

VQZ100/200/300 Valve Single Unit

How to Order Valve VQZ100

VQZ 1 1 5 — **5 M** — **C6** — **PR**

Series

1	VQZ100 Body width 10mm
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Configuration

Body style

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.2.10-18 for details about external pilot specification.
 Note 3) Refer to p.2.10-6 for power consumption of AC type.
 Note 4) When specifying more than one option, indicate them alphabetically.

Bracket

—	None
F	With bracket

Port size {2(A) port}

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

Note) Refer to p.2.10-18 for inch-size One-touch fitting.

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

Note) Standard lead wire length: 300mm
 *With light and surge voltage suppressor.

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 or special voltage, consult SMC.

VQZ100/200/300 Body Ported

Standard Specifications



Valve	Seal	Metal seal	Rubber seal
	Fluid	Air, Inert gas	
	Max.operating pressure	0.7MPa (High pressure style: 1.0MPa)	0.7MPa
	Min.operating pressure	0.1MPa	0.15MPa
	Ambient and fluid temp.	-10 to 50°C ⁽¹⁾	-10 to 50°C ⁽¹⁾
	Max.operating frequency	20Hz	5Hz
	Pilot valve EXH	Individual EXH	
	Lubrication	Not required	
	Manual override	Non-locking push style/Locking slotted style	
	Shock/Vibration resistance ⁽²⁾	150/30 m/s ²	
	Enclosure	Dust proof	
	Coil rated voltage	12V, 24V DC and 100V, 110V, 200V, 220V AC	
	Allowable voltage	±10% of rated voltage	
	Coil insurance	Class B or equivalent	
Solenoid	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)
		200V AC	Inrush 1.0VA (5mA), Holding 1.0VA (5mA)
		220V AC	Inrush 1.1VA (5mA), Holding 1.1VA (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 tests were 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 malfunctions occurred in a one-sweep test between 8.3 and 2,000 Hz. Tests were performed at both energized and de-energized states on the axis and right angle direction of the main valve and armature. (Value in the initial stage.)

Model

Series	Valve configuration	Model		Effective area (mm ²)(Cv) ⁽¹⁾	Response time (ms) ⁽²⁾		Weight(g) ⁽³⁾
					Standard: 1W	High pressure: 1W Low wattage and AC	
VQZ100	N.C.	Poppett	VQZ115	3.6 (0.2)	10 or less	13 or less	25
VQZ200	N.C.	Metal seal	VQZ212	8.1 (0.45)	14 or less	18 or less	58
		Rubber seal	VQZ232	10.8 (0.6)	15 or less	20 or less	
	N.O.	Metal seal	VQZ222	7.2 (0.4)	14 or less	18 or less	
		Rubber seal	VQZ242	10.8 (0.6)	15 or less	20 or less	
VQZ300	N.C.	Metal seal	VQZ312	14.4 (0.8)	17 or less	22 or less	92
		Rubber seal	VQZ332	16.2 (0.9)	25 or less	33 or less	
	N.O.	Metal seal	VQZ322	13.5 (0.75)	17 or less	22 or less	
		Rubber seal	VQZ342	16.2 (0.9)	25 or less	33 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)

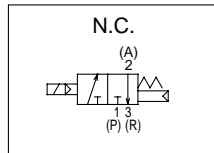
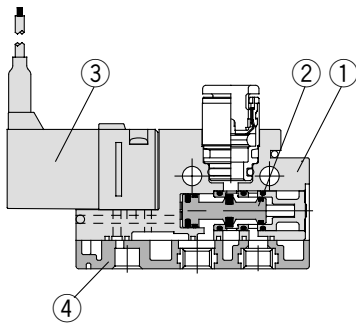
The response time is subject to the pressure and the air quality. The values at the time of ON are given for the double styles.

Note 3) Weight without sub-plate

Construction

VQZ100

Poppet

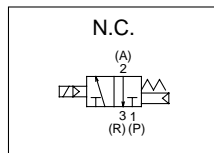
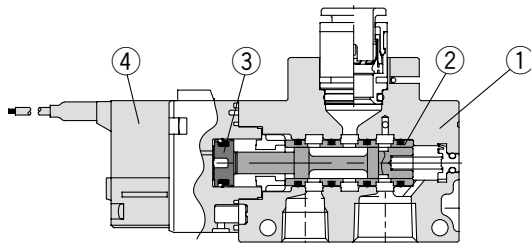


Component Parts

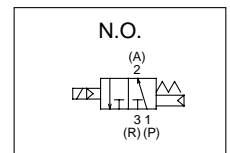
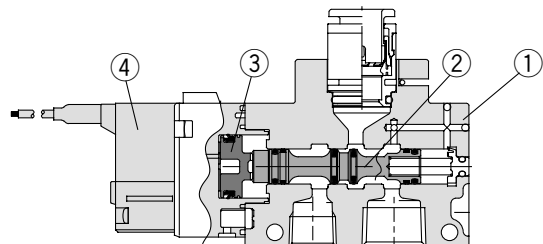
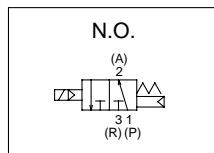
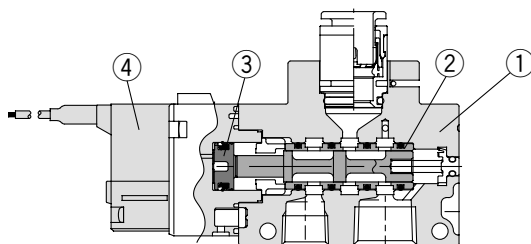
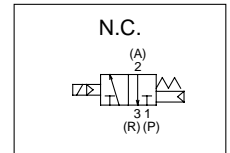
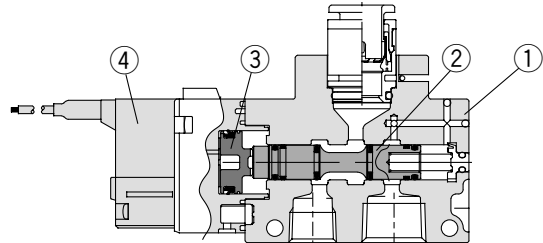
No.	Description	Material	Notes
①	Body	Resin	
②	Spool valve	Aluminum/NBR	
③	Pilot valve	—	
④	P, R plate	Resin/Aluminum	VQZ100-12A

VQZ200/300

Metal seal



Rubber seal



Component Parts

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

SY

SYJ

VK

VZ

VT

VT

VP

VG

VP

VQ

VQZ

VZ

VS

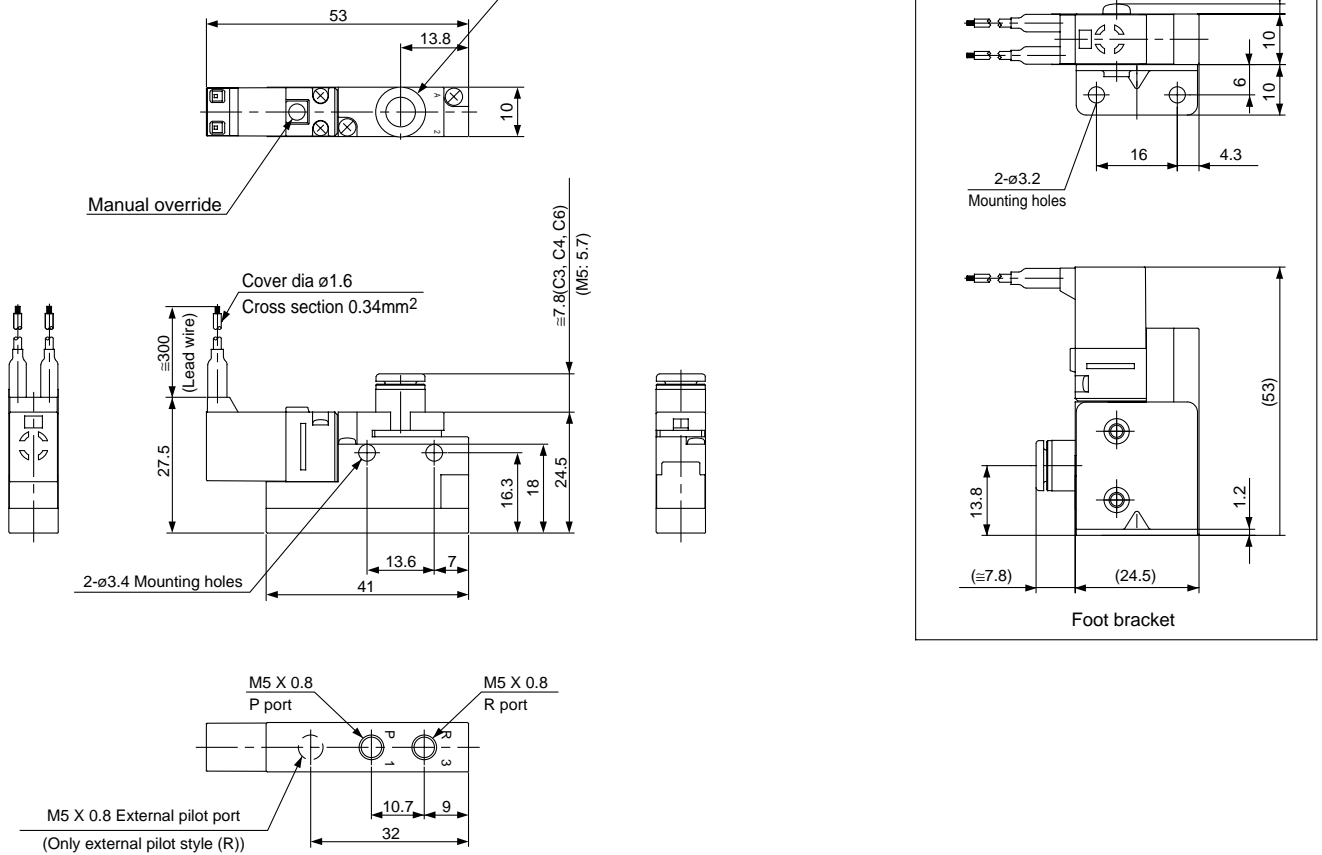
VQZ100/200/300 Body Ported

Dimensions: VQZ100

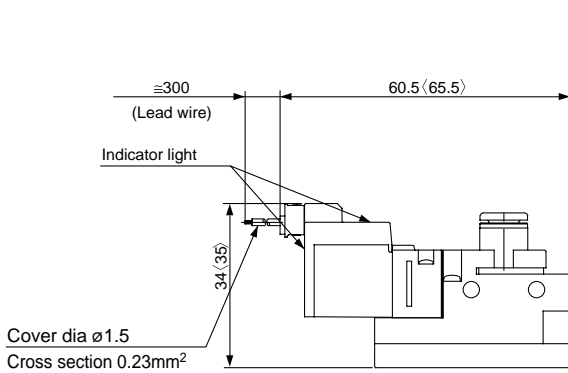
Valve single unit

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

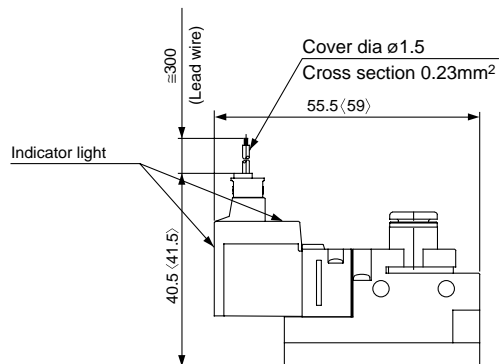
- 2-C3, C4, C6, M5
- C3: One-touch fittings for $\phi 3.2$
- C4: One-touch fittings for $\phi 4$
- C6: One-touch fittings for $\phi 6$
- M5: M5 thread



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



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



Body Ported

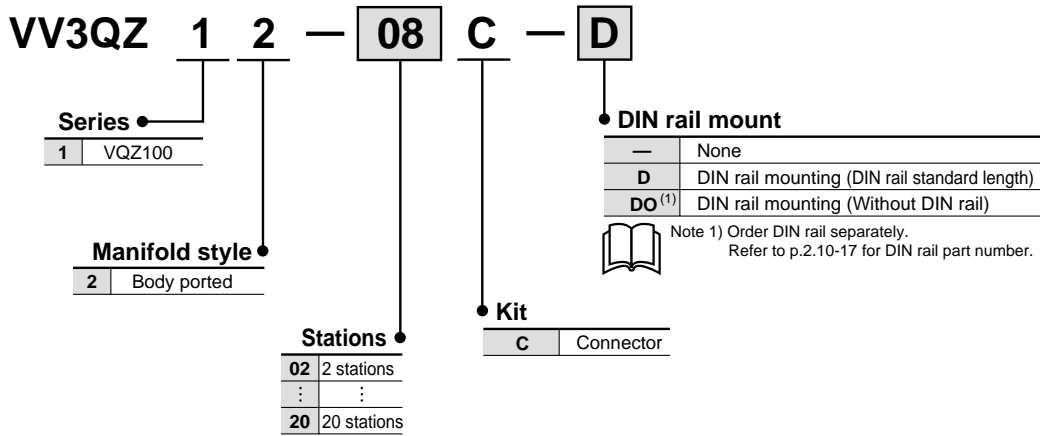
Plug Lead Unit

3 Port Solenoid Valve

VQZ100/200/300

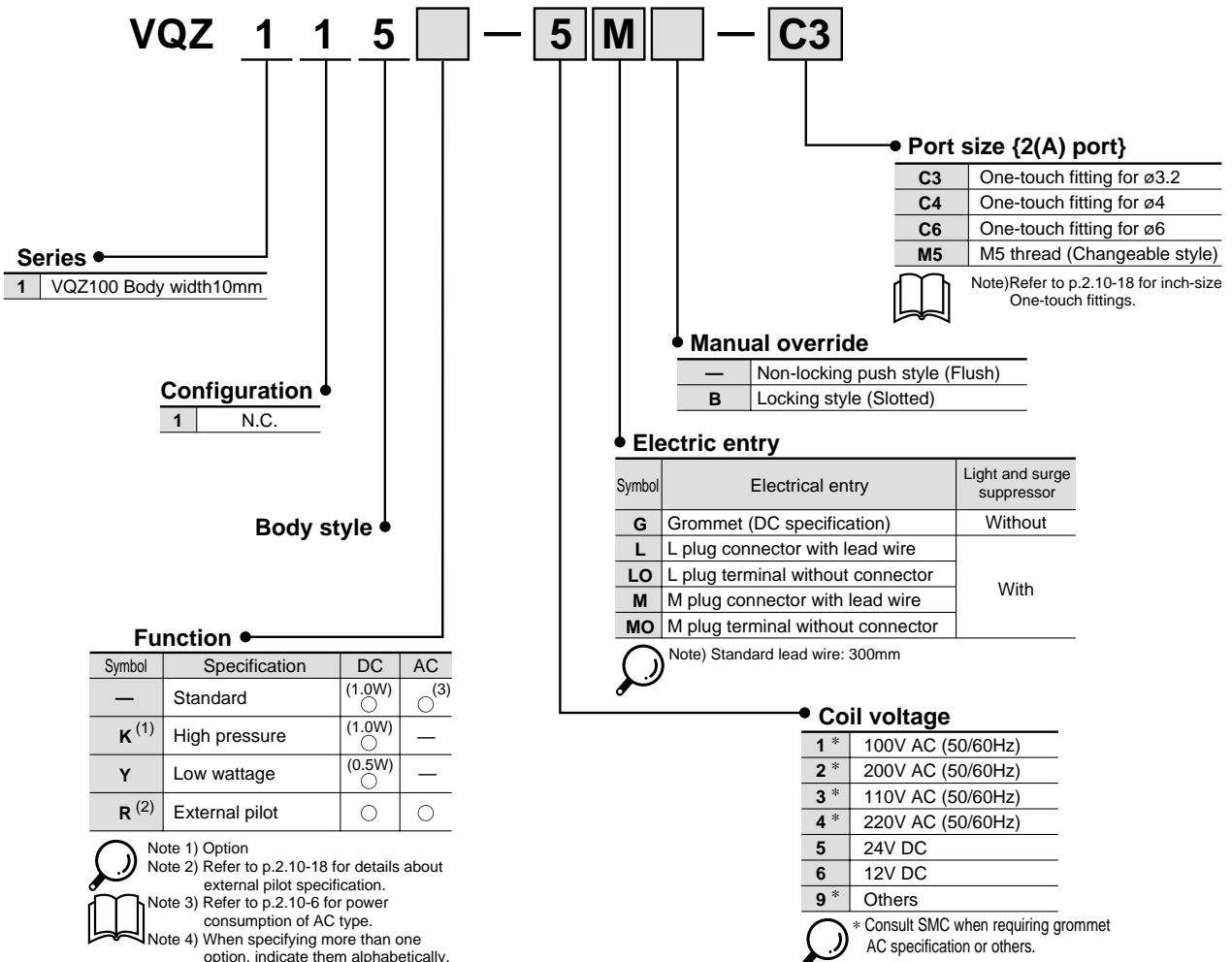
Manifold Connector kit

How to Order Manifold VQZ100



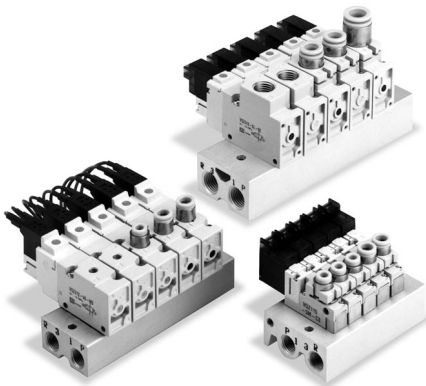
- SY
- SYJ
- VK
- VZ
- VT
- VT
- VP
- VG
- VP

How to Order Valve VQZ100



- VQ
- VQZ
- VZ
- VS

Manifold Specifications



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

- SY
- SYJ
- VK
- VZ
- VT
- VT
- VP
- VG
- VP
- VQ
- VQZ
- VZ
- VS

How to Order Manifold Assembly (Example)

VV3QZ22-05C 1 set (C kit 5 stations manifold base)

* **VVQZ200-10A-2** ... 1 set (Blank plate assembly)

* **VQZ212-5M-C6** ... 4 sets (N.C. style)

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

→ Write sequentially from station 1 on the D side.

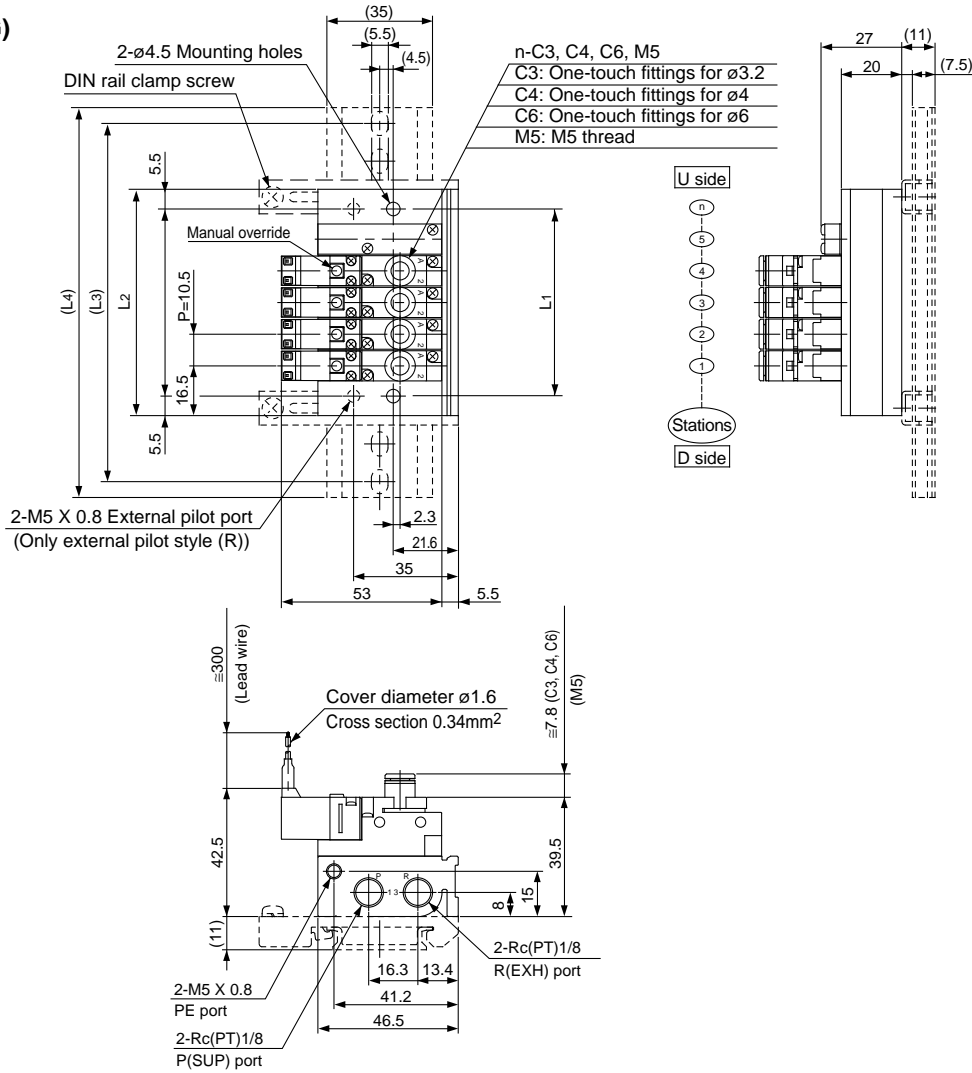
Add the suffix valve and option part numbers to the manifold base number. Part numbers written collectively can be complicated, thus specify by using a manifold specification form.

VQZ100/200/300 Body Ported

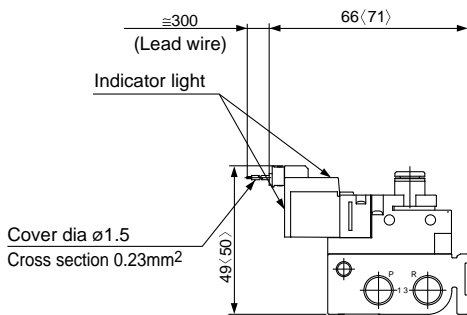
Dimensions: VQZ100

VV3QZ12-Station C

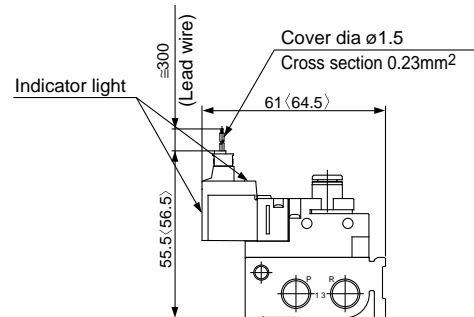
Grommet (G)



L plug connector (L)



M plug connector (M)



Dimensions Equation $L1=10.5n+9.5$ $L2=10.5n+22.5$

n: Station (Max. 20)

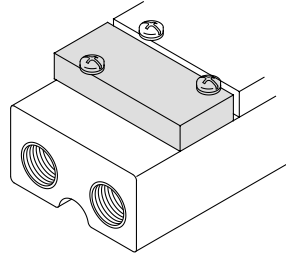
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5
L2	43.5	54	64.5	75	85.5	96	106.5	117	127.5	138	148.5	159	169.5	180	190.5	201	211.5	222	232.5
L3	75	75	87.5	100	112.5	125	137.5	137.5	150	162.5	175	187.5	200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

Manifold Options

Blank plate

VVQZ100-10A-2
VVQZ200-10A-2
VVQZ300-10A-2

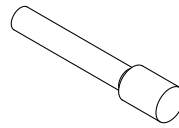
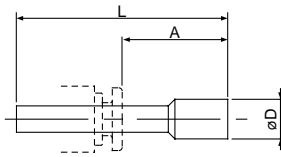
This is used when removing the valve for maintenance, or reserving a valve mounting space on the manifold for future use.



Blank plug

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

● Color: White



Dimensions

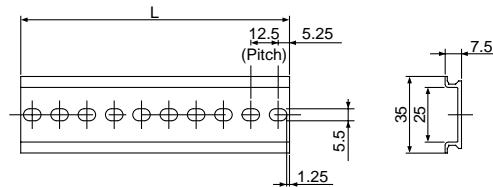
One-touch fitting ød	Part No.	A	L	D
3.2	KQP-23-X19	16	31.5	3.2
4	KQP-04-X19	16	32	6
6	KQP-06-X19	18	35	8
8	KQP-08-X19	20.5	39	10
10	KQP-10-X19	22	43	12

DIN rail

AXT100-DR-□

* Enter suffix number into □ from the table below.
Refer to the manifold dimensions for the 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.



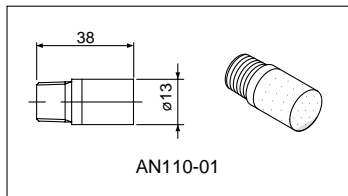
L dimension

$$L = 12.5n + 10.5$$

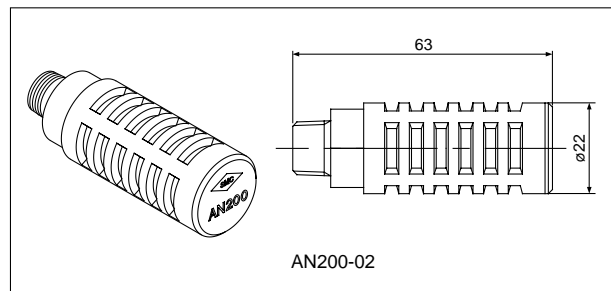
No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	23	35.5	48	60.5	73	85.5	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5
No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
L	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5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

EXH port silencer

Silencer is installed in the EXH port.



AN110-01



AN200-02

Dimensions

Model	Silencer P/N
VQZ100	AN110-01
VQZ200	AN110-01
VQZ300	AN200-02

SY

SYJ

VK

VZ

VT

VT

VP

VG

VP

VQ

VQZ

VZ

VS

Series VQZ Body Ported Option

External Pilot Specification

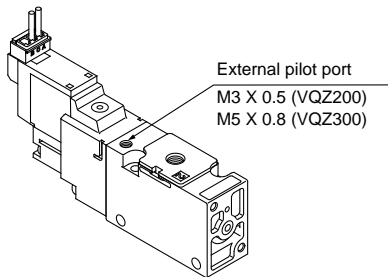
The external pilot specification is used when the operating pressure is below the minimum operating pressure 0.1 to 0.2MPa or when valve is used for a vacuum application.

For the external pilot valve, an "R" should be attached to the valve and the manifold part number.

Example/Valve

VQZ212R — 5M — C6

External pilot specification



Pressure specifications

Series		VQZ100 ⁽²⁾	VQZ200, VQZ300
External pilot pressure range	Metal seal	—	0.1 to 0.7MPa
	Rubber seal (1) (VQZ100: Poppet)	0.2 to 0.7MPa	0.15 to 0.7MPa
Operating press. range (1)		Vacuum to 0.7MPa	

- Note 1) In case of the high pressure style, the upper limit of max. operating pressure and external pressure range is 1MPa.
 Note 2) If VQZ100 is applied in vacuum, vacuum from P port. When finishing the vacuum application, supply pressure from R port. Make sure that the supply pressure is less than half of the external pilot pressure.

Inch Size One-touch Fittings and Optional Thread

Manifolds are available with inch size one-touch fittings and NPT, NPTF or PF type threads.

How to Order Valve

VQZ212 — 5M — N7 T

Thread
(Cylinder ports,
and P/R ports)

—	Rc(PT)
N	NPT
T	NPTF
F	G(PF)

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

Cylinder ports

Symbol	N1	N3	N7	N9	N11	M5	O2
Tube O.D. (Inch)	ø1/8"	ø5/32"	ø1/4"	ø5/16"	ø3/8"	M5	1/4
A, B port	VQZ 100	●	●	—	—	●	—
	VQZ 200	—	●	●	—	●	—
	VQZ 300	—	—	●	●	●	●

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

How to Order Manifold

VV3QZ22 — 05C — 00T

Thread
(P/R port)

—	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 VQZ200/300 rubber seal style only)

VQZ332 — 5YZB W — 02

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.)

Replacement Parts

One-touch Fitting Assembly (For cylinder port)

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

Note) Orders accepted in 10 pcs. 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

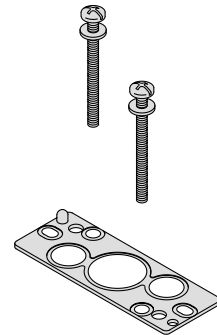
Standard wire length of valve with plug connector is 300mm.

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

Gasket and screw assembly

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

Note) Above part number consists of a 10 pcs. units with one gasket and two screws. Orders are accepted in 10 pcs. units.



Pilot valve assembly

VQ11 1 □ — 5 G

Series

0	VQZ100
1	VQZ200, 300

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 entry: L/M plug connector only.

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 of AC specification and others.

Electric 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 without connector	
M	M plug connector with lead wire	
MO	M plug terminal without connector	Without
Y ⁽¹⁾	DIN terminal	
YO ⁽¹⁾	DIN terminal without connector	
YZ ⁽¹⁾	DIN terminal	With
YOS ⁽¹⁾	DIN terminal without connector	With (Without light)

Note 1) DIN is applicable to VQZ 200 and 300.
 Note 2) Electrical entry of pilot valve for VQZ100 (L and M) is opposite side of valve body part number.

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

SY

SYJ

VK

VZ

VT

VT

VP

VG

VP

VQ

VQZ

VZ

VS