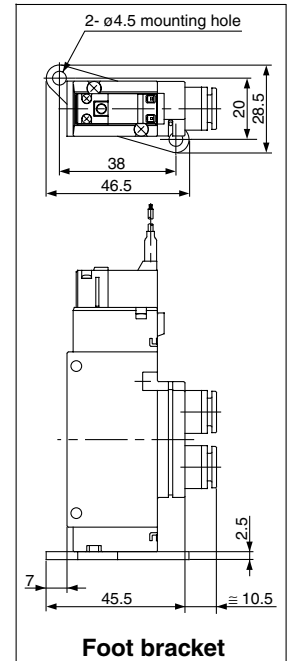
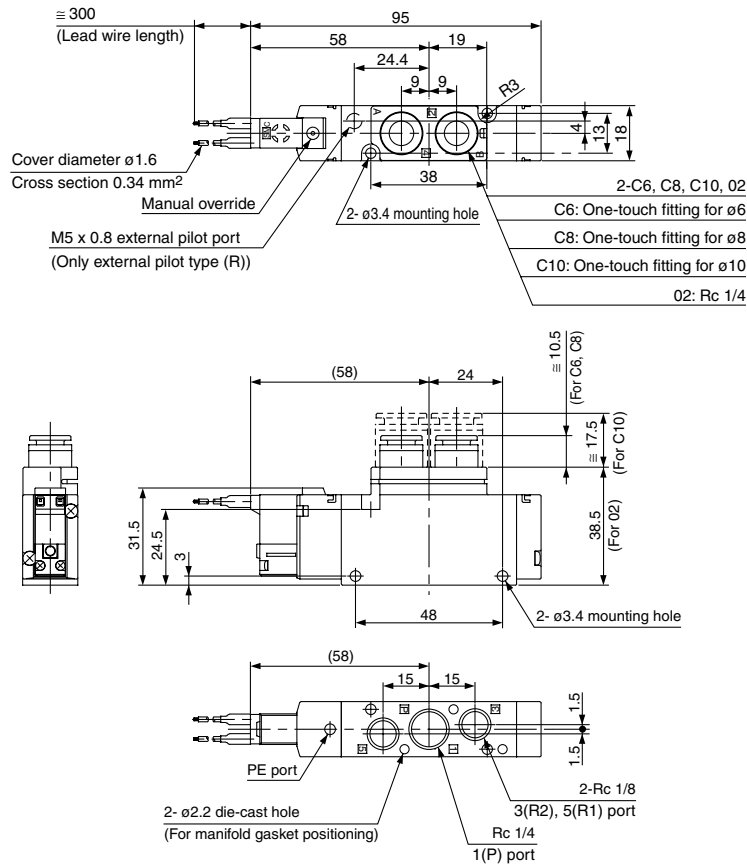


Plug Lead Unit: Single Unit Series VQZ1000/2000/3000

VQZ3000

2 position single

Grommet (G): VQZ312⁰(R)-□G□-C6/C/C10/02



Foot bracket

For bracket assembly modes, refer to page 2-7-28.

VQC

SQ

VQ0

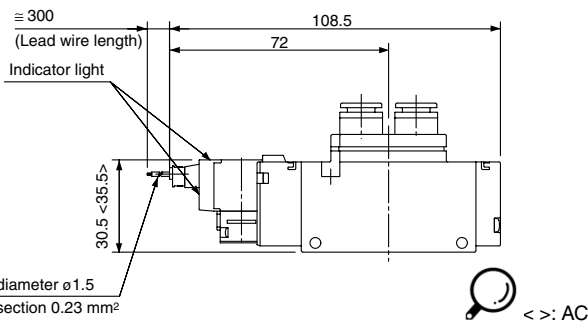
VQ4

VQ5

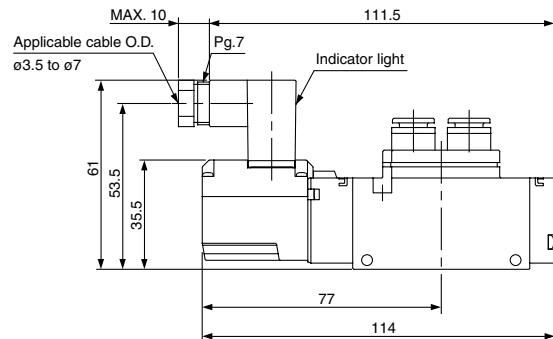
VQZ

VQD

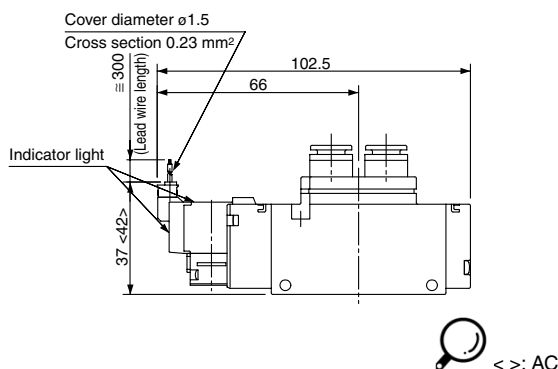
L plug connector (L): VQZ312⁰(R)-□L□-C6/C8/C10/02



DIN terminal (Y): VQZ312⁰(R)-□Y□-C6/C8/C10/02



M plug connector (M): VQZ312⁰(R)-□M□-C6/C8/C10/02

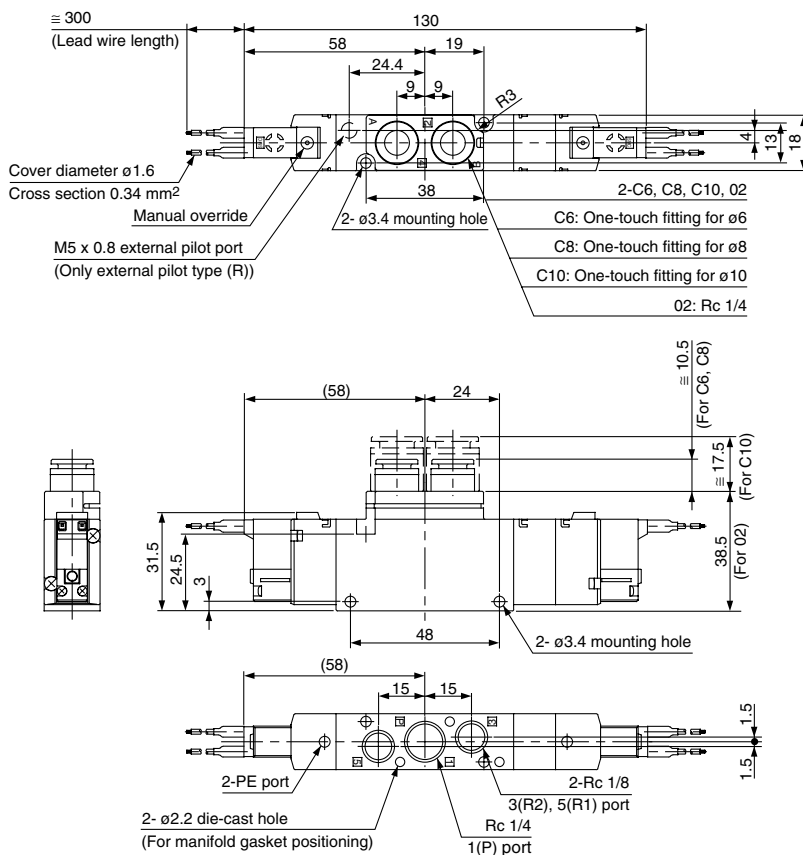


Plug Lead Unit: Single Unit Series VQZ1000/2000/3000

VQZ3000

3 position closed center/exhaust center/pressure center

Grommet (G): VQZ3³/₄ 2⁰/₁(R)-□G□-C6/C8/C10/02



VQC

SQ

VQ0

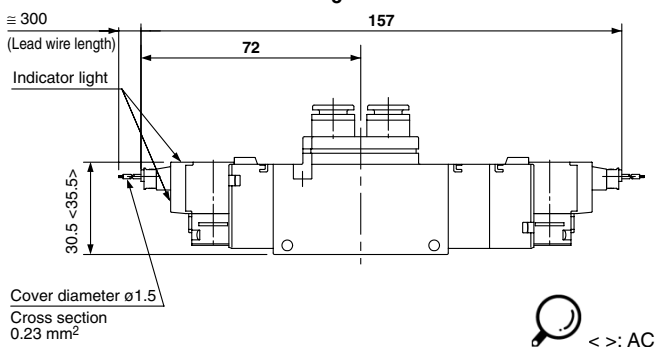
VQ4

VQ5

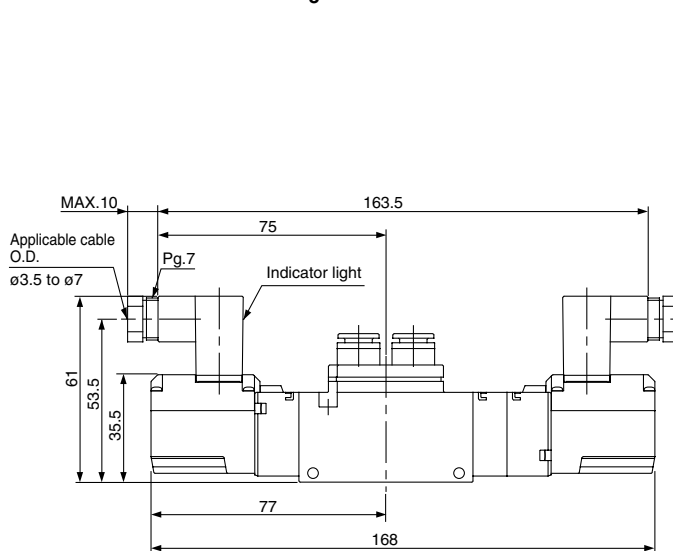
VQZ

VQD

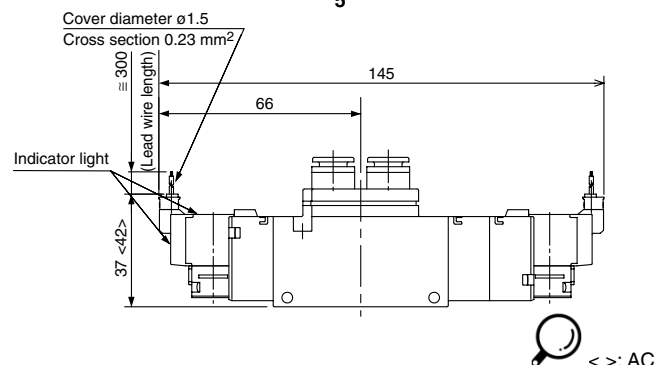
L plug connector (L): VQZ3³/₄ 2⁰/₁(R)-□L□-C6/C8/C10/02



DIN terminal (Y): VQZ3³/₄ 2⁰/₁(R)-□Y□-C6/C8/C10/02



M plug connector (M): VQZ3³/₄ 2⁰/₁(R)-□M□-C6/C8/C10/02



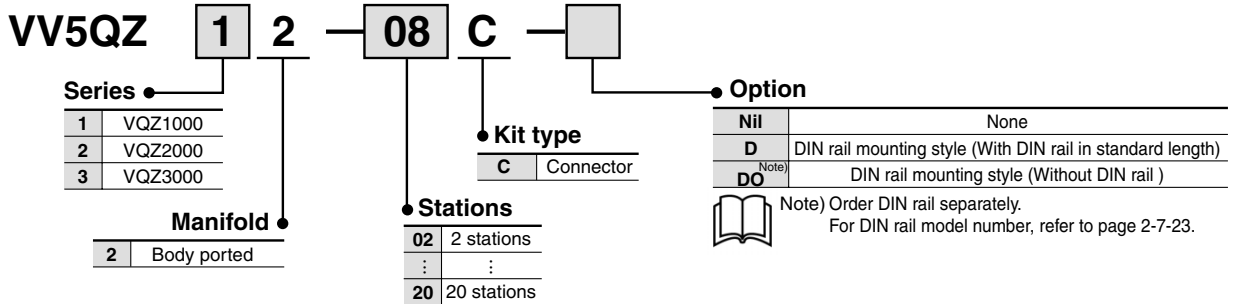
5 Port Solenoid Valve

Body Ported

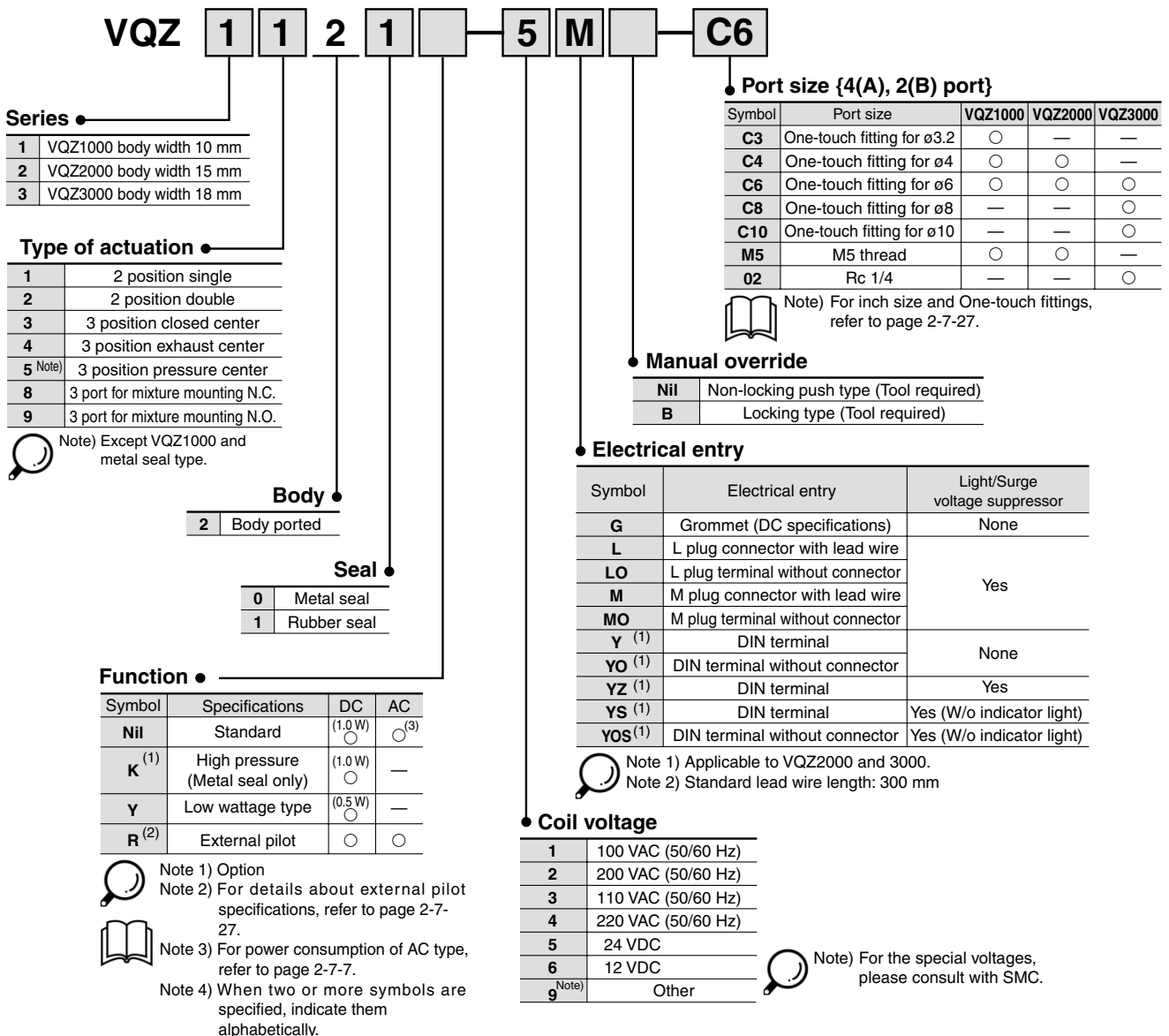
Plug Lead Unit: Manifold (Connector Kit)

VQZ1000/2000/3000

How to Order Manifold

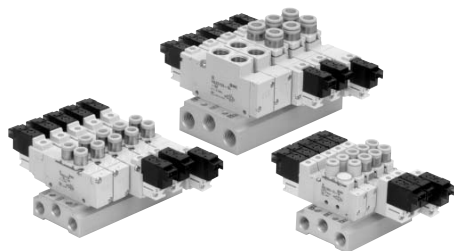


How to Order Valves



Plug Lead Unit: Manifold Series VQZ1000/2000/3000

Manifold Specifications



Series	Base model	Porting specifications			Applicable solenoid valve	Applicable stations	Manifold base weight (g)
		Port location	Port size				
			1(P), 3/5(R)	4(A), 2(B)			
VQZ1000	VV5QZ12-□□□	Top	Rc 1/8	C3 (For ø3.2) C4 (For ø4) C6 (For ø6) M5 (M5 thread)	VQZ1□20 VQZ1□21	2 to 20 stations	2 stations: 64 Addition per/station: 18
VQZ2000	VV5QZ22-□□□	Top	Rc 1/8	C4 (For ø4) C6 (For ø6) M5 (M5 thread)	VQZ2□20 VQZ2□21	2 to 20 stations	2 stations: 86 Addition per/station: 26
VQZ3000	VV5QZ32-□□□	Top	Rc 1/4	C6 (For ø6) C8 (For ø8) C10(For ø10) Rc 1/4	VQZ3□20 VQZ3□21	2 to 20 stations	2 stations: 181 Addition per/station: 53

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

How to Order Valve Manifold Assembly (Example)

VV5QZ22-05C..... 1 set (C kit 5 stations manifold base)

*VVQZ2000-10A-2..... 1 set (Blanking plate assembly)

*VQZ2120-5M-C6..... 1 set (Single solenoid part no.)

*VQZ2220-5M-C6..... 2 sets (Double solenoid part no.)

*VQZ2320-5M-C6..... 1 set (3 position part no.)

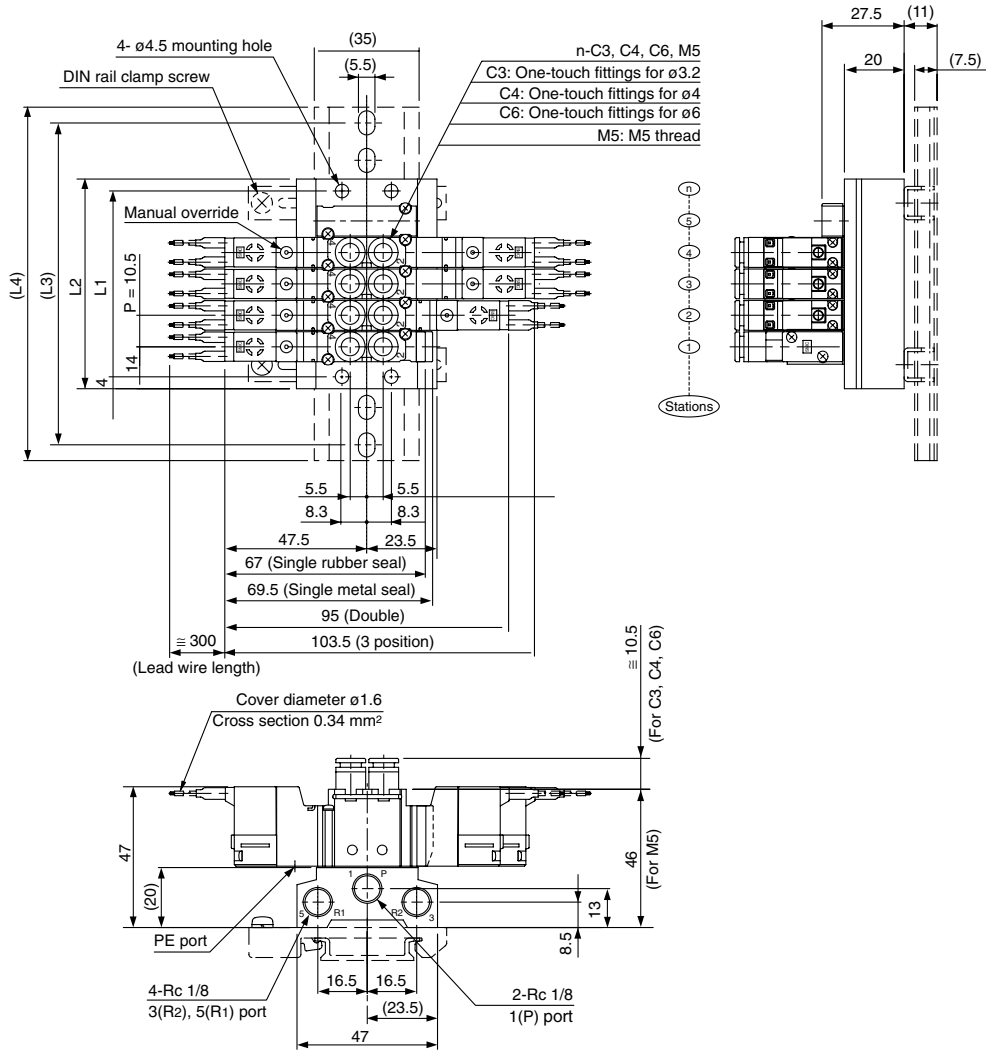
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

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

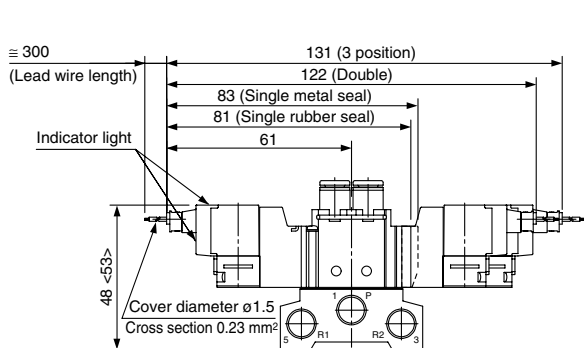
Specify the part numbers for valves and options together beneath the manifold base part number.
When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

Dimensions: VQZ1000

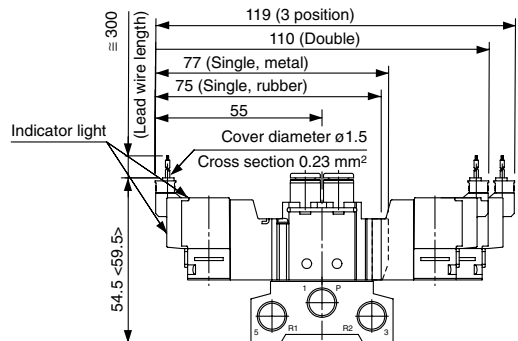
VV5QZ12- Stations C
Grommet (G)



L plug connector (L)



M plug connector (M)



Dimensions

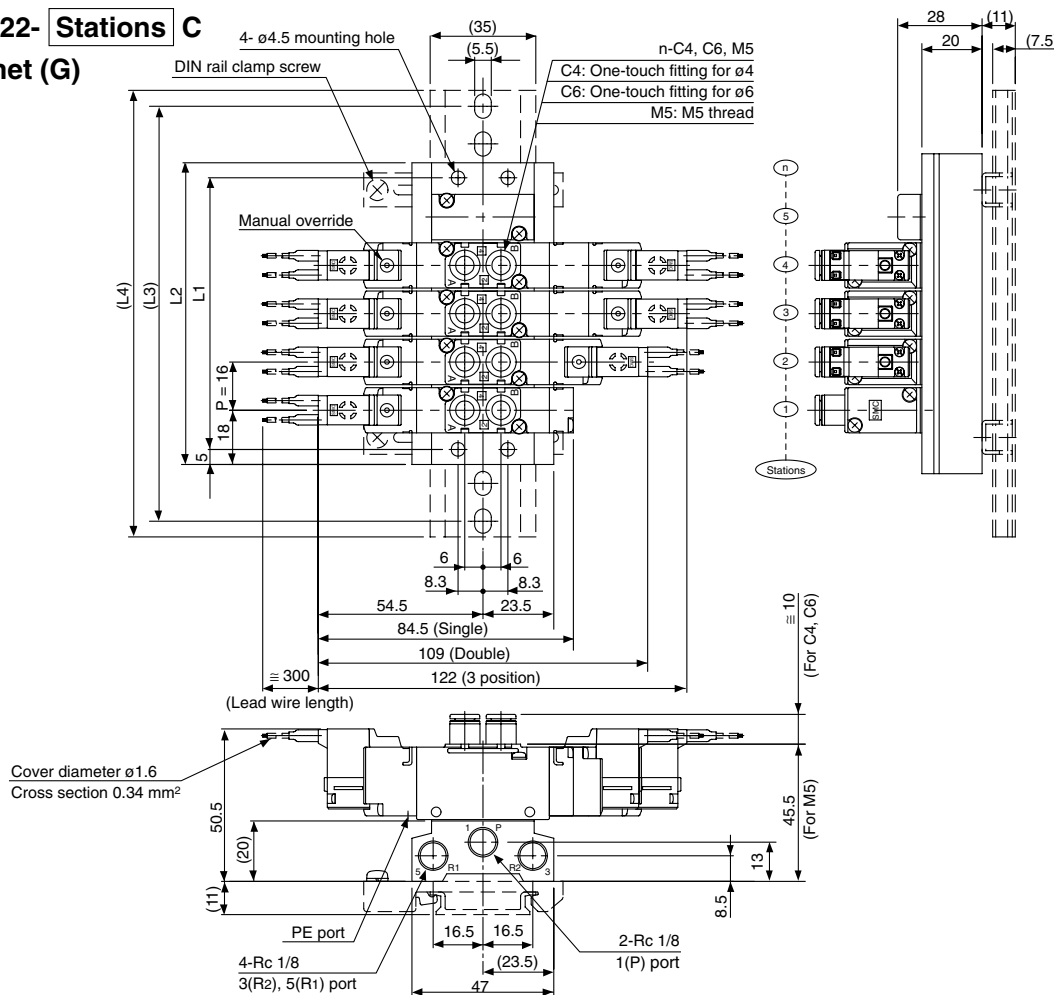
Formula L1 = 10.5n + 9.5, L2 = 10.5n + 17.5 n: Stations (Maximum 20 stations)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5
L2	38.5	49	59.5	70	80.5	91	101.5	112	122.5	133	143.5	154	164.5	175	185.5	196	206.5	217	227.5
L3	62.5	75	87.5	100	100	112.5	125	137.5	150	162.5	175	175	187.5	200	212.5	225	237.5	237.5	250
L4	73	85.5	98	110.5	110.5	123	135.5	148	160.5	173	185.5	185.5	198	210.5	223	235.5	248	248	260.5

Plug Lead Unit: Manifold Series VQZ1000/2000/3000

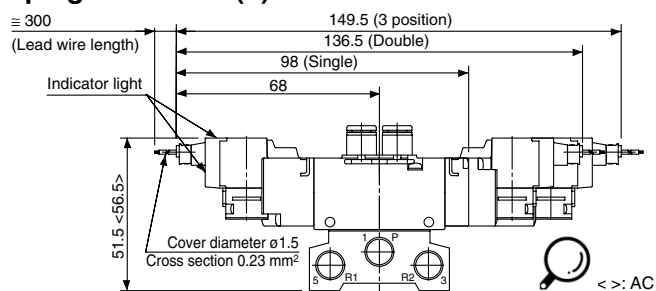
VQZ2000

VV5QZ22- Stations C Grommet (G)

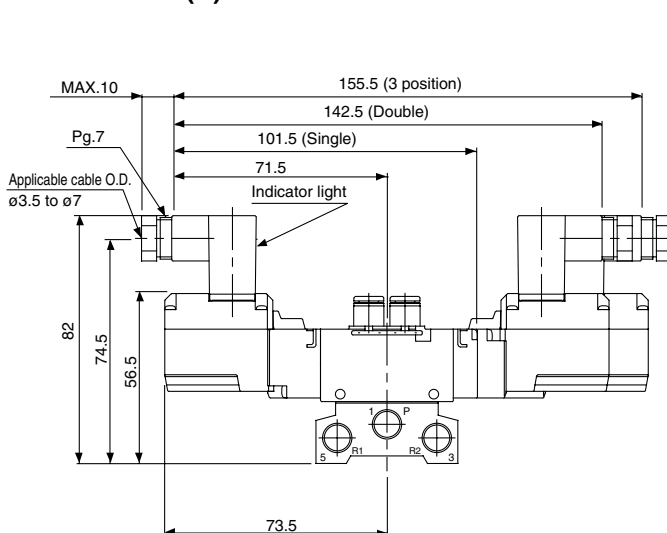


- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD

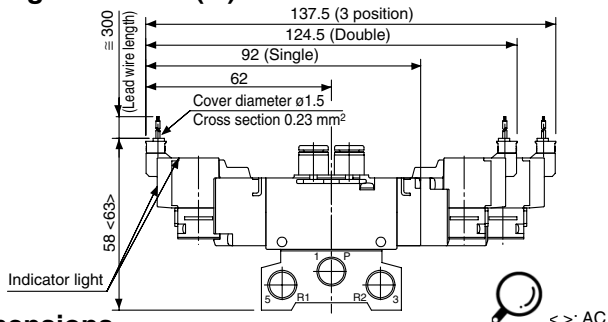
L plug connector (L)



DIN terminal (Y)



M plug connector (M)



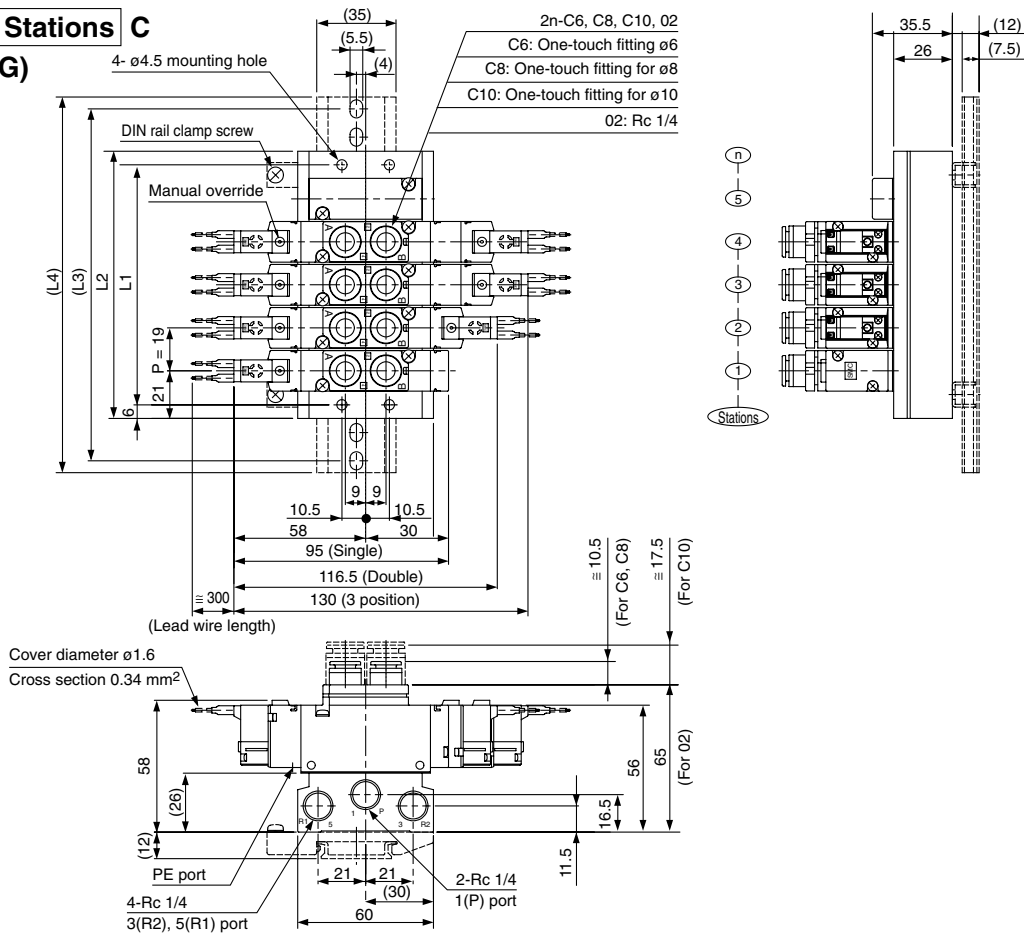
Dimensions

Formula $L1 = 16n + 10$, $L2 = 16n + 20$ n: Stations (Maximum 20 stations)

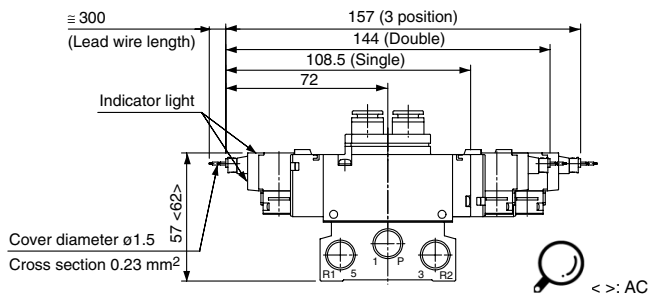
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	42	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330
L2	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
L3	75	87.5	112.5	125	137.5	162.5	175	187.5	200	225	237.5	250	275	287.5	300	312.5	337.5	350	362.5
L4	85.5	98	123	135.5	148	173	185.5	198	210.5	235.5	248	260.5	285.5	298	310.5	323	348	360.5	373

Dimensions: VQZ3000

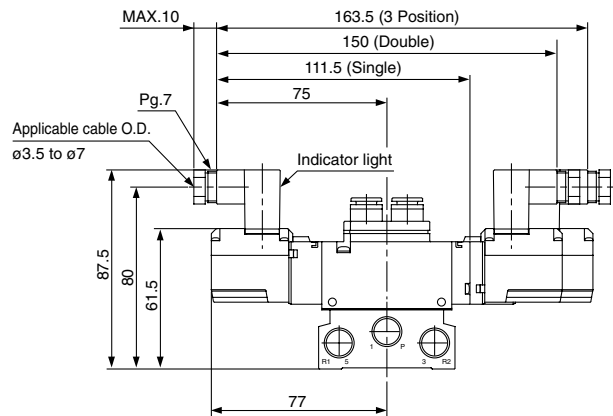
VV5QZ32- Stations C
Grommet (G)



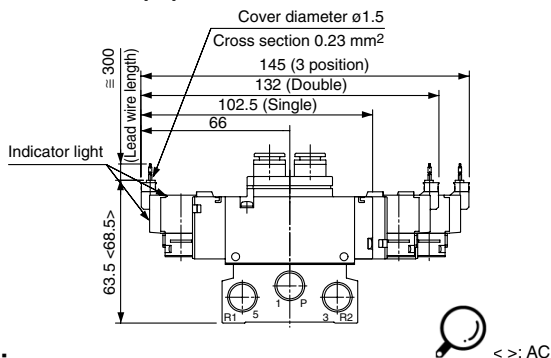
L plug connector (L)



DIN terminal (Y)



M plug connector (M)



Dimensions

Formula $L1 = 19n + 11$, $L2 = 19n + 23$ n: Stations (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	49	68	87	106	125	144	163	182	201	220	239	258	277	296	315	334	353	372	391
L2	61	80	99	118	137	156	175	194	213	232	251	270	289	308	327	346	365	384	403
L3	87.5	100	125	137.5	162.5	187.5	200	225	237.5	262.5	275	300	312.5	337.5	350	375	387.5	412.5	425
L4	98	110.5	135.5	148	173	198	210.5	235.5	248	273	285.5	310.5	323	348	360.5	385.5	398	423	435.5

Plug Lead Unit: Manifold Series VQZ1000/2000/3000

Manifold Option

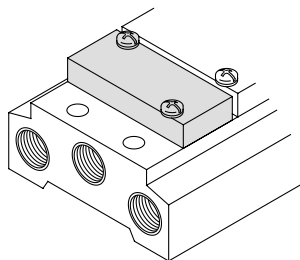
Blanking plate assembly

VVQZ1000-10A-2 (For VQZ1000)

VVQZ2000-10A-2 (For VQZ2000)

VVQZ3000-10A-2 (For VQZ3000)

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.



VQC

SQ

VQ0

VQ4

VQ5

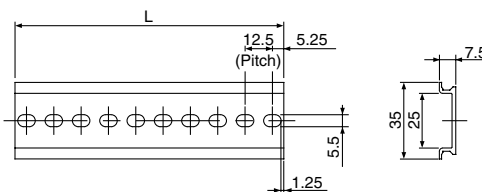
VQZ

VQD

DIN rail

AXT100-DR-□

* As for □, enter the number from the DIN rail dimensions table. For L dimension, refer to the dimensions of each kit.



Each manifold can be mounted on a DIN rail. Insert "D" at the end of the manifold part number. The DIN rail is approximately 30 mm longer than the length of manifold.

L Dimension

$L = 12.5n + 10.5$

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L dimension	23	35.5	48	60.5	73	85.5	98	110.5	123	135.5	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	31	32	33	34	35	36	37	38	39	40
L dimension	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

Blanking plug

KQP-23-X19

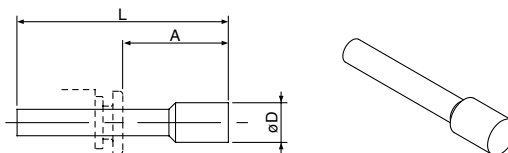
KQP-04-X19

KQP-06-X19

KQP-08-X19

KQP-10-X19

● Color: White

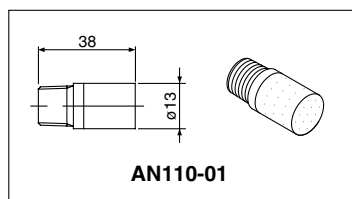


Dimensions

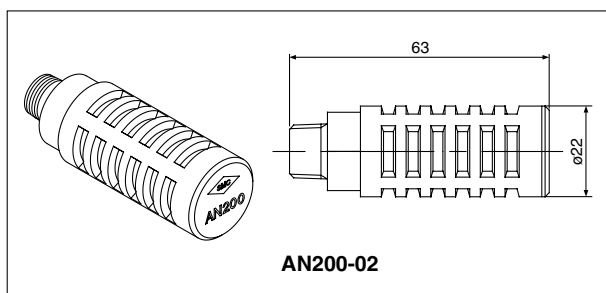
Applicable fittings size ød	Model	A	L	D
3.2	KQP-23-X19	16	31.5	3.2
4	KQP-04-X19	16	32	6
6	KQP-06-X19	18	35	8
8	KQP-08-X19	20.5	39	10
10	KQP-10-X19	22	43	12

Silencer (For EXH port)

Silencer is installed in the EXH port.



AN110-01



AN200-02

Dimensions

Model	Silencer P/N
VQZ1000	AN110-01
VQZ2000	AN110-01
VQZ3000	AN200-02



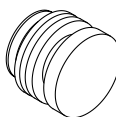
For a silencer to be mounted in a single valve unit, refer to page 2-7-5.

Port plug

VVQZ100-CP (For VQZ1000/VQZ2000)

VVQZ2000-CP (For VQZ3000)

Used to block a cylinder port when changing 5 port valves into 3 port valves, etc.

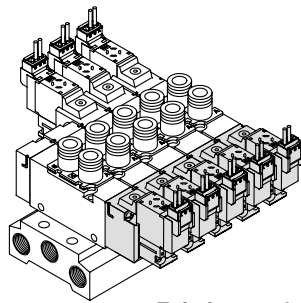


Series VQZ1000/2000/3000

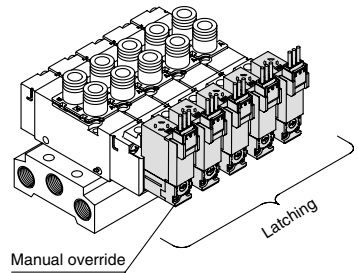
One Side Solenoid (Latching solenoid)

The standard 2 position double solenoid valve has two solenoids, one on each end of the valve body.

The latching solenoid option (with self holding mechanism) functions in the same manner as a 2 position double solenoid but uses only one solenoid to do the job.

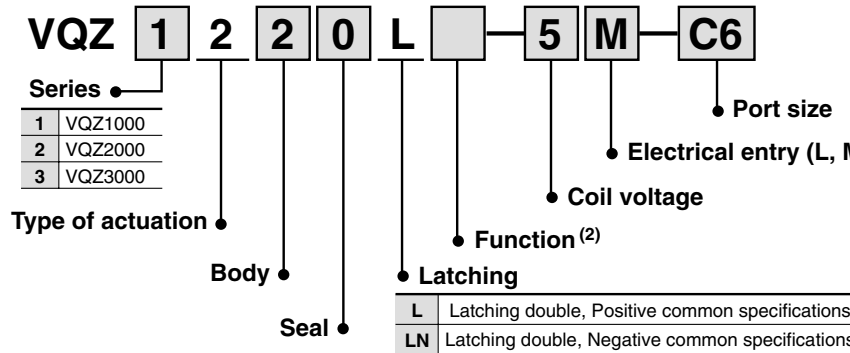


Existing model



One side solenoid (Latching solenoid)

How to Order Latching Solenoid Valves



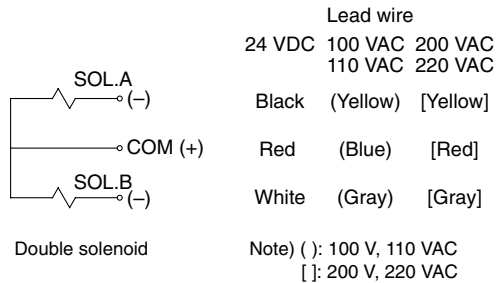
Note 1) Specifications are same as standard except for the function.

Note 2) K (High pressure type) and Y (Low wattage type) are not available.

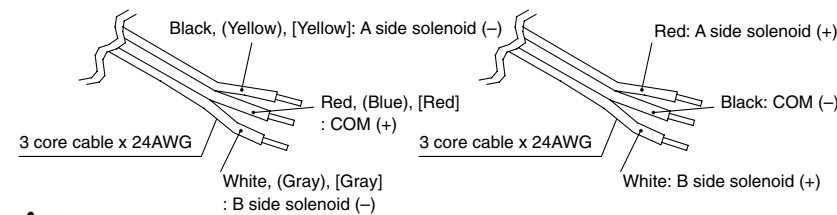
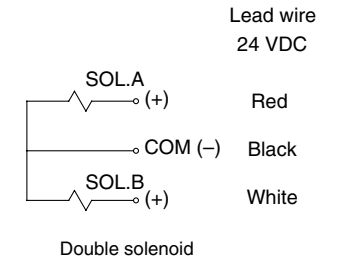
Wiring

Lead wires are connected to the valve as shown below. Connect them with the power supply.

Positive common specifications

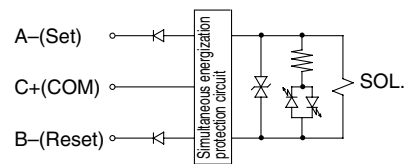


Negative common specifications

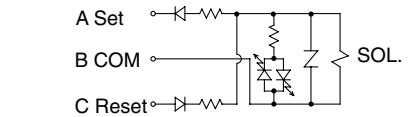


Electrical Circuit

Latching solenoid (DC)



Latching solenoid (AC)



Note 1) • Set side in energized state: Lighting (Orange)
• Reset side in energized state: Lighting (Green)
• With miss-wiring preventing function (Stop diode)
• With surge absorption function (ZNR/Surge absorption diode)

Note 2) Flow direction: P → A {A (set) side in energized state}
Flow direction: A → R {B (reset) side in energized state}

Note 3) Negative common specifications is available.

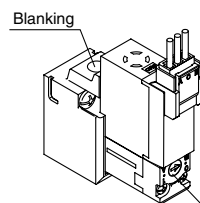
Caution

Cautions for Latching Use

1. Use a circuit in which the ON and OFF signals are not simultaneously energized.
2. Minimum energization time for self holding is 20 ms.
3. Avoid using the latching solenoid valves in environment where impacts or collisions (30/150 m/s² or more) exist. Also, do not use in places where the strong magnetic fields are present.
4. Even though the armature in the solenoid of this valve is held on to B side, ON position (Reset), verify either A side, ON position or B side, ON position by energizing prior to use.
5. Please consult with SMC for extended energization applications.

Manual Override

The manual override is on the pilot valve for latching solenoid valves. Besides, manual on the main body cannot be used.



- If the manual override is turned by 180° clockwise and the ► mark is adjusted to A, then pushed in the direction of an arrow (◄), it will be locked in the set condition. (passage P → A)
- If the manual override is turned by 180° counterclockwise and the ► mark is adjusted to B, then pushed in the direction of an arrow (◄), it will be back to the reset condition. (passage P → B). (It is in the reset state at the time of shipment.)

Caution

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

Series VQZ Body Ported Option

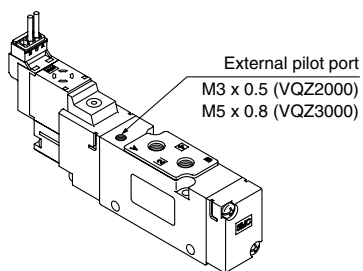
External Pilot Specifications (Except VQZ1000)

The external pilot specifications are used when the operating pressure is below the minimum operating pressure 0.1 to 0.2 MPa or when valve is used for a vacuum application.

Order a valve by adding the external pilot specifications [R] to the part number.

How to Order Manifold VQZ2120R—5M—C6

External pilot specifications



Pressure Specifications

Series	VQZ2000/3000		
	2 position single	2 position double	3 position
External pilot pressure range ^{Note)}	Metal seal	0.1 to 0.7 MPa Only VQZ3000, 3 position 0.15 to 0.7 MPa	
	Rubber seal	0.15 to 0.7 MPa	0.1 to 0.7 MPa
Operating pressure range ^{Note)}	-100 KPa to 0.7 MPa		

Note) In the case of the high pressure type, upper limit of max. operating pressure and external pilot pressure range is 1 MPa.

Inch-size One-touch Fittings and Option Thread

Inch sizes of One-touch fittings and NPT, NPTF and G thread are available.

How to Order Manifold

VQZ2120—5M—N7 T

Thread type
(Cylinder port and 1(P), 3(R2), 5(R1) port)

Nil	Rc
N	NPT
T	NPTF
F	G

Note 1) 3(R2), 5(R1) port of VQZ2000 is only G 1/16.

Note 2) Except VQZ1000

Cylinder port

Symbol	N1	N3	N7	N9	N11	M5	O2
Applicable tubing O.D. (Inch)	ø 1/8"	ø 5/32"	ø 1/4"	ø 5/16"	ø 3/8"	M5 thread	1/4 thread
A, B port	VQZ1000	●	●	●	—	●	—
	VQZ2000	—	●	●	—	●	—
	VQZ3000	—	—	●	●	●	●

Note) Metric sizes of One-touch fittings (C□) are also available.

How to Order Manifold (Suffix each symbol to the end of part number.)

VV5QZ22—05C—00T

Thread type
(1(P), 3(R2), 5(R1)) ports)

Nil	Rc
00N	NPT
00T	NPTF
00F	G

Dusttight/Low Jetproof Type (IP65)

DIN terminal is available with Dusttight/Low jetproof (IP65) type.

How to Order Valves

(Applicable to VQZ2000/3000 rubber seal with the exception of the external pilot type)

VQZ3121—5YZB W—02

IP65 compliant

Nil	No (Standard)
W ^{Note)}	Compliant

Note) The pilot exhaust IP65 valves is common with main valve exhaust. (The standard valve has an individual exhaust for the pilot valve.)

Replacement Parts

One-touch Fitting Assembly (For cylinder port)

Fitting size	C3	C4	C6	C8	C10
Model					
VQZ1000/2000	VVQ1000-50A-C3	VVQ1000-50A-C4	VVQ1000-50A-C6	—	—
VQZ3000	—	—	VVQ1000-51A-C6	VVQ1000-51A-C8	VVQ1000-51A-C10

Note) Purchasing order is available in units of 10 pieces.

<Plug connector assembly>

DC positive common

- Single **AXT661-14A-**□
- Latching **AXT661-13A-**□
- DC (-COM)
- Latching **AXT661-13AN-**□
- For 100 V, 110 VAC
- Single **AXT661-31A-**□
- Latching **AXT661-32A-**□
- For 200 V, 220 VAC
- Single **AXT661-34A-**□
- Latching **AXT661-35A-**□
- Only connector and sockets (3 pcs.)
- AXT661-12A**

Lead wire length

Nil	300 mm
6	600 mm
10	1000 mm
20	2000 mm
30	3000 mm
50	5000 mm

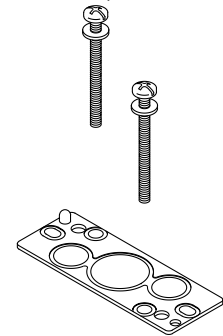
Standard wire length of valve with plug connector is 300 mm.
When requiring valve with 600 mm length lead wire specify the model number of valve without plug connector and plug connector assembly.

Gasket and Screw Assembly

	Part no.
VQZ1000	VQZ1000-GS-2
VQZ2000	VQZ2000-GS-2
VQZ3000	VQZ3000-GS-2

Note) Above part number consists of 10 units.

Each unit has one gasket and two screws. Purchasing order is available in units of 10 pieces.



<Pilot valve assembly>

VQ11 1 □ **5** **G** □

Series

1	VQZ1000/2000/3000
0	Latching

Function

Symbol	Specifications	DC	AC
Nil	Standard	(1.0 W)	○
K ⁽¹⁾	High pressure (Metal seal only)	(1.0 W)	—
Y	Low wattage type	(0.5 W)	—
L ⁽³⁾	Latching type	(1.0 W)	○
N ⁽⁴⁾	Negative common type	○	—

Note 1) Option
Note 2) When two or more symbols are specified, indicate them alphabetically.

Note 3) K (High pressure) and Y (Low wattage) are not available.
Electrical entry: L/M plug connector only.

Note 4) Applicable to latching type.

Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC
g ^{Note)}	Other

Note) For the special voltages, please consult with SMC.

Applicable model (Length of screws attached is different from each other.)

Nil	VQZ2000/3000
4	A and B side of VQZ1000 single double solenoid type A side of VQZ1000 3 position
5	B side of VQZ1000 3 position

Electrical entry

Symbol	Electrical entry	Light/Surge voltage suppressor
G	Grommet (DC specifications)	None
L	L plug connector with lead wire	Yes
LO	L plug terminal without connector	
M	M plug connector with lead wire	
MO	M plug terminal without connector	None
Y ^{Note)}	DIN terminal	
YO ^{Note)}	DIN terminal without connector	
YZ ^{Note)}	DIN terminal with light/surge voltage suppressor	Yes
YS ^{Note)}	DIN terminal with surge voltage suppressor	Yes (W/o indicator light)
YOS ^{Note)}	DIN terminal with surge voltage suppressor, without connector	Yes (W/o indicator light)

Note) DIN is applicable to VQZ2000/3000.

Bracket Assembly

		Part no.	Tightening torque (N·m) ^{Note)}
VQZ1000	Metal seal	VQZ1000-FB-M	0.2 to 0.26
	Rubber seal	VQZ1000-FB-R	
VQZ2000		VQZ2000-FB	0.25 to 0.35
VQZ3000		VQZ3000-FB	0.25 to 0.35

Note) Tightening torque when mounting a bracket on the valve.

3/5 Port Solenoid Valve Metal Seal/Rubber Seal Base Mounted **VQZ1000/2000/3000**

Compact design with large flow capacity

Model	Manifold pitch (mm)	Flow characteristics		Cylinder size
		Metal seal	Rubber seal	
		C [dm ³ /(s·bar)]	C [dm ³ /(s·bar)]	
VQZ1000	10	0.70	1.3	Up to ø63
VQZ2000	15	1.9	2.3	Up to ø100
VQZ3000	18	3.0	4.6	Up to ø100

* Flow characteristics: 4/2 → 5/3 (A/B → R1/R2)

High speed and long service life

	Response time	Life
VQZ1000	10 ms	} 2 million cycles
VQZ2000	12 ms	
VQZ3000	15 ms	
Dispersion accuracy		±2 ms

* Metal seal, single solenoid with light/surge voltage suppressor, according to SMC life test conditions.

VQC

SQ

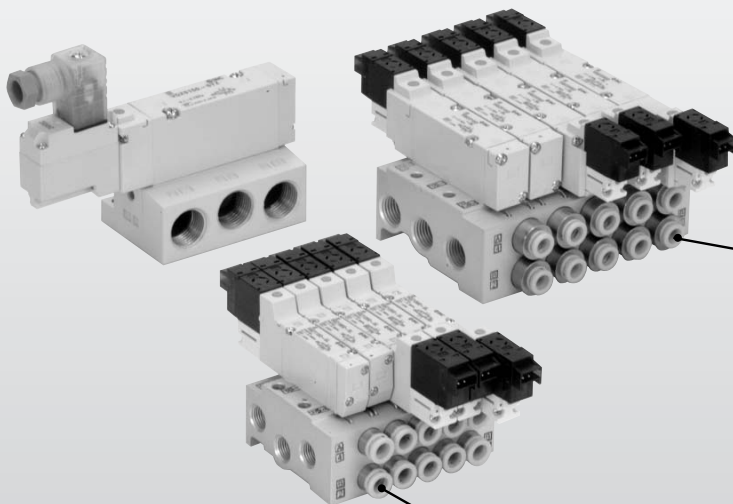
VQ0

VQ4

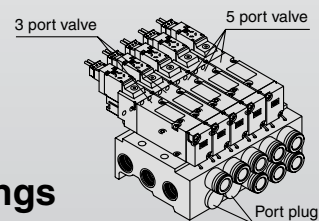
VQ5

VQZ

VQD

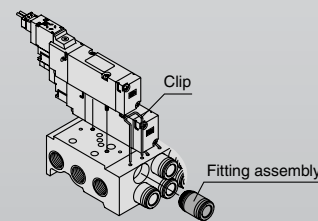


Both 3 and 5 port valves can be mounted on the same manifold.

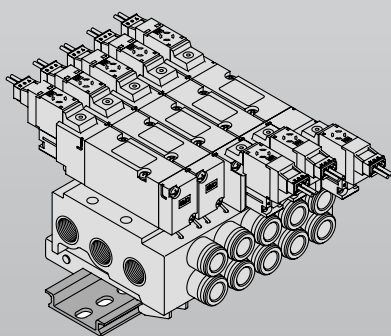


Built-in One-touch fittings for easier piping.

Integral One-touch fittings save on installation time and labor and can be easily removed if necessary.



DIN rail mounting is available.

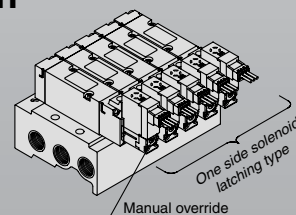


DIN terminal is available with dust tight/low jetproof (IP65) type.

Choice of metal or rubber seal main valve construction

All solenoids on one side

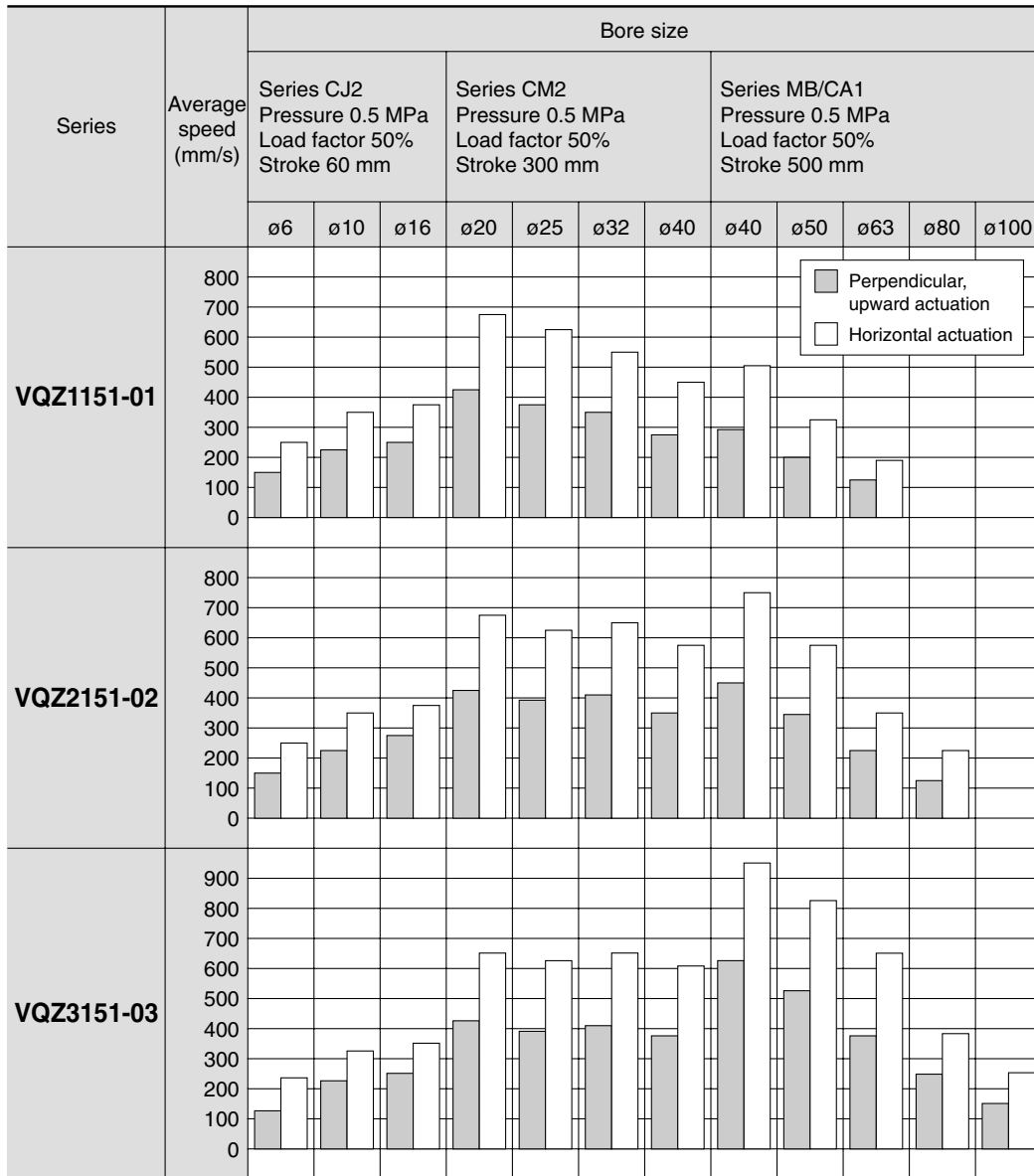
Optional latching coil valve operates the same as a 2 position/double solenoid valve but uses only one solenoid. This saves space and wiring costs.



Cylinder Speed Chart

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

Base Mounted




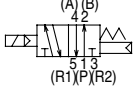
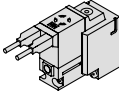
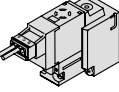
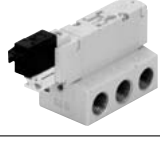
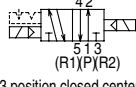


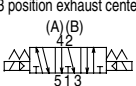
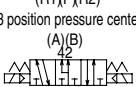

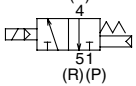
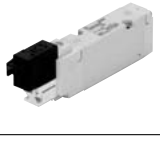
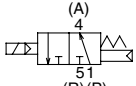

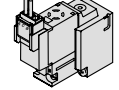

- * It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
- * The average velocity of the cylinder is what the stroke is divided by the total stroke time.
- * Load factor: ((Load weight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

Conditions

Body ported		Series CJ2	Series CM2	Series MB/CA1
VQZ1151-01	Tube x Length	T0604 x 1 m		
	Speed controller	AS3001F-06		
	Silencer	AN110-01		
VQZ2151-02	Tube x Length	T0604 x 1 m	T0806 x 1 m	
	Speed controller	AS3001F-06	AS3001F-08	
	Silencer	AN200-02		
VQZ3151-03	Tube x Length	T0604 x 1 m	T11075 x 1 m	T1209 x 1 m
	Speed controller	AS3001F-06	AS4001F-10	AS4001F-12
	Silencer	AN300-03		

Series VQZ Base Mounted

Model Selection

		Sonic conductance C [dm ³ /(s·bar)]		Type of actuation	Voltage	Electrical entry	Light/Surge voltage suppressor	Manual override	
Base Mounted	5 port	VQZ1000 	Metal 0.70	Rubber 1.3	2 position single (A)(B)  (R1)(P)(R2)	(Standard) 12 VDC 24 VDC (Option) 100 VAC 200 VAC 110 VAC 220 VAC	Grommet (G)  L plug connector (L) 	With light/surge voltage suppressor	Non-locking push type (Tool required)
		VQZ2000 	1.9	2.3	2 position double (A)(B)  (R1)(P)(R2)				
		VQZ3000 	3.0	4.6	3 position closed center (A)(B)  (R1)(P)(R2) 3 position exhaust center (A)(B)  (R1)(P)(R2) 3 position pressure center (A)(B)  (R1)(P)(R2)				
	3 port for mixture mounting	VQZ1000 	0.90	1.3	(A) 4  5 1 (R)(P)				
		VQZ2000 	1.9	2.3	N.C. (A) 4  5 1 (R)(P)				
		VQZ3000 	3.0	4.6	N.O.				
						M plug connector (M)  DIN terminal (Y)  (Except VQZ1000)	L plug connector (L) M plug connector (M) DIN terminal (YZ) (Except VQZ1000)	Locking type (Tool required)	VQC SQ VQ0 VQ4 VQ5 VQZ VQD

* Flow Characteristics: 4/2 → 5/3 (A/B → R1/R2)

⚠ Precautions 1

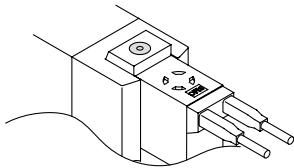
Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 2-9-2.

Manual Override

⚠ Warning

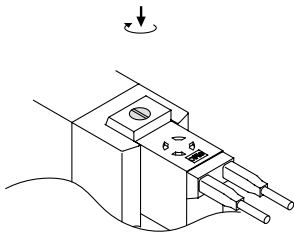
Without an electric signal for the solenoid valve the manual override is used for switching the main valve. Locking type (Tool required) is available as an option.

Push type (Tool required)

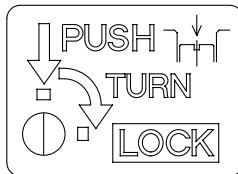


Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

Locking type (Tool required)



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



⚠ Caution

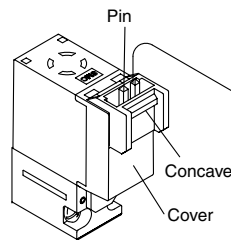
Do not apply excessive torque when turning the locking type manual override. (0.1 N·m or less)

How to Use L/M Plug Connector

⚠ Caution

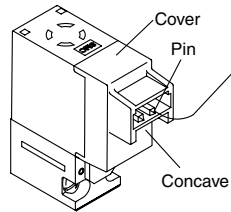
Attaching and detaching connectors

M plug connector

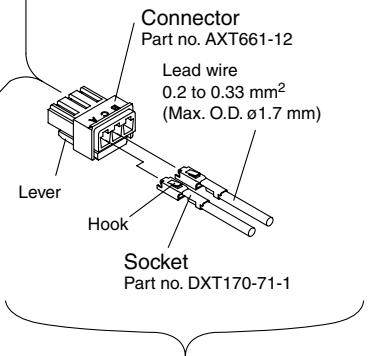


To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.

L plug connector



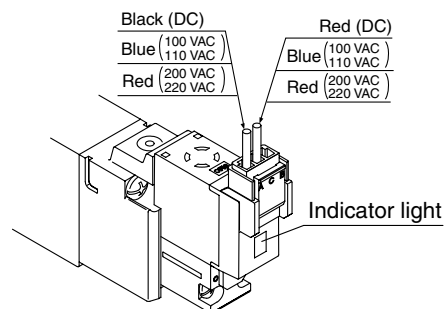
To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.



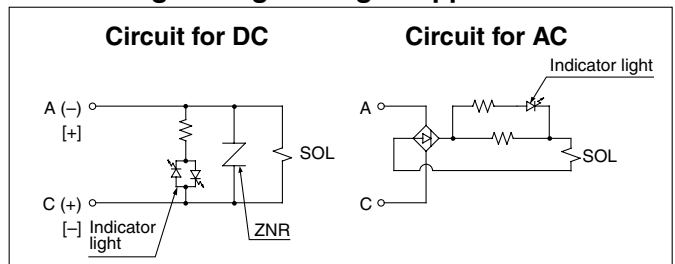
Refer to page 2-7-61 for part no. of plug connector assembly.

Connection and Electrical Circuit

Both DCs have no polarity, and then connect each lead wire with the power source side.



For with Light/Surge Voltage Suppressor



Due to the use of non-polar light, the series VQZ has no polarity. For latching type, refer to page 2-7-59.

⚠ Precautions 2

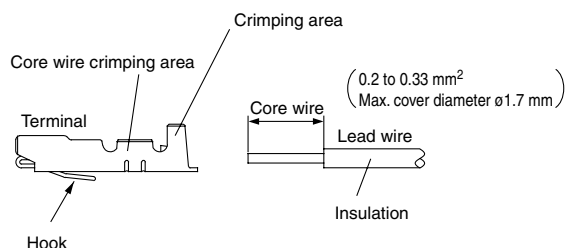
Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to pages 2-9-2.

Connection of Lead Wire

(Not necessary if ordering the lead wire pre-connected model.)

Crimping of lead wires and sockets

Peel 3.2 to 3.7 mm of the tip of lead wire, enter the core wires neatly into a socket and crimp it with a special crimp tool. Be careful so that the cover of lead wire does not enter into the crimping part.



Tool for crimping: Model No. DXT170-75-1

Attaching and detaching lead wires with sockets

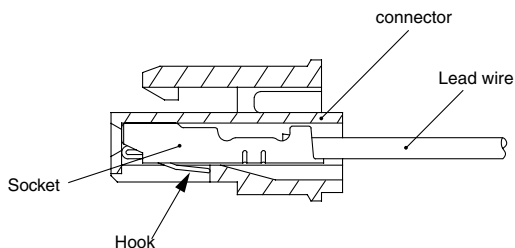
Attaching

Insert the sockets into the square holes of the connector (with ⊕ and ⊖ indication) and, continue to push the sockets all the way in until the lock by hooking into the seats in the connector. (When they are pushed in, their hooks open and they are locked automatically.)

Then confirm that they are locked by pulling lightly on the lead wires.

Detaching

To detach a socket from a connector, pull out the lead wire while pressing the socket's hook with a stick having a thin tip (approx. 1 mm). If the socket will be used again, first spread the hook outward.



How to Wire DIN Terminal

Conforming to ISO#: DIN 43650 C (8 mm between pins)

Connection

1. Loosen the set screw and pull out the connector from the terminal block of the solenoid.
2. Remove the housing screw and insert a screwdriver into the slot area on the underside of the DIN cap and carefully separate block and housing.
3. Loosen the terminal screws (slotted screws) on the terminal block, insert the core of the lead wire into the terminal in accordance with the prescribed connection method, and attach securely with the terminal screws.
4. Tighten the ground nut to secure the wire.

Change of electrical entry (Orientation)

After separating terminal block and housing, the cord entry direction can be changed by attaching the housing in the desired direction (4 directions in 90° increments).

* In the case of indicator light, avoid damaging the light with lead wire.

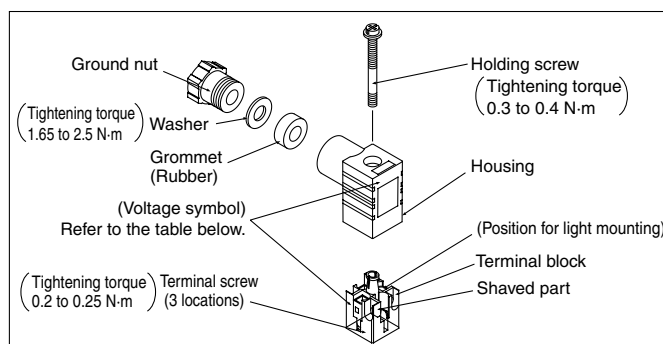
Precautions

Pull a connector out vertically, never at an angle.

Applicable cable

O.D.: $\phi 3.5$ to $\phi 7$

(Reference) 0.5 mm² 2 core and 3 core wires equivalent to JIS C 3306.



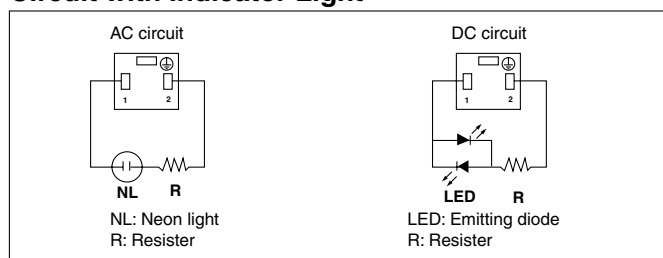
DIN Terminal Part No. (Conforming to DIN)

Without light	AXT100-20-1
---------------	-------------

With indicator light

Rated voltage	Voltage symbol	Part no.
24 VDC	24V	AXT100-20-2-05
12 VDC	12V	AXT100-20-2-06
100 VAC	100V	AXT100-20-2-01
200 VAC	200V	AXT100-20-2-02
110 VAC	110V	AXT100-20-2-03
220 VAC	220V	AXT100-20-2-04

Circuit with Indicator Light



VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

⚠ Precautions 3

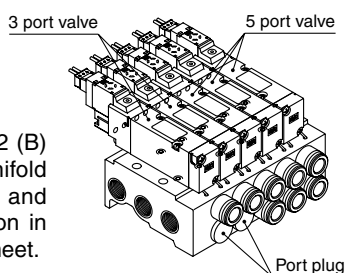
Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 2-9-2.

Mounting 3 Port Valves on 5 Port Manifolds

(VQZ $\frac{1}{3}$ 85 $\frac{0}{1}$, N.C./VQZ $\frac{1}{3}$ 95 $\frac{0}{1}$, N.O.)

⚠ Caution

3 port valves have the same external appearance as the 5 port valves. When using this type, 4(A) port on the 3 port valves can be used as 4(A) port on the 5 port valves' manifold, too. Besides, there's no problem, even though 2(B) port can be either plugged or unplugged.

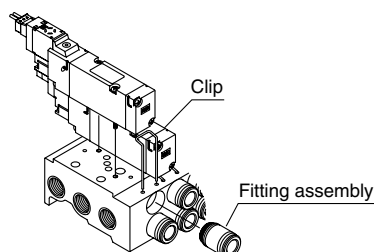


When port plug is used on 2 (B) port, indicate CM in manifold part no. and port size, and specify the port plug location in the manifold specification sheet.

Changing the One-touch Fittings

The built-in fittings on the manifold can be changed easily.

Clip prevents the fittings to come off. After removing the corresponding valve and take out the clip with a screwdriver, etc., then replace the fittings. About mounting the fittings, after inserting the fitting until it stops, then put the clip into the prescribed position.



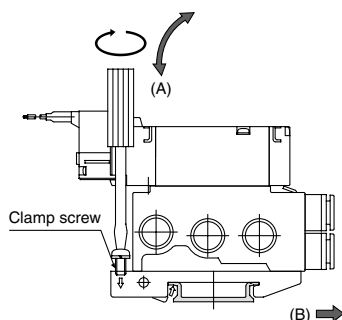
Precaution

When pulling the fitting assembly away from the manifold base, remove the clip, then connect a tube or plug (KQP-□□) with the One-touch fitting and pull it out holding the tube or plug. Do not hold the release bushing to avoid damage.

DIN Rail Removal/Mounting

Removing

1. Loosen the clamp screw on the (A) side of both ends of the manifold.
2. Lift the (A) side of the manifold off the DIN rail and slide it in the direction of the (B) side.



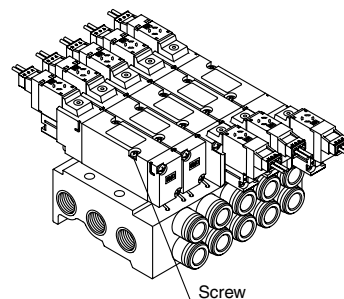
Mounting manifold to DIN rail:

1. Catch the hook of the DIN rail bracket on the (B) side of the DIN rail.
2. Push side (A) onto the DIN rail and tighten the clamp screw. The proper tightening torque for screws 0.3 to 0.4 N-m.

Valve Mounting

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

Model	Proper tightening torque
VQZ1000	0.18 to 0.25 N-m
VQZ2000	0.25 to 0.35 N-m
VQZ3000	0.5 to 0.7 N-m



How to Calculate the Flow Rate

For obtaining the flow rate, refer to pages 2-1-8 to 2-1-11.

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

5 Port Solenoid Valve

Base Mounted

Plug Lead Unit: Single Unit

VQZ1000/2000/3000

How to Order Valves

VQZ 1 1 5 1 5 M 01

Series

1	VQZ1000 body width 10 mm
2	VQZ2000 body width 15 mm
3	VQZ3000 body width 18 mm

Type of actuation

1	2 position single
2	2 position double Metal seal Rubber seal
3	3 position closed center
4	3 position exhaust center
Note) 5	3 position pressure center

Note) Except VQZ1000 and metal seal type.

Body

5	Base mounted
---	--------------

Seal

0	Metal seal
1	Rubber seal

Function

Symbol	Specifications	DC	AC
Nil	Standard	(1.0 W) ○	(3) ○
K ⁽¹⁾	High pressure (Metal seal only)	(1.0 W) ○	—
Y	Low wattage type	(0.5 W) ○	—
R ⁽²⁾	External pilot	○	○



Note 1) Option

Note 2) For details about external pilot specifications, refer to page 2-7-60.



Note 3) For power consumption of AC type, refer to page 2-7-37.

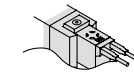
Note 4) When two or more symbols are specified, indicate them alphabetically.

Port size {4(A), 2(B) port}

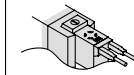
Symbol	Port size	VQZ1000	VQZ2000	VQZ3000
Nil	Without sub-plate	○	○	○
01	Rc 1/8	○	○	—
02	Rc 1/4	—	○	○
03	Rc 3/8	—	—	○

Manual override

Nil:
Non-locking
push type
(Tool required)



B:
Locking type
(Tool required)



Electrical entry

G: Grommet (DC specifications)	L: L plug connector with lead wire	LO: L plug connector without connector	M: M plug connector with lead wire	MO: M plug connector without connector
	With light/ surge voltage suppressor	With light/ surge voltage suppressor	With light/ surge voltage suppressor	With light/ surge voltage suppressor
Y: DIN terminal ⁽¹⁾	YO: DIN terminal ⁽¹⁾ without connector	YZ: DIN terminal ⁽¹⁾	YOS: DIN terminal ⁽¹⁾ without connector	YS: DIN terminal ⁽¹⁾
		With light/ surge voltage suppressor	With surge voltage suppressor	With surge voltage suppressor

Note 1) Applicable to VQZ2000 and 3000.
Note 2) Standard lead wire length: 300 mm

Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC
9 ^{Note)}	Other



Note) For sub-plate part no, refer to page 2-7-61.



Note) For the special voltages, please consult with SMC.

Plug Lead Unit: Single Unit Series VQZ1000/2000/3000

Standard Specifications



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

Note 2) Impact resistance:

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

Vibration resistance:

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

		Valve specifications	
		Valve construction	Seal type
Fluid		Air/Inert gas	
Maximum operating pressure		0.7 MPa (High pressure type: 1.0 MPa)	
Min. operating pressure	2 position single	0.1 MPa	
	Double	only for VQZ3000, 3 position	
	3 position	0.15 MPa	
Ambient and fluid temperature		-10 to 50°C ⁽¹⁾	-10 to 50°C ⁽¹⁾
Max. operating frequency	2 position	20 Hz	5 Hz
	3 position	10 Hz	3 Hz
Pilot valve EXH		Individual EXH	
Lubrication		Not required	
Manual override		Push type/Locking type (Tool required) Option	
Shock/Vibration resistance ⁽²⁾		150/30 m/s ²	
Enclosure		Dust-protected	
Coil rated voltage		12, 24 VDC and 100, 110, 200, 220 VAC	
Allowable voltage fluctuation		±10% of rated voltage	
Coil insulation type		Equivalent to class B	
Electricity specifications	Power consumption (Current)	24 VDC	1 W DC (42 mA), 0.5 W DC (21 mA)
		12 VDC	1 W DC (83 mA), 0.5 W DC (42 mA)
		100 VAC	Inrush 0.5 VA (5 mA), Holding 0.5 VA (5 mA)
		110 VAC	Inrush 0.55 VA (5 mA), Holding 0.55 VA (5 mA)
		200 VAC	Inrush 1.0 VA (5 mA), Holding 1.0 VA (5 mA)
		220 VAC	Inrush 1.1 VA (5 mA), Holding 1.1 VA (5 mA)

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

Model

Series	Configuration	Model	Flow characteristics						Response time (ms) ⁽¹⁾			Weight (g) ⁽²⁾		
			1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Standard: 1 W	High pressure: 1 W Low wattage: 0.5 W	AC			
			C[dm ³ /(s·bar)]	b	Cv	C[dm ³ /(s·bar)]	b	Cv						
VQZ1000	2 position	Single	Metal seal	VQZ1150	0.70	0.21	0.17	0.70	0.21	0.17	12 or less	15 or less	29 or less	37
			Rubber seal	VQZ1151	1.2	0.35	0.30	1.3	0.24	0.32	12 or less	15 or less	34 or less	
	Double	Metal seal	VQZ1250	0.70	0.21	0.17	0.70	0.21	0.17	10 or less	13 or less	13 or less		
		Rubber seal	VQZ1251	1.2	0.35	0.30	1.3	0.24	0.32	10 or less	13 or less	13 or less		
	3 position	Closed center	Metal seal	VQZ1350	0.56	0.20	0.13	0.57	0.22	0.14	20 or less	26 or less	40 or less	
			Rubber seal	VQZ1351	1.1	0.33	0.27	1.0	0.38	0.27	25 or less	33 or less	47 or less	
Exhaust center		Metal seal	VQZ1450	0.56	0.20	0.13	0.70	0.21	0.17	20 or less	26 or less	40 or less		
		Rubber seal	VQZ1451	1.1	0.33	0.27	1.3	0.24	0.32	25 or less	33 or less	47 or less		
Pressure center	Rubber seal	VQZ1551	1.4	0.20	0.34	1.0	0.38	0.27	25 or less	33 or less	47 or less			
VQZ2000	2 position	Single	Metal seal	VQZ2150	1.6	0.13	0.36	1.9	0.16	0.40	14 or less	18 or less	34 or less	60
			Rubber seal	VQZ2151	2.0	0.35	0.51	2.3	0.29	0.53	15 or less	20 or less	36 or less	
		Double	Metal seal	VQZ2250	1.6	0.13	0.36	1.9	0.16	0.40	10 or less	13 or less	13 or less	
			Rubber seal	VQZ2251	2.0	0.35	0.51	2.3	0.29	0.53	12 or less	15 or less	15 or less	
	3 position	Closed center	Metal seal	VQZ2350	1.5	0.16	0.35	1.3	0.26	0.32	23 or less	30 or less	44 or less	
			Rubber seal	VQZ2351	1.7	0.27	0.39	1.7	0.28	0.39	25 or less	33 or less	47 or less	
		Exhaust center	Metal seal	VQZ2450	1.5	0.16	0.35	1.9	0.16	0.40	23 or less	30 or less	44 or less	
			Rubber seal	VQZ2451	1.7	0.27	0.39	2.3	0.29	0.53	25 or less	33 or less	47 or less	
Pressure center	Metal seal	VQZ2550	1.8	0.13	0.39	1.5	0.26	0.36	23 or less	30 or less	44 or less			
	Rubber seal	VQZ2551	2.0	0.35	0.50	1.7	0.28	0.39	25 or less	33 or less	47 or less			
VQZ3000	2 position	Single	Metal seal	VQZ3150	2.6	0.12	0.60	3.0	0.15	0.74	17 or less	22 or less	34 or less	94
			Rubber seal	VQZ3151	3.9	0.29	1.0	4.6	0.26	1.2	25 or less	33 or less	57 or less	
		Double	Metal seal	VQZ3250	2.6	0.12	0.60	3.0	0.15	0.74	10 or less	13 or less	13 or less	
			Rubber seal	VQZ3251	3.9	0.29	1.0	4.6	0.26	1.2	15 or less	20 or less	20 or less	
	3 position	Closed center	Metal seal	VQZ3350	2.4	0.12	0.58	2.8	0.16	0.65	25 or less	33 or less	53 or less	
			Rubber seal	VQZ3351	3.1	0.33	0.82	3.6	0.35	0.97	30 or less	39 or less	59 or less	
		Exhaust center	Metal seal	VQZ3450	2.4	0.12	0.58	3.0	0.15	0.74	25 or less	33 or less	53 or less	
			Rubber seal	VQZ3451	3.9	0.33	0.82	4.6	0.26	1.2	30 or less	39 or less	59 or less	
Pressure center	Metal seal	VQZ3550	3.0	0.12	0.69	2.9	0.16	0.65	25 or less	33 or less	53 or less			
	Rubber seal	VQZ3551	4.4	0.27	1.1	3.6	0.35	0.97	30 or less	39 or less	59 or less			

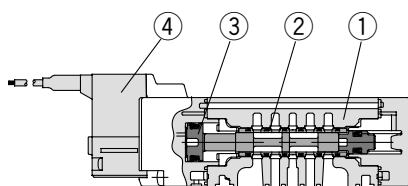
Note 1) Based on JIS B 8375-1981 (Supply pressure; 0.5 MPa; with indicator light/surge voltage suppressor; clean air).

Response time values will change depending on pressure and air quality. The values at the time of ON are given for double types.

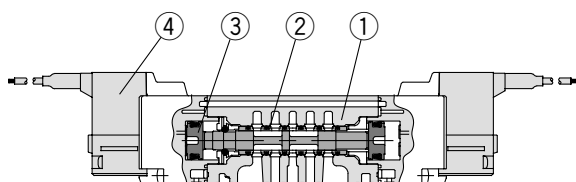
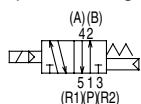
Note 2) Weight without sub-plate

Construction: VQZ1000/2000/3000

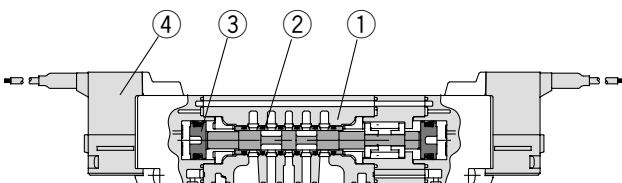
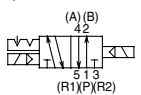
Metal seal type



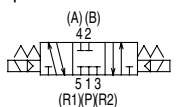
2 position single



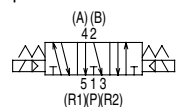
2 position double



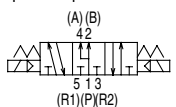
3 position closed center



3 position exhaust center

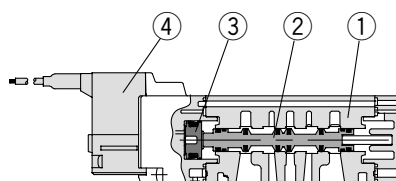


3 position pressure center

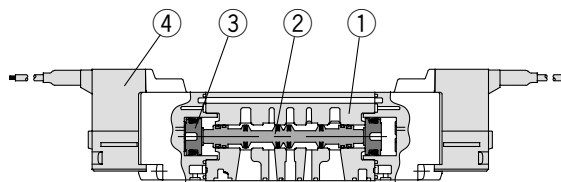
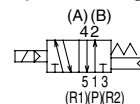


Note) Except VQZ1000 and metal seal type.

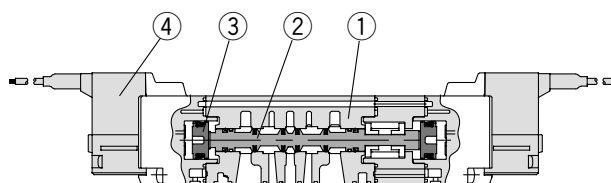
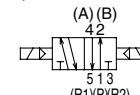
Rubber seal type



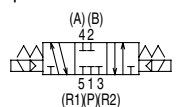
2 position single



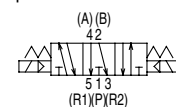
2 position double



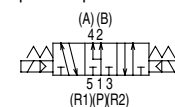
3 position closed center



3 position exhaust center



3 position pressure center



Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted	
②	Spool/Sleeve	Stainless steel	Metal seal
	Spool valve	Aluminum/HNBR	Rubber seal
③	Piston	Resin	
④	Pilot valve assembly	—	



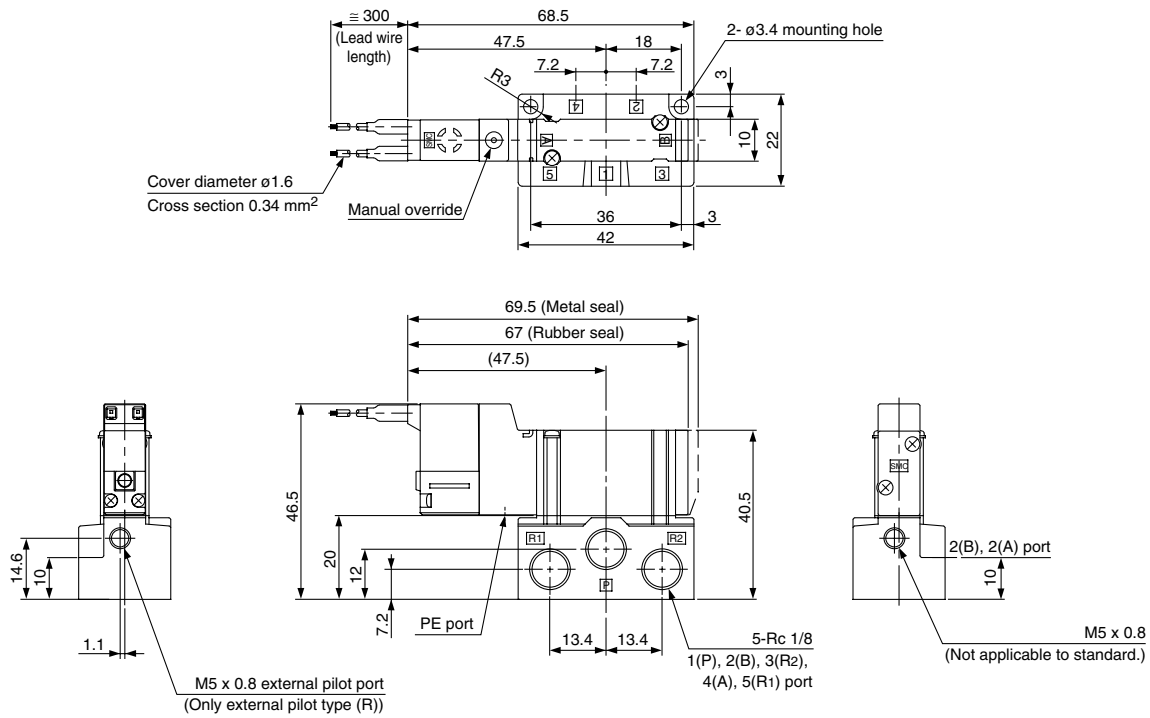
Refer to page 2-7-61 for Pilot Valve Assembly.

Plug Lead Unit: Single Unit Series VQZ1000/2000/3000

Dimensions: VQZ1000

2 position single

Grommet (G): VQZ115⁰(R)-□G□-01



VQC

SQ

VQ0

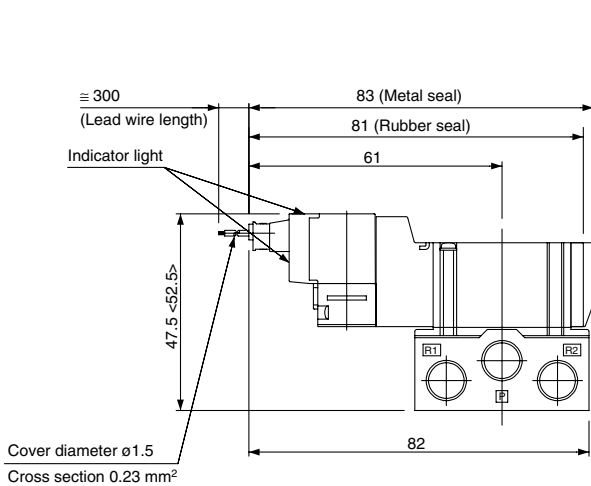
VQ4

VQ5

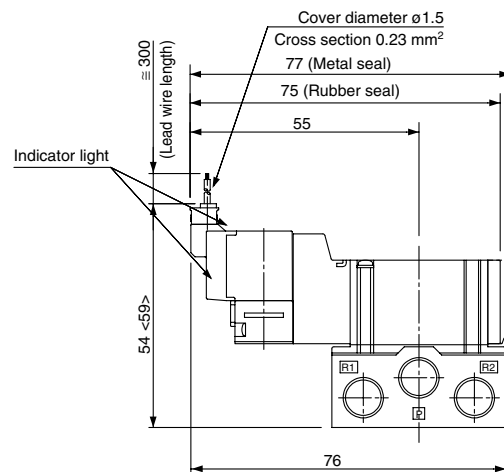
VQZ

VQD

L plug connector (L): VQZ115⁰(R)-□L□-01



M plug connector (M): VQZ115⁰(R)-□M□-01

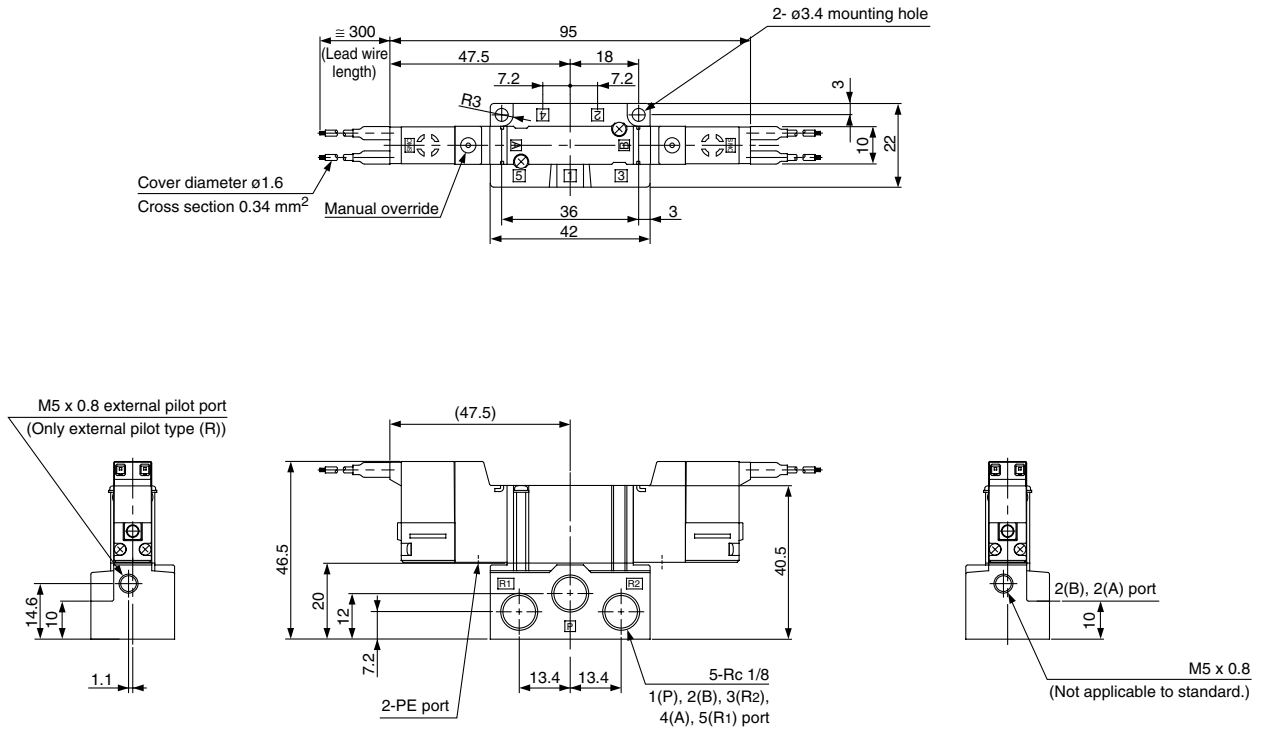


Series VQZ1000/2000/3000

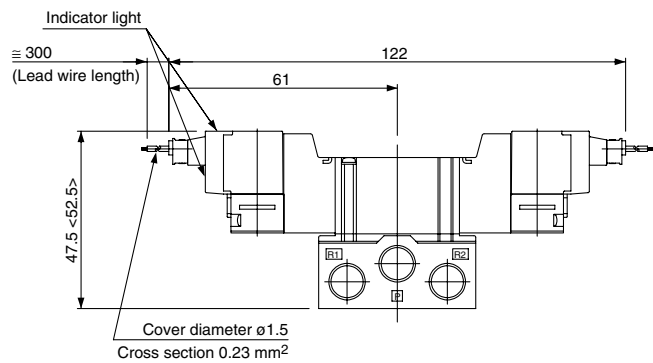
Dimensions: VQZ1000

2 position double

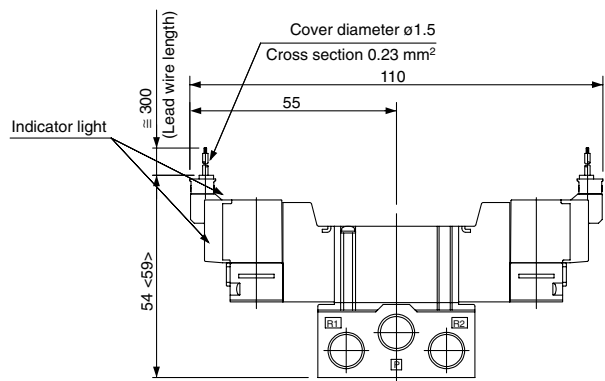
Grommet (G): VQZ125⁰(R)-□G□-01



L plug connector (L): VQZ125⁰(R)-□L□-01



M plug connector (M): VQZ125⁰(R)-□M□-01

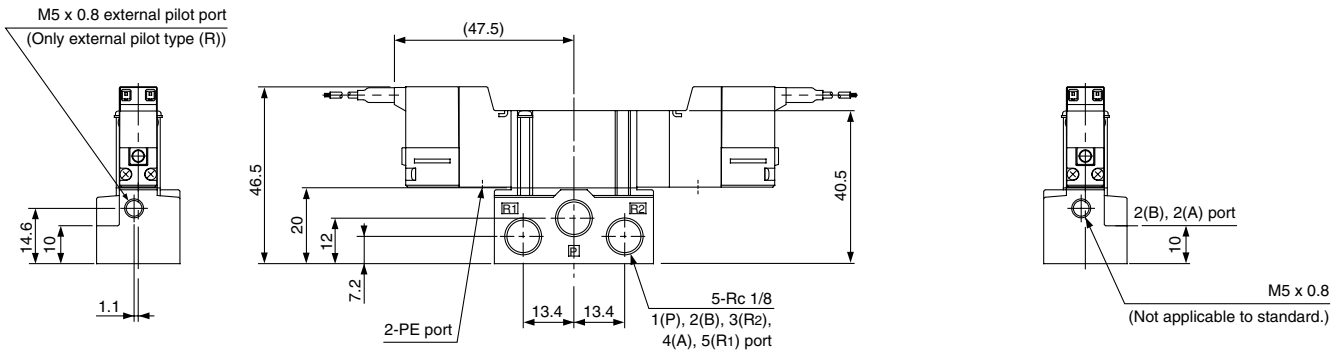
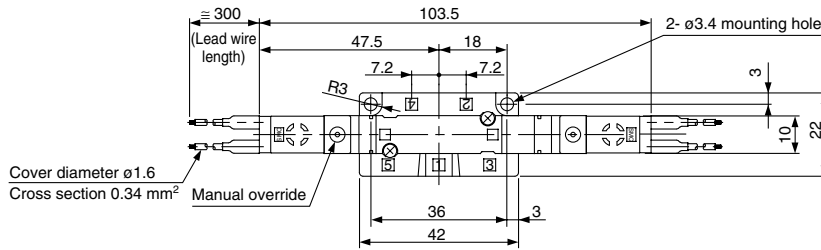


Plug Lead Unit: Single Unit Series VQZ1000/2000/3000

VQZ1000

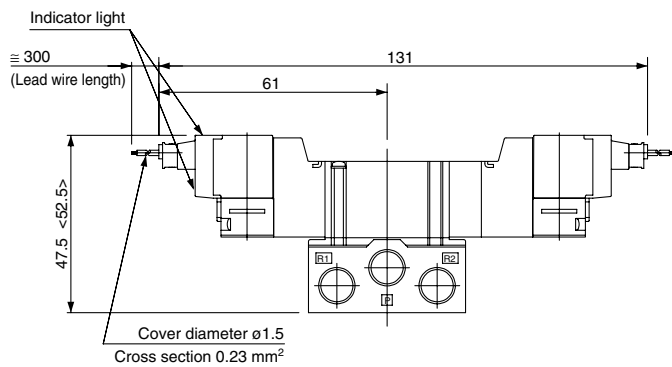
3 position closed center/exhaust center/pressure center (Except metal seal type)

Grommet (G): VQZ1 $\frac{3}{4}$ 5 $\frac{0}{5}$ (R)-□G□-01

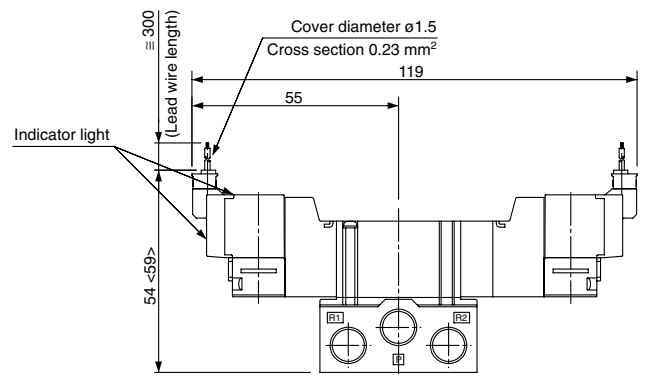


- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD

L plug connector (L): VQZ1 $\frac{3}{4}$ 5 $\frac{0}{5}$ (R)-□L□-01



M plug connector (M): VQZ1 $\frac{3}{4}$ 5 $\frac{0}{5}$ (R)-□M□-01

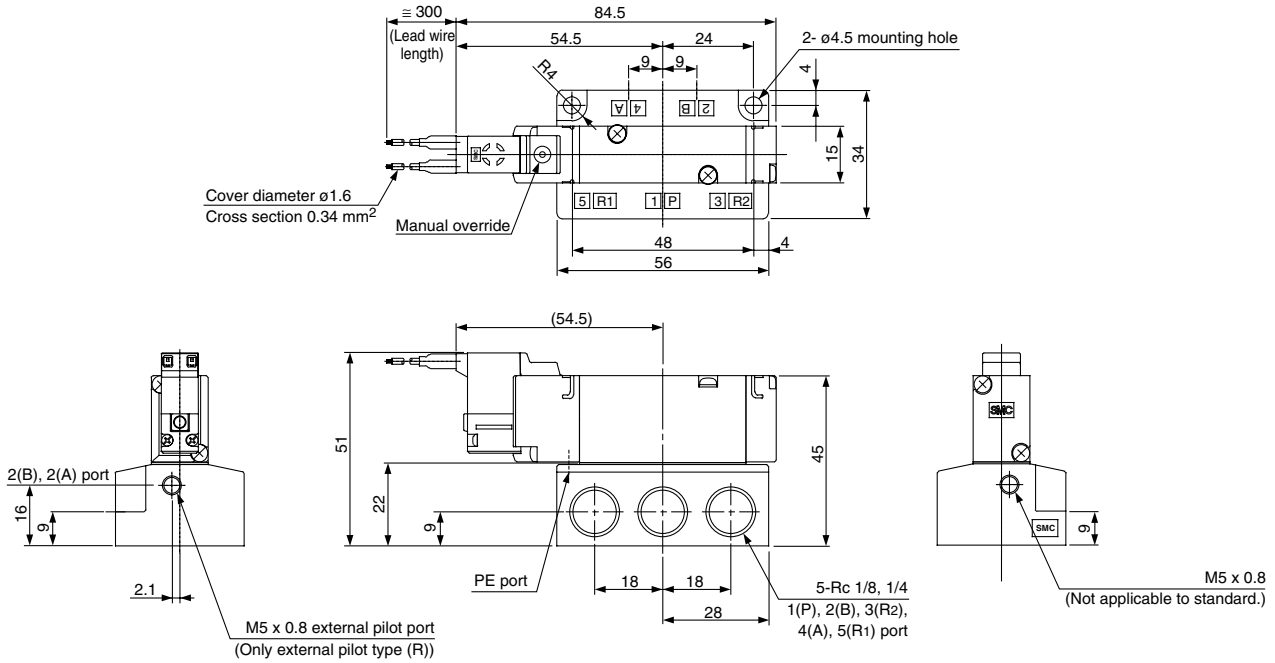


Series VQZ1000/2000/3000

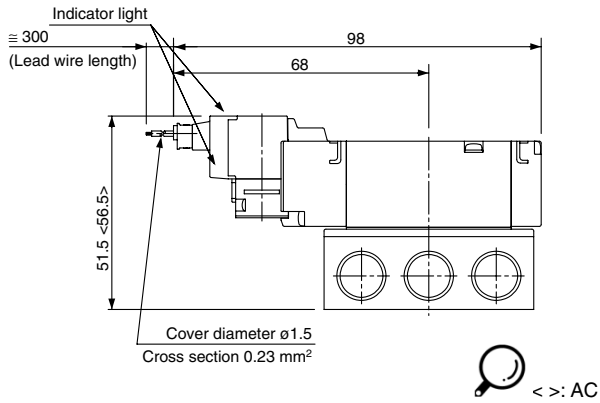
Dimensions: VQZ2000

2 position single

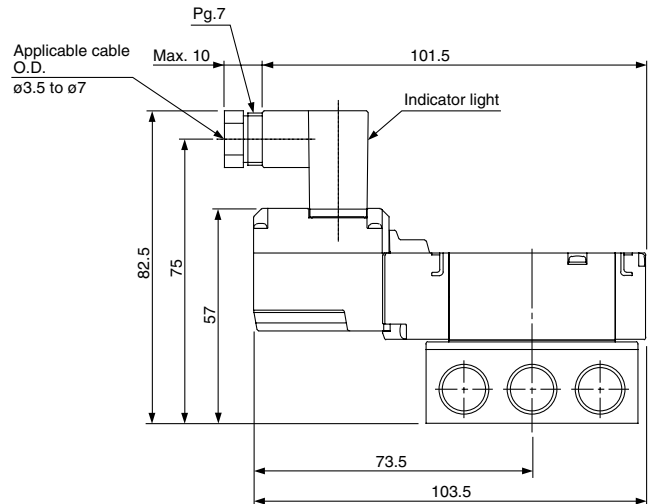
Grommet (G): VQZ215⁰(R)-□G□-0₁⁰¹



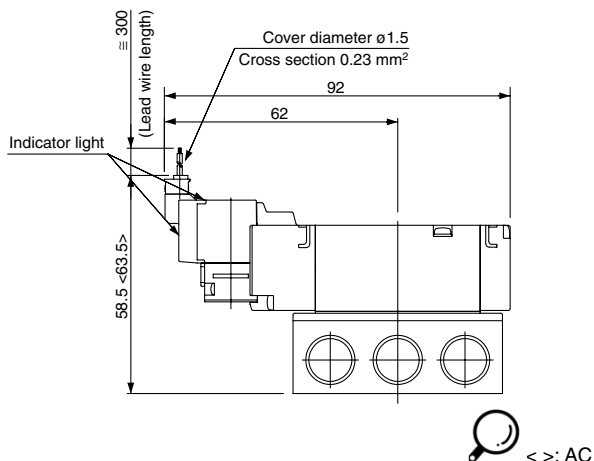
L plug connector (L): VQZ215⁰(R)-□L□-0₁⁰¹



DIN terminal (Y): VQZ215⁰(R)-□Y□-0₁⁰¹



M plug connector (M): VQZ215⁰(R)-□M□-0₁⁰¹

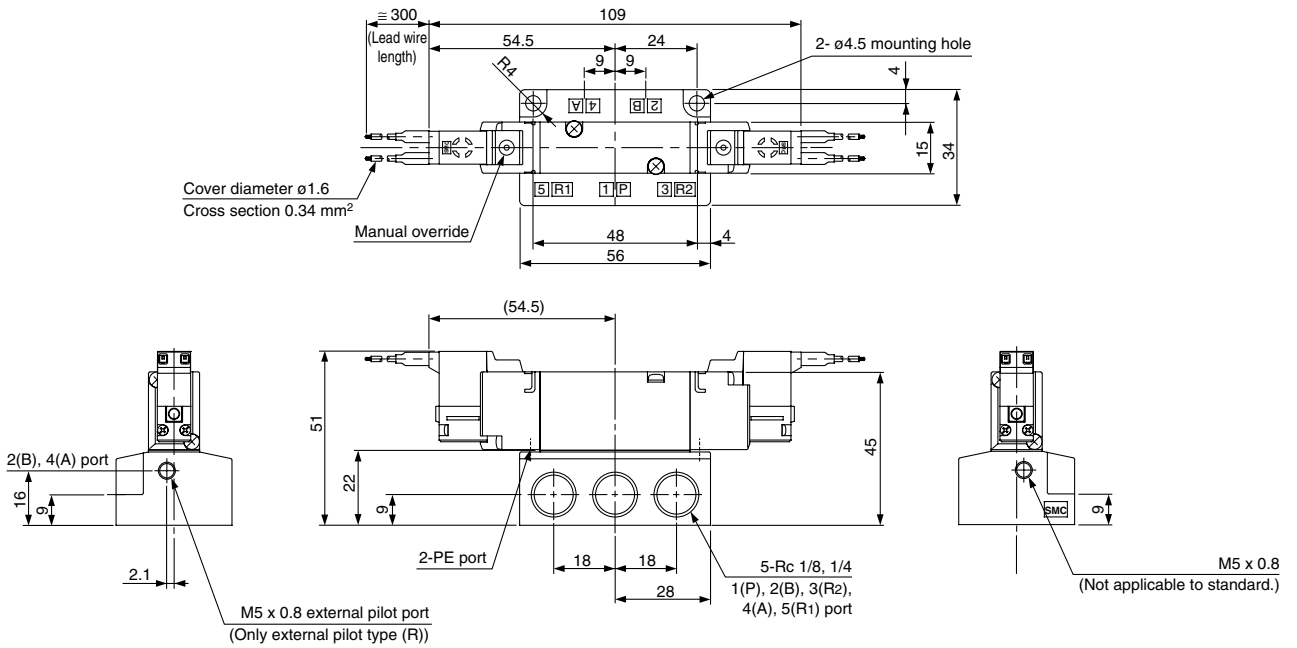


Plug Lead Unit: Single Unit Series VQZ1000/2000/3000

VQZ2000

2 position double

Grommet (G): VQZ225⁰₁(R)-□G□-0¹₂



VQC

SQ

VQ0

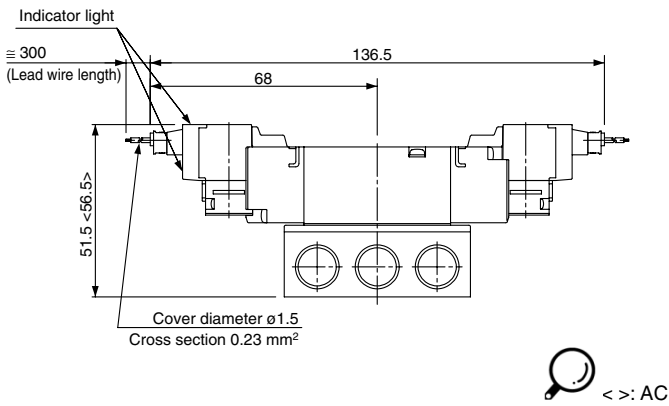
VQ4

VQ5

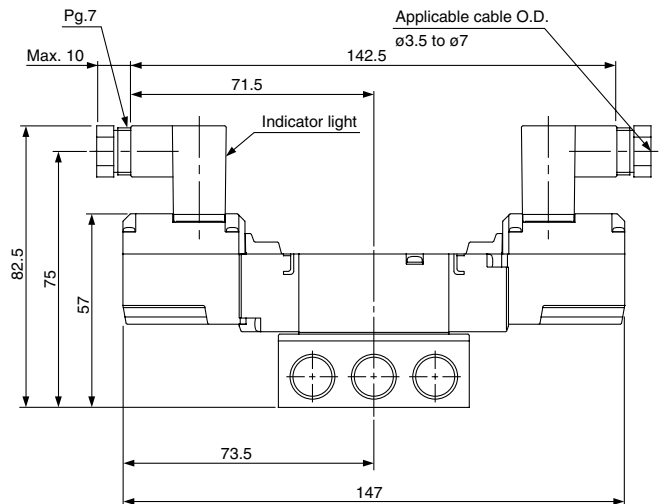
VQZ

VQD

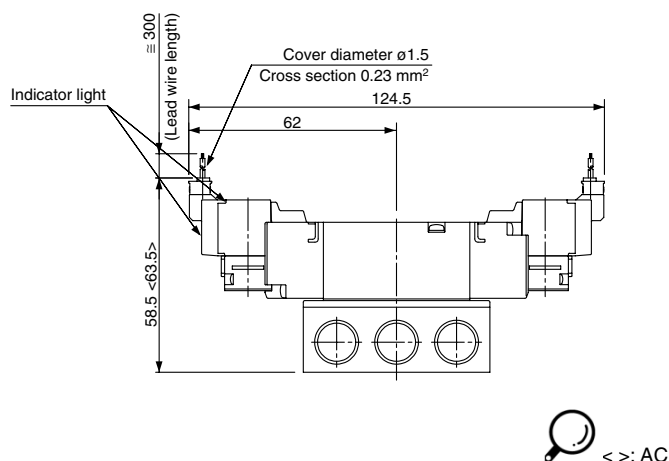
L plug connector (L): VQZ225⁰₁(R)-□L□-0¹₂



DIN terminal (Y): VQZ225⁰₁(R)-□Y□-0¹₂



M plug connector (M): VQZ225⁰₁(R)-□M□-0¹₂

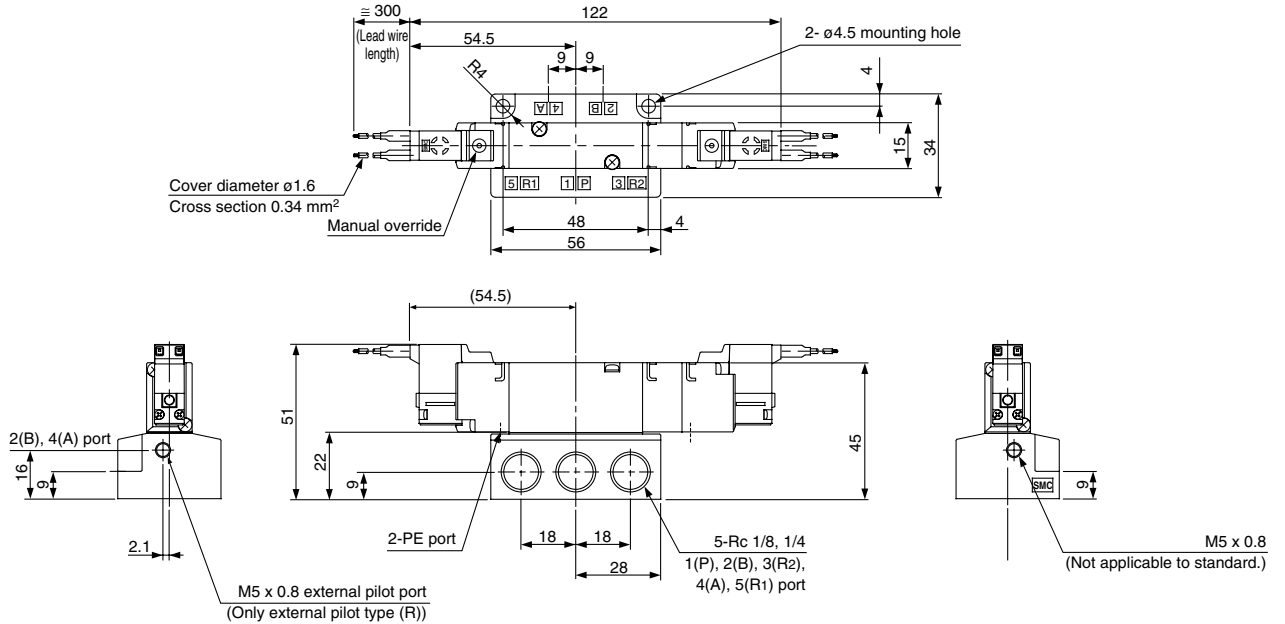


Series VQZ1000/2000/3000

Dimensions: VQZ2000

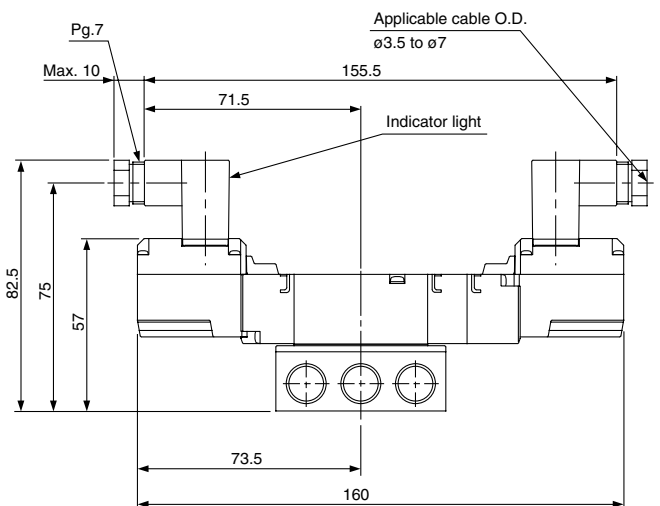
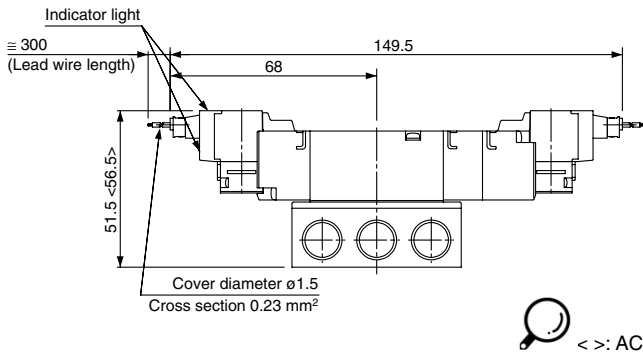
3 position closed center/exhaust center/pressure center

Grommet (G): VQZ2 $\frac{3}{5}$ 5 $\frac{0}{1}$ (R)-□G□- $\frac{01}{02}$

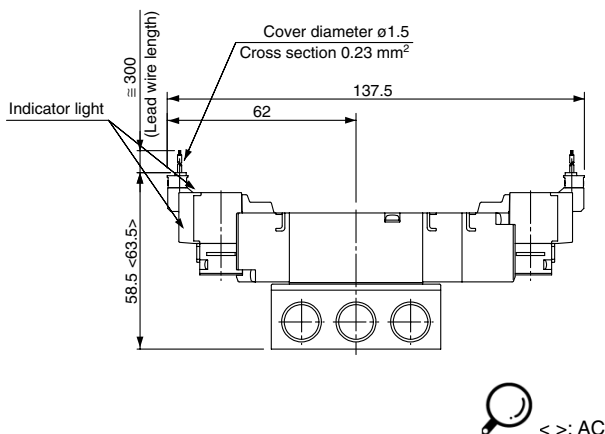


L plug connector (L): VQZ2 $\frac{3}{5}$ 5 $\frac{0}{1}$ (R)-□L□- $\frac{01}{02}$

DIN terminal (Y): VQZ2 $\frac{3}{5}$ 5 $\frac{0}{1}$ (R)-□Y□- $\frac{01}{02}$



M plug connector (M): VQZ2 $\frac{3}{5}$ 5 $\frac{0}{1}$ (R)-□M□- $\frac{01}{02}$

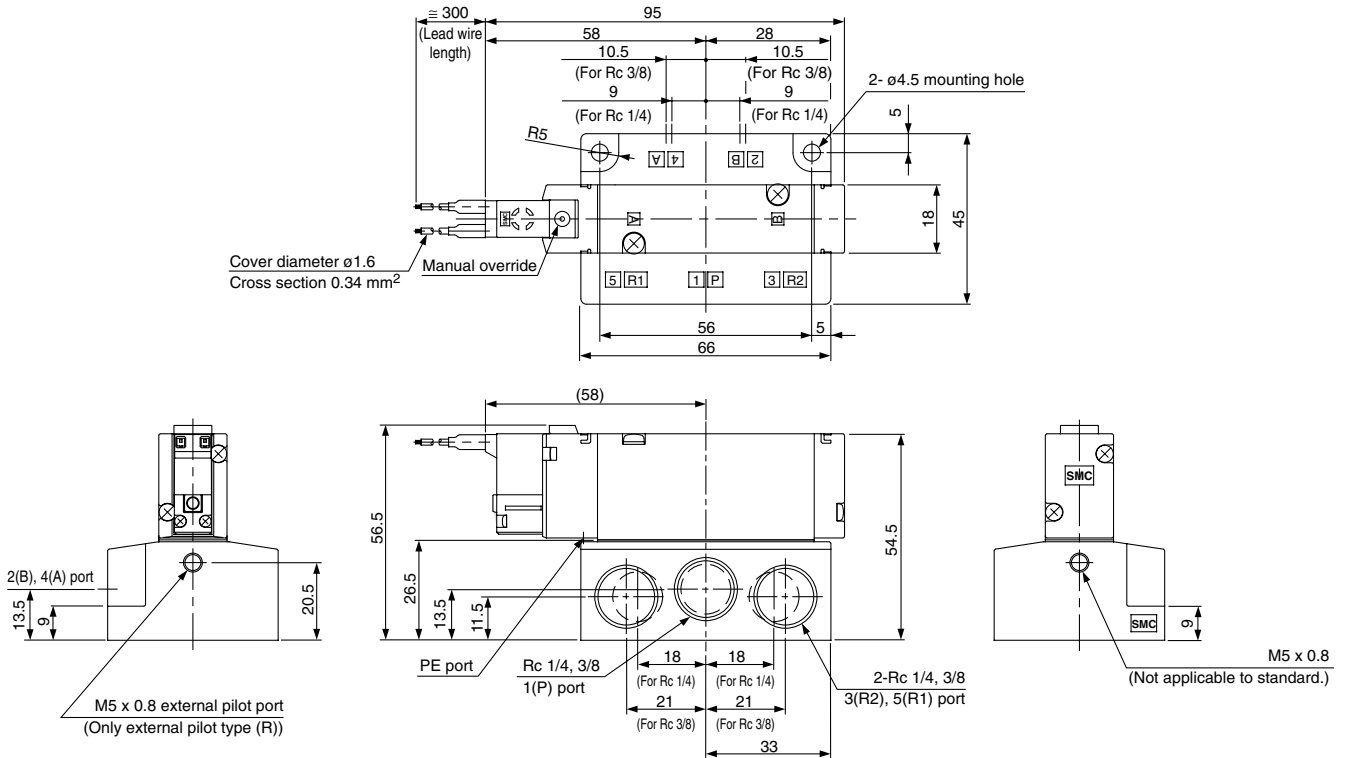


Plug Lead Unit: Single Unit Series VQZ1000/2000/3000

VQZ3000

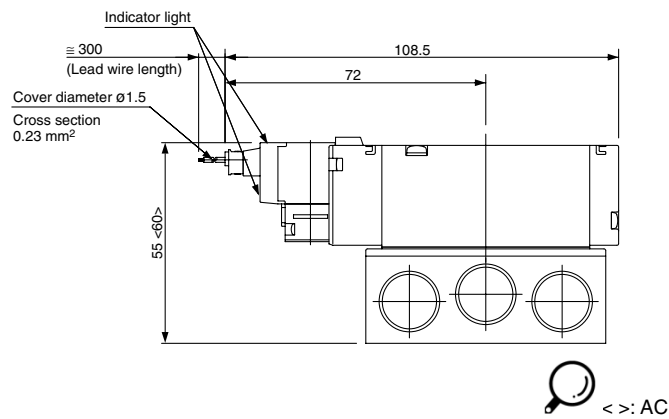
2 position single

Grommet (G): VQZ315⁰(R)-□G□-0₃⁰²

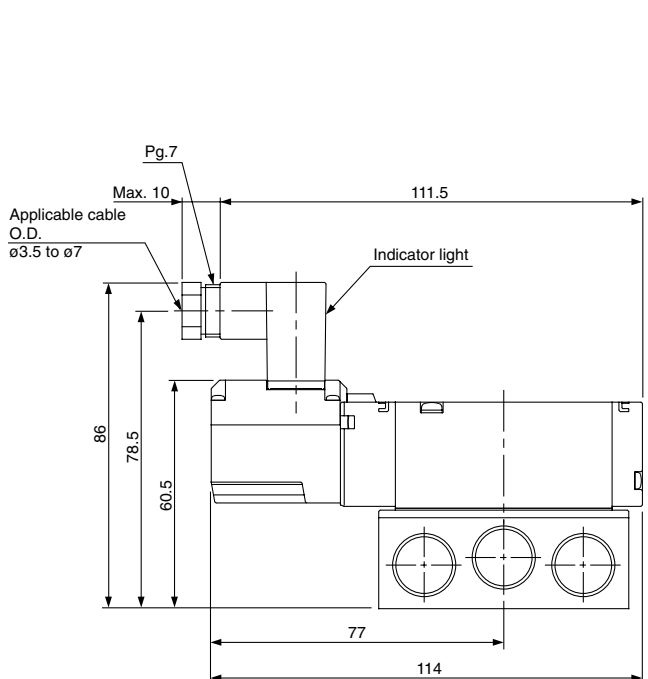


- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ**
- VQD

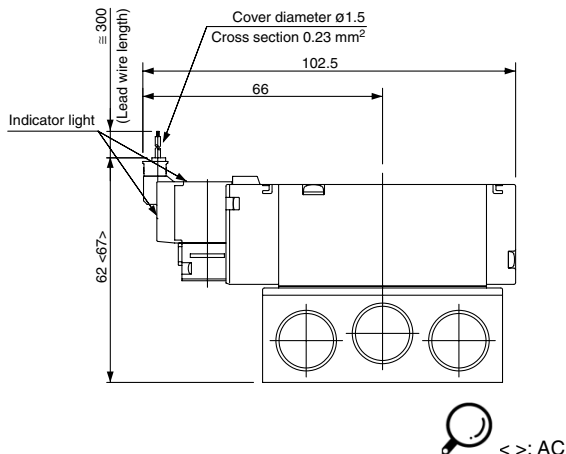
L plug connector (L): VQZ315⁰(R)-□L□-0₃⁰²



DIN terminal (Y): VQZ315⁰(R)-□Y□-0₃⁰²



M plug connector (M): VQZ315⁰(R)-□M□-0₃⁰²

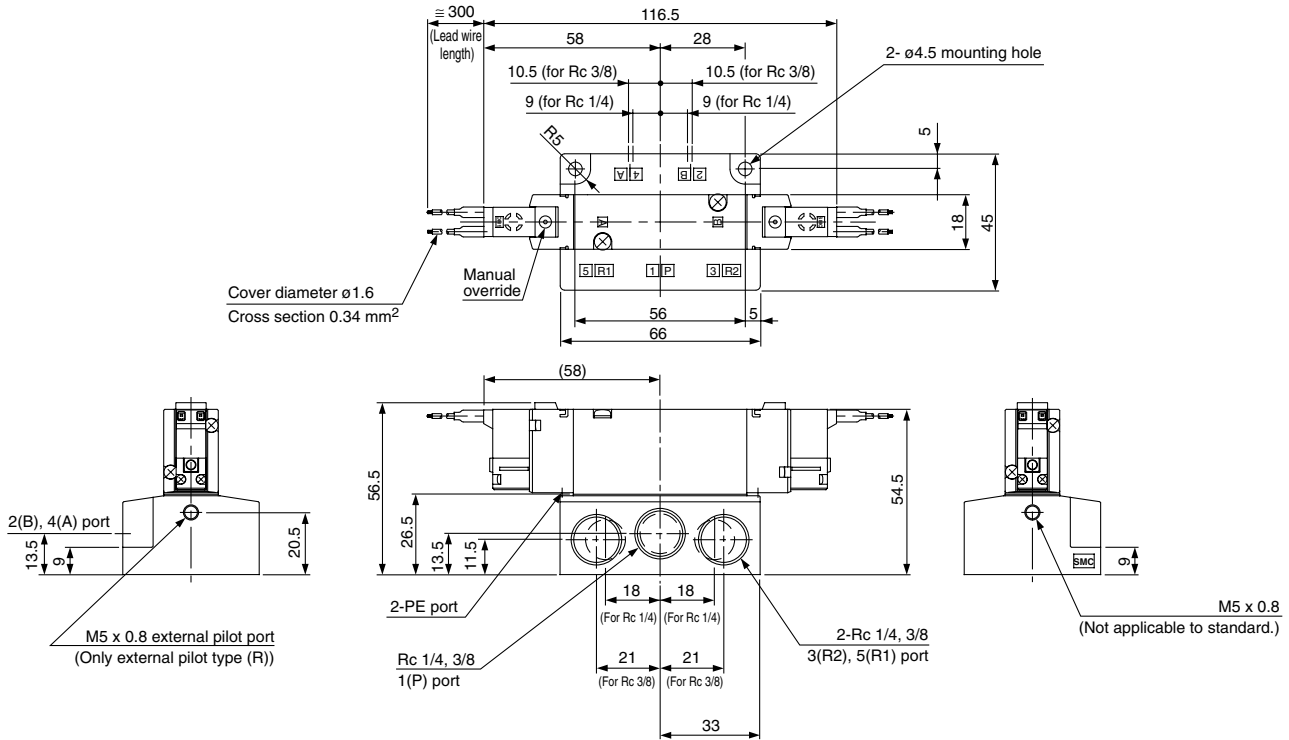


Series VQZ1000/2000/3000

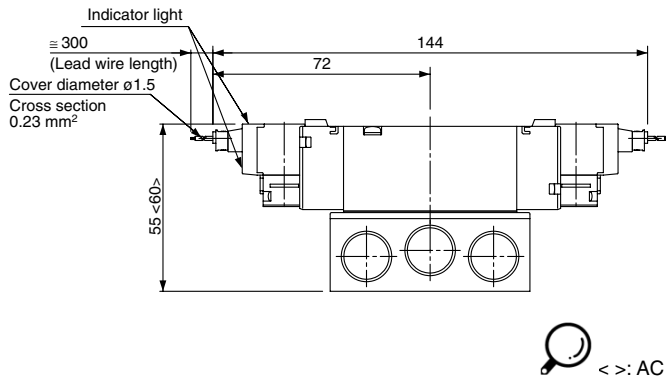
Dimensions: VQZ3000

2 position double

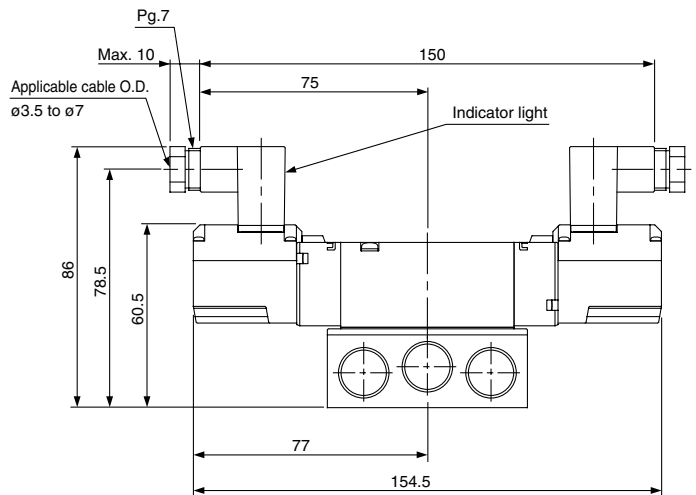
Grommet (G): VQZ325⁰₁(R)-□G□-⁰²₀₃



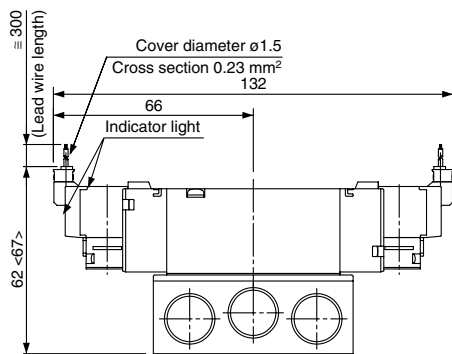
L plug connector (L): VQZ325⁰₁(R)-□L□-⁰²₀₃



DIN terminal (Y): VQZ325⁰₁(R)-□Y□-⁰²₀₃



M plug connector (M): VQZ325⁰₁(R)-□M□-⁰²₀₃

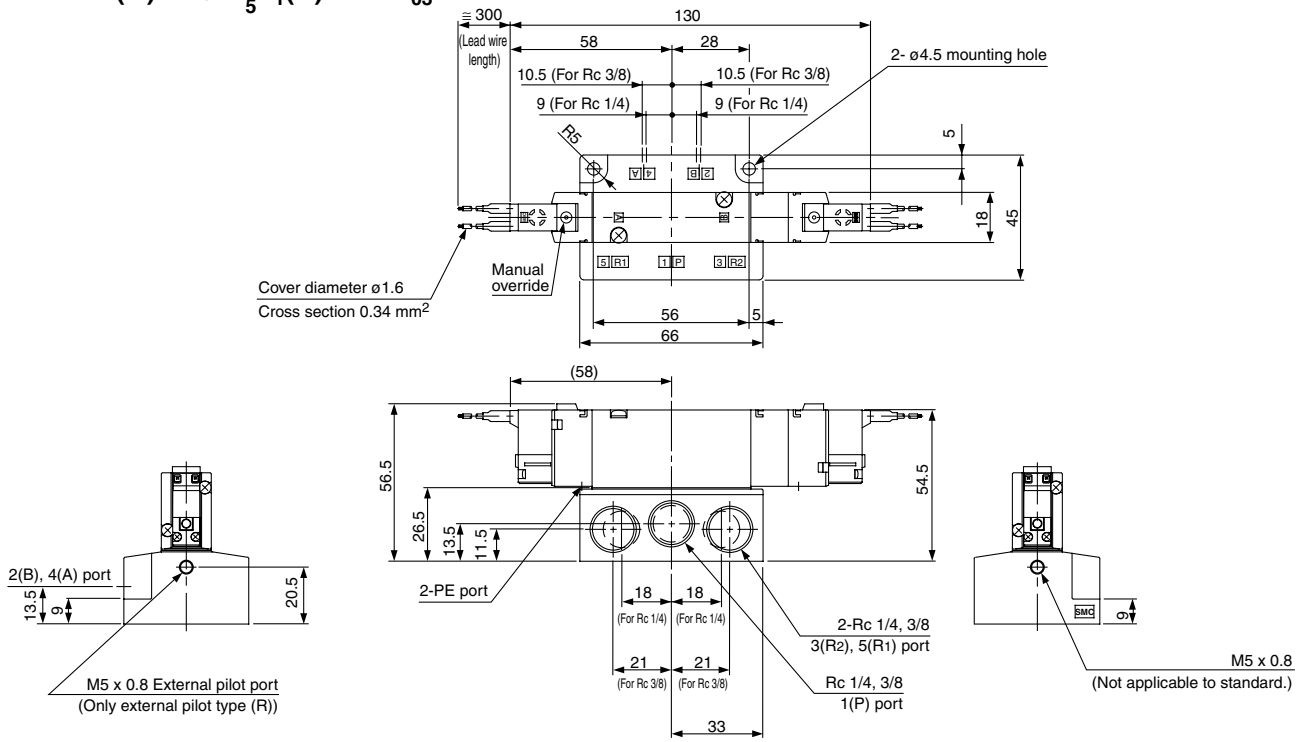


Plug Lead Unit: Single Unit Series VQZ1000/2000/3000

VQZ3000

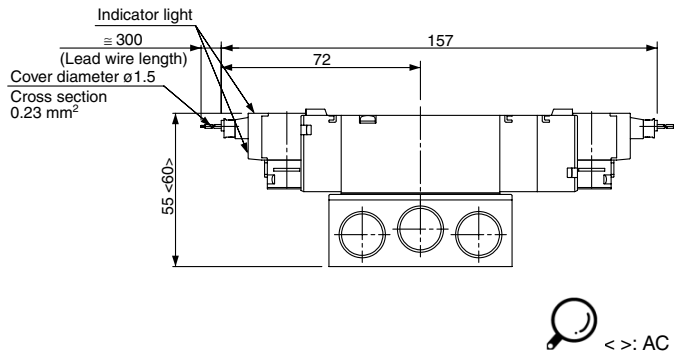
3 position closed center/exhaust center/pressure center

Grommet (G): VQZ3³/₄5⁰/₁(R)-□G□-0²/₀₃

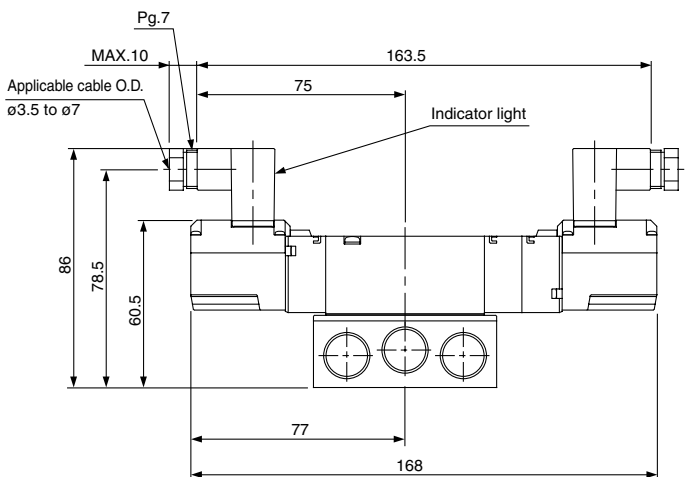


- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD

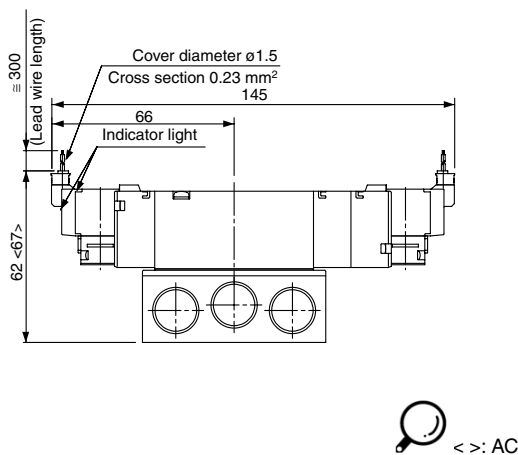
L plug connector (L): VQZ3³/₄5⁰/₁(R)-□L□-0²/₀₃



DIN terminal (Y): VQZ3³/₄5⁰/₁(R)-□Y□-0²/₀₃



M plug connector (M): VQZ3³/₄5⁰/₁(R)-□M□-0²/₀₃



5 Port Solenoid Valve Base Mounted

Plug Lead Unit: Manifold (Connector Kit) VQZ1000/2000/3000

How to Order Manifold

VV5QZ **1** **5** — **08** **C6** **C** — **N**

Series

1	VQZ1000
2	VQZ2000
3	VQZ3000

Manifold

5	Base mounted
---	--------------

Stations

02	2 stations
⋮	⋮
20	20 stations

Port size {4 (A), 2 (B) port}

Symbol	Port size	VQZ1000	VQZ2000	VQZ3000
C3	One-touch fitting for ø3.2	○	—	—
C4	One-touch fitting for ø4	○	○	—
C6	One-touch fitting for ø6	○	○	○
C8	One-touch fitting for ø8	—	○	○
C10	One-touch fitting for ø10	—	—	○
M5	M5 thread	○	—	—
O1	Rc 1/8	—	○	—
O2	Rc 1/4	—	—	○
CM ⁽¹⁾	Mixture of port sizes	○	○	○

Option

Nil	None
D	DIN rail mounting style (With DIN rail in standard length)
DO ⁽¹⁾	DIN rail mounting style (Without DIN rail)
N ⁽²⁾	Name plate
R	External pilot specifications

Note 1) Order DIN rail separately.
For DIN rail model number, refer to page 2-7-54.
Note 2) Applicable to VQZ2000 and 3000.

Kit type

C	Connector
---	-----------

Note 1) Specify port mixture/with port plug by means of the manifold specification sheet.
Port mixture and port plug are available only for One-touch fitting type.

Note 2) For inch size and One-touch fittings, refer to page 2-7-60.

How to Order Valves

VQZ **1** **1** **5** **1** — **5** **M**

Series

1	VQZ1000 body width 10 mm
2	VQZ2000 body width 15 mm
3	VQZ3000 body width 18 mm

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5 ^{Note)}	3 position pressure center
8	3 port for mixture mounting N.C.
9	3 port for mixture mounting N.O.

Note) Except VQZ1000 and metal seal type.

Body

5	Base mounted
---	--------------

Seal

0	Metal seal
1	Rubber seal

Function

Symbol	Specifications	DC	AC
Nil	Standard	(1.0 W) ○	(3) ○
K ⁽¹⁾	High pressure (Metal seal only)	(1.0 W) ○	—
Y	Low wattage type	(0.5 W) ○	—
R ⁽²⁾	External pilot	○	○

Note 1) Option
Note 2) For details about external pilot specifications, refer to page 2-7-60.
Note 3) For power consumption of AC type, refer to page 2-7-37.
Note 4) When two or more symbols are specified, indicate them alphabetically.

Manual override

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

Electrical entry

Symbol	Electrical entry	Light/Surge voltage suppressor
G	Grommet (DC specifications)	None
L	L plug connector with lead wire	Yes
LO	L plug terminal without connector	
M	M plug connector with lead wire	
MO	M plug terminal without connector	None
Y ⁽¹⁾	DIN terminal	
YO ⁽¹⁾	DIN terminal without connector	
YZ ⁽¹⁾	DIN terminal	
YS ⁽¹⁾	DIN terminal	Yes (W/o indicator light)
YOS ⁽¹⁾	DIN terminal without connector	Yes (W/o indicator light)

Note 1) Applicable to VQZ2000 and 3000.
Note 2) Standard lead wire length: 300 mm.

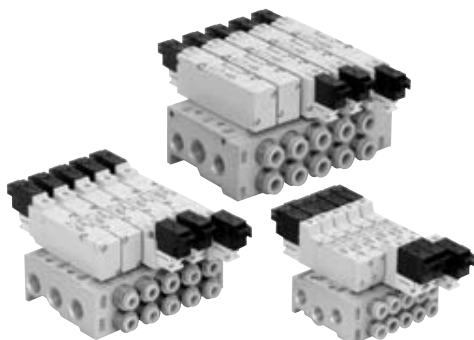
Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC
9 ^{Note)}	Other

Note) For the special voltages, please consult with SMC.

Plug Lead Unit: Manifold Series VQZ1000/2000/3000

Manifold Specifications



Series	Base model	Porting specifications			Applicable solenoid valve	Applicable stations	Note) Manifold base weight (g)
		Port location	Port size				
			1(P), 3/5(R)	4(A), 2(B)			
VQZ1000	VV5QZ15-□□□	Side	Rc 1/8	C3 (For ø3.2) C4 (For ø4) C6 (For ø6) M5 (M5 thread)	VQZ1□50 VQZ1□51	2 to 20 stations	2 stations: 105 Addition per/station: 27
VQZ2000	VV5QZ25-□□□	Side	Rc 1/4	C4 (For ø4) C6 (For ø6) C8 (For ø8) Rc 1/8	VQZ2□50 VQZ2□51	2 to 20 stations	2 stations: 193 Addition per/station: 54
VQZ3000	VV5QZ35-□□□	Side	1(P) port Rc 3/8 3/5(R) port Rc 1/4	C6 (For ø6) C8 (For ø8) C10(For ø10) Rc 1/4	VQZ3□50 VQZ3□51	2 to 20 stations	2 stations: 398 Addition per/station: 102

Note) Threaded port.

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

How to Order Valve Manifold Assembly (Example)

VV5QZ25-05C6C.....1 set (C kit 5 stations manifold base)

*VVQZ2000-10A-5.....1 set (Blanking plate assembly)

*VQZ2150-5L.....1 set (Single solenoid part no.)

*VQZ2250-5L.....2 sets (Double solenoid part no.)

*VQZ2350-5L.....1 set (3 position part no.)

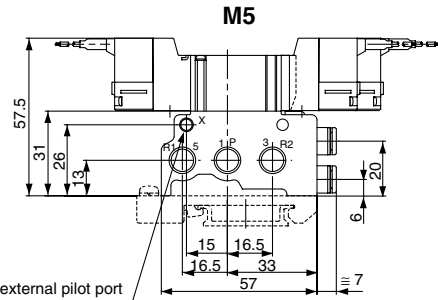
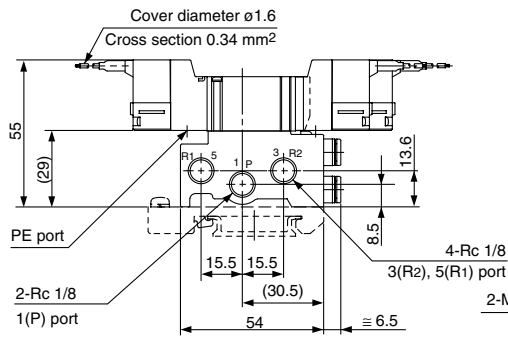
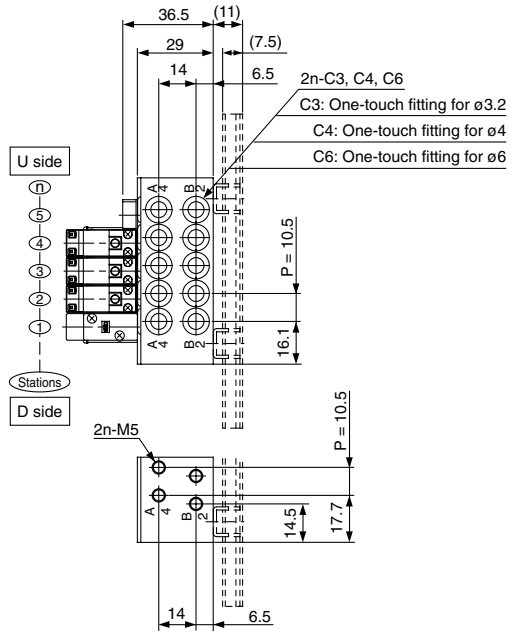
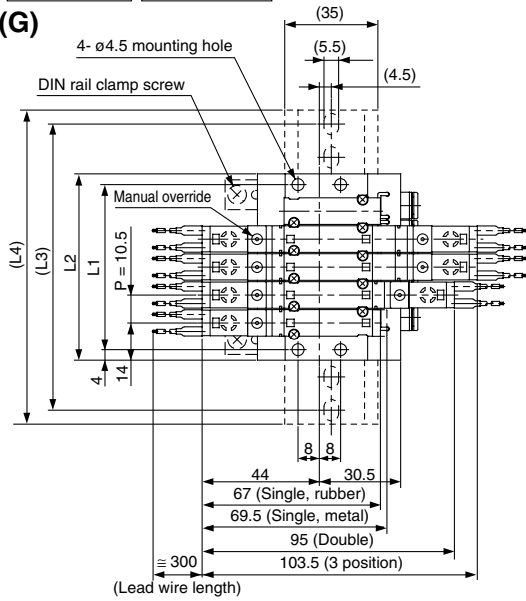
→ The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

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

Specify the part numbers for valves and options together beneath the manifold base part number.
When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

Dimensions: VQZ1000

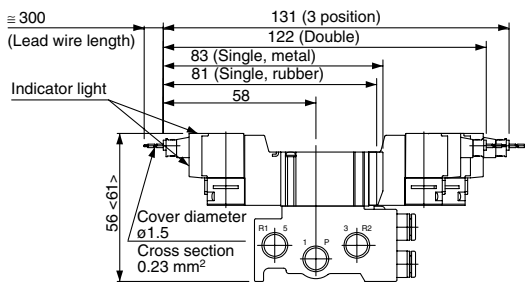
VV5QZ15- Stations Port size C
Grommet (G)



External pilot specifications

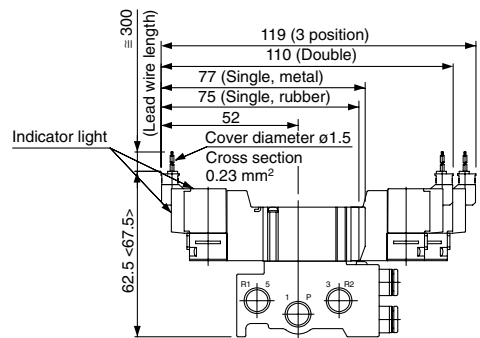
The broken lines indicate the DIN rail mounting style [-D].

L plug connector (L)



< >: AC

M plug connector (M)



< >: AC

Dimensions

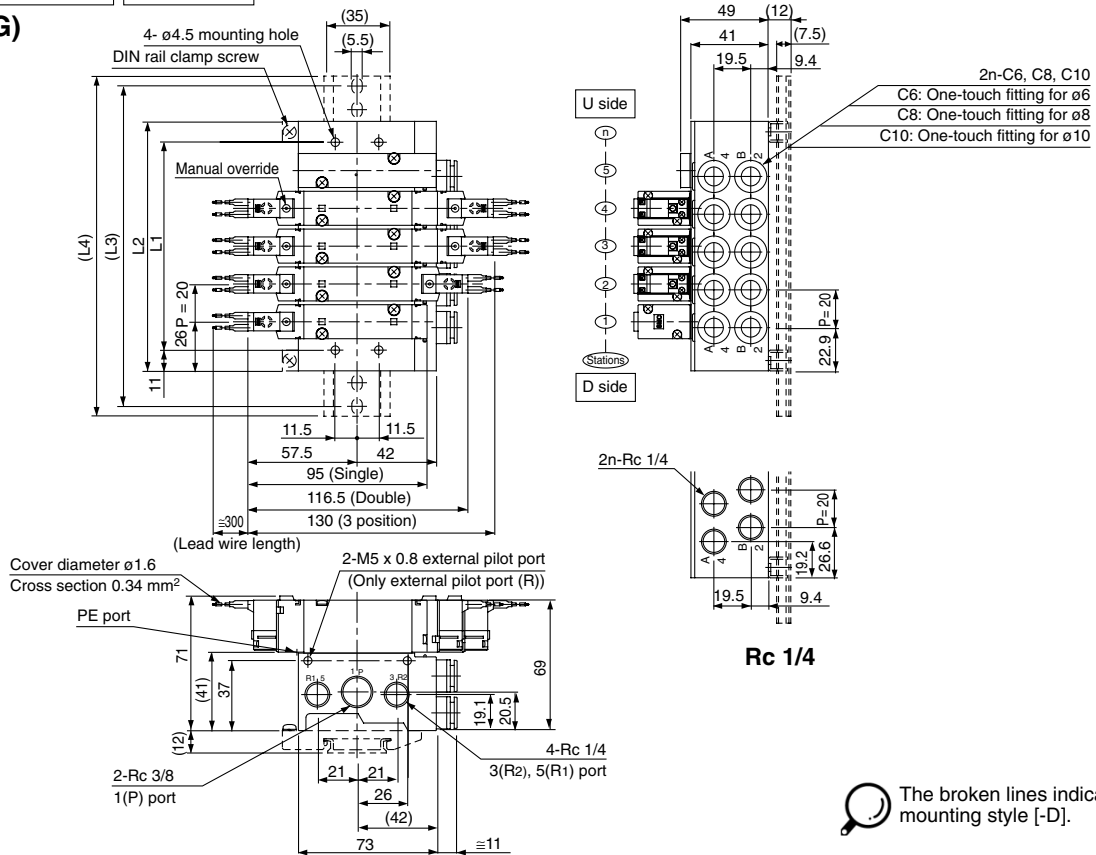
Formula L1 = 10.5n + 9.5, L2 = 10.5n + 17.5 n: Stations (Maximum 20 stations)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5
L2	38.5	49	59.5	70	80.5	91	101.5	112	122.5	133	143.5	154	164.5	175	185.5	196	206.5	217	227.5
L3	62.5	75	87.5	100	100	112.5	125	137.5	150	162.5	175	175	187.5	200	212.5	225	237.5	237.5	250
L4	73	85.5	98	110.5	110.5	123	135.5	148	160.5	173	185.5	185.5	198	210.5	223	235.5	248	248	260.5

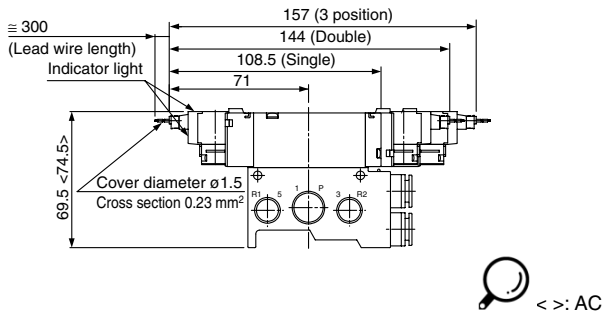
Series VQZ1000/2000/3000

Dimensions: VQZ3000

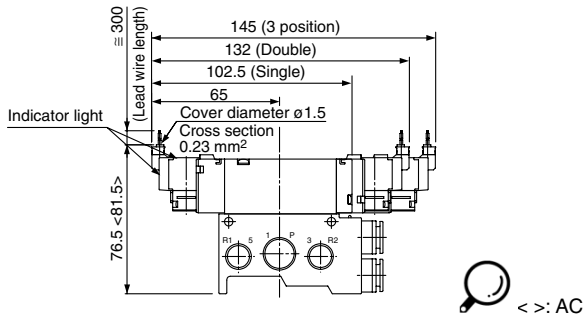
VV5QZ35- Stations Port size C
Grommet (G)



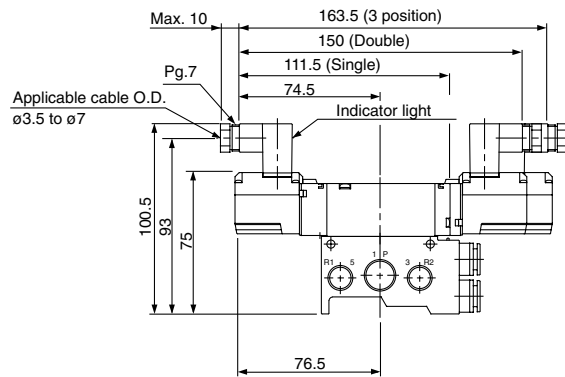
L plug connector (L)



M plug connector (M)



DIN terminal (Y)



Dimensions

Formula L1 = 20n + 10, L2 = 20n + 32 n: Stations (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	50	70	90	110	130	150	170	190	210	230	250	270	290	310	330	350	370	390	410
L2	72	92	112	132	152	172	192	212	232	252	272	292	312	332	352	372	392	412	432
L3	100	112.5	137.5	162.5	175	200	212.5	237.5	262.5	275	300	312.5	337.5	362.5	375	400	412.5	437.5	462.5
L4	110.5	123	148	173	185.5	210.5	223	248	273	285.5	310.5	323	348	373	385.5	410.5	423	448	473

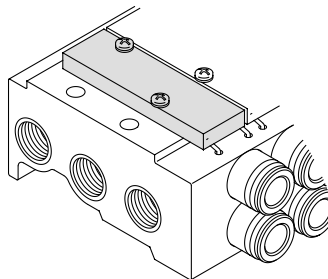
Plug Lead Unit: Manifold Series VQZ1000/2000/3000

Manifold Option

Blanking plate assembly

- VVQZ1000-10A-5 (VQZ1000)
- VVQZ2000-10A-5 (VQZ2000)
- VVQZ3000-10A-5 (VQZ3000)

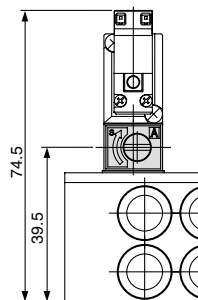
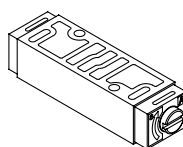
It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.



Throttle valve spacer (For VQZ2000 only)

- VVQZ2000-20A-5

Mount a throttle valve spacer between manifold base and valve, and thus making it possible to control cylinder speed by meter-out.

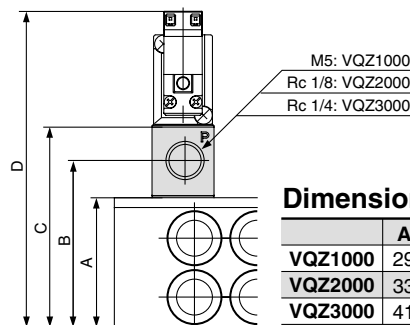
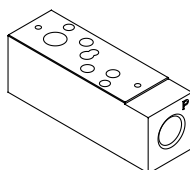


- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD

Individual SUP spacer

- VVQZ1000-P-5-M5 (VQZ1000)
- VVQZ2000-P-5-01 (VQZ2000)
- VVQZ3000-P-5-02 (VQZ3000)

Supply port can be installed individually by mounting an individual supply spacer onto the manifold block. It's used for such cases that the different pressure should be supplied into each valve, etc.



Dimensions

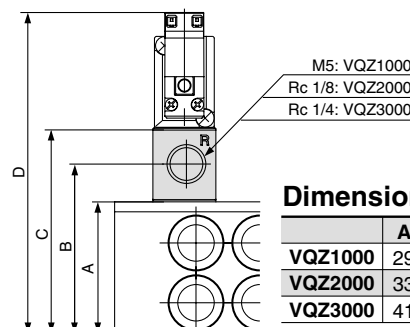
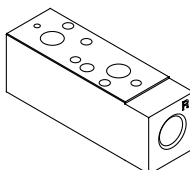
	A	B	C	D (Note)
VQZ1000	29	35	40	67
VQZ2000	33	43	52	81
VQZ3000	41	52	63	93

Note) For grommet

Individual EXH spacer

- VVQZ1000-R-5-M5 (VQZ1000)
- VVQZ2000-R-5-01 (VQZ2000)
- VVQZ3000-R-5-02 (VQZ3000)

Exhaust port can be installed individually by mounting an individual exhaust spacer on to the manifold block. It's used for such cases that the valve exhaust is likely to affect other stations due to circuit, etc.



Dimensions

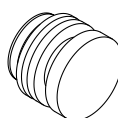
	A	B	C	D (Note)
VQZ1000	29	35	40	67
VQZ2000	33	43	52	81
VQZ3000	41	52	63	93

Note) For grommet

Port plug

- VVQZ1000-CP (VQZ1000)
- VVQZ2000-CP (VQZ2000)
- VVQZ3000-CP (VQZ3000)

Used to block a cylinder port when changing 5 port valves into 3 port valves, etc.



Series VQZ1000/2000/3000

Manifold Option

Name plate [-N] (For VQZ2000 and 3000 only)

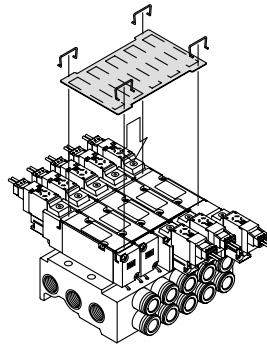
VVQZ2000-N5- Stations (VQZ2000)

VVQZ3000-N5- Stations (VQZ3000)

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.

- To order a manifold with nameplate already attached, insert "N" at the end of the manifold number.

* 4 clips are attached for name plate mounting.

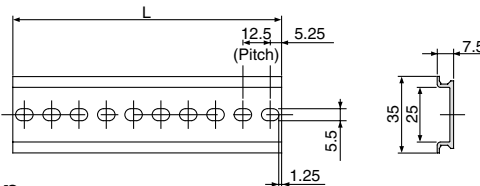


DIN rail

AXT100-DR-□

* As for □, enter the number from the DIN rail dimensions table. For L dimension, refer to the dimensions of each manifold.

Each manifold can be mounted on a DIN rail. Order it by indicating an option symbol for DIN rail mounting style, -D. The DIN rail is approximately 30 mm longer than the length of manifold.



L Dimension

$$L = 12.5n + 10.5$$

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L dimension	23	35.5	48	60.5	73	85.5	98	110.5	123	135.5	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	31	32	33	34	35	36	37	38	39	40
L dimension	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5

Blanking plug

KQP-23-X19

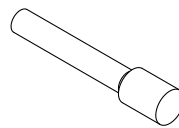
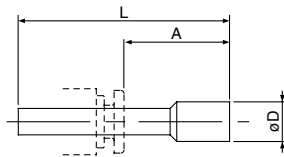
KQP-04-X19

KQP-06-X19

KQP-08-X19

KQP-10-X19

● Color: White



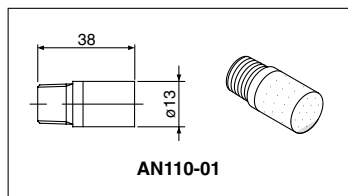
Dimensions

Applicable fittings size ød	Model	A	L	D
3.2	KQP-23-X19	16	31.5	3.2
4	KQP-04-X19	16	32	6
6	KQP-06-X19	18	35	8
8	KQP-08-X19	20.5	39	10
10	KQP-10-X19	22	43	12

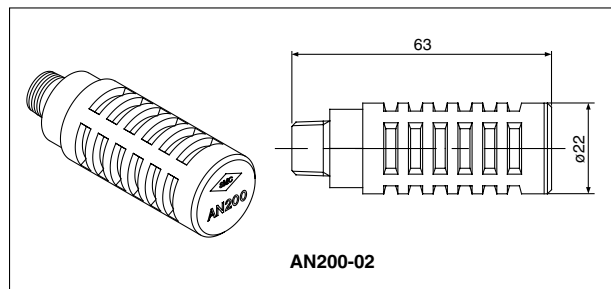
Silencer

(For Manifold EXH port)

Silencer is installed in the EXH port.



AN110-01



AN200-02

Model	Silencer P/N
VQZ1000	AN110-01
VQZ2000	AN200-02
VQZ3000	AN200-02

Plug Lead Unit: Manifold Series VQZ1000/2000/3000

Manifold Option

Double check block (Externally placed downstream): For VQZ1000 only VQ1000-FPG-□□

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the double check block with a built-in pilot type double check valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time.

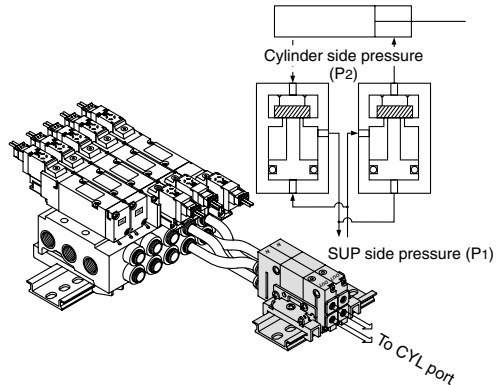
The combination of a 2 position single or double solenoid with a double check block will prevent the cylinder from "dropping" at stroke end when residual supply pressure is released.

Specifications

Maximum operating pressure	0.8 MPa
Minimum operating pressure	0.15 MPa
Ambient and fluid temperature	-5 to 50°C
Flow characteristics: C	0.60 dm ³ /(s·bar)
Max. operating frequency	180 c.p.m

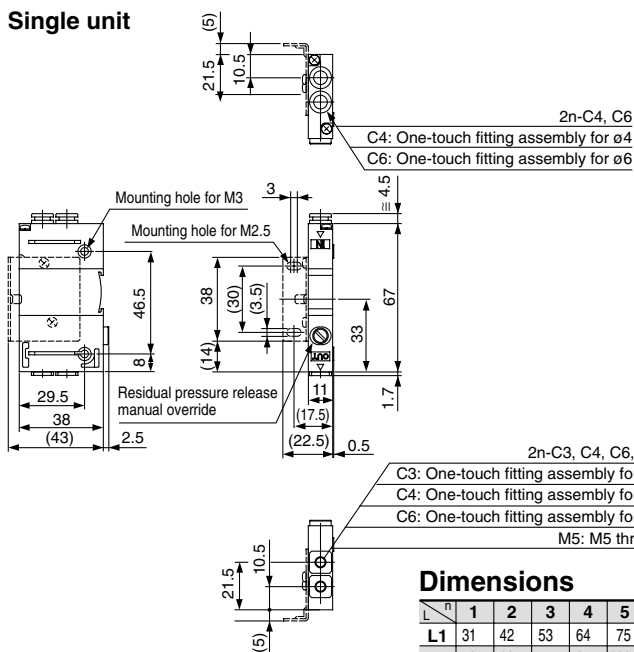
Note) Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa)

<Check valve operation principle>

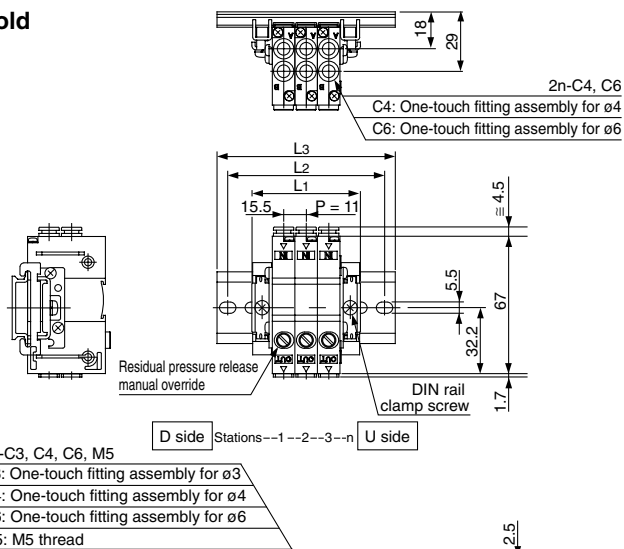


Dimensions

Single unit



Manifold



Dimensions

n: Station (Maximum 24 stations)

L	n	1	2	3	4	5	6	7	8	9	10	11	12
L1		31	42	53	64	75	86	97	108	119	130	141	152
L2		50	62.5	75	87.5	100	112.5	125	137.5	150	162.5	175	
L3		60.5	73	85.5	98	110.5	123	135.5	148	160.5	173	185.5	

L	n	13	14	15	16	17	18	19	20	21	22	23	24
L1		163	174	185	196	207	218	229	240	251	262	273	284
L2		187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5	300
L3		198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.5

Formula L1 = 11n + 20

How to Order

Double check block

VQ1000-FPG-□□-□□-□□

IN side port size

C4	One-touch fitting for ø4
C6	One-touch fitting for ø6

OUT side port size

M5	M5 thread
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6

Option

Nil	None
D	DIN rail mount style (For manifold)
F	With bracket
N	Name plate

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

Manifold

VVQ1000-FPG-06

Stations

01	1 station
...	...
16	16 stations

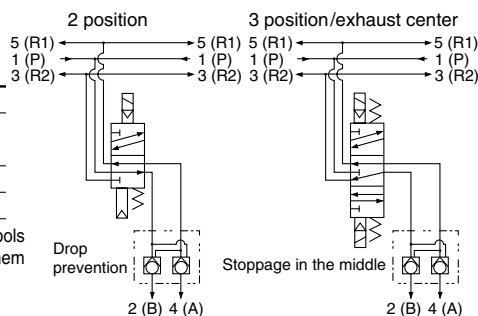
<Ordering Example>

VVQ1000-FPG-06.... 6stations of manifold
 *VQ1000-FPG-C4M5-D: 3 sets } Double check
 *VQ1000-FPG-C6M5-D: 3 sets } block

Caution

- Since air leakage from the pipe between the valve and cylinder or the fittings will prevent the cylinder from stopping for a long time. Check for air leakage using neutral household detergent, such as dish washing soap. Also check the cylinder's tube gasket, piston packing and rod packing for air leakage.
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- Combining double check block with 3 position closed center or pressure center solenoid valve will not work.
- A M5 fitting assembly is attached, without being incorporated in the double After screwing in the fittings, mount the assembly on the double check block. (Tightening torque: 0.8 to 1.2 N·m)
- If exhaust side of double check block is narrowed down too much intermediate stopping accuracy may be decreased.

<Example>



Bracket Assembly

Part no.	Tightening torque
VQ1000-FPG-FB	0.22 to 0.25 N·m

Note) It is the tightening torque for mounting a bracket for the double check

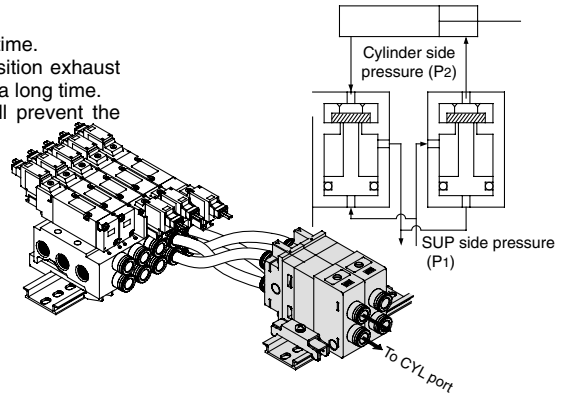
Series VQZ1000/2000/3000

Manifold Option

Double check block (Externally placed downstream): For VQZ2000/3000 only VQZ2000-FPG-□□-□

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the double check block with a built-in pilot type double check valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time. The combination of a 2 position single or double solenoid with a double check block will prevent the cylinder from "dropping" at stroke end when residual supply pressure is released.

<Check valve operation principle>



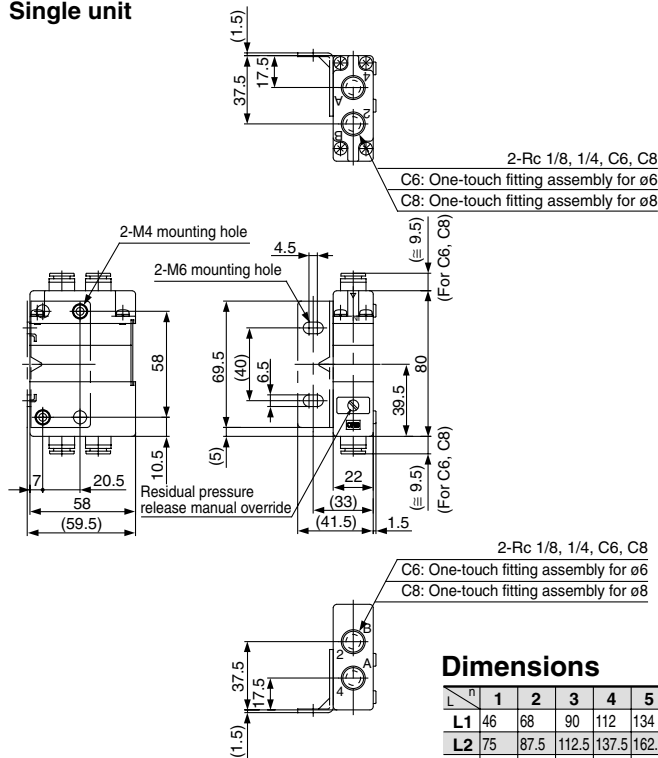
Specifications

Maximum operating pressure	0.8 MPa
Minimum operating pressure	0.15 MPa
Ambient and fluid temperature	-5 to 50°C
Flow characteristics: C	3.0 dm ³ /(s·bar)
Max. operating frequency	180 c.p.m

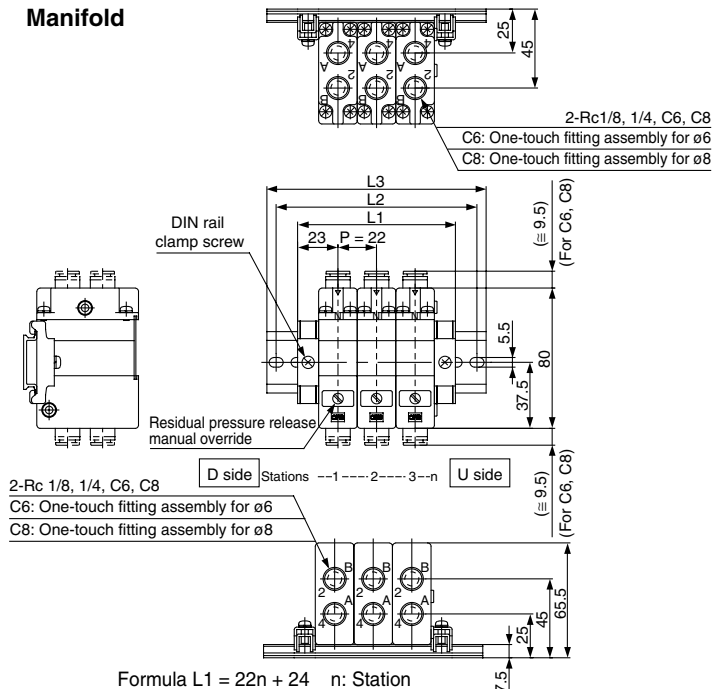
Note) Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa)

Dimensions

Single unit



Manifold



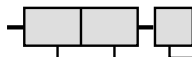
Dimensions

Formula L1 = 22n + 24 n: Station

n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	46	68	90	112	134	156	178	200	222	244	266	288	310	332	354	376
L2	75	87.5	112.5	137.5	162.5	175	200	225	250	262.5	287.5	312.5	337.5	362.5	375	400
L3	85.5	98	123	148	173	185.5	210.5	235.5	260.5	273	298	323	348	373	385.5	410.5

How to Order

Double check block



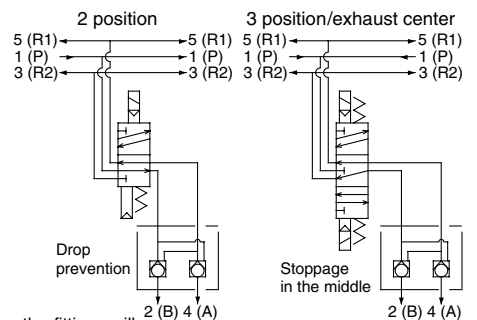
IN side port size	OUT side port size
01 Rc 1/8	01 Rc 1/8
02 Rc 1/4	02 Rc 1/4
C6 One-touch fitting for ø6	C6 One-touch fitting for ø6
C8 One-touch fitting for ø8	C8 One-touch fitting for ø8

Option

Nil	None
F	With bracket
D	DIN rail mount type (for manifold)
N	Name plate

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

<Example>



Manifold

VVQ2000-FPG-06

Stations	
01	1 station
⋮	⋮
16	16 stations

<Ordering Example>

VVQ2000-FPG-06...6 stations manifold
*VQZ2000-FPG-C6C6-D: 3 sets } Double check
*VQZ2000-FPG-C8C8-D: 3 sets } block

Caution

- Since air leakage from the pipe between the valve and cylinder or the fittings will prevent the cylinder from stopping for a long time. Check for air leakage using neutral household detergent, such as dish washing soap. Also check the cylinder's tube gasket, piston packing and rod packing for air leakage.
- Since One-touch fittings allow slight air leakage, screw piping is recommended when stopping the cylinder in the middle for a long time.
- Combining perfect block with 3 position closed center or pressure center solenoid valve will not work.
- When screwing the fittings in the double check block, proper tightening torque for screws is as shown at the right.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
- If exhaust side of double check block is narrowed down too much, intermediate stopping accuracy will be decreased.

Connection threads	Proper tightening torque (N·m)
Rc 1/8	7 to 9
Rc 1/4	12 to 14

Bracket Assembly

Part no.	Tightening torque
VQZ2000-FPG-FB	0.8 to 1.0 N·m

Note) It is the tightening torque for mounting a bracket for the perfect block.

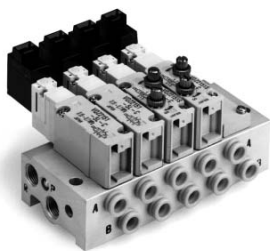
Plug Lead Unit: Manifold Series VQZ1000/2000/3000

Compact Body Type with Speed Controller: For VQZ2000 Only

- Speed controllers are built into the valve body, making it easier to adjust cylinder speed.
- Needle valve is equipped with a retainer to prevent accidental needle loss.

Specifications

Number of solenoids	Model	Flow characteristics						Response time (ms) ⁽¹⁾			Weight (g) ⁽²⁾		
		1 → 4/2 (P → A/B)		4/2 → 5/3 (A/B → EA/EB)		Standard	High pressure: 1W Low wattage: 0.5W	AC					
		C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]				b	Cv			
Single	Metal (Without speed controller)	VQZ2150-□-C	0.74	0.19	0.17	0.63	0.19	0.16	12 or less	15 or less	29 or less	40	
	Rubber seal (Without speed controller)	VQZ2151-□-C	1.2	0.17	0.26	1.0	0.20	0.24	15 or less	20 or less	36 or less		
	Rubber seal (With speed controller)	VQZ2151S-□-C	1.2	0.13	0.27	0.40	0.25	0.10	15 or less	20 or less	36 or less		
Double	Metal (Without speed controller)	VQZ2250-□-C	0.74	0.19	0.17	0.63	0.19	0.16	10 or less	13 or less	13 or less	54	
	Rubber seal (Without speed controller)	VQZ2251-□-C	1.2	0.17	0.26	1.0	0.20	0.24	15 or less	20 or less	20 or less		
	Rubber seal (With speed controller)	VQZ2251S-□-C	1.2	0.13	0.27	0.40	0.25	0.10	15 or less	20 or less	20 or less		
3 position	Closed center	Metal (Without speed controller)	VQZ2350-□-C	0.47	0.23	0.11	0.41	0.28	0.10	20 or less	26 or less	40 or less	54
		Rubber seal (Without speed controller)	VQZ2351-□-C	0.53	0.42	0.15	0.62	0.31	0.16	25 or less	33 or less	47 or less	
		Rubber seal (With speed controller)	VQZ2351S-□-C	0.59	0.33	0.15	0.35	0.28	0.09	25 or less	33 or less	47 or less	
	Exhaust center	Metal (Without speed controller)	VQZ2450-□-C	0.50	0.29	0.12	0.65	0.13	0.15	20 or less	26 or less	40 or less	54
		Rubber seal (Without speed controller)	VQZ2451-□-C	0.53	0.42	0.15	1.1	0.16	0.24	25 or less	33 or less	47 or less	
		Rubber seal (With speed controller)	VQZ2451S-□-C	0.53	0.34	0.13	0.42	0.35	0.10	25 or less	33 or less	47 or less	



JIS Symbol



(Single)

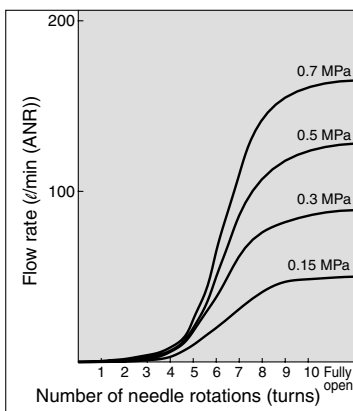


Note 1) Valve with built-in speed controls is available on rubber seal models only.

Note 2) Since the body (of this type) is made compact, there is no interchangeability with the standard VQZ2000.

Note 3) Tightening torque of needle valve lock nut should not exceed 0.3 N·m.

Flow Characteristics



Note 1) Based on JIS B 8375-1981 (Value for supply pressure of 0.5 MPa, with light/surge voltage suppressor, when using clean air). Response time values will change depending on pressure and air quality. The values at the time of ON are given for double styles.

Note 2) Weight without sub-plate

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

Manifold

VV5QZ25C — **05** **C4** **C** — **D**

Series
2 VQZ2000

Manifold
5 Base mounted

Compact body

Stations

02	2 stations
⋮	⋮
20	20 stations

Port size {4(A), 2(B) port}

C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
01	Rc 1/8

Option

Nil	None
D	DIN rail mounting style (With DIN rail in standard length)
Note) DO	DIN rail mounting style (Without DIN rail)

Note) The One-touch fittings on the compact manifold are pressed in and therefore cannot be changed out.

Note) Order DIN rail separately. For DIN rail model number, refer to page 2-7-54.

Valve model

VQZ2 **1** **5** **1** **□** **□** **□** **□** **5** **M** **□** **□** **□** **□** **C**

Symbol

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center

Body

5	Base mounted
---	--------------

Seal

0	Metal seal
1	Rubber seal

Throttle valve

Nil	None
S ^{Note)}	With

Note) Available with rubber seal valve only.

Function

Symbol	Specifications	DC	AC
Nil	Standard	(1.0 W)	○ ⁽²⁾
K ⁽¹⁾	High pressure (Metal seal only)	(1.0 W)	—
Y	Low wattage type	(0.5 W)	—

Compact body

Port size {4(A), 2(B) port}

Symbol	Port size
Nil	Without sub-plate
01	Rc 1/8

Manual override

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

Electrical entry

G	Grommet (DC specifications)
L ^{Note)}	L plug connector with lead wire
LO ^{Note)}	L plug terminal without connector
M ^{Note)}	M plug connector with lead wire
MO ^{Note)}	M plug terminal without connector

Note) With light/surge voltage suppressor for L, LO, M, MO

Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC
9 ^{Note)}	Other

Note) For the special voltages, please consult with SMC.

Sub-plate Part No.
VQZ2000C-S-01

Blanking Plate Assembly
VVQZ2000C-10A-5



Note 1) Option
Note 2) For power consumption of AC type, refer to page 2-7-37.

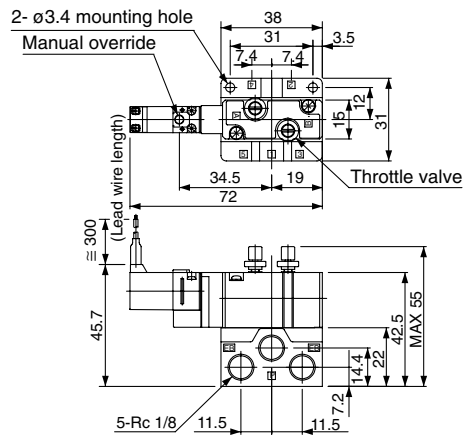
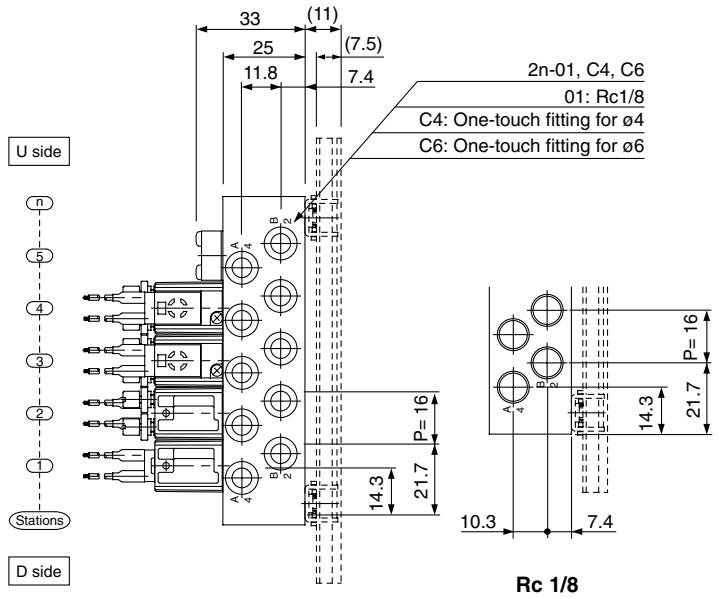
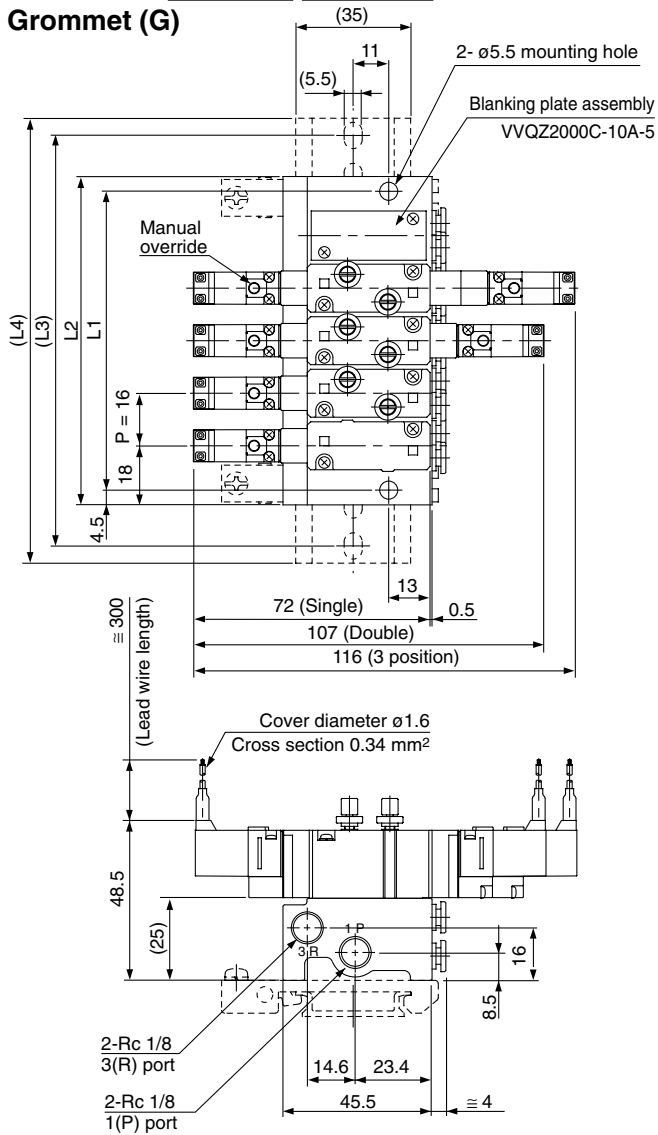


Note 3) When two or more symbols are specified, indicate them alphabetically.

Series VQZ1000/2000/3000

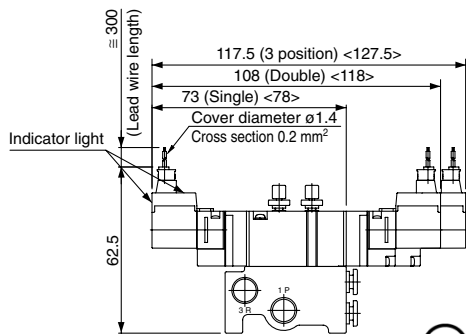
Dimensions: VQZ2000

VV5QZ25C- Stations Port size C
Grommet (G)



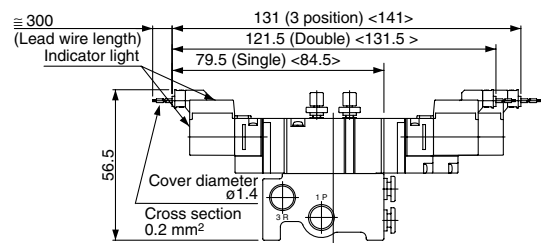
The broken lines indicate the DIN rail mounting style [-D].

L plug connector (L)



< >: AC

M plug connector (M)



< >: AC

Dimensions

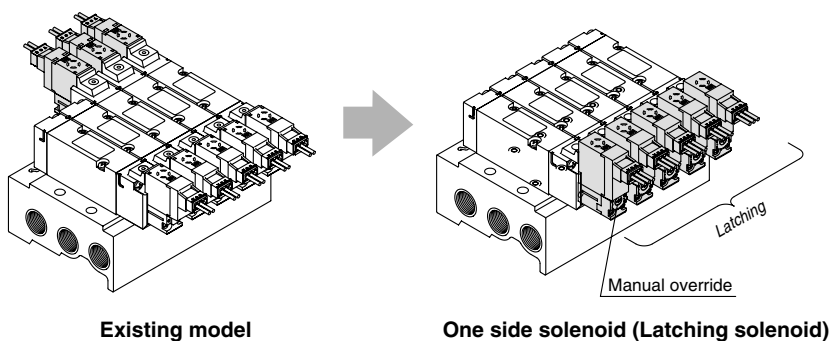
Formula L1 = 16n + 11, L2 = 16n + 20 n: Stations (Maximum 20 stations)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	43	59	75	91	107	123	139	155	171	187	203	219	235	251	267	283	299	315	331
L2	52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
L3	75	87.5	112.5	125	137.5	162.5	175	187.5	200	225	237.5	250	275	287.5	300	312.5	337.5	350	362.5
L4	85.5	98	123	135.5	148	173	185.5	198	210.5	235.5	248	260.5	285.5	298	310.5	323	348	360.5	373

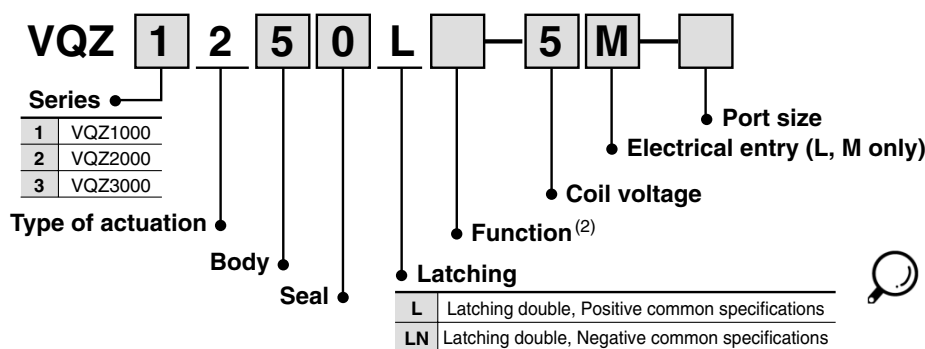
Plug Lead Unit: Manifold Series VQZ1000/2000/3000

One Side Solenoid (Latching solenoid)

The standard 2 position double solenoid valve has two solenoids, one on each end of the valve body. The latching solenoid option (with self holding mechanism) functions in the same manner as a 2 position double solenoid but uses only one solenoid to do the job.



How to Order Latching Solenoid Valves



VQC

SQ

VQ0

VQ4

VQ5

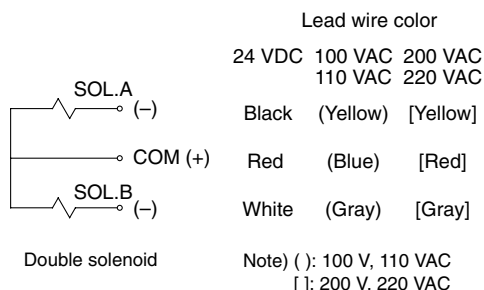
VQZ

VQD

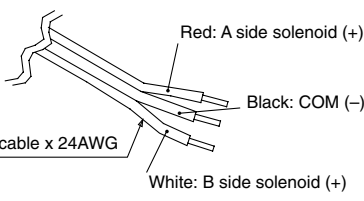
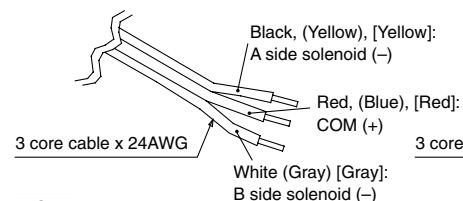
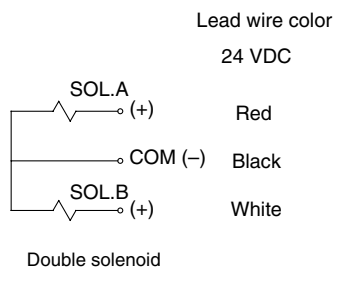
Wiring

Lead wires are connected to the valve as shown below. Connect them with the power supply.

Positive common specifications



Negative common specifications



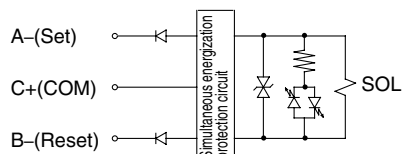
Caution

Cautions for Latching Use

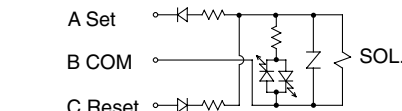
1. Use a circuit in which the ON and OFF signals are not simultaneously energized.
2. Minimum energization time for self holding is 20 ms.
3. Avoid using the latching solenoid valves in environment where impacts or collisions (30/150 m/s² or more) exist. Also, do not use in places where the strong magnetic fields are present.
4. Even though the armature in the solenoid of this valve is held on to B side, ON position (Reset), verify either A side, ON position or B side, ON position by energizing prior to use.
5. Please consult with SMC for extended energization applications.

Electrical Circuit

Latching solenoid (DC)



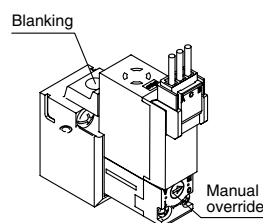
Latching solenoid (AC)



- Note 1) • Set side in energized state: Lighting (Orange)
• Reset side in energized state: Lighting (Green)
• With miss-wiring preventing function (Stop diode)
• With surge absorption function (ZNR/Surge absorption diode)
- Note 2) Flow direction: P → A {A (set) side in energized state}
Flow direction: A → R {B (reset) side in energized state}
- Note 3) Negative common specifications is available.

Manual Override

The manual override is on the pilot valve for latching solenoid valves. Besides, manual on the main body cannot be used.



- If the manual override is turned by 180° clockwise and the ► mark is adjusted to A, then pushed in the direction of an arrow (➡), it will be locked in the set condition. (passage P → A)
- If the manual override is turned by 180° counterclockwise and the ► mark is adjusted to B, then pushed in the direction of an arrow (➡), it will be back to the reset condition. (passage P → B). (It is in the reset state at the time of shipment.)

Caution

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

Series VQZ Base Mounted Option

External Pilot Specifications

The external pilot specifications are used when the operating pressure is below the minimum operating pressure 0.1 to 0.2 MPa or when valve is used for a vacuum application.

Order a valve by adding the external pilot specifications [R] to the part number.

How to Order Manifold

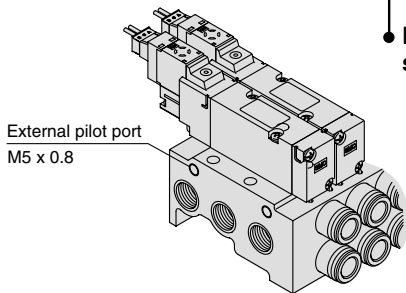
VQZ2150R—5M—02

External pilot specifications

How to Order Manifold

VV5QZ25—06C6C—R

External pilot specifications



Pressure Specifications

Series		VQZ1000/2000/3000		
		2 position single	2 position double	3 position
External pilot pressure range	Metal seal	0.1 to 0.7 MPa	Only VQZ3000, 3 position 0.15 to 0.7 MPa	
	Rubber seal	0.15 to 0.7 MPa	0.1 to 0.7 MPa	0.2 to 0.7 MPa
Operating pressure range		-100 kPa to 0.7 MPa		

Note) In the case of the high pressure type, upper limit of max. operating pressure and external pilot pressure range is 1 MPa.

Inch-size One-touch Fittings and Option Thread

Inch sizes of One-touch fittings and NPT, NPTF and G thread are available.

How to Order Manifold

VV5QZ15—08 N7 T C—N

Thread type
(Cylinder port and
1(P), 3(R2), 5(R1) port)

Nil	Rc
N	NPT
T	NPTF
F	G

Cylinder port

Symbol	N1	N3	N7	N9	N11	NM ⁽¹⁾	M5	01	02
Applicable tubing O.D.	ø1/8"	ø5/32"	ø1/4"	ø5/16"	ø3/8"	Mixed	M5 threads	1/8 thread	1/4 thread
Cylinder port	VQZ1000	●	●	●	—	—	●	●	—
	VQZ2000	—	●	●	●	—	●	—	●
	VQZ3000	—	—	●	●	●	●	—	●

Note 1) Mixing One-touch fittings and thread types is impossible.
Note 2) Matric sizes of One-touch fittings (C□) are also available.

International Thread Standards Other than Rc

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

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

How to Order Valves

VQZ2151—5M—02 T

Thread type
(Cylinder port and
1 (P), 3 (R2), 5 (R1) ports)

Nil	Rc
N	NPT
T	NPTF
F	G

Dusttight/Low Jetproof Type (IP65)

DIN terminal is available with Dusttight/Low jetproof (IP65) type.

How to Order Valves

(Applicable to VQZ2000/3000 rubber seal with the exception of the external pilot type)

VQZ3151—5YZB W—03

IP65 compliant

Nil	No (Standard)
W ^{Note)}	Compliant

Note) The pilot exhaust of the IP65 valves is common with main valve exhaust. (The standard valve has an individual exhaust for the pilot valve.)

Series VQZ Base Mounted

Replacement Parts

One-touch Fitting Assembly (For cylinder port)

Fitting size	C3	C4	C6	C8	C10
VQZ1000	VVQ1000-50A-C3	VVQ1000-50A-C4	VVQ1000-50A-C6	—	—
VQZ2000	—	VVQ1000-51A-C4	VVQ1000-51A-C6	VVQ1000-51A-C8	—
VQZ3000	—	—	VVQ2000-51A-C6	VVQ2000-51A-C8	VVQ2000-51A-C10

Note) Purchasing order is available in units of 10 pieces.

<Plug connector assembly>

DC positive common

- Single
AXT661-14A-□
- Latching
AXT661-13A-□
- DC (-COM)
- Latching
AXT661-13AN-□
- For 100 V, 110 VAC
- Single
AXT661-31A-□
- Latching
AXT661-32A-□
- For 200 V, 220 VAC
- Single
AXT661-34A-□
- Latching
AXT661-35A-□
- Only connector and sockets (3 pcs.)
AXT661-12A

Lead wire length

Nil	300 mm
6	600 mm
10	1000 mm
20	2000 mm
30	3000 mm
50	5000 mm

Standard wire length of valve with plug connector is 300 mm.
When requiring valve with 600 mm length lead wire specify the model number of valve without plug connector and plug connector assembly.

<Pilot valve assembly>

VQ11 1 □ **5** **G** □

Series

1	VQZ1000/2000/3000
0	Latching type

Function

Symbol	Specifications	DC (1.0 W)	AC
Nil	Standard	○	○
K ⁽¹⁾	High pressure (Metal seal only)	○	—
Y	Low wattage type	(0.5 W) ○	—
L ⁽³⁾	Latching type	(1.0 W) ○	○
N ⁽⁴⁾	Negative common type	○	—

- Note 1) Option
Note 2) When two or more symbols are specified, indicate them
Note 3) alphabetically.
K (High pressure) and Y (Low wattage) are not available.
Electrical entry: L/M plug connector only.
Applicable to latching type

Coil voltage

1	100 VAC (50/60 Hz)
2	200 VAC (50/60 Hz)
3	110 VAC (50/60 Hz)
4	220 VAC (50/60 Hz)
5	24 VDC
6	12 VDC
g ^{Note)}	Other

Note) For the special voltages, please consult with SMC.

Applicable model (length of screws attached is different from each other.)

Nil	VQZ2000/3000
4	A and B side of VQZ1000 single double solenoid type A side of VQZ1000 3 position
5	B side of VQZ1000 3 position

Electrical entry

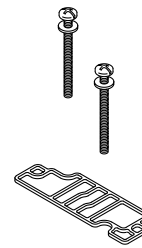
Symbol	Electrical entry	Light/Surge voltage suppressor
G	Grommet (DC specifications)	None
L	L plug connector with lead wire	Yes
LO	L plug terminal without connector	
M	M plug connector with lead wire	
MO	M plug terminal without connector	None
Y ^{Note)}	DIN terminal	
YO ^{Note)}	DIN terminal without connector	
YZ ^{Note)}	DIN terminal with light/surge voltage suppressor	Yes
YS ^{Note)}	DIN terminal with surge voltage suppressor	Yes (W/o indicator light)
YOS ^{Note)}	DIN terminal with surge voltage suppressor, without connector	Yes (W/o indicator light)

Note) DIN is applicable to VQZ2000/3000.

Gasket and Screw Assembly

	Part no.
VQZ1000	VQZ1000-GS-5
VQZ2000	VQZ2000-GS-5
VQZ3000	VQZ3000-GS-5

Note) Above part number consists of 10 units.
Each unit has one gasket and two screws.
Purchasing order is available in units of 10 pieces.



VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

Sub-plate

Model	Sub-plate part no.
VQZ1000	VQZ1000-S-01
VQZ2000	VQZ2000-S- ⁰¹ Rc 1/8 ⁰² Rc 1/4
VQZ3000	VQZ3000-S- ⁰² Rc 1/4 ⁰³ Rc 3/8

