

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**

**Series**

1	VQZ1000
2	VQZ2000
3	VQZ3000

**Manifold**

5	Base mounted
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**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	Rc(PT)1/8	—	○	—
02	Rc(PT)1/4	—	—	○
CM <sup>(1)</sup>	Mixture of port sizes	○	○	○

**Options**

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

**Kit**

C	Connector
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Note 1) Order DIN rail separately. Refer to p.1.12-52 for DIN rail model no.  
Note 2) Applicable to VQZ2000 and 3000.

### How to Order Valve

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

**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 center
4	3 position exhaust center
5 <sup>(1)</sup>	3 position pressure center
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
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**Seal**

0	Metal seal
1	Rubber seal

**Function**

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

Note 1) Option  
Note 2) Refer to p.1.12-58 for details about external pilot specification  
Note 3) Refer to p.1.12-35 for power consumption of AC type.  
Note 4) When specifying more than one option, indicate them alphabetically.

**Manual override**

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

**Electrical entry**

Symbol	Electrical entry	Light and surge voltage suppressor
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	Without
Y <sup>(1)</sup>	DIN connector	
YO <sup>(1)</sup>	DIN terminal without connector	With
YZ <sup>(1)</sup>	DIN connector	
YOS <sup>(1)</sup>	DIN terminal without connector	With (w/o light)

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

**Coil voltage**

1*	100V AC (50/60Hz)
2*	200V AC (50/60Hz)
3*	110V AC (50/60Hz)
4*	220V AC (50/60Hz)
5	24V DC
6	12V DC
9*	Others

\*When requiring AC specification of grommet style and/or special voltage, consult SMC.

## Manifold Specifications



Series	Base model	Piping specifications			Applicable valve	Applicable stations	Manifold base weight (g) <sup>(1)</sup>
		Piping	Port size				
			1(P), 3/5(R)	4(A), 2(B)			
VQZ1000	VV5QZ15-□□□	In-line	Rc(PT) 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	Rc(PT) 1/4	C4(ø4) C6(ø6) C8(ø8) Rc(PT)1/8	VQZ2 □50 VQZ2 □51	2 to 20 stations	2 stations: 193 Addition per/ station: 54
VQZ3000	VV5QZ35-□□□	In-line	1(P)port Rc(PT)3/8 3-5(R)port Rc(PT)1/4	C6(ø6) C8(ø8) C10(ø10) Rc(PT)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.....1 set (C kit 5 stations manifold base)**

- \*VVQZ2000-10A-5...1 set (Blank plate assembly)
- \*VQZ2150-5L .....1 set (Valve P/N – single solenoid)
- \*VQZ2250-5L .....2 set (Valve P/N – double solenoid)
- \*VQZ2350-5L .....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.

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VP4

VQ

VQ4

**VQZ**

VQD

VZS

VFS

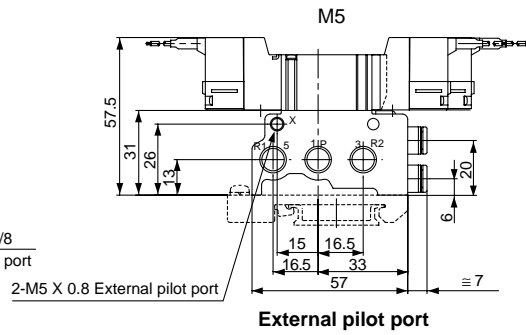
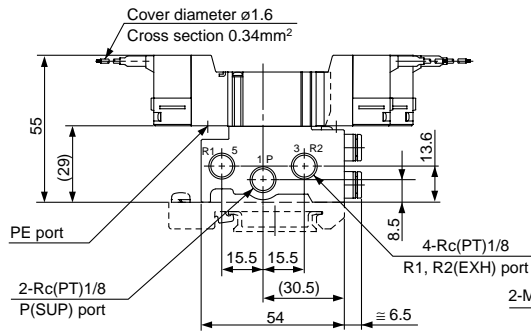
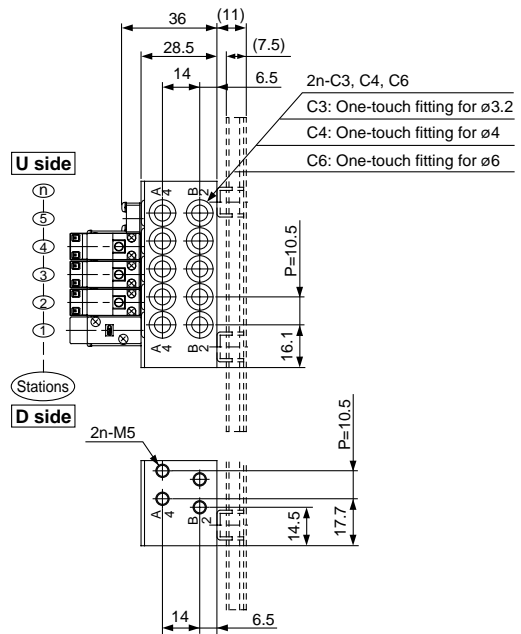
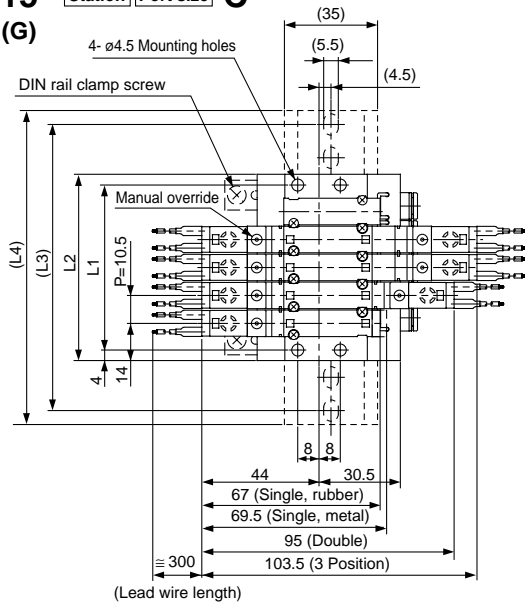
VS

VS7

# VQZ1000/2000/3000 Base Mounted

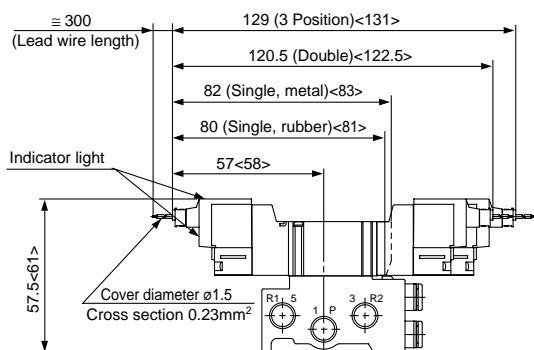
## Dimensions: VQZ1000

### VV5QZ15- Station Port size **C** Grommet (G)



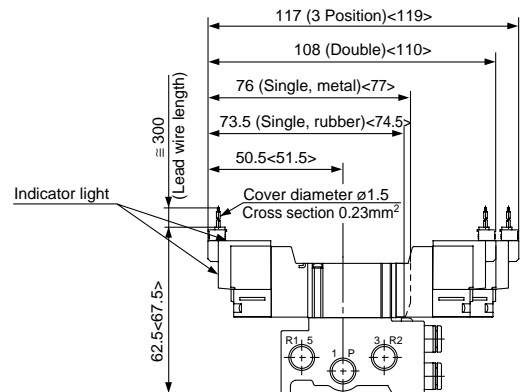
The broken line indicate DIN rail mounted style [-D].

### L plug connector (L)



< >: AC

### M plug connector (M)



< >: AC

### Dimensions

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

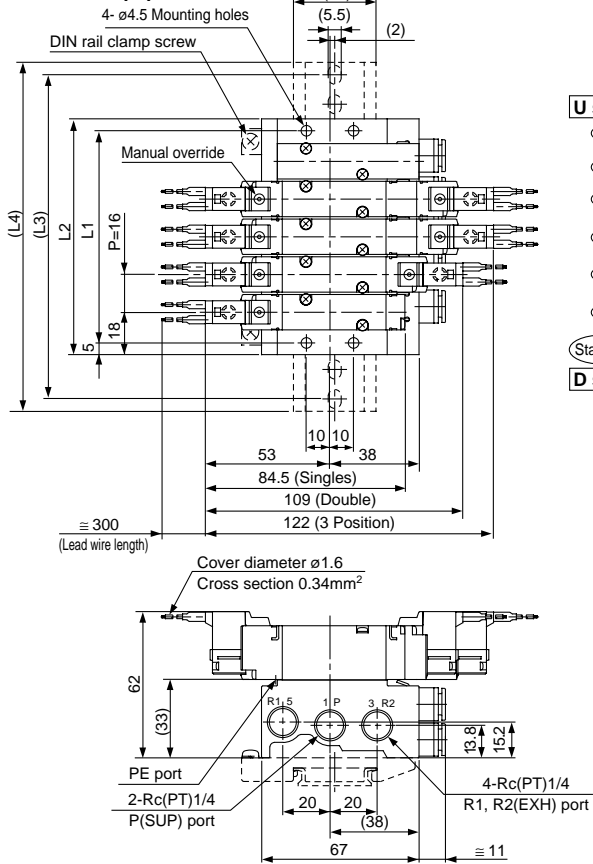
n: Station (Max. 20 stations)

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

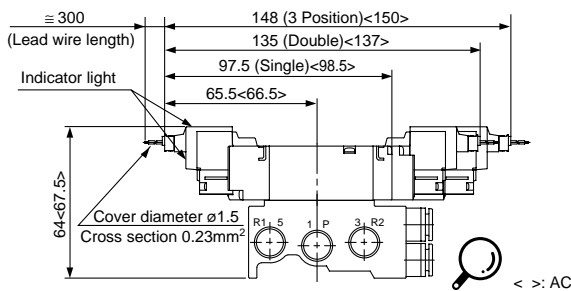
## VQZ2000

### VV5QZ25—Station Port size C

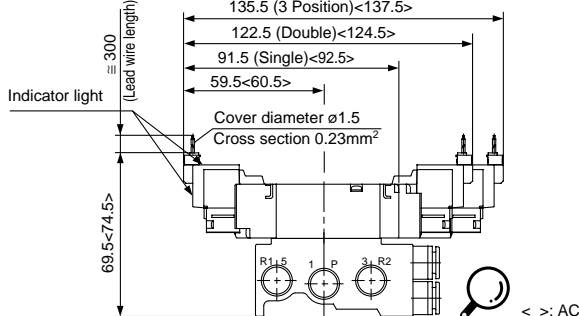
#### Grommet (G)



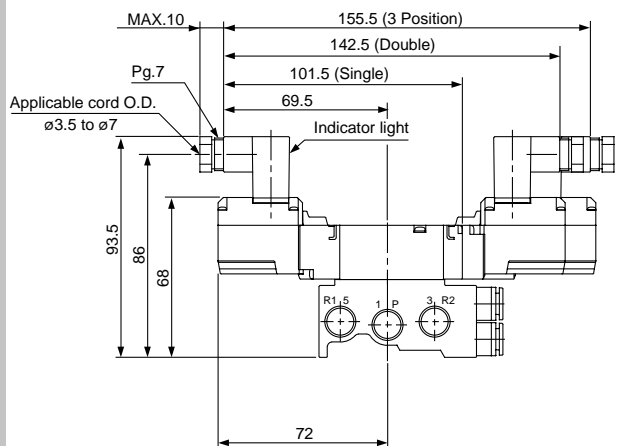
#### L plug connector (L)



#### M plug connector (M)



#### DIN connector (Y)



#### Dimensions

Equation L1=16n+10 L2=16n+20

n: Station (Max. 20 stations)

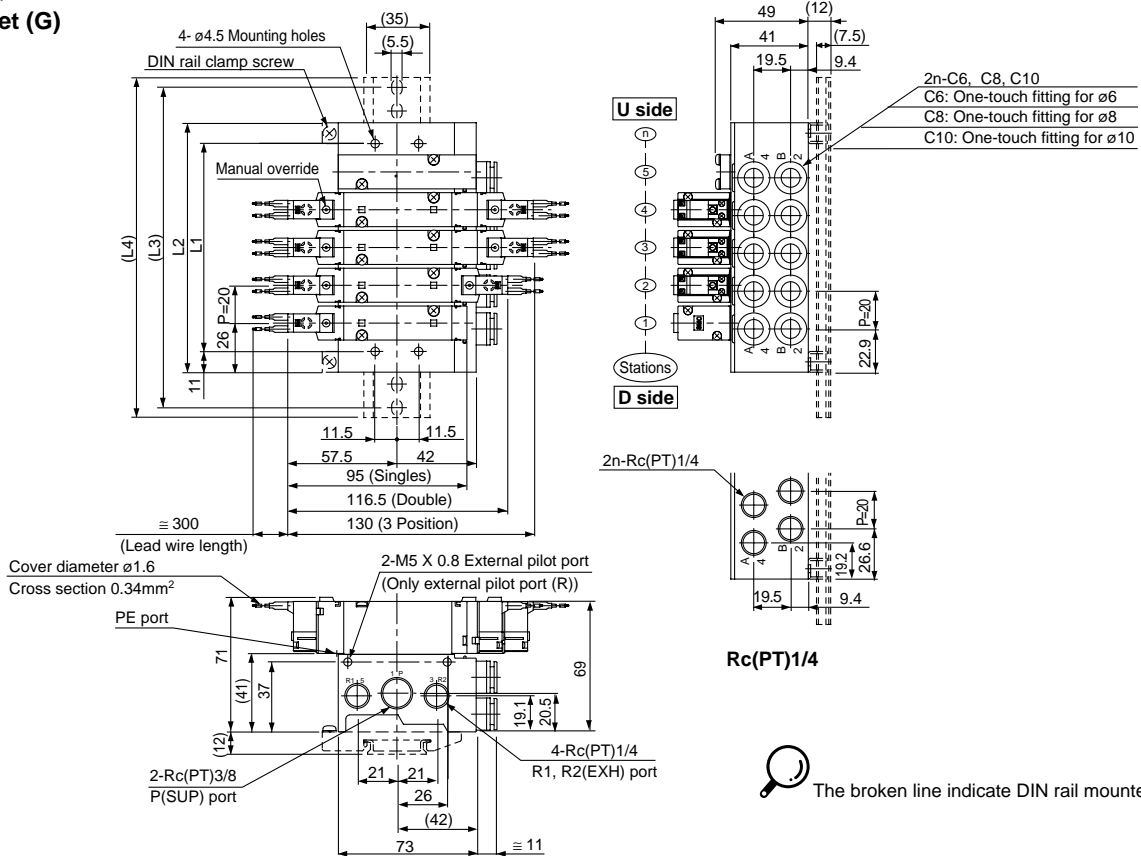
L	n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1		42	58	74	90	106	122	138	154	170	186	202	218	234	250	266	282	298	314	330
L2		52	68	84	100	116	132	148	164	180	196	212	228	244	260	276	292	308	324	340
L3		75	87.5	112.5	125	137.5	162.5	175	187.5	200	225	237.5	250	275	287.5	300	312.5	337.5	350	362.5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

- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VP4
- VQ
- VQ4
- VQZ
- VQD
- VZS
- VFS
- VS
- VS7

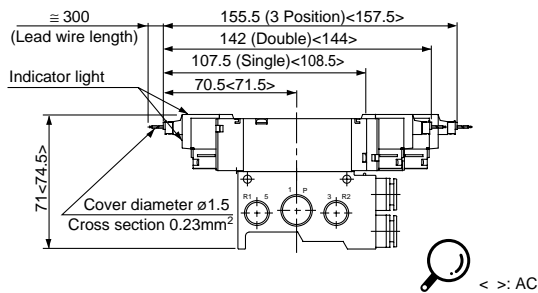
# VQZ1000/2000/3000 Base Mounted

## Dimensions: VQZ3000

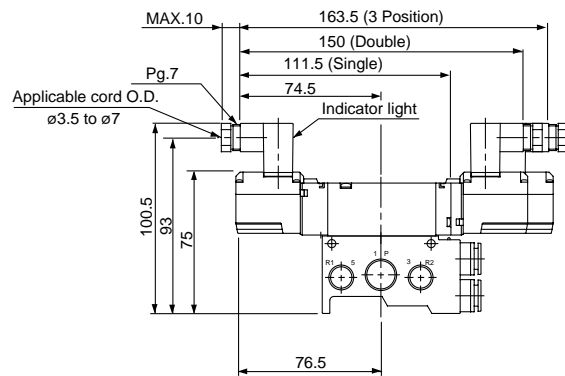
**VV5QZ25C**— Stations | Port size | **C**  
**Grommet (G)**



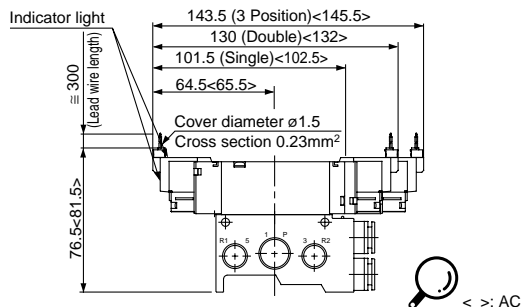
### L plug connector (L)



### DIN connector (Y)



### M plug connector (M)



### Dimensions

Equation L1=20n+10 L2=20n+32

n: Station (Max. 20 stations)

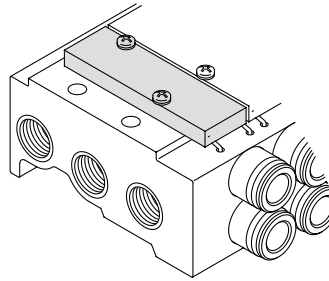
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	50	70	90	110	130	150	170	190	210	230	250	270	290	310	330	350	370	390	410
L2	72	92	112	132	152	172	192	212	232	252	272	292	312	332	352	372	392	412	432
L3	100	112.5	137.5	162.5	175	200	212.5	237.5	262.5	275	300	312.5	337.5	362.5	375	400	412.5	437.5	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

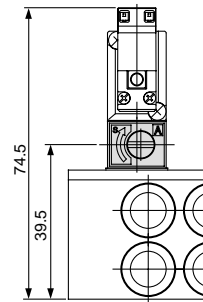
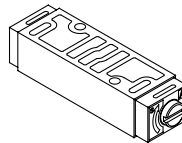
This is used when removing the valve for maintenance, or reserving a valve mounting space on the manifold for future use.



### Interface speed control (For VQZ2000 only)

- VVQZ2000-20A-5

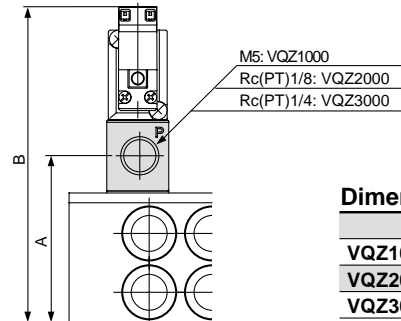
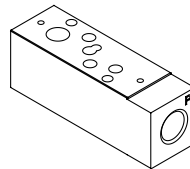
Actuator speed is controlled by throttling exhaust air flow.



### 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.



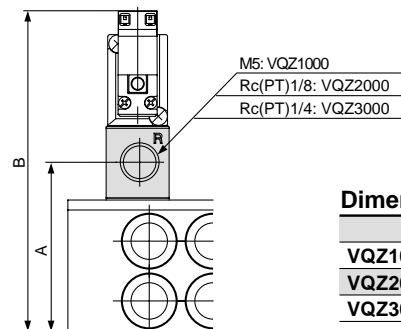
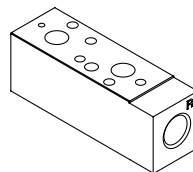
#### Dimensions

	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.



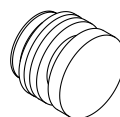
#### Dimensions

	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.



SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VP4

VQ

VQ4

VQZ

VQD

VZS

VFS

VS

VS7

# VQZ1000/2000/3000 Base Mounted

## Manifold Option

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

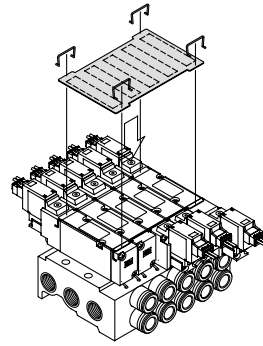
VVQZ2000-N5-Station

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.



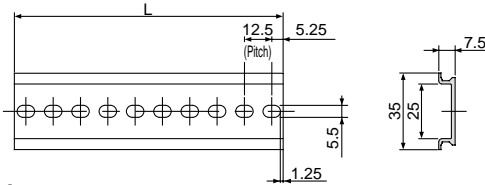
## DIN rail

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

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

L=12.5n+10.5

No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
L	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

KQP-23-X19

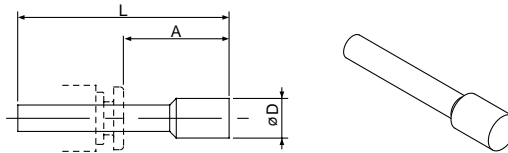
KQP-04-X19

KQP-06-X19

KQP-08-X19

KQP-10-X19

● Color: White

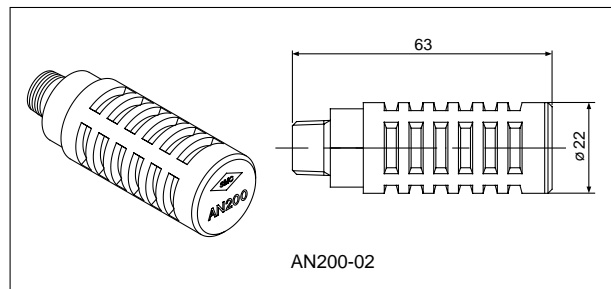
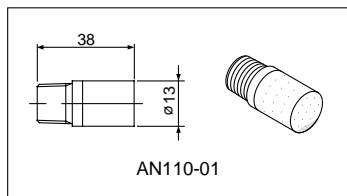


### Dimensions

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

## EXH port silencer

Silencer is installed in the EXH port.



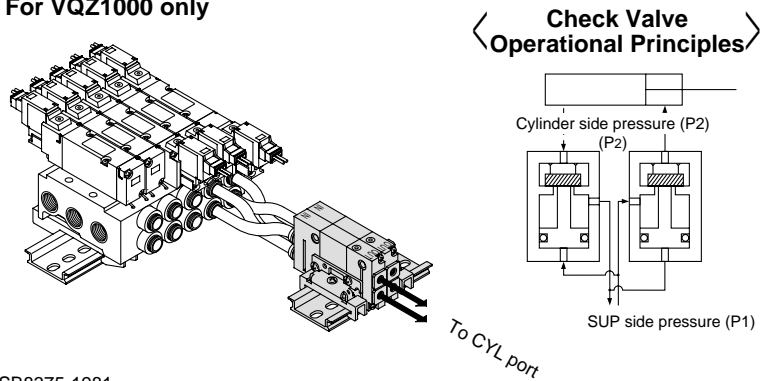
Model	Silencer P/N
VQZ1000	AN110-01
VQZ2000	AN200-02
VQZ3000	AN200-02



## Manifold Option

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

Using a 3 position exhaust center 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.

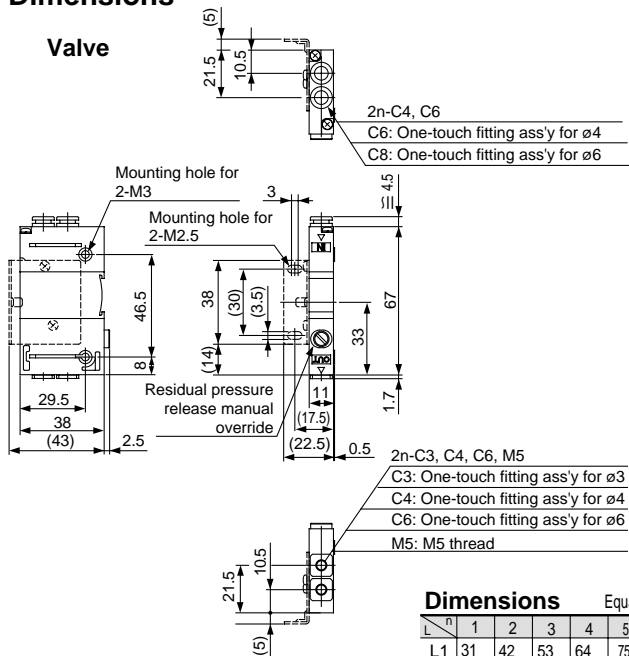


### Specifications

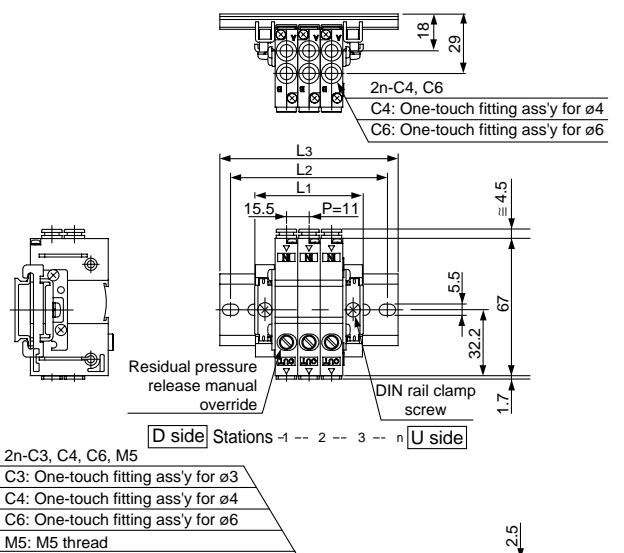
Max. operating pressure	0.8MPa
Min. operating pressure	0.15MPa
Ambient and fluid temp.	-5 to 50°C
Effective area (Cv) <sup>(1)</sup>	2.7mm <sup>2</sup> (0.15)
Max. operating frequency	180 c.p.m

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

### Dimensions



### 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	137.5	150	162.5	175					
L3	60.5	73	85.5	98	110.5	123	135.5	148	160.5	173	185.5					
L/n	13	14	15	16	17	18	19	20	21	22	23	24				
L1	163	174	185	196	207	218	229	240	251	262	273	284				
L2	187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5	300				
L3	198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.5				

### How to Order

#### Double check block

VQ1000-FPG-**C4 M5 F**

#### IN side port size

<b>C4</b>	One-touch fitting for ø4
<b>C6</b>	One-touch fitting for ø6

#### OUT side port size

<b>M5</b>	M5 thread
<b>C3</b>	One-touch fitting for ø3.2
<b>C4</b>	One-touch fitting for ø4
<b>C6</b>	One-touch fitting for ø6

#### Option

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

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

#### Manifold

VVQ1000-FPG-**06**

#### Stations

<b>01</b>	1 stations
⋮	⋮
<b>16</b>	16 stations

<Example>

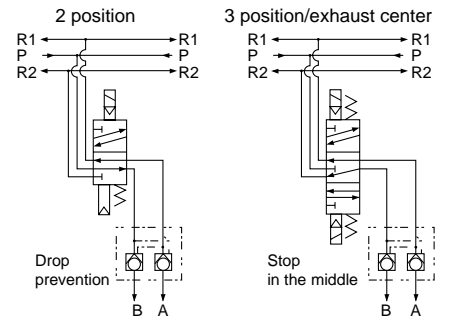
VVQ1000-FPG-06...6 stations of manifold

\*VQ1000-FPG-C4M5-D, 3 sets } Double check block  
 \*VQ1000-FPG-C6M5-D, 3 sets }

### 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 center or pressure center 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.

### <Examples>



- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VP4
- VQ
- VQ4
- VQZ
- VQD
- VZS
- VFS
- VS
- VS7

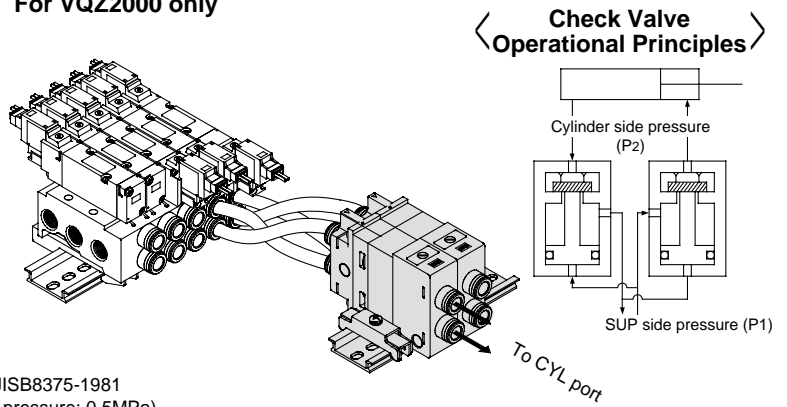


# VQZ1000/2000/3000 Base Mounted

## Manifold Option

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

Using a 3 position exhaust center 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.

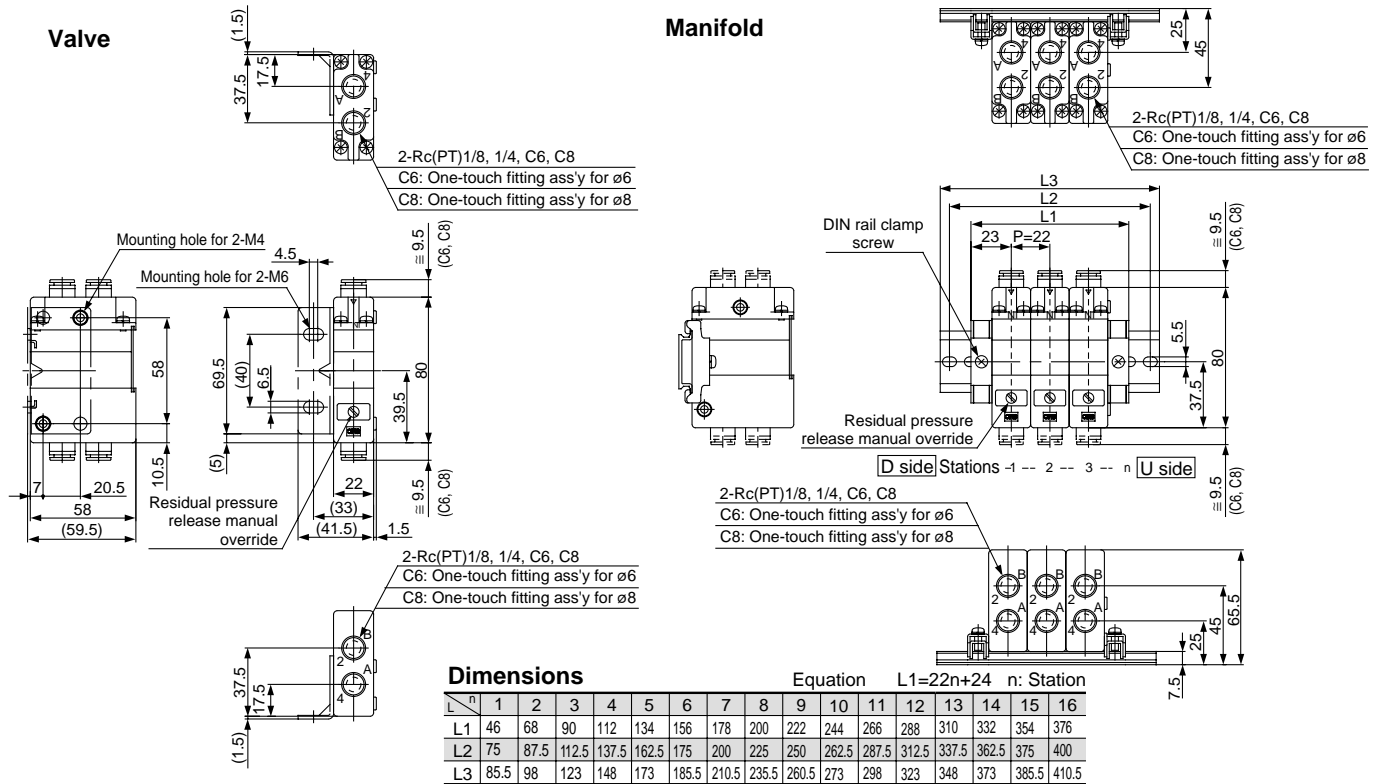


### Specifications

Max. operating pressure	0.8MPa
Min. operating pressure	0.15MPa
Ambient and fluid temp.	-5 to 50°C
Effective area (Cv) <sup>(1)</sup>	18mm <sup>2</sup> (1.0)
Max. operating frequency	180 c.p.m

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

### Dimensions



### How to Order

#### Double check block

VQ2000-FPG-**01 01 F**

#### IN side port size

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

#### OUT side port size

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

#### Option

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

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

#### Manifold

VVQ2000-FPG-**06**

#### Stations

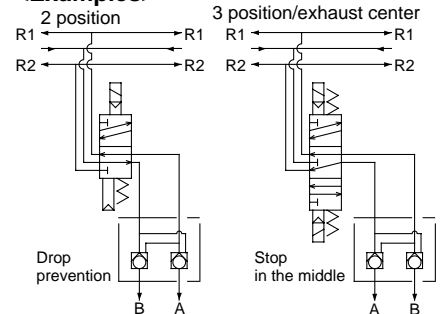
<b>01</b>	1 stations
...	...
<b>16</b>	16 stations

<Example>

VVQ2000-FPG-06 ...6 stations of manifold

- \* VQ2000-FPG-C6C6-D; 3 sets } Double check block
- \* VQ2000-FPG-C8C8-D; 3 sets }

#### <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 perfect block with 3 position closed center or pressure center solenoid valve will not work.
- When screwing the fittings in the double check block, applied torque is as shown below:

Thread	Torque Nm
Rc(PT)1/8	7 to 9
Rc(PT)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.

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

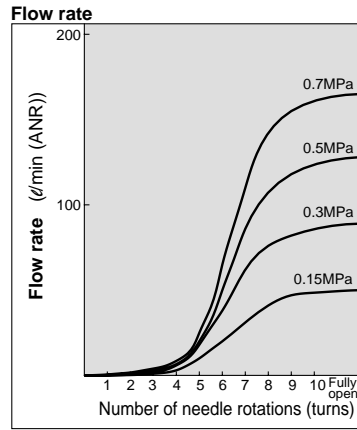
- Speed controllers are built-in to the valve body, making it easier to adjust cylinder speed.
- Needle valve is equipped with a retainer to prevent accidental needle loss.



symbol



(Single)



- 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 should not exceed 0.3Nm.

### Specifications

Number of solenoids	Model	Effective area (1) mm <sup>2</sup> (Cv)	Response time (ms) <sup>(2)</sup>		Weight <sup>(3)</sup> (g)		
			Standard: 1W	High pressure 1.0W Low wattage AC			
2 Position	Single	Metal VQZ2150-□-C	2.7(0.15)	12 or less	15 or less	40	
		Rubber VQZ2151-□-C	3.6(0.2)	15 or less	20 or less	44	
	Double	Rubber w/sp.controller VQZ2151S-□-C	2.2(0.12)	15 or less	20 or less	44	
		Metal VQZ2250-□-C	2.7(0.15)	10 or less	13 or less	54	
3 Position	Closed center	Rubber VQZ2251-□-C	3.6(0.2)	15 or less	20 or less	58	
		Rubber w/sp.controller VQZ2251S-□-C	2.2(0.12)	15 or less	20 or less	58	
	Exhaust center	Metal VQZ2350-□-C	2.0(0.11)	20 or less	26 or less	54	
		Rubber VQZ2351-□-C	2.7(0.15)	25 or less	33 or less	58	
	Pressure center	Rubber w/sp.controller VQZ2351S-□-C	2.2(0.12)	25 or less	33 or less	58	
		Metal VQZ2450-□-C	2.0(0.11)	20 or less	26 or less	54	
	3 Position	Exhaust center	Rubber VQZ2451-□-C	2.7(0.15)	25 or less	33 or less	54
			Rubber w/sp.controller VQZ2451S-□-C	2.2(0.12)	25 or less	33 or less	58
		Pressure center	Rubber VQZ2551-□-C	2.7(0.15)	25 or less	33 or less	54
			Rubber w/sp.controller VQZ2551S-□-C	2.2(0.12)	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**

**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	Rc(PT)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**

**Symbol**

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5 <sup>(1)</sup>	3 position pressure center

Note 1) Except for metal seals.

**Body**

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

**Seal**

0	Metal seal
1	Rubber seal

**Speed controller**

—	Without
S <sup>(1)</sup>	With

Note 1) Available with rubber seal valve only.

**Pilot valve specifications**

Symbol	Specification	DC (1.0W)	AC (2)
—	Standard	○	○
K <sup>(1)</sup>	High pressure	○	—
Y	Low wattage	○	—

Note 1) Option  
Note 2) Refer to p.1.12-35 for power consumption of AC type.  
Note 3) When specifying more than one option, indicate them alphabetically.

**Compact body**

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

Symbol	Port size
—	Without sub-plate
01	Rc (PT) 1/8

**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 suppressor for L, LO, M, MO

**Coil voltage**

1*	100V AC (50/60Hz)
2*	200V AC (50/60Hz)
3*	110V AC (50/60Hz)
4*	220V AC (50/60Hz)
5	24V DC
6	12V DC
9*	Others

\* Contact SMC when requiring Grommet AC specification and other voltages.

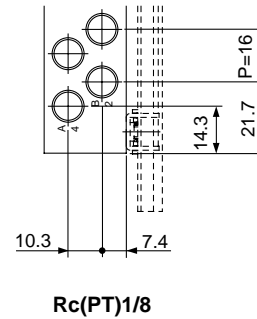
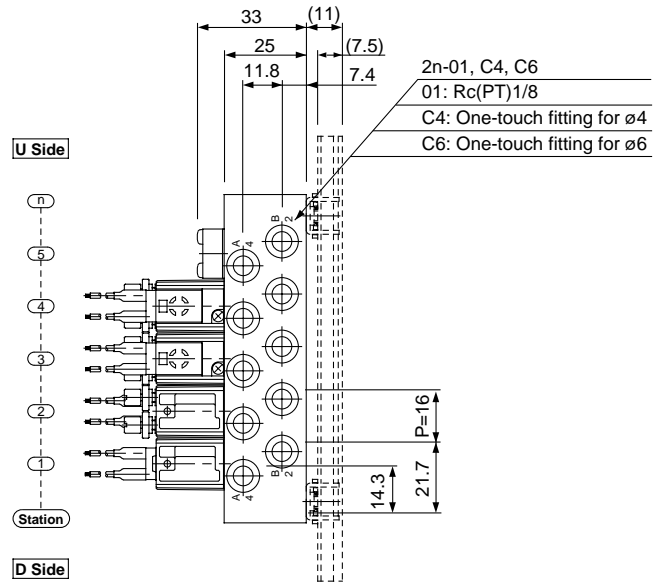
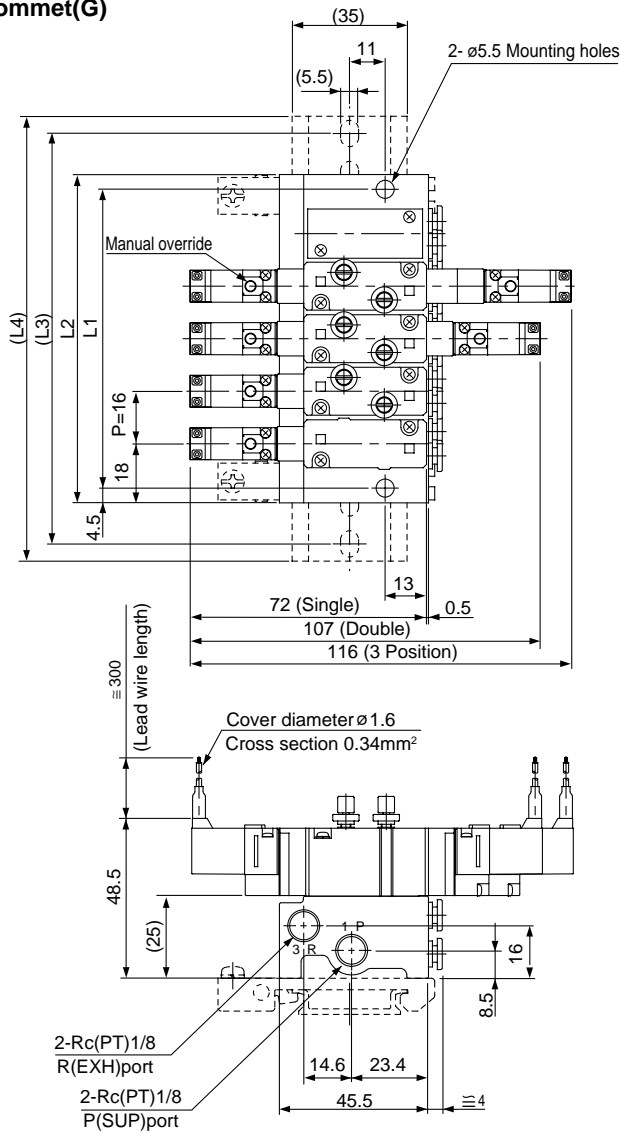
- SY
- SYJ
- SX
- VK
- VZ
- VF
- VFR
- VP7
- VP4

- VQ
- VQ4
- VQZ
- VQD
- VZS
- VFS
- VS
- VS7

# VQZ1000/2000/3000 Base Mounted

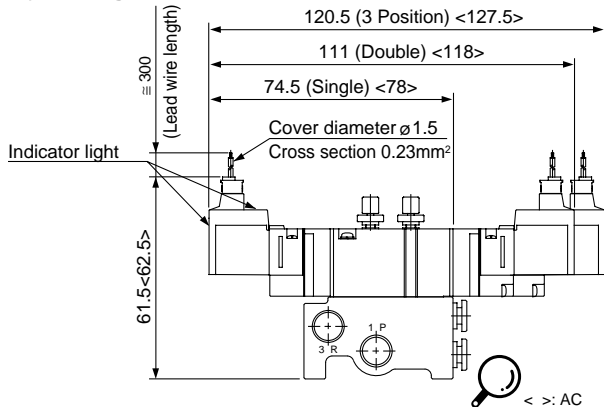
## Dimensions: VQZ2000

**VV5QZ25C** — Station Port size **C**  
Grommet(G)

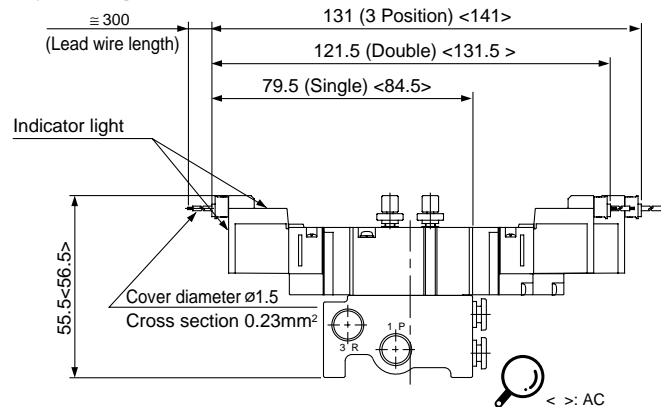


The broken line indicate DIN rail mounted style [-D]

### L type plug connector (L)



### M type plug connector (M)



### Dimensions

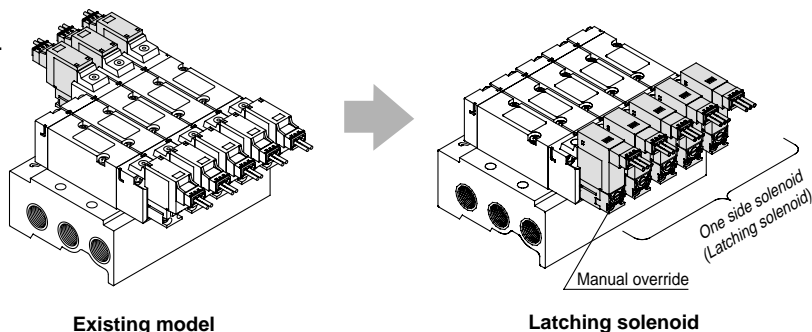
Equation  $L_1=16n+11$   $L_2=16n+20$

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)

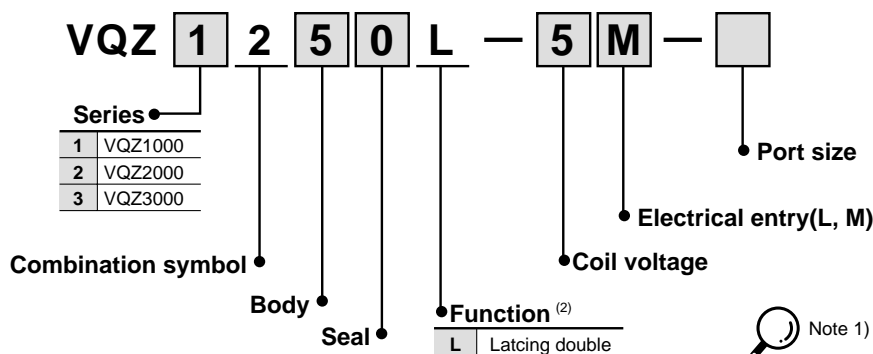
The standard 2 position double solenoid valve has two solenoids, one on each end of the valve body. The latching solenoid option (with self holding mechanism) functions in the same manner as a 2 position double solenoid but uses only one solenoid to do the job.



Existing model

Latching solenoid

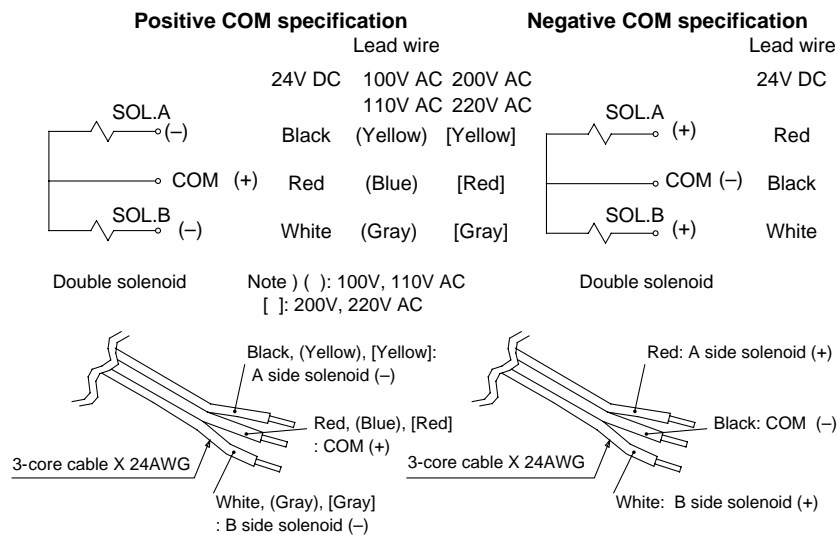
## How to Order Latching Solenoid Valve



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.

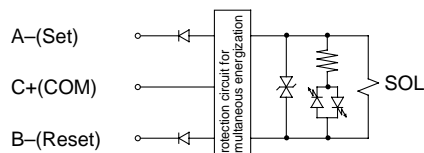
## Wiring

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

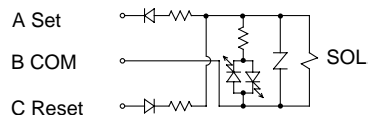


## Electrical Circuit

### Latching solenoid (DC)



### Latching solenoid (AC)



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

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

Note 3) Negative COM specification available.

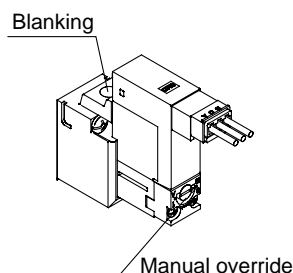
## ⚠ Caution

### 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

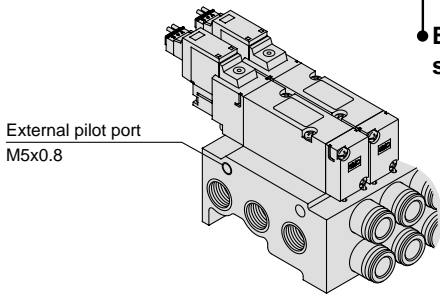
**VQZ2150R – 5M – 02**

• External pilot specification

Example/Manifold

**VV5QZ25 – 06C6C – R**

• External pilot specification.



## Pressure Specifications

Series		VQZ1000, 2000, 3000		
		2 position single	2 position double	3 position
External pilot pressure range *	Metal seal	0.1 to 0.7 MPa Only VQZ3000, 3 position 0.15 to 0.7MPa		
	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**

• 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 <sup>(1)</sup>	M5	01	02
Applicable tube O.D.(Inch)	∅ 1/8"	∅ 5/32"	∅ 1/4"	∅ 5/16"	∅ 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) Millimeter sizes of One-touch fittings (C□) are also available.

How to Order Valve with Sub-plate

**VQZ2151 – 5M – 02 T**

• 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**

• IP65 rated

—	No (Standard)
W <sup>(1)</sup>	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 Base Mounted

## Replacement Parts

### One-touch Fitting Assembly (For cylinder port)

Fitting Size	C3	C4	C6	C8	C10
<b>VQZ1000</b>	VVQ1000-50A-C3	VVQ1000-50A-C4	VVQ1000-50A-C6	—	—
<b>VQZ2000</b>	—	VVQ1000-51A-C4	VVQ1000-51A-C6	VVQ1000-51A-C8	—
<b>VQZ3000</b>	—	—	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-□

#### 100V, 110V AC

• Single

AXT661-31A-□

• Latching

AXT661-32A-□

#### 200V, 220V AC

• Single

AXT661-34A-□

• Latching

AXT661-35A-□

Only connector and sockets (3 pcs.)

AXT661-12A

#### Lead wire length

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

Standard wire length of valve with plug connector is 300mm.

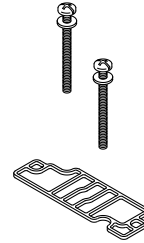
When requiring valve with 600mm length lead wire specify the model number of valve without plug connector and plug connector assembly.

### <Gasket and screw assembly>

	Part No.
<b>VQZ1000</b>	VQZ1000-GS-5
<b>VQZ2000</b>	VQZ2000-GS-5
<b>VQZ3000</b>	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 — □

#### Series

1	VQZ1000, 2000, 3000
---	---------------------

#### Function

Symbol	Specification	DC	AC
—	Standard	(1.0W) ○	○
K <sup>(1)</sup>	High pressure (Metal seal)	(1.0W) ○	—
Y	Low wattage	(0.5W) ○	—
L <sup>(3)</sup>	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.

#### 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

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

#### Coil voltage

1*	100V AC (50/60Hz)
2*	200V AC (50/60Hz)
3*	110V AC (50/60Hz)
4	220V AC (50/60Hz)
5	24V DC
6	12V DC
9*	Others



\* Consult SMC when requiring grommet style, AC specification and others.

### <Sub-plate>

Model	Sub-plate part No.
<b>VQZ1000</b>	VQZ1000-S-01
<b>VQZ2000</b>	VQZ2000-S-01 [Rc1/8] 02 [Rc1/4]
<b>VQZ3000</b>	VQZ3000-S-02 [Rc1/4] 03 [Rc3/8]

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VP4

VQ

VQ4

VQZ

VQD

VZS

VFS

VS

VS7