# Space Saving Vacuum Ejector

**ZQ** Series

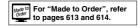
[Option]

Note) CE/UKCA-compliant:
For DC only.

The ZQ series space saving vacuum ejector/vacuum pump system is to be discontinued as of April 2023. Consider selecting a ZQ $\square$ A series compact vacuum unit as a substitute. Click here for details.

#### **How to Order**

# **Ejector Unit**





#### 1 Nozzle nominal size

05	ø0.5
07	ø0.7
10	ø1.0

#### 2 Exhaust type

10	With silencer for single unit
3M	With silencer for manifold

# 3 Solenoid valve combination (Refer to Table (1).)

Symbol Supply valve		Vacuum release valve	
K1	Normally closed	Normally closed	
K2 Note 1)	Normally open	Normally closed	
J1	Normally closed	None	
J2 Note 1)	Normally open	None	
Q1	Latching positive common	Normally closed	
Q2	Latching positive common	None	
N1	Latching negative common	Normally closed	
N2	Latching negative common	None	

Note 1) When using K2 or J2 (supply valve normally open), ensure that the energizing time does not become longer than the non-energizing time. If the energizing time becomes longer or if the valve is energized for 10 minutes or longer, select the DC low vattage type in "Made to Order". (Refer to page 614.)

#### 4 Pilot valve (Refer to Table (1).)

Nil	Standard (DC: 1 W) Note 2)	
Υ	DC low wattage type (0.5 W) Note 2)	
11 . 41 4 11 1 1 1 1 1		

Note 2) Avoid energizing the solenoid valve for long periods of time. (Refer to Design and Selection on Specific Product Precautions.)

# 5 Solenoid valve rated voltage (Refer to Table (1).)

		CE/UKCA-compliant
1 Note 3)	100 VAC (50/60 Hz)	_
2 Note 3)	200 VAC (50/60 Hz)	_
3 Note 3)	110 VAC (50/60 Hz)	_
4 Note 3)	220 VAC (50/60 Hz)	_
5	24 VDC	•
6	12 VDC	•

Note 3) CE/UKCA-compliant products are not available for "1", "2", "3" and "4".

#### Table (1) Combination of Solenoid Valve, Pilot Valve and Power Supply Voltage

Combination	Solenoid valve combination	Pilot valve	Applicable power supply voltage (V)					
no.	symbol	symbol	100 AC	200 AC	110 AC	220 AC	24 DC	12 DC
1	K1	Nil	_	_	_	_	•	•
2	K1	Y	_	_	_	_	•	•
3	K2	Nil	_	_	_	_	•	•
4	J1	Nil	•	•	•	•	•	•
(5)	J1	Y	_	_	_	_	•	•
6	J2	Nil	_	_	_	_	•	•
7	Q1	Nil	_	_	_	_	•	•
8	Q2	Nil	•	•	•	•	•	•
9	N1	Nil	_	_	_	_	•	•
10	N2	Nil	_	_	_	_	•	•

 $<sup>\</sup>ast$  Combinations 1 to 10 in the above table are the only possible options.

#### 6 Electrical entry

L	L-type plug connector, with 0.3 m lead wire, with light/surge voltage suppressor	
LO	L-type plug connector, without connector, with light/surge voltage suppressor	
G	Grommet, with 0.3 m lead wire (Latching/AC type: Not applicable)	

#### 7 Manual override Note 4)

Nil	Non-locking push type Latching type: Push-locking type
В	Locking type (Q1/Q2/N1/N2: Not applicable)

Note 4) Latching type supply valve: Available in "Nil" only. In this case, the supply valve and release valve come with a push-locking type.

#### 8 Vacuum pressure switch suction filter Note 5)

EA	0 to −101 kPa/NPN open collector 2 outputs, with suction filter
EB	0 to −101 kPa/PNP open collector 2 outputs, with suction filter
EC	0 to -101 kPa/NPN open collector 1 output + analog voltage, with suction filter
EE	0 to -101 kPa/PNP open collector 1 output + analog voltage, with suction filter
FA	100 to -100 kPa/NPN open collector 2 outputs, with suction filter
FB	100 to −100 kPa/PNP open collector 2 outputs, with suction filter
FC	100 to -100 kPa/NPN open collector 1 output + analog voltage, with suction filter
FE	100 to -100 kPa/PNP open collector 1 output + analog voltage, with suction filter
F	Suction filter only

Note 5) The filter included in this product is of an simple type, and will become clogged quickly in environments with high quantities of dust or particulates. Please make additional use of an air suction filter of the ZFA, ZFB or ZFC series.

#### **△**Warning

The filter case of this suction filter is made of nylon. Contact with alcohol or similar chemicals may cause it to be damaged. Also, do not use the filter when these chemicals are present in the atmosphere.

# Vacuum pressure switch unit specifications

Nil	With unit switching function Note 6)
M	Fixed SI unit Note 7)
Р	With unit switching function Note 6)
P	(Initial value psi)

Note 6) Under the New Measurement Law, sales of switches with the unit switching function are not allowed for use in Japan.

Note 7) Fixed unit: kPa

# 10 Vacuum pressure switch lead wire specifications

Nil Without connecto		Without connector
G	à	Lead wire with connector (Lead wire length 2 m) With connector cover

#### 11 Check valve Note 8) Note 9)

Nil	None
K	With check valve

Note 8) The check valve has a function to prevent the exhaust air from the silencer overflowing to the vacuum port side when a manifold is used, but it cannot prevent overflow of the exhaust air completely. During usage, please inspect thoroughly with actual machine.

Also, in order to completely prevent the overflow of exhaust air, leave plenty of space between the check valve unit and adjacent ejector to avoid interference from the ejector's exhaust unit.

Note 9) Only applicable to the exhaust type 3M and cannot be selected for solenoid valve combinations of J1, J2, Q2 and N2.

#### **△** Warning

- 1) Cannot be used for vacuum retention.
- Use a release valve. (Without a release valve, a workpiece may not be released.)

#### 12 Fitting (V port) Note 10)

Symbol	Applicable tubing O.D.
0	Without fitting (M5 x 0.8)
1	ø3.2 (Straight)
2	ø4 (Straight)
3	ø6 (Straight)
4	ø3.2 (Elbow)
5	ø4 (Elbow)

#### 13 Fitting (P port) Note 10)

Symbol	Applicable tubing O.D.	Object spec.
Nil	Without port	Manifold
0	Without fitting (M5 x 0.8)	
2	ø4 (Straight)	Cinala unit
3	ø6 (Straight)	Single unit
5	ø4 (Elbow)	

#### 14 Bracket A

Nil	With bracket A	
N	Without bracket A	Note 11)

#### 15 CE/UKCA-compliant

Nil	_
Q	CE/UKCA-compliant

Note) CE/UKCA-compliant: For DC only.

Note 10) For filter only (Without vacuum pressure switch)

Single unit: When neither V port fitting nor P port fitting are needed, enter nothing or –00 in the dotted line "How to Order".

Manifold specifications: When the V port fitting is not needed, enter nothing or –0 in the dotted line "How to Order".

Note 11) Only applicable to the exhaust type 1U.



#### **How to Order**

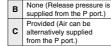


in Simultaneous Operation

Nozzle nominal size	Maximum number of stations in simultaneous operation
ø <b>0.5</b>	8 stations
ø <b>0.7</b>	6 stations
ø1.0	4 stations

Note) If the number of stations in simultaneous operation is within the numbers stated above a manifold can be used for up to 8 stations

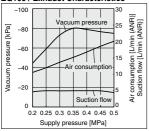
# Vacuum release pressure supply port (PD port)

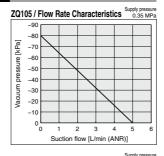




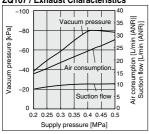
#### Flow/Exhaust Characteristics

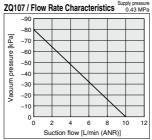
#### ZQ105 / Exhaust Characteristics



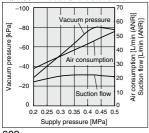


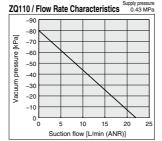
#### ZQ107 / Exhaust Characteristics





#### ZQ110 / Exhaust Characteristics



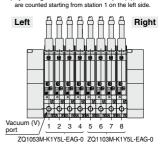


#### Manifold Ordering Example

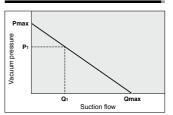
ZZQ108-BSB

\*ZQ1053M-K1Y5L-EAG-0 (-Q) → 4 pcs. (Stations 1 to 4) \*ZQ1103M-K1Y5L-EAG-0 (-Q) → 4 pcs. (Stations 5 to 8)

Note) By viewing the front side of vacuum port (V), stations



#### How to Read Flow Rate Characteristics



Flow rate characteristics are expressed in ejector vacuum pressure and suction flow. If suction flow rate changes, a change in vacuum pressure will also be expressed. Normally this relationship is expressed in ejector standard use.

In the graph, Pmax is max. vacuum pressure and Qmax is max. suction flow. The valves are specified according to catalog use. Changes in vacuum pressure are expressed in the below order.

- 1. When ejector suction port is covered and made airtight, suction flow becomes 0 and vacuum pressure is at maximum value (Pmax).
- 2. When suction port is opened gradually, air can flow through, (air leakage), suction flow increases, but vacuum pressure decreases. (condition P1 and Q1)
- 3. When suction port is opened further, suction flow moves to maximum value (Qmax), but vacuum pressure is near 0. (atmospheric pressure).

When vacuum port (vacuum piping) has no leakage, vacuum pressure becomes maximum, and vacuum pressure decreases as leakage increases. When leakage value is the same as max. suction flow, vacuum pressure is near 0.

When ventirative or leaky work must be adsorbed, please note that vacuum pressure will not be high.

# **Precautions**

Be sure to read this before handling the products. Refer to page 33 for safety instructions and pages 34 to 36 for vacuum equipment precautions.

## Caution

Refer to the vacuum equipment model selection on pages 11 to 32 for the selecting and sizing of ZQ

## **Specifications**

#### **Ejector**

Mo	del	ZQ105	ZQ107	ZQ110
Nozzle nominal di	ameter (mm)	0.5	0.7	1.0
Maximum suction	flow (L/min (ANR))	5	10	22
Air consumption	(L/min (ANR))	15	25	47
Maximum vacuun	n pressure		-80 kPa	
	Air pressure supply port (P)	0.3 to 0.5 MPa (Normally open: 0.3 to 0.45 MPa)		
Supply pressure range	Supply pressure port for vacuum release (PD)		0.3 to 0.5 MPa ally open: 0.3 to 0.45 so PD pressure ≤P pr	
Supply pressure	lote)	0.35 MPa	0.43	MPa
Operating temper	ature range		5 to 50°C	
Fluid			Air	

Note) Maximum suction flow can be obtained by standard supply pressure.

#### Weight

Single	With suction filter Note 1)	95 g
unit	With vacuum pressure switch and suction filter Note 2)	109 g
	End plate assembly for manifold	122 g

Note 1) Including a 0.3 m connector for supply valve and vacuum release valve.

Note 2) Including a 0.3 m connector for supply valve and vacuum release valve and a 2 m connector for vacuum pressure switch.

© Calculation of weight for the manifold type (Single unit weight) x (Number of stations) + (Weight of end plate assembly for manifold)

Example) Vacuum pressure switch + 8 stations with suction filter 109 g x 8 + 122 g = 994 g

#### Supply Valve / Vacuum Release Valve

_		Normally	/ closed		
Туре		Standard (1 W)	Low wattage type (0.5 W)	Latching type	Normally open
Model (Refer to "How to Ord solenoid valves on p		VQ110-□	VQ110Y-□	VQ110	ZQ1-VQ120-□
Manual override		Non-locking push type /	Locking type (Tool type)	Push-locking type	Non-locking push type / Locking type (Tool type)
Rated coil voltage		12, 24 VDC, 100, 110, 200, 220 VAC	12, 24 VDC	12, 24 VDC, 100, 110, 200, 220 VAC	12, 24 VDC
	DC	1 W	0.5 W	1 W	
	100 VAC	0.5 VA (5 mA)	_	0.6 VA (6 mA)	_
Power consumption (current value)	110 VAC	0.55 VA (5 mA)	_	0.65 VA (5.9 mA)	_
(ourrent value)	200 VAC	1.0 VA (5 mA)	_	1.2 VA (6 mA)	_
	220 VAC	1.1 VA (5 mA)	_	1.3 VA (5.9 mA)	_
Electrical entry		L-type plug	nmet connector oltage suppressor)	L-type plug connector with light/surge voltage suppressor	Grommet L-type plug connector ( with light/surge voltage suppressor)

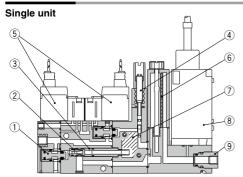
## **Specifications**

#### **Vacuum Pressure Switch**

	М	lodel	ZQ1-ZSE (ZSE10)	ZQ1-ZSF (ZSE10F)	
Rated press	ure range		0 to -101 kPa	-100 to 100 kPa	
Set pressure	range/Dis	play pressure range	10 to -105 kPa	-105 to 105 kPa	
Withstand p	ressure		500	kPa	
Minimum se	tting unit		0.1	kPa	
Power suppl	y voltage		12 to 24 VDC ±10%, Ripple (p-p) 10% or l	ess (with power supply polarity protection)	
Current cons	sumption		40 mA	or less	
Switch outp	ut		NPN or PNP open collector: 2 outputs (selectable)		
	Maximum	load current	80	mA	
Maximum applied voltage			28 V (with N	IPN output)	
	Residual	voltage	2 V or less (with load current of 80 mA)		
	Response	time	2.5 ms or less (Response time selections with anti-chattering function: 20, 100, 500, 1000 and 2000 ms		
	Short circ	uit protection	With short-circ	cuit protection	
Repeatabilit	/		±0.2% F.S. ±1 digit		
Hysteresis	Hysteresi	s mode	Variable (0 or	above) Note 1)	
Trysteresis	Window o	omparator mode	variable (0 or	above,	
Analog	Voltage	Output voltage (rated pressure range)	1 to 5 V ±2.5% F.S.		
output	output	Linearity	±1% F.S	. or less	
		Output impedance	Approx		
Display syst	em		3 1/2-digit, 7 segment LE	D 1-color display (Red)	
Display accu			±2% F.S. ±1 digit (at ambie	nt temperature of 25 ±3°C)	
Operation in	dicator ligh	nt	Lights when ON, OUT	1: Green, OUT2: Red	
F	Enclosure	•	IP-	40	
Environ- mental		numidity range	Operating/Stored: 35 to 85%	RH (with no condensation)	
resistance	Withstand	i voltage	1000 VAC for 1 min. between	een terminals and housing	
		resistance	50 ${\rm M}\Omega$ or more (500 VDC measured via me	gohmmeter) between terminals and housing	
Temperature	characteri	stics	±2% F.S. (at 25°C of ambient temper	erature range between -5 and 50°C)	
Lead wires			Oil-resistant Cross section: 0.15 mm <sup>2</sup> (AWG26), 5		

Note 1) If the applied voltage fluctuates around the set-value, the hysteresis must be set to a value more than the fluctuating width, otherwise chattering will occur. Note 2) For others, refer to ejector specifications on page 603.

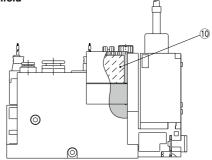
## Construction



#### **Component Parts**

No.	Description	Material
1	Poppet valve assembly	_
2	Nozzle	Resin
3	Diffuser	Resin
4	Vacuum release flow adjustment needle	Stainless steel

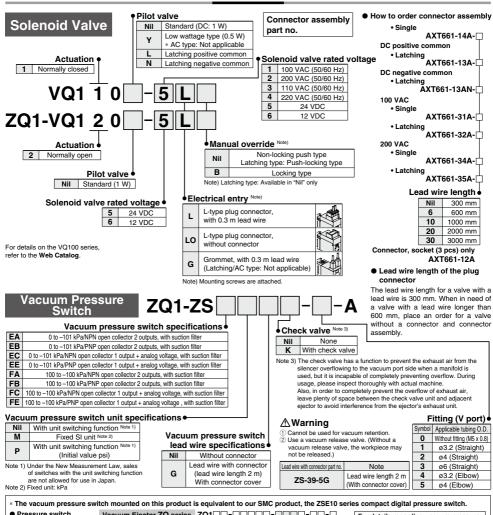
## Manifold



#### Replacement Parts

No.	Description	Material	Part no.
5	Solenoid valve	_	Refer to page 605.
6	Filter element	PVA sponge	XT534-5-001-AS
7	Sound absorbing material 1 (single unit)	PVA sponge	ZQ-SAE
8	Vacuum pressure switch	_	Refer to page 605.
9	Fitting	_	_
10	Sound absorbing material 2 (manifold)	PVA sponge	ZZQ-SAE

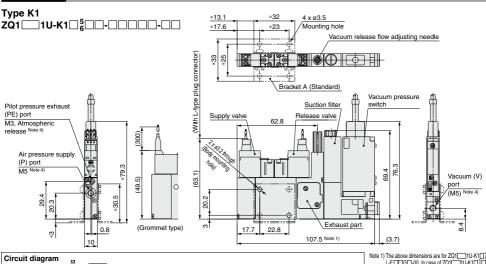
#### How to Order

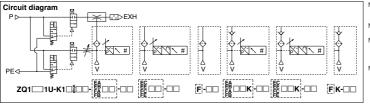


Pressure switch	Va	cuum Ejector ZQ series	ZQ1 For details regarding vacuum	
correspondence table	Vacuum	Pressure Switch for ZQ	ZQ1-ZS ————————————————————————————————————	eries in
Digi	ital Pressu	re Switch ZSE10 series	zSE10♀-□-中-中□□□	
(Refer to rat	ted pressur		range/Output specifications • Vacuum pressure switch lead wire specification	
lated pressure ran	nae/Outpu	t specifications corresp	nondence table   Vacuum pressure switch unit specification	
	<del></del>			
Vacuum pressure swit	tch for ZQ	ZSE10 series	Specification	
Vacuum pressure switzQ1-ZSEA□□□	tch for ZQ			
	tch for ZQ I-□-A	ZSE10 series	Specification	
ZQ1-ZSEA□□□	tch for ZQ I-□-A	ZSE10 series ZSE10-□-A-□□□□	Specification 0 to –101 kPa/NPN open collector 2 outputs	
ZQ1-ZSEA□□□ ZQ1-ZSEB□□□	tch for ZQ  -□-A  -□-A	ZSE10 series ZSE10-□-A-□□□□ ZSE10-□-B-□□□□	Specification 0 to -101 kPa/NPN open collector 2 outputs 0 to -101 kPa/PNP open collector 2 outputs	
ZQ1-ZSEA□□□ ZQ1-ZSEB□□□ ZQ1-ZSEC□□□	tch for ZQ  -□-A  -□-A  -□-A	ZSE10 series ZSE10-□-A-□□□□ ZSE10-□-B-□□□□ ZSE10-□-C-□□□□	Specification  0 to -101 kPa/NPN open collector 2 outputs  0 to -101 kPa/PNP open collector 2 outputs  0 to -101 kPa/NPN open collector 1 output + analog voltage	
ZQ1-ZSEB CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	tch for ZQ 	ZSE10 series ZSE10-□-A-□□□□ ZSE10-□-B-□□□□ ZSE10-□-C-□□□□ ZSE10-□-E-□□□□	Specification  0 to -101 kPa/NPN open collector 2 outputs  0 to -101 kPa/PNP open collector 2 outputs  0 to -101 kPa/NPN open collector 1 output + analog voltage  0 to -101 kPa/PNP open collector 1 output + analog voltage	
ZQ1-ZSEBUUU ZQ1-ZSEBUUU ZQ1-ZSECUUU ZQ1-ZSEEUUU ZQ1-ZSFAUUU	tch for ZQAAAAA	ZSE10 series ZSE10-□-A-□□□□ ZSE10-□-B-□□□□□ ZSE10-□-C-□□□□□ ZSE10-□-E-□□□□□ ZSE10F-□-A-□□□□	Specification  0 to -101 kPa/NPN open collector 2 outputs  0 to -101 kPa/NPN open collector 2 outputs  0 to -101 kPa/NPN open collector 1 output + analog voltage  0 to -101 kPa/NPN open collector 1 output + analog voltage  10 to -101 kPa/PNP open collector 1 output + analog voltage  100 to -100 kPa/NPN open collector 2 outputs	

# **ZQ** Series

#### **Dimensions**





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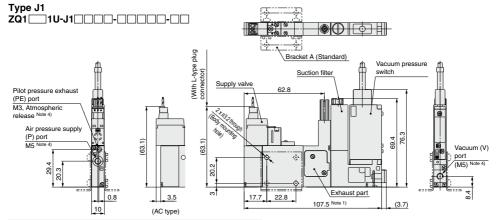
bracket A is mounted.

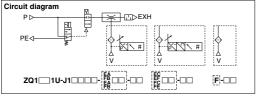
Note 3) When the body is mounted, tighten with a torque

of 0.6 ± 0.06 N·m.
Using excessive torque may cause damage to

Using excessive torque may cause damage to the body.

Note 4) The pitches of P, V and PE ports are determined assuming the use of One-touch filings. It used with other fittings, these may actuse interference, dependant on their type and size. Please refer to the catalog to confirm the sizes of the littings to be used.

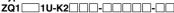


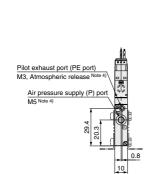


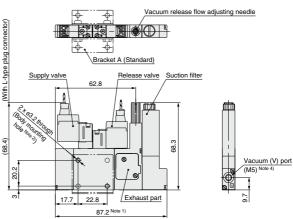
- Note 1) The above dimensions are for ZQ1 10-J1 5L-E 06. In case of ZQ1 10-J1 0, the overall length is 87.2.
- Note 2) The dimensions after bracket A is mounted are the same as those of the K1 type.
- Note 3) When the body is mounted, tighten with a torque of  $0.6\pm0.06~\text{N}\cdot\text{m}$ . Using excessive torque may cause damage to the body.
- Note 4) The pitches of P, V and PE ports are determined assuming the use of One-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalog to confirm the sizes of the fittings to be used.

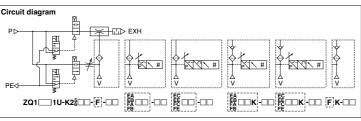
#### **Dimensions**

#### Type K2









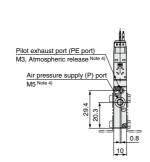
- Note 1) The above dimensions are for ZQ1 10-K2 6 L-F --- In case of ZQ1 10-K2 10-5 F --- 10-1, the overall length is 107.5.
- Note 2) The dimensions after bracket A is mounted are the same as those of the K1 type.
- Note 3) When the body is mounted, tighten with a torque of 0.6 ± 0.06 N·m.

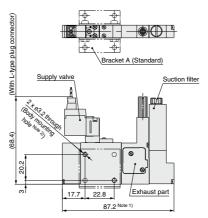
  Using excessive torque may cause damage to
- the body.

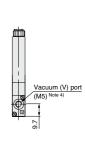
  Note 4) The pitches of P, V and PE ports are determined assuming the use of One-touch fittings, If used with other fittings, these may cause interference, dependant on their type and size. Please relet to the catalog to confirm the sizes of the fittings to be used.

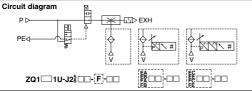
## Type J2

ZQ1 \_\_\_1U-J2 \_\_\_\_-







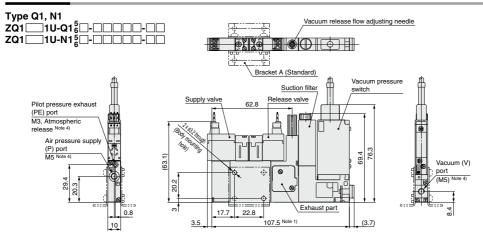


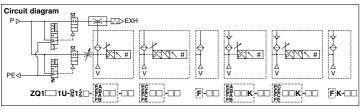
- Note 1) The above dimensions are for ZQ1 \_\_\_1U-J2 \bigs\_1-F\_.

  In case of ZQ1 \_\_\_1U-J2 \_\_\_-\bigs\_F\_\_\_\_\_\_, the overall length is 107.5.
- Note 2) The dimensions after bracket A is mounted are the same as those of the K1 type.
- Note 3) When the body is mounted, tighten with a torque of 0.6 ± 0.06 N·m. Using excessive torque may cause damage to the body.
- Note 4) The pitches of P, V and PE ports are determined assuming the use of One-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalog to confirm the sizes of the fittings to be used.

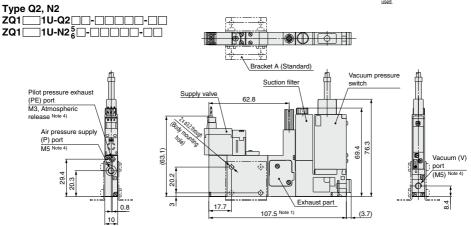
# **ZQ** Series

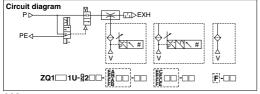
#### **Dimensions**





- Note 1) The above dimensions are for ZQ1 $\square$ 1U $_N^Q$ 1 $_6^5$ L-E $\square$ G $\square$ -00. In case of ZQ1 $\square$ 1U $_N^Q$ 1 $_6^5$  $\square$ -F $\square$ -00, the overall
  - In case of ZQ1 10- 11- 10- 11- 00, the overall length is 87.2.
- Note 2) The dimensions after bracket A is mounted are the same as those of the K1 type.
- Note 3) When the body is mounted, tighten with a torque of  $0.6 \pm 0.06$  N·m.
  Using excessive torque may cause damage to the body.
- Note 4) The pitches of P, V and PE ports are determined assuming the use of One-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalog to confirm the sizes of the fittings to be





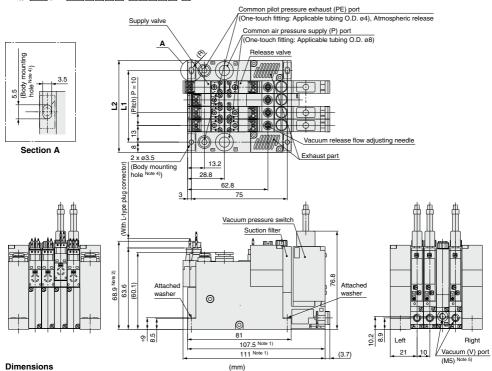
- Note 1) The above dimensions are for ZQ1  $\square$ 1U- $^{Q}_{N}2^{5}_{5}$ L-E $\square$ G $\square$ -00. In case of ZQ1 $\square$ 1U- $^{Q}_{N}2^{5}_{5}$  $\square$ -F $\square$ -00, the overall length is 87.2.
- Note 2) The dimensions after bracket A is mounted are the same as those of the K1 type.
- Note 3) When the body is mounted, tighten with a torque of 0.6  $\pm$  0.06 N·m. Using excessive torque may cause damage to the body.
- Note 4) The pitches of P, V and PE ports are determined assuming the use of One-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalog to confirm the sizes of the fittings to be used.

#### **Dimensions**

#### Manifold type (without PD port)

ZZQ1 -BSB

\*ZQ1 3M-



8

86 96

102 112

36 L2 52 62 72 Note 1) The above dimensions are for ZZQ104-BSB

3

46

\* ZQ1 3M-K1 6L-E G-0.

2

- \* ZQ1 3M-K25L-E GK-0.
- \* ZQ1 3M-J1 5L-F-0. \* ZQ1 3M-Q1 L-E 0.

n

L1

26

- \* In case of ZQ1 3M-K - F 0, the overall length is 87.2.
- \* In case of ZQ1 3M-N -F -0, the overall length is 90.7.

1 5 6

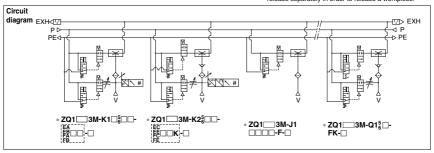
76

92

66

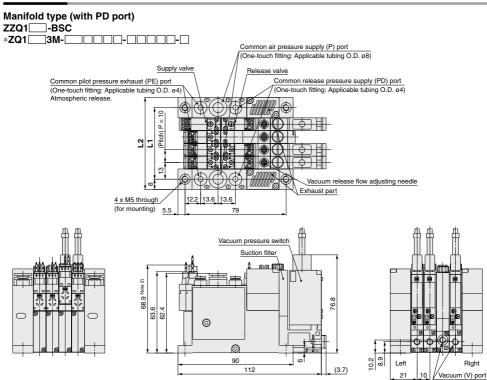
- \* In case of ZQ1 \_\_\_3M-\(\frac{3}{1}\_{\text{\colored}} -1, \text{\colored} -2, \text{\colored} + \text{\colored} + \text{\colored} -2, \text{\colored} + \text{\colored} + \text{\colored} -2, \text{\colored} + \text{\

- Note 2) \* The above dimensions are for ZQ1 3M-125 3-F
- Note 3) \* Dimensions marked with "\*" are those after the attached square bracket is mounted.
- Note 4) When the body is mounted, tighten with a torque of  $0.6 \pm 0.06$
- Using excessive torque may cause damage to the body. Note 5) The pitches of V ports are determined assuming the use of
  - One-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalog to confirm the sizes of the fittings to be used.
- Note 6) When the release valve is not used, design the circuit for vacuum release separately in order to release a workpiece.



# **ZQ** Series

#### **Dimensions**

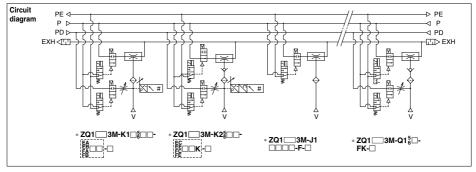


Dimensions (mi									
n	1	2	3	4	5	6	7	8	
L1	26	36	46	56	66	76	86	96	
L2	42	52	62	72	82	92	102	112	

Note 1) The above dimensions are for ZZQ104-BSC.

- \* ZQ1 3M-K1 6L-EG-0.
- \* ZQ1 3M-K2 5L-E G-0.
- \* ZQ1 \_\_\_3M-J1\_\_\_\_\_5L-F\_\_\_-0. \* ZQ1 \_\_\_3M-Q1\_5L-E\_\_\_G-0.

- \* In case of ZQ1 \_\_\_3M-\_\_\_\_\_\_-E\_\_G-0, the overall length is 112.
- Note 3) When the body is mounted, tighten with a torque of 0.6  $\pm$  0.06 N·m. Using excessive torque may cause damage to the body.
- Note 4) The pitches of V ports are determined assuming the use of One-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalog to confirm the sizes of the fittings to be used.
- Note 5) When the release valve is not used, design the circuit for vacuum release separately in order to release a workpiece.

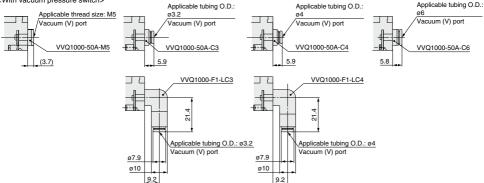


#### **Dimensions**

#### Fittings / Fitting type filter dimensions after installation

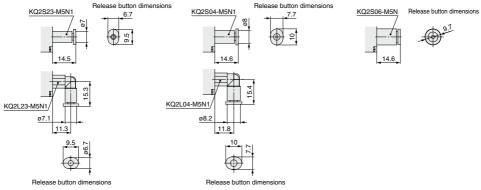
#### V port



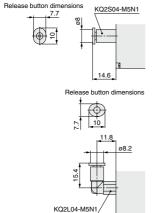


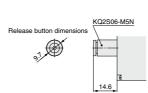
#### V port

<Suction filter only>

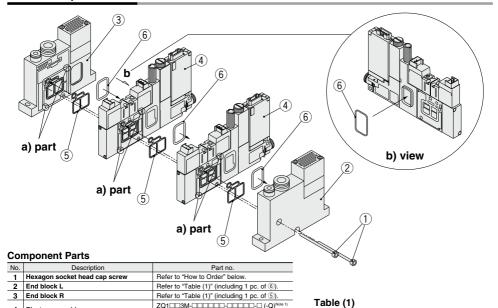


#### P port





#### Manifold Exploded View



ZQ1□□3M-□□□□□□□-□(-Q)<sup>N</sup>

(1 pc. each in ⑤ and ⑥ is included.)

ZQ-3-005-10AS Note 2)

ZQ-3-009-10AS Note 2 6 Exhaust block gasket Note 1) Refer to pages 600 and 601 for detailed description of "How to Order". Note 2) 10 pcs. are included in one set

#### **Working Procedure**

Ejector assembly

#### Disassembly

Loosen and remove the clamp rod (1).

Ejector body gasket for manifold

#### Assembly

- 1. Install the ejector body gasket for manifold 5 into the gasket groove of each ejector assembly 4. Install the exhaust block gasket 6 around the projected part
- 2. Install the exhaust block gasket 6 around the projected part of the end block L 2
- 3. Install the ejector body gasket for manifold 5 into the gasket groove of the end block R 3.
- 4. Align the ejector assemblies 4, end block (L) 2, and end block (R) 3 using positioning pins (at the two "a" positions) and fasten with clamp rods 1 (2 pcs.) (with a tightening torque of 0.6 N·m ± 0.06 N·m).

#### **How to Order Hexagon Socket Head Cap Screw**

ZQ-STB 05

#### Number of stations

01	1 station			
02	2 stations			
:	:			
08	8 stations			

#### Note) 2 pcs. are included in one set

#### Replacement of V Port Fittings (With vacuum pressure switch)

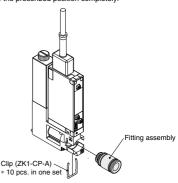
V port fittings are cassette style for easy replacement.

Description

End block R

The fittings are blocked by a clip. Remove the clip with a flat blade screwdriver, etc. to replace the fittings.

When mounting the fittings, after inserting the fitting assembly until it stops, then put the clip into the prescribed position completely.



With PD port

ZQ1L-2-BSB-AS

ZQ1R-2-BSB-AS

Without PD port

ZQ1L-1-BSB-AS

ZO1R-1-RSR-AS

Applicable tubing O.D.	Straight	Elbow
Applicable tubing O.D. ø3.2	VVQ1000-50A-C3	VVQ1000-F1-LC3
Applicable tubing O.D. ø4	VVQ1000-50A-C4	VVQ1000-F1-LC4
Applicable tubing O.D. ø6	VVQ1000-50A-C6	_
M5 female thread	VVQ1000-50A-M5	_

# ZQ Series Made to Order Specifications



# 1 Port Exhaust Specifications



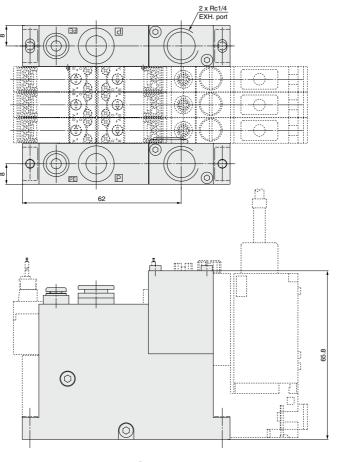
Exhaust port is changed for "Port Exhaust Specifications."

#### **Dimensions**

Manifold type (without PD port)

ZZQ1 - B2B-X125

\*ZQ1 3M- (-Q)



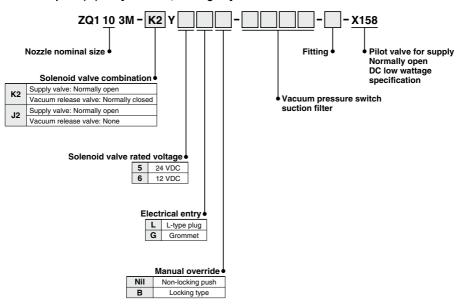
# ZQ Series Made to Order Specifications



Please contact SMC for detailed dimensions, specifications and lead times.

# 2 Pilot Valve for Supply: Normally Open DC Low Wattage Specification

Power consumption (W): 0.3 [Inrush 1.5, Holding 0.3]



<sup>·</sup> Normally open supply valve with low wattage type pilot valve mounted

Dimensions: Same as standard type.



When the normally open specification is selected as a countermeasure for power failure, the temperature increase of the solenoid valve can be suppressed in the operation cycle where the vacuum suspension state (supply valve energizing) is longer than the vacuum generation state.