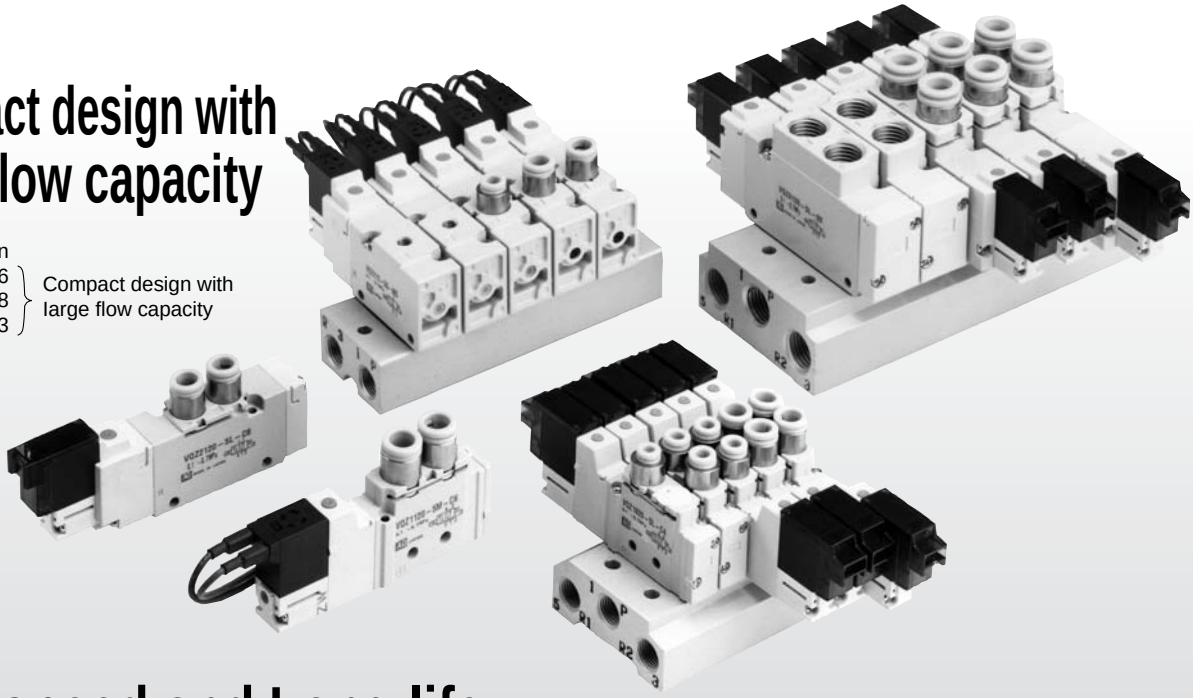
5 Port Solenoid Valve
Metal Seal/Rubber Seal
Body Ported
VQZ1000/2000/3000

Compact design with large flow capacity

Body Width	N ℓ/min	
10mm	196	Compact design with large flow capacity
15mm	588	
18mm	883	



High speed and Long life

	Response time	Life
VQZ1000	10ms	200 million* cycles
VQZ2000	12ms	
VQZ3000	15ms	

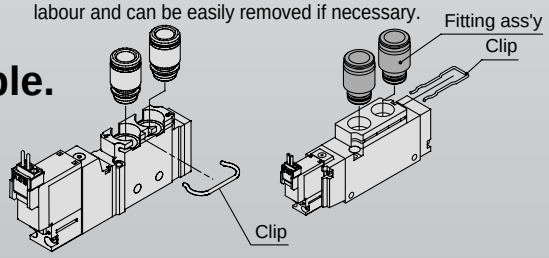
Dispersion accuracy±2ms

*Metal seal, Single solenoid with light and surge voltage suppressor

Optional IP65 rated model is available with DIN connector.

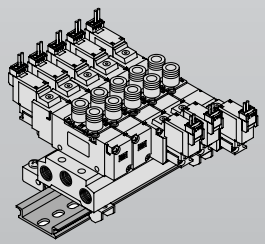
Built-in One-touch fittings for easier piping

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



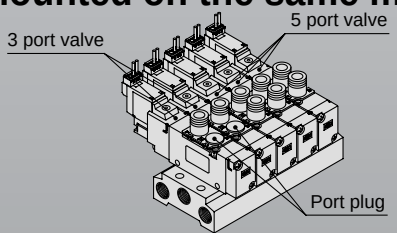
VQZ1000/2000 VQZ3000

DIN rail mounting is available.



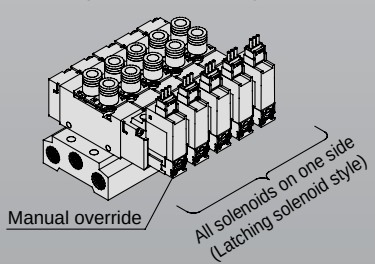
Choice of metal or rubber seal for main valve construction

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



Possible to have all solenoids on same side of manifold

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.

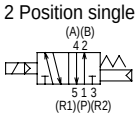
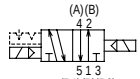
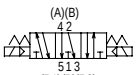
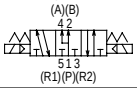
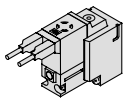
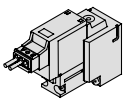
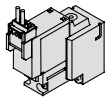
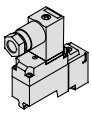


Series VQZ Body Ported
Model Selection

Body Ported

5 Port

3 Port for mixed mounting

	Nℓ/min Metal/Rubber		Function	Voltage	Electrical entry	Light and surge voltage suppressor	Manual override
VQZ1000 	147	294	2 Position single  2 Position double  3 Position closed centre  3 Position exhaust centre  3 Position pressure centre 	(Standard) 12V DC 24V DC (Option) 100V AC 110V AC	Grommet (G)  L plug connector (L)  M plug connector (M)  DIN connector (Y)  (Except for VQZ1000)	Indicator light and surge voltage suppressor L plug connector (L) M plug connector (M) DIN connector (YZ) (Except for VQZ1000)	Non-locking push style (Flush) Locking style (Slotted)
VQZ2000 	441	588					
VQZ3000 	687	883					
VQZ1000 	147	294	(A) 4 5 1 (R) (P) N.C.				
VQZ2000 	441	588					
VQZ3000 	687	883	(A) 4 5 1 (R) (P) N.O.				

SV
SY
SYJ
SX
VK
VZ
VF
VFR
VP7
VQC
SQ
VQ
VQ4
VQ5
VQZ
VQD
VFS
VS
VS7
VQ7

Base mounted (With sub-plate)	Nℓ/min	Cylinder speed (mm/s)	Bore size (mm)											
			Series CJ2			Series CM2				Series CA1				
			ø6	ø10	ø16	ø20	ø25	ø32	ø40	ø40	ø50	ø63	ø80	ø100
VQZ1000 Body width 10	294	150												
		300												
		450	●											
		600		●	●									
		750												
VQZ2000 Body width 15	588	150												
		300												
		450	●											
		600		●	●									
		750												
VQZ3000 Body width 18	883	150												
		300												
		450	●					●	●					
		600		●	●									
		750												

Cylinder speed marked with "●" can be controlled by speed controller. (Pressure: 0.5MPa, Load rate: 50%)

⚠Precautions

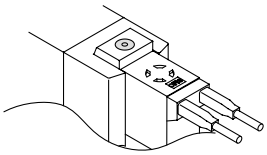
Be sure to read before handling. Refer to p.0-33 to 0-36 for Safety Instructions and common precautions.

⚠Warning

Manual Override

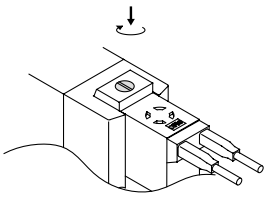
Without an electric signal for the solenoid valve the manual override is used for switching the main valve.

Non-locking push style (Flush)

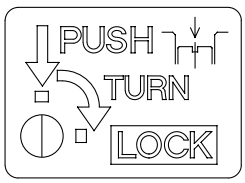


Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

Locking style (Slotted)



Push down on the manual override button with a small screwdriver until it stops. While down ,turn clockwise by 90˚ to lock it. Turn it co-unterclockwise to release it.

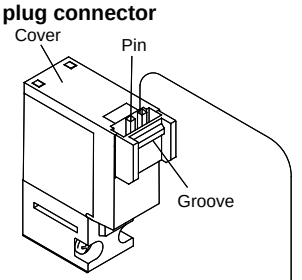


⚠Caution

How to Use L and M Plug Connector

Insertion/Removal or connector

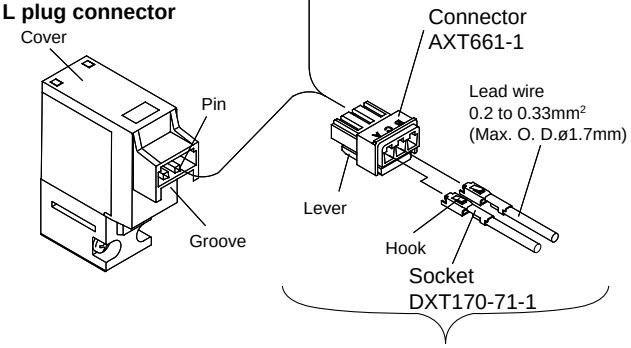
M plug connector



Insertion:
Push the connector straight onto the pins of the solenoid, making sure the lip of the lever securely "locks" into the groove of the solenoid cover.

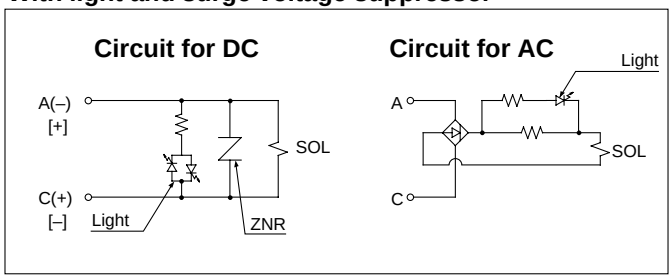
Removal:
Press the lever against the connector housing and pull it outward from the solenoid.

L plug connector



Refer to p.1.15-28 for part no. of plug connetor ass'y.

With light and surge voltage suppressor

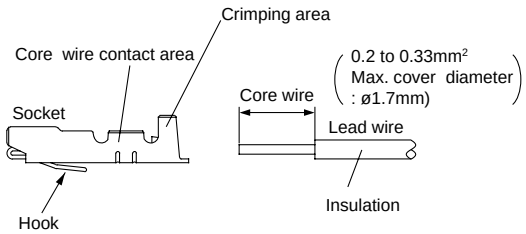


Due to the use of non-polar light, the VQZ series has no polarity. Refer to p.1.15-26 for latching style.

Connection of Lead Wire (Not necessary if ordering lead wire pre-connected model.)

Crimping connection of lead wire and socket

Strip 3.2 to 3.7mm of the lead wire ends, insert each stripped wire into a socket and crimp contact it using special crimping tool. Be careful that the outer insulation of the lead wires does not interfere with the socket contact part.



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

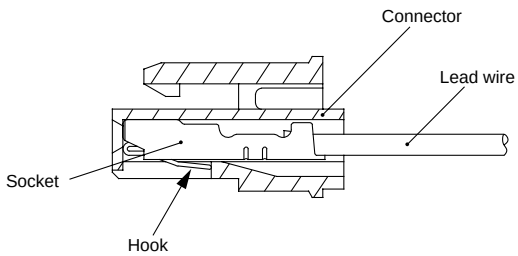
Connection/Disconnection of socket with lead wire

Connection

Insert lead wire and crimped socket into square holes (indicated as A,B, COM) of connector. Press the socket in fully until the hook of the socket locks into the groove of the connector housing. Confirm the locked position by lightly pulling on the lead wire.

Disconnection

To remove the socket from the connector, pull out lead wire while depressing the hook of the socket with a fine screw driver (or similar). If the socket is to be re-used, reposition the hook again.



How to Wire the DIN Connector

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

Cut the power and air supply before mounting/removing the connector.

①Loosen the top screw and remove the connector housing from the terminal spades on the solenoid.

②Remove the housing screw and insert a screwdriver into the slot area on the underside of the DIN cap and carefully separate block and housing.

③Loosen the terminal screws of the block and insert stripped lead wires in accordance with the wiring diagram. Secure each wire by tightening the terminal screw.

④Tighten the housing grommet nut to secure the cable wire.

Change of electrical entry (orientation)

Once the housing is separated from the terminal block, it can be rotated in any direction to change the orientation of the electrical entry.

∗ In the case of the indicator light option, avoid damaging the light with the lead wire connections.

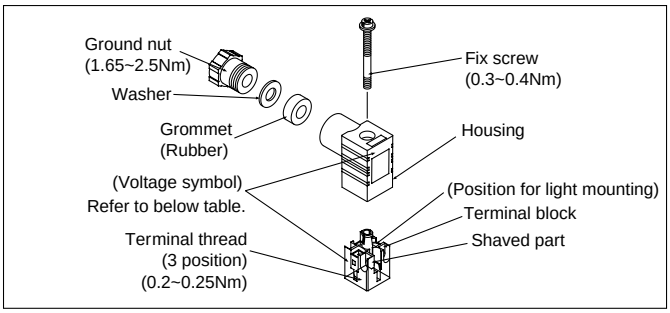
Precaution

Pull connector out vertically, never at an angle.

Applicable cable

Cord O. D.: ø3.5 to ø7

(Reference) 0.5mm² 2-core and 3-core wires equivalent to JISC3306.



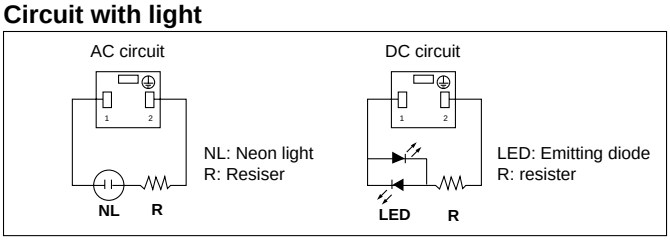
Part No. of DIN Connector (Based on DIN)

Without light	AXT100-20-1

With light

Rated voltage	Voltage symbol	Part No.
24V DC	24V	AXT100-20-2-05
12V DC	12V	AXT100-20-2-06
100V AC	100V	AXT100-20-2-01
110V AC	110V	AXT100-20-2-03

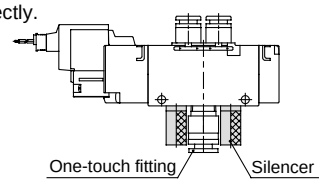
Circuit with light



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

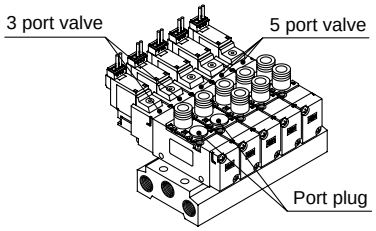
Series	One-touch fitting for 1(P) port	Silencer for 3(R2, R), 5(R1)	
		Silencer	One-touch fitting
VQZ1000	KQH06-M5	AN120-M5	KJSO4-M5
VQZ2000	KQH06-01S	INA-25-46	IN-457-32 (for ø6)
VQZ3000	KQH08-02S	AN101-01	KQH06-01S

The diameter of the above fitting and silencer is the maximum diameter to be installed correctly.



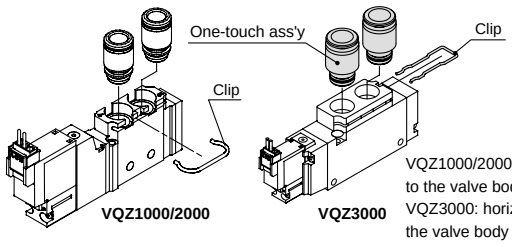
Mounting 3 Port Valves on 5 Port Manifolds(VQZ$\frac{1}{2}$82$\frac{0}{1}$, N.C./VQZ$\frac{1}{2}$92$\frac{0}{1}$, N.O.)

When a 3 port valve is mounted on a 5 port manifold, the "A" port is the working port, port plug is installed in the B 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. Then remove the affected fitting and replace with a new one. Finally, replace the fitting clip and remount the valve.



VQZ1000/2000: vertically clipped to the valve body
VQZ3000: horizontally clipped to the valve body

Precaution

When pulling the fitting ass'y 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.

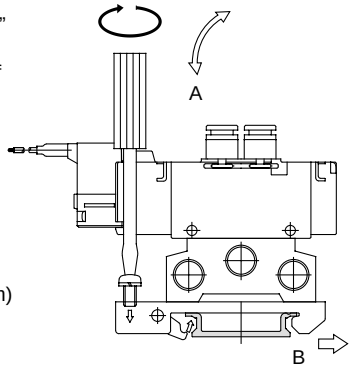
DIN Rail Removal/Mounting

To remove manifold from DIN rail:

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:

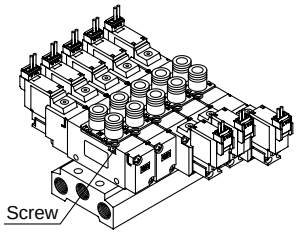
1) Catch the hook of the DIN rail bracket on the "B" side on the DIN rail.
2) Push side "A" onto the DIN rail and tighten the clamp screw. (Tightening torque of 0.3 to 0.4 Nm)



Valve Mounting

After confirming the gasket is correctly placed under the valve, tighten the mounting screws with the appropriate torque listed below.

Model	Suitable tightening torque
VQZ1000	0.18 to 0.25Nm
VQZ2000	0.25 to 0.35Nm
VQZ3000	0.5 to 0.7Nm



Body Ported

Plug Lead Unit

5 Port Solenoid Valve

VQZ1000/2000/3000

Single Unit

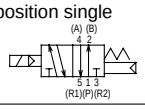
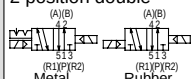
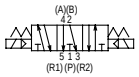
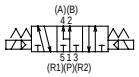
How to Order Valve

VQZ [1] [1] [2] [1] [ ] — [5] [M] [ ] — [C6] [ ] [ ] — **Q**

Series

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

Configuration

1	2 position single 
2	2 position double  Metal / Rubber
3	3 position closed centre 
4	3 position exhaust centre 
5*	3 position pressure centre 

∗ Except VQZ1000 and metal seal style.

Body

2	Body ported

Seal

0	Metal seal
1	Rubber seal

Function

Symbol	Specification	DC	AC
—	Standard	(1.0W) ○	○
K (1)	High pressure (Metal seal)	(1.0W) ○	—
Y	Low wattage	(0.5W) ○	—
R	External pilot	○	○

Note 1) Option
Note 2) Refer to p.1.15-27 for details about external pilot specification except VQZ1000.
Note 3) Refer to p.1.15-7 for power consumption of AC type.
Note 4) When specifying more than one option, indicate them alphabetically.

Coil voltage

1 *	100V AC (50/60Hz)
3 *	110V AC (50/60Hz)
5	24V DC
6	12V DC
9 *	Other (50V or less)

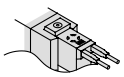
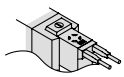
∗ DIN type only available.

Contact SMC for other voltages (9)

Protective class class I (Mark:⏚)..... DIN terminal type

Protective class class III (Mark:◈)..... Grommet, L and M plug connector

Manual override

—: Non-locking push style (Flush)	B: Locking style (Slotted)
	

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	○	○	—
02	1/4	—	—	○
N1	One-touch fitting for ø1/8	○	—	—
N3	One-touch fitting for ø5/32	○	○	—
N7	One-touch fitting for ø1/4	○	○	○
N9	One-touch fitting for ø5/16	—	—	○
N11	One-touch fitting for ø3/8	—	—	○
M5T	10-32 UNF thread	○	○	—

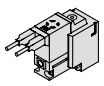
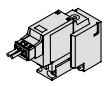
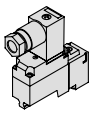
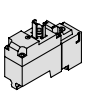
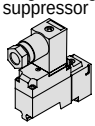
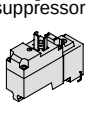
Thread

—	Rc (PT)
N	NPT
T	NPTF
F	G (PF)

Option

—	None
F	With bracket (Applicable to single)

Electrical entry

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

Note 1) DIN is available for VQZ2000, 3000.
Note 2) Standard lead wire length: 300mm



Standard Specifications

Valve specifications	Seal		Metal seal	Rubber seal
	Fluid		Air, Inert gas	Air, Inert gas
	Max. operating pressure		0.7MPa (High pressure type: 1.0MPa)	0.7MPa
	Max. operating pressure	2 position Single	0.1MPa only for VQZ3000, 3 position 0.15MPa	0.15MPa
		2 position Double		0.1MPa
		3 position		0.2MPa
	Ambient and fluid temperature		–10 to 50°C (1)	–10 to 50°C (1)
	Max. operating frequency	2 position Single	20Hz	5Hz
		2 position Double		
		3 position	10Hz	3Hz
	Pilot valve EXH		Individual EXH	
	Lubrication		Not required	
	Manual override		Non-locking push / Locking slotted styles	
	Shock/Vibartion resistance (2)		150/30 m/s^2	
	Enclosure		Dust proof	
Solenoid specifications	Coil rated voltage		12V, 24V DC and 100V, 110V AC	
	Allowable voltage		±10% of rated voltage	
	Coil insurance		Class B	
	Power consumption (Current value)	24V DC	1W DC (42mA), 0.5W DC (21mA)	
		12V DC	1W DC (83mA), 0.5W DC (42mA)	
		100V AC	Inrush 0.5VA (5mA), Holding 0.5VA (5mA)	
		110V AC	Inrush 0.55VA (5mA), Holding 0.55VA (5mA)	

Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Shock resistance·····No malfunctions resulted from the impact test using a drop impact tester.The test was perfomad on the axis and right angle direction of the main valve and armature, for both energized and de-energized states.(Value in the initial stage.)
Vibration resistance···No malfunction occurred in a one-sweep test between 8.3 and 2,000 Hz.Test was performed at both energized and de-energized states to the axis and right angle direction of the main valve and armature.(Value in the initial stage.)

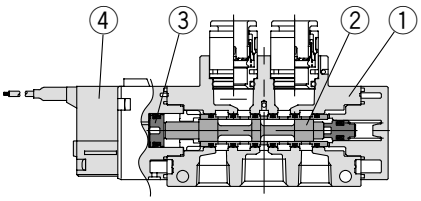
Model

Series	Configuration		Model		Effective area (mm^2)(Nℓ/min) (1)	Response time (ms)(2) Standard: 1W High pressure: 1.5W	Response time (ms)(2) High pressure: 1W Low wattage and AC	Weight (g)(3)
VQZ1000	2 position	Single	Metal seal	**VQZ1120**	2.7 (147)	12 or less	15 or less	42
			Rubber seal	**VQZ1121**	5.4 (294)	12 or less	15 or less	
		Double	Metal seal	**VQZ1220**	2.7 (147)	10 or less	13 or less	61
			Rubber seal	**VQZ1221**	5.4 (294)	10 or less	13 or less	
	3 position	Closed centre	Metal seal	**VQZ1320**	2.0 (107)	20 or less	26 or less	
			Rubber seal	**VQZ1321**	3.1 (166)	25 or less	33 or less	
		Exhaust centre	Metal seal	**VQZ1420**	2.7 (147)	20 or less	26 or less	
			Rubber seal	**VQZ1421**	5.4 (294)	25 or less	33 or less	
		Pressure centre	Rubber seal	**VQZ1521**	3.1 (166)	25 or less	33 or less	
VQZ2000	2 position	Single	Metal seal	**VQZ2120**	8.1 (441)	14 or less	18 or less	64
			Rubber seal	**VQZ2121**	10.8 (588)	15 or less	20 or less	
		Double	Metal seal	**VQZ2220**	8.1 (441)	10 or less	13 or less	88
			Rubber seal	**VQZ2221**	10.8 (588)	12 or less	15 or less	
	3 position	Closed centre	Metal seal	**VQZ2320**	6.3 (343)	23 or less	30 or less	
			Rubber seal	**VQZ2321**	8.1 (441)	25 or less	33 or less	
		Exhaust centre	Metal seal	**VQZ2420**	8.1 (441)	23 or less	30 or less	
			Rubber seal	**VQZ2421**	10.8 (588)	25 or less	33 or less	
		Pressure centre	Metal seal	**VQZ2520**	6.3 (343)	23 or less	30 or less	
			Rubber seal	**VQZ2521**	8.1 (441)	25 or less	33 or less	
VQZ3000	2 position	Single	Metal seal	**VQZ3120**	12.6 (687)	17 or less	22 or less	109
			Rubber seal	**VQZ3121**	16.2 (883)	25 or less	33 or less	
		Double	Metal seal	**VQZ3220**	12.6 (687)	10 or less	13 or less	134
			Rubber seal	**VQZ3221**	16.2 (883)	15 or less	20 or less	
	3 position	Closed centre	Metal seal	**VQZ3320**	10.8 (588)	25 or less	33 or less	
			Rubber seal	**VQZ3321**	12.6 (687)	30 or less	39 or less	
		Exhaust centre	Metal seal	**VQZ3420**	12.6 (687)	25 or less	33 or less	
			Rubber seal	**VQZ3421**	16.2 (883)	30 or less	39 or less	
		Pressure centre	Metal seal	**VQZ3520**	10.8 (588)	25 or less	33 or less	
			Rubber seal	**VQZ3521**	12.6 (687)	30 or less	39 or less	

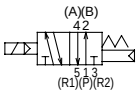
Note 1) Value for sub-plate and maximum diameter
Note 2) As per JISB8375-1981 (Supply pressure; 0.5MPa ; with indicator light and surge voltage suppressor; clean air)
The response time is subject to the pressure and the air quality. The values at the time of ON are given for double styles.
Note 3) Weight without sub-plate

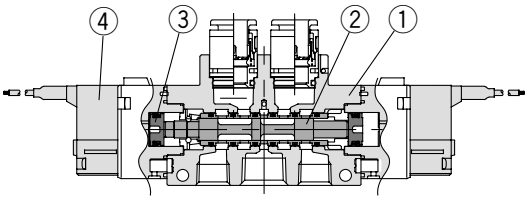
Construction: VQZ1000/2000/3000

Metal seal

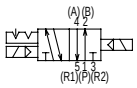


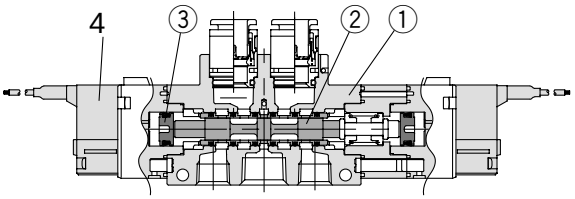
2 position single



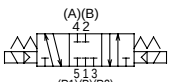


2 position double

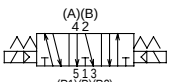




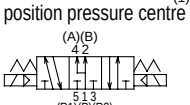
3 position closed centre



3 position exhaust centre

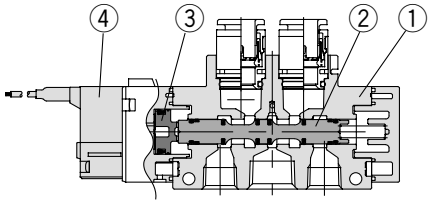


3 position pressure centre (1)

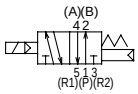


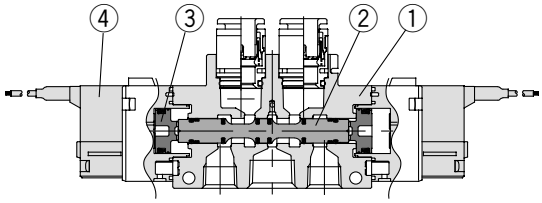
Note 1) Except VQZ1000 and metal seal.

Rubber seal

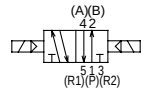


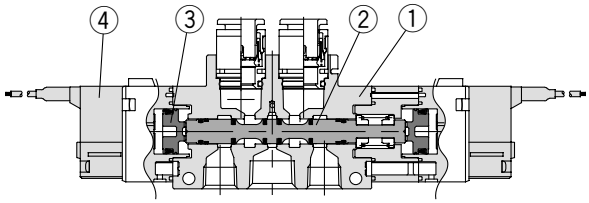
2 position single



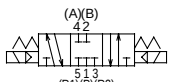


2 position double

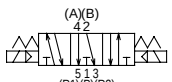




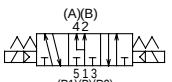
3 position closed centre



3 position exhaust centre



3 position pressure centre



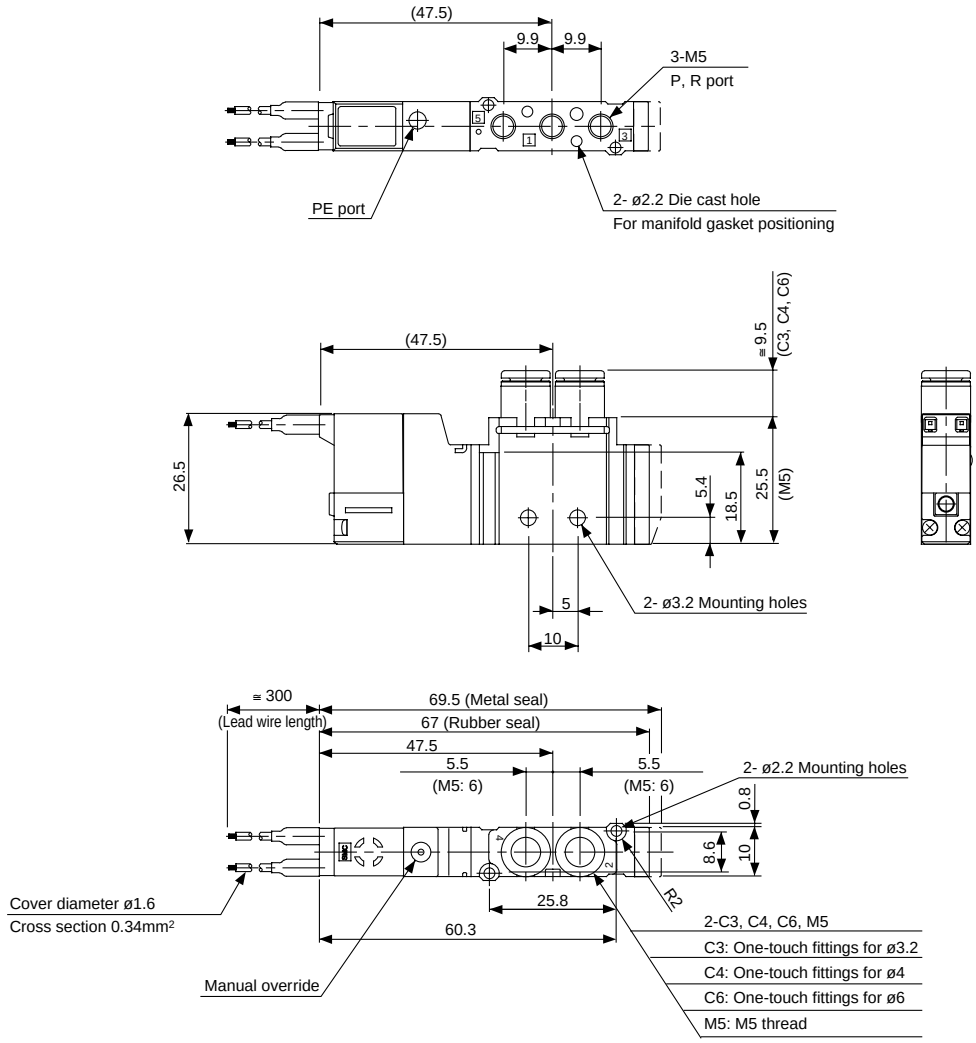
Component Parts

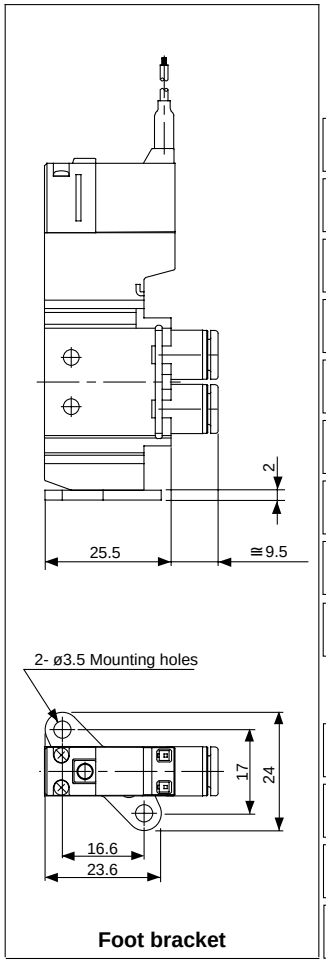
No.	Description	Material	Note
①	Body	Aluminium die cast	
②	Spool/Sleeve	Stainless steel	Metal seal
	Spool valve	Aluminium/NBR	Rubber seal
③	Piston	Resin	
④	Pilot valve	–	

Dimensions: VQZ1000

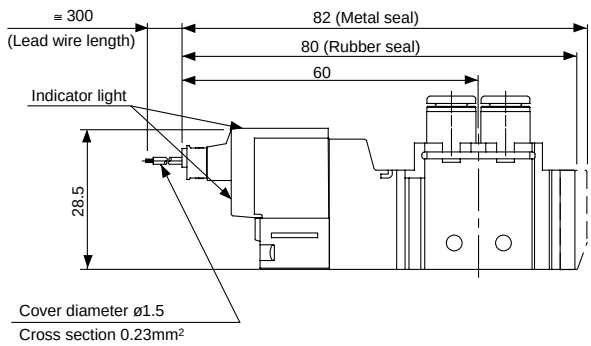
2 position single

Grommet (G): VQZ112$^{0}_{1}$–□G□–C3, C4, C6, M5 -Q

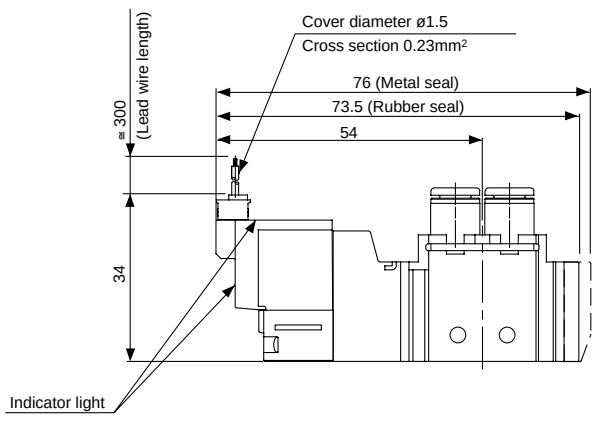




L plug connector (L): VQZ112$^{0}_{1}$–□L□–C3, C4, C6, M5 -Q



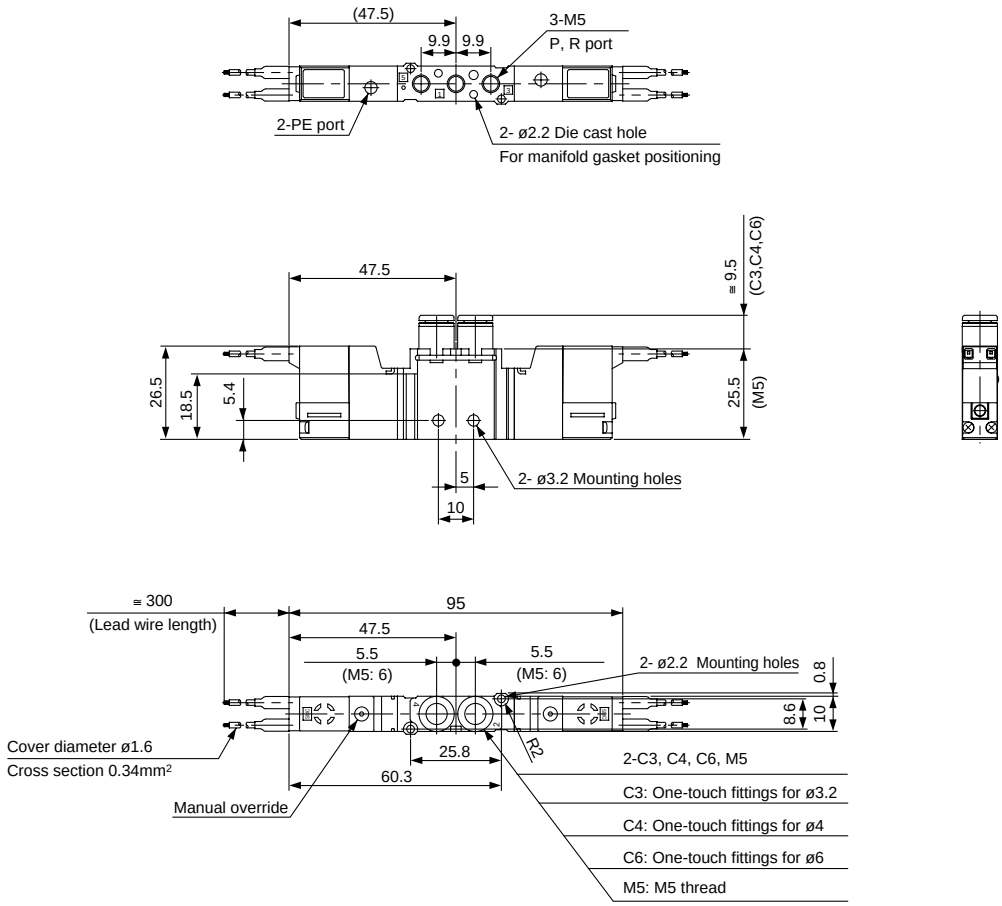
M plug connector (M): VQZ112$^{0}_{1}$–□M□–C3, C4, C6, M5 -Q



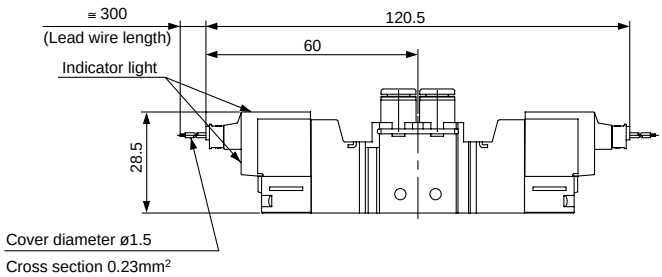
Dimensions: VQZ1000

2 position double

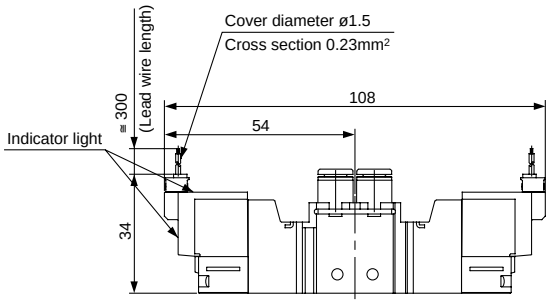
Grommet (G): VQZ122$^{0}_{1}$–□G□–C3, C4, C6, M5 -Q



L plug connector (L): VQZ122$^{0}_{1}$–□L□–C3, C4, C6, M5 -Q



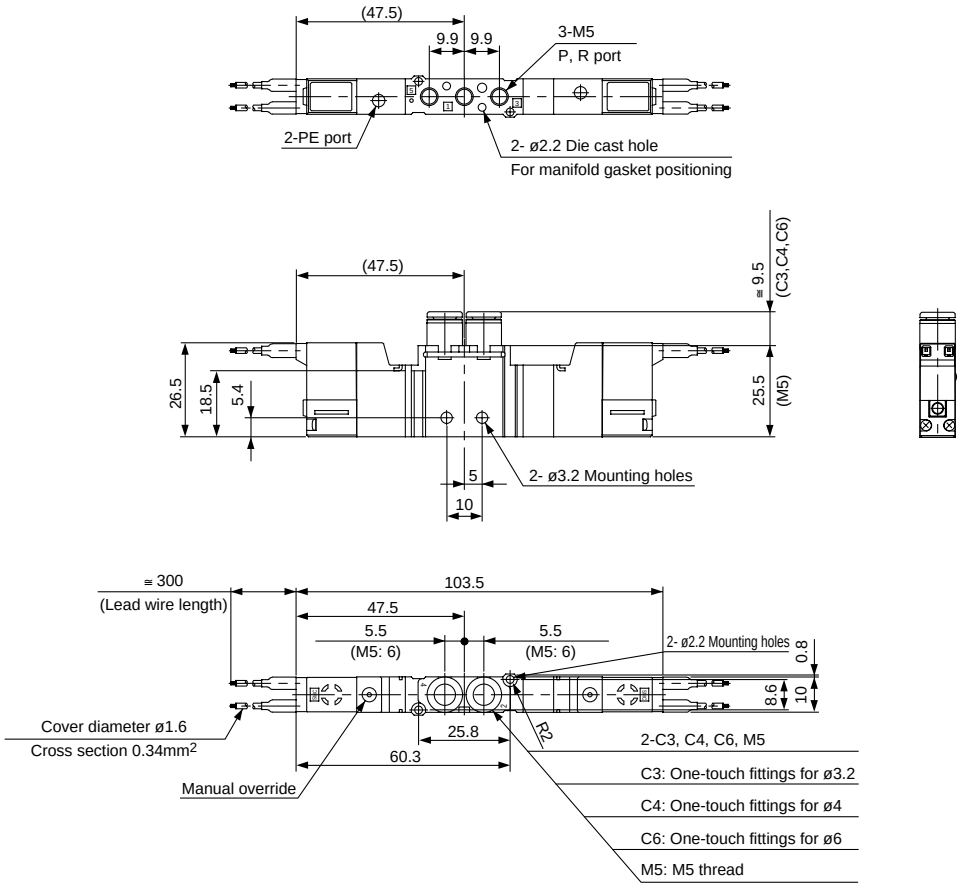
M plug connector (M): VQZ122$^{0}_{1}$–□M□–C3, C4, C6, M5 -Q



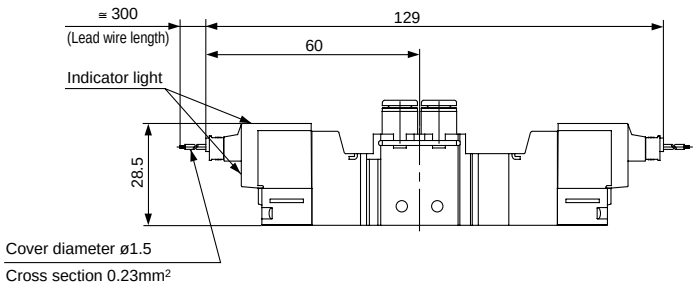
VQZ1000

3 position closed centre/exhaust centre/pressure centre (except for metal seal)

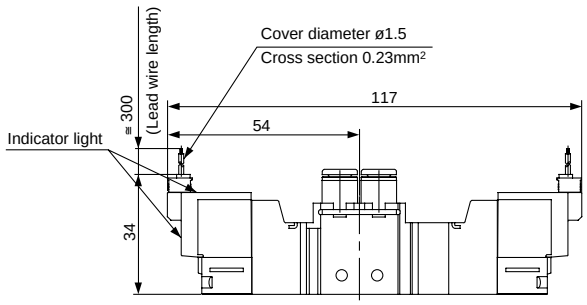
Grommet (G): VQZ1$^{3}_{5}$4$^{0}_{1}$2–□G□–C3, C4, C6, M5 -Q



L plug connector (L): VQZ1$^{3}_{5}$4$^{0}_{1}$2–□L□–C3, C4, C6, M5 -Q



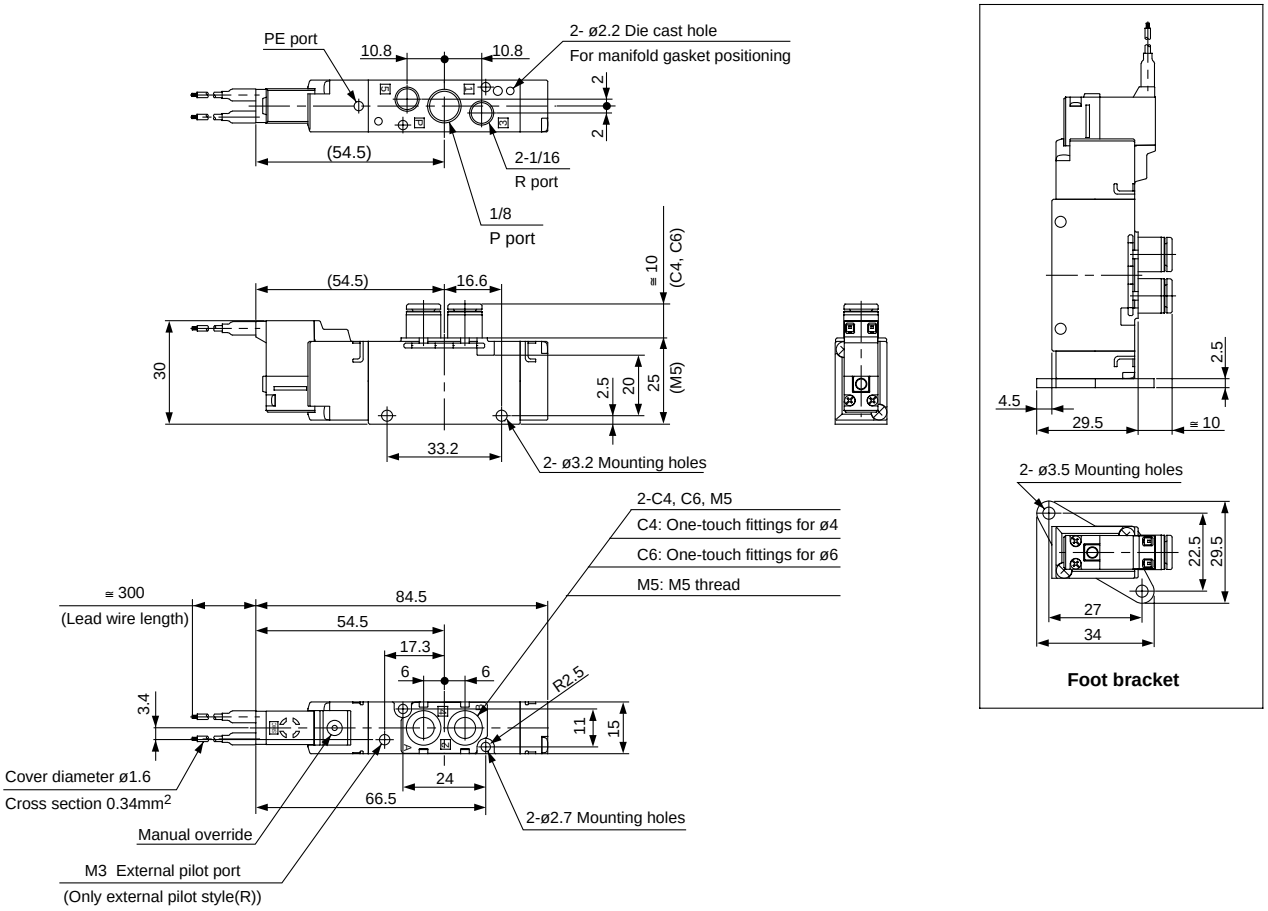
M plug connector (M): VQZ1$^{3}_{5}$4$^{0}_{1}$2–□M□–C3, C4, C6, M5 -Q



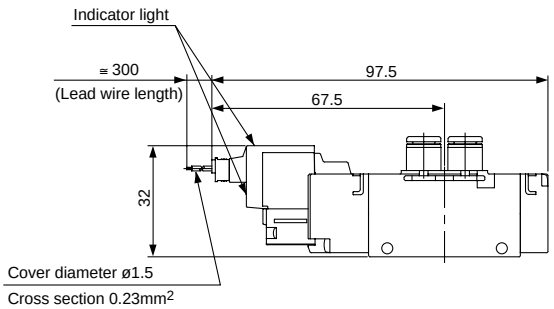
Dimensions: VQZ2000

2 position single

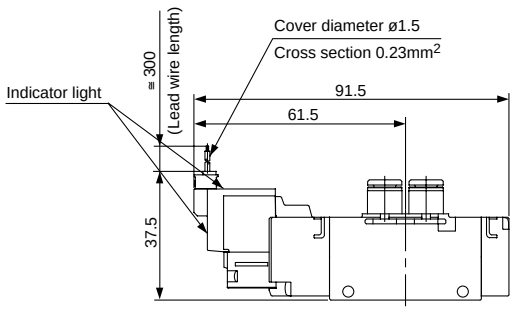
Grommet (G): VQZ212$^{0}_{1}$(R)–□G□–C4, C6, M5 -Q



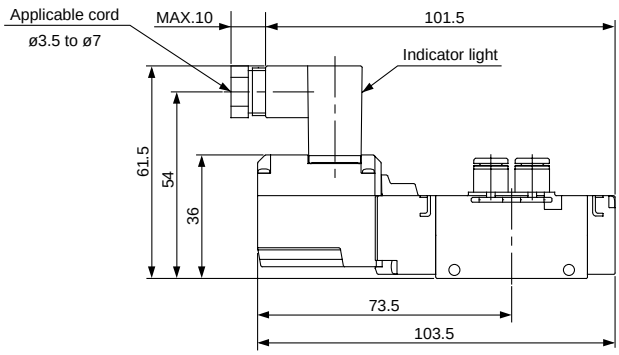
L plug connector (L): VQZ212$^{0}_{1}$(R)–□L□–C4, C6, M5 -Q



M plug connector (M): VQZ212$^{0}_{1}$(R)–□M□–C4, C6, M5 -Q



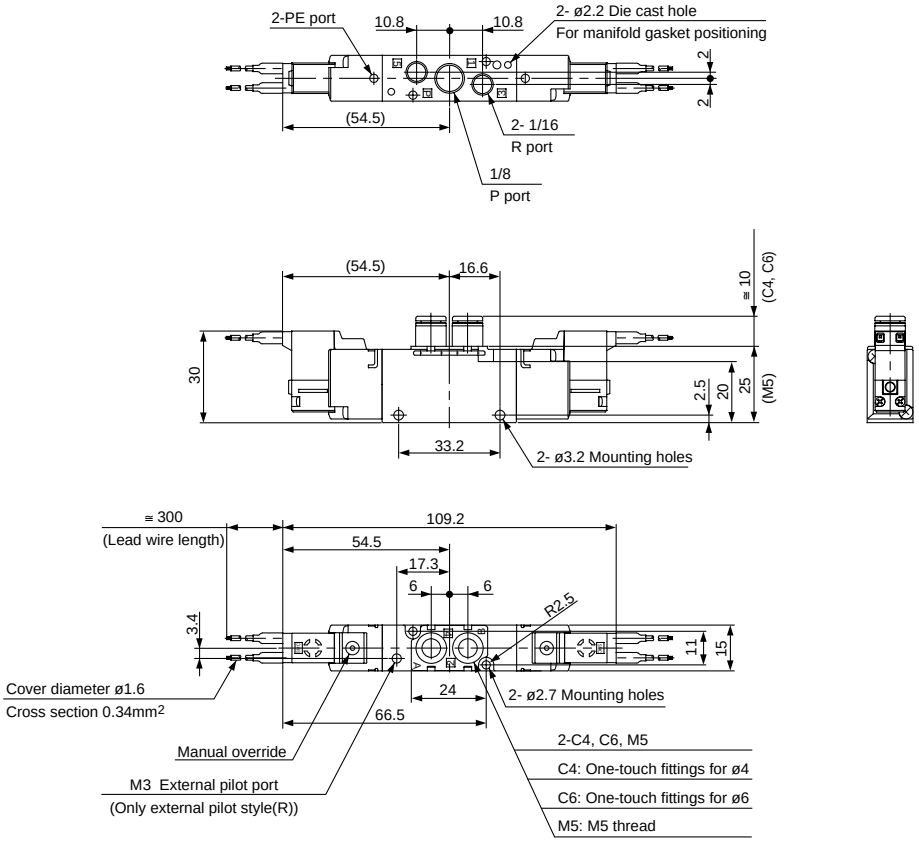
DIN connector (Y): VQZ212$^{0}_{1}$(R)–□Y□–C4, C6, M5 -Q



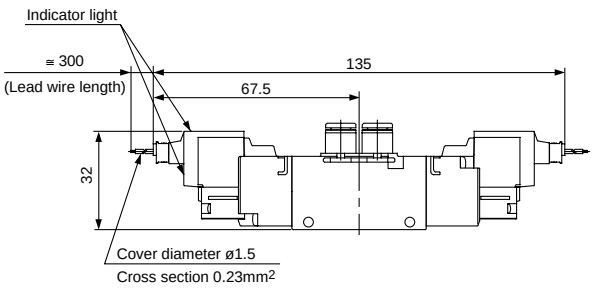
VQZ2000

2 position double

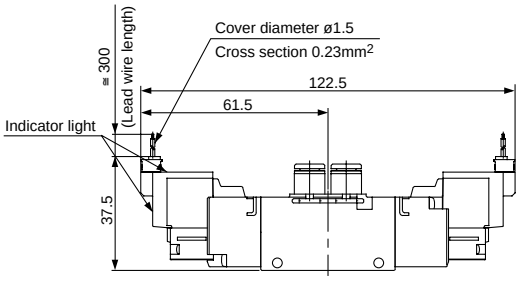
Grommet (G): VQZ222$^{0}_{1}$(R)–□G□–C4, C6, M5 -Q



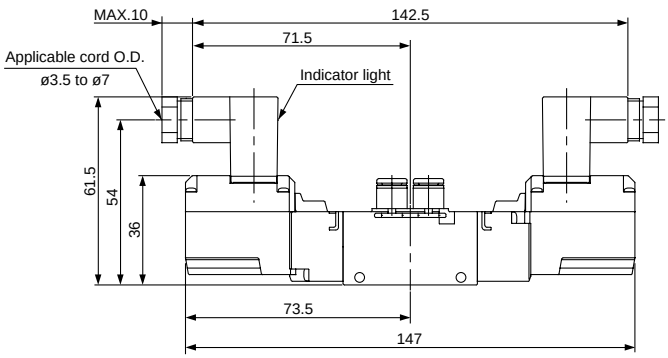
L plug connector (L): VQZ222$^{0}_{1}$(R)–□L□–C4, C6, M5 -Q



M plug connector (M): VQZ222$^{0}_{1}$(R)–□M□–C4, C6, M5



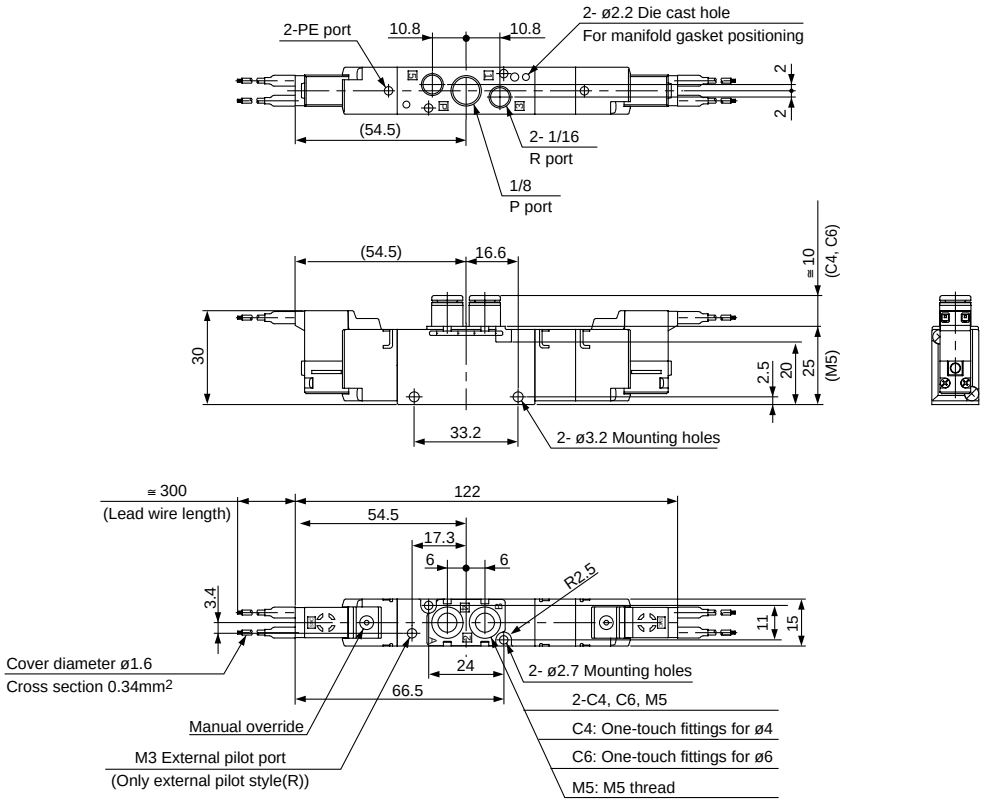
DIN connector (Y): VQZ222$^{0}_{1}$(R)–□Y□–C4, C6, M5 -Q



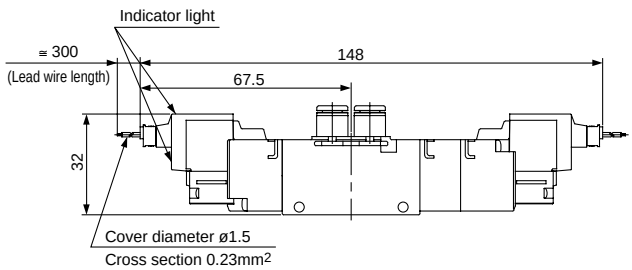
Dimensions: VQZ2000

3 position closed center/exhaust center/pressure center

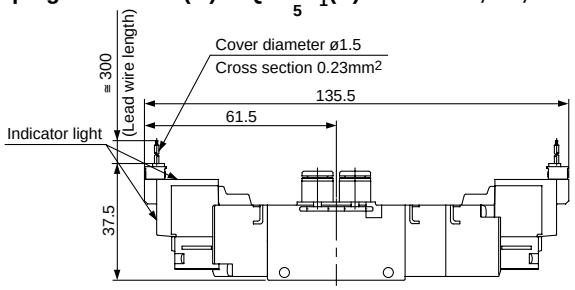
Grommet (G): VQZ2$^{3}_{4}$2$^{0}_{1}$(R)–□G□–C4, C6, M5 -Q



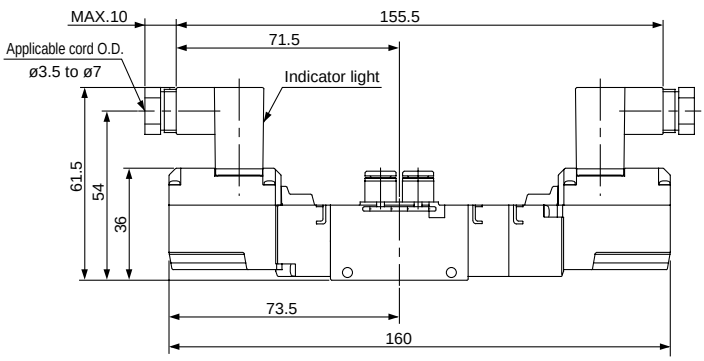
L plug connector (L): VQZ2$^{3}_{4}$2$^{0}_{1}$(R)–□L□–C4, C6, M5 -Q



M plug connector (M): VQZ2$^{3}_{4}$2$^{0}_{1}$(R)–□M□–C4, C6, M5



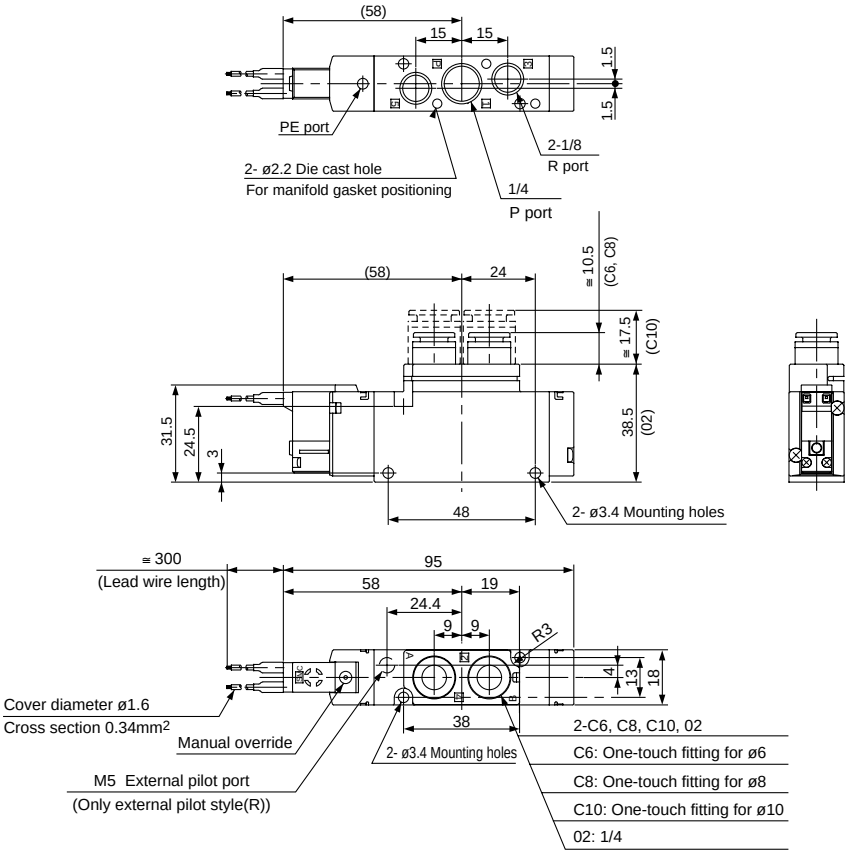
DIN connector (Y): VQZ2$^{3}_{4}$2$^{0}_{1}$(R)–□Y□–C4, C6, M5 -Q

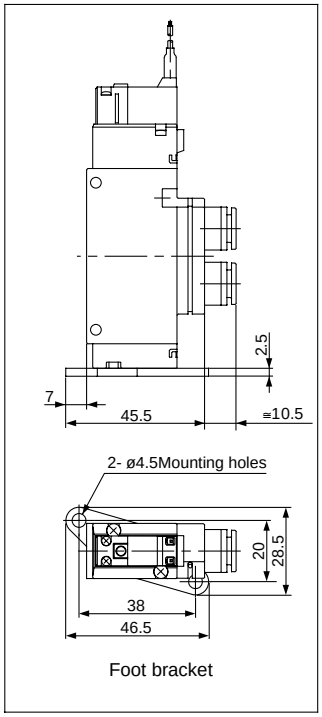


VQZ3000

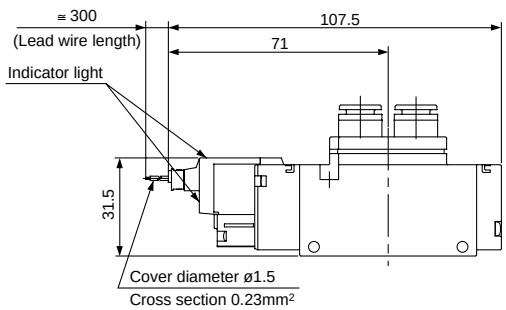
2 position single

Grommet (G): VQZ312$^{0}_{1}$(R)–□G□–C6, C8, C10, 02 -Q

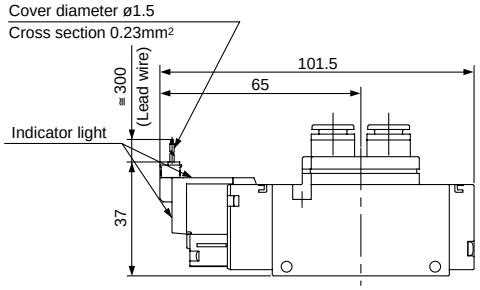




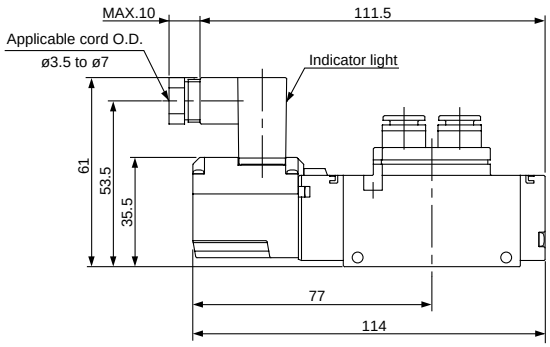
L plug connector (L): VQZ312$^{0}_{1}$(R)–□L□–C6, C8, C10, 02 -Q



M plug connector (M): VQZ312$^{0}_{1}$(R)–□M□–C6, C8, C10, 02 -Q



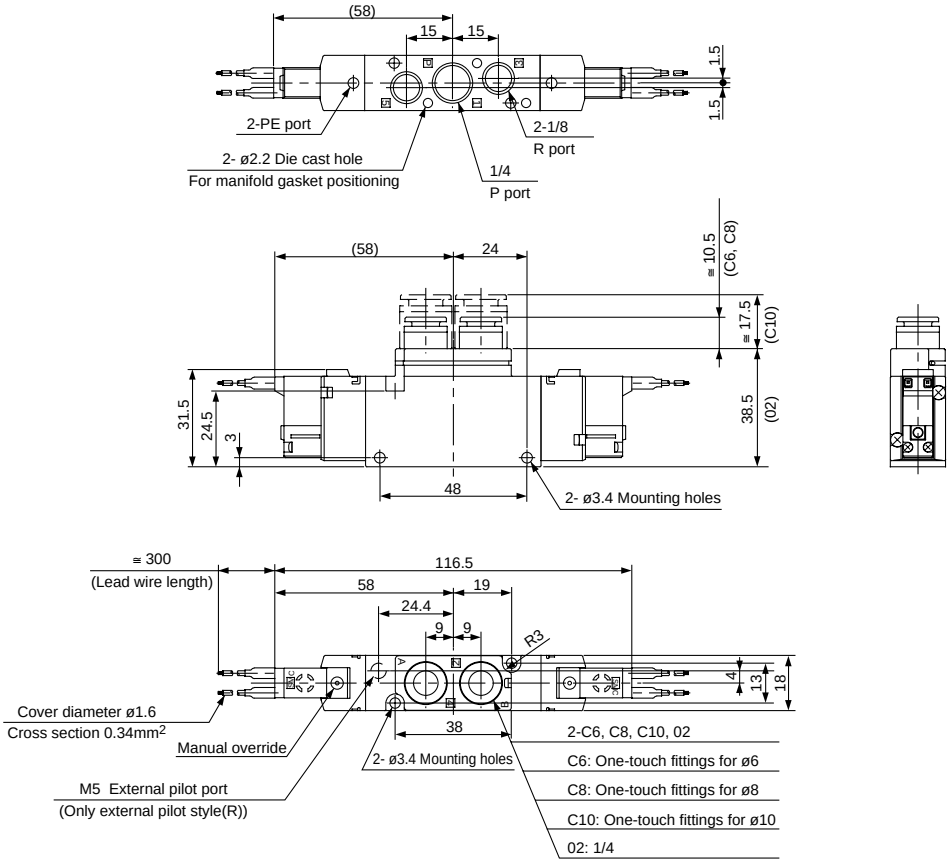
DIN connector (Y): VQZ312$^{0}_{1}$(R)–□Y□–C6, C8, C10, 02 -Q



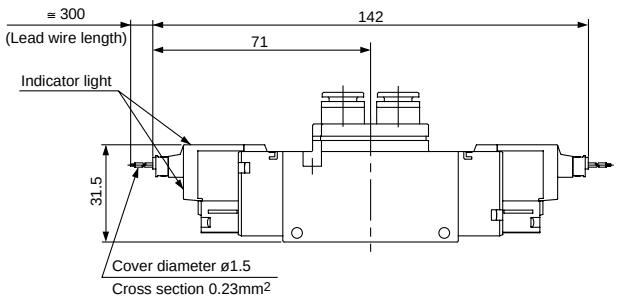
Dimensions: VQZ3000

2 position double

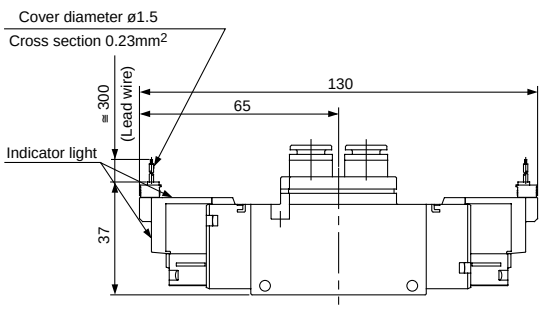
Grommet (G): VQZ322$^{0}_{1}$(R)–□G□–C6, C8, C10, 02 -Q



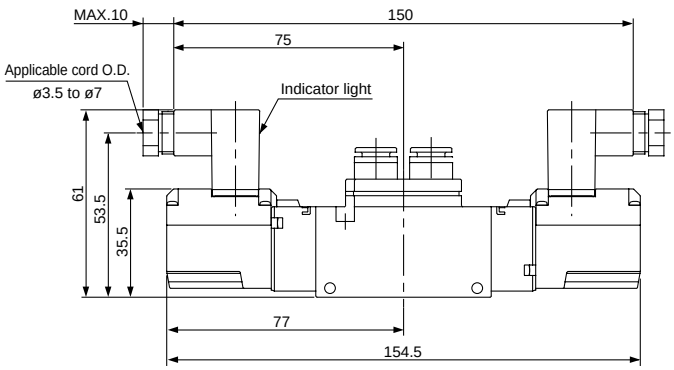
L plug connector (L): VQZ322$^{0}_{1}$(R)–□L□–C6,C8,C10,02 -Q



M plug connector (M): VQZ322$^{0}_{1}$(R)–□M□–C6, C8, C10, 02 -Q



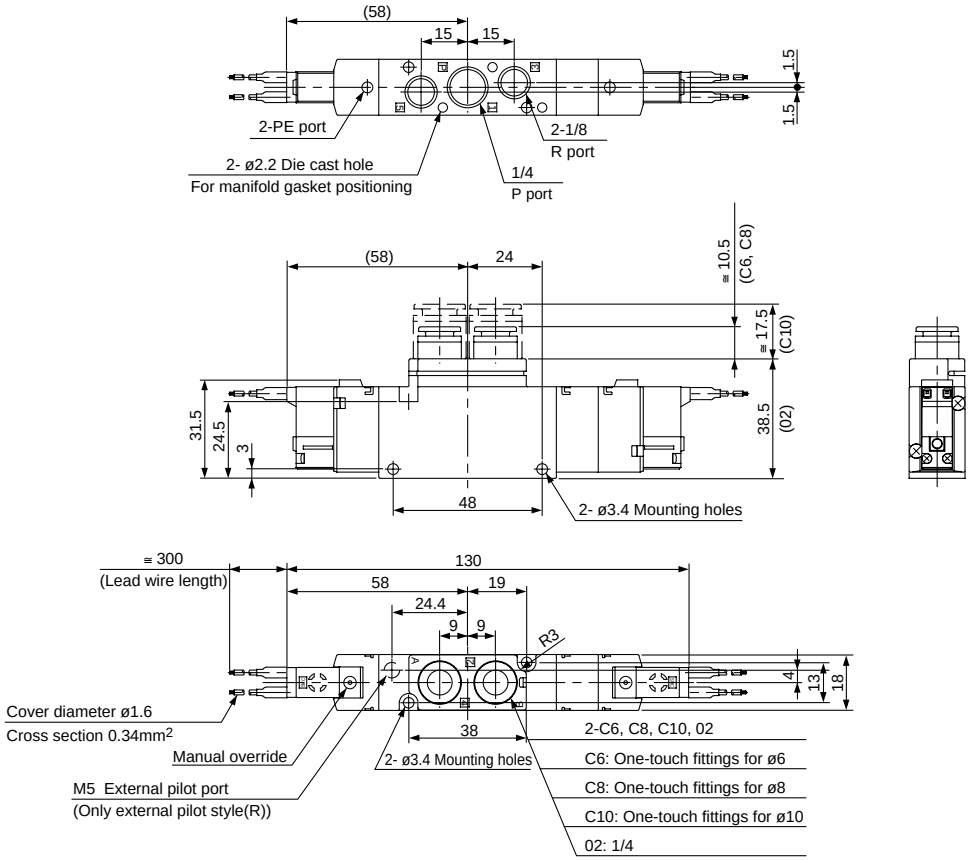
DIN connector (Y): VQZ322$^{0}_{1}$(R)–□Y□–C6, C8, C10, 02 -Q



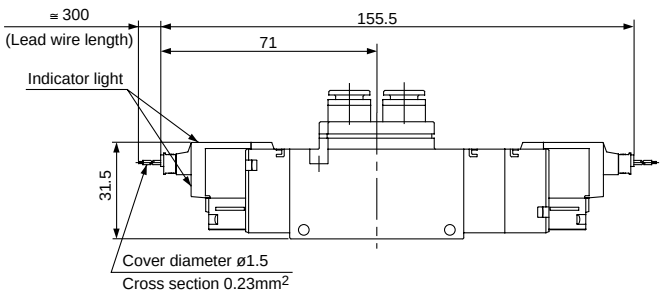
VQZ3000

3 position closed centre/exhaust centre/pressure centre

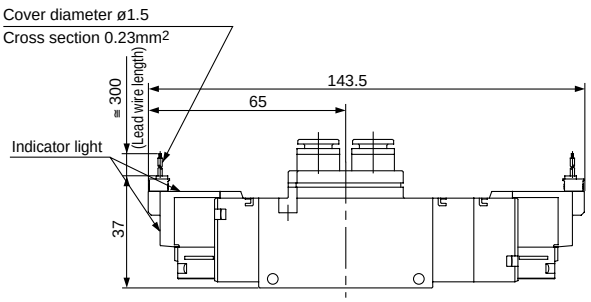
Grommet (G): VQZ3$^{3}_{5}$4$^{0}_{1}$2(R)–□G□–C6, C8, C10, 02 -Q



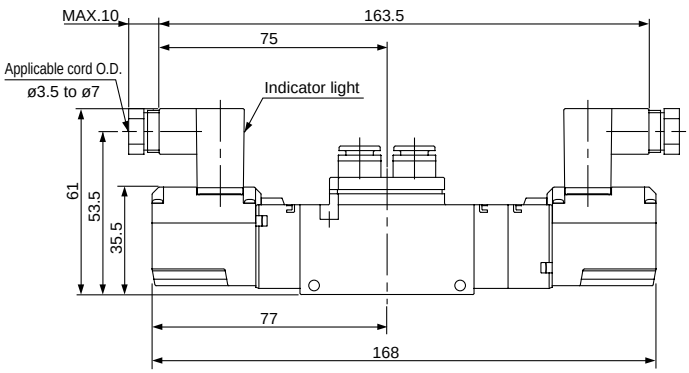
L plug connector (L): VQZ3$^{3}_{5}$4$^{0}_{1}$2(R)–□L□–C6, C8, C10, 02 -Q



M plug connector (M): VQZ3$^{3}_{5}$4$^{0}_{1}$2(R)–□M□–C6, C8, C10, 02 -Q



DIN connector (Y): VQZ3$^{3}_{5}$4$^{0}_{1}$2(R)–□Y□–C6, C8, C10, 02 -Q



Body Ported

Plug Lead Unit

5 Port Solenoid Valve

VQZ1000/2000/3000

Manifold Connector Kit

How to Order Manifold

VV5QZ **1** **2** — **08** **C** — □ — □ — Q

Series

1	VQZ1000
2	VQZ2000
3	VQZ3000

Manifold

2	Body ported

Stations

02	2 stations
⋮	⋮
20	20 stations

Kit

C	Connector

Option

—	None
D	DIN rail mounting (DIN rail standard length)
DO (1)	DIN rail mounting (Without DIN rail)

Note 1) Order DIN rail separately.

Thread (P, R port)

—	Rc (PT)
00N	NPT
00T	NPTF
00F	G (PF)

How to Order Valve

VQZ **1** **1** **2** **1** □ — **5** **M** □ — **C6** — Q

Series

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

Configuration

1	2 position single
2	2 position double
3	3 position closed centre
4	3 position exhaust centre
5*	3 position pressure centre
8	3 port for mixture mounting N.C.
9	3 port for mixture mounting N.O.

* Except for VQZ1000 and metal seal style

Body

2	Body ported

Seal

0	Metal seal
1	Rubber seal

Function

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

Note 1) Option
Note 2) Refer to p.1.15-27 for details about external pilot specification.
Note 3) Refer to p.1.15-7 for power consumption for AC style.
Note 4) When specifying more than one option, indicate them alphabetically.

Coil voltage

1*	100V AC (50/60Hz)
3*	110V AC (50/60Hz)
5	24V DC
6	12V DC
9	Others less than 50VDC

* DIN only

Order Made Contact SMC for other voltages (9)

Protective class
class I (Mark: ⏚)..... DIN terminal type

Protective class
class III (Mark: ◈)..... Grommet, L and M plug connector

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	○	○	–
02	1/4	–	–	○

Note 1) Refer to p.1.15-27 for inch-sizes and one-touch fittings.

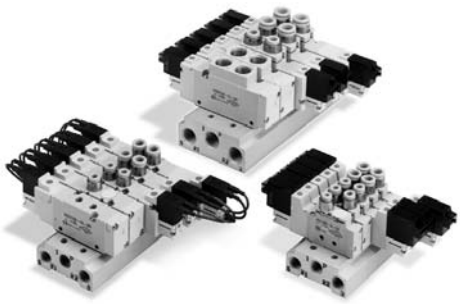
Manual override

—	Non-locking push style (Flush)
B	Locking style (Slotted)

Electrical entry

Symbol	Electrical entry	Light and surge suppressor
G	Grommet (DC specification)	Without
L	L plug connector with lead wire	With
LO	L plug terminal without connector	
M	M plug connector with lead wire	
MO	M plug terminal without connector	
Y (1)	DIN connector	Without
YO (1)	DIN terminal without connector	
YZ (1)	DIN connector	With
YOS (1)	DIN terminal without connector	With (w/o light)

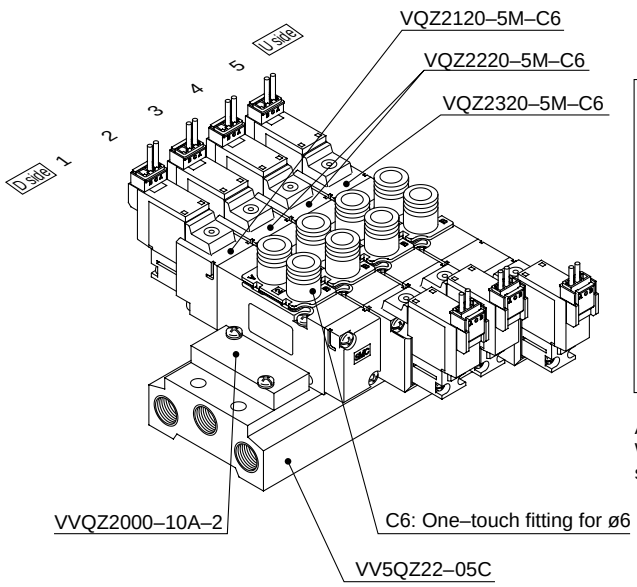
Note 1) DIN style is applicable to VQ2000, 3000.
Note 2) Standard lead wire length: 300mm.



Manifold Specifications

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

How to Order Manifold Assembly (Example)



VV5QZ22-05C -Q ……1 set (C kit 5 stations manifold base)
- ∗ **VVQZ2000–10A–2 -Q……1 set (Blank plate assembly)**
- ∗ **VQZ2120–5M–C6 -Q ……1 set (Valve P/N–single solenoid)**
- ∗ **VQZ2220–5M–C6 -Q ……2 set (Valve P/N–double solenoid)**
- ∗ **VQZ2320–5M–C6 -Q ……1 set (Valve P/N–3 position)**

Prefix "∗" mark to valves etc. to be assembled on the manifold.

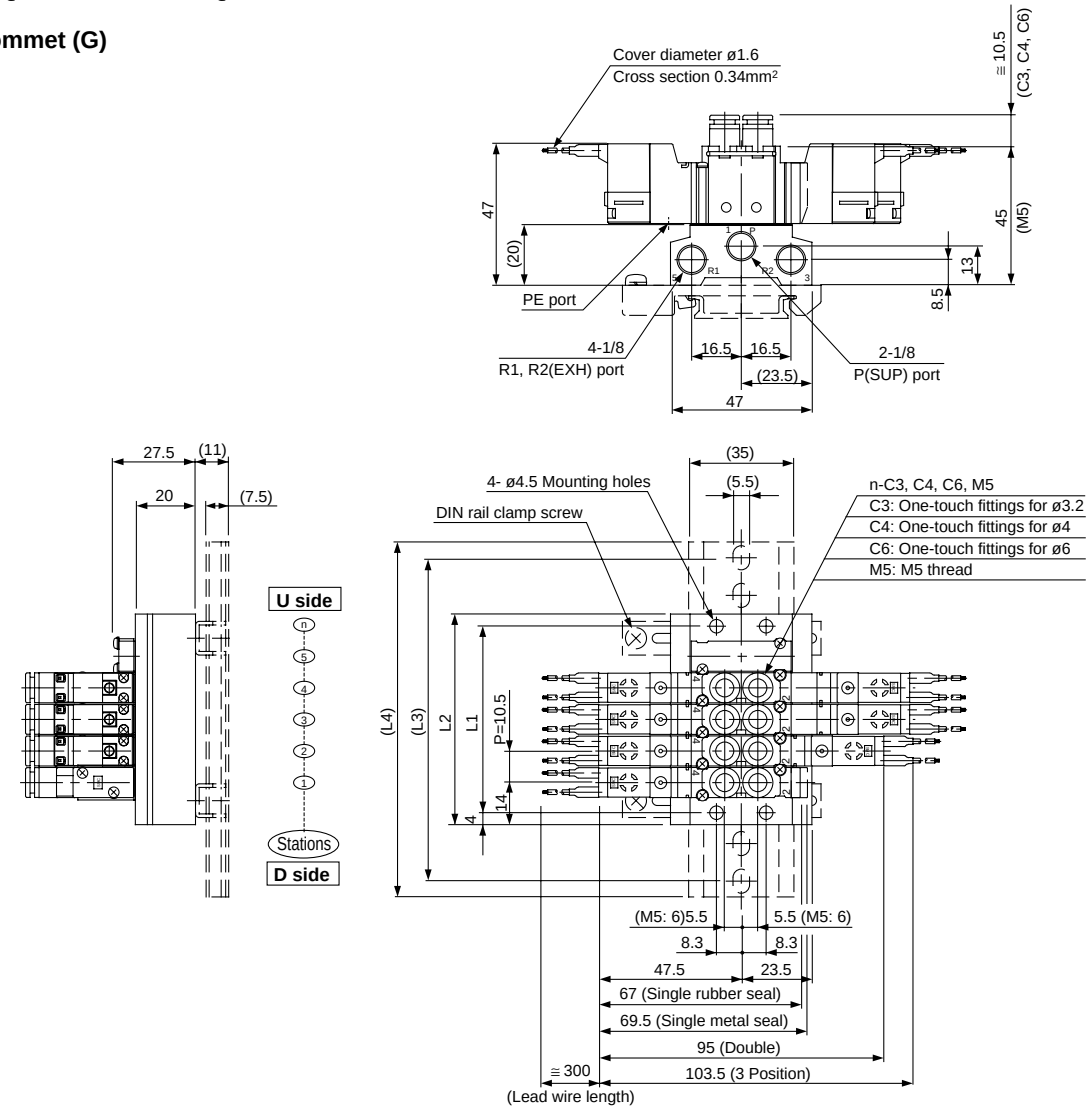
Write sequentially from the 1st station on the D side

Add valve suffix and option number to the manifold base number.
When part numbers written collectively are complicated, specify by using a manifold specification form.

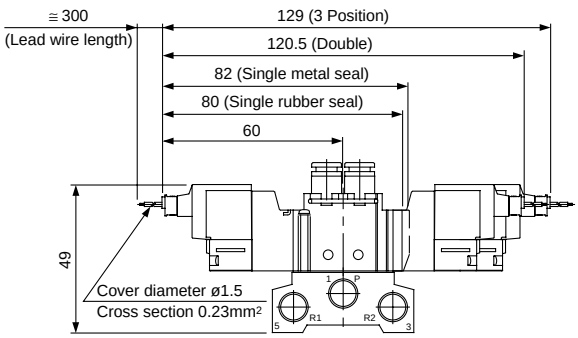
Dimensions: VQZ1000

VV5QZ12– Station C -Q

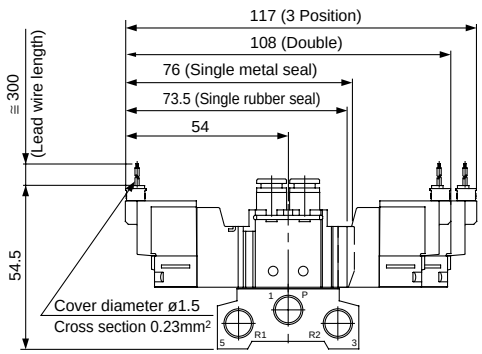
Grommet (G)



L plug connector (L)



M plug connector (M)



Dimensions Equation L1=10.5n+9.5 L2=10.5n+17.5

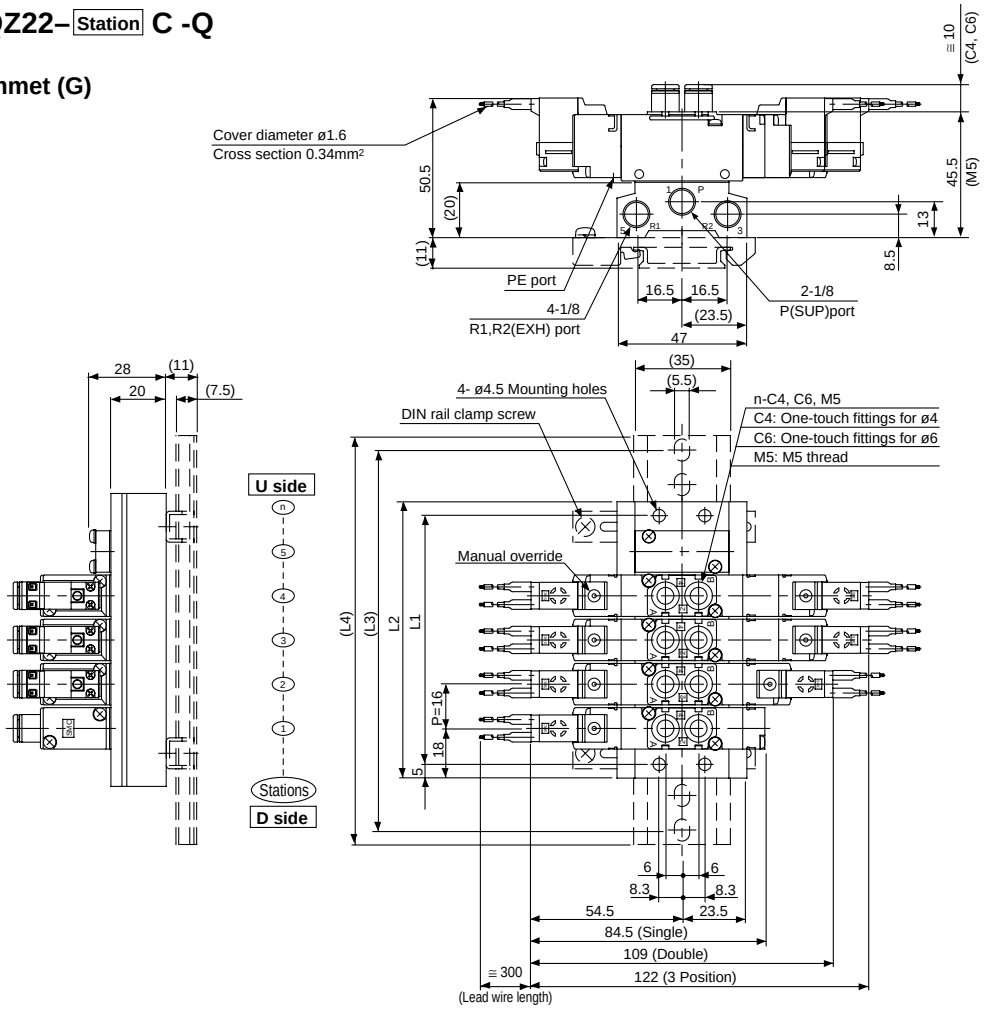
n: Station (Max. 20 stations)

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

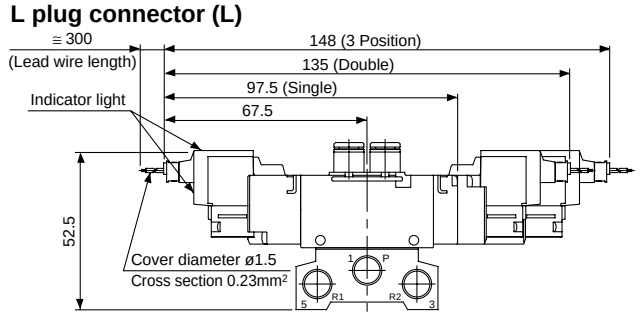
VQZ2000

VV5QZ22– Station C -Q

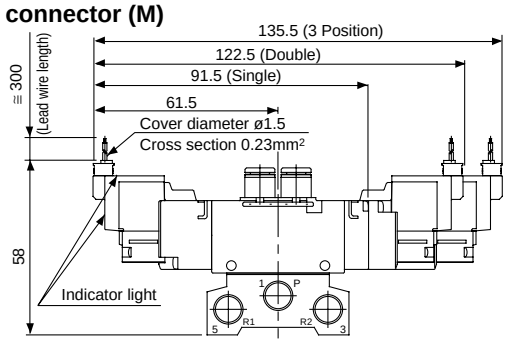
Grommet (G)



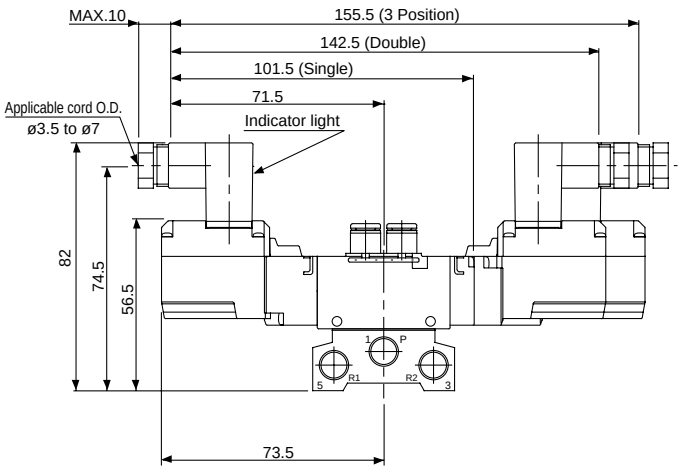
L plug connector (L)



M plug connector (M)



DIN connector (Y)



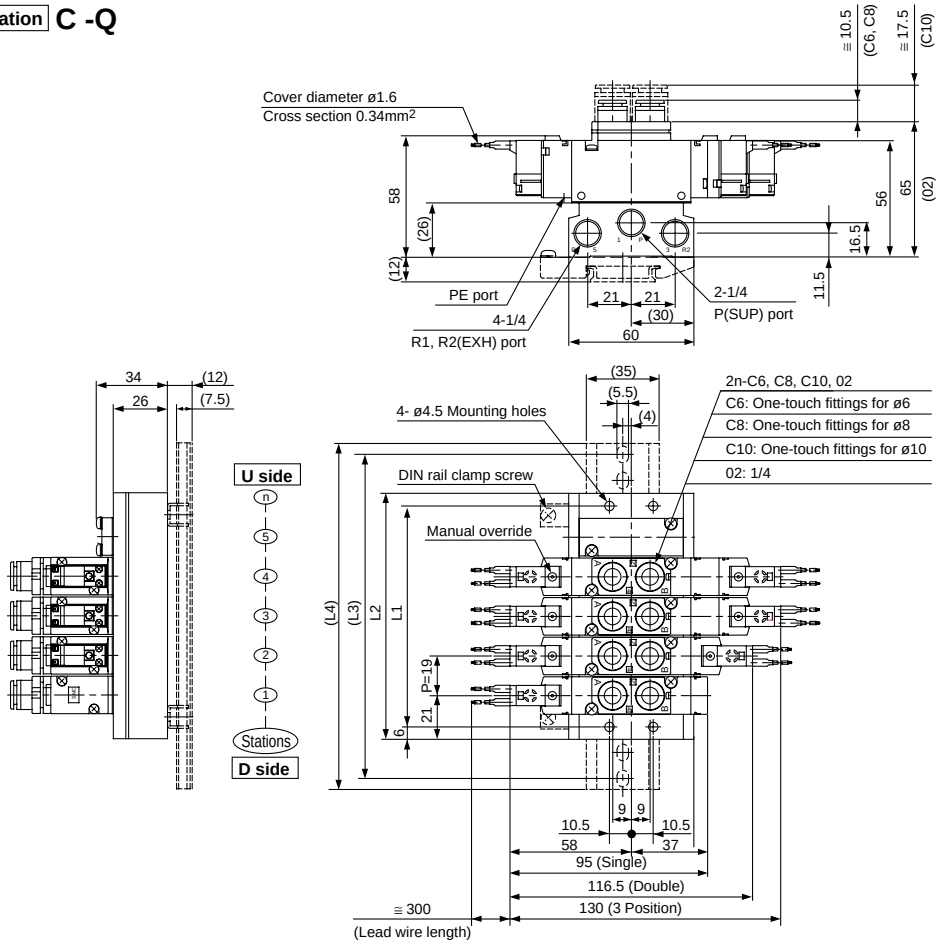
Dimensions Equation L1=16n+10 L2=16n+20 n: Station (Max. 20 stations)

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

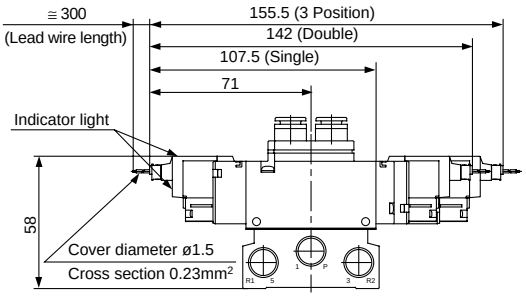
Dimensions: VQZ3000

VV5QZ32–Station C -Q

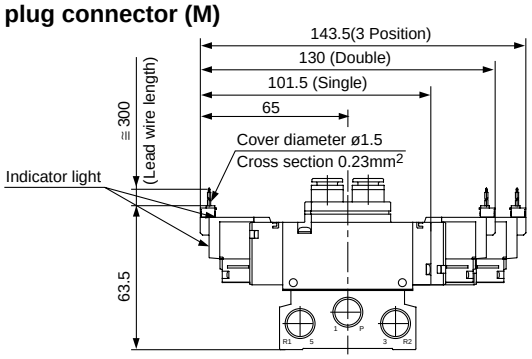
Grommet (G)



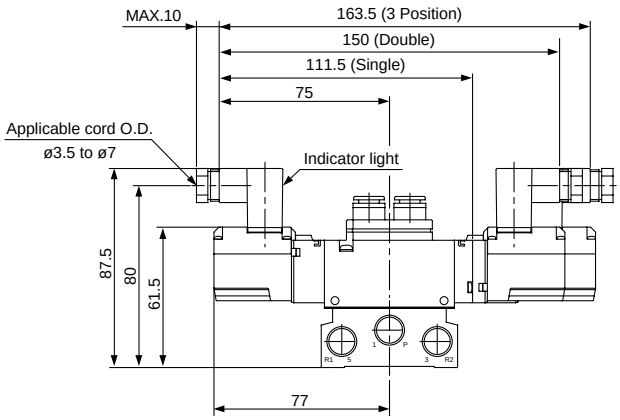
L plug connector (L)



M plug connector (M)



DIN connector (Y)



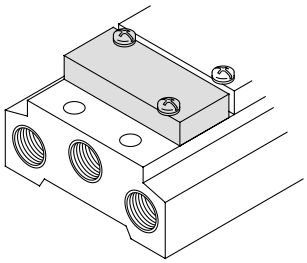
Dimensions Equation L1=19n+11 L2=19n+23 n: Station (Max. 20 stations)

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	237	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

Manifold Option

Blank plate assembly
VVQZ1000-10A-2
VVQZ2000-10A-2
VVQZ3000-10A-2

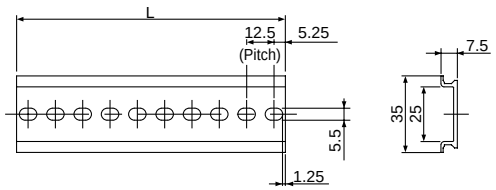
This is used when removing the valve for maintenance, or reserving a valve mounting space on the manifold for future use.



DIN rail
AXT100-DR-☐

∗ Suffix number into ☐ from the dimension tabe below.
Refer to each manifold dimensions for L dimension.

To order a manifold with DIN rail already attached, insert “D” at the end of the manifold part number. The DIN rail is approximately 30mm longer than the length of manifold.

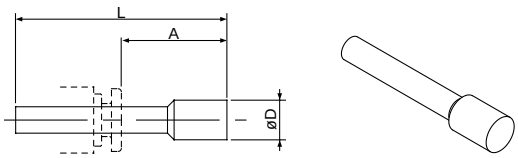


L dimension L=12.5n+10.5

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	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	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

Fitting blank plug
KQ2P-23
KQ2P-04
KQ2P-06
KQ2P-08
KQ2P-10

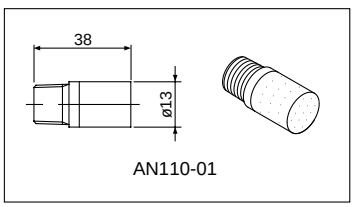


Dimensions

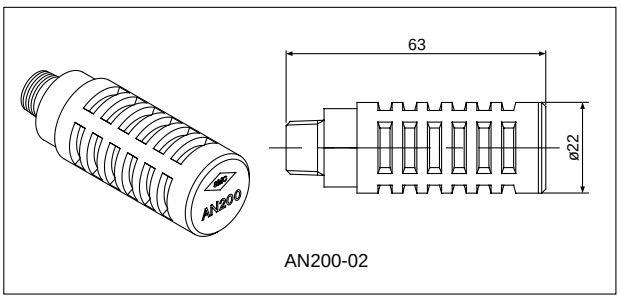
Applicable fitting ød	Part No.	A	L	D
3.2	**KQ2P-23**	16	31.5	3.2
4	**KQ2P-04**	16	32	6
6	**KQ2P-06**	18	35	8
8	**KQ2P-08**	20.5	39	10
10	**KQ2P-10**	22	43	12

EXH port silencer

Silencer is installed in the EXH port.



AN110-01



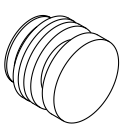
AN200-02

Dimensions

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

Port plug
VVQZ100-CP(For VQZ1000/VQZ2000)
VVQZ2000-CP(For VQZ3000)

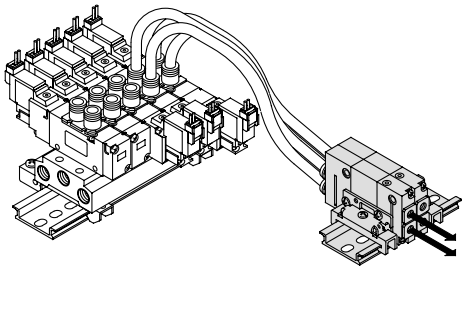
Used to block an unused cylinder port when using a 4 way valve as a 3 way valve.



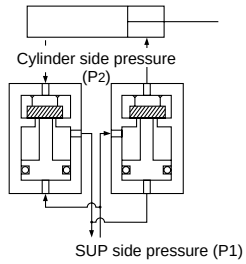
Manifold Option

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

Using a 3 position exhaust centre valve, this check block can stop and hold a cylinder in mid-stroke. The combination of a 2 position single or double solenoid with a double check will prevent the cylinder from "dropping" at stroke end when the residual supply pressure is released.



〈Check Valve Operational Principles〉



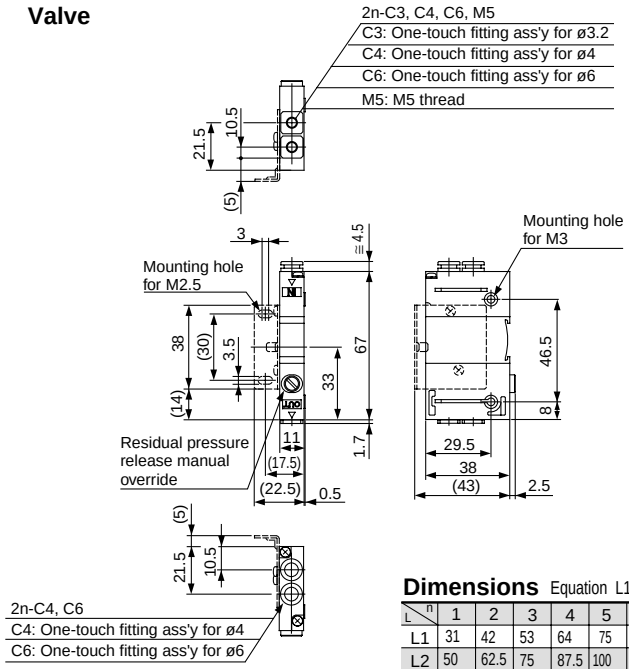
Specifications

Max. operating pressure	0.8MPa
Min. operating pressure	0.15MPa
Ambient and fluid temp.	–5 to 50˚C
Effective area (Cv) (1)	2.7mm² (0.15)
Max. operating frequency	180 c.p.m

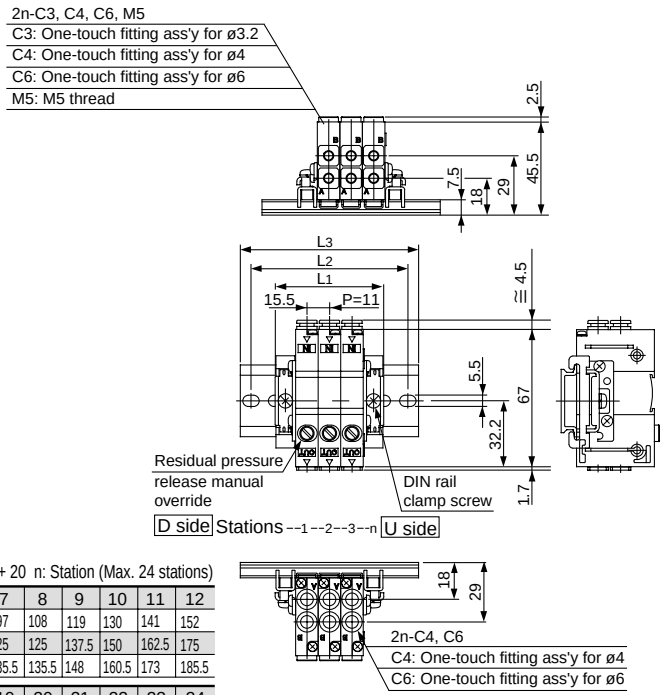
Note 1) As per JISB8375-1981
(Supply pressure: 0.5MPa)

Dimensions

Valve



Manifold



Dimensions Equation L1 = 11n + 20 n: Station (Max. 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	125	137.5	150	162.5	175
L3	60.5	73	85.5	98	110.5	123	135.5	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

How to Order

Double check block

VQ1000–FPG– C4 M5 F

IN side port side

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

OUT side port side

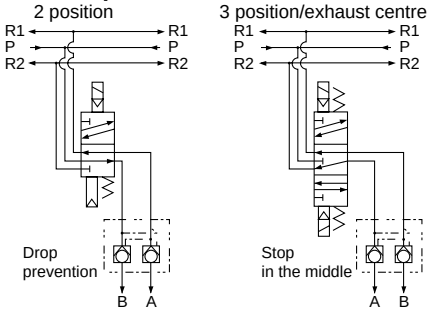
M5	M5 thread
C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6

Option

—	None
D	DIN rail mounting (for manifold)
F	With bracket
N	With name plate

Note) When specifying more than one option, combine symbols in alphabetically.
Ex.) -DN

<Examples>



Manifold

VVQ1000–FPG– 06

Stations

01	1 station
⋮	⋮
16	16 stations

<Example>
VVQ1000-FPG-06⋯6 stations of manifold
∗ VQ1000-FPG-C4M5-D, 3 sets
∗ VQ1000-FPG-C6M5-D, 3 sets
} Double check block

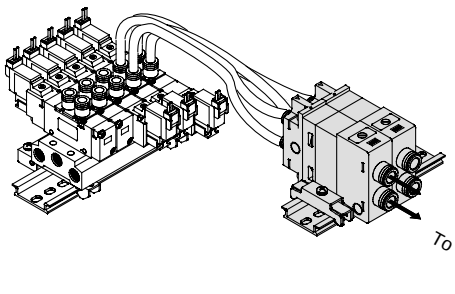
⚠Cautions

- 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 seal and rod seal for leakage.
- Since slight air leakage from One-touch fittings is allowed, use of a piping screw (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- Combining double check block with 3 position closed centre or pressure centre solenoid valve will not work.
- A M5 fitting assembly is attached, without being incorporated in the perfect block. After screwing in the fittings, mount the ass'y on the double check block. Tightening torque: 0.8 to 1.2Nm
- If exhaust side of double check block is narrowed down too much, this decreases the intermediate stop accuracy.

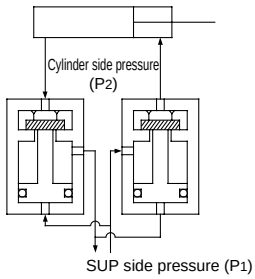
Manifold Option

Double check block (Externally placed downstream): For VQ2000 only
VQ2000–FPG–□□–□

Using a 3 position exhaust centre valve, this check block can stop and hold a cylinder in mid-stroke. 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 releasad.



〈Check Valve Operational Principles〉



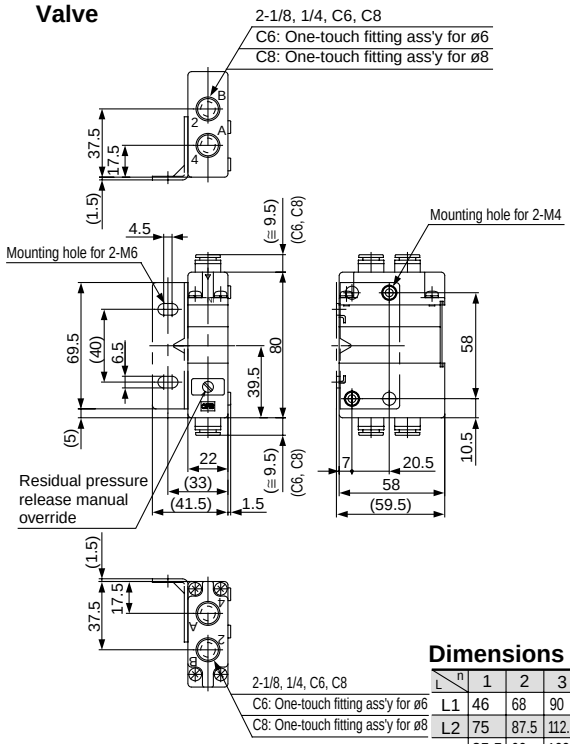
Specifications

Max. operating Pressure	0.8MPa
Min. operating Pressure	0.15MPa
Ambient and fluid temp.	–5 to 50°C
Effective area (Nℓ/min)(1)	18mm² (98)
Max. operating frequency	180 c.p.m

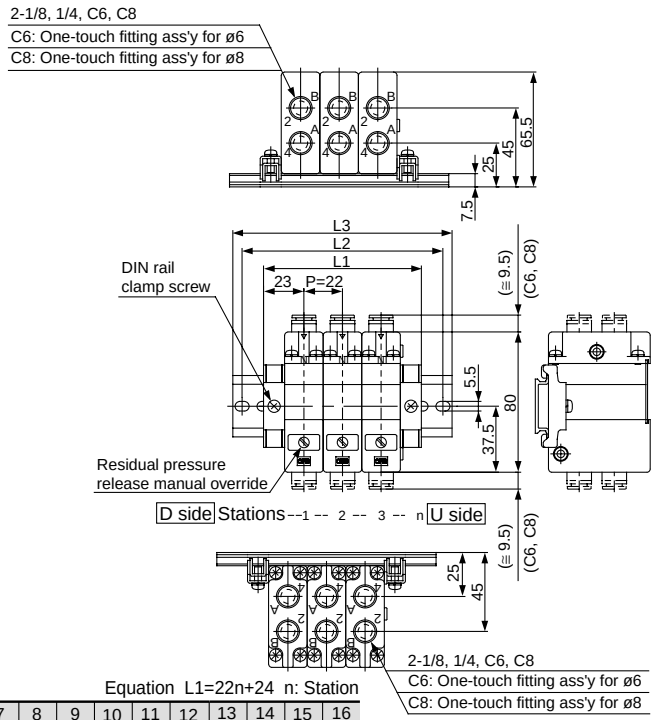
Note 1) As per JISB8375-1981
(Supply pressure: 0.5MPa)

Dimensions

Valve



Manifold



Dimensions Equation L1=22n+24 n: Station

L \ 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

VQ2000–FPG– 01 01 – F

IN side port size

01	Rc(PT)1/8
02	Rc(PT)1/4
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8

OUT side port size

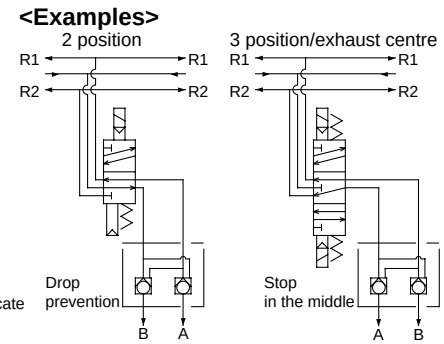
01	1/8
02	1/4
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8

Option

—	None
D	DIN rail mounted (for manifold)
F	With bracket
N	With name plate

Note) When specifying more than one symbol, indicate them alphabetically.
Ex.) -DN

<Examples>



Manifold

VVQ2000–FPG– 06

Stations

01	1 station
⋮	⋮
16	16 stations

<Example>
VVQ2000-FPG-06⋯6 stations of manifold
∗ VQ2000-FPG-C6C6-D, 3 sets
∗ VQ2000-FPG-C8C8-D, 3 sets
} Double check block

⚠Caution

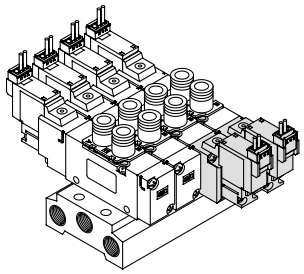
- Since air leakage from the pipe between the valve and cylinder or the fittings will prevent the cylinder from stopping for a long time, check for air leakage using neutral household detergent, such as dish washing soap. Also check the cylinder's tube gasket, piston seal and rod seal for leakage.
- Since slight air leakage from One-touch fittings is allowed, use of a piping screw (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- Combining double check block with 3 position closed centre or pressure centre solenoid valve will not work.
- When screwing the fittings in the double check block, applied torque is as shown below:

Thread	Torque Nm
1/8	7 to 9
1/4	12 to 14

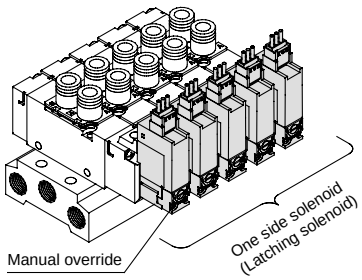
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
- If exhaust side of double check block is narrowed down too much, this decreases the intermediate stop accuracy.

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



Latching solenoid

How to Order Latching Solenoid Valve

VQZ 1 2 2 0 L – 5 M – C6 – Q

Series

1	VQZ1000
2	VQZ2000
3	VQZ3000

Combination symbol

Body

Seal

Function (2)

L	Latching double

Coil voltage

Electrical entry (L, M)

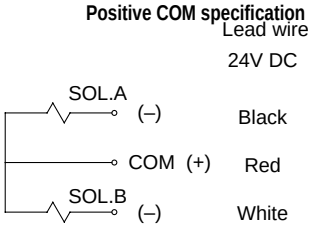
Port size

Note 1) Specifications are same as standard except for the function.
Note 2) H(High pressure style) and Y(Low wattage style) are not available.

Wiring

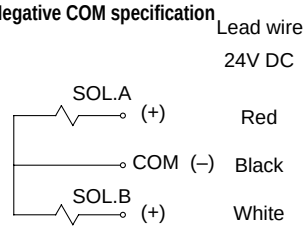
Lead wires are connected to the valve as shown below. Connect them with the power supply.

Positive COM specification

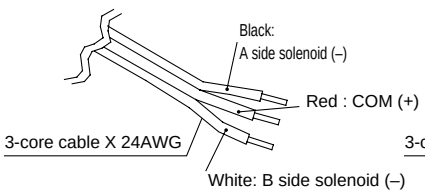


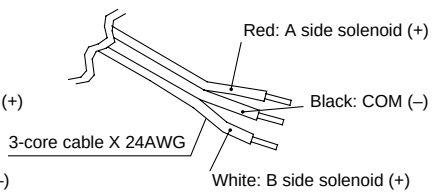
Double solenoid

Negative COM specification



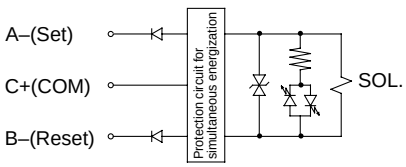
Double solenoid





Electrical Circuit

Latching solenoid (DC)



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: P→R {B (reset) side in energized state}
Note 3) Negative COM specification available.

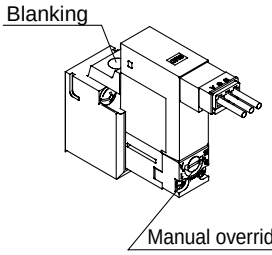
⚠Caution

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 20ms.
3. Avoid using the latching solenoid valves in environments where impact or collisions with the valve might occur. Also, do not use in places where a strong magnetic fields are present.
4. The armature in the solenoid is set in the B side ON position (Reset) at the factory. However shifting of the armature might occur during shipping so please confirm the position by energizing the solenoid.
5. Please consult SMC for extended energization applications.

Manual Override

The manual override is on the pilot valve for latching solenoid valves.



·To lock in set position (Flow path: P→A): Turn the manual override clockwise by 180° to make A press down. Valve is now locked in the set condition. (Flow path: P→A)
·To reset (Flow path: P→B): Turn manual override counterclockwise to mark B and press down. Valve will then be in the reset condition. (Flow path: P→B).

Options

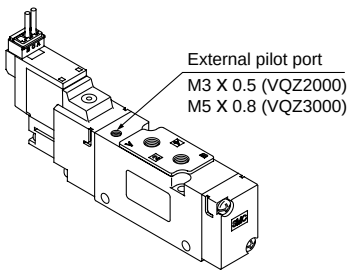
External Pilot

The external pilot specification is used when the operating pressure is below the minimum operation pressure 0.1 to 0.2 MPa or when valve is used for a vacuum application. For the external pilot valve, an "R" should be attached to the valve and the manifold part number. (See the below.)

Example/Valve

VQZ2120R—5M—C6—Q

External pilot specification



Pressure Specifications

Series		VQZ2000, 3000		
		2 position single	2 position double	3 position
External pilot pressure range *	Metal seal	0.1 to 0.7MPa	only VQZ3000, 3 position 0.15 to 0.7MPa	
	Rubber seal	0.15 to 0.7MPa	0.1 to 0.7MPa	0.2 to 0.7MPa
Operating pressure range *		Vacuum to 0.7MPa		

* In case of high pressure style, upper limit of max. operating pressure and external pilot pressure range is 1MPa.

Inch Size One-touch Fittings and Option Thread

Manifolds are available with inch-size One-touch fitting for the cylinder ports. Sub-plates and manifolds with NPT, NPTF or PF threads are available.

How to Order Valve

VQZ2120—5M—N7 T —Q

Thread (Cylinder ports and P, R ports)

—	Rc(PT)
N	NPT
T	NPTF
F	G(PF)

Note) R port of VQZ2000 is only G(PF) 1/16

Cylinder ports

Symbol		N1	N3	N7	N9	N11	M5	02
Applicable tube O.D. (Inch)		ø1/8"	ø5/32"	ø1/4"	ø5/16"	ø3/8"	M5	1/4
A, B port	VQZ1000	●	●	●	—	—	●	—
	VQZ2000	—	●	●	—	—	●	—
	VQZ3000	—	—	●	●	●	—	●

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

How to Order Manifold

VV5QZ22—05C— 00T —Q

Thread (P, R ports)

—	Rc(PT)
00N	NPT
00T	NPTF
00F	G(PF)

Dust Tight/Jet Proof (IP65)

Optional IP65 model is available on valves with DIN connector electrical entry.

How to Order Valve
(Applicable to VQZ2000/3000 rubber seal)

VQZ3121—5YZB W —02 —Q

IP65 rated

—	No (Standard)
W (1)	IP65 rated

Note 1) 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 Body Ported
Replacement Parts

One-touch Fitting Assembly (For cylinder port)

Series \ Fitting size	C3	C4	C6	C8	C10
VQZ1000, 2000	VVQ1000-50A-C3	VVQ1000-50A-C4	VVQ1000-50A-C6	—	—
VQZ3000	—	—	VVQ1000-51A-C6	VVQ1000-51A-C8	VVQ1000-51A-C10

Note) Order is accepted in 10 units.

<Plug connector assembly>

DC (+COM)
· Single
AXT661–14A– □
· Latching
AXT661–13A– □
DC (-COM)
· Latching
AXT661–13AN– □
100V, 110V AC

Lead wire length

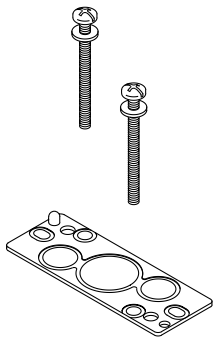
—	300mm
6	600mm
10	1000mm
20	2000mm
30	3000mm

Standard wire length of valve with plug connector is 300mm.
When requiring valve with 600mm 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.
Orders are accepted in 10 units.



<Pilot valve assembly>

VQ11 1 □ — 5 G — □ —Q

Series

1	VQZ1000, 2000, 3000

Function

Symbol	Specification	DC	AC
—	Standard	(1.0W) ○	○
K (1)	High pressure (Metal seal only)	(1.0W) ○	–
Y	Low wattage	(0.5W) ○	–
L (3)	Latching	(1.0W) ○	○

Note 1) Option
Note 2) When specifying more than one option, please indicate them alphabetically.
Note 3) K (High pressure) and Y (Low wattage) are not available.
Electrical ently: L/ M plug connector only.

Coil voltage

1	100V AC (50/60Hz)
3	110V AC (50/60Hz)
5	24V DC
6	12V DC
9	Others less than 50VDC

Order Made Contact SMC for other voltages (9)

Protective class
class III (Mark:◈)..... Grommet, L and M plug connector

Applicable model

—	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

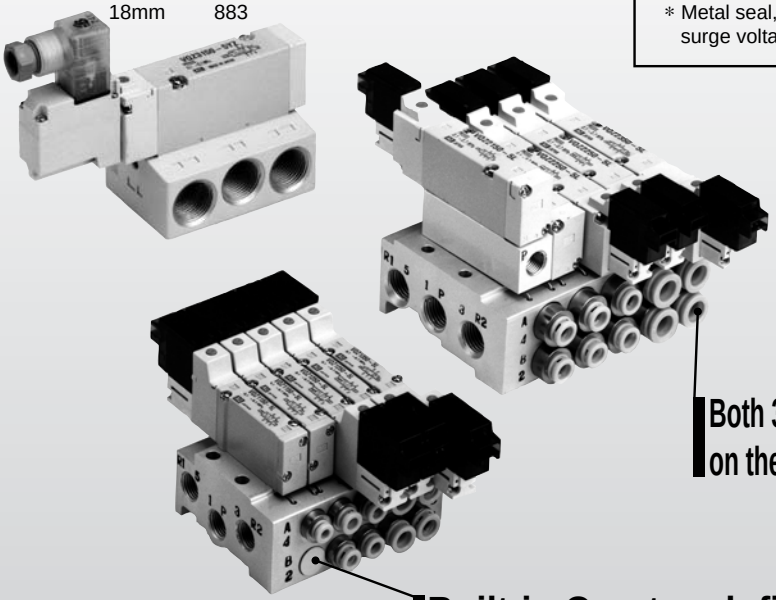
Symbol	Electrical entry	Light and surge suppressor
G	Grommet (DC specification)	Without
L	L plug connector with lead wire	With
LO	L plug terminal without connector	
M	M plug connector with lead wire	
MO	M plug terminal without connector	
Y (1)	DIN connector	Without
YO (1)	DIN terminal without connector	
YZ (1)	DIN connector	With
YOS (1)	DIN terminal without connector	With (w/o light)

Note 1) DIN is applicable to VQZ2000, 3000.

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

Compact design with large flow capacity

Body Width	N*l*/min
10mm	196
15mm	588
18mm	883



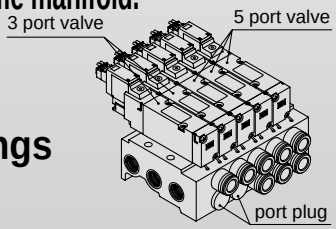
High speed and Long life

	Response time	Life
VQZ1000	10ms	2 million cycles*
VQZ2000	12ms	
VQZ3000	15ms	

Dispersion accuracy ±2ms

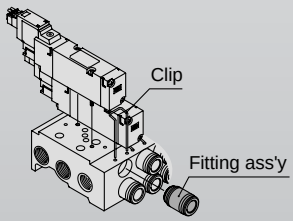
* Metal seal, single solenoid with light and surge voltage suppressor

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

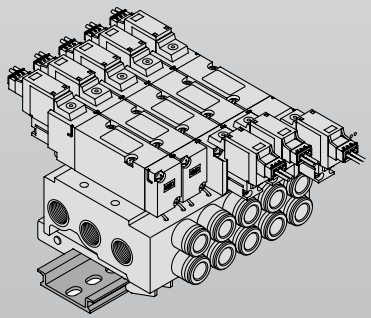


Built-in One-touch fittings for easier piping.

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



DIN rail mounting is available.

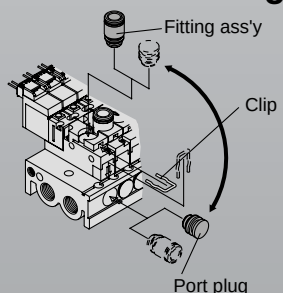


Optional IP65 rated model is available with DIN connector.

Choice of metal or rubber seal main valve construction

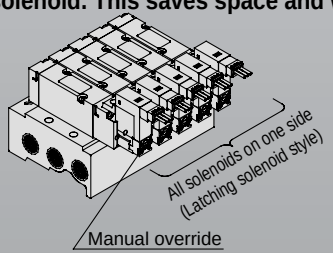
Piping direction can be changed on VQZ100.

It's possible to change from side to top porting and vice versa.



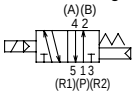
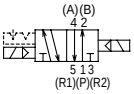
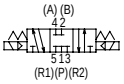
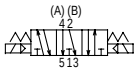
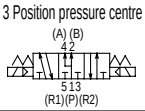
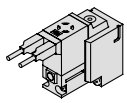
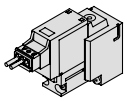
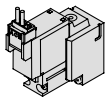
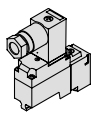
Possible to have all solenoids on same side of manifold

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.



Model Selection

Base Mounted

		Nℓ/min Metal/ Rubber		Function	Voltage	Electrical entry	Light and surge voltage suppressor	Manual override
5 port	VQZ1000 	196	343	2 Position single  2 Position double  3 Position closed centre  3 Position exhaust centre  3 Position pressure centre 	(standard) 12V DC 24V DC (Option) 100V AC 110V AC	Grommet (G)  L plug connector (L)  M plug connector (M)  DIN connector (Y)  (Except for VQZ 1000)	Indicator light and surge voltage suppressor L plug connector (L) M plug connector (M) DIN connector (YZ) (Except for VQZ 1000)	Non-locking push style (Flush) Locking style (Slotted)
	VQZ2000 	588	687					
	VQZ3000 	883	1177					
3 Port for mixed mounting	VQZ1000 	196	343	(A) 4 5 1 (R) (P) N.C.				
	VQZ2000 	588	687	(A) 4 5 1 (R) (P) N.O.				
	VQZ3000 	883	1177					

Base mounted (With sub-plate)	Nℓ/min	Cylinder speed (mm/s)	Bore size (mm)											
			Series CJ2			Series CM2				Series CA1				
			ø6	ø10	ø16	ø20	ø25	ø32	ø40	ø40	ø50	ø63	ø80	ø100
VQZ1000 Body width 10	343	150												
		300						●	●					
		450	●											
		600		●	●									
		750												
VQZ2000 Body width 15	687	150												
		300												
		450	●					●	●					
		600		●	●									
		750												
VQZ3000 Body width 18	1177	150												
		300												
		450	●					●	●					
		600		●	●									
		750												

Cylinder speed marked with "●" can be controlled by speed controller. (Pressure: 0.5 MPs, Load rate: 50%)

⚠ Precautions

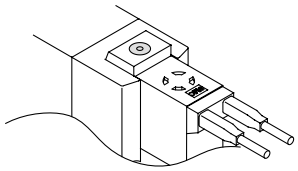
Be sure to read before handling. Refer to p.0-33 to 0-36 for Safety Instructions and common precautions.

⚠ Warning

Manual Override

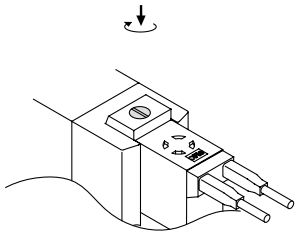
Without an electric signal for the solenoid valve the manual override is used for switching the main valve.

Non-locking push style (Flush)

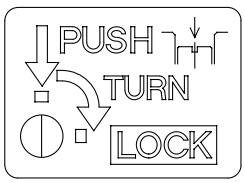


Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

Locking style (Slotted)



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

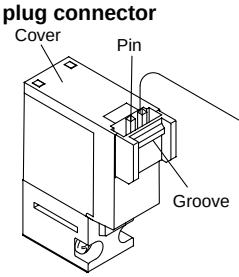


⚠ Caution

How to Use L and M Plug Connector

Insertion/Removal of connector

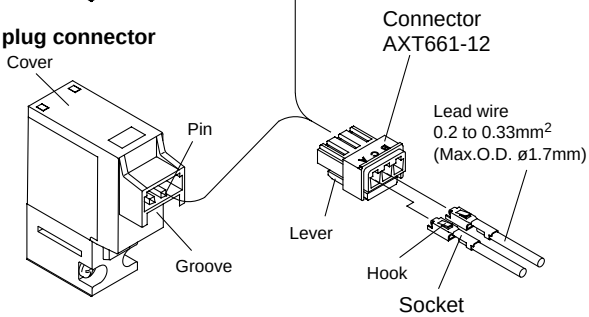
M plug connector



Insertion:
Push the connector straight onto the pins of the solenoid, making sure the lip of the lever securely "locks" into the groove of the solenoid cover.

Removal:
Press the lever against the connector housing and pull it outward from the solenoid.

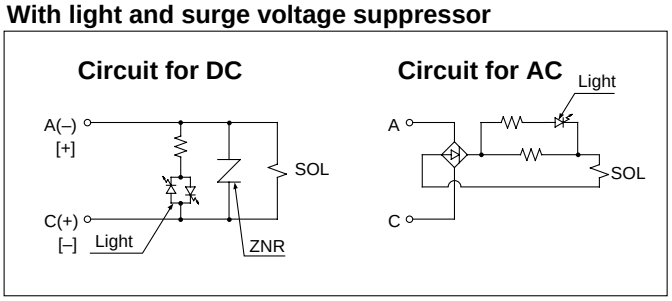
L plug connector



Refer to p.1.15-59 for part no. of plug connector ass'y.

Connection and Electrical Circuit

With light and surge voltage suppressor



Due to the use of non-polar light, the VQZ series has no polarity.
Refer to p.1.15-57 for latching style.

⚠ Precautions

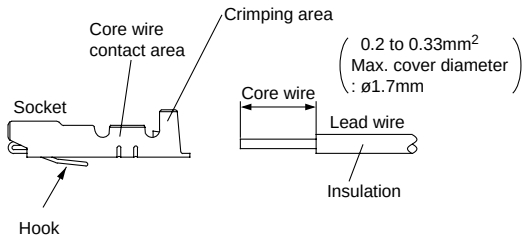
Be sure to read before handling. Refer to p.0-33 to 0-36 for Safety Instructions and common precautions.

Connection of Lead Wire

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

Crimping connection of lead wire and socket

Strip 3.2 to 3.7mm of the lead wire ends, insert each stripped wire into a socket and crimp contact it using special crimping tool. Be careful that the outer insulation of the lead wires does not interfere with the socket contact part.



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

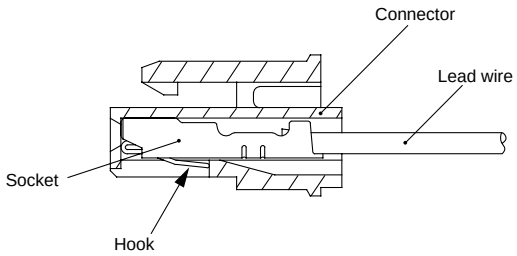
Connection/Disconnection of socket with lead wire

Connection

Insert lead wire and crimped socket into square holes (indicated as A, B, COM) of connector. Press the socket in fully until the hook of the socket locks into the groove of the connector housing. Confirm the locked position by lightly pulling on the lead wire.

Disconnection

To remove the socket from the connector, pull out lead wire while depressing the hook of the socket with a fine screw driver (or similar). If the socket is to be re-used, reposition the hook again.



How to Wire the DIN Connector

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

Cut the power and air supply before mounting/removing the connector.

① Loosen the top screw and remove the connector housing from the terminal spades on 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 of the block and insert stripped lead wires in accordance with the wiring diagram. Secure each wire by retightening the terminal screw.
④ Tighten the housing grommet nut to secure the cable wire.

Change of electrical entry (orientation)

Once the housing is separated from the terminal block, it can be rotated in any direction to change the orientation of the electrical entry.

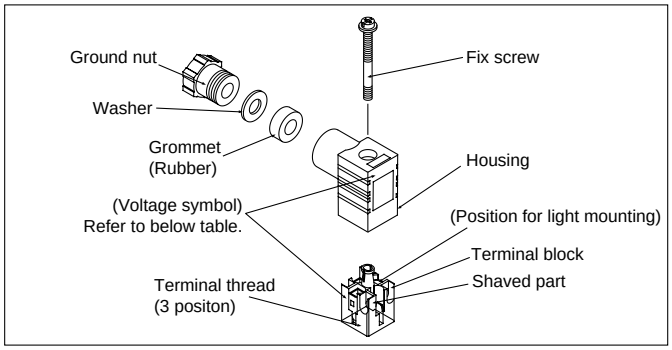
∗ In the case of the indicator light option, avoid damaging the light with the lead wire connections.

Precaution

Pull connector out vertically, never at an angle.

Applicable cable

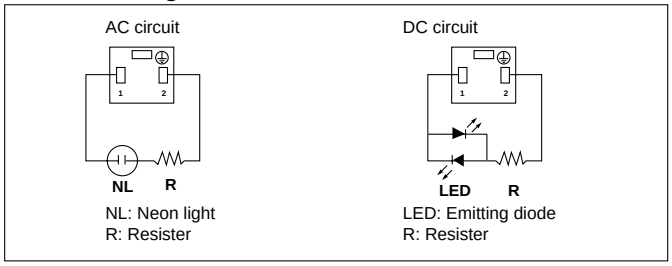
Cord O.D.: ø3.5 to ø7
(Reference) 0.5mm² 2-core and 3-core wires equivalent to JISC3306.



Part No. of DIN Connector (Based on DIN)

Without light	AXT100-20-1	
With light		
Rated voltage	Voltage symbol	Part No.
24V DC	24V	AXT100-20-2-05
12V DC	12V	AXT100-20-2-06
100V AC	100V	AXT100-20-2-01
110V AC	110V	AXT100-20-2-03

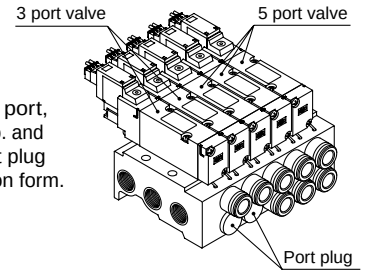
Circuit with light



⚠Caution

Mounting 3 Port Valves on 5 Port Manifolds (VQZ$\frac{1}{3}$850, N.C./VQZ$\frac{1}{3}$950, N.O.)

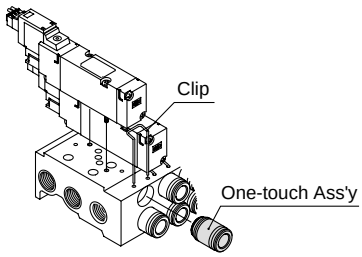
When a 3 port valve is mounted on a 5 port manifold, the "A" port is the working port. The "B" port can either be plugged or unplugged.



When port plug is used on B port, indicate "CM" in manifold part no. and port size, and supecify the port plug location in manifold specification form.

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. Then remove the affected fitting and replace with a new one. Finally, replace the fitting clip and remount the valve.



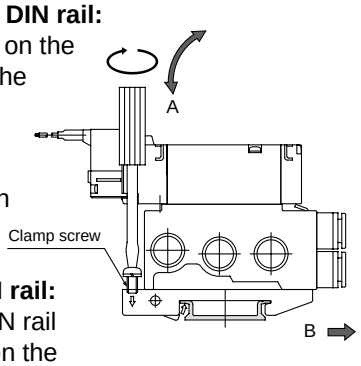
Precaution

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

DIN Rail Removal/Mounting

To remove manifold from DIN rail:

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 side it in the direction of the "B" side.



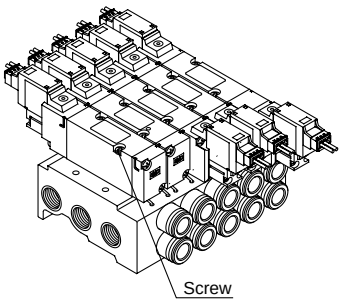
Mounting manifold to DIN rail:

1) Catch the hook of the DIN rail bracket on the "B" side on the DIN rail.
2) Push side "A" onto the DIN rail and tighten the clamp screw. (Tighening torque of 0.3 to 0.4 Nm{3 to 4kgf/cm})

Valve Mounting

After confirming the gasket is correctly placed under the valve, tighten the mounting screws with the appropriate torque listed below.

Model	Suitable tightening torque
VQZ1000	0.18 to 0.25Nm
VQZ2000	0.25 to 0.35Nm
VQZ3000	0.5 to 0.7Nm



5 Port Solenoid Valve

VQZ1000/2000/3000

Single Unit

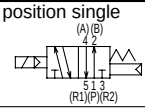
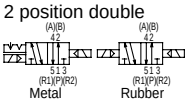
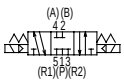
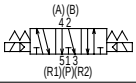
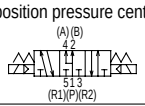
How to Order Valve

VQZ [1] [1] [5] [1] [ ] — [5] [M] [ ] — [01] [ ] — [Q]

Series

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

Configuration

1	2 position single 
2	2 position double  Metal / Rubber
3	3 position closed centre 
4	3 position exhaust centre 
Note) 5	3 position pressure centre 

Note) Except VQZ1000 and metal seal style.

Body

5	Base mounted

Seal

0	Metal seal
1	Rubber seal

Function

Symbol	Specification	DC	AC
—	Standard	(1.0W) ○	○
K (1)	High pressure (Metal seal)	(1.0W) ○	—
Y (1)	Low wattage	(0.5W) ○	—
R	External pilot	○	○

Note 1) Option
Note 2) Refer to p.1.15-58 for details about external pilot specification except VQZ1000.
Note 3) Refer to p.1.15-35 for power consumption of AC type.
Note 4) When specifying more than one option, indicate them alphabetically.

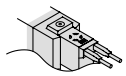
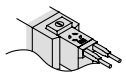
Thread

—	Rc (PT)
N	NPT
T	NPTF
F	G (PF)

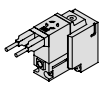
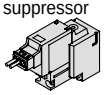
Port size [4(A), 2(B) port]

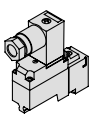
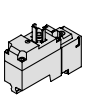
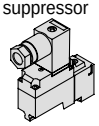
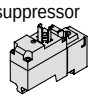
Symbol	Port size	VQZ1000	VQZ2000	VQZ3000
—	Without sub-plate	○	○	○
01	1/8	○	○	—
02	1/4	—	○	○
03	3/8	—	—	○

Manual override

—: Non-locking push style (Flush)	B: Locking style (Slotted)
	

Electrical entry

G: Grommet (DC specification)	L: L plug connector with lead wire	LO: L plug terminal without connector	M: M plug connector with lead wire	MO: M plug terminal without connector
	With light and surge voltage suppressor 	With light and surge voltage suppressor 	With light and surge voltage suppressor 	With light and surge voltage suppressor 

Y: DIN (1) connector	YO: DIN (1) terminal without connector	YZ: DIN (1) connector	YOS: DIN (1) terminal without connector
		With light and surge voltage suppressor 	With surge voltage suppressor 

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

Coil voltage

1*	100V AC (50/60Hz)
3*	110V AC (50/60Hz)
5	24V DC
6	12V DC
9	others (50V or less)

*DIN only

Order Made Contact SMC for other voltages (9)

Protective class
class I (Mark: ⏚)..... DIN terminal type

Protective class
class III (Mark: ◈)..... Grommet, L and M plug connector

SMC



Standard Specifications

Valve specifications	Seal			Metal seal	Rubber seal
	Fluid			Air, Inert gas	Air, Inert gas
	Max. operation pressure			0.7MPa (High pressure type: 1.0MPa)	
	Min. operating pressure	2 position	Single	0.1MPa only for VQZ3000, 3 position 0.15MPa	0.15MPa
			Double		0.1MPa
		3 position			0.2MPa
	Ambient and fluid temperature			–10 to 50°C (1)	–10 to 50°C (1)
	Max. operating frequency	2 position	Single	20Hz	5Hz
			Double		
		3 position		10Hz	3Hz
	Pilot valve EXH			Individual EXH	
	Lubrication			Not required	
	Manual override			Non-locking push Locking slotted styles	
	Shock/Vibration resistance (2)			150/30 m/s^2	
	Enclosure			Dust-proof	
Solenoid specifications	Coil rated voltage			12V, 24V DC and 100V, 110V, 200V, 220V AC	
	Allowable voltage			±10% of rated voltage	
	Coil insurance			Class B	
	Power consumption (Current value)		24V DC	1W DC (42mA), 1.5W DC (63mA), 0.5W DC (21mA)	
			12V DC	1W DC (83mA), 1.5W DC (125mA), 0.5W DC (42mA)	
			100V AC	Inrush 1.2VA (12mA), Holding 1.2VA (12mA)	
			110V AC	Inrush 1.3VA (11.7mA), Holding 1.3VA (11.7mA)	

Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Shock resistance·····No malfunctions resulted from the impact test using a drop impact tester. The test was performed on the axis and right angle direction of the main valve and armature, for both energized and de-energized states. (Value in the initial stage.)
Vibration resistance···No malfunction occurred in a one-sweep test between 8.3 and 2,000 Hz. Test was performed at both energize and de-energized states to the axis and right angle direction of the main valve and armature. (Value in the initial stage.)

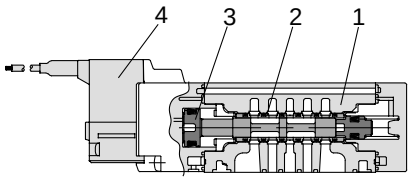
Model

Series	Configuration		Model		Effective area (mm^2)(Nℓ/min) (1)	Response time (ms) (2) Standard: 1W High pressure: 1.5W	Response time (ms) (2) High pressure: 1W Low wattage and AC	Weight (g) (3)
VQZ1000	2 position	Single	Metal seal	**VQZ1150**	3.6 (196)	12 or less	15 or less	37
			Rubber seal	**VQZ1151**	6.3 (343)	12 or less	15 or less	
		Double	Metal seal	**VQZ1250**	3.6 (196)	10 or less	13 or less	56
			Rubber seal	**VQZ1251**	6.3 (343)	10 or less	13 or less	
	3 position	Closed centre	Metal seal	**VQZ1350**	2.2 (117)	20 or less	26 or less	
			Rubber seal	**VQZ1351**	3.6 (196)	25 or less	33 or less	
		Exhaust centre	Metal seal	**VQZ1450**	3.6 (196)	20 or less	26 or less	
			Rubber seal	**VQZ1451**	6.3 (343)	25 or less	33 or less	
		Pressure centre	Rubber seal	**VQZ1551**	3.6 (196)	25 or less	33 or less	
VQZ2000	2 position	Single	Metal seal	**VQZ2150**	10.8 (588)	14 or less	18 or less	60
			Rubber seal	**VQZ2151**	12.6 (687)	15 or less	20 or less	
		Double	Metal seal	**VQZ2250**	10.8 (588)	10 or less	13 or less	84
			Rubber seal	**VQZ2251**	12.6 (687)	12 or less	15 or less	
	3 position	Closed centre	Metal seal	**VQZ2350**	7.2 (392)	23 or less	30 or less	
			Rubber seal	**VQZ2351**	9.0 (490)	25 or less	33 or less	
		Exhaust centre	Metal seal	**VQZ2450**	10.0 (539)	23 or less	30 or less	
			Rubber seal	**VQZ2451**	12.6 (687)	25 or less	33 or less	
		Pressure centre	Metal seal	**VQZ2550**	7.2 (392)	23 or less	30 or less	
			Rubber seal	**VQZ2551**	9.0 (490)	25 or less	33 or less	
VQZ3000	2 position	Single	Metal seal	**VQZ3150**	16.2 (883)	17 or less	22 or less	94
			Rubber seal	**VQZ3151**	21.6 (1177)	25 or less	33 or less	
		Double	Metal seal	**VQZ3250**	16.2 (883)	10 or less	13 or less	119
			Rubber seal	**VQZ3251**	21.6 (1177)	15 or less	20 or less	
	3 position	Closed centre	Metal seal	**VQZ3350**	14.4 (785)	25 or less	33 or less	
			Rubber seal	**VQZ3351**	16.2 (883)	30 or less	39 or less	
		Exhaust centre	Metal seal	**VQZ3450**	15.3 (834)	25 or less	33 or less	
			Rubber seal	**VQZ3451**	21.6 (1177)	30 or less	39 or less	
		Pressure centre	Metal seal	**VQZ3550**	14.4 (785)	25 or less	33 or less	
			Rubber seal	**VQZ3551**	16.2 (883)	30 or less	39 or less	

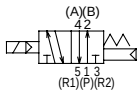
Note 1) Value for sub-plate and maximum diameter
Note 2) As per JISB8375-1981 (Supply pressure; 0.5MPa; with indicator light and surge voltage suppressor; clean air)
The response time is subject to the pressure and the air quality. The values at the time of ON are given for double styles.
Note 3) Weight without sub-plate

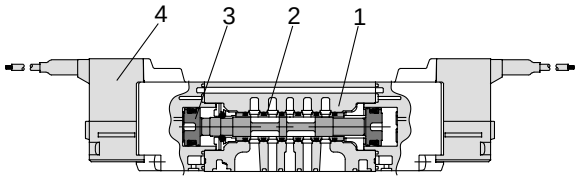
Construction: VQZ1000/2000/3000

Metal seal

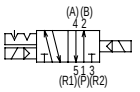


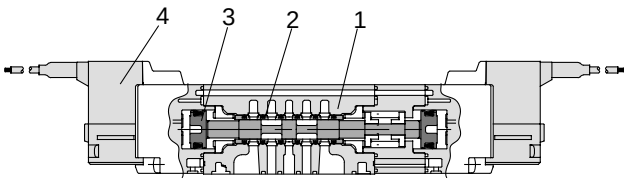
2 position single



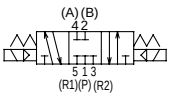


2 position double

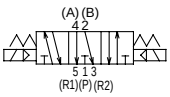




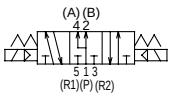
3 position closed centre



3 position exhaust centre

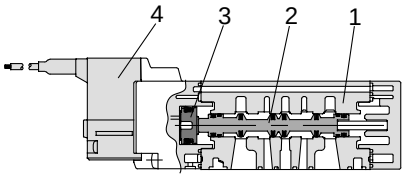


3 position pressure centre (1)

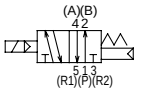


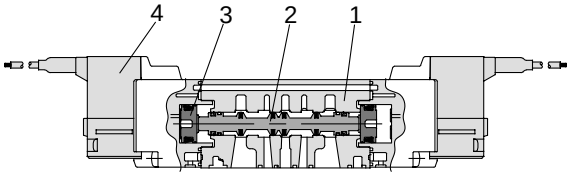
Note 1) Except for VQZ1000 and metal seal

Rubber seal

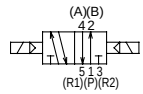


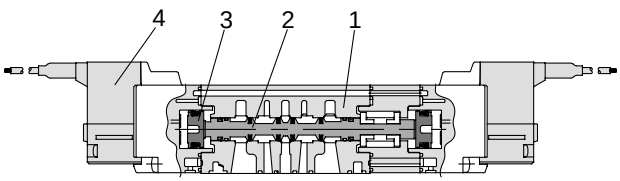
2 position single



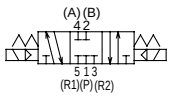


2 position double

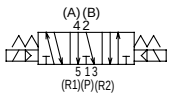




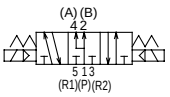
3 position closed centre



3 position exhaust centre



3 position pressure centre



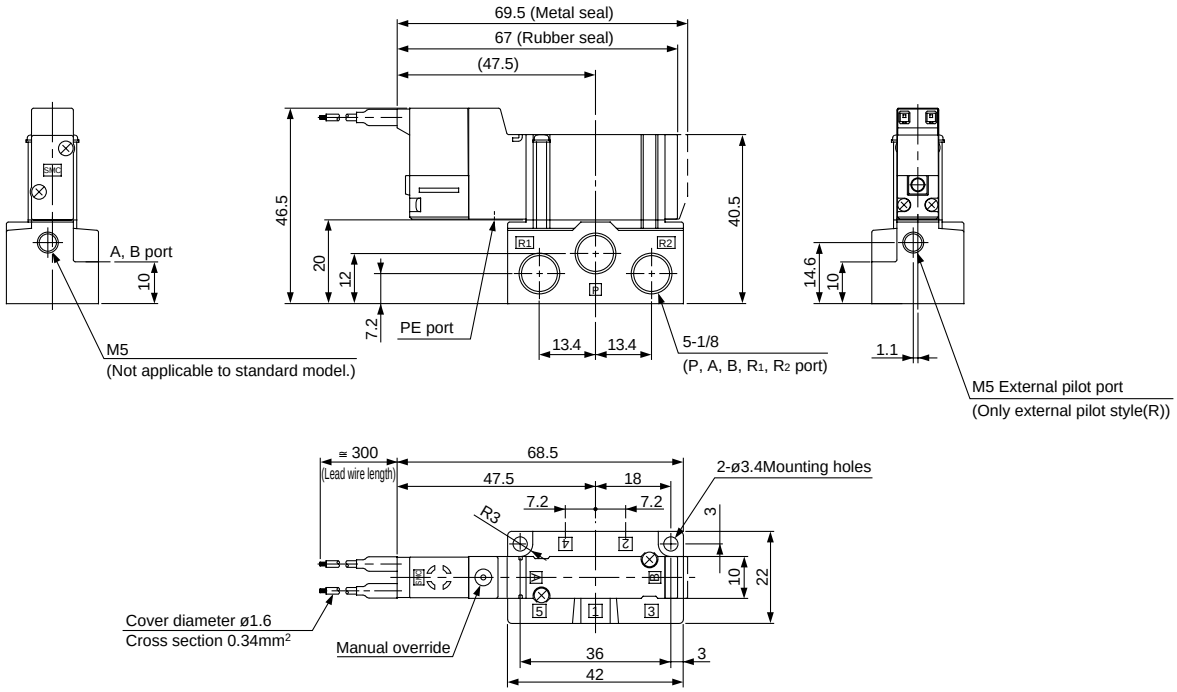
Component Parts

No.	Description	Meterial	Note
①	Body	Alminium die cast	
②	Spool/Sleeve	Stainless steel	Metal seal
	Spool valve	Aluminium/NBR	Rubber seal
③	Piston	Resin	
④	Pilot valve	–	

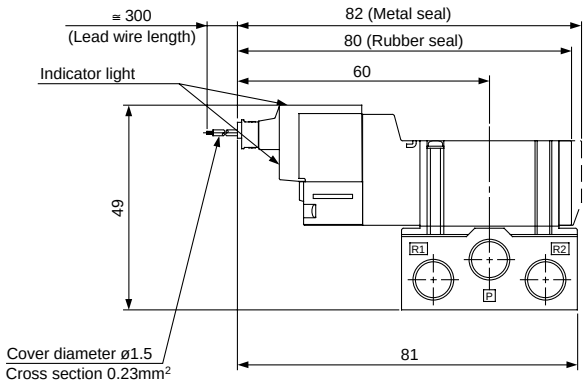
Dimensions: VQZ1000

2 position single

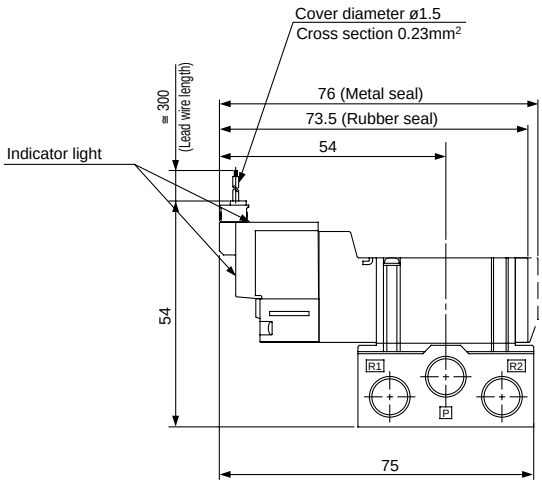
Grommet(G): VQZ115$^{0}_{1}$(R)–□G□–01-Q



L plug connector (L): VQZ115$^{0}_{1}$(R)–□L□–01 -Q



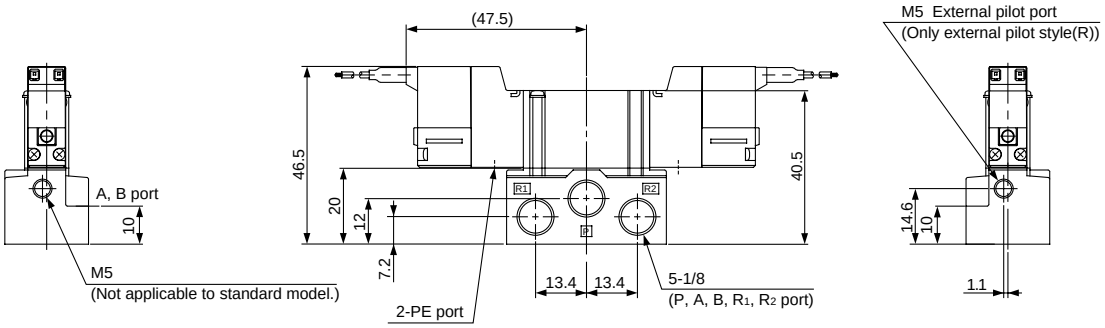
M plug connector (M): VQZ115$^{0}_{1}$(R)–□M□–01 -Q

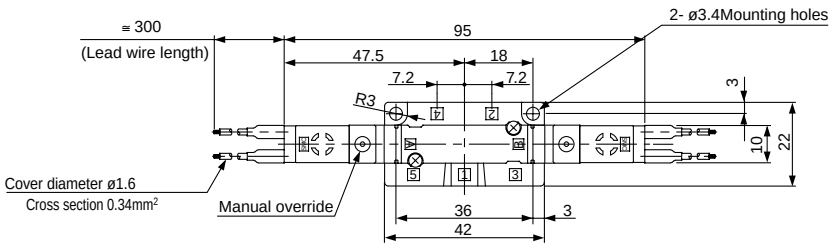


Dimensions: VQZ1000

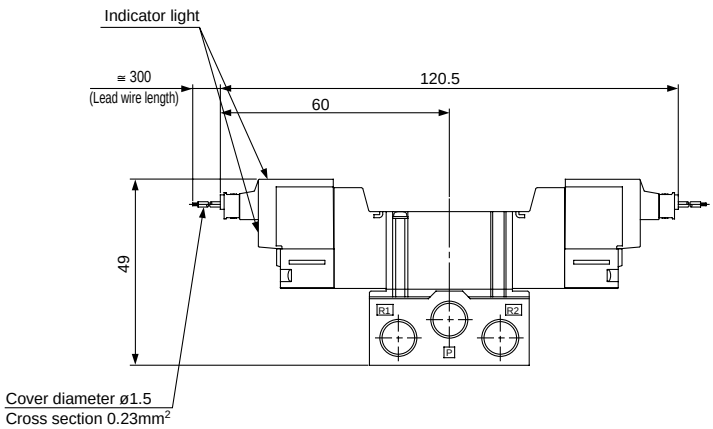
2 position double

Grommet(G): VQZ125$^{0}_{1}$(R)–□G□–01 -Q

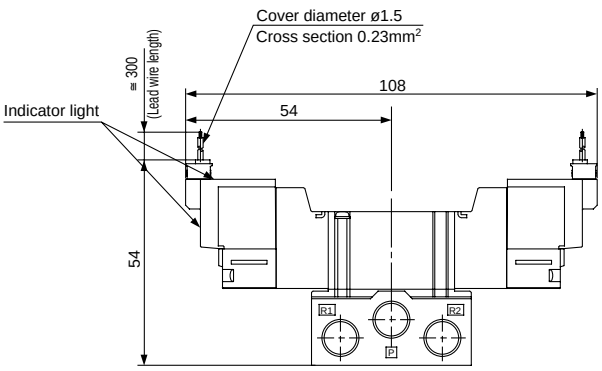




L plug connector (L): VQZ125$^{0}_{1}$(R)–□L□–01 -Q



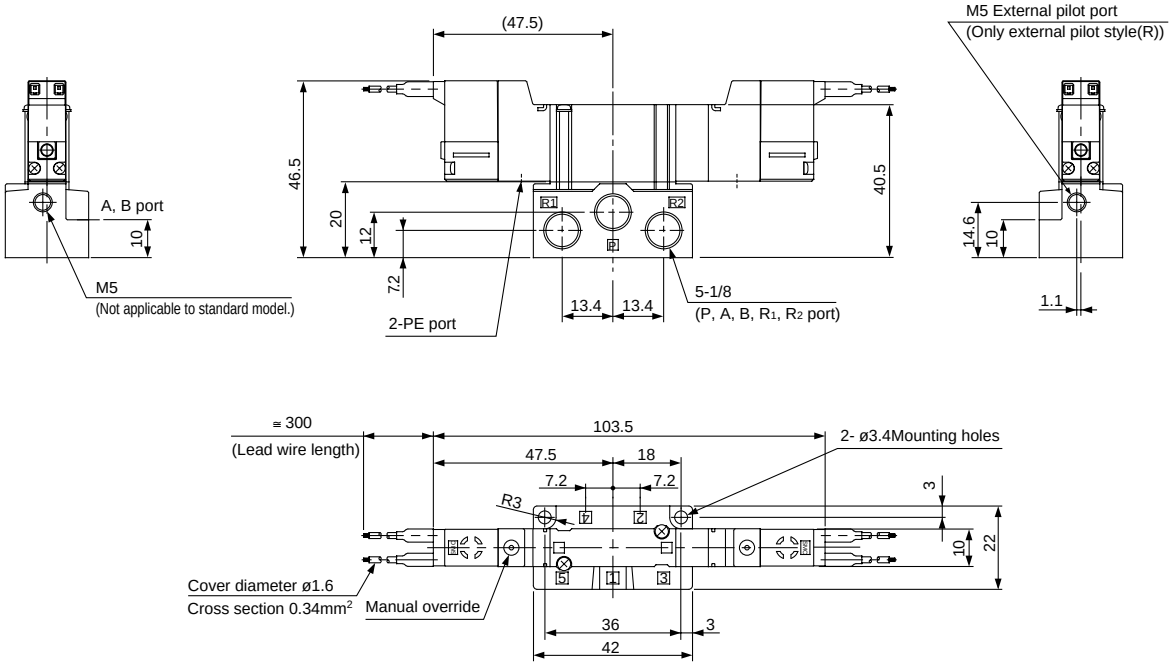
M plug connector (M): VQZ125$^{0}_{1}$(R)–□M□–01 -Q



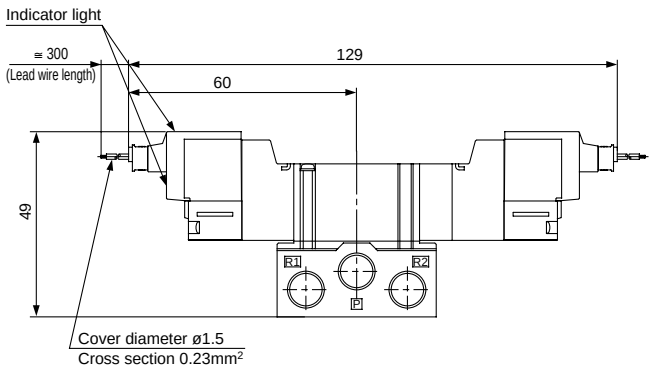
VQZ1000

3 position closed centre/exhaust centre/pressure centre

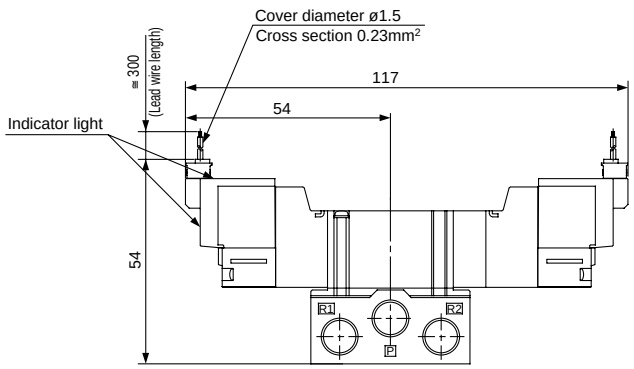
Grommet(G): VQZ1$^{3}_{4}_{5}$5$^{0}_{1}$(R)–□G□–01 -Q



L plug connector (L): VQZ1$^{3}_{4}_{5}$5$^{0}_{1}$(R)–□L□–01 -Q



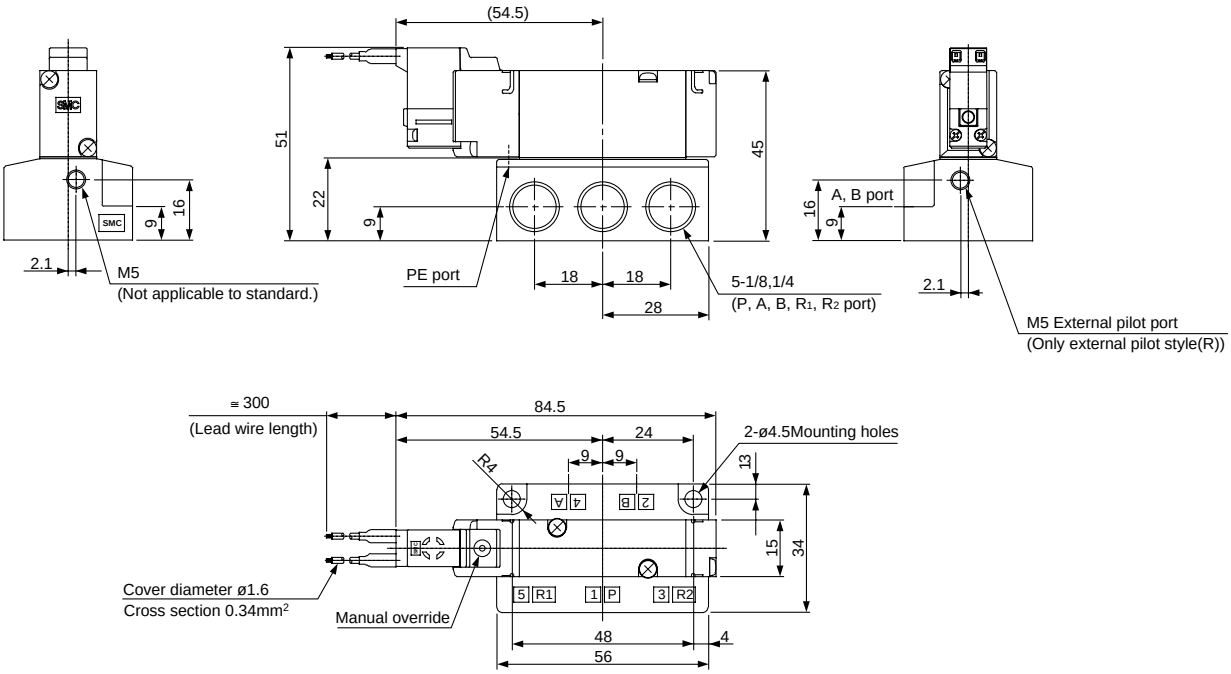
M plug connector (M): VQZ1$^{3}_{4}_{5}$5$^{0}_{1}$(R)–□M□–01 -Q



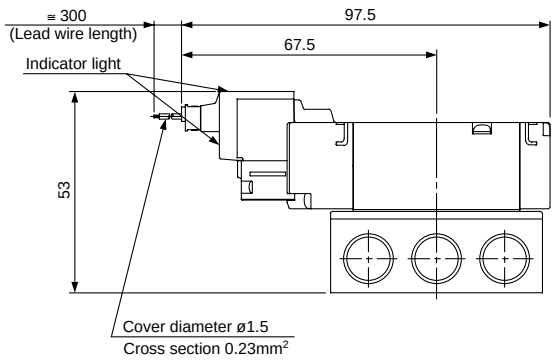
Dimensions: VQZ2000

2 position single

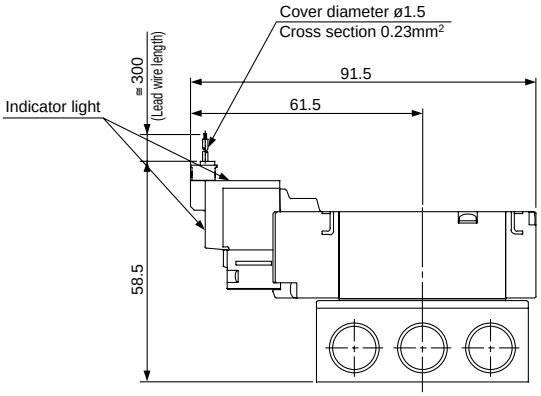
Grommet(G): VQZ215 $^{0}_{1}$(R)–□G□–$^{01}_{02}$ -Q



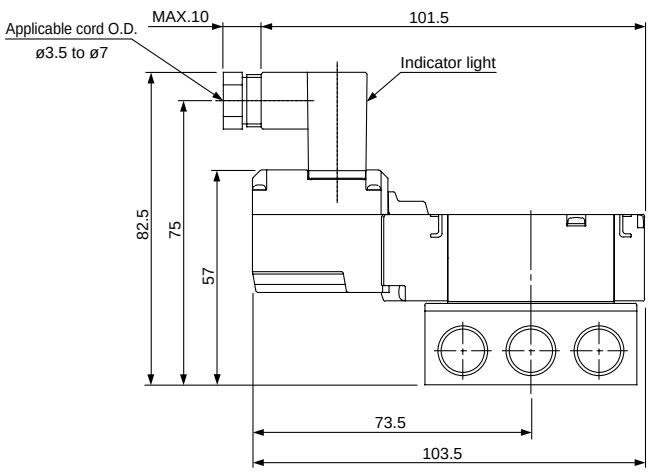
L plug connector (L): VQZ215 $^{0}_{1}$(R)–□L□–$^{01}_{02}$ -Q



M plug connector (M): VQZ215 $^{0}_{1}$(R)–□M□–$^{01}_{02}$ -Q



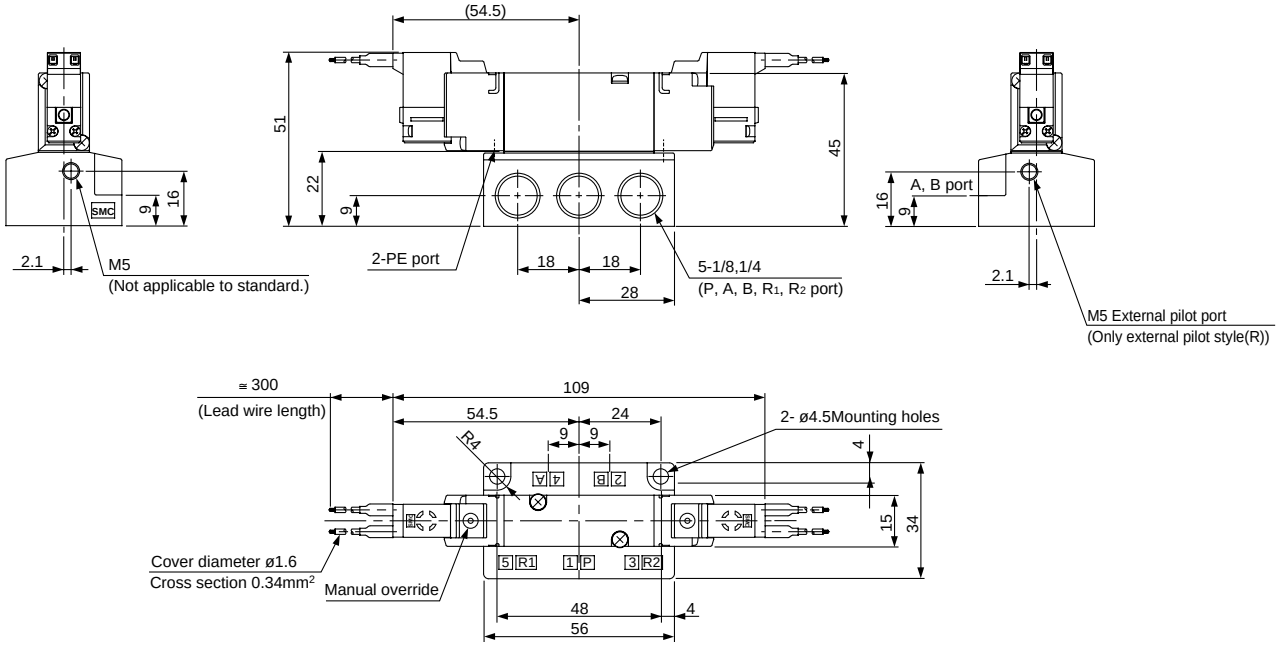
DIN connector (Y): VQZ215 $^{0}_{1}$(R)–□Y□–$^{01}_{02}$ -Q



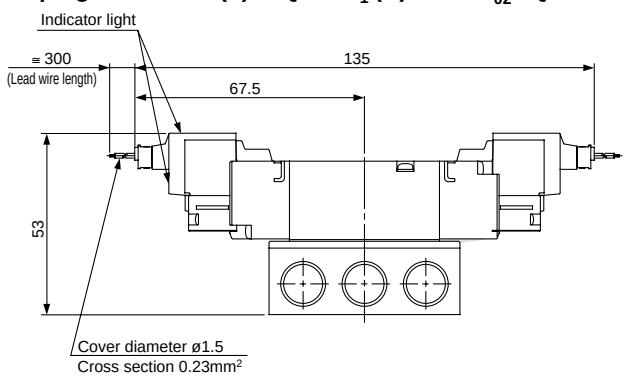
VQZ2000

2 position double

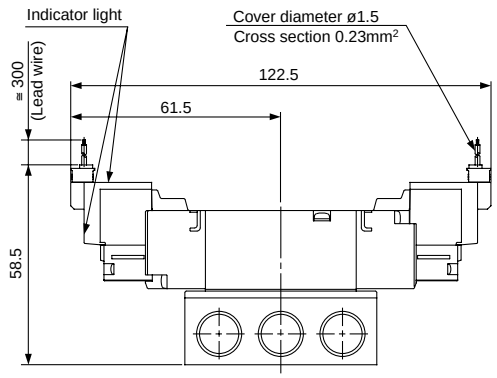
Grommet(G): VQZ225 $^{0}_{1}$ (R)–□G□–$^{01}_{02}$ -Q



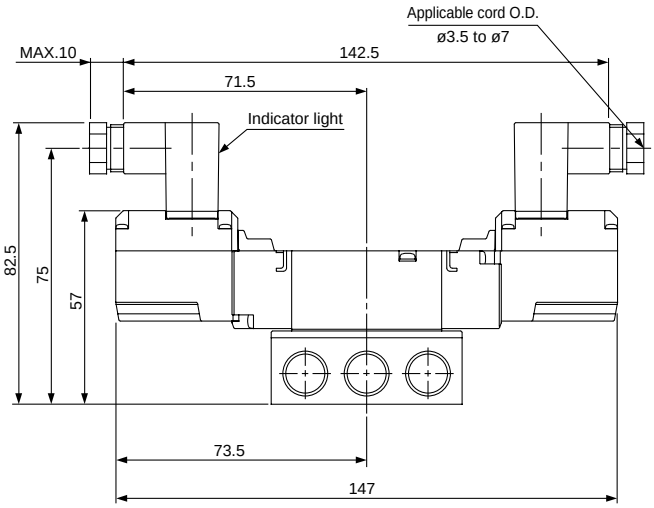
L plug connector (L): VQZ225 $^{0}_{1}$ (R)–□L□–$^{01}_{02}$ –Q



M plug connector (M): VQZ225 $^{0}_{1}$ (R)–□M□–$^{01}_{02}$–Q



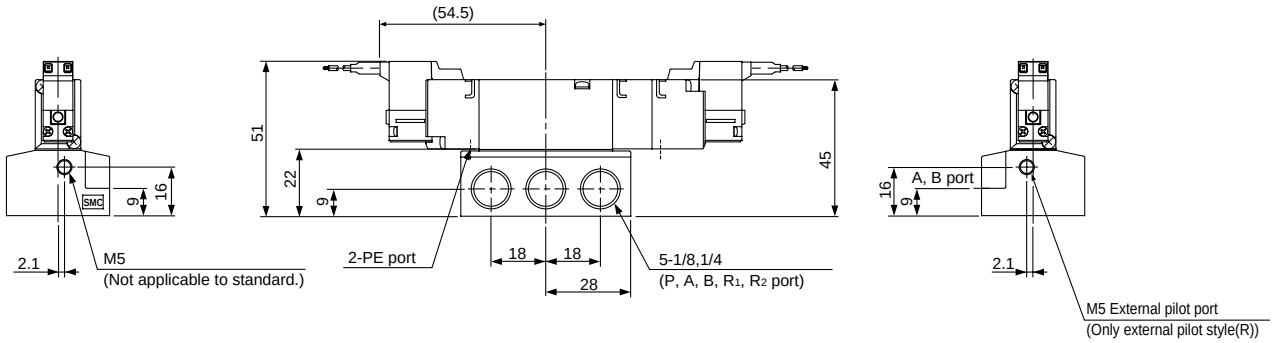
DIN connector (Y): VQZ225 $^{0}_{1}$ (R)–□Y□–$^{01}_{02}$ –Q

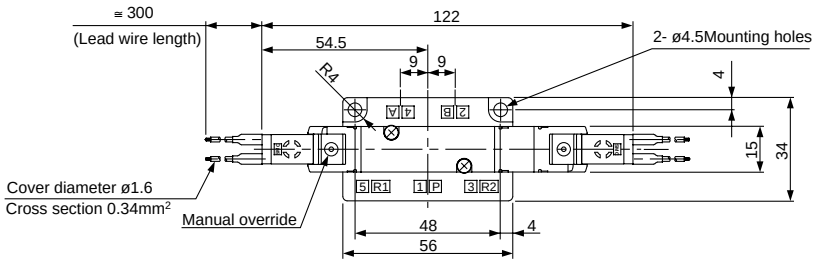


Dimensions: VQZ2000

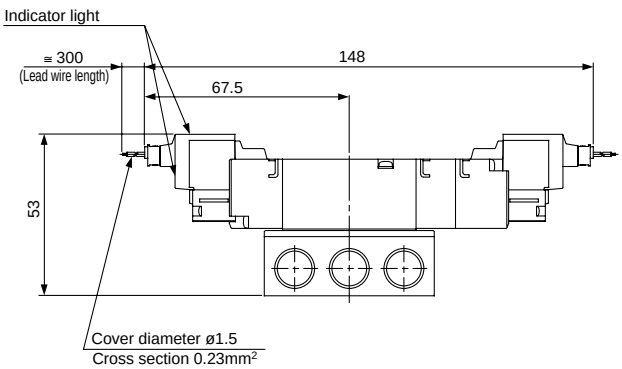
3 position closed centre/exhaust centre/pressure centre

Grommet(G): VQZ2$^{3}_{4}_{5}$5$^{0}_{1}$(R)–□G□–$^{01}_{02}$–Q

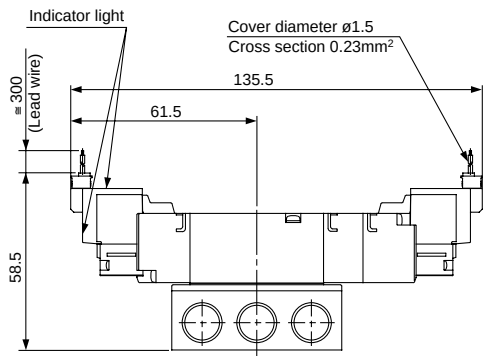




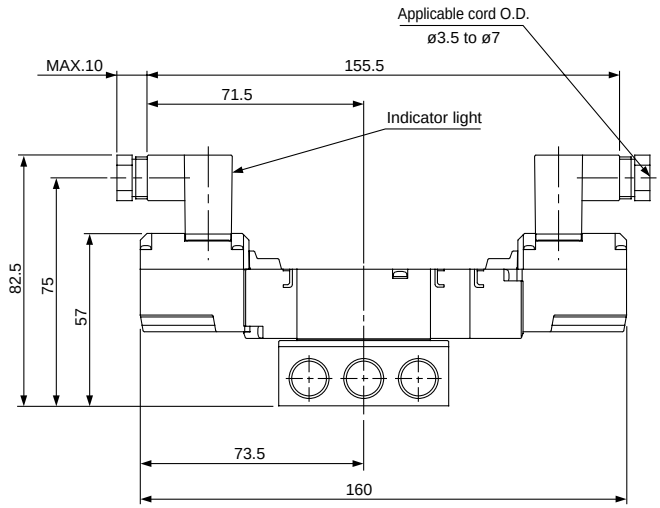
L plug connector (L): VQZ2$^{3}_{4}_{5}$5$^{0}_{1}$(R)–□L□–$^{01}_{02}$–Q



M plug connector (M): VQZ2$^{3}_{4}_{5}$5$^{0}_{1}$(R)–□M□–$^{01}_{02}$–Q



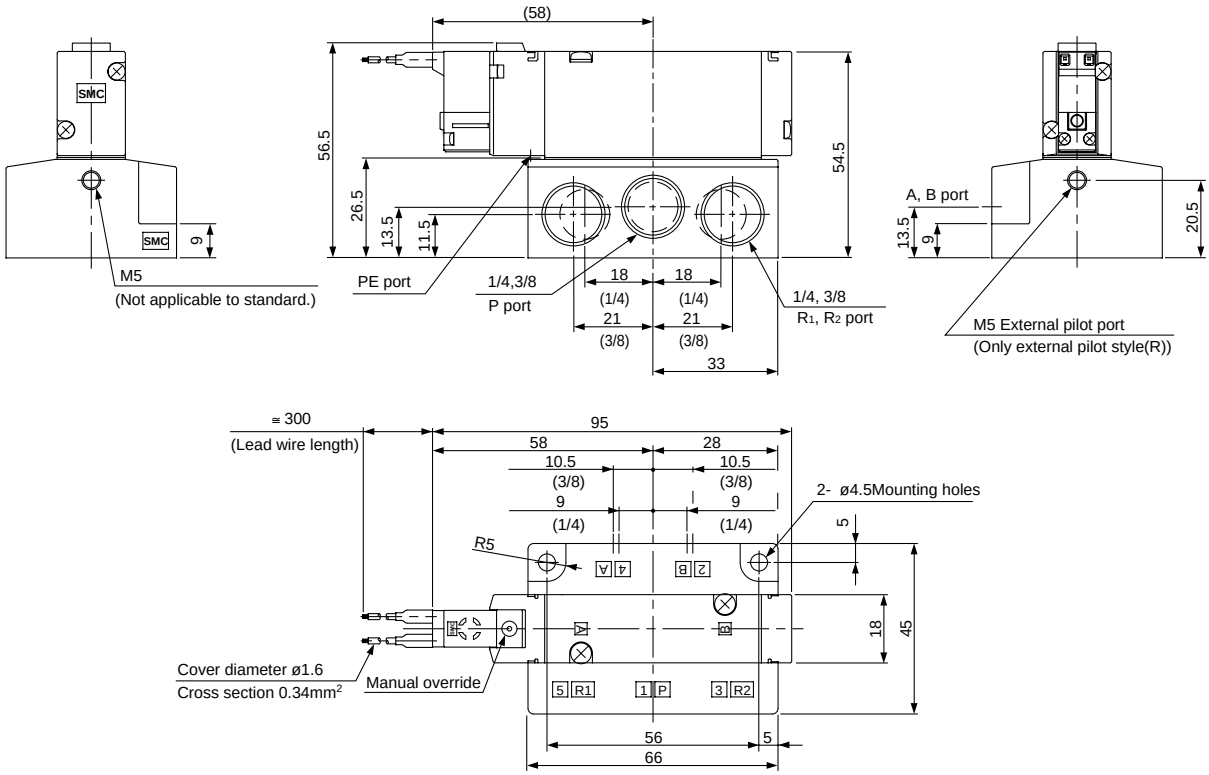
DIN connector (Y): VQZ2$^{3}_{4}_{5}$5$^{0}_{1}$(R)–□Y□–$^{01}_{02}$–Q



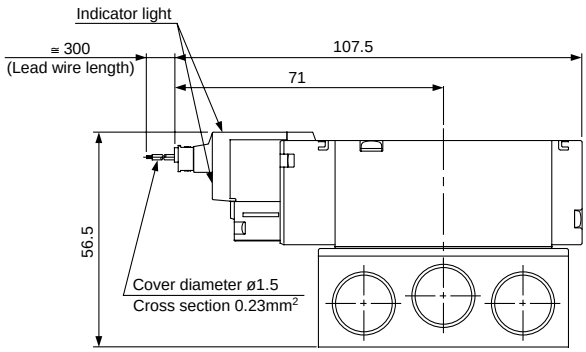
VQZ3000

2 position single

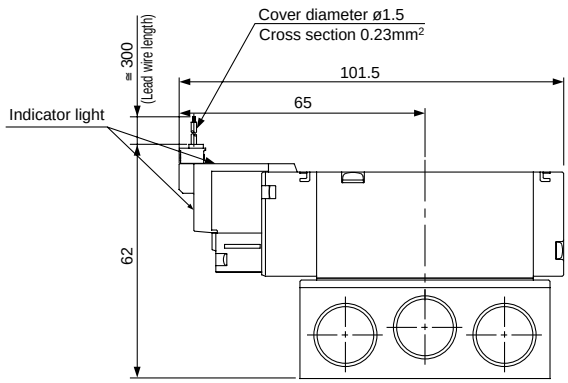
Grommet(G): VQZ315 $^{0}_{1}$(R)–□G□–$^{02}_{03}$–Q



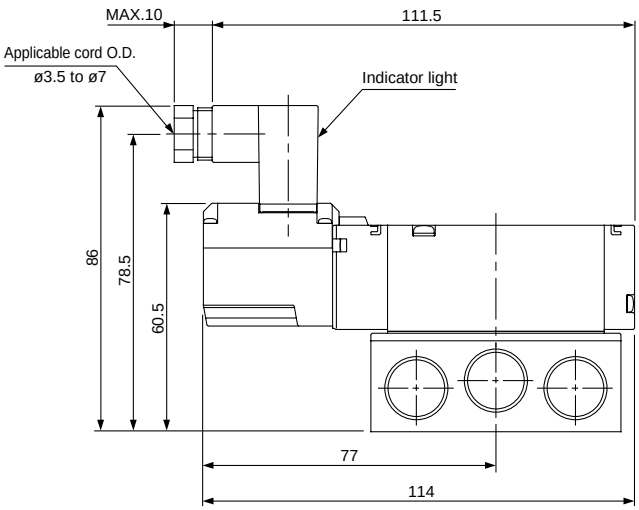
L plug connector (L): VQZ315 $^{0}_{1}$(R)–□L□–$^{02}_{03}$–Q



M plug connector (M): VQZ315 $^{0}_{1}$(R)–□M□–$^{02}_{03}$–Q



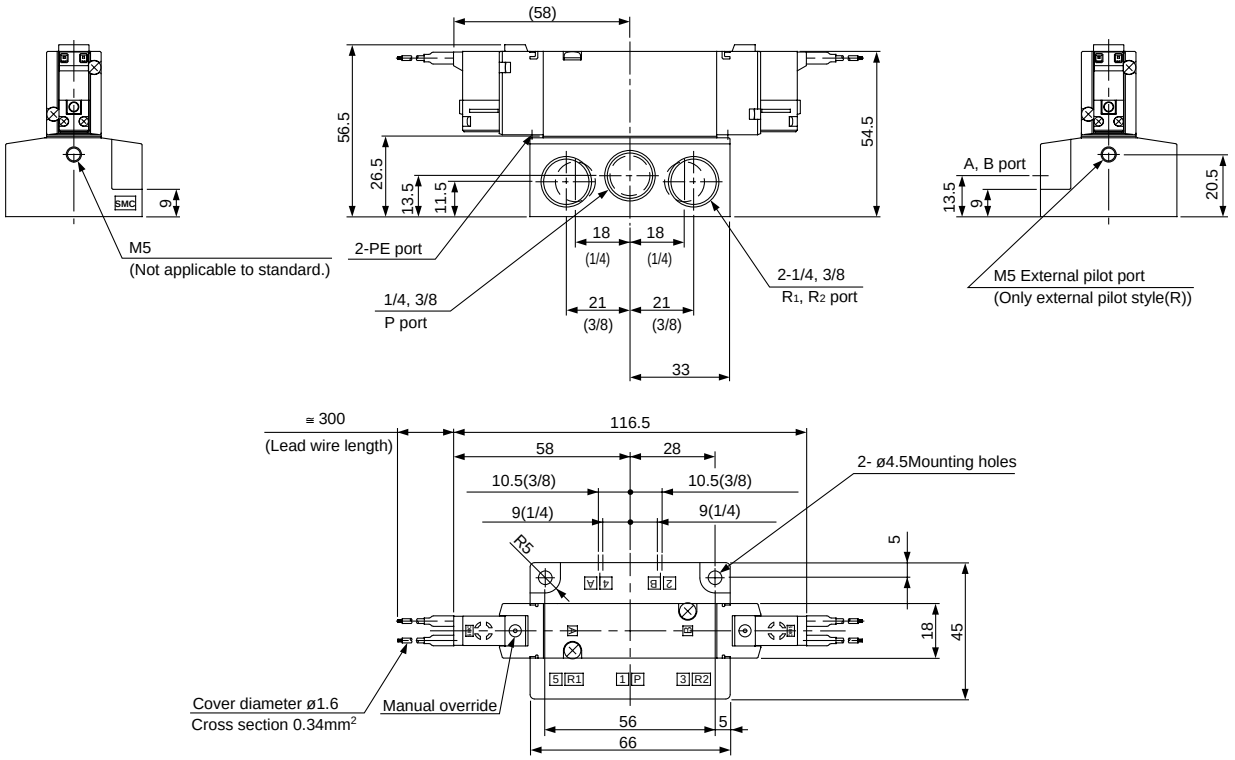
DIN connector (Y): VQZ315 $^{0}_{1}$(R)–□Y□–$^{02}_{03}$–Q



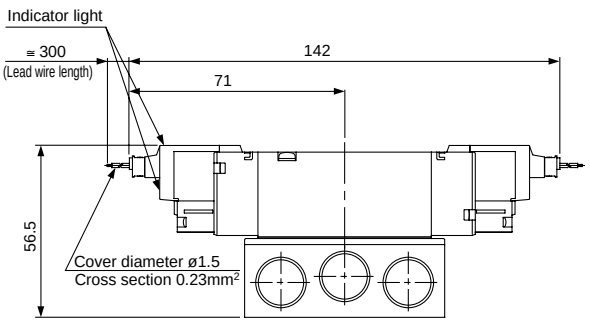
Dimensions: VQZ3000

2 position double

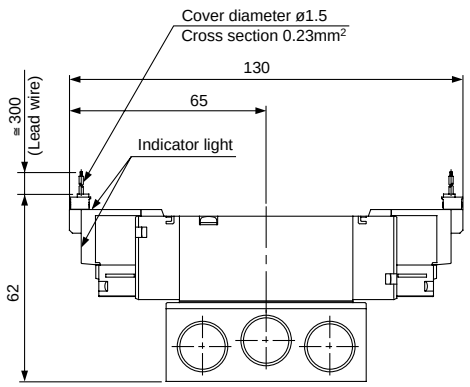
Grommet(G): VQZ325 $^{0}_{1}$(R)–□G□–$^{02}_{03}$–Q



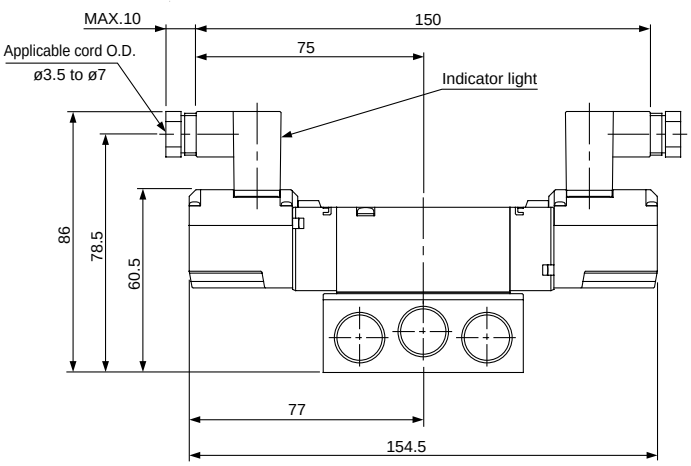
L plug connector (L): VQZ325 $^{0}_{1}$(R)–□L□–$^{02}_{03}$–Q



M plug connector (M): VQZ325 $^{0}_{1}$(R)–□M□–$^{02}_{03}$–Q



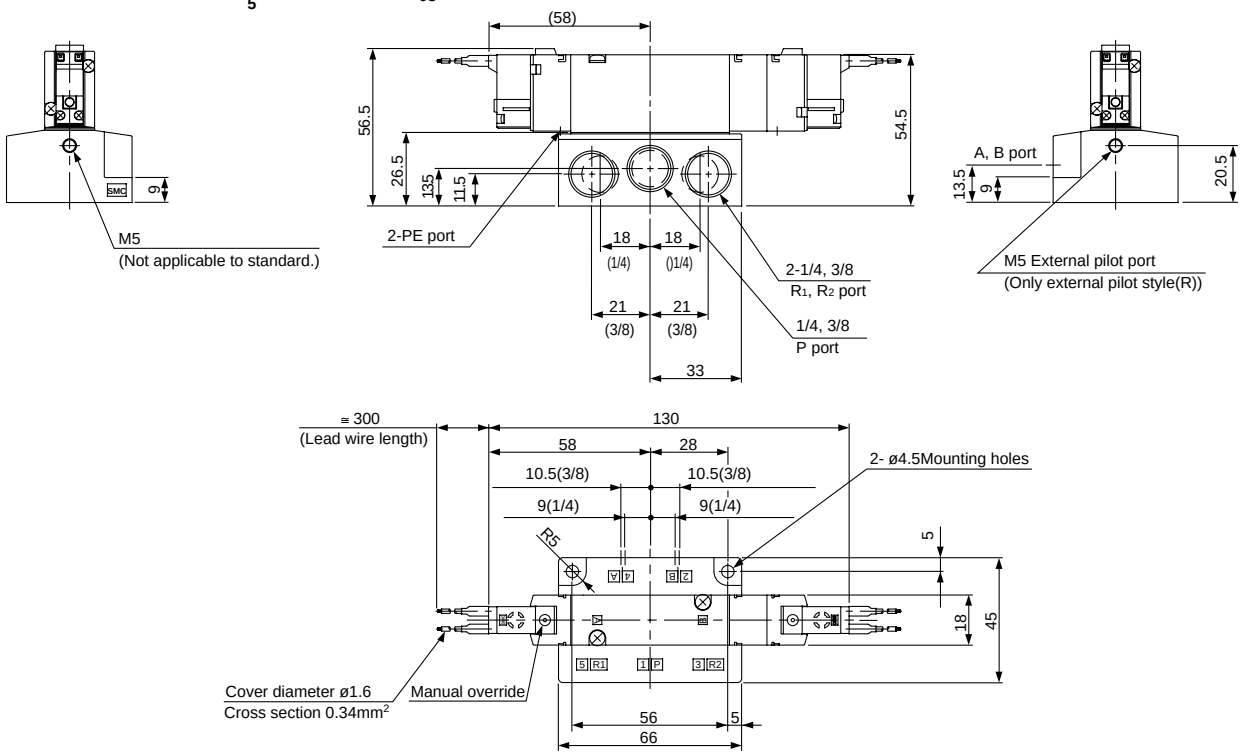
DIN connector (Y): VQZ325 $^{0}_{1}$(R)–□Y□–$^{02}_{03}$–Q



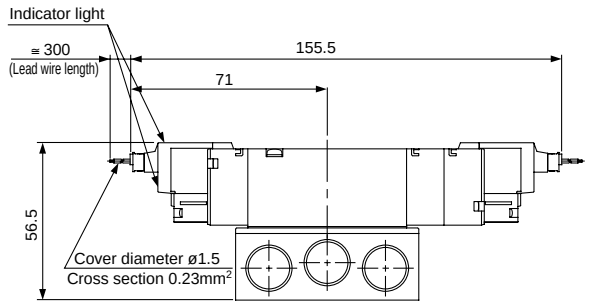
VQZ3000

3 position closed centre/exhaust centre/pressure centre

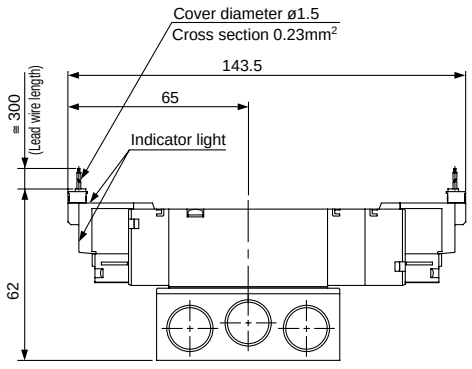
Grommet(G): VQZ3 $^{3}_{4}_{5}$ 5^{0}_{1} (R)–□G□–$^{02}_{03}$–Q



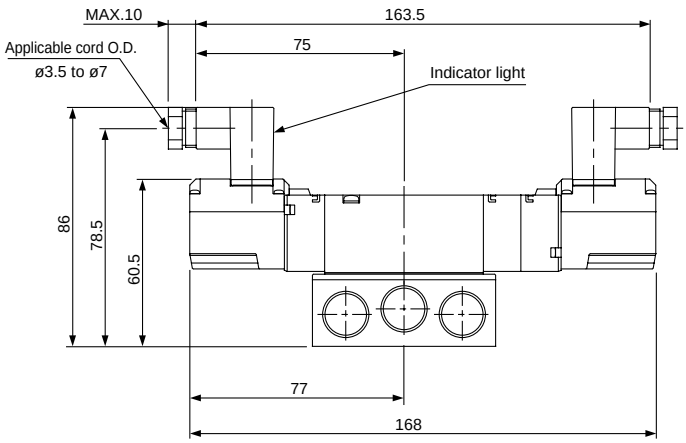
L plug connector (L): VQZ3 $^{3}_{4}_{5}$ 5^{0}_{1} (R)–□L□–$^{02}_{03}$–Q



M plug connector (M): VQZ3 $^{3}_{4}_{5}$ 5^{0}_{1} (R)–□M□–$^{02}_{03}$–Q



DIN connector (Y): VQZ3 $^{3}_{4}_{5}$ 5^{0}_{1} (R)–□Y□–$^{02}_{03}$–Q



Base Mounted

Plug Lead Unit

5 Port Solenoid Valve

VQZ1000/2000/3000

Manifold Connector Kit

How to Order Manifold

VV5QZ [1] [5] — [08] [C6] [ ] — [C] — [N] — Q

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	○	–	–
01	1/8	–	○	–
02	1/4	–	–	○
CM(1)	Mixture of port sizes	○	○	○
N1	One-touch fitting for ø1/8	○	–	–
N3	One-touch fitting for ø5/32	○	○	–
N7	One-touch fitting for ø1/4	○	○	○
N9	One-touch fitting for ø5/16	–	○	○
N11	One-touch fitting for ø3/8	–	–	○
NM(1)	Mixed size	○	○	○
M5T	10-32 UNF thread	○	–	–

Thread

—	Rc (PT)
N	NPT
T	NPTF
F	G (PF)

Note 1) When ordering port mixture and/or with port plug, suffix it in manifold specifications. Port mixture and port plug are available only for One-touch type.
Note 2) Refer to p.1.14-58 for inch size and One-touch fitting.

Kit

C	Connector

Options

—	None
D	DIN rail mounting (DIN rail standard length)
DO(1)	DIN rail mounting (Without DIN rail)
N (2)	With name plate
R	External pilot

Note 1)Order DIN rail separately.
Note 2)Applicable to VQZ2000 and 3000.

How to Order Valve

VQZ [1] [1] [5] [1] [ ] — [5] [M] [ ] — Q

Series

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

Configuration

1	2 position single
2	2 position double
3	3 position closed centre
4	3 position exhaust centre
5(1)	3 position pressure centre
8	3 port for mixture mounting N.C.
9	3 port for mixture mounting N.O.

Note 1) Except VQZ1000 and metal seal type.

Body

5	Base mounted

Seal

0	Metal seal
1	Rubber seal

Function

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

Note 1) Option
Note 2) Refer to p.1.14-58 for details about external pilot specification
Note 3) Refer to p.1.14-35 for power consumption of AC type.
Note 4) When specifying more than one option, indicate them alphabetically.

Coil voltage

1*	100V AC (50/60Hz)
3*	110V AC (50/60Hz)
5	24V DC
6	12V DC
9	Others less than 50VDC, 250VCA

*DIN only

Order Made Contact SMC for other voltages (9)

Protective class
class I (Mark: ⏚)..... DIN terminal type

Protective class
class III (Mark: ◇)..... Grommet, L and M plug connector

Manual override

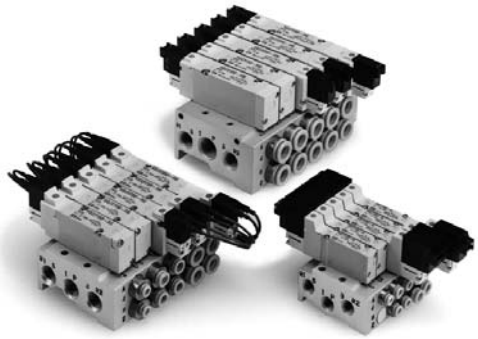
—	Non-locking push style (Flush)
B	Locking style (Slotted)

Electrical entry

Symbol	Electrical entry	Light and surge voltage supressor
G	Grommet (DC specification)	Without
L	L plug connector with lead wire	With
LO	L plug terminal w/o connector	
M	M plug connector with lead wire	
MO	M plug terminal w/o connector	
Y (1)	DIN connector	Without
YO(1)	DIN terminal without connector	
YZ(1)	DIN connector	With
YOS(1)	DIN terminal without connector	With (w/o light)

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

SMC

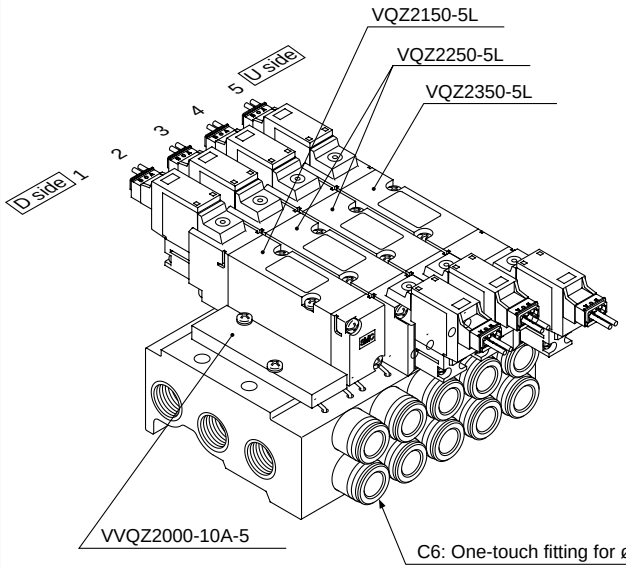


Manifold Specifications

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

Note 1) Threaded port.

How to Order Valve Manifold Assembly (Example)



VV5QZ25–05C6C-Q……1 set (C kit 5 stations manifold base)
∗VVQZ2000–10A-5-Q…1 set (Blank plate assembly)
∗VQZ2150–5L-Q ……1 set (Valve P/N – single solenoid)
∗VQZ2250–5L-Q ……2 set (Valve P/N – double solenoid)
∗VQZ2350–5L-Q ……1 set (Valve P/N – 3 position)

Prefix "∗" mark to valves etc. to be assembled on the manifold.

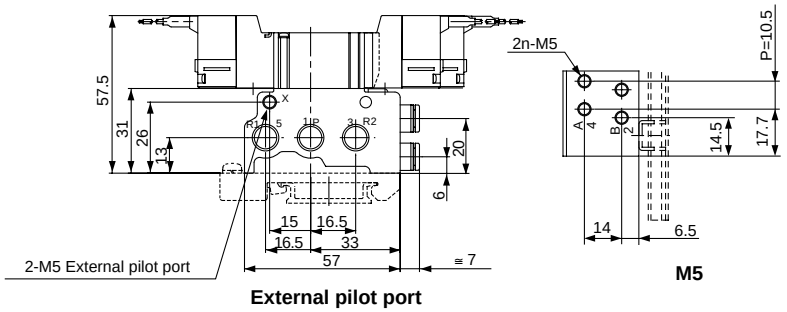
Write sequentially from the 1st station on the D side.

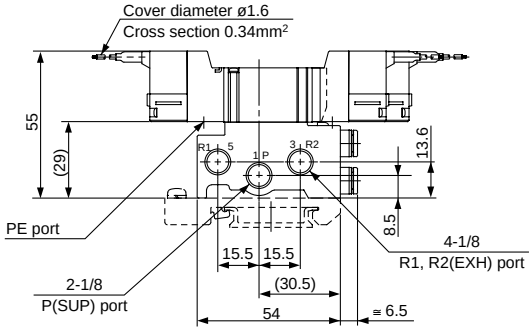
Add valve suffix and option numbers to the manifold base number.
When part numbers written collectively are complicated, specify by using a manifold specification form.

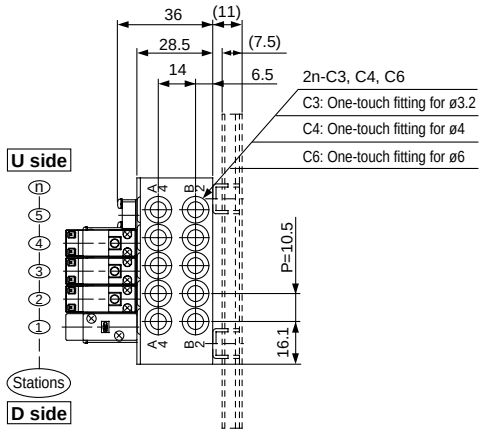
Dimensions: VQZ1000

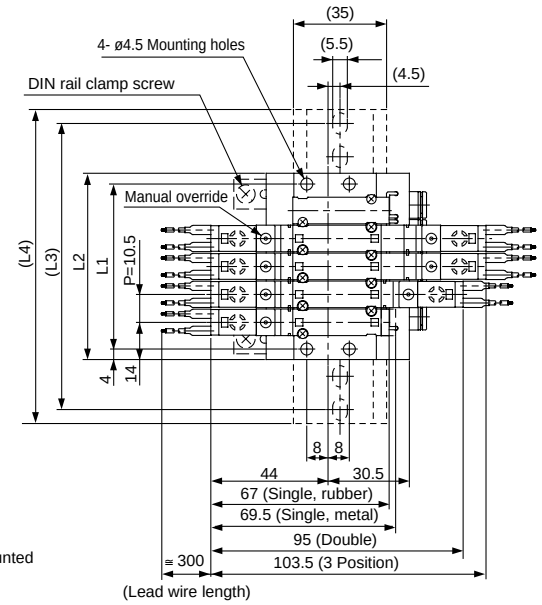
VV5QZ15– Station Port size C–Q

Grommet (G)



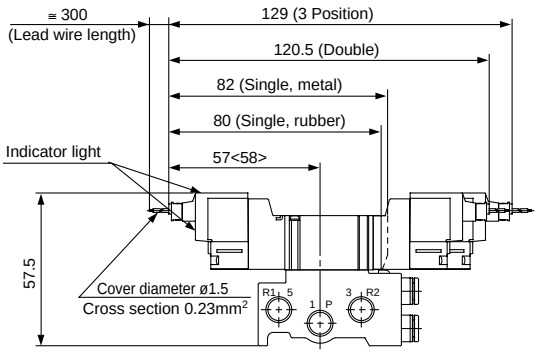




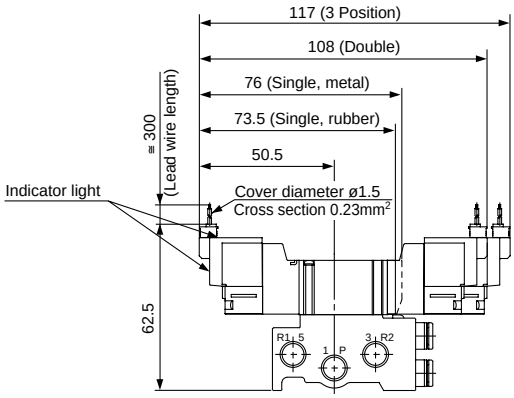


The broken line indicate DIN rail mounted style [-D].

L plug connector (L)



M plug connector (M)



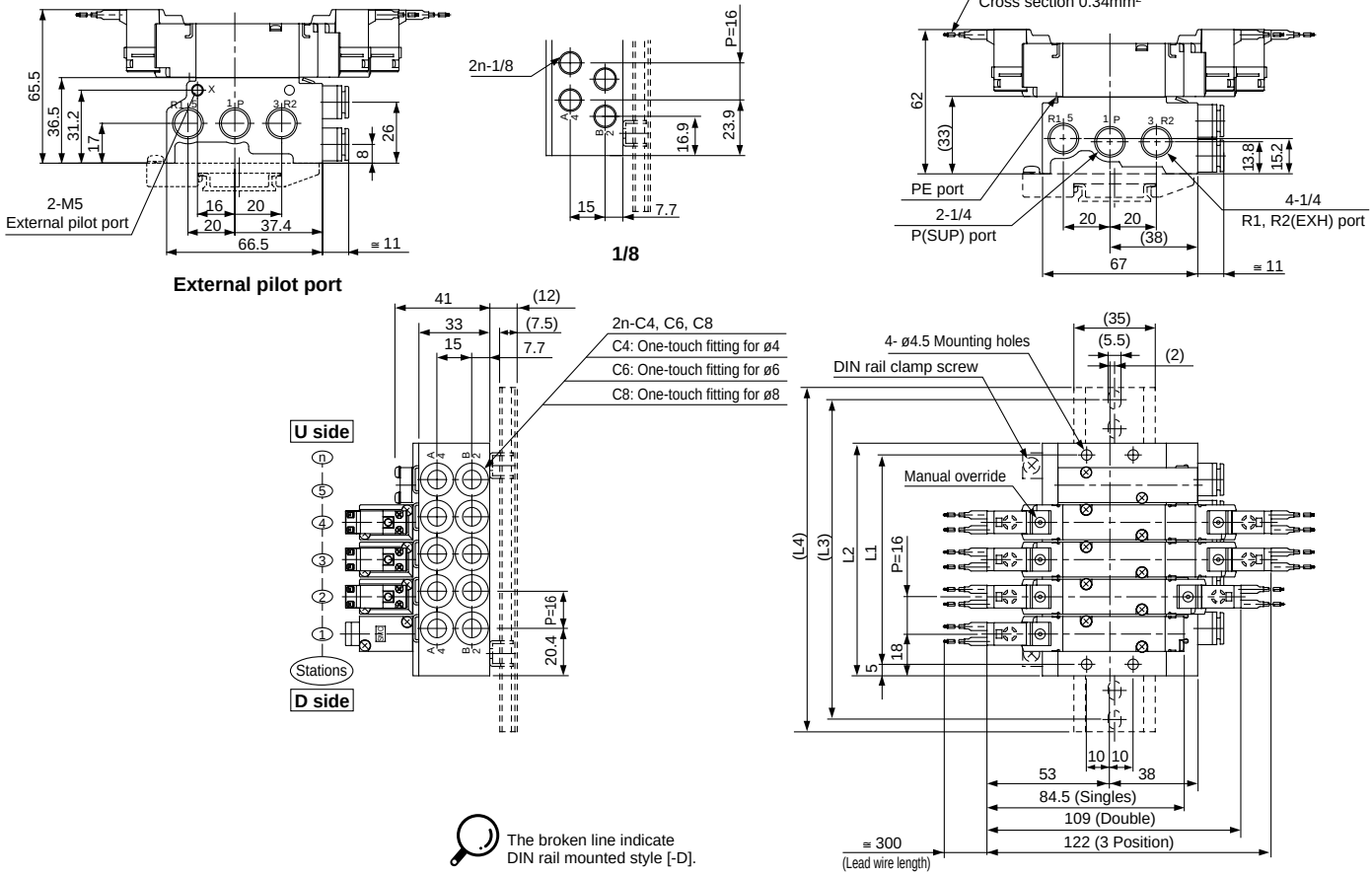
Dimensions Equation L1=10.5n+9.5 L2=10.5n+17.5 n: Station (Max. 20 stations)

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

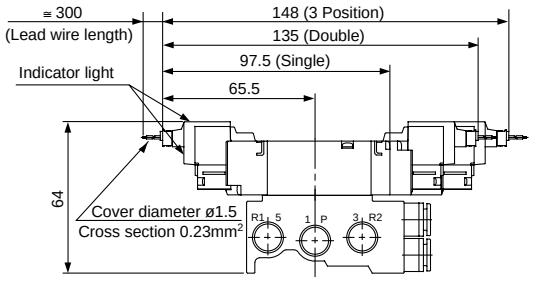
VQZ2000

VV5QZ25– Station Port size C–Q

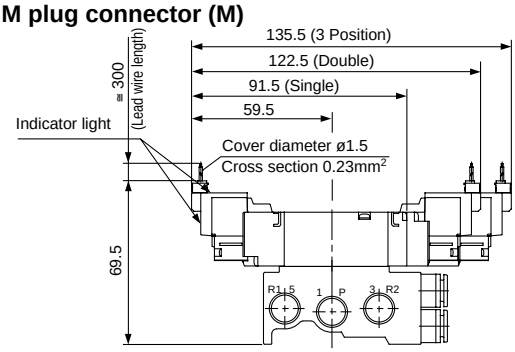
Grommet (G)



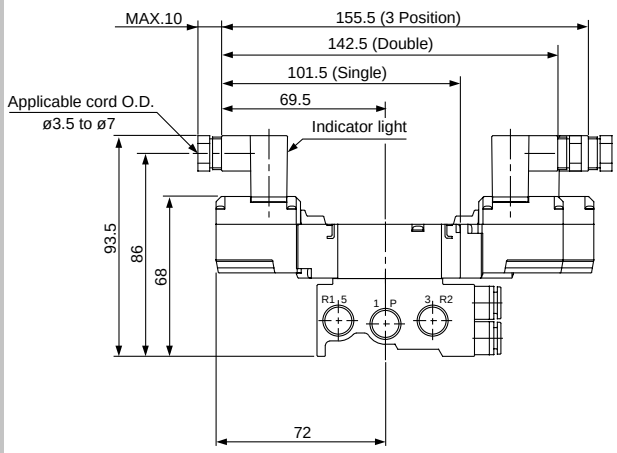
L plug connector (L)



M plug connector (M)



DIN connector (Y)



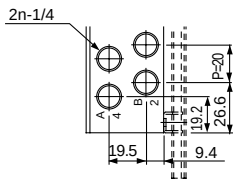
Dimensions Equation L1=16n+10 L2=16n+20 n: Station (Max. 20 stations)

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

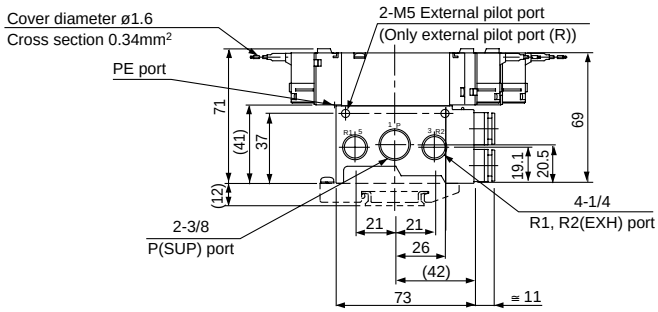
Dimensions: VQZ3000

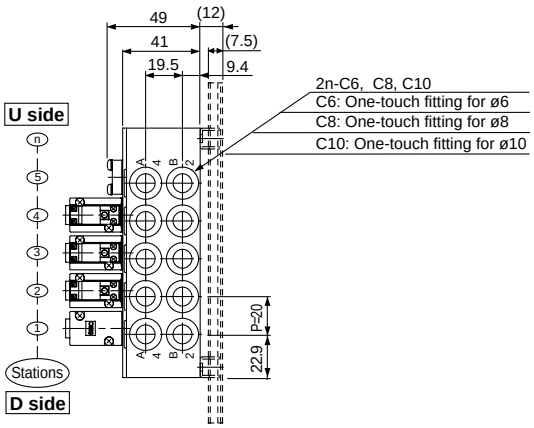
VV5QZ25C– Stations Port size C–Q

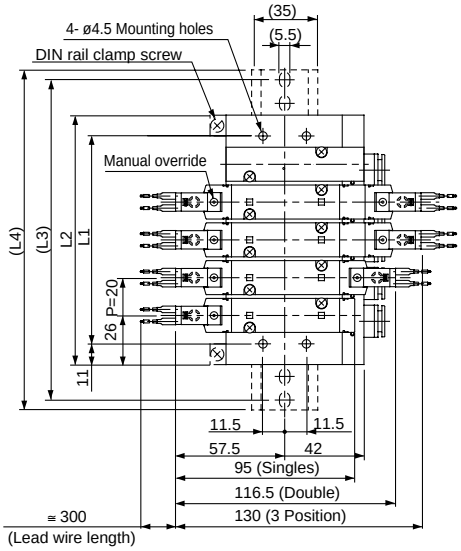
Grommet (G)



1/4

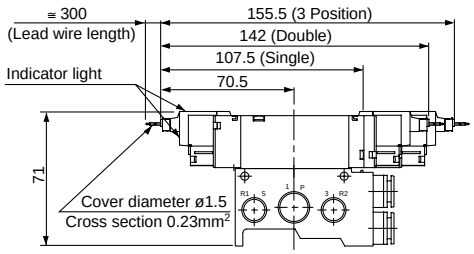




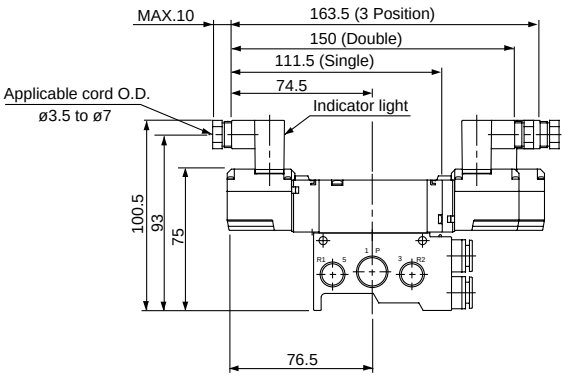


The broken line indicate DIN rail mounted style[-D].

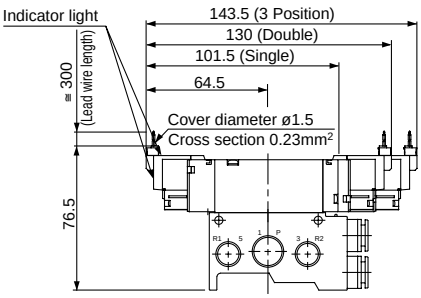
L plug connector (L)



DIN connector (Y)



M plug connector (M)



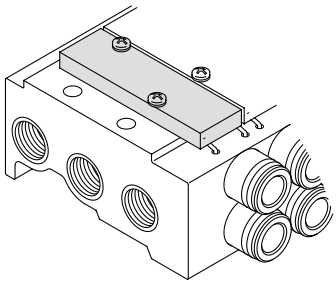
Dimensions Equation L1=20n+10 L2=20n+32 n: Station (Max. 20 stations)

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

Manifold Option

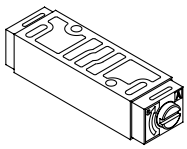
Blank plate assembly
VVQZ1000-10A-5
VVQZ2000-10A-5
VVQZ3000-10A-5

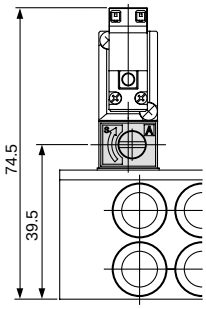
This is used when removing the valve for maintenance, or reserving a valve mounting space on the manifold for future use.



Interface speed control (For VQZ2000 only)
VVQZ2000-20A-5

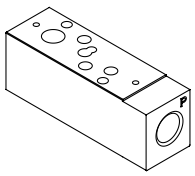
Actuator speed is controlled by throttling exhaust air flow.

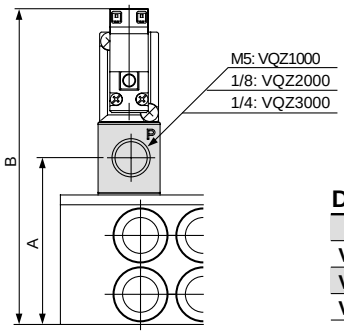




Individual SUP spacer
VVQZ1000-P-5-M5
VVQZ2000-P-5-01
VVQZ3000-P-5-02

Used to form a separate supply port for an interior manifold station or stations.



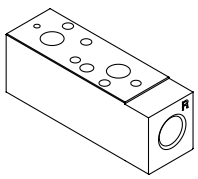


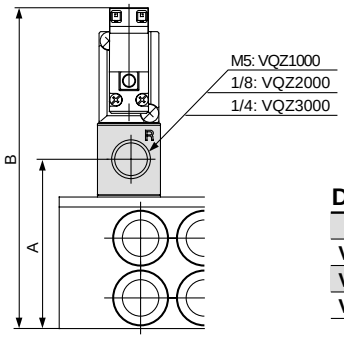
Dimensions

	A	B
VQZ1000	35	67
VQZ2000	43	81
VQZ3000	52	93

Individual EXH spacer
VVQZ1000-R-5-M5
VVQZ2000-R-5-01
VVQZ3000-R-5-02

Used to form a separate exhaust port for an interior manifold station or stations.



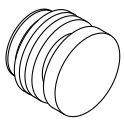


Dimensions

	A	B
VQZ1000	35	67
VQZ2000	43	81
VQZ3000	52	93

Port plug
VVQZ1000-CP
VVQZ2000-CP
VVQZ3000-CP

Used to block an unused cylinder port when using a 4 way valve as a 3 way valve.



Manifold Option

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

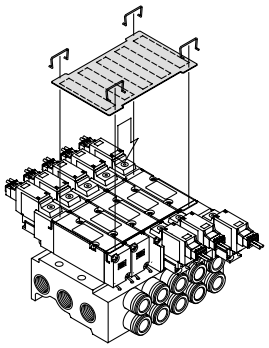
VVQZ2000-N5- Station

VVQZ3000-N5- Station

Transparent plastic plate to paste stickers on to identify the functions of each valve station.

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

∗ 4 clips are attached for name plate mounting.

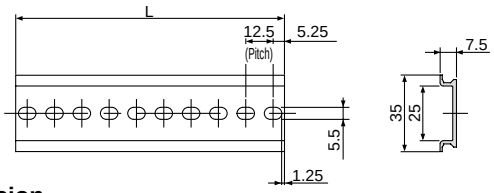


DIN rail

AXT100-DR-□

∗ Suffix the number from DIN rail dimensions table below. Refer to manifold dimension drawings for L dimension.

To order a manifold with DIN rail already attached, insert “D” at the end of the manifold part number. The DIN rail is approximately 30mm longer than the length of manifold.



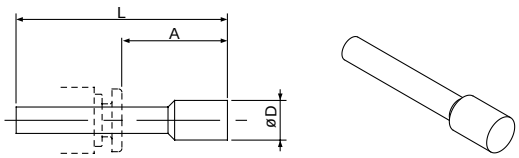
L dimension L=12.5n+10.5

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	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	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

Fitting blank plug

KQ2P-23
KQ2P-04
KQ2P-06
KQ2P-08
KQ2P-10

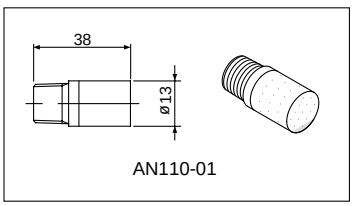


Dimensions (mm)

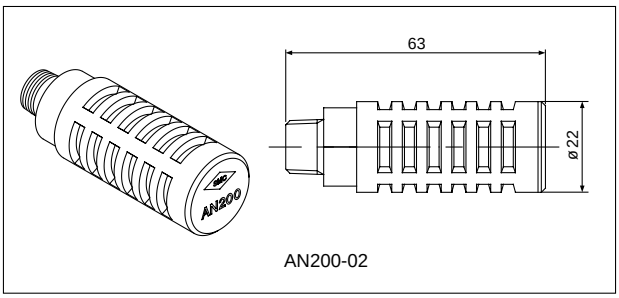
Applicable fitting ød	Part number	A	L	D
3.2	**KQ2P-23**	16	31.5	3.2
4	**KQ2P-04**	16	32	6
6	**KQ2P-06**	18	35	8
8	**KQ2P-08**	20.5	39	10
10	**KQ2P-10**	22	43	12

EXH port silencer

Silencer is installed in the EXH port.



AN110-01



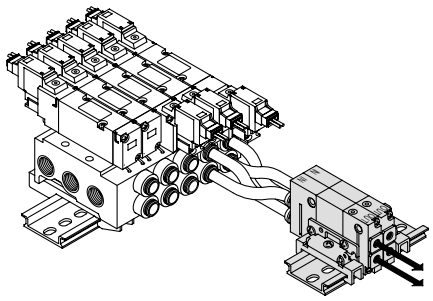
AN200-02

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

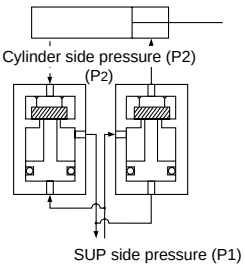
Manifold Option

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

Using a 3 position exhaust centre valve, this check block can stop and hold a cylinder in mid-stroke. 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 Operational Principles〉



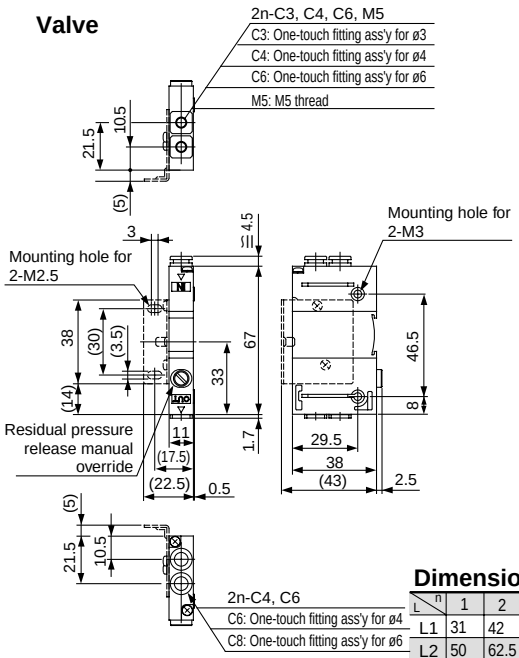
Specifications

Max. operating pressure	0.8MPa
Min. operating pressure	0.15MPa
Ambient and fluid temp.	–5 to 50°C
Effective area (Nℓ/min) (1)	2.7mm² (147)
Max. operating frequency	180 c.p.m

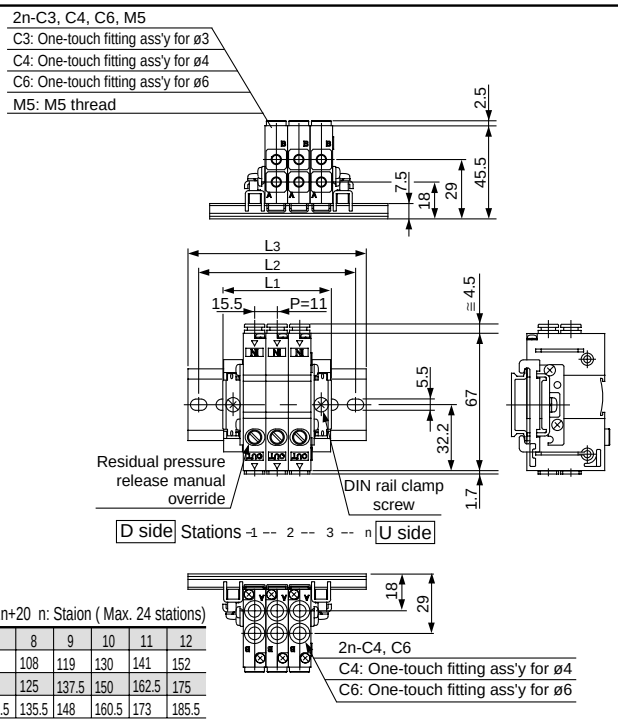
Note 1) As per JISB8375-1981
(Supply pressure: 0.5MPa)

Dimensions

Valve



Manifold



Dimensions Equation L1=11n+20 n: Staion (Max. 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	125	137.5	150	162.5	175
L3	60.5	73	85.5	98	110.5	123	135.5	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

How to Order

Double check block

VQ1000–FPG– C4 M5 – F

IN side port size

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

OUT side port size

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

Option

—	None
D	DIN rail mounted (for manifold)
F	With bracket
N	With name plate

Note) When specifying more than one symbol, indicate them alphabetically.
Ex.) -DN

Manifold

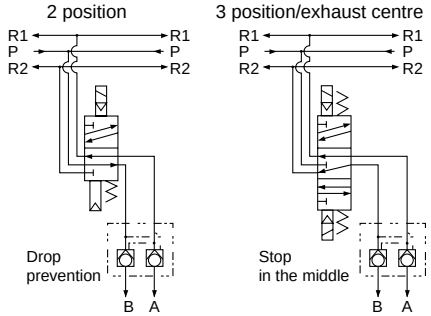
VVQ1000–FPG– 06

Stations

01	1 stations
⋮	⋮
16	16 stations

<Example>
VVQ1000–FPG–06 ⋯6 stations of manifold
＊VQ1000–FPG–C4M5-D, 3 sets
＊VQ1000–FPG–C6M5-D, 3 sets
} Double check block

<Examples>



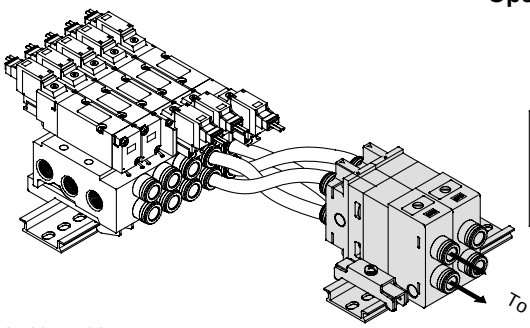
⚠Caution

- 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 seal and rod seal for leakage.
- Since slight air leakage from One-touch fittings is allowed, use of a piping screw (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- Combining double check block with 3 position closed centre or pressure centre solenoid valve will not work.
- A M5 fitting assembly is attached, without being incorporated in the double check block. After screwing in the fittings, mount the ass'y on the double check block. (Tightening torque: 0.8 to 1.2 Nm)
- If exhaust side of double check block is narrowed down so much, this decreases the intermediate stop accuracy.

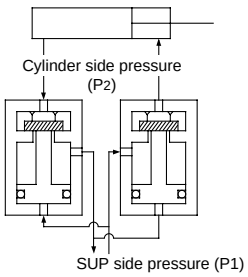
Manifold Option

Double check block (Externally placed downstream): For VQZ2000 only
VQ2000–FPG–□□–□

Using a 3 position exhaust centre valve, this check block can stop and hold a cylinder in mid-stroke. 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 Operational Principles〉



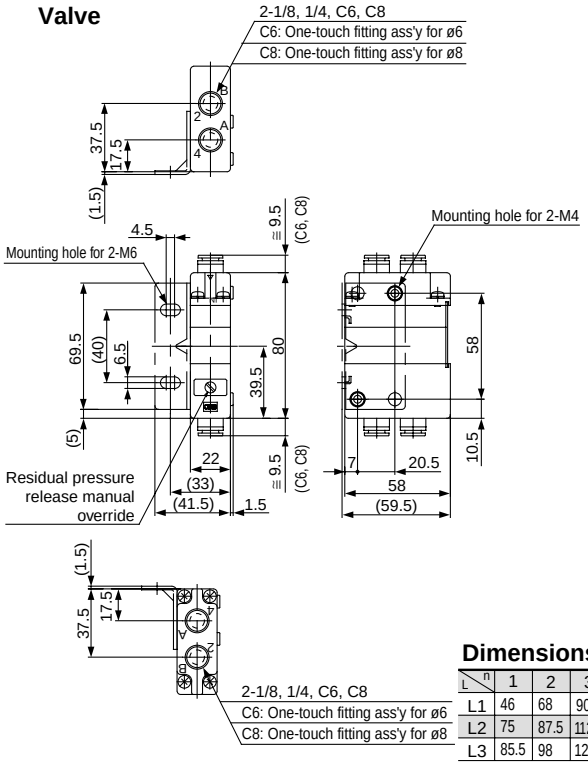
Specifications

Max. operating pressure	0.8MPa
Min. operating pressure	0.15MPa
Ambient and fluid temp.	–5 to 50°C
Effective area (Nℓ/min) (1)	18mm² (98)
Max. operating frequency	180 c.p.m

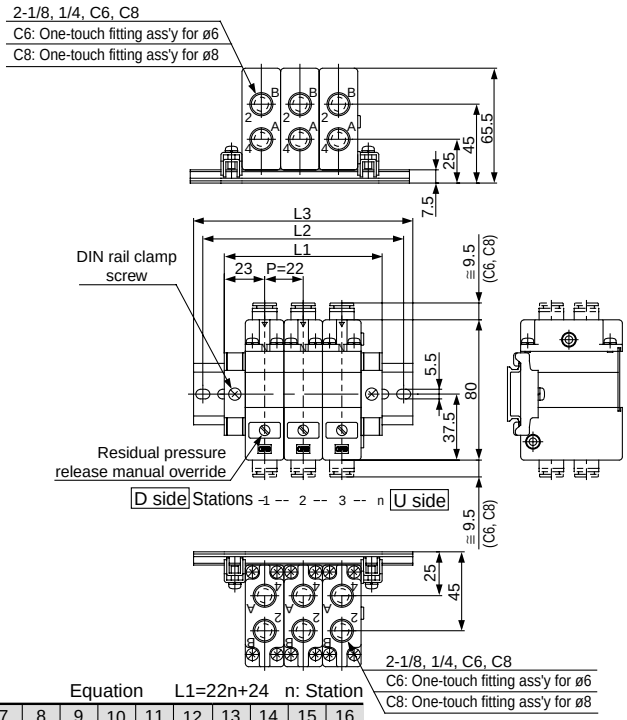
Note 1) As per JISB8375-1981
(Supply pressure: 0.5MPa)

Dimensions

Valve



Manifold



Dimensions Equation L1=22n+24 n: Station

L \ 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

VQ2000–FPG– **01** **01** **F**

IN side port size

01	1/8
02	1/4
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8

OUT side port size

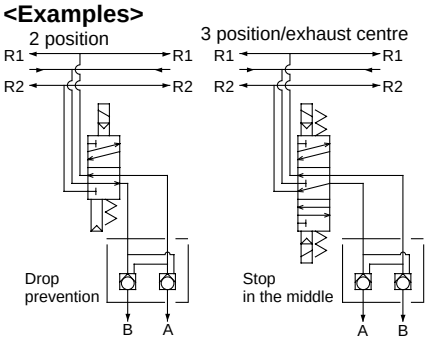
01	1/8
02	1/4
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8

Option

—	None
F	With bracket
D	DIN rail mounted (for manifold)
N	With name plate

Note) When specifying more than one symbol, indicate them alphabetically.
Ex.) –DN

<Examples>



Manifold

VVQ2000–FPG– **06**

Stations

01	1 stations
⋮	⋮
16	16 stations

<Example>
VVQ2000-FPG-06 ···6 stations of manifold
* VQ2000-FPG-C6C6-D; 3 sets
* VQ2000-FPG-C8C8-D; 3 sets
} Double check 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 seal and rod seal for leakage.
- Since slight air leakage from One-touch fittings is allowed, use of a piping screw (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- Combining perfect block with 3 position closed centre or pressure centre solenoid valve will not work.
- When screwing the fittings in the double check block, applied torque is as shown below:

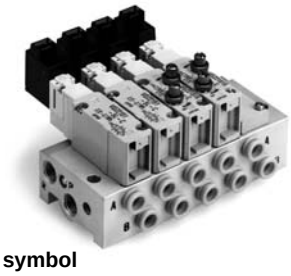
Thread	Torque Nm
1/8	7 to 9
1/4	12 to 14

- 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 so much, this decreases of the intermediate stop accuracy.

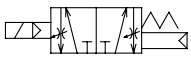
SMC

Compact Body Style with Built–in Speed Controller: For VQZ2000 Only

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

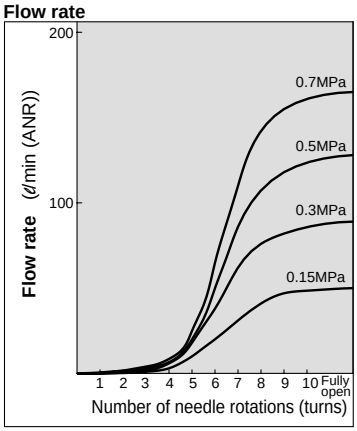


symbol



(Single)

Flow rate



Note 1) Valve with built-in speed controls is available on rubber seal models only.
Note 2) Compact body valves and standard valves are not interchangeable.
Compact valves cannot be mounted on a standard manifolds and vice versa.
Note 3) Tightening torque of needle valve lock nut shoud not exceed 0.3Nm.

Specifications

Number of solenoids		Model		(1) Effective area mm²(Nℓ/min)	Response time (ms)(2) Standard: 1W	High pressure: 1.0W Low wattage AC	(3) Weight (g)
2 Position	Single	Metal	VQZ2150–□–C–Q	2.7(147)	12 or less	15 or less	40
		Rubber	VQZ2151–□–C–Q	3.6(196)	15 or less	20 or less	
		Rubber w/ sp.controller	VQZ2151S–□–C–Q	2.2(117)	15 or less	20 or less	44
	Double	Metal	VQZ2250–□–C–Q	2.7(147)	10 or less	13 or less	54
		Rubber	VQZ2251–□–C–Q	3.6(196)	15 or less	20 or less	
		Rubber w/ sp.controller	VQZ2251S–□–C–Q	2.2(117)	15 or less	20 or less	58
3 Position	Closed centre	Metal	VQZ2350–□–C–Q	2.0(107)	20 or less	26 or less	54
		Rubber	VQZ2351–□–C–Q	2.7(147)	25 or less	33 or less	
		Rubber w/ sp.controller	VQZ2351S–□–C–Q	2.2(117)	25 or less	33 or less	58
	Exhaust centre	Metal	VQZ2450–□–C–Q	2.0(107)	20 or less	26 or less	54
		Rubber	VQZ2451–□–C–Q	2.7(147)	25 or less	33 or less	
		Rubber w/ sp.controller	VQZ2451S–□–C–Q	2.2(117)	25 or less	33 or less	58
	Pressure centre	Rubber	VQZ2551–□–C–Q	2.7(147)	25 or less	33 or less	54
		Rubber w/ sp.controller	VQZ2551S–□–C–Q	2.2(117)	25 or less	33 or less	58

Note 1) Valve for sub-plate and maximum diameter.
Note 2) As per JISB8375-1981 (Supply pressure: 0.5MPa; with indicator light and surge voltage suppressor; clean air)
The response time is subject to the pressure and the air quality.
The values at the time of ON are given for double styles.
Note 3) Weight without sub-plate

How to Order Manifold

VV5QZ25C — 05 C4 C — Q

Series

2	VQZ2000

Manifold

5	Base mounted style

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	1/8

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

How to Order Valve

VQZ2 1 5 1 — 5 M — C — Q

Symbol

1	2 position single
2	2 position double
3	3 position closed centre
4	3 position exhaust centre
5(1)	3 position pressure centre

Note 1) Except for metal seals.

Body

5	Base mounted

Seal

0	Metal seal
1	Rubber seal

Speed controller

—	Without
S(1)	With

Note 1) Available with rubber seal valve only.

Pilot valve specifications

Symbol	Specification	DC
—	Standard	(1.0W) ○
K(1)	High pressure	(1.0W) ○
Y	Low wattage	(0.5W) ○

Note 1) Option
Note 2) When specifying more than one option, indicate them alphabetically.

Coil voltage

5	24V DC
6	12V DC
9	Others, (less than 50VDC)

Order Made Contact SMC for other voltages (9)

Protective class
class I (Mark: ⏚)..... DIN terminal type

Protective class
class III (Mark: ◈)..... Grommet, L and M plug connector

Manual override

—	Non-locking push style (Flush)
B	Locking style (Slotted)

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

Symbol	Port size
—	Without sub-plate
01	1/8

Compact body

Electrical entry

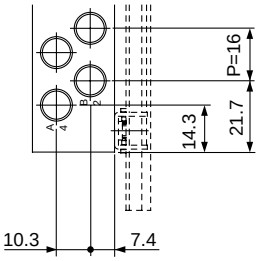
G	Grommet (DC specificatiopn)
L*	L plug connector with lead wire
LO*	L plug terminal without connector
M*	M plug connector with lead wire
MO*	M plug terminal without connector

* With light and surge suppressor for L, LO, M, MO

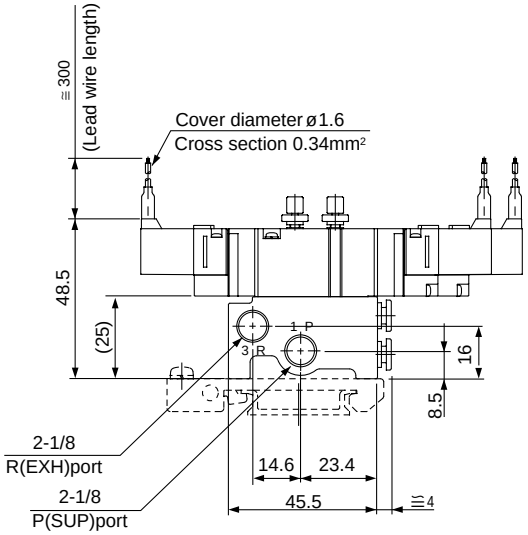
Dimensions: VQZ2000

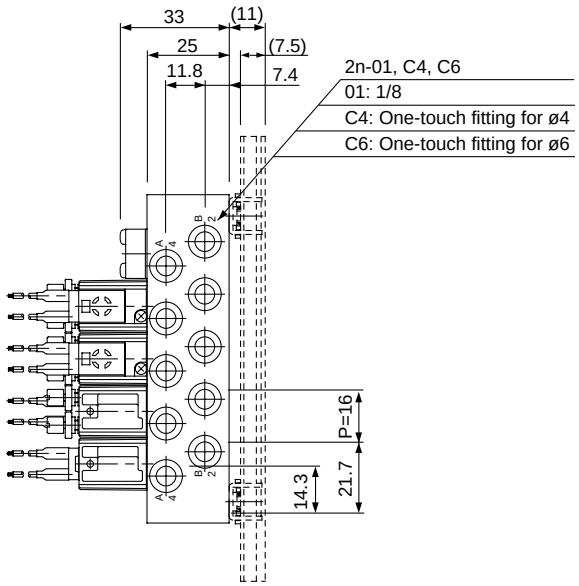
VV5QZ25C– Station Port size C –Q

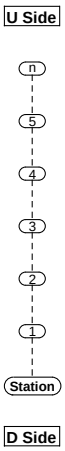
Grommet(G)

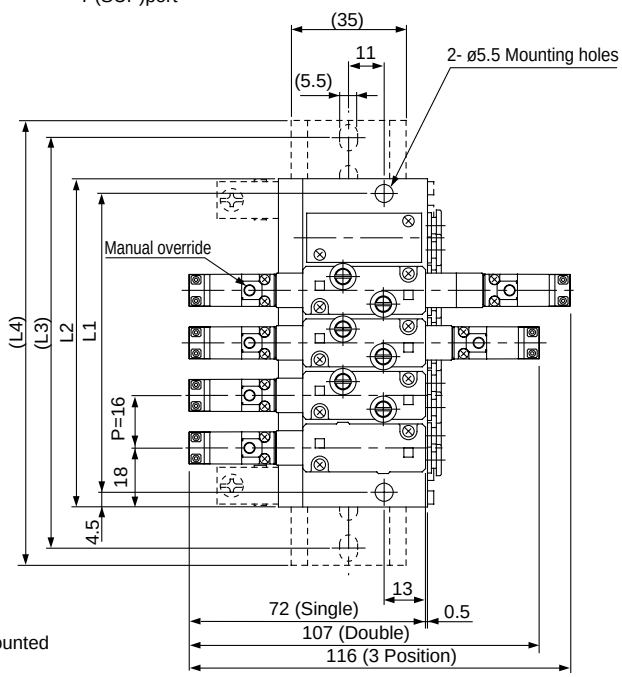


1/8



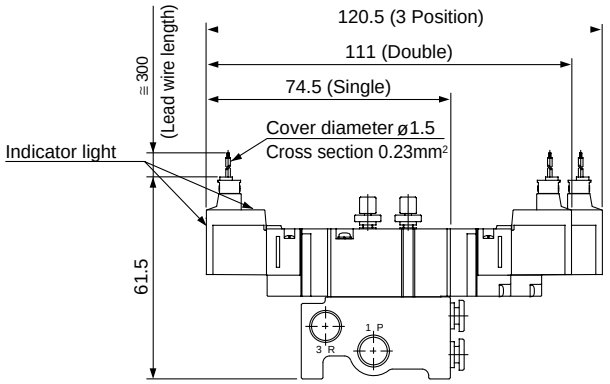




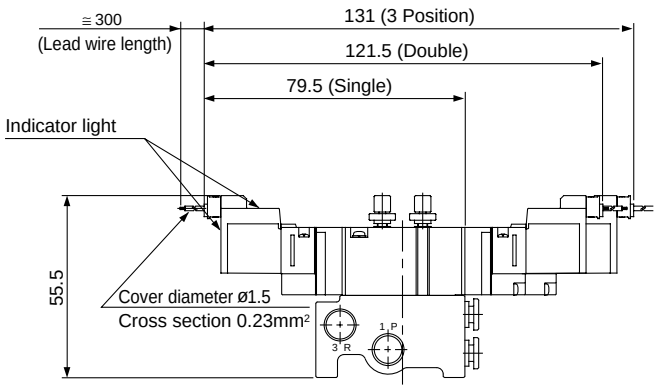


The broken line indicate DIN rail mounted style [-D]

L type plug connector (L)



M type plug connector (M)

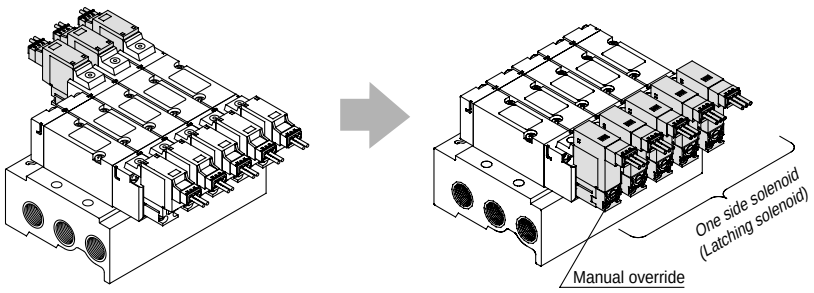


Dimensions Equation L1=16n+11 L2=16n+20 n: Station (Max.20 stations)

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

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　　Latching solenoid

How to Order Latching Solenoid Valve

VQZ **1** **2** **5** **0** **L** — **5** **M** — **□** — **Q**

Series

1	VQZ1000
2	VQZ2000
3	VQZ3000

Combination symbol

Body

Seal

Function (2)

L	Latcing double

Coil voltage

Electrical entry(L, M)

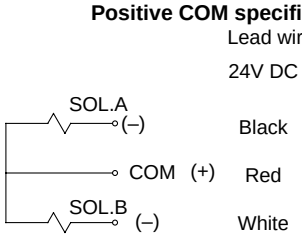
Port size

Note 1) Specifications are same as standard except for the function.
Note 2) K(High pressure style) and Y(Low wattage style) are not available.

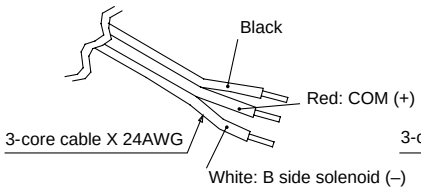
Wiring

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

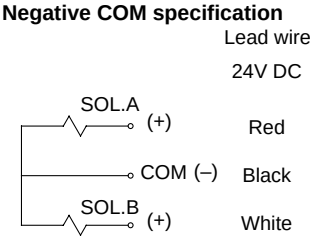
Positive COM specification



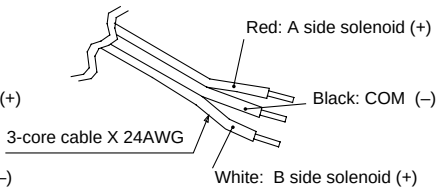
Double solenoid



Negative COM specification

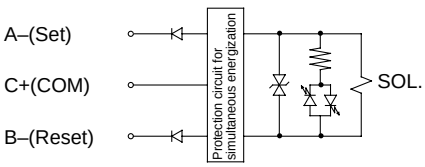


Double solenoid



Electrical Circuit

Latching solenoid (DC)



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: P→R {B (reset) side in energized state}
Note 3) Negative COM specification available.

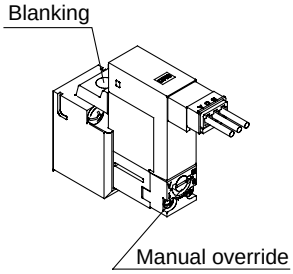
⚠Caution

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 20ms.
3. Avoid using the latching solenoid valves in environments where impact or collisions with the valve might occur. Also, do not use in places where a strong magnetic fields are present.
4. The armature in the solenoid is set in the B side ON position (Reset) at the factory. However, shifting of the armature might occur during shipping so please confirm the position by energizing the solenoid.
5. Please consult SMC for extended energization applications.

Manual Override

The manual override is on the pilot valve for latching solenoid valves.



·To lock in set position (Flow path: P →A): Turn the manual override clockwise by 180° to mark A press down. Valve is now locked in the set condition.(Flow path: P →A)
·To reset (Flow path: P →B): Turn manual override counterclockwise to mark B and press down. Valve will then be in the reset condition. (Flow path: P→B).

Options

External Pilot Specifications

The external pilot specification must be used when the operating pressure is below the minimum operating pressure 0.1 to 0.2 MPa or when valve is being used for a vacuum application.
For the external pilot valve, an "R" should be attached to the valve and the manifold part number.(See the below.)

Example/Valve

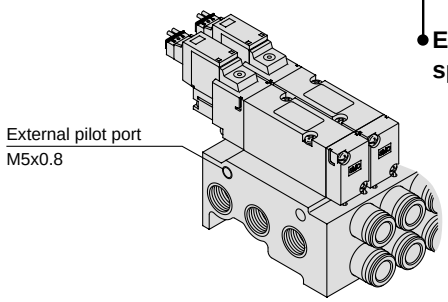
VQZ2150R – 5M – 02 – Q

External pilot specification

Example/Manifold

VV5QZ25 – 06C6C – R – Q

External pilot specification.



Pressure Specifictions

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 0.7MPa	
	Rubber seal	0.15 to 0.7MPa	0.1 to 0.7MPa	0.2 to 0.7MPa
Operating pressure range*		Vacuum to 0.7MPa		

* In case of the high pressure style, upper limit of max. operating pressure and external pilot pressure range is 1MPa.

Inch Size One–touch Fittings and Option Thread

Manifolds are available with inch size and One-touch fittings for the cylinder ports.
Sub-bases and manifolds with NPT, NPTF or PF threads are available.

How to Order Manifold

VV5QZ15 – 08 N7 T C – N – Q

Thread (Cylinder ports and P, R ports)

—	Rc(PT)
N	NPT
T	NPTF
F	G(PF)

Cylinder ports

Symbol		N1	N3	N7	N9	N11	NM (1)	M5	01	02
Applicable tube O.D.(Inch)		ø 1/8"	ø 5/32"	ø 1/4"	ø 5/16"	ø 3/8"	Mix	M5	1/8	1/4
Cylinder port	VQZ1000	●	●	●	—	—	●	●	—	—
	VQZ2000	—	●	●	●	—	●	—	●	—
	VQZ3000	—	—	●	●	●	●	—	—	●

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

How to Order Valve with Sub-plate

VQZ2151 — 5M — 02 T – Q

Thread (Cylinder ports and P, R ports)

—	Rc(PT)
N	NPT
T	NPTF
F	G(PF)

Dust Tight/Jet Proof (IP65)

Optional IP65 model is available on valves with DIN connector electrical entry.

How to Order Valve
(Applicable to VQZ2000/3000 rubber seal)

VQZ3151 — 5YZB W — 03 – Q

IP65 rated

—	No (Standard)
W (1)	IP65 reted

Note 1) 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)

Series \ 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) Order is accepted in 10 units.

<Plug connector assembly>

DC (+COM)
· Single
AXT661–14A– □
· Latching
AXT661–13A– □
DC (-COM)
· Latching
AXT661–13AN– □

Lead wire length

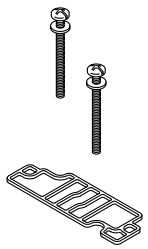
—	300mm
6	600mm
10	1000mm
20	2000mm
30	3000mm

Standard wire length of valve with plug connector is 300mm.
When requiring valve with 600mm 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-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.
Orders are accepted in 10 units.



<Pilot valve assembly>

VQ11 1 □ – 5 G – □ – Q

Series

1	VQZ1000, 2000, 3000

Function

Symbol	Specification	DC	AC
—	Standard	(1.0W) ○	○
K (1)	High pressure (Metal seal)	(1.0W) ○	—
Y	Low wattage	(0.5W) ○	—
L (3)	Latching	(1.0W) ○	○

Note 1) Option
Note 2) When specifying more than one option, please indicate them alphabetically.
Note 3) K (High pressure) and Y (Low wattage) are not available. Electrical entry: L/ M plug connector only.

Coil voltage

1*	100V AC (50/60Hz)
3*	110V AC (50/60Hz)
5	24V DC
6	12V DC
9	Others

* DIN only.

Applicable model

—	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

G	Grommet (DC specification)
L (1)	L plug connector with lead wire
LO (1)	L plug terminal without connector
M (1)	M plug connector with lead wire
MO (1)	M plug terminal without connector
Y (2)	DIN connector
YO (2)	DIN terminal without connector
YZ (2)	DIN connector
YOS (2)	DIN terminal without connector

Note 1) L, LO, M and MO types are attached with light and surge voltage suppressors as standard.
Note 2) DIN style is applicable to VQZ2000, 3000.

<Sub-plate>

Model	Sub-plate part No.
VQZ1000	VQZ1000-S-01
VQZ2000	VQZ2000-S-01 [1/8] 02 [1/4]
VQZ3000	VQZ3000-S-02 [1/4] 03 [3/8]