







Metal Seal / Rubber Seal 3 Port Solenoid Valve

VQZ100/200/300

Solenoid Valve Variation





Manifold Options



Body Ported

Plug Lead Unit

3 Port Solenoid Valve Series VQZ100/200/300 Single Unit

VQZ100 / How to Order Valve 1-**C6**-PR VQZ 1 5 5 CE compliant Series 1 VQZ100 body width 10 mm Type of actuation Option N.C. (A) : None 1 F: With bracket 13 (P)(R) Body type cket Function Specifications DC Symbol Port size [2(A) port] (0.35 W Standard type C3 ø3.2 one-touch fitting (0.9 W) ø4 one-touch fitting K Note 1) High pressure type C4 C6 ø6 one-touch fitting R Note 1, 2) \bigcirc External pilot type M5 M5 thread (Replaceable type) (0.9 W) KR Note 1, 2) High pressure/External pilot type Note) For inch size one-touch fittings, refer to page 15 Note 1) Option Note 2) For details on external pilot type, refer to page 15. Manual override Non-locking B: Locking type - 1 push type (Tool required) Use standard (DC) specification for continuous duty. Coil voltage 5 24 VDC **Electrical entry** 12 VDC 6 L: L plug M: M plug MO: M plug G: Grommet LO: L plug (DC speciconnector connecto connector connector with lead fication) without with lead without wire connecto wire connector With light/ With light/ With light/ With light/ surge voltage surge voltage surge voltage surge voltage suppressor suppressor suppressor suppressor Note) Standard lead wire length: 300 mm

> Note) For one-touch fittings to be mouned on this valve and the silencer part no., refer to back page 4.



Body Ported Series VQZ100/200/300

VQZ200/300 / How to Order Valve



SMC

2



Valve construction	Metal seal	Rubber seal	VQZ100 (Poppet seal)						
Fluid		Air, Inert gas							
Max. operating pressure (MPa)	0.7 (High pressure type: 1.0)	0.7	0.7 (High pressure type: 1.0)						
Min. operating pressure (MPa)	0.1	0.15	0.15						
Ambient and fluid temperature (°C)	-10 to 50 (No freezing)								
Max. operating frequency (Hz)	.) 20 5 20								
Pilot exhaust method	Individua	l exhaust	Common exhaust						
Lubrication		Not required							
Manual override	Push typ	oe/Locking type (Tool r	equired)						
Shock/Vibration resistance (m/s ²) Note)	^{e)} 150/30								
Enclosure	Dust-tight (DIN terminal: IP65*)								
* Based on JEC60529									

Specifications

Note) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energised and deenergised states every once for each condition. (Value in the initial state)

Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve and armature when pilot signal is ON and OFF. (Value in the initial state)

Solenoid Specifications

Electrical entry			Grommet (G) L plug connector (L)	M plug connector (M) DIN terminal (Y)				
			G, L, M	Y				
Coil rated voltage	1	00	24,	12				
(V)	AC 50/60 Hz		100, 110,	200, 220 [*]				
Allowable voltage fluctuation			±10% of rat	ed voltage*				
	Standard		0.35 (With light: 0.4 (DIN	terminal with light: 0.45)]				
Power consumption (W)	DC	High speed response, high pressure	0.9 (With light: 0.95 (DIN terminal with light: 1.0)]					
		100 V	-	0.78 (With light: 0.87)				
Apparent power	40	110 V [115 V]	-	0.86 (With light: 0.87) [0.94 (With light: 1.07)]				
(VA)*	AC	200 V	-	1.15 (With light: 1.30)				
		220 V [230 V]	-	0.86 (With light: 0.89) [1.39 (With light: 1.60)]				
Surge voltage supp	oresso	or	Diode (DIN terminal, Varis	Diode (DIN terminal, Varistor when non-polar types)				
Indicator light	Indicator light			LED (Neon light when AC with DIN terminal)				
* In common bet	ween 1	10 VAC and 115 VA	C, and between 220 VAC and 23	80 VAC.				

 \ast For 115 VAC and 230 VAC, the allowable voltage is –15% to +5% of rated voltage.

Optional Specifications

High speed response type
High pressure type (Metal seal type only)

External pilot type*

* For details on external pilot type, refer to page 15.

Flow Characteristics

	Valva				Fl	ow char	acteristics	Res	Note 2)					
Series	construc-	Mode	el	1→2 (P→A)		2→3 (A→R)		Standard [.]	High	High		Weight
	tion		-	C [dm3/(s•bar)]	b	Cv	C [dm³/(s•bar)]	b	Cv	0.35 W	speed: 0.9 W	pressure: 0.9 W	AC	(g)
VQZ100	N.C. valve	Poppet	VQZ115	0.59	0.44	0.17	0.56	0.30	0.14	10 or less	—	13 or less	22 or less	24
	N.C.	Metal seal	VQZ212	1.2	0.21	0.30	1.3	0.24	0.33	22 or less	14 or less	18 or less	34 or less	
V07200	valve	Rubber seal	VQZ232	1.6	0.33	0.39	1.7	0.37	0.45	22 or less	15 or less	20 or less	36 or less	57
VQZZUU	N.O.	Metal seal	VQZ222	1.2	0.25	0.31	1.3	0.20	0.31	22 or less	14 or less	18 or less	34 or less	57
	valve	Rubber seal	VQZ242	1.6	0.36	0.40	1.7	0.36	0.45	22 or less	15 or less	20 or less	36 or less	
	N.C.	Metal seal	VQZ312	2.7	0.18	0.62	2.4	0.28	0.56	22 or less	17 or less	22 or less	34 or less	
VO7200	valve	Rubber seal	VQZ332	3.5	0.34	0.87	3.0	0.33	0.72	33 or less	25 or less	33 or less	57 or less	0.2
VQZ300	N.O.	Metal seal	VQZ322	2.6	0.21	0.59	2.2	0.16	0.49	22 or less	17 or less	22 or less	34 or less	93
	valve	Rubber seal	VQZ342	3.5	0.38	0.88	2.9	0.27	0.69	33 or less	25 or less	33 or less	57 or less	

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

Response time values will change depending on pressure and air quality. Note 2) Weight for threaded connection



Body Ported Series VQZ100/200/300

Construction

VQZ100 Poppet type





Component Parts

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

VQZ200/300

Metal seal type





Rubber seal type









Component Parts

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

Note) For "How to Order Pilot Valve Assembly", refer to page 16.

Dimensions: VQZ100

Single Unit

Grommet (G): VQZ115-□G□1-C3, C4, C6, M5-PR-Q



Note) For model no. of one-touch fittings for P and R port and silencer, refer to back page 4.

L plug connector (L): VQZ115-□L□1-C3, C4, C6, M5-PR-Q

M plug connector (M): VQZ115-DMD1-C3, C4, C6, M5-PR-Q





Body Ported Series VQZ100/200/300

Dimensions: VQZ200



L plug connector (L): VQZ2□2(R)-□L□1-C4, C6, M5-Q



M plug connector (M): VQZ2□2(R)-□M□1-C4, C6, M5



DIN terminal (Y): VQZ2 2(R)- Y - 1-C4, C6, M5-Q



Dimensions: VQZ300

Single Unit



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L plug connector (L): VQZ3□2(R)-□L□1-C6, C8, C10, 02-Q



M plug connector (M): VQZ3 2(R)- M 1-C6, C8, C10, 02-Q



DIN terminal (Y): VQZ3 2(R)- Y 1-C6, C8, C10, 02-Q



Body Ported

Plug Lead Unit

3 Port Solenoid Valve Series VQZ100/200/300 Manifold Connector Kit





Body Ported Series VQZ100/200/300

Manifold Specifications



How to Order Manifold Assembly (Example)



Dimensions: VQZ100







Dimer	sions									F	ormula: I	L1 = 10.	5n + 9.5	L2 = 10).5n + 22	2.5 n: S	tations (I	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	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

Body Ported Series VQZ100/200/300

Dimensions: VQZ200



Dimensions: VQZ300



Body Ported Series VQZ100/200/300

Manifold Options

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

It is mounted onto the manifold block in preparation for removing a valve for maintenance reasons or when planning to mount a spare valve, etc.

Colour: White

ð

Dimensions	6			(mm)
Applicable fittings size ød	Model	Α	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-

Blanking plug KQP-23-X19 KQP-04-X19 KQP-06-X19 KQP-08-X19

KQP-10-X19

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

Each manifold can be mounted on a DIN rail.

Insert "D" at the end of the manifold part number. The DIN rail is approximately 30 mm longer than the length of manifold.

	۰ <u>۲</u>	4	
	12.5	5.25	7.5
	(Pitch)		
ensions table	++++++++++++++++++++++++++++++++++++++	1.2	
L Dimension	+	ما 1.25_	*C^

L = 12.5n + 10.5

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L dimension	23	35.5	48	60.5	73	85.5	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5
No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
L dimension	273	285.5	208	310.5	333	225.5	2/10	260.5	272	295.5	200	410.5	122	125.5	110	160 5	172	195.5	100	510.5

Silencer (For manifold EXH port)

Silencer is installed in the manifold EXH port.

Dimensions									
Model	Silencer pa								
107400									

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

For a silencer to be mounted on a single valve unit, refer to back page 4.

External Pilot Specification

The external pilot specification is used when the operating pressure is below the minimum operating pressure of 0.1 to 0.15 MPa or when valve is used for a vacuum application.

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

Pressure Specifications

S	eries	VQZ100 Note 2)	VQZ200/300
Note 1)	Metal seal	—	0.1 to 0.7 MPa
External pilot pressure range	Rubber seal (VQZ100: poppet)	0.2 to 0.7 MPa	0.15 to 0.7 MPa
Operating press	sure range Note 1)	–100 kPa	to 0.7 MPa

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

Note 2) Pump down from 1(P) port when VQZ100 series vacuum type is specified. Apply pressure from 3(R) port to relieve vacuum pressure. Set the release pressure at 50% of external pilot pressure or less.

Inch-size One-touch Fittings and Option Thread

Inch size one-touch fittings and NPT, NPTF and G thread are available.

How to Order Manifold

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

VV3QZ22-05C-00T-Q

(1 (P),	3 (R) p	orts)
-	Rc	
00N	NPT	
00T	NPTF	
00F	G	

IP65 Enclosure (Based on IEC529)

DIN terminal is available with IP65 enclosure.

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

Series VQZ Body Ported **Replacement Parts**

One-touch Fitting Assembly (For cylinder port)

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

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

<Plug connector assembly>

Without lead wire: SY100-30-A (with connector and 2 sockets only)

Le	ead wi	re length •								
	- 300 mm									
	6	600 mm								
	10	1000 mm								
	15	1500 mm								
	20	2000 mm								
	25	2500 mm								
	30	3000 mm								
	50	5000 mm								

<Pilot valve assembly>

VQZ115□-□M□1

V111 M- L

-Gasket and screw assemblys

EX.) In case of 2000 mm of lead wire

VQZ115-5LO1-M5-PR-Q SY100-30-4A-20

How to Order

For DC

<gashe< th=""><th>and sole</th><th>w assemb</th><th>iy></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></gashe<>	and sole	w assemb	iy>												
		Part no.		<d< th=""><th>IN termin</th><th>nal type (</th><th>Appli</th><th>cable</th><th>to the</th><th>e VQZ</th><th>2200/3</th><th>300)></th><th></th><th></th><th></th></d<>	IN termin	nal type (Appli	cable	to the	e VQZ	2200/3	300)>			
VQZ1	00 V	/QZ100-GS-2							1 6						
VQZ2	.00 V	/QZ200-GS-2				V	115	5		5	Y -	-X1	110		
VQZ3	00 V	/QZ300-GS-2					Funct	ion			Т				
Note	e) Above part num Each unit has o screws. Purcha units of 10 piec	nber consists of 1 one gasket and tv asing order is avai tes.	0 units. vo ilable in 2 2 3 - 4 2 5 2 6 -	Symbol - B Note) K Note) Coil 100 VAC 200 VAC 200 VAC 220 VAC 220 VAC 24 VDC 12 VDC	Specii Standard tyj High speed High pressu (Metal seal t tote) Option Voltage (50/60 Hz) (50/60 Hz) (50/60 Hz)	fications pe response type ype only) Symbol Y YO YZ YS Note) VOS Note	DC (0.35 W) (0.9 W) (0.9 W) (0.9 W) (0.9 W) DIN te DIN te DIN te DIN te DIN te DIN te	AC 	ithout co ith light/s ith surge ith surge	Electric ponnector surge vo e voltage e voltage	al entry litage su suppre	appresso ssor (D0 ssor, wi	Dr C specific ithout cor	Electri cation)	cal entry ● Light/surge voltage suppressor None Yes Yes (With light)
	Part no.	Tightening torc	ue (N•m	Note)		Not	e) For A	C voltage	e valves t	here is n	o "S" op	tion. It is	already b	puilt-in to	the rectifier
VQZ100	VQZ100-FB	0.45 to	o 0.55				circui	t.					-		
VQZ200	VQZ200-FB	0.25 to	o 0.35				⁄∆(Cauti	ion						
VQZ300	VQZ300-FB	0.25 to 0.35					When	replacir	ng the p	pilot va	alve as	sembl	y, use c	aution	because it
Note	e) Tightening torq	ue when mountin	ig a brack	et on		i	s not gromr	possibl net, L t	e to co ype, M	nvert to type).	o a V1 or vice	15 (DIN versa	N termir 1.	nal) froi	n a V111

Ŋ the valve.

Base Mounted

Plug Lead Unit

3 Port Solenoid Valve Series VQZ100/200/300 Single Unit

Coil voltage

5	24 VDC	Note) For sub-plate part no
6	12 VDC	refer to page 32.

Base Mounted Series VQZ100/200/300

VQZ200/300 / How to Order Valve

1	100 VAC (50/60 Hz)	Note) For sub-plate part no.,
2	200 VAC (50/60 Hz)	refer to page 32.
3	110 VAC [115 VAC] (50/60 Hz)	
4	220 VAC [230 VAC] (50/60 Hz)	Note) Ac specification is only
5	24 VDC	with Y, YO, YZ type.
6	12 VDC]

to page 32.

pecification is only available , YO, YZ type.

Valve construction	Metal seal	Rubber seal	VQZ100 (Poppet seal)					
Fluid	Air, Inert gas							
Max. operating pressure (MPa)	0.7 (High pressure type: 1.0)	0.7	0.7 (High pressure type: 1.0)					
Min. operating pressure (MPa)	0.1	0.15	0.15					
Ambient and fluid temperature (°C)	-	-10 to 50 (No freezing)						
Max. operating frequency (Hz)	20	5	20					
Pilot exhaust method	Individual	exhaust	Common exhaust					
Lubrication		Not required						
Manual override	Push typ	e/Locking type (Tool r	equired)					
Shock/Vibration resistance (m/s ²) Note)	150/30							
Enclosure	Dust	-tight (DIN terminal: IP	65*)					
* Based on IEC60529.	malfunction occurred when	n it is tested with a drop te	ester in the avial direction					

and at the right angles to the main valve and armature in both energised and deenergised states every once for each condition. (Value in the initial state)

Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve and armature when pilot signal is ON and OFF. (Value in the initial state)

Solenoid Specifications

Specifications

Electrical entry			Grommet (G) L plug connector (L)	M plug connector (M) DIN terminal (Y)			
			G, L, M	Y			
Coil rated voltage	1	00	24,	12			
(V)		AC 50/60 Hz	100, 110,	200, 220*			
Allowable voltage f	luctu	ation	±10% of rat	ed voltage*			
		Standard	0.35 (With light: 0.4 (DIN	terminal with light: 0.45)]			
Power consumption (W)	DC	High speed response, high pressure	0.9 (With light: 0.95 (DIN terminal with light: 1.0)]				
		100 V	-	0.78 (With light: 0.87)			
Apparent power	40	110 V [115 V]	-	0.86 (With light: 0.87) [0.94 (With light: 1.07)]			
(VA)		200 V	-	1.15 (With light: 1.30)			
		220 V [230 V]	-	0.86 (With light: 0.89) [1.39 (With light: 1.60)]			
Surge voltage suppressor			Diode (DIN terminal, Varistor when non-polar types)				
Indicator light			LED (Neon light when AC with DIN terminal)				

 \ast In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC. \ast For 115 VAC and 230 VAC, the allowable voltage is –15% to +5% of rated voltage.)

Flow Characteristics

	Value				Flow characteristics							Response time (ms) Note 1)			
Series	construc-	Mode	Model		1→2 (P→A)			2→3 (A→R)			High	High		Weight	
	tion			C [dm3/(s•bar)]	b	Cv	C [dm3/(s•bar)]	b	Cv	0.35 W	speed: 0.9 W	pressure: 0.9 W	AC	(g)	
VQZ100	N.C. valve	Poppet	VQZ115	0.87	0.46	0.23	1.0	0.35	0.25	10 or less	—	13 or less	22 or less	24	
	N.C.	Metal seal	VQZ215	1.7	0.17	0.38	2.0	0.20	0.45	22 or less	14 or less	18 or less	34 or less		
VO7200	valve	Rubber seal	VQZ235	2.3	0.46	0.65	3.0	0.40	0.80	22 or less	15 or less	20 or less	36 or less	52	
VQZZUU	N.O.	Metal seal	VQZ225	1.7	0.18	0.38	1.8	0.21	0.39	22 or less	14 or less	18 or less	34 or less	52	
	valve	Rubber seal	VQZ245	2.5	0.43	0.67	3.0	0.30	0.74	22 or less	15 or less	20 or less	36 or less		
	N.C.	Metal seal	VQZ315	3.0	0.21	0.70	3.2	0.27	0.80	22 or less	17 or less	22 or less	34 or less		
VQZ300	valve	Rubber seal	VQZ335	4.5	0.42	1.3	4.1	0.36	1.0	33 or less	25 or less	33 or less	57 or less	70	
	N.O.	Metal seal	VQZ325	2.9	0.21	0.72	2.9	0.16	0.69	22 or less	17 or less	22 or less	34 or less	/0	
	valve	Rubber seal	VQZ345	4.4	0.45	1.2	4.5	0.38	1.2	33 or less	25 or less	33 or less	57 or less		

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

Note 2) Weight without sub-plate.

Base Mounted Series VQZ100/200/300

Dimensions: VQZ100

Single Unit

Grommet (G): VQZ115(R)-□G□1-01-Q

L plug connector (L): VQZ115(R)-□L□1-01-Q

M plug connector (M): VQZ115(R)-□M□1-01-Q

Dimensions: VQZ200

Single Unit

Grommet (G): VQZ2 5(R)- G - 1-02 - Q

L plug connector (L): VQZ2 5(R)- L 1-02 -Q

M plug connector (M): VQZ2 5(R)- M - 1-02 -Q

DIN terminal (Y): VQZ2 5(R)- Y 1-01 -Q

Dimensions: VQZ300

Single Unit

L plug connector (L): VQZ3 5(R)-L 1-03-Q

M plug connector (M): VQZ3□5(R)-□M□1-⁰²₀₃-Q

DIN terminal (Y): VQZ3 5(R)- Y - 1-02 -Q

Base Mounted

Plug Lead Unit

3 Port Solenoid Valve Series VQZ100/200/300 Manifold Connector Kit (E

VQZ100 / How to Order Manifold

Base Mounted Series VQZ100/200/300

VQZ200/300 / How to Order Manifold

		Pip	ing spec	ifications	Applicable	Applicable	Note) Manifold
Series	Series Base model		F	Port size	solenoid	station	base
		location	1(P), 3(R)	2(A)	valve		weight (g)
VQZ100	VV3QZ15-□□C-□-Q	Side/Top	Rc 1/8	C3 (For ø3.2) C4 (For ø4) C6 (For ø6) M5 (M5 thread)	VQZ115	2 to 20 stations	2 stations: 83 Addition per station: 19
VQZ200	VV3QZ25-□□C-□-Q	Side	Rc 1/4	C4 (For ø4) C6 (For ø6) C8 (For ø8) Rc 1/8	VQZ2⊡5	2 to 20 stations	2 stations: 126 Addition per station: 38
VQZ300	VV3QZ35-□□C-□-Q	Side	1(P) port Rc 3/8 3(R) port Rc 1/4	C6 (For ø6) C8 (For ø8) C10 (For ø10) Rc 1/4	VQZ3⊡5	2 to 20 stations	2 stations: 209 Addition per station: 60
) Weight for threaded cor	nnection.	<u> </u>	·			

Optional Specifications

High speed response type
High pressure type (Metal seal type only)
External pilot type*

* For details on external pilot type, refer to page 31.

How to Order Manifold Assembly (Example)

Base Mounted Series VQZ100/200/300

Construction

VQZ100 Poppet type

Note) For "How to Order Pilot Valve Assembly", refer to page 32.

Dimensions: VQZ100

Dimensions Formula: L1 = 10.5n + 9.5								5 L2 = 10.5n + 22.5 n: Stations (max. 20 station											
	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

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SMC

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O.

Base Mounted Series VQZ100/200/300

Dimensions: VQZ200

Dimensions: VQZ300

Base Mounted Series VQZ100/200/300

Manifold Options

Blanking plate assembly VVQZ100-10A-5 (For VQZ100) VVQZ200-10A-5 (For VQZ200) VVQZ300-10A-5 (For VQZ300) It is mounted on to the manifold block in preparation for removing a valve for maintenance reasons or when planning to mount a spare valve, etc. **Blanking plug KQP-23-X19** Dimensions (mm) KQP-04-X19 Applicable D Model Α L **KQP-06-X19** fittings size ød 3.2 KQP-23-X19 16 31.5 3.2 **KQP-08-X19** ð 4 **KQP-04-X19** 16 32 6 KQP-10-X19 KQP-06-X19 6 18 35 8 KQP-08-X19 20.5 8 39 10 Colour: White 10 **KQP-10-X19** 22 43 12 L **DIN** rail 12.5 (Pitch) 5.25 7.5 AXT100-DR-As for \Box , enter the number from the DIN rail dimensions table. For L dimension, refer to the dimensions of each kit 5.5 Each manifold can be mounted on a DIN rail. 12.5 Insert "D" at the end of the manifold part number. L Dimension L = 12.5n + 10.5The DIN rail is approximately 30 mm longer than 9 10 11 12 13 14 15 16 17 18 19 20 No. 1 2 3 4 5 6 7 8 the length of manifold. L dimension 23 35.5 48 60.5 73 85.5 98 1105 123 135.5 148 160.5 173 185.5 198 210.5 223 235.5 248 260.5 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 21 22 No L dimension 273 285.5 298 310.5 323 335.5 348 360.5 373 385.5 398 410.5 423 435.5 448 460.5 473 485.5 498 510.5 Silencer (For manifold EXH port) 63 Silencer is installed in the manifold EXH port.

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

Port plug VVQZ100-CP (For VQZ100)

This is used when changing piping location. (Side or Top) $\label{eq:constraint}$

External Pilot Specification

The external pilot specification is used when the operating pressure is below the minimum operating pressure of 0.1 to 0.15 MPa or when valve is used for a vacuum application.

Order a valve by adding the external pilot specification $\left[R\right]$ to the part number.

Pressure Specifications

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

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

Note 2) When using the VQZ100 series for a vacuum application, vacuum air through its 1(P) port. When supplying vacuum-release air, supply it through its 3(R) port. But do not supply vacuum-release air exceeding 50% for the external pilot pressure.

Inch-size One-touch Fittings and Option Thread

Inch size one-touch fittings and NPT, NPTF and G thread are available.

					1	● Th (C 1 (reac ylinc (P), 3	l ty lei 6 (l	ype r por R) po	t and orts)	
							-		Rc]	
						1	N	1	NPT		
						-	Г	Ν	IPTF		
Cylin	der pol	rt	NO	NZ	N9	N11	NM Note	e 1)	M5	01	02
Sym	lodr	N1	113	1117	110				-		-
Sym Applicab O.D.	nbol le tubing (Inch)	N1 ø1/8"	ø5/32"	ø1/4"	ø5/16"	ø3/8"	Mixe	d	M5 thread	1/8 thread	1/4 threa
Sym Applicab O.D.	nbol le tubing (Inch) VQZ100	N1 ø1/8"	N3 ø5/32" ●	ø1/4"	ø5/16"	ø3/8"	Mixe	d	M5 thread	1/8 thread	1/4 threa
Syn Applicab O.D. Cylinder port	nbol le tubing (Inch) VQZ100 VQZ200	N1 ø1/8" —	N3 ø5/32" ●	ø1/4"	ø5/16"	ø3/8" 	Mixe	d	M5 thread	1/8 thread —	1/4 threa

International Thread Standards Other than Rc

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

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

Rc		
NPT		
NPTF		
G		

IP65 Enclosure (Based on IEC529)

DIN terminal is available with IP65 enclosure.

How to Order Single Valve (Applicable to the VQZ200/300 rubber seal with the

Series VQZ Base Mounted **Replacement Parts**

One-touch Fitting Assembly (For cylinder port)

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

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

<Plug connector assembly>

Without lead wire: SY100-30-A (with connector and 2 sockets only)

Lead wire length						
	-	300 mm				
	6	600 mm				
	10	1000 mm				
	15	1500 mm				
	20	2000 mm				
	25	2500 mm				
	30	3000 mm				
	50	5000 mm				

<Pilot valve assembly> 5 V111 G Function Manual override Symbol Specifications DC AC (Applicable to VQZ100) 0.35 V Standard type \bigcirc Non-locking push type High speed response в Locking slotted type B Note) (0.9 W) type (Applicable to VQZ200, 300) Coil voltage High pressure type (0.9 W) 5 24 VDC K Note) (Metal seal type, 12 VDC 6 Poppet seal type) Note) Option With/Without manual override None (Applicable to VQZ200, 300) Yes (Applicable to VQZ100) М Electrical entry Symbol Light/surge voltage Electrical entry DC suppressor G Grommet (DC specification) None

L plug connector with lead wire

M plug connector with lead wire

from that of the main valve model number.

Valve model no.

VQZ115
L
1

VQZ115□-□M□1

L plug connector without connector

M plug connector without connector

Note) The electrical entry (L, M) for the VQZ100 pilot valve is different

Pilot valve model no.

V111 M- L

Yes

LU

LOU

MU

MOU

How to Order

Include the connector assembly part number together with the part number for the plug connector's solenoid valve without connector.

EX.) In case of 2000 mm of lead wire

- For DC
- VQZ115-5LO1-M5-Q SY100-30-4A-20

<Gasket and screw assembly>

and internal pilot type are common.

Series VQZ Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by labels of **"Caution"**, **"Warning"** or **"Danger"**. To ensure safety, be sure to observe ISO 4414 ^{Note 1}, JIS B 8370 ^{Note 2}) and other safety practices.

Explanation of the Labels

Labels	Explanation of the labels
\land Danger	In extreme conditions, there is a possible result of serious injury or loss of life.
\land Warning	Operator error could result in serious injury or loss of life.
A Caution	Operator error could result in injury Note 3) or equipment damage. Note 4)

Note 1) ISO 4414: Pneumatic fluid power - General rules relating to systems

Note 2) JIS B 8370: General Rules for Pneumatic Equipment

Note 3) Injury indicates light wounds, burns and electrical shocks that do not require hospitalisation or hospital visits for long-term medical treatment.

Note 4) Equipment damage refers to extensive damage to the equipment and surrounding devices.

Selection/Handling/Applications

1. The compatibility of the pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.

Since the products specified here are used in various operating conditions, their compatibility for the specific pneumatic system must be based on specifications or post analysis and/or tests to meet the specific requirements. The expected performance and safety assurance are the responsibility of the person who has determined the compatibility of the system. This person should continuously review the suitability of all items specified, referring to the latest catalogue information with a view to giving due consideration to any possibility of equipment failure when configuring a system.

- 2. Only trained personnel should operate pneumatically operated machinery and equipment. Compressed air can be dangerous if handled incorrectly. Assembly, handling or repair of the systems using pneumatic equipment should be performed by trained and experienced operators. (Understanding JIS B 8370 General Rules for Pneumatic Equipment, and other safety rules are included.)
- 3. Do not service machinery/equipment or attempt to remove components until safety is confirmed.
 - Inspection and maintenance of machinery/equipment should only be performed once measures to prevent falling or runaway of the driven objects have been confirmed.
 When arrive performed is a provide a state of the second s
 - When equipment is removed, confirm the safety process as mentioned above. Turn off the supply pressure for this equipment and exhaust all residual compressed air in the system, and release all the energy (liquid pressure, spring, condenser, gravity).
 Before machinery/equipment is restarted, take measures to prevent quick extension of a cylinder piston rod, etc.
- 4. Contact SMC if the product will be used in any of the following conditions:
 - 1. Conditions and environments beyond the given specifications, or if product is used outdoors.
 - Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, clutch and brake circuits in press applications, or safety equipment.
 An application which has the possibility of having negative effects on people, property, requiring special safety analysis.
 - An application which has the possibility of having negative enects on people, property, requiring special safety analysis.
 If the products are used in an interlock circuit, prepare a double interlock style circuit with a mechanical protection function for the prevention of a breakdown. And, examine the devices periodically if they function normally or not.

■ Exemption from Liability

- 1. SMC, its officers and employees shall be exempted from liability for any loss or damage arising out of earthquakes or fire, action by a third person, accidents, customer error with or without intention, product misuse, and any other damages caused by abnormal operating conditions.
- 2. SMC, its officers and employees shall be exempted from liability for any direct or indirect loss or damage, including consequential loss or damage, loss of profits, or loss of chance, claims, demands, proceedings, costs, expenses, awards, judgments and any other liability whatsoever including legal costs and expenses, which may be suffered or incurred, whether in tort (including negligence), contract, breach of statutory duty, equity or otherwise.
- 3. SMC is exempted from liability for any damages caused by operations not contained in the catalogues and/or instruction manuals, and operations outside of the specification range.
- 4. SMC is exempted from liability for any loss or damage whatsoever caused by malfunctions of its products when combined with other devices or software.

Be sure to read this before handling.

For Safety Instructions and 3 Port Solenoid Valve Precautions, refer to "Precautions for Handling Pneumatic Devices" (M-03-E3A).

Manual Override Operation

ACaution

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

1. For VQZ100

Push type

Press in the direction of the arrow

Locking type (Tool required)

Turn 90° in the direction of the arrow.

2. For VQZ200, 300

Push type (Tool required)

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

Locking type (Tool required)

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

Locked position

Precautions

When operating with a screwdriver, turn it gently using a watch-maker's screwdriver. (Torque: less than 0.1 $N{\mbox{-}m})$

Press and rotate to lock the manual operation of VQZ200, and VQZ300. If rotated without pressing, breakage and air leakage could occur.

How to Use L/M Plug Connector

ACaution

1. Attaching and detaching connectors

To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve. To detach a connector remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.

Light/surge Voltage Suppressor

ACaution

1. L and M plug connector

<For DC>

2. DIN terminal

<For DC>

With light/surge voltage suppressor (YS, YOS)

Light/surge voltage suppressor (YZ)

NO.1 (-) (+) Coil NO.2 (+) (-) O Varistor

<For AC> With light (YZ)

Note) The varistor of the surge voltage suppressor has a residual voltage corresponding to the protective element and rated voltage; therefore, protect the controller side from the surge.

Be sure to read this before handling.

For Safety Instructions and 3 Port Solenoid Valve Precautions, refer to "Precautions for Handling Pneumatic Devices" (M-03-E3A).

Light/surge Voltage Suppressor

A Caution

1. Surge voltage countermeasures

When shutting off the DC power supply using an emergency circuit breaker, the valve may operate incorrectly due to surge voltage generated by other electric parts (e.g., the solenoid). To ensure that surge does not affect the valve, take anti-surge measures (diode for surge protection, etc.) or use a valve with diode to prevent reverse current. (For the model number, consult with SMC.)

 (1), (3): Examples of anti-surge measures
 (2) : Valve equipped with diode to prevent reverse current

Connection of Lead Wire

ACaution

1. Crimping of lead wires and sockets

Not necessary if ordering the with a pre-connected lead wire model. Strip 3.2 to 3.7 mm at the end of the lead wires, insert the ends of the core wires evenly into the sockets, and then crimp with a crimping tool. When this is done, take care that the coverings of the lead wires do not enter the core wire crimping area.

Crimping tool, Part no. DXT170-75-1

Connection of Lead Wire

ACaution

2. Attaching and detaching sockets with lead wires

Attaching

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

Detaching

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

Replacement of Pilot Valve

ACaution

1.When replacing an old type VQZ valve with a new type for maintenance or other reasons, a "conversion connector assembly" is necessary to convert the connector from 3 terminals to 2 terminals and must be ordered separately. (When ordering, refer to the part no. below.)

For pilot valves, there is no compatibility between the old type and new type. When replacing a pilot valve, be sure to confirm whether it is the new type or the old type beforehand.

Be sure to read this before handling.

For Safety Instructions and 3 Port Solenoid Valve Precautions, refer to "Precautions for Handling Pneumatic Devices" (M-03-E3A).

How to Use DIN Terminal

1. EN-175301-803C (Previous DIN 43650C)

The DIN terminal type with an IP65 enclosure is protected against dust and water, however, it must not be used in water.

2. Connection

- 1) Loosen the holding screw and pull the connector out of the solenoid valve terminal block.
- 2) After removing the holding screw, insert a flat head screwdriver, etc. into the notch on the bottom of the terminal block and pry it open, separating the terminal block and the housing.
- 3) Loosen the terminal screws (slotted screws) on the terminal block, insert the cores of the lead wires into the terminals according to the connection method, and fasten them securely with the terminal screws.
- 4) Secure the cord by fastening the ground nut.

3. Changing the entry direction

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

* When equipped with a light, be careful not to damage the light with the cord's lead wires.

4. Precautions

Plug in and pull out the connector vertically without tilting to one side.

5. Compatible cable

Cable O.D.: ø3.5 to ø7

(Reference) 0.5 mm², 2-core or 3-core, equivalent to JIS C 3306

DIN Connector Part No.

Without light

Rated voltage	Voltage symbol	Part no.
All voltages	None	SY100-82-1

With light

with light		
Rated voltage	Voltage symbol	Part no.
24 VDC	24 V	SY100-82-3-05
12 VDC	12 V	SY100-82-3-06
100 VAC	100 V	SY100-82-2-01
200 VAC	200 V	SY100-82-2-02
110 VAC (115 VAC)	110 V	SY100-82-2-03
220 VAC (230 VAC)	220 V	SY100-82-2-04

Circuit diagram with light

One-touch fitting and Silencer Part No. for P, R Ports When Using Valve as an Individual Unit

Part no. for one-touch fitting for 1 (P) port and silencer for 3 (R) port

	_		
Cariaa	(1) One-touch	(2) Sil	encer for 3(R)
Series	fitting for 1(P) port	Silencer	One-touch fitting
VQZ100	KQ2H06-M5	AN120-M5	KJS04-M5
VQZ200	KQ2S06-01S	INA-25-46	IN-457-32 (For ø6)
VQZ300	KQ2H08-02S	AN101-01	KQ2H06-01S

The diameter of the above fittings and silencers are the maximum diameters to lift in the EXH port.

Be sure to read this before handling.

For Safety Instructions and 3 Port Solenoid Valve Precautions, refer to "Precautions for Handling Pneumatic Devices" (M-03-E3A).

Changing the One-touch Fittings

ACaution

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

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

VQZ200: Clipped parallel to the valve body VQZ100/300: Clipped perpendicular to the valve body

Precautions

When pulling the fitting assembly away from the valve base, remove the clip, then connect a tube or plug (KQ2P- $\Box\Box$) 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

ACaution

1. Removing

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

2. Mounting

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

Valve Mounting

ACaution

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

Change of Piping Direction

ACaution

1. How to replace the port direction

Fitting and port plug are modules. After removing the clip with a flat head screwdriver, take out the fitting and port plug. The piping direction (side or top) can be altered by exchanging the fitting and port plug. During exchange, insert the fitting and the port plug until they contact the wall, then, insert the clip to specified position.

Caution

The clip length for the valve and the base are different. Fitting may detach if the incorrect clip is used.

2.Valve piped on top can be operated independently by using PR plate.

(Refer to the below part numbers when placing an order.)

VQZ100-12A (standard spec.) VQZ100-12B (external pilot spec.) * 2 set screws are included.

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