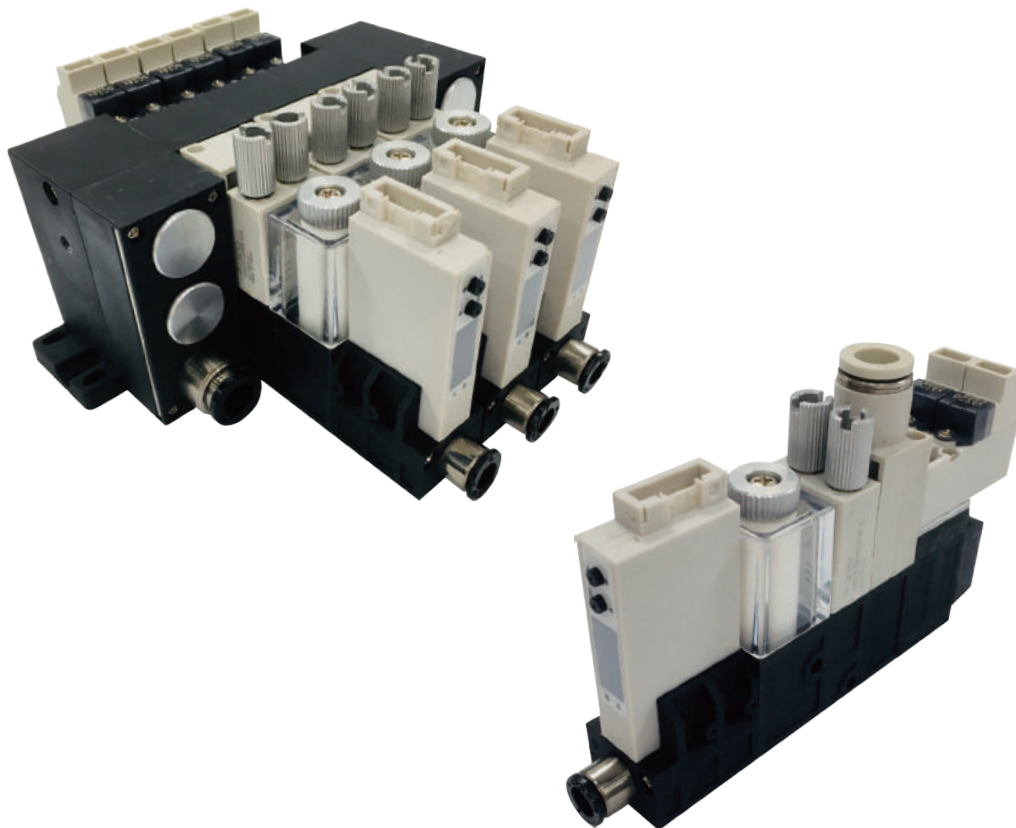


VJ VACUUM GENERATOR
SERIES

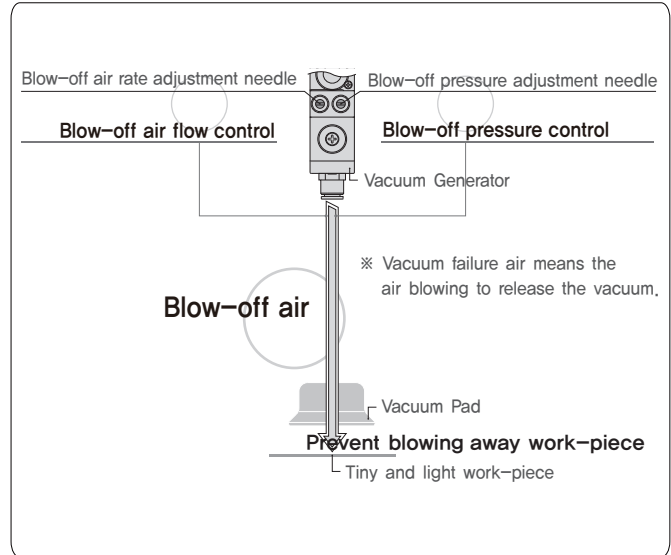


NEW

VJ

VACUUM GENERATOR

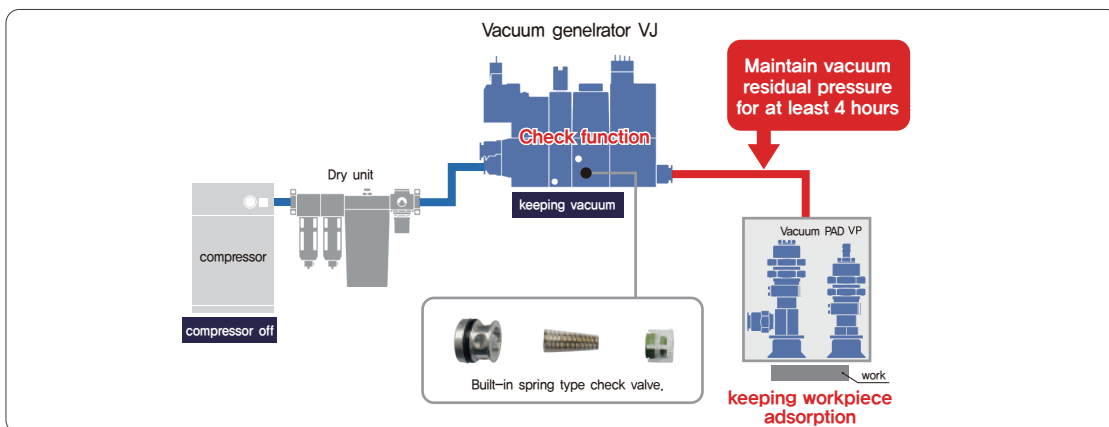
- Wide variety of combinations can cope with various needs. External Vacuum Controller for Vacuum Pump Series is for available
- For the pipe lead-out direction of concentrated piping of manifold-type, two types are available; front lead-out type and rear lead-out type.
- 3 types for supply valv
 - Doble solenoid type (Vacuum retention type, selectable for saving energy)
 - Normally closed type
 - Normally open type
- The vacuum sensor is an LED-indicated digital sensor (V4). The basic specification : 2 switch output and analog output



- Standard nozzle bore: 05(ø0.5mm), 07(ø0.7mm), 10(ø1.0mm) and 12(ø1.2mm).
- It is designed to adjust the breaking flow and breaking pressure at the same time to prevent scattering or locking of work piece which is difficult to control by only breaking flow adjustment.
- By adding a relief function to the vacuum breaker circuit, the vacuum breakdown time has been shortened for the first time in the industry.

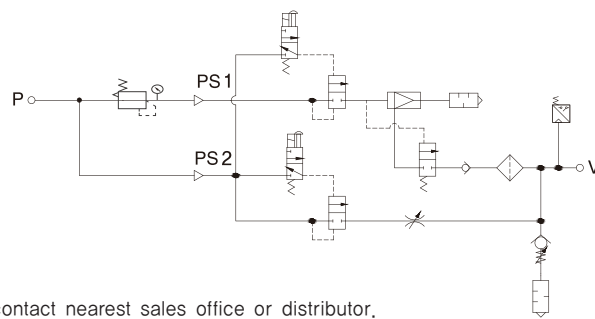
VJ check type structure

- Built-in **Spring type** check valve.
- Stable long time check.
- Vacuum ON / OFF can be performed in one operation when energy saving sensor is used.



External Pilot Type Launch

- PS1 : Port for nozzle supply
- PS2 : External Pilot Port

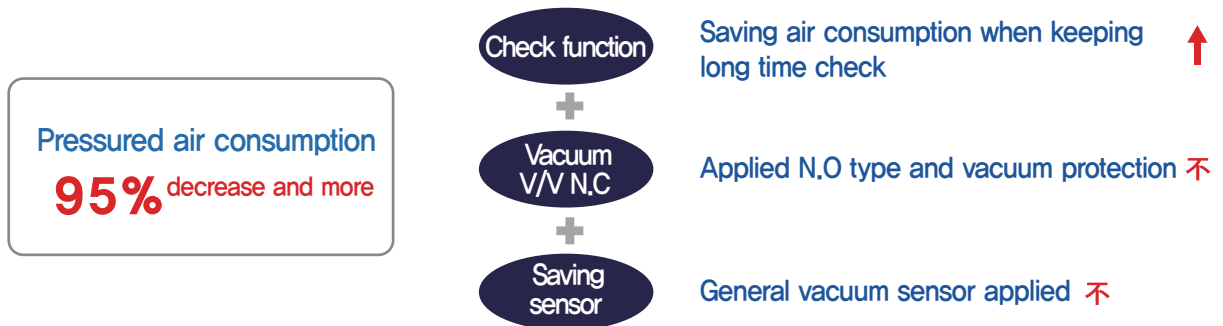


※ Since the external pilot type is special order, please contact nearest sales office or distributor.

Energy saving vacuum generator

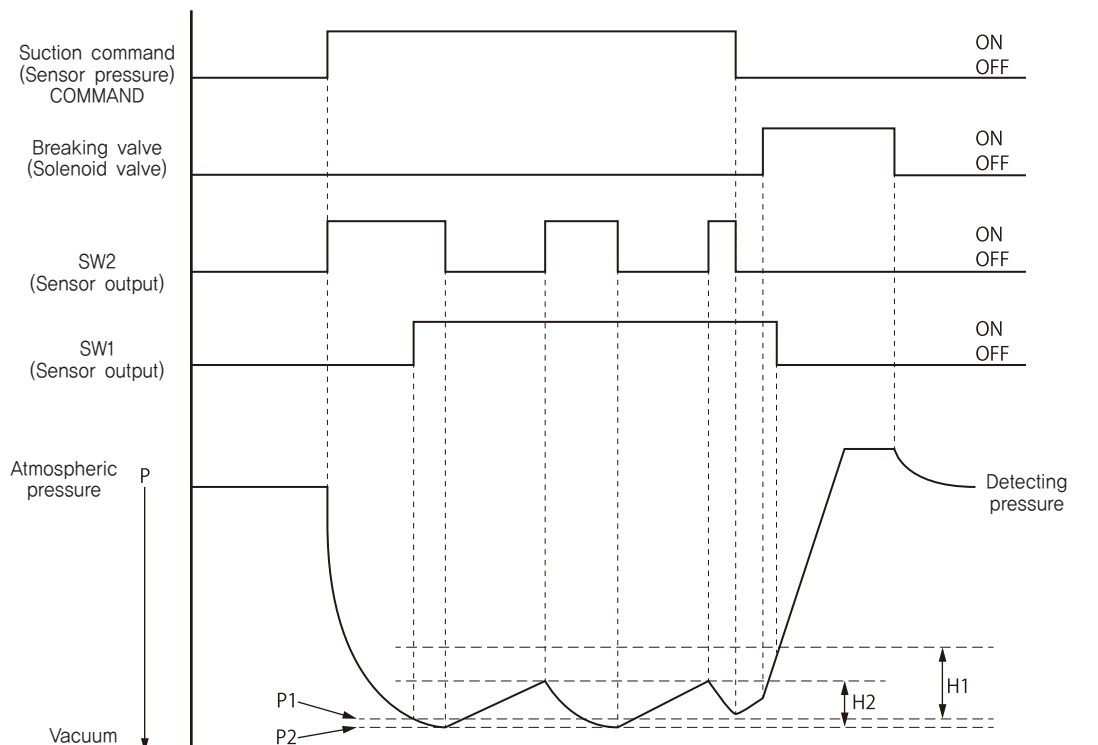
● Energy saving vacuum generator.

Cut of air, when built-in vacuum pressure sensor (with energy saving function) set vacuum valve.

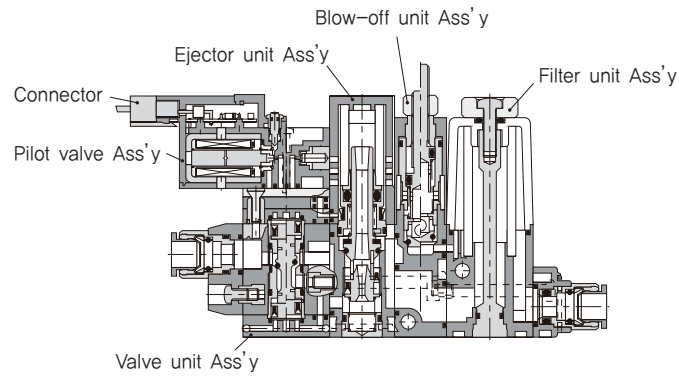


● Operation method of the sensor with energy saving function.

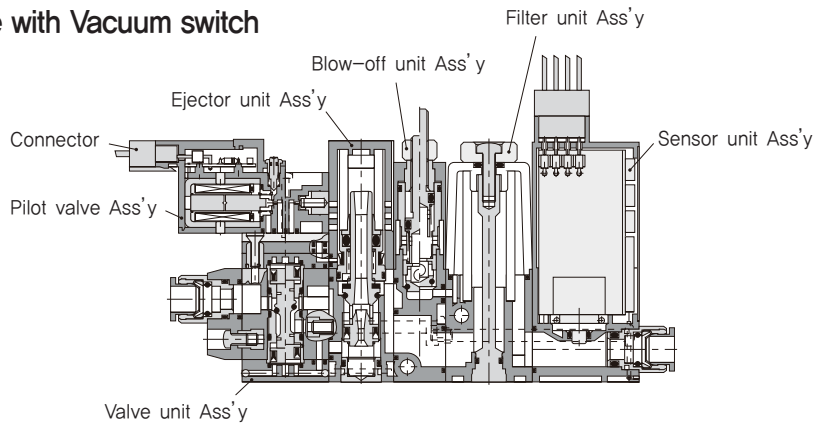
P1 : Switch output value(SW1) H1 : The value of course(SW1)
 P2 : Switch output value(SW2) H2 : The value of course(SW2)



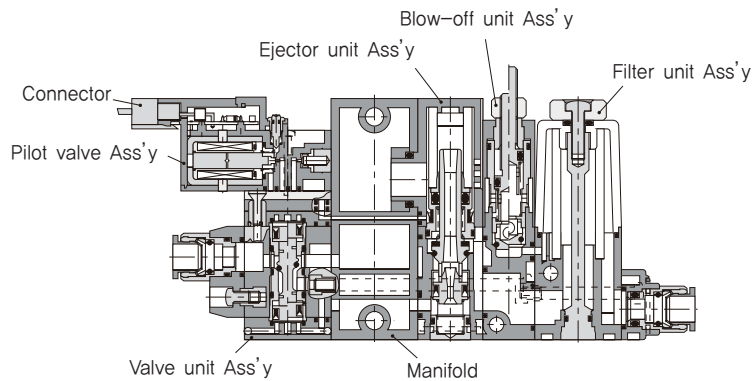
Stand-alone type without Vacuum switch



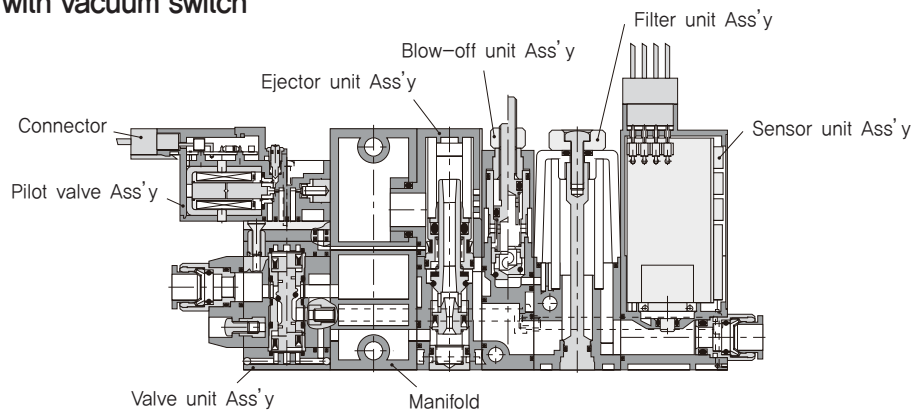
Stand-alone type with Vacuum switch



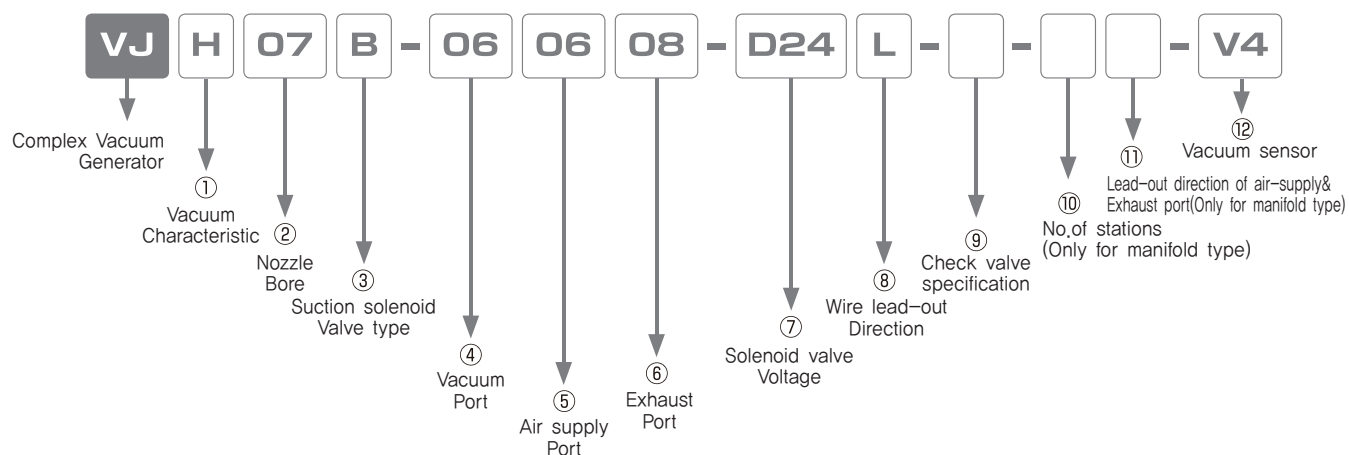
Manifold type without vacuum switch



Manifold type with vacuum switch



Model Designation (Example)



① Vacuum characteristics

Code	Performance	Code	Performance	Code	Performance
H	High-vacuum type	L	High-vacuum type	E	High-vacuum at low air pressure type
K	Combination of different vacuum characteristics on mounting units on a manifold (Details should be described on Specification Order Form separately)				

② Nozzle bore

Code	Nozzle bore	H type Vacuum lever, Suction flow	L type Vacuum lever, Suction flow	E type Vacuum lever, Suction flow	Air consumption
05	0.5mm	-90.4kPa 7ℓ/min(ANR)	-66.5kPa 11ℓ/min(ANR)	-	11.5ℓ/min(ANR)
07	0.7mm	-93.1kPa 13ℓ/min(ANR)	-66.5kPa 26ℓ/min(ANR)	-90.4kPa 10.5ℓ/min(ANR)	23ℓ/min(ANR) (17ℓ/min(ANR))
10	1.0mm	-93.1kPa 27ℓ/min(ANR)	-66.5kPa 40ℓ/min(ANR)	-90.4kPa 21ℓ/min(ANR)	46ℓ/min(ANR) (34ℓ/min(ANR))
12	1.2mm	-93.1kPa 38ℓ/min(ANR)	-	-90.4kPa 27ℓ/min(ANR)	70ℓ/min(ANR) (47ℓ/min(ANR))
00					

※ Supply pressure is 0.5MPa for H and L type and 0.35MPa for E type.

※ Air consumption values in () represents that of E type.

00 : With manifold types, when port size differs with each station, (Details should be described in Specification order form.)

③ Suction solenoid valve type

Code	Valve unit	Code	Valve unit	Code	Valve unit
A	Double solenoid type (Vacuum retention type)	B	Normally closed type	C	Normally open type
K	Combination of different vacuum characteristics on mounting units on a manifold (Details should be described on Specification Order Form separately)				

④ Vacuum port (Applicable tube size)

Code	04	06	08
Size	ø4	ø6	ø8

⑤ Air supply port (Applicable tube size)

Code	04	06	08	10
Size	ø4(※1)	ø6	ø8(※2)	ø10(※2)

※1. Stand-alone type only.

※2. Manifold type only.

Model Designation (Example)

⑥ Exhaust port

■ Stand-alone type

Code	S	08
Size	Open to air (Silencer vent)	Tube exhaust (Push-in fitting) $\varnothing 8$

■ Manifold type

Code	S	SJ08	08	10
Size	Open to air	Individual concentrated exhaust $\varnothing 8$ one-touch fitting type	$\varnothing 8$ one-touch fitting on both sides with concentrated exhaust	$\varnothing 10$ one-touch fitting on both sides with concentrated exhaust

⑦ Solenoid valve type

Code	D24	A100
Working voltage	DC24V	AC100V

⑧ Wire lead-out direction

Code	L	S	K
Lead-out direction	Top	Side	Different directions on mounting units (Specification Order Form required)

⑨ Check valve specification

Code	No Code	CV
Size	Without check valve	Check valve included

⑩ No. of stations (Only for manifold type)

Code	02	03	04	05	06	07	08	09	10
No. of manifolds	2	3	4	5	6	7	8	9	10

⑪ Lead-out direction of air-supply & exhaust port (Only for manifold type)

Code	A	B
Lead-out direction	Vacuum port side	Solenoid valve side

⑫ Vacuum switch

Code	V4	DWE	K
Switch Type	NPN open collector Button-type vacuum sensor 2 switch output and analog output	Energy saving sensor 1 switch output	Different vacuum switches on mounting units (Specification Order Form required)

※ When using the DWE energy saving sensor, select N.C Type for the vacuum generator valve.

1 Vacuum Generator Stand-alone type

VJ H 05 A - 04 06 S - D24 L - CV - V4

- ① Vacuum characteristics : H → High-vacuum type
- ② Nozzle bore : 05 → Ø0.5mm
- ③ Suction solenoid valve type : A → Double solenoid type (Vacuum retention type)
- ④ Vacuum port : 04 → Ø4mm Push-In Fitting
- ⑤ Air supply port : 06 → Ø6mm Push-In Fitting
- ⑥ Exhaust port : S → Open to air(Silencer vent)
- ⑦ Solenoid valve type : D24 → DC24VDC
- ⑧ Wire lead-out direction : L → Top
- ⑨ Check function selection : CV-check specification
- ⑩ Vacuum switch : V4 → 2 switch + analog output
DWE → Energy saving 1 switch

2 Vacuum Generator Manifold type

VJ H 05 A - 04 10 10 - D24 L - CV - 04 A - V4

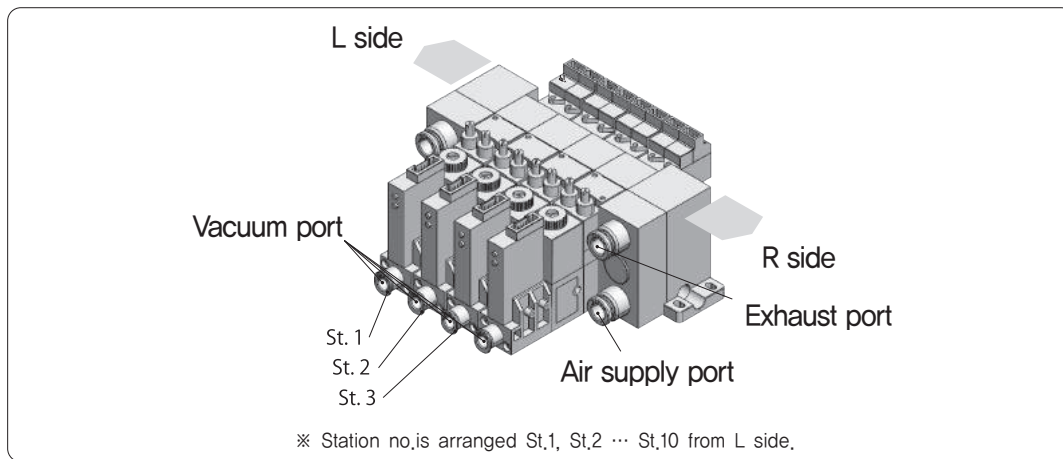
- ① Vacuum characteristics : H → High-vacuum type
- ② Nozzle bore : 05 → Ø0.5mm
- ③ Suction solenoid valve type : A → Double solenoid type (Vacuum retention type)
- ④ Vacuum port : 04 → Ø4mm Push-In Fitting
- ⑤ Air supply port : 10 → Ø10mm Push-In Fitting
- ⑥ Exhaust port : 10 → Ø10mm Push-In Fitting
- ⑦ Solenoid valve type : D24 → 24VDC
- ⑧ Wire lead-out direction : L → Top
- ⑨ Check function selection : CV-check specification
- ⑩ No.of stations : 04 → 4 stations
- ⑪ Lead-out direction of air-supply & exhaust port : A → Vacuum port side
- ⑫ Vacuum switch : V4 → 2 switch + analog output
DWE → Energy saving 1 switch

3 Vacuum Generator Manifold type (Different mounting units on a manifold)

VJ K 00 K - 00 10 10 - D24 L - CV - 05 A - V4

- ① Vacuum characteristics : K → St.1, St.2, : H type
St.4 : E type
St.5 : H type
- ② Nozzle bore : 00 → St.1, St.2, St.3 : Ø0.5mm
St.4 : Ø1.0mm
St.5 : Ø1.2mm
- ③ Suction solenoid valve type : K → St.1, St.2, St.3 : Double solenoid type
St.4, St.5 : Normally closed type
- ④ Vacuum port : 00 → St.1, St.2, St.3 : Ø0.6mm Push-In Fitting
St.4, St.5 : Ø8mm Push-In Fitting
- ⑤ Air supply port : 10 → Ø10mm Push-In Fitting
- ⑥ Exhaust port : 10 → Ø10mm Push-In Fitting
- ⑦ Solenoid valve type : D24 → 24VDC
- ⑧ Wire lead-out direction : L → Top
- ⑨ Check function selection : CV-check specification
- ⑩ No.of stations : 05 → 5 stations
- ⑪ Lead-out direction of air-supply & exhaust port : A → Vacuum port side
- ⑫ Vacuum switch : K → St.1, St.2, St.3 : V4 → 2 switch + analog output
St.4 : Without vacuum switch

Example of Manifold Type



■ Specification Order Form (ex) : Vacuum Generator Manifold type in the previous page

Manifold model code	Vacuum characteristics ①	Nozzle bore ②	Suction solenoid valve type ③	Vacuum port ④	Air supply port ⑤	Exhaust port ⑥	Solenoid valve type ⑦	Wire lead-out direction ⑧	Check valve ⑨	No. of stations ⑩	Lead-out direction of air-supply & exhaust port ⑪	Vacuum switch ⑫
VJ	K	00	K	00	10	10	D24	L	05	A	K	
L ↑ St. ↓ R	St.1	H	07	A	06							v4
	St.2	St.1										
	St.3	St.1										
	St.4	E	10	B	08							
	St.5	H	12	B	08							v4
	St.6											
	St.7											
	St.8											
	St.9											
	St.10											

Vacuum Generator VJ series Specification Order Form

TO : PISCO KOREA PNEUMATIC CO.,Ltd.

Manager :

—— Order in the following format ——

Company name :

Manager: • Department: • Position: • Name:

• TEL : • FAX : • E-mail :

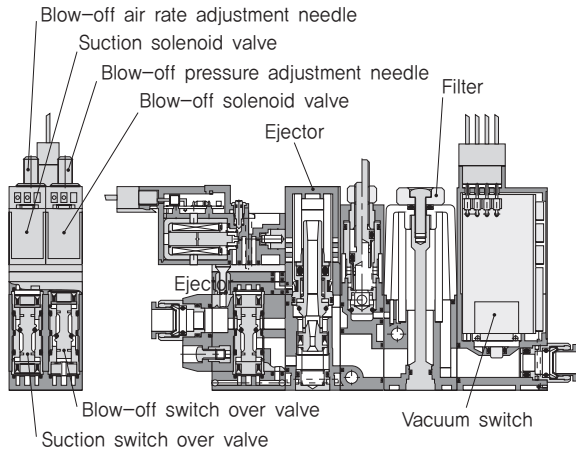
• Quantity of order: SET • Delivery:

Manifold model code	Vacuum characteristics ①	Nozzle bore ②	Suction solenoid valve type ③	Vacuum port ④	Air supply port ⑤	Exhaust port ⑥	Solenoid valve type ⑦	Wire lead-out direction ⑧	Check valve ⑨	No. of stations ⑩	Lead-out direction of air-supply & exhaust port ⑪	Vacuum switch ⑫
VJ	K	00	K	00	10	10	D24	L	05	A	K	
L ↑ St. ↓ R	St.1	H	07	A	06							v4
	St.2	St.1										
	St.3	St.1										
	St.4	E	10	B	08							
	St.5	H	12	B	08							v4
	St.6											
	St.7											
	St.8											
	St.9											
	St.10											

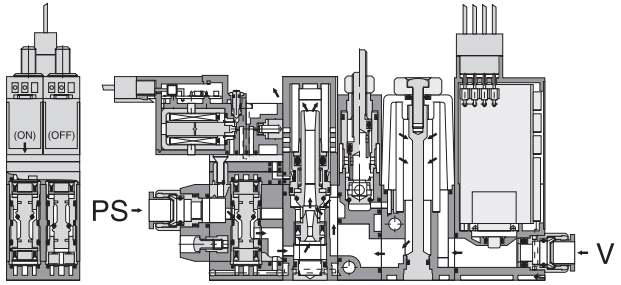
Mechanism of VJ

Example) VJ□□A-□□□-□□-□□-□ (Valve unit type : Double solenoid type (Vacuum retention type))

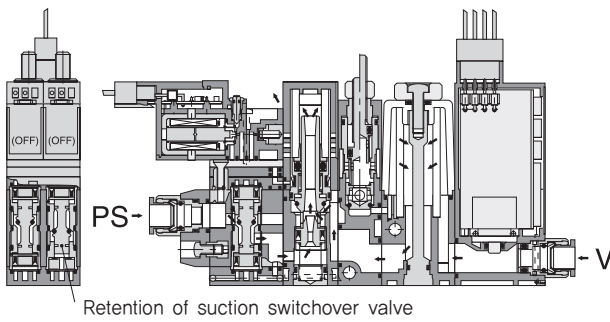
① At vacuum generation suspended



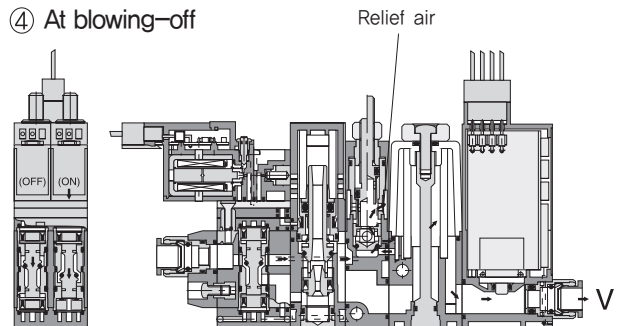
② At vacuum generating



③ At vacuum retention

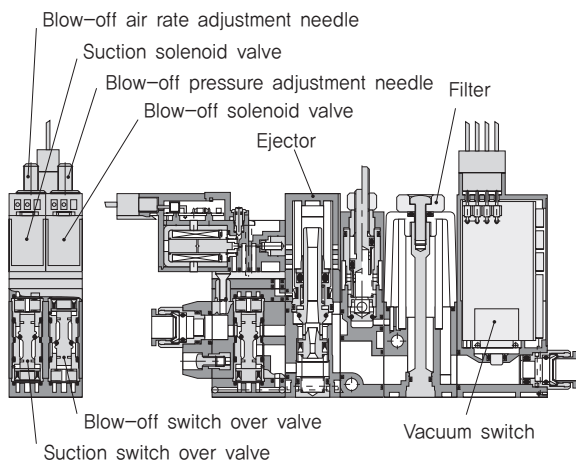


④ At blowing-off

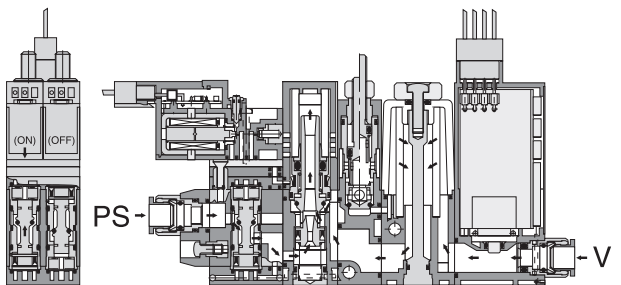


Example) VJ□□B-□□□-□□-□□-□ (Valve unit type : Normally closed)

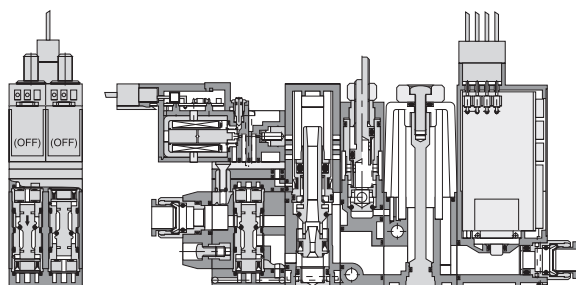
① At vacuum generation suspended



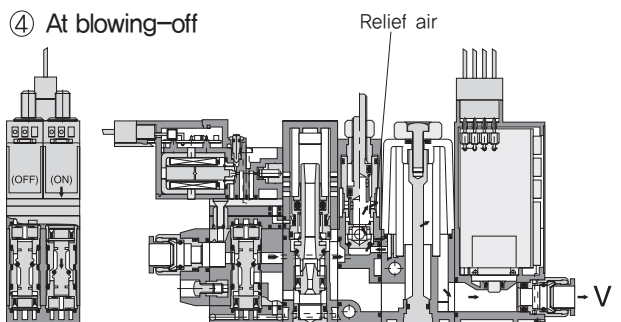
② At vacuum generating



③ At vacuum retention



④ At blowing-off



Specification

Fluid medium	Air
Operating pressure range	0.3 ~ 0.7 MPa
Rated supply pressure	H, L type : 0.5MPa, E type : 0.35MPa
Operating temp.range	5 ~ 50°C

Ejector characteristics

Model code	Model code (mm)	Final vacuum (-kPa)	Suction flow (ℓ/min(ANR))	Air consumption (ℓ /min(ANR))
VJH05...	0.5	90.4	7	11.5
VJL05...		66.5	11	
VJH07...	0.7	93.1	13	23
VJL07...		66.5	26	
VJE07...		90.4	10.5	
VJH10...	1.0	93.1	27	46
VJL10...		66.5	40	
VJE10...		90.4	21	
VJH12...	1.2	93.1	38	70
VJE12...		90.4	27	47

- ※ Secure supply pressure as listed when the vacuum generator is in operation.
- ※ The values in the table are reference values only. Suction flow varies according to the vacuum system conditions; vacuum port dia, or tube length.
- ※ The above characteristics are the values measured at the rated supply pressure which is 0.5MPa for H and L type and 0.35MPa for E type.

Solenoid valve (Suction solenoid valve / Blow-off solenoid valve)

Pilot valve

Item	Suction solenoid valve		Blow-off solenoid valve	
Operating system	Direct operation			
Valve construction	Elastic seal, Poppet valve			
Rated voltage	DC24V	AC100V	DC24V	AC100V
Allowable voltage range	DC24V ±10%	AC100V ±10%	DC24V ±10%	AC100V ±10%
Surge protection circuit	Diode	Diode bridge	Diode	Diode bridge
Power consumption	1.2W(with LED)	1.5VA(with LED)	1.2W(with LED)	1.5VA(with LED)
Manual operation	Push & Lock type			
Operation indicator	During coil excitation, Red LED is on			
Wiring type	Connector wire (cable length : 500mm)			
	Red : DC24V Black : COM	Blue	Red : DC24V Black : COM	Blue

Item	Suction solenoid valve		Blow-off solenoid valve
Operating system	Pneumatic operation by pilot valve		
Valve construction	Elastic seal, Poppet valve		
Proof pressure	1.05MPa		
Valve type	Double solenoid(retention type)/Normally closed/Normally open		Normally closed
Min. excitation time	50msec(Double solenoid type only)		—
Lubrication	Not required		
Effective sectional area	Air supply port diameter	ø4mm : 3.5mm ²	1mm ²
		ø6mm : 5mm ²	

LED Display Digital Vacuum Sensor

Button type compound pressure sensor (-V4)

General specifications	Fluid medium	Non-corrosive gas
	Operating temp. range	0~50° C (No freezing)
	Preservation temp. range	-20~70° C (No freezing)
	Operating humidity range	35-85%RH (No dew condensation)
Pressure range	Display method	Pressure gauge
	Operating pressure range	-100kPa - 300kPa
	Pressure proof	1.471MPa
Power supply	Rated voltage	DC12~24V ± 10%
	Current consumption	30mA Max
Display	Panel lock function	On/Off by push button
	Non-display function	On/Off by push button
	Pressure display unit	kPa
	Display resolution	1kPa
	Indication accuracy	±3%F.S. (0~50° C, at Ta=25° C)
	Zero point adjustment	Adjustable by zero adjusting mode
Switch	Output points	2 point switch outputs
	Output method	NPN open collector
	Switch capacity	DC30V 80mA Max
	Residual voltage	1.2V Max (at load current 80mA)
	Output mode	Separate mode, Window comparator mode
	Pressure setting range	-8~30 counts (kPa setting)
	Operational indication	Output On : LED ON (SW1 : Red, SW2 : Green)
	Temperature characteristics	±5%F.S. (0~50° C, at Ta=25° C)
	Repeat accuracy	±3%F.S.
	Response time	Filter setting at 0 msec : 5msec
	Hysteresis adjustment	0~30counts
	Overload protection	Equipped
	Analog output	Output voltage
Voltage with max negative pressure applied (-100kPa)		1~5V
Voltage with negative pressure applied (-90kPa)		1.1±0.06V
Zero point voltage		2±0.06V
Voltage with Max positive pressure applied (300kPa)		5±0.06V
Linearity		±0.5%F.S.
Repeat accuracy		±0.5%F.S.
Temperature characteristics		±5%F.S. (0-50° C, at Ta=25° C)

Filter specification

Element material	PVF (Polyvinyl formal)	
Filtering capacity	10 μ m	
Filter area	1,130mm ²	
Replacement filter model code	Vacuum filter	VGFE 10
	Blow-off filter	VJFF

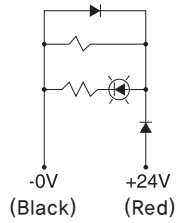
Blow-off function

Blow-off air rate	0 ~ 50 l /min[ANR] (Rated supply pressure: 0.5Mpa)	
Valve structure	Elastic seal, Poppet valve	
Relief pressure setting range	0.005 ~ 0.05MPa	

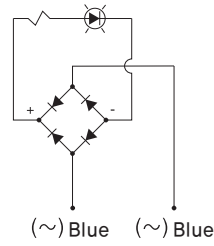
DWE Saving sensor (DWE)

Specifi- cations	Fluid medium	Air (non-corrosive)		
	Pressure Detection	Semi-conductor pressure switch		
	Operating temp. range	0~50 °C		
	Storage temp. range	-20~70°C (Atmospheric pressure, humidity less than 65%)		
	Operating humidity range	35~85% (No freezing)		
	Vibration resistance	100m/s		
	Shock resistance	150m/s		
	Protection	IEC standard IP40 equivalent		
Pressure range	Operating pressure range	-100kPa ~ 100kPa	-100kPa ~ 300kPa	
	Protection	500kPa	0.1MPa	
Power	Operating pressure range	DC12~24V ±10% (Inc. Ripple P-P)		
	Protection	MAX. 30mA or less than (All lights, 2-point output no load ON)		
Display	Pressure indicator	2 spaces 7segment Red LED (Character height 4.5mm)		
	Display count	4times/sec		
	Surveillance function	Pressure over indication, flashing indication		
	Special function	Panel Lock function	Enable / disable selection by button operation	
		Non-display function	Enable / disable selection by button operation	
	Accuracy of display	±1%F.S. ± 1count		
	Temperature characteristic	±3F.S. ± 1count (0 ~ 50°C, at Ta=25°C)		
Zero point adjustment	Configure zero adjust mode			
Switch output	Output points	1 point output		
	Output method	NPN open collector		
	Switch capacity	DC30V 80mA or less than		
	Residual voltage	1.2V or less than (When NPN, load current 80mA)		
	Output operation	Separate mode, window comperator mode		
	Pressureresetting range	-99 ~ 0 (kPa)	-99 ~ 0 (kPa)	
		.00 ~ 0.12(MPa)	.00 ~ 0.36(MPa)	
	Operation display	Output ON : LED light on (SW1 : red / SW2 : green)		
	Temperature characteristic	±5%F.S. ± (0 ~ 50°C, at Ta=25°C)		
	Repeatability	±0.3%F.S.		
	Responsiveness	1ms or less than		
	Hysteresis setting	Variable by hysteresis setting, 0 to 90 kPa equivalent		
Overload protection circuit	Available			

Circuit diagram (solenoid valve)



DC24V Suction & Blow-off solenoid valve



AC100V Suction & Blow-off solenoid valve

VJ Series weight list

① Stand-alone type

Type	Model code	Weight(g)	Remarks
silencer vent with vacuum switch	W□□□-□□□□□□	164.5	Vacuum port : Ø4, Ø6
silencer vent without vacuum switch	W□□□-□□□□□□	171.0	Vacuum port : Ø8
silencer vent with vacuum switch	W□□□-□□□□□□	156.0	Vacuum port : Ø4, Ø6
silencer vent without vacuum switch	W□□□-8□□□□□	162.5	Vacuum port : Ø8
silencer vent with vacuum switch	W□□□-□□□□□□	169.0	Vacuum port : Ø4, Ø6
silencer vent without vacuum switch	W□□□-8□□□□□	175.5	Vacuum port : Ø8
silencer vent with vacuum switch	W□□□-□□□□□□	160.5	Vacuum port : Ø4, Ø6
silencer vent without vacuum switch	W□□□-8□□□□□	167.0	Vacuum port : Ø8

② Manifold intermediate

Type	Weight(g)	Remarks
Manifold intermediate block	18.5	Per station

③ Manifold side block

Type	Weight(g)	Remarks
silencer vent	118.0	Cartridge qty : 2pcs (PS port) PV and EX ports have plugs.
Tube exhaust	112.0	Cartridge qty : 4pcs (PS and EX ports) PV ports have plug.

④ Cartridge (supply and exhaust ports)

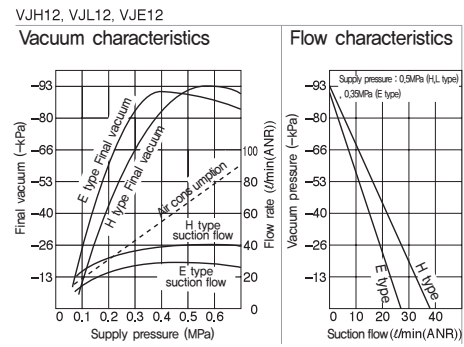
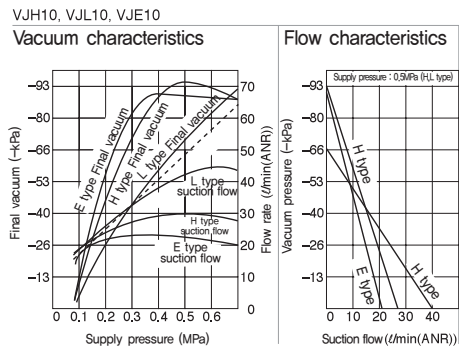
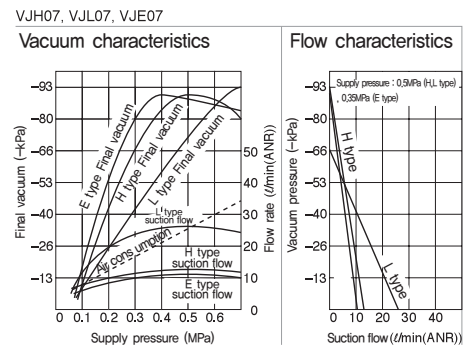
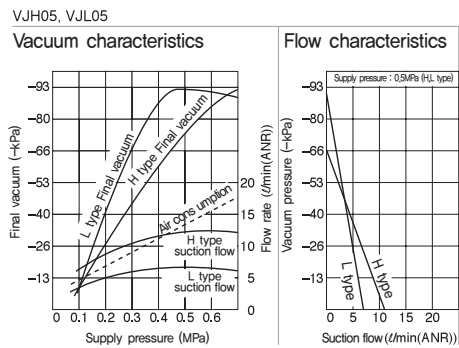
Model code	Weight(g)	Remarks
CJC14-06	11.5	For Ø6mm
CJC14-08	10.0	For Ø8mm
CJC14-10	13.0	For Ø10mm

■ Total weight can be calculated by the following calculation formula.

$$\text{Total weight of manifold type} = (\text{①Stand-alone type} + \text{②Manifold intermediate block}) \times \text{station qty} + \text{③Manifold Side block} + \text{④Cartridge} \times \text{qty}$$

Characteristics

Supply pressure – Final vacuum, Suction flow, Air consumption



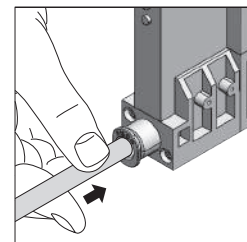
1. In the characteristics shown above, supply pressures refer to those when vacuum is generated.
2. In the characteristics shown above, an odd noise may be heard when supply pressures are immediately before the peak of vacuum levels (H (High vacuum) type: 0.4~0.45MPa, and E (High-vacuum at low air supply pressure type) type: 0.29~0.32MPa). The sounding of this odd noise means the characteristics are unstable. If nothing is done, the sound may become even noisier. This situation can also adversely affect the sensor, resulting in a malfunction or trouble. So reset the supply pressure.
(Ex. 1: When the vacuum generator H type is in operation with the original pressure of 0.5MPa, the odd noise began to be heard due to a drop in supply pressure to 0.43MPa. Reset the supply pressure for the vacuum generator in operation at 0.5MPa.)
3. Piping design and equipment selection should be made with an effective sectional area being 3 times as large as the nozzle diameter as a standard. Satisfactory vacuum characteristics are not obtained unless sufficient supply air flow is secured.(For example, the odd noise is heard even when pressure is at the set value, suction flow is insufficient, the final vacuum does not satisfy the required level, etc.) (Example2. There is the odd noise from the vacuum generator H type, though the supply pressure is 0.5MPa. → Insufficient supplied air rate is the cause. The supplied air rate is reduced before the vacuum generator by a pipe resistance, and a proper air rate is not obtained. Select tubes and pneumatic apparatuses with the target effective cross-section areas obtaining the necessary air flow rate.) (Example3. When $\varnothing 1.0\text{mm}$ of nozzle bore is selected, the effective cross-section size should be more than 2.35mm^2 .(cross-section $0.52 \times \pi = 0.785\text{mm}^2 \times 3 = 2.35\text{mm}^2$). Select tubes and pneumatic apparatuses with the effective cross-section area more than 2.3mm^2 .)

Characteristics

1. How to insert and disconnect

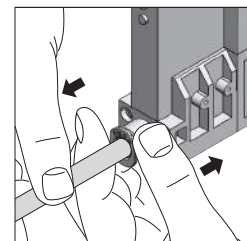
① Tube insertion

Insert a tube into Push-In Fitting of the vacuum generator VK up to the tube end. Lock-claws bite the tube to fix it and the elastic sleeve seals around the tube. Refer to “2. Instructions for Tube Insertion” under “Common Safety Instructions for Fittings” .



② Tube disconnection

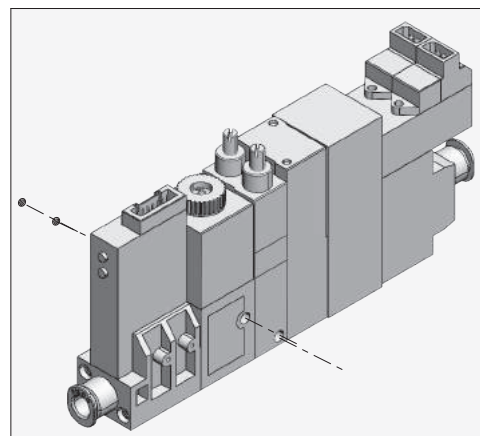
The tube is disconnected by pushing release-ring to release Lock-claws. Make sure to stop air supply before the tube disconnection.



2. How to fix the product

In order to fix the vacuum generator VK, tighten M3 threads through the fixing holes on the resin body with tightening torque 0.3 to 0.35Nm. Refer to the outer dimensional drawings for the hole pitch.

※ For general type and check valve internal waste, the position of the cabinet is different. Please refer to this information.



Detailed safety instruction

Please read it before use, Appendix–P.38 for 'Safety Precautions', Appendix P.40 for 'Common Precautions for products', and Appendix P.44 for 'Common Precautions for Vacuum Equipment'.

Warning

1. Make sure that the leakage current is less than 1mA, when operating a valve unit. Leakage current larger than that may cause malfunction.
2. Vacuum generator with vacuum retention function permits some vacuum leakage. Provide an appropriate safety measure when vacuum retention for long period of time is required.
3. The coil in a pilot solenoid valve generates heat under the following ①–③ conditions. The heat may cause dropping life cycle, malfunctions and burn or may affect negatively on peripheral machines. Contact us when the power is applied to the vacuum generator under the following conditions:
 - ① The power is continuously ON for over 2 hours.
 - ② High-cycle operation.
 - ③ Even when intermittent running of the generator is carried out, the total operation time per day is longer than non-operation time.
4. Regarding double-solenoid types (VJ□□A···), the switchover valve (main valve) is placed in neutral after the supply of pilot air has been suspended (the same is true when the valve is being operated for the first time after shipment). When resuming the supply of pilot air, be sure to send a signal to the pilot valve, or conduct switchover operations manually as required.

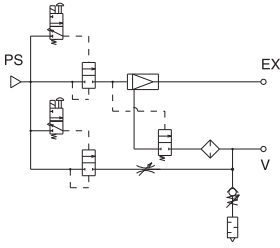
caution

1. Do not give an excessive tensile strength and bending on a lead wire. Otherwise, breaking wire or damage on connector may be caused.
 2. When manifold type is selected, dropping the performance or having an effect to other vacuum ports can be caused depending on number of stations or a combination of mounting units. Contact us for any unclear points.
 3. Compressed air contains many kinds of drains such as water, oxidized oil, tar and other foreign substances. Dehumidify the compressed air by using an after-cooler or a dryer and improve the air quality, since those drains seriously impair the performance of the vacuum generator.
 4. Do not use lubricators.
 5. Since pipe rust cause malfunctions, a filter finer than 5 μ m should be placed right before the air supply port.
 6. Do not use the vacuum generator under the condition of corrosive and / or inflammable gas. Also do not use these gasses as fluid medium.
 7. Do not operate a blow-off valve during vacuum generating.
 8. When replacing vacuum port cartridge, first remove any foreign substances clinging to them and the surrounding areas, then firmly insert pins into cartridges.
 9. When replacing a supply port block, make sure not to lose the seal rubber and remove the foreign substances stuck around the block. Tighten the screw to fix the block with 0.27–0.3Nm of the tightening torque.
 10. For check type, if the vacuum port is closed when the vacuum is blown-off, the residual pressure in the check valve may be applied and vacuum switching may not be possible.
- ※ In above case, disassembling vacuum filter module will release residual pressure and it will operated again.

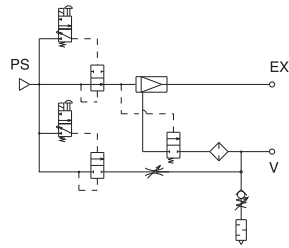
Standard product table

Concentrated exhaust

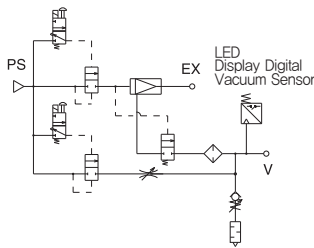
Normally close



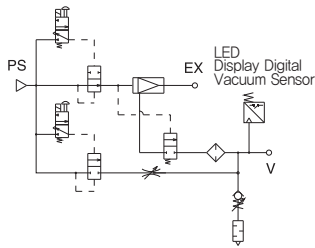
Normally open



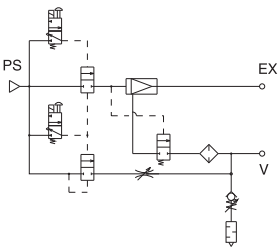
Normally close +V4



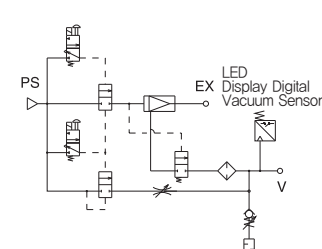
Normally open +V4



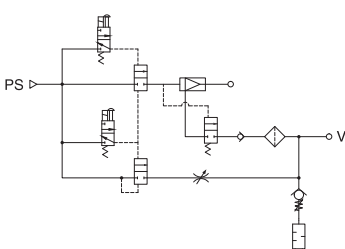
Vacuum protection type (double valve)



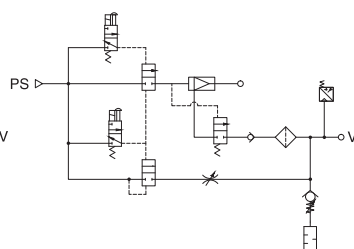
Vacuum protection type (double valve) + V4



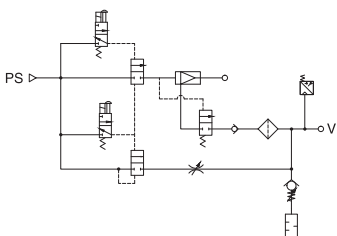
Vacuum protection type + CV(Check valve)



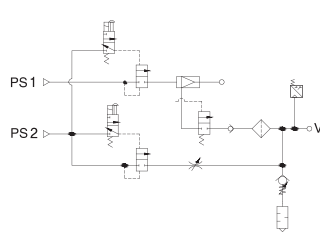
Vacuum protection type + CV(Check valve) + V4



CV(Check valve) + DWE(Energy saving)



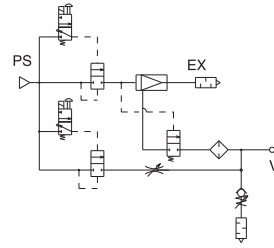
External pilot type



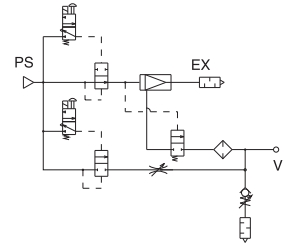
※ External pilot function is available for all orders
Please contact your local dealer or our head office.

Atmospheric open

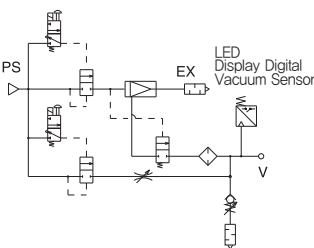
Normally close



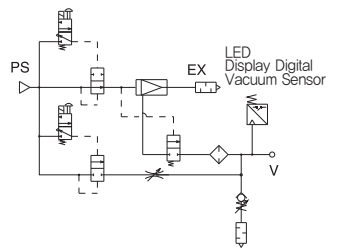
Normally open



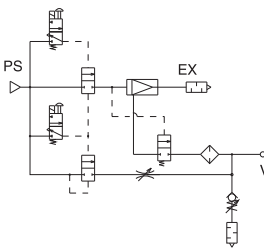
Normally close +V4



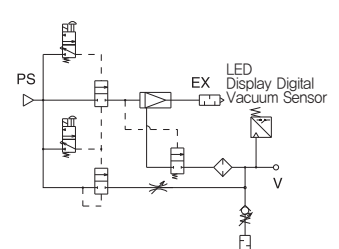
Normally open +V4



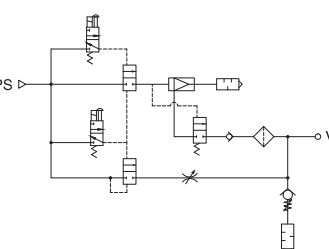
Vacuum protection type (double valve)



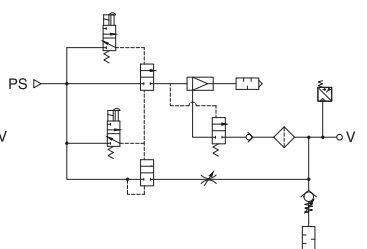
Vacuum protection type (double valve) + V4



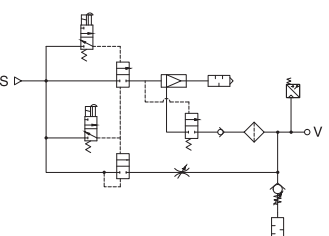
Vacuum protection type + CV(Check valve)



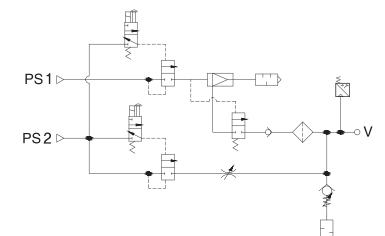
Vacuum protection type + CV(Check valve) + V4



CV(Check valve) + DWE(Energy saving)



External pilot type



※ External pilot function is available for all orders
Please contact your local dealer or our head office.

Dimensional drawing

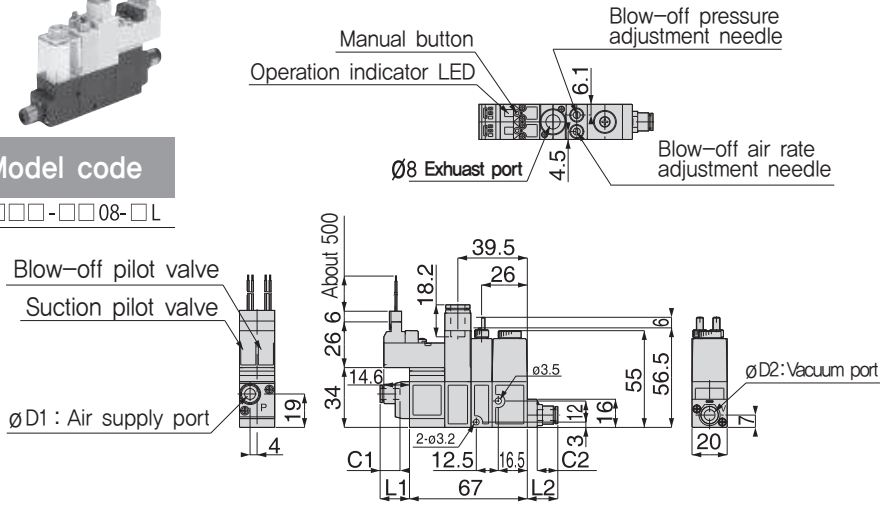
VJ Tube exhaust, wire-lead out direction : Top

VJ



Model code

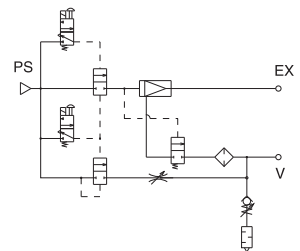
VJ□□□-□□08-□L



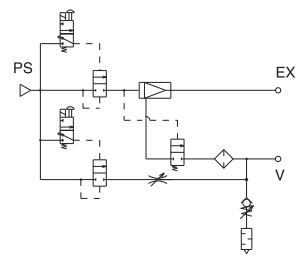
Unit: mm			Unit: mm		
Air supply port applicable tube O,D : ϕ D1	C1	L1	Vacuum port applicable tube O,D : ϕ D2	C2	L2
4	10.9	14.6	4	10.9	14.3
6	11.7	17.1	6	11.7	17.2
			8	18.2	25.8

Circuit diagram

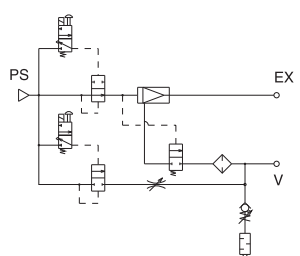
VJA... (Double solenoid stand-alone type)



VJB... (Normally closed stand-alone type)

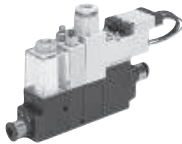


VJC... (Normally open stand-alone type)



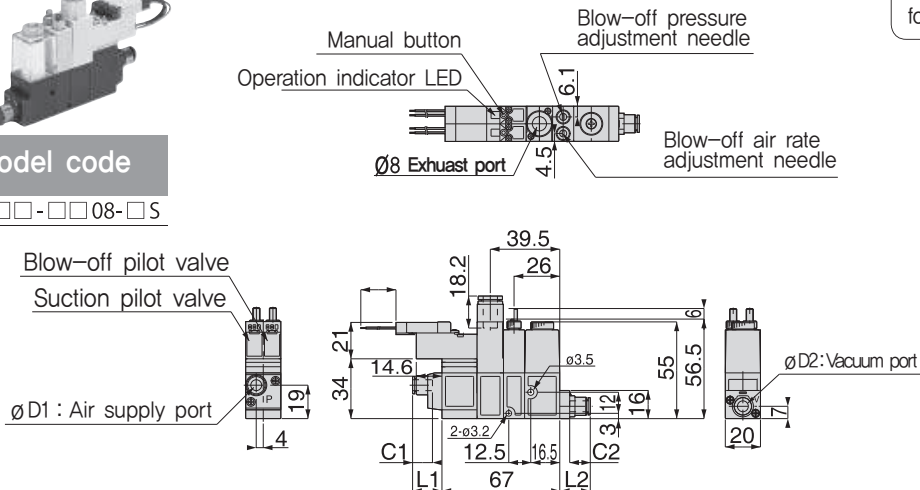
VJ Tube exhaust, wire-lead out direction : Side

VJ



Model code

VJ□□□-□□08-□S



Unit: mm			Unit: mm		
Air supply port applicable tube O,D : ϕ D1	C1	L1	Vacuum port applicable tube O,D : ϕ D2	C2	L2
4	10.9	14.6	4	10.9	14.3
6	11.7	17.1	6	11.7	17.2
			8	18.2	25.8

Circuit diagram

See the above circuit diagram for the one for this type.

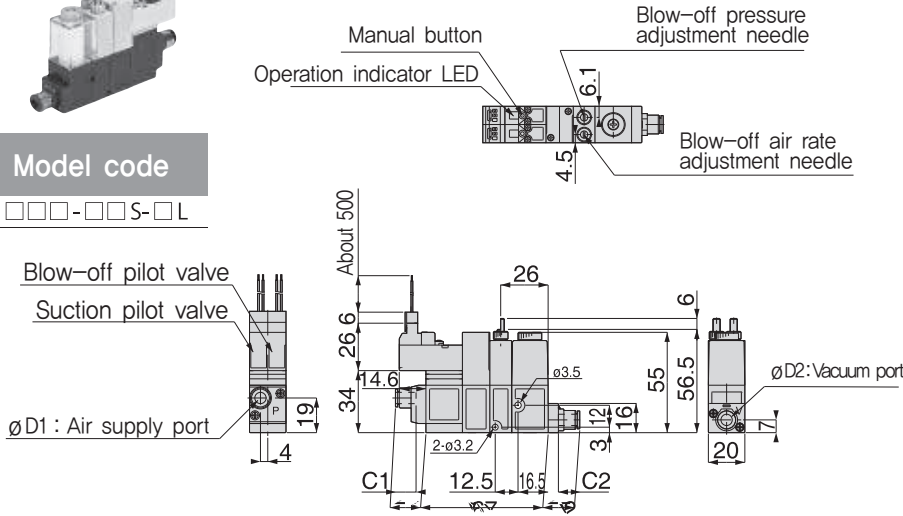
Dimensional drawing

VJ silencer vent, wire-lead out direction : Top

VJ



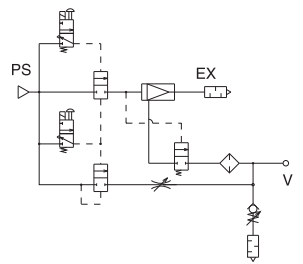
Model code
 VJ□□□□-□□S-□L



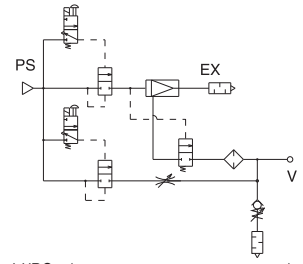
Unit: mm			Unit: mm		
Air supply port applicable tube O.D : øD1	C1	L1	Vacuum port applicable tube O.D : øD2	C2	L2
4	10.9	14.6	4	10.9	14.3
6	11.7	17.1	6	11.7	17.2
			8	18.2	25.8

Circuit diagram

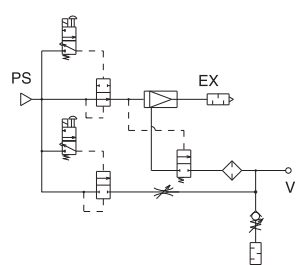
VJA... (Double solenoid stand-alone type)



VJPB... (Normally closed stand-alone type)

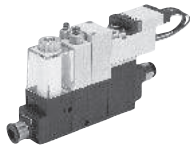


VJPC... (Normally open stand-alone type)

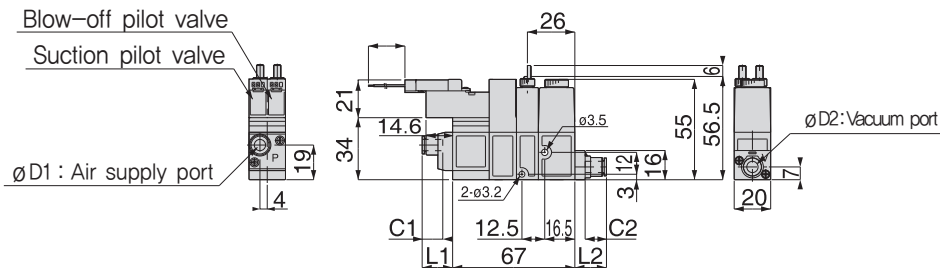
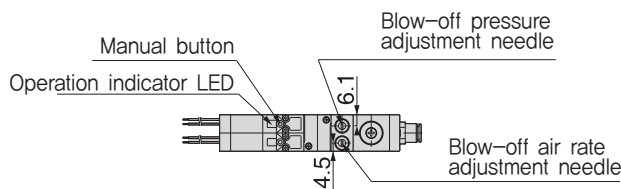


Vj silencer vent, wire-lead out direction : Side

VJ



Model code
 VJ□□□□-□□S-□S



Unit: mm			Unit: mm		
Air supply port applicable tube O.D : øD1	C1	L1	Vacuum port applicable tube O.D : øD2	C2	L2
4	10.9	14.6	4	10.9	14.3
6	11.7	17.1	6	11.7	17.2
			8	18.2	25.8

Circuit diagram

See the above circuit diagram for the one for this type.

Dimensional drawing

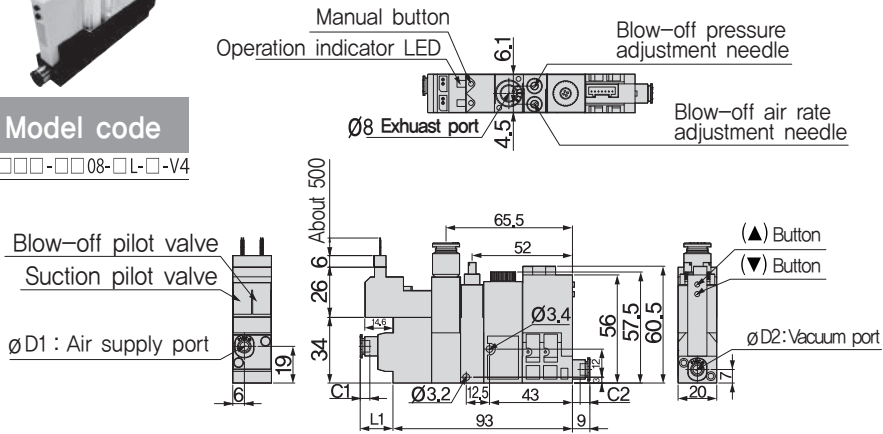
Tube exhaust type with built-in V4 sensor, wire-lead out direction : Top

VJ



Model code

VJ□□□-□□08-□L-□-V4

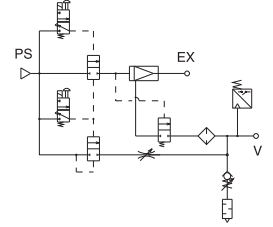


Unit: mm		
Air supply port applicable tube O.D : ϕ D1	C1	L1
4	10.1	14.2
6	11.3	16.7

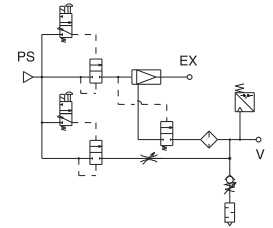
Unit: mm		
Vacuum port applicable tube O.D : ϕ D2	C2	L2
4	10.9	5.8
6	11.7	8.7
8	21.7	14.5

Circuit diagram

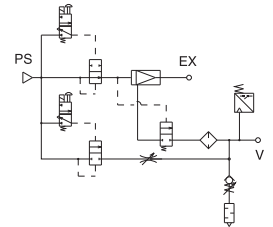
VJA... (Double solenoid stand-alone type)



VJB... (Normally closed stand-alone type)



VJC... (Normally open stand-alone type)



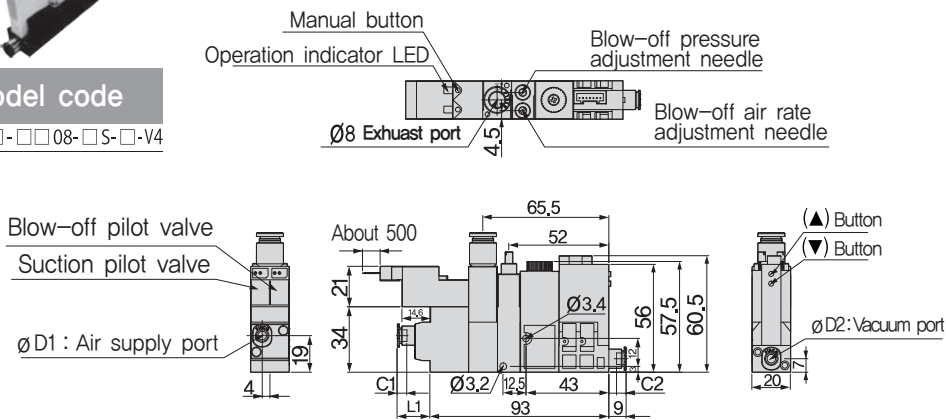
Tube exhaust type with built-in V4 sensor, wire-lead out direction : Side

VJ



Model code

VJ□□□-□□08-□S-□-V4



Unit: mm		
Air supply port applicable tube O.D : ϕ D1	C1	L1
4	10.1	14.2
6	11.3	16.7

Unit: mm		
Vacuum port applicable tube O.D : ϕ D2	C2	L2
4	10.9	5.8
6	11.7	8.7
8	21.7	14.5

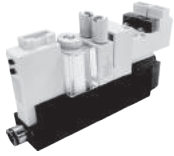
Circuit diagram

See the above circuit diagram for the one for this type.

Dimensional drawing

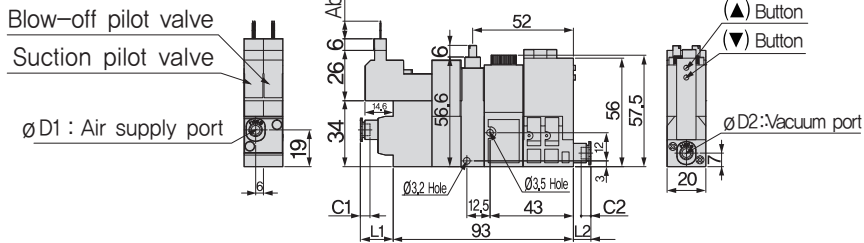
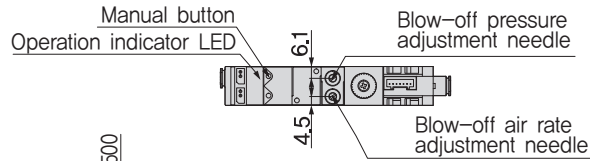
Silencer vent, built-in V4 sensor, wire-lead out direction : Top

VJ



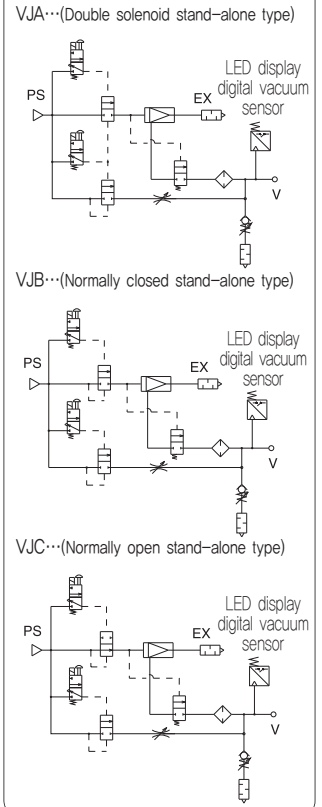
Model code

VJ□□□-□□S-□□□-V4



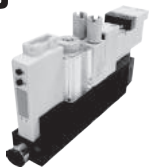
Unit: mm			Unit: mm		
Air supply port applicable tube O.D : $\phi D1$	C1	L1	Vacuum port applicable tube O.D : $\phi D2$	C2	L2
4	10.1	14.2	4	10.9	5.8
6	11.3	16.7	6	11.7	8.7
			8	21.7	14.5

Circuit diagram



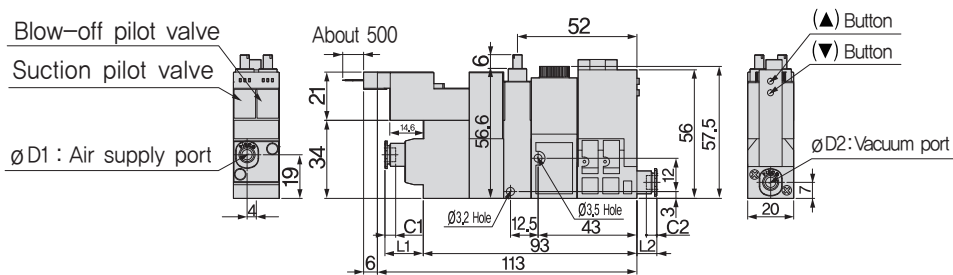
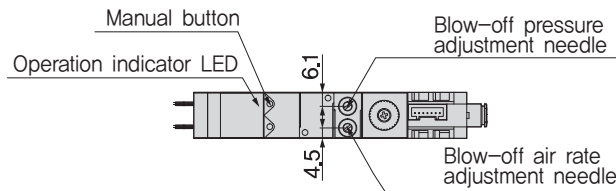
Silencer vent, built-in V4 sensor, wire-lead out direction : Side

VJ



Model code

VJ□□□-□□S-□□S-□□-V4



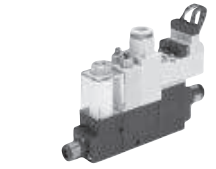
Unit: mm			Unit: mm		
Air supply port applicable tube O.D : $\phi D1$	C1	L1	Vacuum port applicable tube O.D : $\phi D2$	C2	L2
4	10.1	14.2	4	10.9	5.8
6	11.3	16.7	6	11.7	8.7
			8	21.7	14.5

Circuit diagram

See the above circuit diagram for the one for this type.

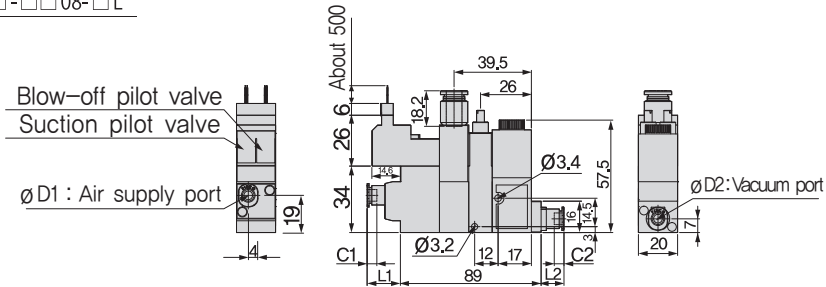
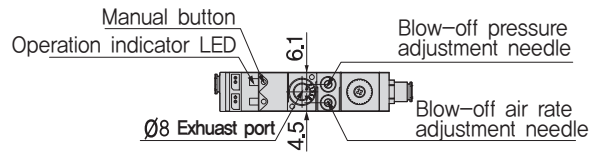
Dimensional drawing

CV(Check valve) Tube exhaust type, wire-lead out direction : Top VJ



Model code

VJ□□□-□□08-□L

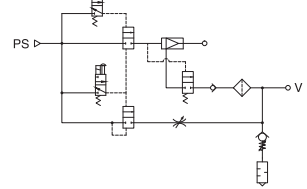


Air supply port applicable tube O.D : ϕ D1	Unit: mm	
	C1	L1
4	10.9	14.6
6	11.7	17.1

Vacuum port applicable tube O.D : ϕ D2	Unit: mm	
	C2	L2
4	10.9	14.3
6	11.7	17.2
8	18.2	25.8

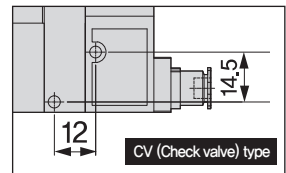
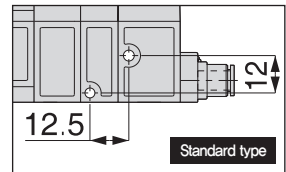
Circuit diagram

VJ Vacuum maintain
+CV(Check valve)



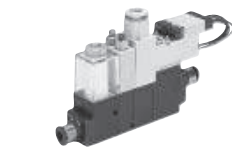
Circuit diagram

See the above circuit diagram
for the one for this type.



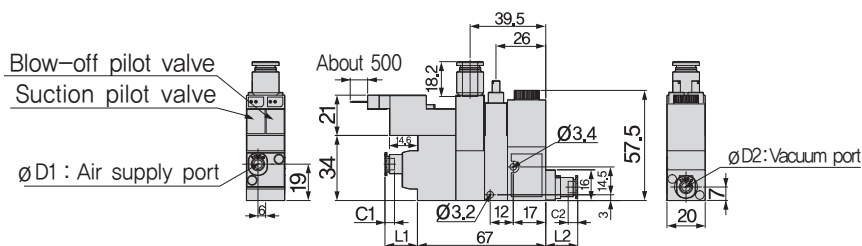
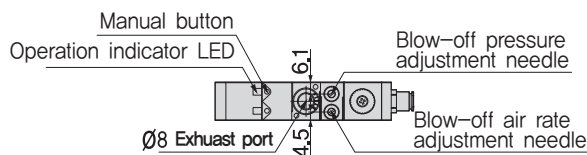
* Please be careful when using the
CV type and standard because they
have different attachment size.

CV(Check valve) Tube exhaust type, wire-lead out direction : Side VJ



Model code

VJ□□□-□□08-□S



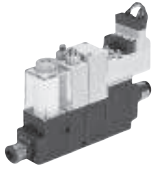
Air supply port applicable tube O.D : ϕ D1	Unit: mm	
	C1	L1
4	10.9	14.6
6	11.7	17.1

Vacuum port applicable tube O.D : ϕ D2	Unit: mm	
	C2	L2
4	10.9	14.3
6	11.7	17.2
8	18.2	25.8

Dimensional drawing

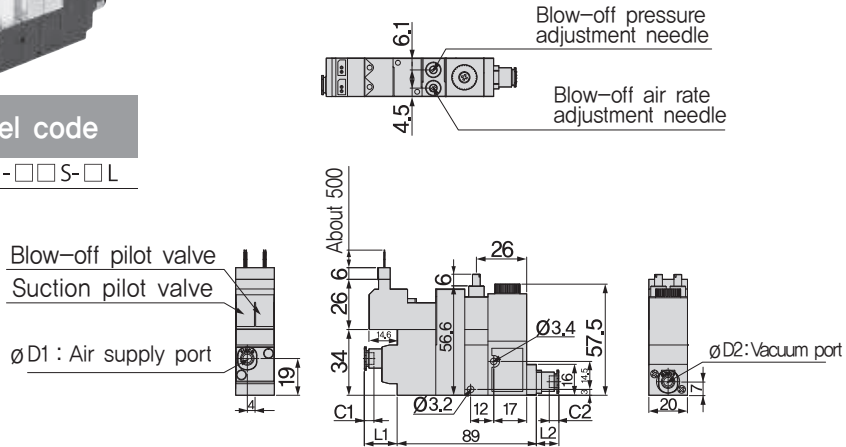
CV(Check valve) Silencer vent, wire-lead out direction : Top

VJ



Model code

VJ□□□□-□□S-□L



Unit: mm

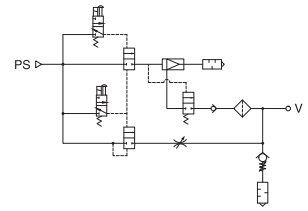
Air supply port applicable tube O.D : $\phi D1$	C1	L1
4	10.9	14.6
6	11.7	17.1

Unit: mm

Vacuum port applicable tube O.D : $\phi D2$	C2	L2
4	10.9	14.3
6	11.7	17.2
8	18.2	25.8

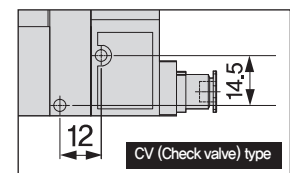
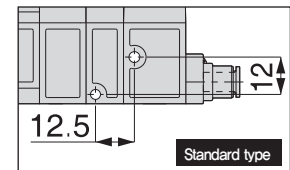
Circuit diagram

VJ Vacuum maintain
+CV(Check valve)



Circuit diagram

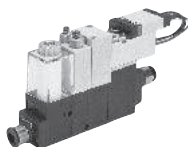
See the above circuit diagram
for the one for this type.



※ Please be careful when using the
CV type and standard because they
have different attachment size.

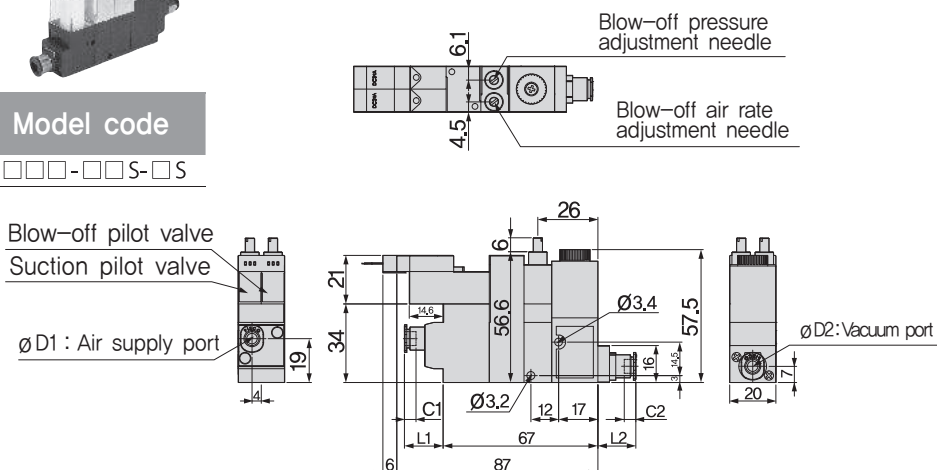
CV(Check valve)Silencer vent, wire-lead out direction : Side

VJ



Model code

VJ□□□□-□□S-□S



Unit: mm

Air supply port applicable tube O,D : $\phi D1$	C1	L1
4	10.9	14.6
6	11.7	17.1

Unit: mm

Vacuum port applicable tube O,D : $\phi D2$	C2	L2
4	10.9	14.3
6	11.7	17.2
8	18.2	25.8

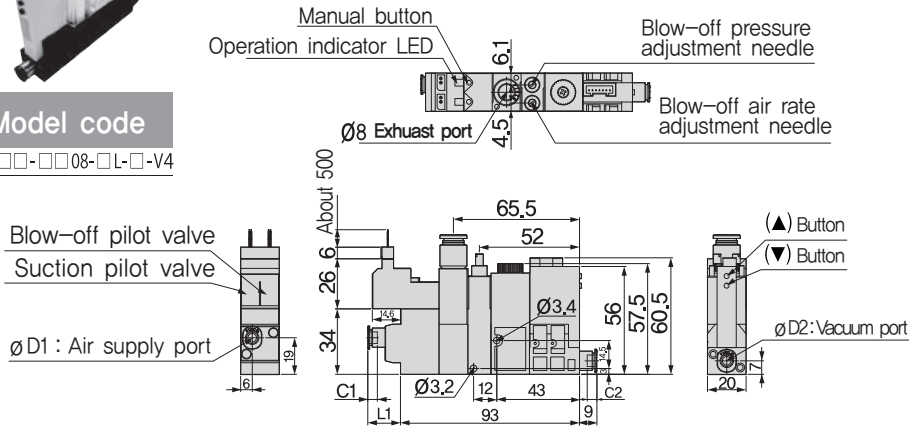
Dimensional drawing

CV(Check valve) Tube exhaust type, wire-lead out direction : Top VJ



Model code

VJ□□□-□□08-□L-□-V4

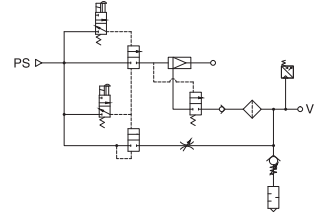


Unit: mm	
Air supply port applicable tube O.D : ϕ D1	
4	C1 L1
6	10.1 14.2
	11.3 16.7

Unit: mm	
Vacuum port applicable tube O.D : ϕ D2	
4	C2 L2
6	10.9 5.8
8	11.7 8.7
	21.7 14.5

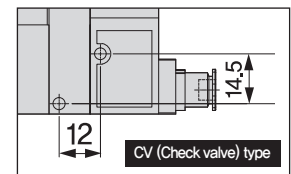
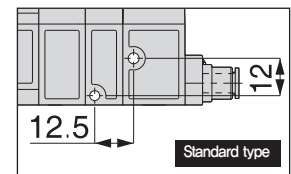
Circuit diagram

VJ Vacuum maintain +CV(Check valve)+4



Circuit diagram

See the above circuit diagram for the one for this type.



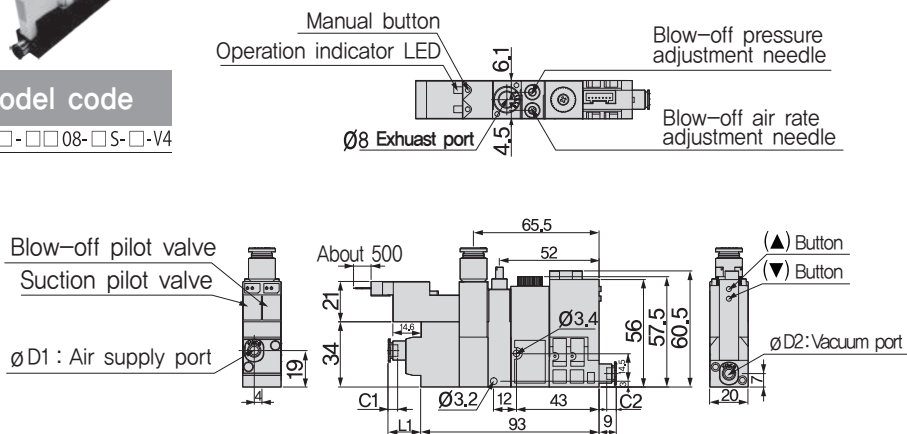
* Please be careful when using the CV type and standard because they have different attachment size.

CV(Check valve) Tube exhaust type, wire-lead out direction : Side VJ



Model code

VJ□□□-□□08-□S-□-V4

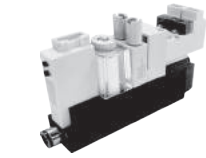


Unit: mm	
Air supply port applicable tube O.D : ϕ D1	
4	C1 L1
6	10.1 14.2
	11.3 16.7

Unit: mm	
Vacuum port applicable tube O.D : ϕ D2	
4	C2 L2
6	10.9 5.8
8	11.7 8.7
	21.7 14.5

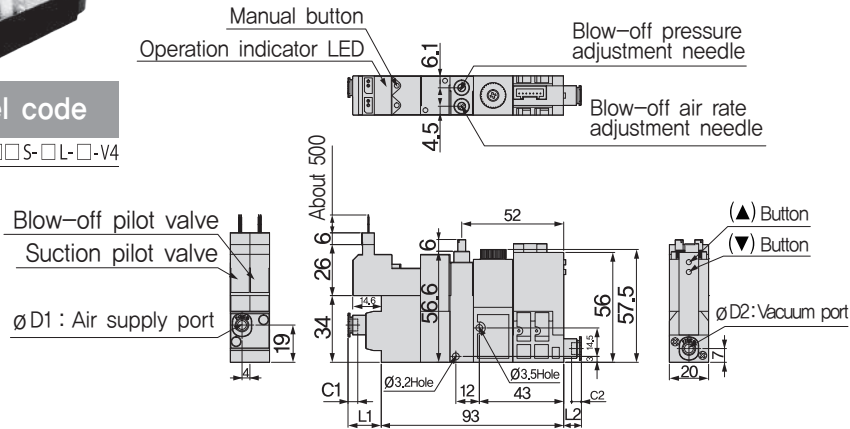
Dimensional drawing

CV(Check valve) Silencer vent, wire-lead out direction : Top



Model code

VJ□□□-□□S-□L-□-V4

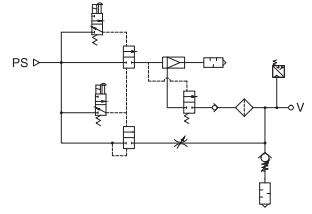


Unit: mm		
Air supply port applicable tube O,D : ø D1	C1	L1
4	10.1	14.2
6	11.3	16.7

Unit: mm		
Vacuum port applicable tube O,D : ø D2	C2	L2
4	10.9	5.8
6	11.7	8.7
8	21.7	14.5

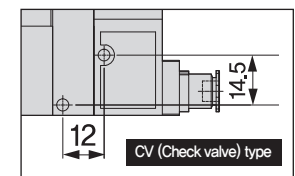
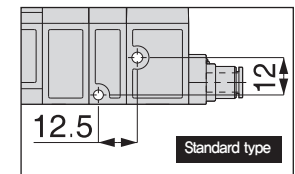
Circuit diagram

VJ Vacuum maintain
+CV(Check valve)+4



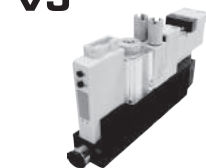
Circuit diagram

See the above circuit diagram
for the one for this type.



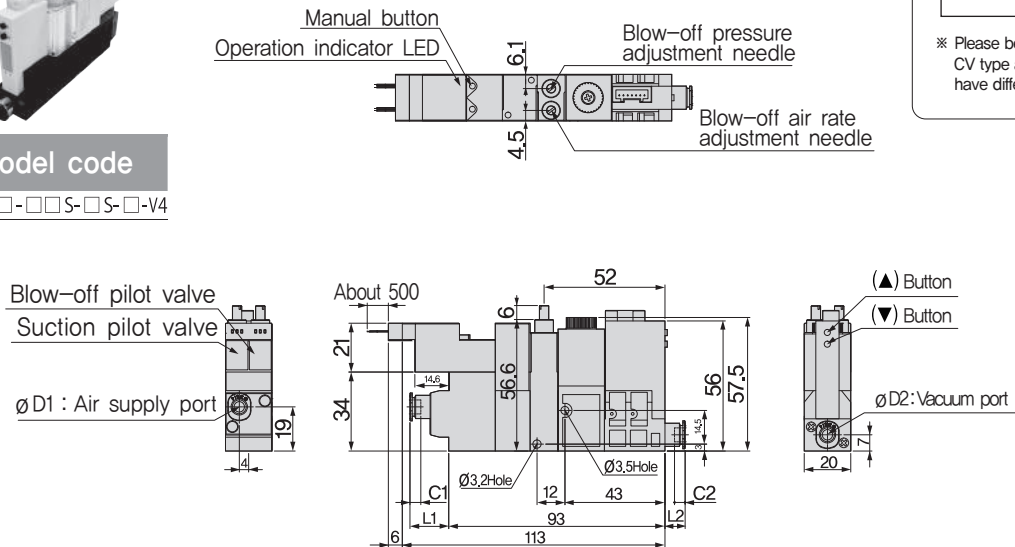
※ Please be careful when using the
CV type and standard because they
have different attachment size.

CV(Check valve) Silencer vent, wire-lead out direction : Side



Model code

VJ□□□-□□S-□S-□-V4

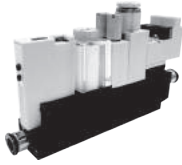


Unit: mm		
Air supply port applicable tube O,D : ø D1	C1	L1
4	10.1	14.2
6	11.3	16.7

Unit: mm		
Vacuum port applicable tube O,D : ø D2	C2	L2
4	10.9	5.8
6	11.7	8.7
8	21.7	14.5

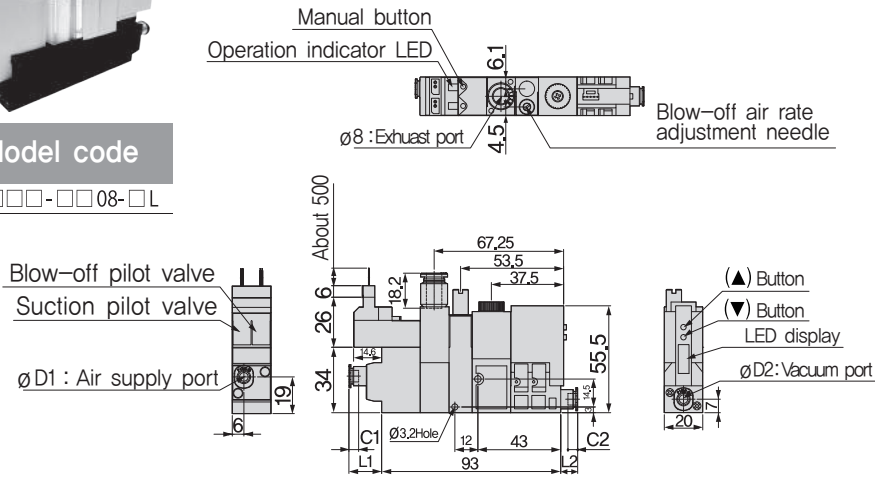
Dimensional drawing

CV(Check valve) + DWE sensor tube exhaust type, wire-lead out direction : Top VJ



Model code

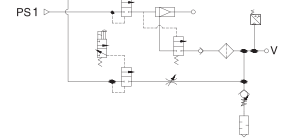
VJ□□□-□□08-□L



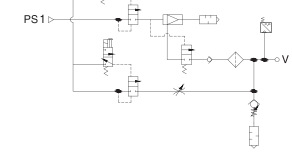
Unit: mm			Unit: mm		
Air supply port applicable tube O.D : ϕ D1	C1	L1	Vacuum port applicable tube O.D : ϕ D2	C2	L2
4	10.9	14.6	4	10.9	14.3
6	11.7	17.1	6	11.7	17.2
			8	18.2	25.8

Circuit diagram

VJ CV(Check valve)
+DWE(Energy saving)



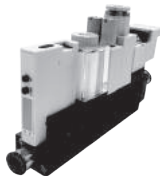
VJ CV(Check valve)
+DWE(Energy saving)



Circuit diagram

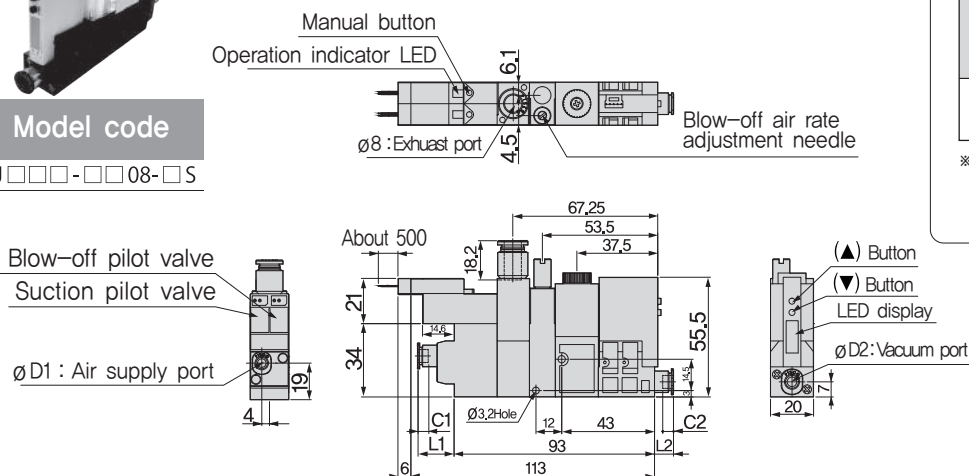
See the above circuit diagram
for the one for this type.

CV(Check valve) + DWE sensor tube exhaust type, wire-lead out direction : Side VJ

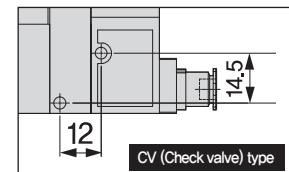
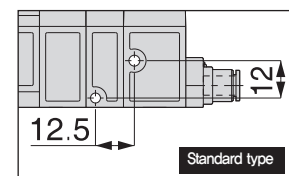


Model code

VJ□□□-□□08-□S



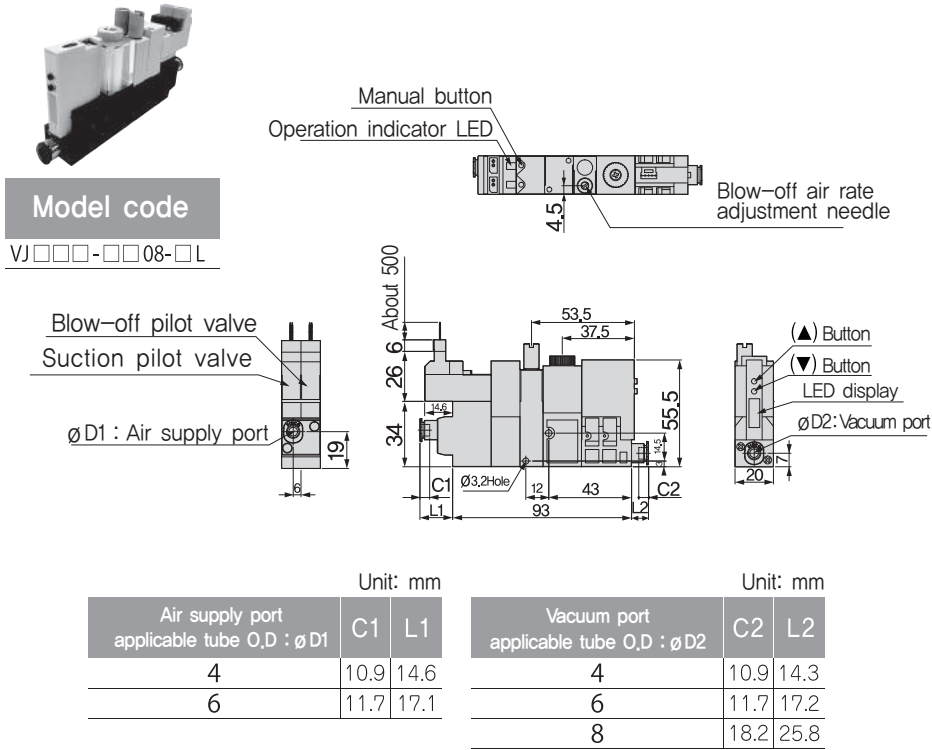
Unit: mm			Unit: mm		
Air supply port applicable tube O.D : ϕ D1	C1	L1	Vacuum port applicable tube O.D : ϕ D2	C2	L2
4	10.9	14.6	4	10.9	14.3
6	11.7	17.1	6	11.7	17.2
			8	18.2	25.8



※ Please be careful when using the
CV type and standard because they
have different attachment size.

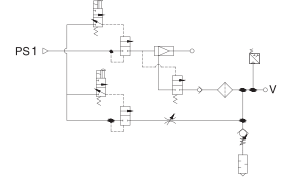
Dimensional drawing

CV(Check valve) + DWE sensor Silencer vent type, wire-lead out direction : Top VJ

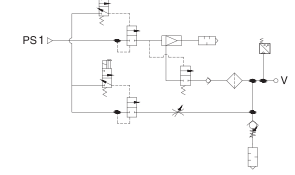


Circuit diagram

VJ CV(Check valve)
+DWE(Energy saving)



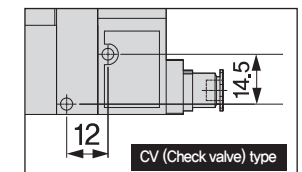
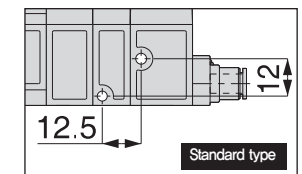
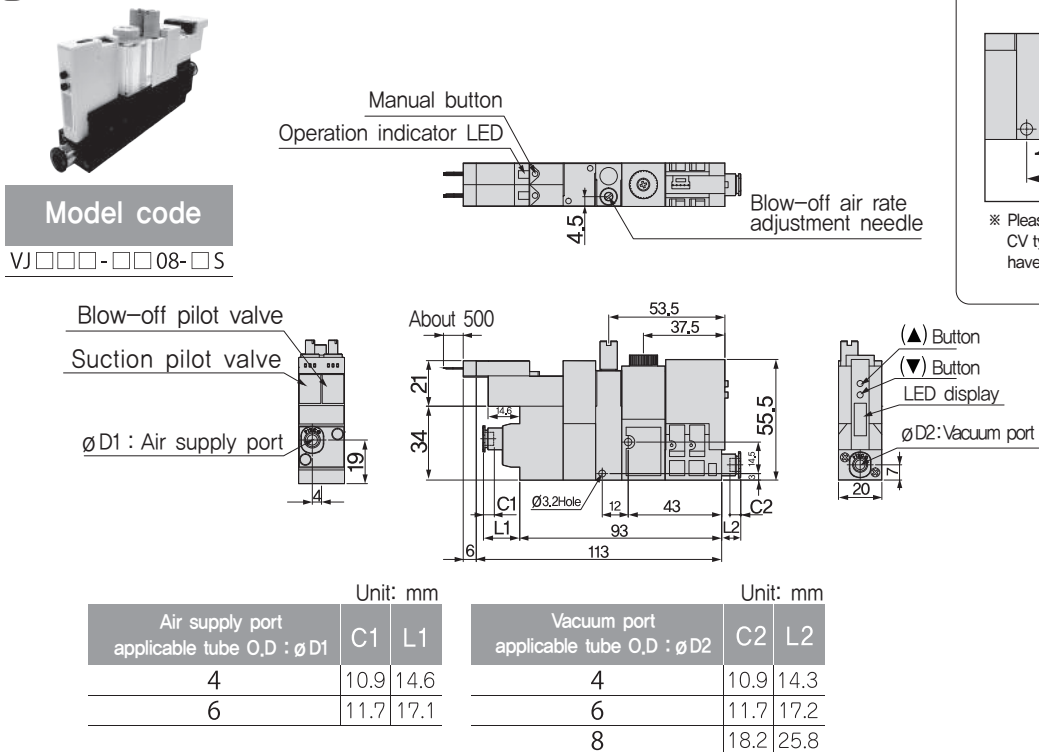
VJ CV(Check valve)
+DWE(Energy saving)



Circuit diagram

See the above circuit diagram for the one for this type.

CV(Check valve) + DWE sensor Silencer vent type, wire-lead out direction : Side VJ

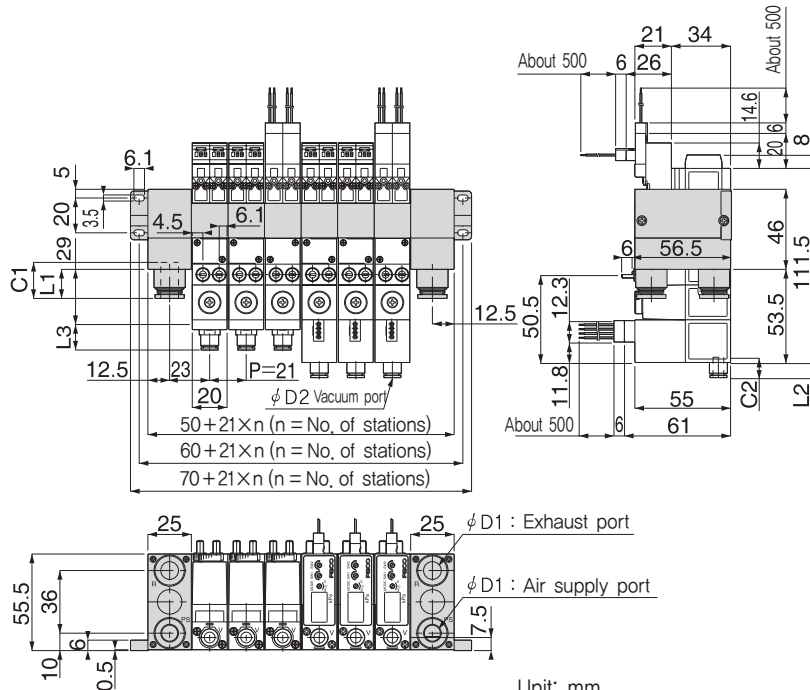


※ Please be careful when using the CV type and standard because they have different attachment size.

Dimensional drawing

VJ Manifold type, tube exhaust, concentrated wire lead-out direction: vacuum port side

VJ



Model code

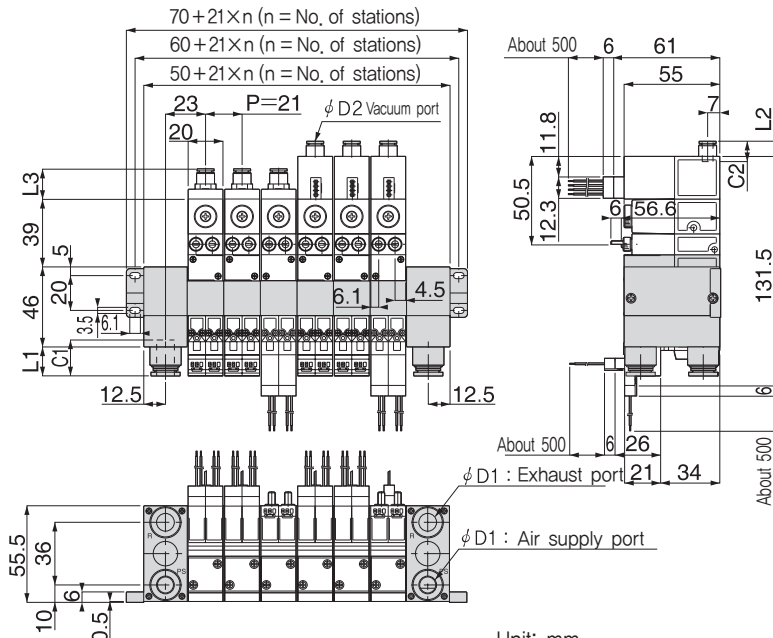
VJ□□□□-□□□□-□□-□A-□

Air supply port applicable tube O,D : ϕ D1	Unit: mm	
	C1	L1
6	16.95	11.55
8	18.2	13.1
10	20.7	16.7

Vacuum port applicable tube O,D : ϕ D2	Unit: mm		
	C2	L2	L3
4	10.9	5.8	14.3
6	11.7	8.7	17.2
8	21.7	14.5	23.0

VJ Manifold type, tube exhaust, concentrated wire lead-out direction: supply port side

VJ



Model code

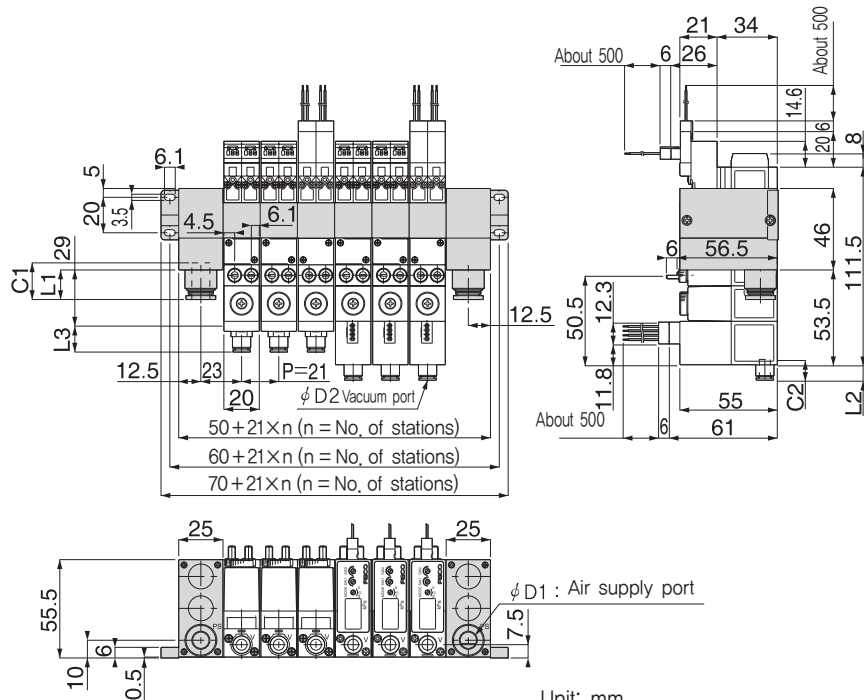
VJ□□□□-□□□□-□□-□B-□

Air supply port applicable tube O,D : ϕ D1	Unit: mm	
	C1	L1
6	14.5	9.1
8	18.2	13.1
10	20.7	16.7

Vacuum port applicable tube O,D : ϕ D2	Unit: mm		
	C2	L2	L3
4	10.9	5.8	14.3
6	11.7	8.7	17.2
8	21.7	14.5	23.0

Dimensional drawing

VJ Manifold type, silencer vent, concentrated wire lead-out direction: vacuum port side VJ

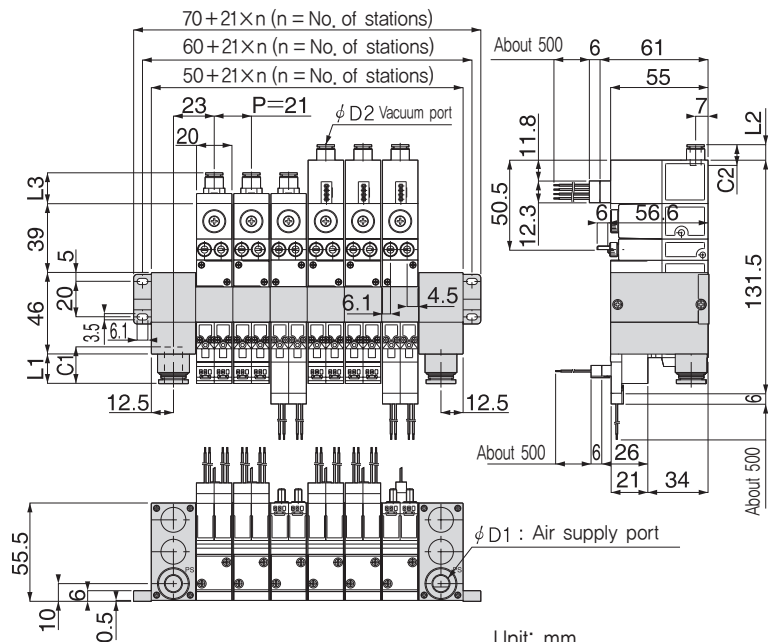


Model code
VJ□□□-□□S-□□-□A-□

Air supply port applicable tube O,D : ϕ D1	Unit: mm	
	C1	L1
6	16.95	11.55
8	18.2	13.1
10	20.7	16.7

Vacuum port applicable tube O,D : ϕ D2	Unit: mm		
	C2	L2	L3
4	10.9	5.8	14.3
6	11.7	8.7	17.2
8	21.7	14.5	23.0

VJ Manifold type, silencer vent, concertated wire lead-out direction: supply port side VJ

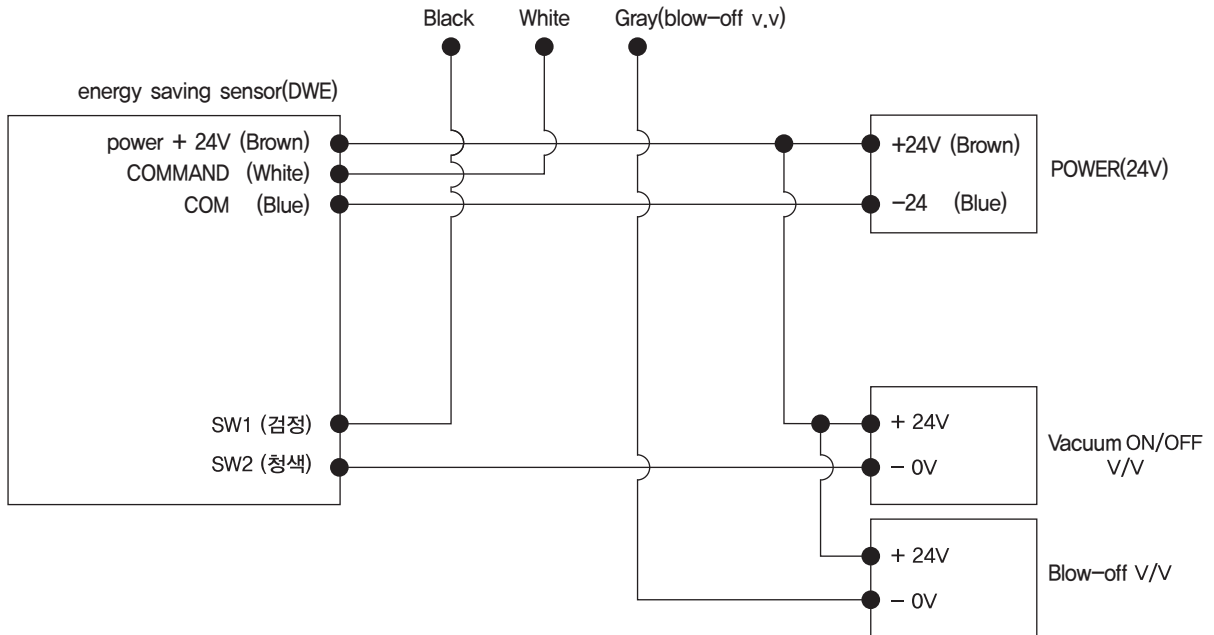


Model code
VJ□□□-□□S-□□-□B-□

Air supply port applicable tube O,D : ϕ D1	Unit: mm	
	C1	L1
6	14.5	9.1
8	18.2	13.1
10	20.7	16.7

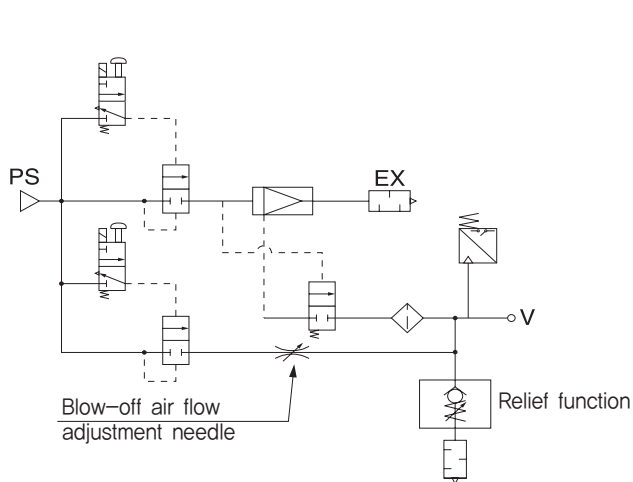
Vacuum port applicable tube O,D : ϕ D2	Unit: mm		
	C2	L2	L3
4	10.9	5.8	14.3
6	11.7	8.7	17.2
8	21.7	14.5	23.0

1. Energy saving sensor wiring diagram

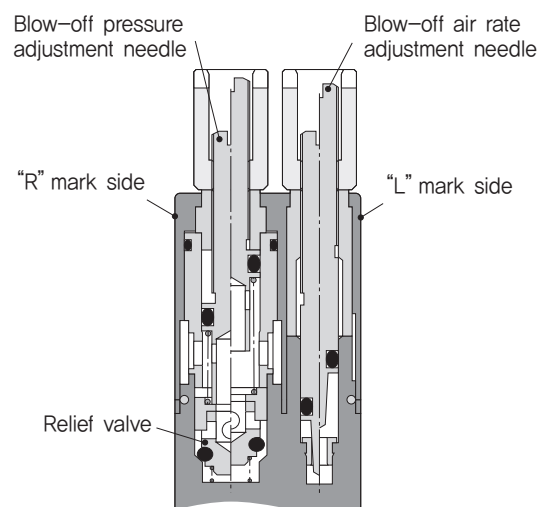


1. Adjusting Method of Relief Valve

(1) Circuit diagram / Construction



Circuit diagram (VJ□□B: Normally closed)



Construction of blow-off unit

- (2) Adjust and set the amount of pressure by referring to the following "Table 1. Open limit of the blow-off pressure relief needle".

Table 1. Open limit of the blow-off pressure adjustment needle

Vacuum characteristics	H : High-vacuum type				L : Large-flow type			E : High-vacuum at low air supply pressure type		
Nozzle bore (mm)	0.5	0.7	1.0	1.2	0.5	0.7	1.0	0.7	1.0	1.2
Max. open limit (rotations)	6.5	7.5	8.5	9.0	7.5	8.0	9.0	7.5	8.0	8.5

- ※ In case of External Vacuum Controller "VJP Series" (VJP□), open limit of the blow-off pressure needle differs according to the performance of a vacuum pump. Adjust the needle within the condition under which the startup time and vacuum level are not affected.
- ※ Table 1 represents the referential values at rated supply pressure. Open limit of the blow-off pressure needle can change by factors such as supply pressure, vacuum characteristics and volume of piping at vacuum side. Values in table 1 are only reference values.

- (3) Reconfirm if the vacuum characteristics and the evacuation time are not influenced and abnormal after setting the blow-off pressure.

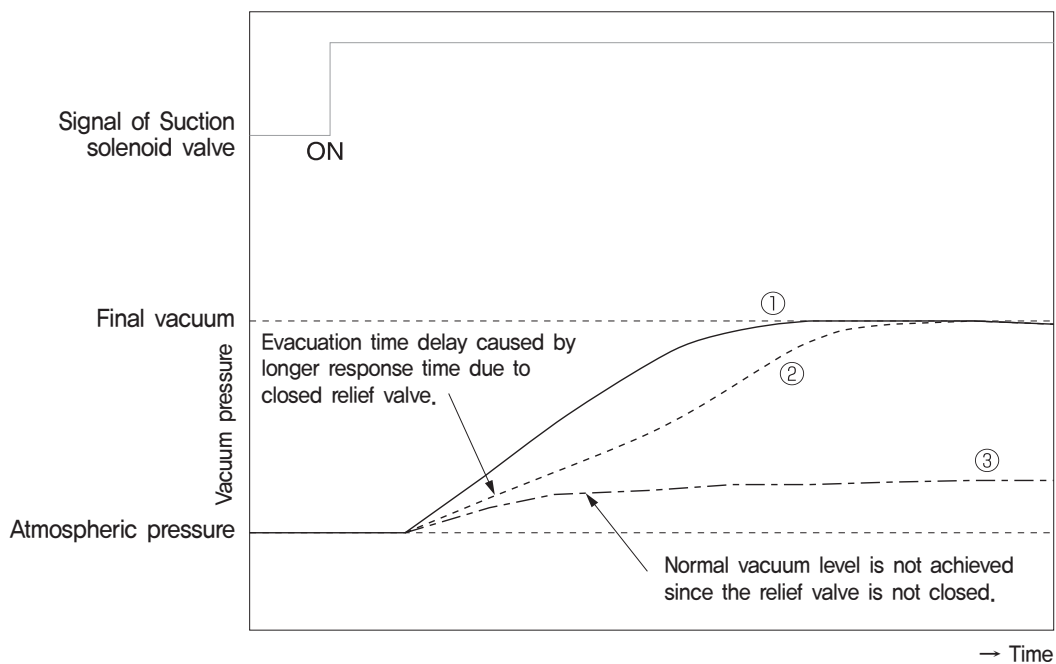
- ※ Be noted that the evacuation time may become longer or normal final vacuum level may not be obtained when the pressure adjustment needle opening exceeds the limit indicated in Table 1. (Please refer to the following (5) Others.)

- (4) Adjust the desired blow-off air rate by blow-off air rate adjustment needle.

- ※ Increase the amount of blow-off air if shorter blow-off air time is required.
- ※ Decrease the amount of blow-off air flow in order to avoid a work from being blown away.

- (5) Others

- 1) When the pressure adjustment needle opening is adequate, a vacuum rising becomes like ① in the below graph.
- 2) If the pressure adjustment needle opening exceeds the limit, a vacuum rising becomes like ② in the below graph and evacuation time becomes longer.
- 3) If the pressure adjustment needle is opened more from ② of below graph, a vacuum rising becomes like ③ in the below graph and proper vacuum level cannot be obtained.

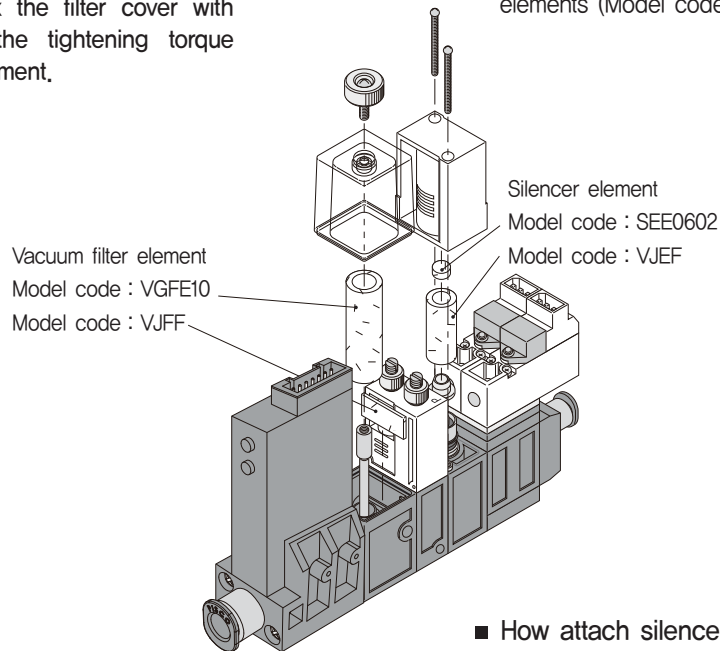


Replacement element

- Remove the fixing screw to replace the filter element. Make sure to place the filter seal rubber properly and tighten the screw to fix the filter cover with 0,3–0,5Nm of the tightening torque after the replacement.

How to detach silencer element

- Remove 2 fixing screws by a proper screwdriver.
- Detach the element cover and replace silencer elements (Model code: SEE0602 & VJEF).



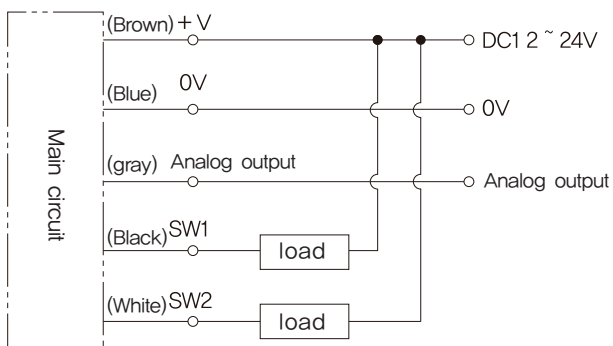
How attach silencer elements

- Tighten 2 fixing screws firmly with 0,18–0,2Nm of the tightening torque by a proper screwdriver.

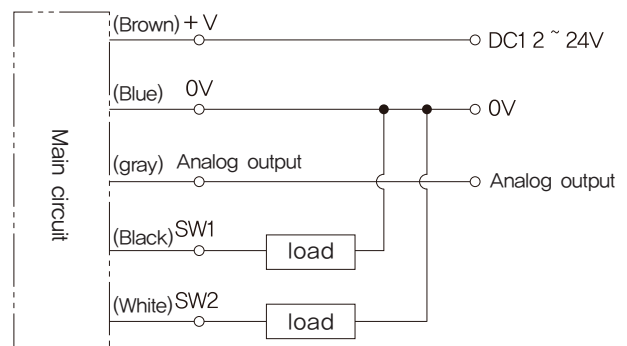
V4 Wiring Connection

Wiring Connection

NPN Output mode



PNP Output mode



Panel Operation Procedure

● Cautions

1. Avoid pressing the setting buttons with a sharp pointed tool, it may break the buttons.
2. Do not apply excessive force to the setting button. It leads to breakage of the button or the product itself.

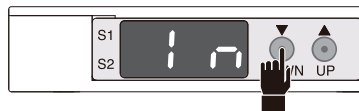
① Mode Selection



Press ▲&▼ buttons simultaneously more than 1 second in the Operation Mode to enter Selection mode



OA : Zero Adjusting mode
 SS : Switch Setting mode
 dl : Display Setting mode
 In : Initial Setting mode
 Ar : Auto-reference mode

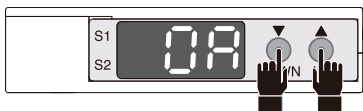


Display the mode you want to set and press ▼and▲ buttons simultaneously for 1 second or more. The Selection is confirmed and enter each setting mode.

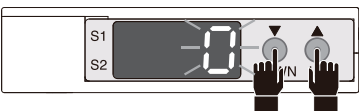
● Cautions

3. With non-operation state for more than 5 seconds while entering the Selection mode, the Selection mode will be canceled and automatically back to the Operation mode. After entering mode from the Selection mode, it will not return to the Operation mode even if there is no key operation for more than 5 seconds.

② Zero point correction (Zero adjusting mode)

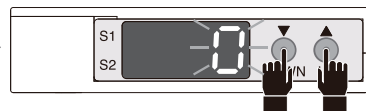


Release the pressure from the pressure port and enter the Zero Adjusting mode from the Selection mode according to "Panel Operation Procedure, ① Mode Selection".



It enters the Zero Adjusting mode, and zero point correction is applied once at this point. If the display is not "0" here, press ▼and▲ buttons simultaneously once. Re-correction of zero point is applied.

* Zero point correction can be performed any number of times.



Confirm that the display is "0", and press ▼and▲ buttons simultaneously for 1 second or more. Return to the Operation mode and start pressure detection.

Panel Operation Procedure

● Cautions

4. "E2" is displayed by the monitoring function when over $\pm 5\%$ of pressure range is applied to the pressure port.
By pressing \blacktriangle button, E2 will be canceled and return to the Operation mode, Reliably release the pressure port pressure and Perform zero point correction again after ensuring pressure release from the pressure port.

Negative pressure type	Compound pressure type
-5kPa ~ 5kPa	-20kPa ~ 20kPa

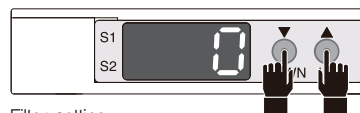
③ Setting SW switch pressure value, Hysteresis, Filter (response) (Switch Setting mode)



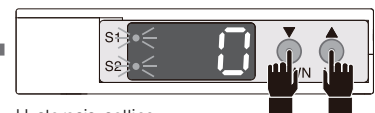
Enter the Switch Setting mode from the Selection mode according to "Panel Operation Procedure, 0 Mode Selection".

SW1 switch pressure value setting

SW2 switch pressure value setting



Filter setting



Hysteresis setting

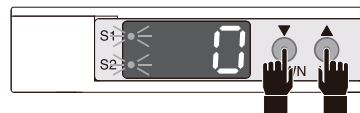
S1 LED flashes, and the current SW switch pressure value is displayed. Every time you push the \blacktriangledown and \blacktriangle buttons simultaneously once, the display changes in the order of SW1 switch pressure setting \rightarrow SW2 switch pressure setting \rightarrow Hysteresis setting \rightarrow Filter setting \rightarrow SW1 switch pressure setting.

SW1, SW2 switch pressure value setting



In SW1 switch pressure value setting indication (S1 LED flashing), select SW1 switch pressure value with \blacktriangledown and \blacktriangle a button. Likewise, SW2 switch pressure value is selected by displaying SW2 switch pressure value (S2 LED flashing).
* When the Window-comparator mode is selected by the Switch Output Action, SW1 and SW2 are set within the range of $P1 \leq P2 - 2H$.

Hysteresis setting

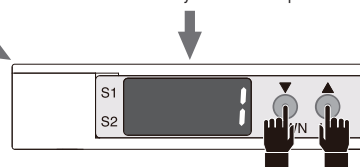


In Hysteresis setting indication (S1, S2 LED flashing), select hysteresis value with \blacktriangledown and \blacktriangle button.
* Hysteresis can be set within the range of 0 to 30 counts.
* When Separate mode is selected by Switch Output Action, the operating pressure of SW1 and SW2 can be set within the display range.
* Hysteresis (H) can be set within the range of $Pis P2 - 2H$ when the Window-comparator mode is selected by Switch Output Action

Filter setting



In Filter setting (displaying 0), select filter setting value with \blacktriangledown and \blacktriangle button.
* The filter value can be selected from 0 to 99 msec.



After completing SW switch pressure value, hysteresis and filter setting, press \blacktriangledown and \blacktriangle a buttons simultaneously for 1 second or more to save the setting. Return to Operation mode and start pressure detection.

* Switch output operates according to the setting before entering Selection mode until the new setting is saved (while setting in progress). The new setting will be valid only after saving

Setting range and change unit

Negative pressure type		Compound pressure type	
Setting range	Change unit	Setting range	Change unit
-99 ~ 0	1kPa	-99 ~ .30	1kPa (≤ 0 kPa) 0.01 MPa (0 kPa <)

Panel Operation Procedure

● Cautions

- SW switch pressure value and hysteresis setting must be performed after "Panel Operating Procedure, ③ Setting Switch Output Action". In particular, when changing the output operation from the Separate mode to the Window-comparator mode, all hysteresis setting will be "0". Also, the Switch pressure value of SW1 will be the same as that of SW2. It is changed to work pressure value. Therefore, be sure to set SW switch pressure value and hysteresis value after setting Switch Output Action.
- Hysteresis values and Filter values are set to 0 at the factory shipment.

④ Display on/off (Display Setting mode)



Enter the Display Setting mode from the Selection mode according to "Panel Operation Procedure, ① Mode Selection".



"on" or "OF" is displayed.

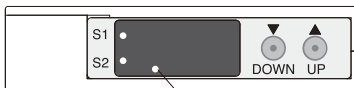
Every time you push the button, the "on" Indication and the "OF" Indication are switched. The "on" Indication is display (always display) mode, and "OF" display is non-display (lights out) mode.



After selecting Display setting mode, on/off, press ▼ and ▲ button simultaneously for 1 second or more to save the setting. Return to Operation mode and start displaying pressure.

● Cautions

- While the non-display mode is selected, if the non-operation state lasts for more than 10 seconds in the Operation mode, the display will go out, and the display looks like as shown right. Also, when SW outputs while the display off, red LED on S1 or green LED on S2 will light.



Only decimal point will light.

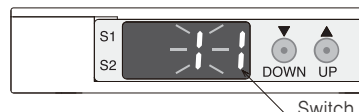
- If you want to display the pressure temporarily while the non-display mode is selected, push the ▼ or ▲ button once. Detecting pressure is displayed, then the display turns off again if the non-operation state continues for more than 10 seconds

- The factory default setting is set to "on display mode.

⑤ Setting of Display Magnification, Switch Output Action (Initial Setting mode)

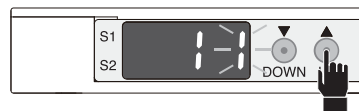
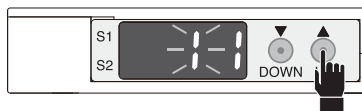


Enter the Initial Setting mode from the Selection mode according to "Panel Operation Procedure, ① Mode Selection".



Switch Output Action

The current setting is displayed. Here, the left digit represents "Display Magnification No.", and the right digit represents "Switch Output Action No."



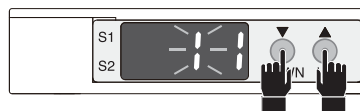
Every time you push the ▲ button, "Display Magnification setting" ↔ "Switch Output Operation setting" is switched. The one that is blinking is the setting item you have selected.

Display Magnification setting



To set the Switch Output Operation, blink the digit on the right side and select the Switch Output Operation No. with the ▼ button. Every time you push the ▼ button, it switches in the order of 1 → 2 → 3 → 4 → 5 → 6 → 7 → 8 → 1

- "For Switch Output Operation No., please check the Switch Output Operation No. / Operation Diagram in the table below.



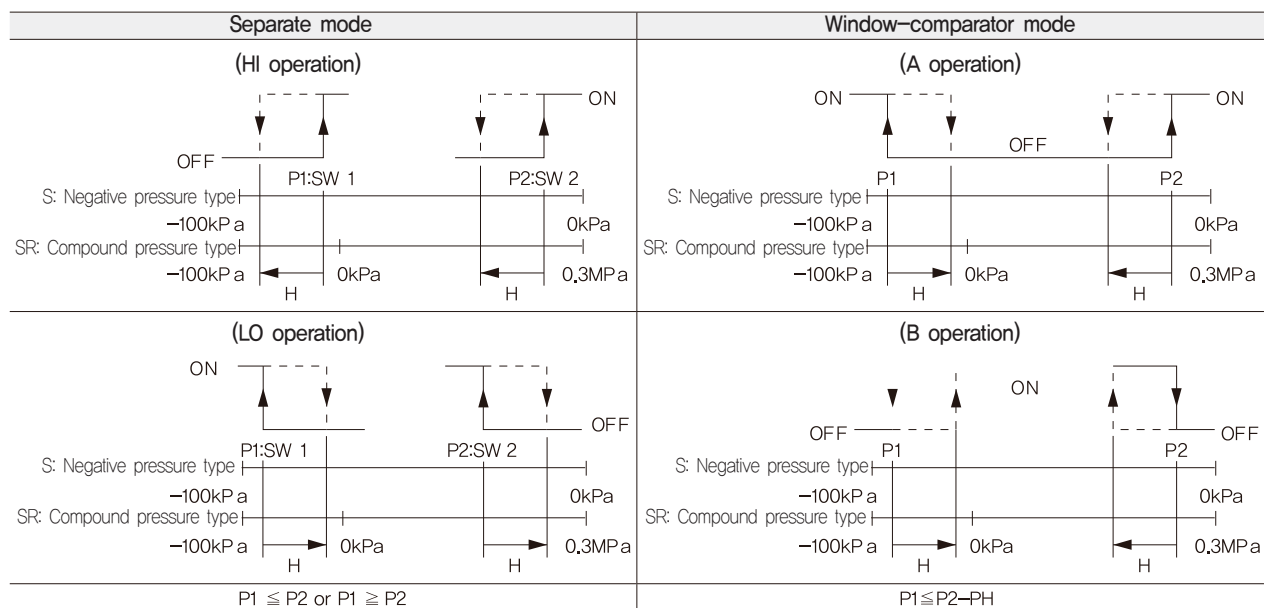
After selecting Display Magnification and Switch Output Operation is completed, press the ▼ and ▲ buttons simultaneously for 1 second or more to save the setting. Return to Operation mode and start displaying pressure.

* Switch output operates according to the setting before entering Selection mode until the new setting is saved (while setting in progress). The new setting will be valid only after saving.

Panel Operation Procedure

Switch Output Action No. / Operation Diagram

Output Mode Action	SW1				SW2			
	Separate		Window-comparator		Window-comparator			
	HI	LO	A	B	HI	LO	A	B
1	○				○			
2	○					○		
3		○			○			
4		○				○		
5			○				○	
6			○					○
7				○			○	
8				○				○
Pressure setting (Operating point)	Setting 1		Lower limit: Setting 1 Upper limit: Setting 2		Setting 1		Lower limit: Setting 1 Upper limit: Setting 2	



P1: Setting 1, P2: Setting 2, H: Setting

The factory default setting

Sensor Type	Negative pressure	Compound pressure type
Switch Output Action No.	Switch Output Action No. 4 Separate mode (SW1: LO operation / SW2: LO operation)	Switch Output Action No. 1 Separate mode (SW1: HI operation / SW2: HI operation)
	-50kPa (SW1, SW2)	100kPa (SW1, SW2)

● Cautions

- 10. Set according to "Panel Operating Procedure, ⑤ Setting of Display Magnification, Switch Output Action (Initial Setting modes)"
- 11. SR: Compound pressure type is displayed in negative pressure(≦0kPa): 1 kPa unit and static pressure(0kPa{}): 0.01 MPa unit,

⑥ The procedure in which indication pressure values are taken as operating pressure setting of SW1, SW2 (Auto-reference mode)



Enter the Auto-reference mode from the Selection mode according to "Panel Operation Procedure, ① Mode Selection".

The auto reference mode is a function in which the indication pressure can be taken automatically as the operating pressure set value of SW1, SW2 by button operation.



When the display pressure flashes with applying a pressure wanting to be set, press the ▲ button to set the SW1 switch pressure and press the ▼ button to set the SW2 switch pressure. When you press the button, the flashing speed of the screen will be faster.

After setting Switch pressure of SW1 ▼ and ▲ SW2, press and a buttons simultaneously for more than 1 second to save the setting. Return to Operation mode and start displaying pressure.

Panel Operation Procedure

⑥ The procedure in which indication pressure values are taken as operating pressure setting of SW1, SW2 (Auto-reference mode)



Enter the Auto-reference mode from the Selection mode according to "Panel Operation Procedure, ① Mode Selection".

The auto reference mode is a function in which the indication pressure can be taken automatically as the operating pressure set value of SW1, SW2 by button operation.



When the display pressure flashes with applying a pressure wanting to be set, press the ▲ button to set the SW1 switch pressure and press the ▼ button to set the SW2 switch pressure. When you press the button, the flashing speed of the screen will be faster.



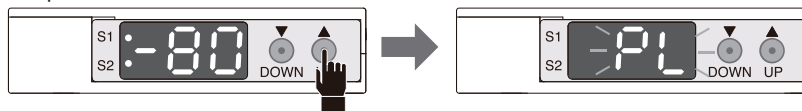
After setting Switch pressure of SW1 ▼ and ▲ SW2, press and a buttons simultaneously for more than 1 second to save the setting. Return to Operation mode and start displaying pressure.

• Cautions

- When the ▲ or ▼ button is pressed, if the input pressure to the sensor exceeds the set range of Switch pressure value of SW1 and SW2 in the "Switch Setting mode", or window-comparator mode is selected by Switch Output Action in the "Initial Setting mode" and "P1 SP2 ≤ 2H" is not satisfied, error "E1" is displayed. By pressing the ▲ button while "E1" error displaying, the process will return to the save stand-by state of Switch pressure setting of SW1 or SW2.

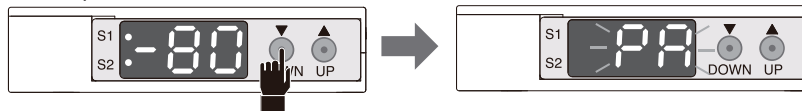
⑦ Panel Lock setting

Set panel lock



In the Operation mode, press ▲ button for 4 seconds or more, "PL" flashes 3 times and panel lock is set. Start displaying pressure again after setting.

Cancel panel lock



In the Operation mode, press ▼ button for more than 4 seconds, "PA" flashes 3 times and the panel lock is cancelled. Start displaying pressure again after cancellation.

Operations during panel lock setting



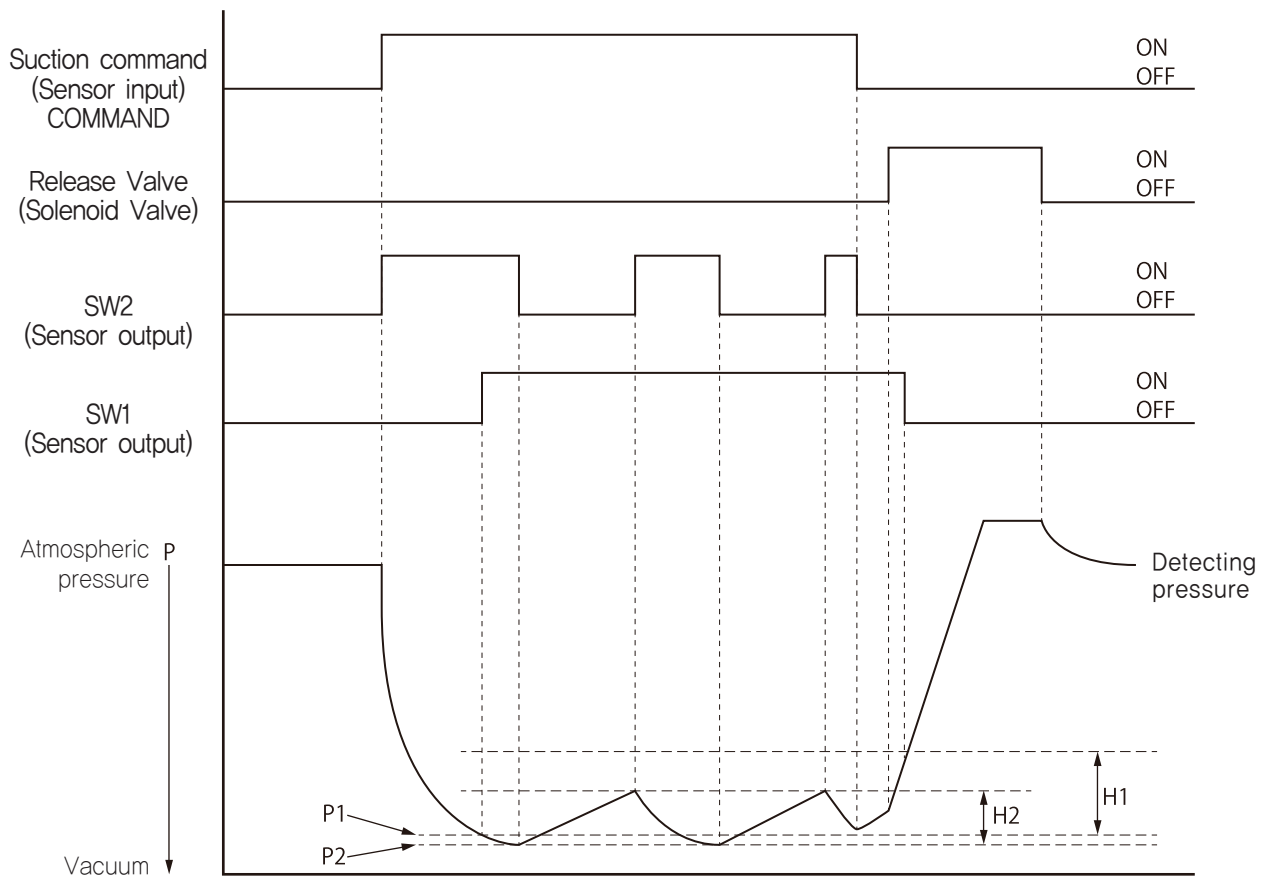
"PL" flashes 3 times when there is some operation during panel lock setting, start displaying pressure display again. Operation is not accepted.

Error No.	Error details	Setting condition	Check timing	How to clear the Error	Pronty
	Flash ROM error	Checksum abnormality	Sensor activation	Please consult the nearest Pisco office	1
	Abnormal setting value for Auto-reference mode	The input pressure to the sensor is out of the set switch pressure range, or "P1 P2 ≤ 2H" is not satisfied in the Window-comparator mode	When saving the swich pressure value of SW1 and SW2 in Auto-reference mode	Pressing ▲ button	2
	Pressuring while setting Zero Adjusting mode	Detecting pressure s-5% below the minimum display pressure range, or +5% ≤ above the maximum display pressure range	Zero point correction in Zero Adjusting mode	Pressing ▲ button	3
	Parameter abnormality occurs during pressure detection	"P1 ≤ P2 - 2H" is not satisfied in the window-comparator made	during pressure detection	Re-activate the sensor by reboot	4
	Detected pressure exceeds 110% F,S	Derecting pressure > 100%F,S	Operation mode	Make detecting pressure ≤ 110% F,S	5

〈About Energy saving function〉

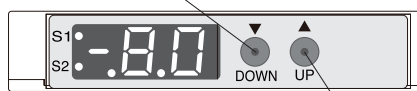
This product can operate the following energy saving functions by inputting a vacuum generation signal to the COMMAND terminal. During vacuum break (work detachment), stop the input signal to the COMMAND terminal and input the signal to the vacuum break pilot valve (with vacuum break air).

When only the specified pressure P2 (Figure below) drops, the input signal SW2 of the vacuum generating pilot valve can be turned on again to maintain the predetermined pressure. SW1 output set pressure P1 (Figure below) for suction confirmation. It should be less than P2 (Figure below). In addition, the hysteresis H1 of the SW1 output needs to be less than H2. This product is configured only for this condition.



Note) The symbols shown in the operation procedures in the following figure indicate the following operations, respectively.

(▼) DOWN Button



(▲) UP Button

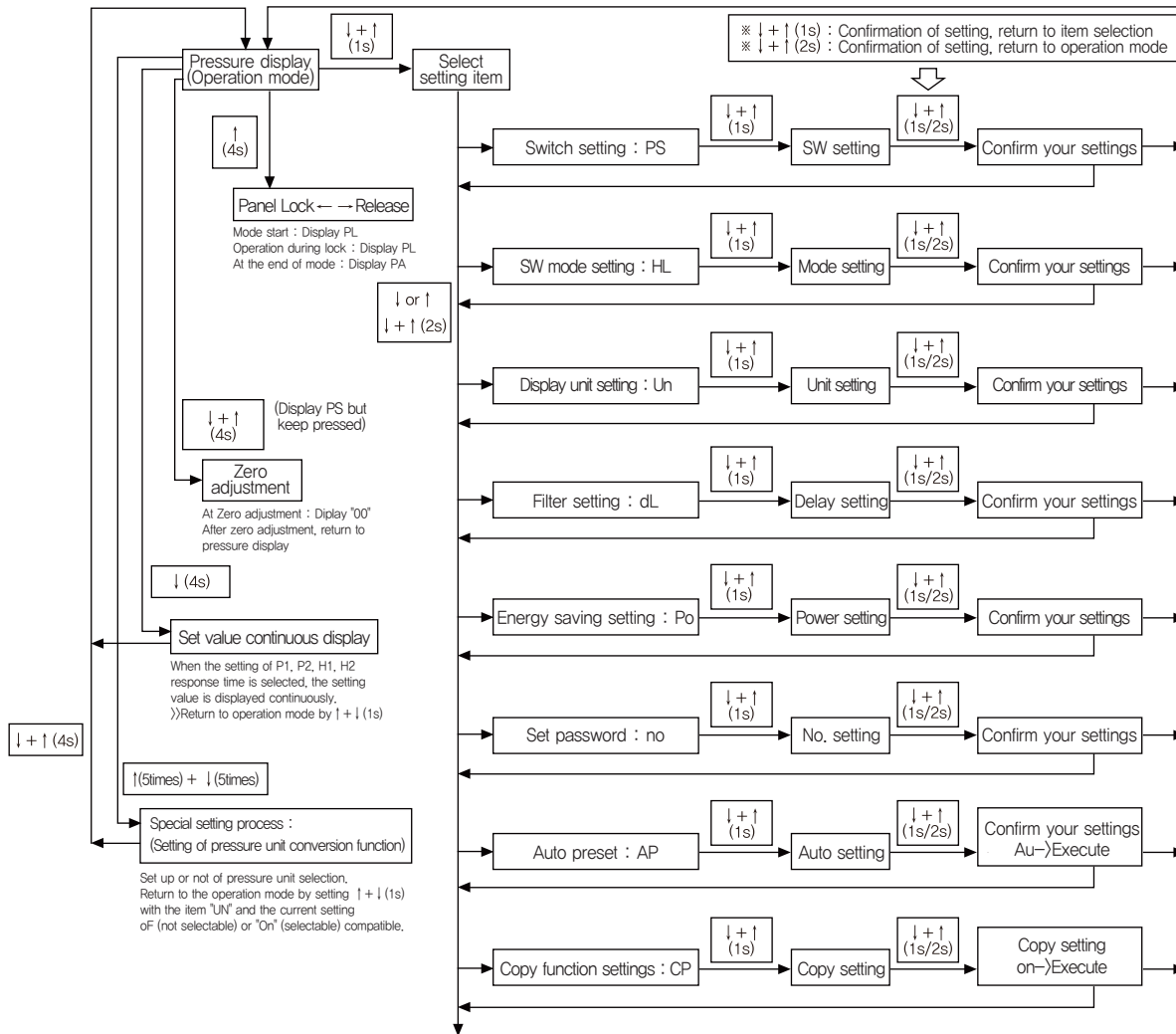


Hold (▼)Down + (▲)Up button for 1 second

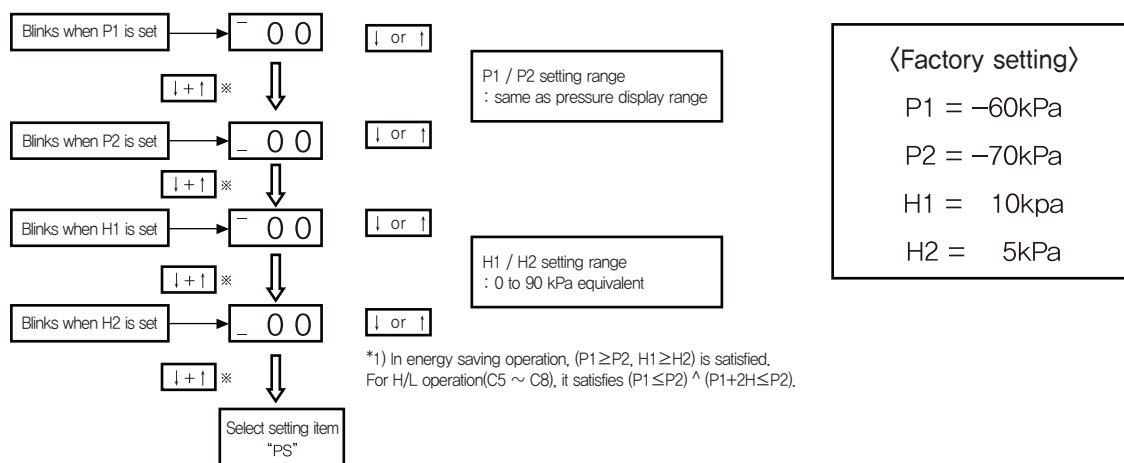


Hold (▲)Up button for 1 second

<Operation sequence(All)>



<Operation sequence(SW setting)>



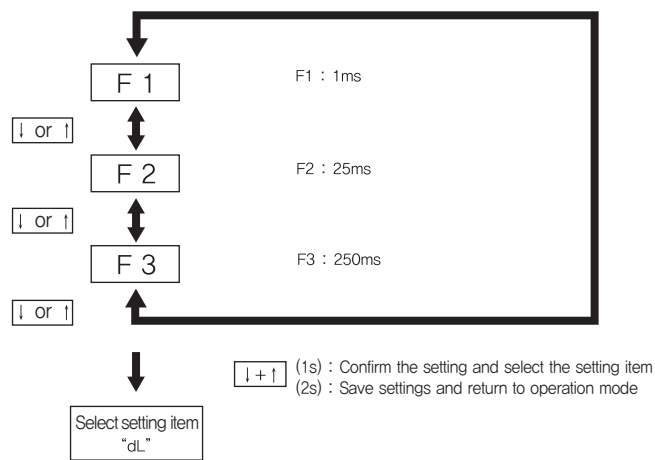
<Operation procedure (SW mode setting)>

This operation is not necessary due to energy saving mode.

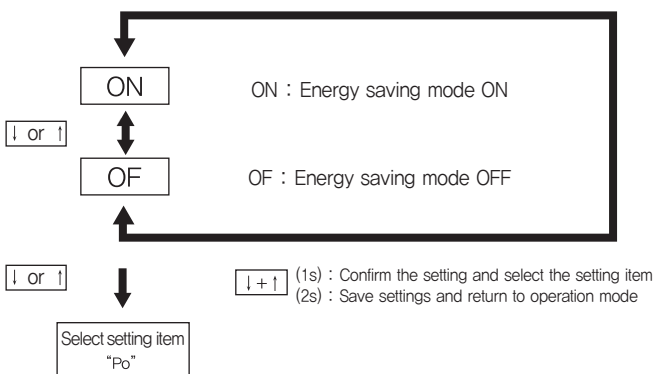
<Operation procedure (Display unit switching)>

This operation is not necessary due to [Kpa] unit only.

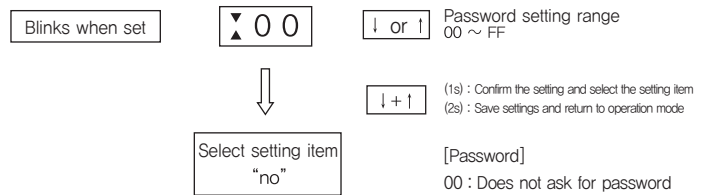
<Operation procedure (Filter setting)>



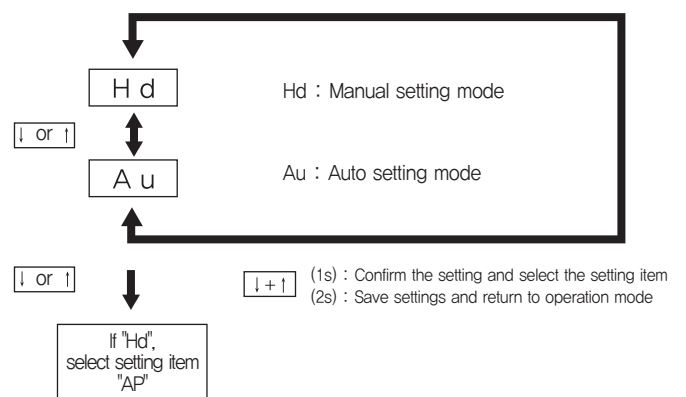
<Operation procedure (Energy saving setting)>



<Operation procedure (Set password)>



<Operation procedure (Energy saving setting)>

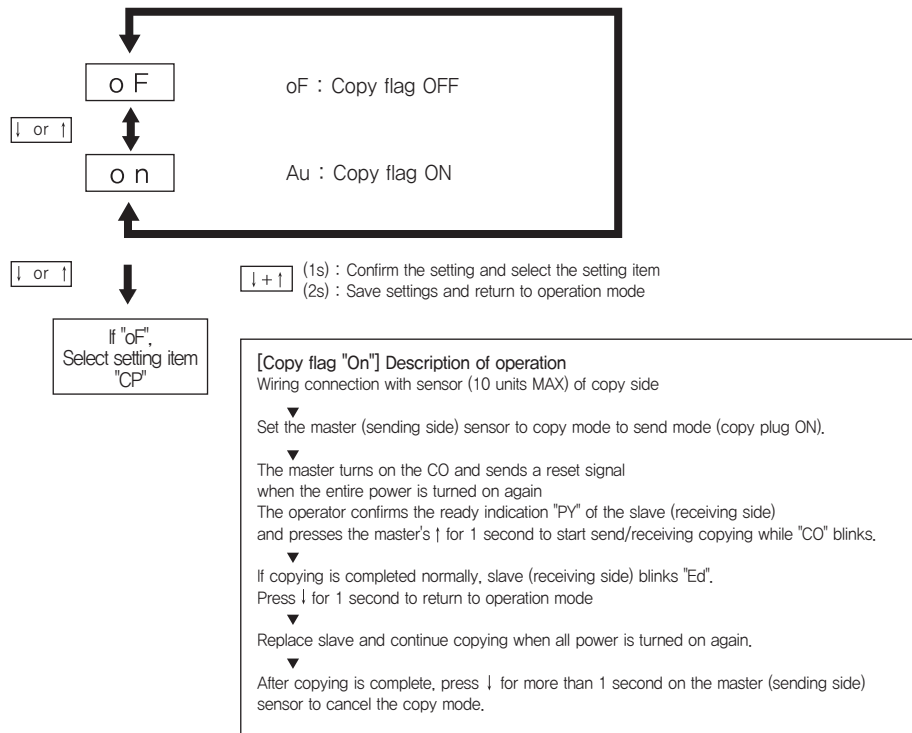


[Set value]
 $P1 = B - (A - B)$
 $H1 = \uparrow (A - B) \downarrow$
 $P2 = B - (A - B) / 2$
 $H2 = \uparrow (A - B) / 4 \downarrow$
 A : Max. Reach Pressure,
 B : Min. Reach Pressure

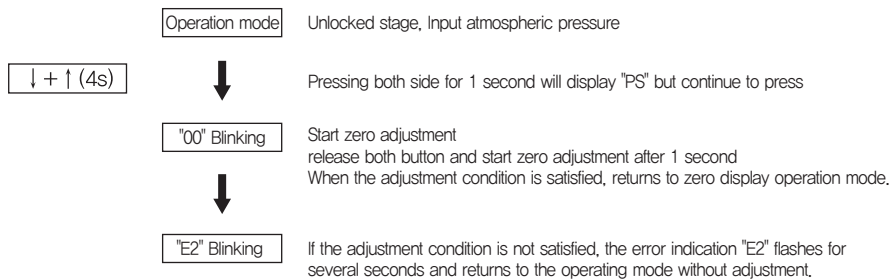
※ Pressure detection condition: -10 kPa or less

[Auto setting mode]
 Select auto setting mode and return to pressure display (operation mode)
 ▼
 Press ↑ for more than 1 second to open, PA blinks
 ▼
 Start the device and repeat the adsorption and exhaust (regardless of the number of times)
 ▼
 Calculate P1 ~ H2 from left formula (return flag to "Hd")
 ▼
 Confirm set value, return to pressure display (operation mode)

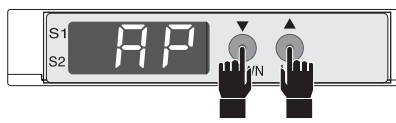
<Operation procedure (Copy function)>



<Operation procedure (Zero adjust)>



Energy saving sensor (DWE) Instruction manual



According to panel operation procedure ① of selection mode for panel operation procedure, input auto preset in the selection mode



Set with (▼)or(▲) button If set, press (▼)and(▲) simultaneously for 1 second to fix and return to selection mode

Hd : Manual setting mode
 Au : Automatic setting mode
 ※Press (▼) and (▲) simultaneously for 2 second to Confirm / Save and return to operation mode

[Automatic setting mode]

Select automatic selection mode and enter operation mode (Display pressure)

↓

Press (▲) and hold for 1 second will flash "PA".

↓

Move the device and repeat adsorption and exhaust (Repeated time irrelevant)

↓

Calculate P1 ~ H2 according to the method on the right (return the plug to "Hd")

↓

Set value confirmed, Return to operation mode (pressure.display)

[Set value]

$P1=B-(A-B)$

$H1=|(A-B)|$

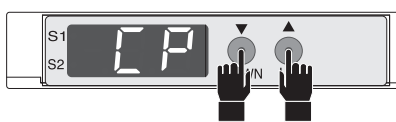
$P2=B-(A-B)/2$

$H2=|(A-B)/4|$

A : MAX reach pressure

B : MIN reach pressure

※ Pressure detection condition : -10kPa or less



According to panel operation procedure ① of selection mode for panel operation procedure, input auto preset in the selection mode



Set with (▼)or(▲) button If set, press (▼)and(▲) simultaneously for 1 second to fix and return to selection mode

oF : Copy plug OFF
 on : Copy plug ON
 ※Press (▼) and (▲) simultaneously for 2 second to Confirm / Save and return to operation mode

[Copy plug "on" explanation]

Use COMMAND terminal to connect sensor(10*max) before copying

↓

Set the master (sending side) sensor to copy mode and set it to transmit mode (copy plug ON)

↓

Restarting power will blink "CO" and sends reset pulse from the master. When the operator confirms the ready indication "Py" of the slave(receiving side), the master (1) button is pressed for 1 second, "CO" flashes to start transmission and reception of the copy.

↓

Slave which completed satisfactorily will blink "Ed". Press (▼)button to return to operation mode.

↓

Copying can be continued by swapping the slave side and restarting the entire power.

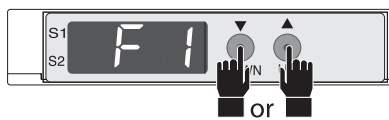
↓

After completing copying, press (▼)button for more than 1 second to cancel copy mode.

Energy saving sensor (DWE) Instruction manual

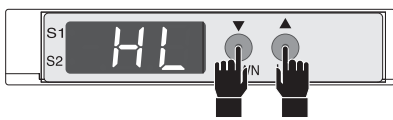


According to panel operation procedure ① of selection mode for panel operation procedure, input auto preset in the selection mode

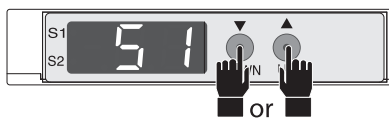


Select filter with (▼) or (▲) button Pressing button will change value to F1⇄F2⇄F3⇄F1 To set, press (▼) and (▲) simultaneously for 1 second to fix and return to selection mode

F1 : 1ms
F2 : 25ms
F3 : 250ms
※Press (▼) and (▲) simultaneously for 2 second to Confirm / Save and return to operation mode

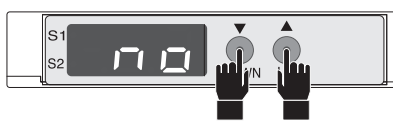


According to panel operation procedure ① of selection mode for panel operation procedure, input auto preset in the selection mode



Select filter with (▼) or (▲) button Pressing button will change value to S1⇄S2⇄S3⇄S4⇄C5⇄C6⇄C7⇄C8⇄S1. To set, press (▼) and (▲) simultaneously for 1 second to fix and return to selection mode

S1~S4 : Separate mode
C5~C6 : window comperate
※Press (▼) and (▲) simultaneously for 2 second to Confirm / Save and return to operation mode

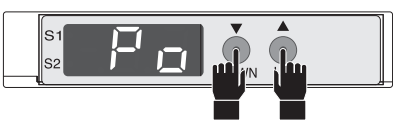


According to panel operation procedure ① of selection mode for panel operation procedure, input auto preset in the selection mode

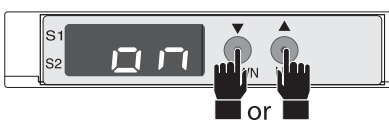


[S1],[S2] LED will blink Use (▼) or (▲) button set To set, press (▼) and (▲) simultaneously for 1 second to fix and return to selection mode

Password setting range : 00~FF
※Press (▼) and (▲) simultaneously for 2 second to Confirm / Save and return to operation mode
[Password]
00 : Do not set a password



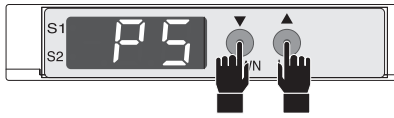
According to panel operation procedure ① of selection mode for panel operation procedure, input auto preset in the selection mode



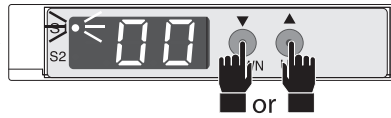
Use (▼) or (▲) button to select ON/OFF Pressing button will change value to on⇄of⇄on⇄in order. To set, press (▼) and (▲) simultaneously for 1 second to fix and return to selection mode

on : Power save mode ON
of : Power save mode OFF
※Press (▼) and (▲) simultaneously for 2 second to Confirm / Save and return to operation mode
[Light off mode]
During operation mode, the display turns off by no operation for more than 10 seconds, The operation will return when manipulated. While the display is off, the segment display turns off and the decimal point LED flashes.

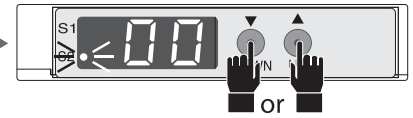
Energy saving sensor (DWE) Instruction manual



According to panel operation procedure ① of selection mode for panel operation procedure, input auto preset in the selection mode



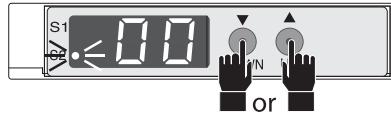
The S1 LED blinks and the P1 setpoint of the phenomenon is displayed. To set, press (▼) and (▲) simultaneously for 1 second to fix and move to next step



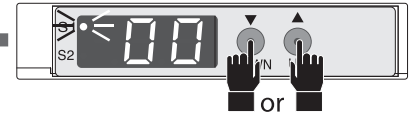
The S2 LED blinks and the P2 setpoint of the phenomenon is displayed. After setting with (▼) and (▲) button, press button for 1 second simultaneously to confirm move to next step



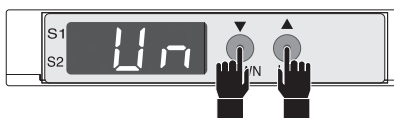
P1/P2 setting range : same as pressure display range
 H1/H2 setting range : 0~90kPa equivalent
 ※1. Energy save type satisfies (P1≤P2,H1≤H2)
 ※2. 2 point SW output type satisfies (P1≤P2)^(P1+2H≤P2) when SW operation(C5~C8) is selected
 ※3. Press (▼) and (▲) simultaneously for 2 second to Confirm / Save and return to operation mode



The S2 LED blinks and the H2 setpoint of the phenomenon is displayed. To set, press (▼) and (▲) simultaneously for 1 second to fix and move to next step



The S1 LED blinks and the h1 setpoint of the phenomenon is displayed. After setting with (▼) and (▲) button, press button for 1 second simultaneously to confirm move to next step



According to panel operation procedure ① of selection mode for panel operation procedure, input auto preset in the selection mode



Use (▼) or (▲) button to set Pressing button will change value to PA≒cH≒br≒PS≒PA in order. To set, press (▼) and (▲) simultaneously for 1 second to fix and return to selection mode

PA : kPa (x1)
 cH : cmHg (x0,75) (302R invalid)
 br : bar (x0,01)
 PS : psi (x0,145)
 ※Press (▼) and (▲) simultaneously for 2 second to Confirm / Save and return to operation mode



All LEDs light up



Display program number



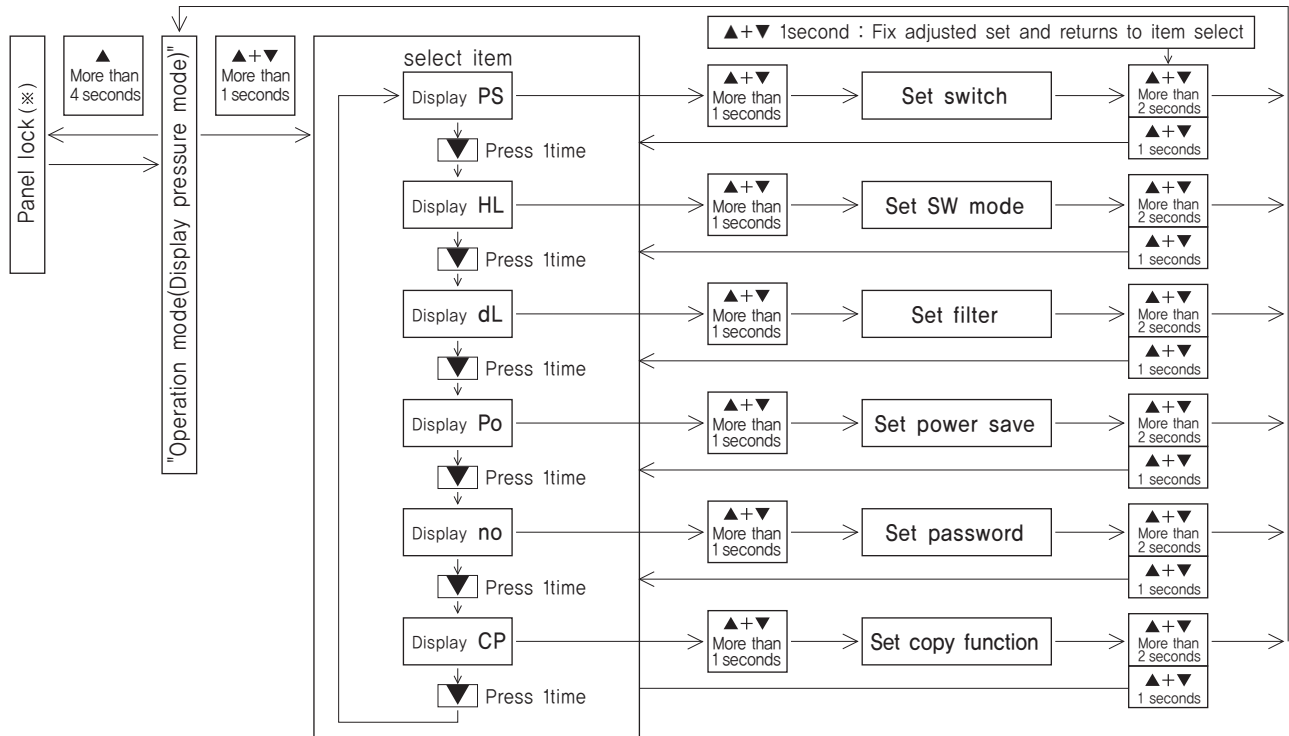
Operation mode



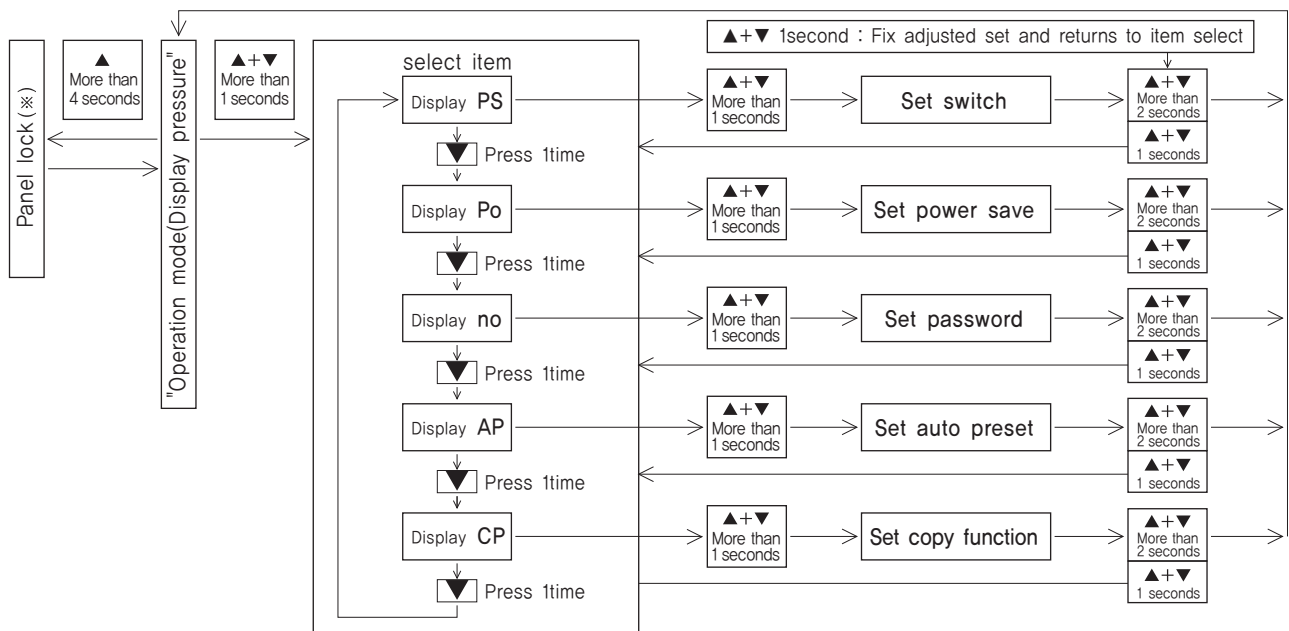
Display product specification

[Display product specification]
 1N : VUS8A-□-□N 1P : VUS8A-□-□P
 3N : VUS8A-□-□RN 3P : VUS8A-□-□RP

Energy saving sensor (DWE) Instruction manual



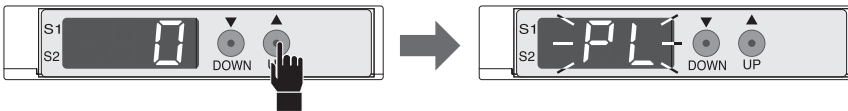
※ If a password has been set, entering the password is required when canceling.



※ If a password has been set, entering the password is required when canceling.

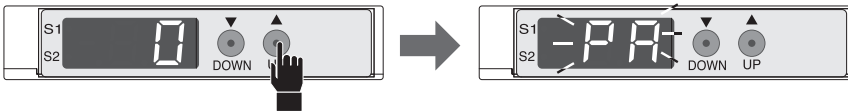
Energy saving sensor (DWE) Instruction manual

■ Set panel lock



Press (▲) button for 4 seconds in operation mode. "PL" will blink and panel lock will set
After setting, pressure display will show again

■ Removing panel lock (For password "00") *If password is other than 00, refer to operation during panel lock setting



Press (▲) button for 4 seconds in operation mode. "PL" will blink and panel lock will release
After release, pressure display will show again

■ Operation during Panel Lock Setting (For Password "00")



During panel lock setting, if you operate buttons other than the release operation, "PL" is displayed.

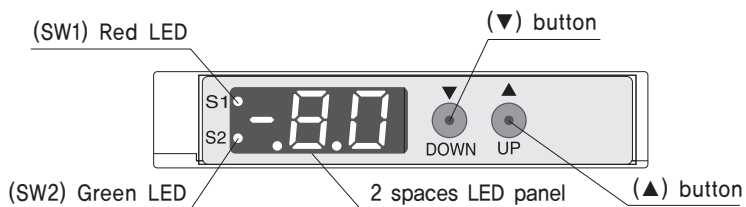
■ Operation during Panel Lock Setting (For Password other than "00")



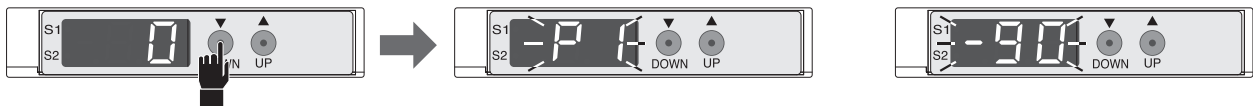
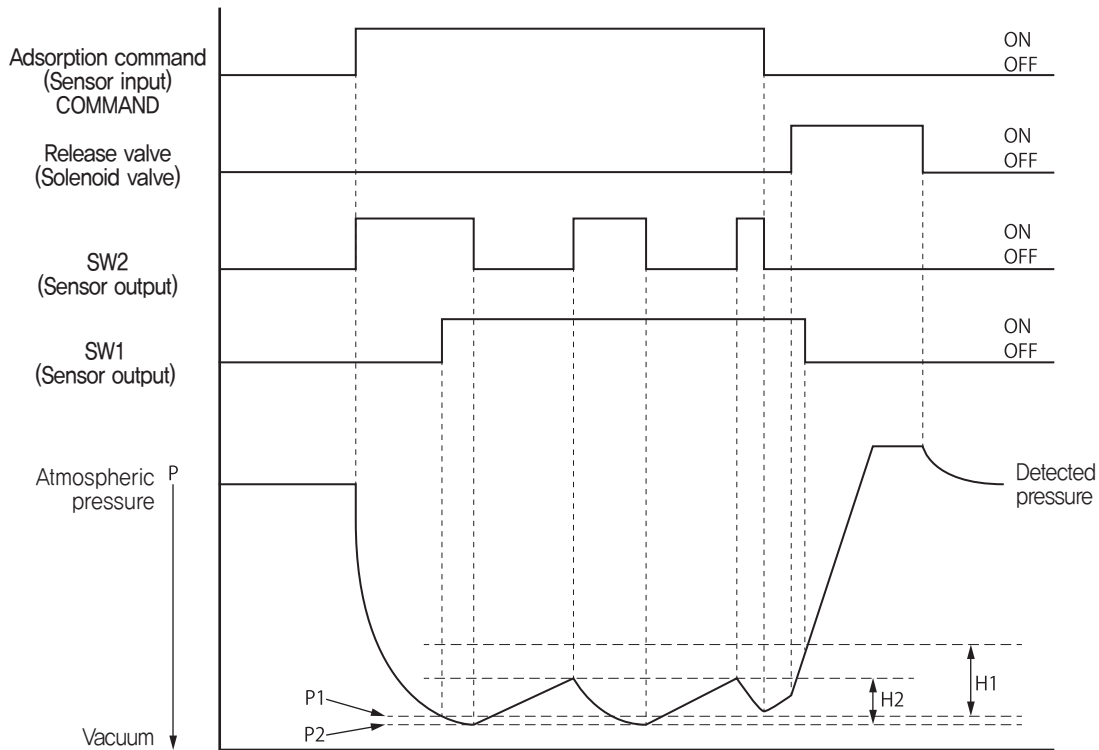
Manipulating during panel lock will blink "no" on display

After "no", "00" will be on Press (▼) or (▲) button to select "01~FF" and press (▼)and(▲) simultaneously more than 1second to fix the value

If the password matches, "PA" is displayed and the lock is released. After release, the pressure display will start again. If it does not match, you can re-enter up to three times after the "-" flashes. If it does not match more than 3 times, it will return to the pressure display from the locked state.

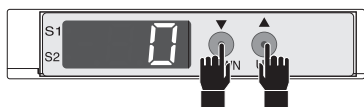


(Switch operation sequence)



After unlocking state from operation mode press (▼) button for 4seconds

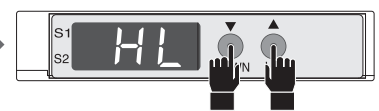
The setting item "P1" and the setting value "-90" are displayed in turn. Pressing (▼) or (▲) button will show P1≧P2≧H1≧HL≧Un≧dL≧no≧AP≧CP≧P1, setting item and set value From any item, pressing (▼)and(▲)simultaneously for 1second will bring back to operation mode



Press (▼) and (▲) button for more than 1second



The PS entered in the selection mode will display Press (▼) button each time will show PS→HL→dL→Po→no→CP→PS in order

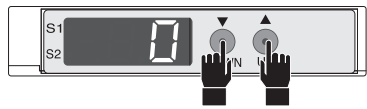


Press (▼) and (▲) simultaneously for more than 1second for mode you wish to set The selection is confirmed and enters each setting mode.

PS : Display set switch mode
HL : Display set SW mode
dL : Display set filter mode

Po : Display set power save mode
no : Display set password mode
CP : Display set copy function mode

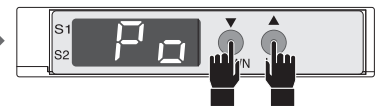
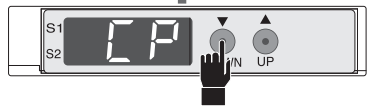
Energy saving sensor (DWE) Instruction manual



From operation mode Press (▼)and(▲) simultaneously for 1second



The PS entered in the selection mode will display Press (▼) button each time will show PS→Po→no→AP→CP→PS in order



Press (▼) and (▲) simultaneously for more than 1second for mode you wish to set The selection is confirmed and enters each setting mode.

PS : Display set switch mode
Po : Display set power save mode
no : Display set password mode

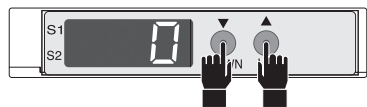
AP : Display auto preset mode
CP : Display set copy function mode



Initialize display for 2 seconds



Start operation mode (Pressure detection)



Unlock the panel in operating mode and press the (▼)and(▲) buttons 5 times at the same time

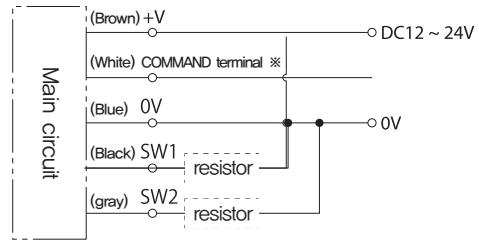
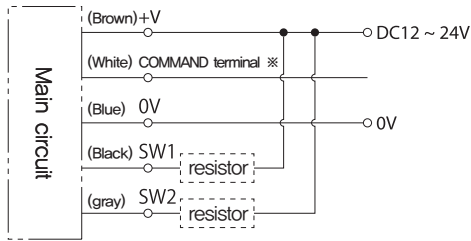


"Un" (Display device setting mode) and the setting value "On" or "oF" are displayed alternately Press the (▼)or(▲) button to change the setting. Press (▼)and(▲) simultaneously for 1 second to set device and return it to driving mode

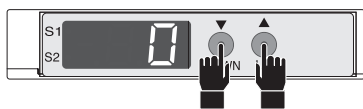
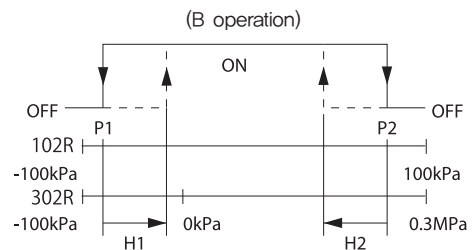
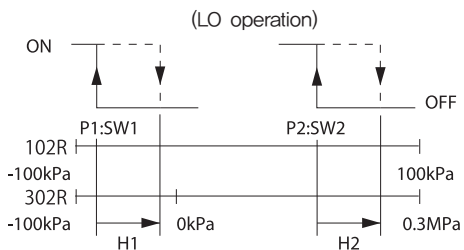
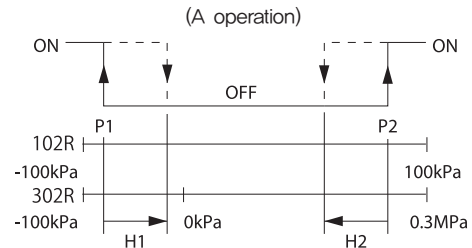
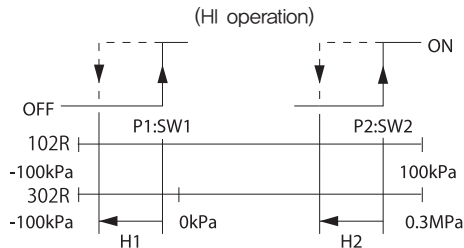
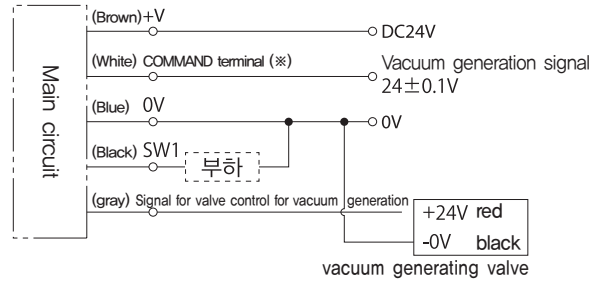
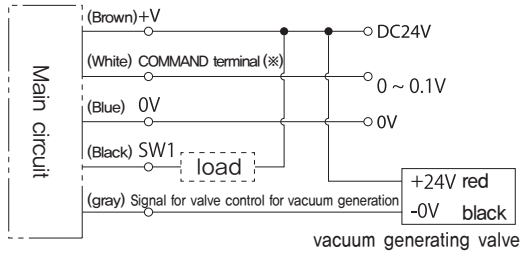
※ "PA" (kPa) is standard display unit



Energy saving sensor (DWE) Instruction manual



※ COMMAND terminal of 2-point SW output type is not used except for copy mode.



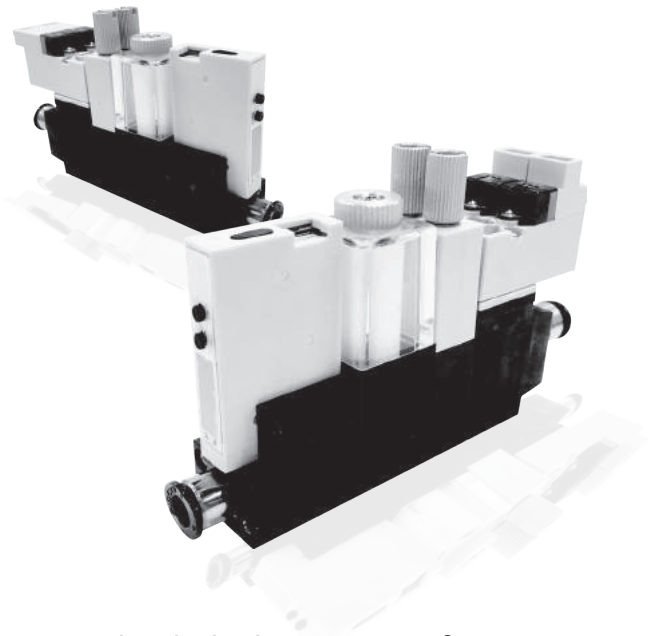
Unlock the panel in operating mode and press the (▼) and (▲) buttons for more than 4 seconds
 ※PS is displayed when pressed for 1 second, but keep pressing

Releasing (▼) and (▲) buttons will execute zero adjustment after 1 second and if the adjustment condition is satisfied, zero display is displayed and the operation mode is returned.

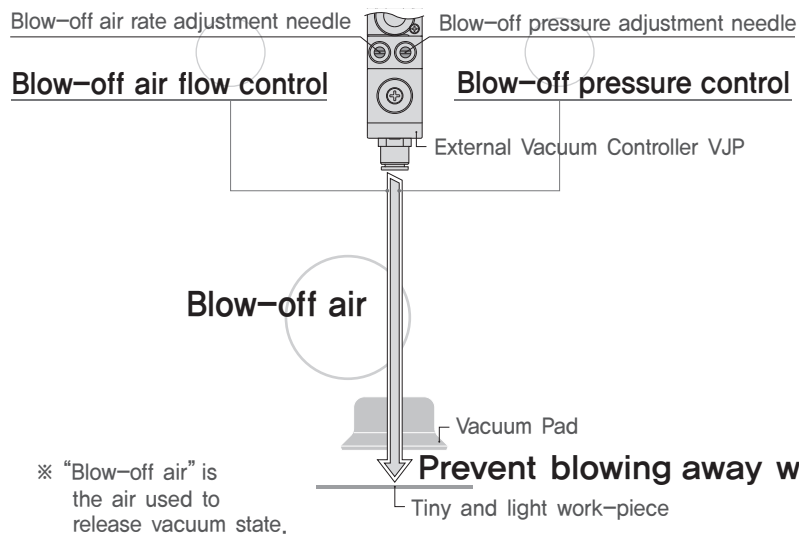
If the adjustment condition is not met, the error indication E2 blinks for a few seconds and returns to the operating mode without adjustment.

EXTERNAL VACUUM CONTROLLER WITH BLOW-OFF AIR AND RELIEF PRESSURE ADJUSTMENT

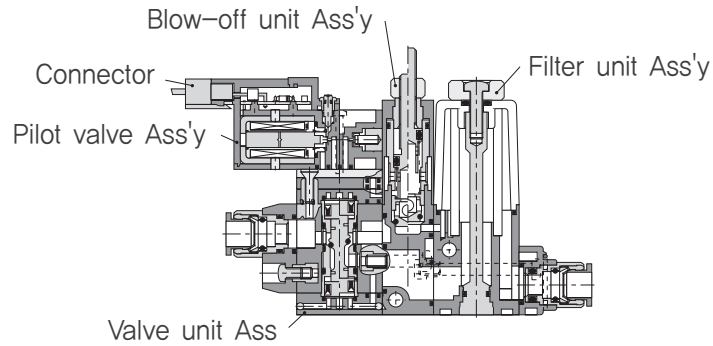
VJP EXTERNAL VACUUM CONTROLLER **SERIES**



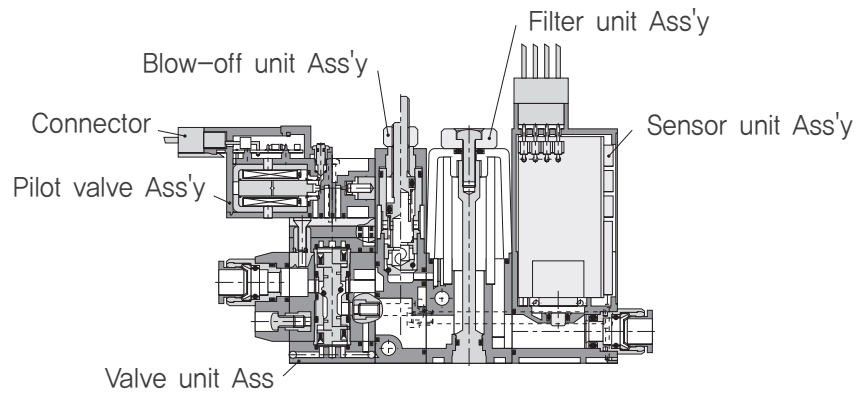
- Wide variety of combinations enables to meet various applications. Complex vacuum generator VJ Series is also available
- Manifold type is available. User-friendly wiring. 2 selections of pipe lead-out directions; Front lead-out type and rear lead-out type.
- 3 Supply valve types
 - Double solenoid type
(Vacuum retention type, selectable for saving energy)
 - Normally closed type
 - Normally open type
- Visibility improvement by adopting LED display for vacuum switch indication. There are 2 types of vacuum switch; 2 switch output and 1 switch output and analog output.
- Pressure adjustment function and blow-off flow adjusting function, it enables to prevent works from being blown away
- A relief mechanism built into the blow-off circuit which breaks the vacuum (extra pressure is relieved) realizes shorter blow-off time.



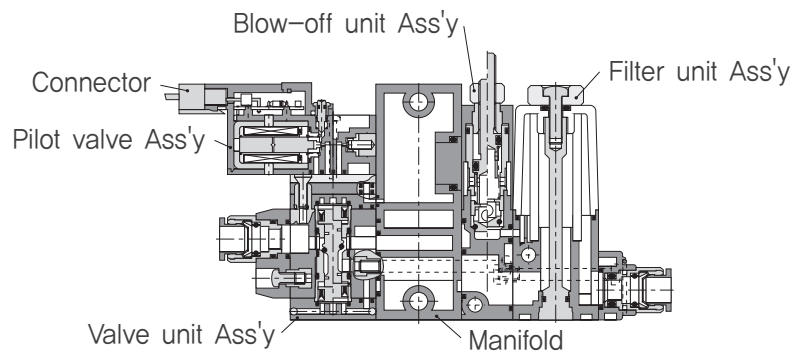
Stand-alone type, Without vacuum switch



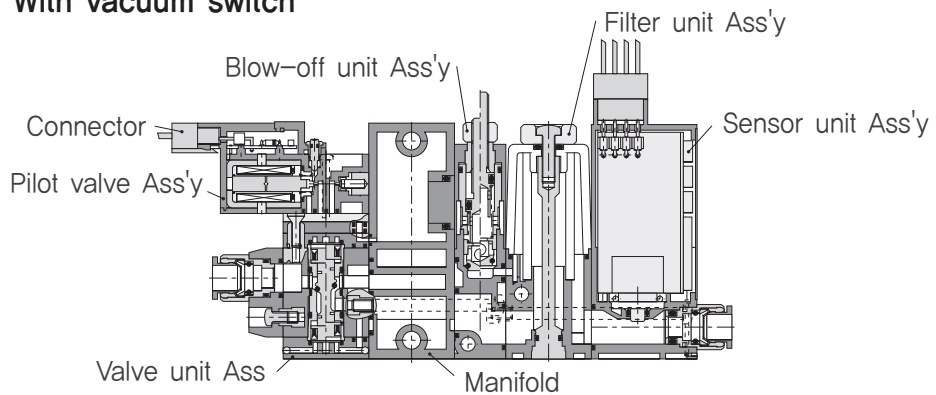
Stand-alone type, With vacuum switch



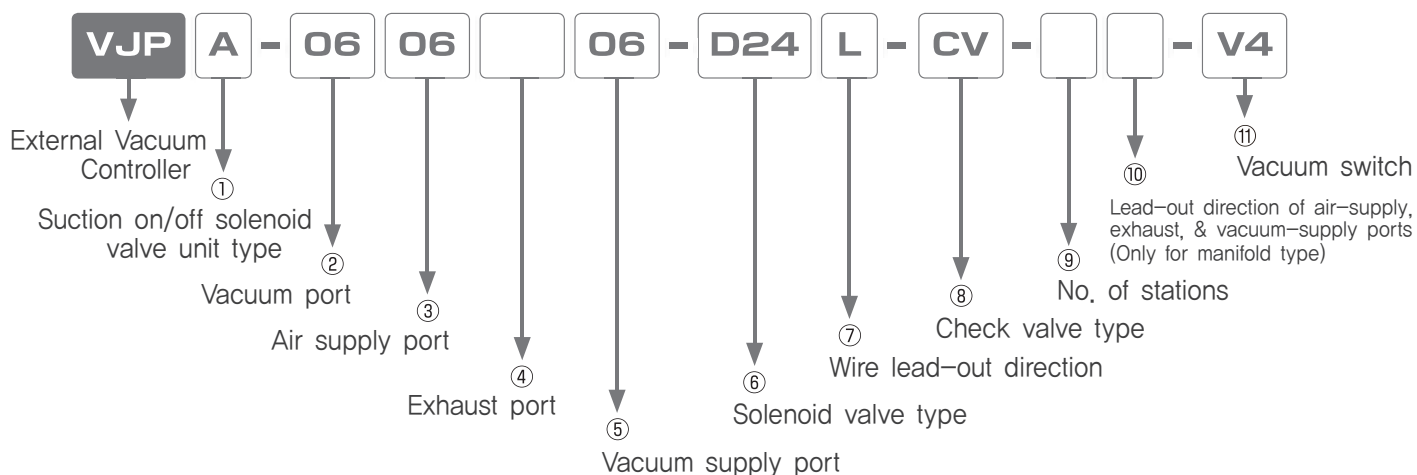
Manifold type, Without vacuum switch



Manifold type, With vacuum switch



Model Designation (Example)



① Suction on/off solenoid valve unit type

Code	Valve unit	Code	Valve unit	Code	Valve unit
A	Double solenoid type (Vacuum retention type)	B	Normally closed type	C	Normally open type
K	Combination of different valve unit type on a manifold (Fill in the details on Specification Order Form)				

② Vacuum port (Applicable tube size)

Code	04	06	08
Tube dia.(mm)	ø4	ø6	ø8

00 : When different vacuum ports are mixed on a manifold (Fill in the details on Specification Order Form)

③ Air supply port (Applicable tube size)

Code	04	06	08	10
Tube dia.(mm)	ø4(※1)	ø6	ø8(※2)	ø10(※2)

※1. Stand-alone type only.

※2. Manifold type only.

④ Air supply port (Applicable tube size)

Code	06	08	10
Tube dia.(mm)	ø6	ø8	ø10

※Manifold Specifications Only (Individual Types Not Applicable)

⑤ Vacuum supply port (Applicable tube size)

Code	04	06	08	10
Tube dia.(mm)	ø4(※1)	ø6	ø8(※2)	ø10(※2)

※1. Stand-alone type only.

※2. Manifold type only.

⑥ Solenoid valve type

Code	D24	A100
Voltage	DC24V	AC100V

⑦ Wire lead-out direction

Code	L	S	K
lead-out direction	Top	Side	Different lead-out directions are mixed on a manifold (Fill in the details on Specification Order Form)

⑧ Check valve type

Code	No Code	CV
Type	Without check valve	Check valve internal

⑨ No. of stations (Only for manifold type)

Code	02	03	04	05	06	07	08	09	10
No. of stations	2	3	4	5	6	7	8	9	10

Model Designation (Example)

⑩ Lead-out direction of air-supply, exhaust, & vacuum-supply. ports (Only for manifold type)

Code	A	B
Lead-out direction	Vacuum port side	Solenoid valve side

⑪ Vacuum switch

Code	V4	DWE	K
Switch	NPN open collector Button type vacuum switch 2 switch output+analog output	1 switch output and for saving energy	Manifold combination spec mixes the valve function for vacuumsaving in each station (By separate order)

※Please select N, C Type for vacuum generator valve when using DWE energy saving switch.

1 External vacuum controller stand-alone type

VJP A - 04 04 06 - D24 L - CV - 05 A - V4

- ① Suction on/off solenoid valve unit type : A→Double solenoid type (Vacuum retention type)
- ② Vacuum port: 04→ \varnothing 4mm Push-In Fitting
- ③ Air supply port: 04→ \varnothing 4mm Push-In Fitting
- ⑤ Vacuum supply port: 06→ \varnothing 6mm Push-In Fitting
- ⑥ Solenoid valve type: D24→24VDC
- ⑦ Wire lead-out direction: L→Top
- ⑧ Check type : CV - Check valve internal
- ⑨ No. of stations : 05 → 5stations
- ⑩ Lead-out direction of air-supply, exhaust, & vacuum-supply ports: A→Vacuum port side
- ⑪ Vacuum switch : K → St.1, St.2, St.3 : V4 → 2 switch + analog output
St.4 : Without vacuum switch

2 External vacuum controller manifold type

VJP A - 04 08 08 10 - D24 L - CV - 04 A - V4

- ① Suction on/off solenoid valve unit type : A→Double solenoid type (Vacuum retention type)
- ② Vacuum port: 04→ \varnothing 4mm Push-In Fitting
- ③ Air supply port: 08→ \varnothing 8mm Push-In Fitting
- ④ Exhaust port: 08→ \varnothing 8mm Push-In Fitting
- ⑤ Vacuum supply port: 10→ \varnothing 10mm Push-In Fitting
- ⑥ Solenoid valve type: D24→24VDC
- ⑦ Wire lead-out direction: L→Top
- ⑧ Check type : CV - Check valve internal
- ⑨ No. of stations : 04 → 4stations
- ⑩ Lead-out direction of air-supply, exhaust, & vacuum-supply ports: A→Vacuum port side
- ⑪ Vacuum switch : K → St.1, St.2, St.3 : V4 → 2 switch + analog output
St.4 : Without vacuum switch

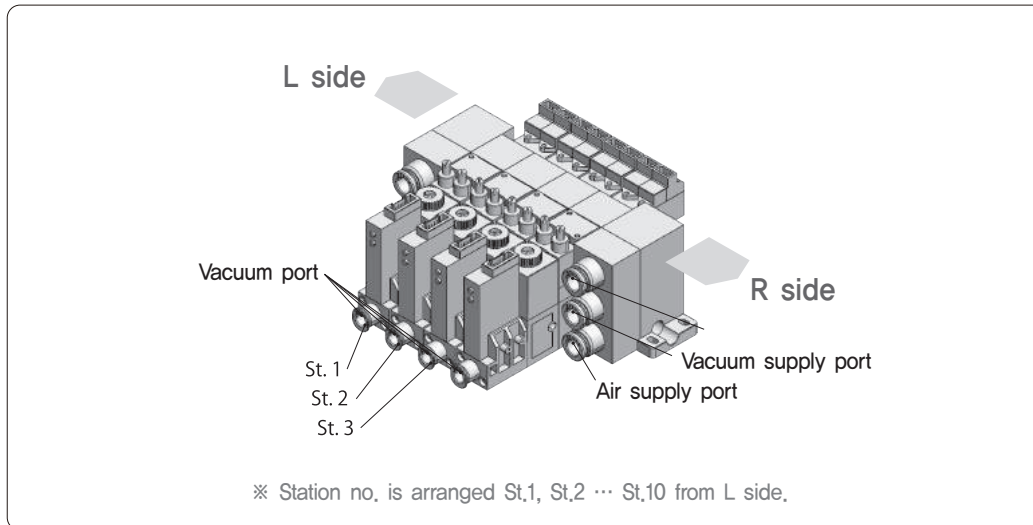
3 External vacuum controller manifold type

(When any one of mounting units has a different specification on a manifold)

VJP K - 00 10 10 10 - D24 L - CV - 05 A - V4

- ① Suction on/off solenoid valve unit type:
K→St.1, St.2 and St.3: Double solenoid type (Vacuum retention type)
St.4, St.5: Normally closed type
- ② Vacuum port: 00→St.1, St.2 and St.3: \varnothing 4mm Push-In Fitting
St.4, St.5: \varnothing 8mm Push-In Fitting
- ③ Air supply port: 10→ \varnothing 10mm Push-In Fitting
- ④ Exhaust port: 10→ \varnothing 10mm Push-In Fitting
- ⑤ Vacuum supply port: 10→ \varnothing 10mm Push-In Fitting
- ⑥ Solenoid valve type: D24→24VDC
- ⑦ Wire lead-out direction: L→Top
- ⑧ Check type : CV - Check valve internal
- ⑨ No. of stations : 05 → 5stations
- ⑩ Lead-out direction of air-supply, exhaust, & vacuum-supply ports: A→Vacuum port side
- ⑪ Vacuum switch : K → St.1, St.2, St.3 : V4 → 2 switch + analog output
St.4 : Without vacuum switch

Manifold Type Example



Specification Order Form (In case of order example of 3 in the left page)

Manifold type		Valve unit type ①	Vacuum port ②	Air supply port ③	Exhaust port ④	Vacuum supply port ⑤	Solenoid valve type ⑥	Wire lead-out direction ⑦	No. of stations ⑧	Lead-out direction of PS & EX ports ⑨	Vacuum switch ⑩	
	VJP	K —	00	10	10	10 —	D24	L —	05	A —	K	
Mounting unit code	L ↑	St.1	A	06							W	
		St.2	St.1									
		St.3	St.1									
	St. 10 ↓ R	St.4	B	08								
		St.5	B	08								A
		St.6										
		St.7										
		St.8										
		St.9										
		St.10										

※ When the top-mounting units for St. 1, St. 2 and St. 3 are of the same specifications as in the above example of specification order form, fill up the St. 1 space (uppermost) only, while entering “St. 1” in each of the St. 2 and St. 3 grids on the valve unit type column①.

External Vacuum Controller VJP Series Specification Order Form

To: PISCO KOREA PNEUMATIC CO., LTD

Manager

--- Order in the following format ---

Name:

Order No.:

• TEL :

• FAX :

• E-mail :

• Request EX-W PISCO Date :

• Quantity :

Manifold type		Valve unit type ①	Vacuum port ②	Air supply port ③	Exhaust port ④	Vacuum supply port ⑤	Solenoid valve type ⑥	Wire lead-out direction ⑦	No. of stations ⑧	Lead-out direction of PS & EX ports ⑨	Vacuum switch ⑩
	VJP	—				—		—			
Mounting unit code	L ↑	St.1									
		St.2									
		St.3									
	St. 10 ↓ R	St.4									
		St.5									
		St.6									
		St.7									
		St.8									
		St.9									
		St.10									

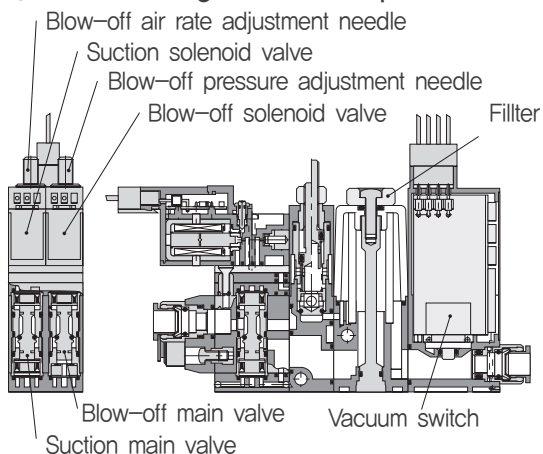
※. Make a copy of this form and fill in it referring to the example in the previous page.

※. When the combination of mounting unit spec. is different, a separate Specification Order Form is required.

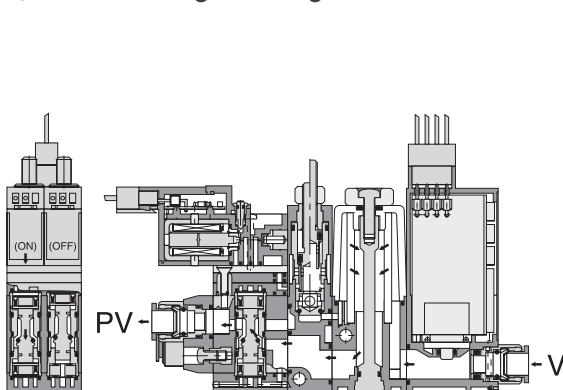
Mechanism of VJP

Example) VJPA-□□□-□□-□□-□ (Valve unit type: Double solenoid type (Vacuum retention type))

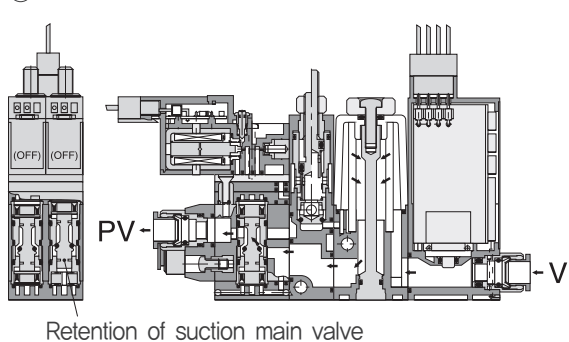
① At vacuum generation suspended



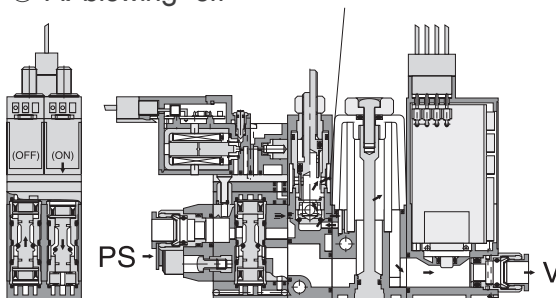
② At vacuum generating



③ At vacuum retention

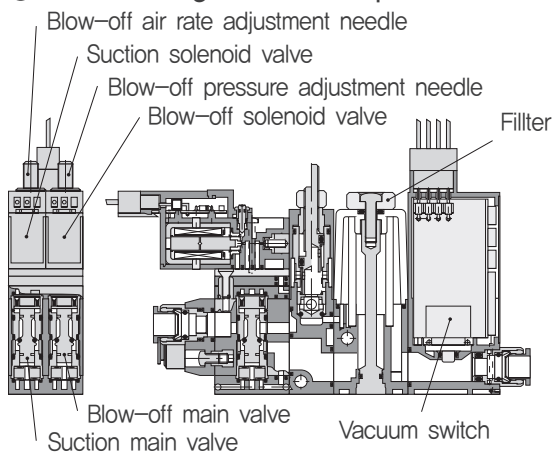


④ At blowing-off

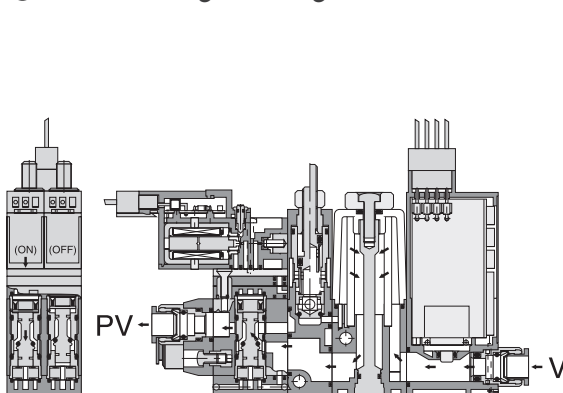


Example) VJPB-□□□-□□-□□-□ (Valve unit type: Normally closed)

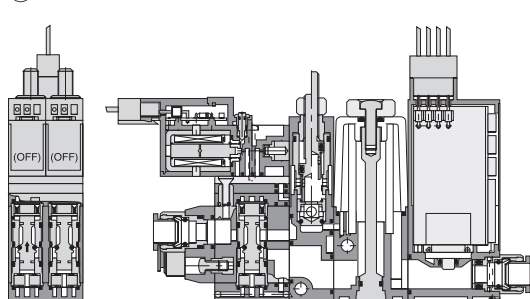
① At vacuum generation suspended



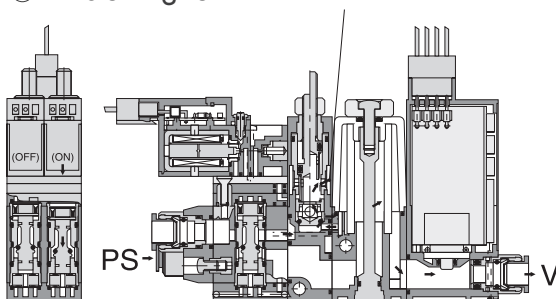
② At vacuum generating



③ At vacuum retention



④ At blowing-off



※ V: Vacuum air / PS: Supply air / PV: Vacuum supply air

Specification (Supply pressure)

Fluid medium	Air
Operating pressure range	0.3 ~ 0.7 MPa
Operating temp. range	5 ~ 50° C
Operating vacuum range	0 ~ -100kPa

Solenoid valve (Suction solenoid valve / Blow-off solenoid valve)

Pilot valves

Item	Suction solenoid valve		Blow-off solenoid valve	
Operating system	Direct operation			
Valve construction	Elastic seal, Poppet valve			
Rated voltage	DC24V	AC100V	DC24V	AC100V
Allowable voltage range	DC24V ±10%	AC100V ±10%	DC24V ±10%	AC100V ±10%
Surge protection circuit	Diode	Diode bridge	Diode	Diode bridge
Power consumption	1.2W (With LED)	1.5VA (With LED)	1.2W (With LED)	1.5VA (With LED)
Manual operation	Non-lock push-button type			
Operation indicator	Coil excitation: Red LED ON			
Wire connection method	Connector (Lead wire length: 500mm)			
	Red : DC24V Black : COM	Blue	Red : DC24V Black : COM	Blue

Switchover valve

Item	Suction main valve		Blow-off main valve
Operating system	Pneumatic operation by pilot valve		
Valve construction	Elastic seal, Poppet valve		
Proof pressure	1.05MPa		
Valve unit type	Double solenoid (retention)/ N.C. / N.O.		N.C.
Response time	50msec (Double solenoid type only)		—
Lubrication	Not required		
Effective sectional area	Air supply port (PV) size	∅ 4mm : 3.5mm ²	1mm ²
		∅ 6mm : 5mm ²	

Filter specification

Element material	PVF (Polyvinyl formal)	
Filtering capacity	10μm	
Filter area	1,130mm ²	
Replacement filter model code	Vacuum filter	VGFE 10
	Blow-off filter	VJFF

Blow-off function

Blow-off air rate	0 ~ 50 l /min[ANR] (Rated supply pressure: 0.5Mpa)
Valve structure	Elastic seal, Poppet valve
Relief pressure setting range	0.005 ~ 0.05MPa

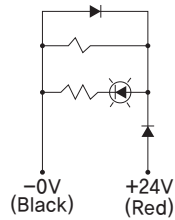
LED Display Digital Vacuum Sensor (V4)

Button Type Compound Pressure Sensor (-V4)

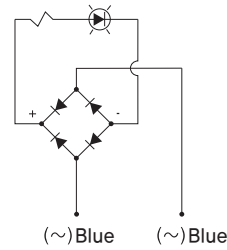
General specifications	Fluid medium	Non-corrosive gas
	Operating temp. range	0~50° C (No freezing)
	Preservation temp. range	-20~70° C (No freezing)
	Operating humidity range	35-85%RH (No dew condensation)
Pressure range	Display method	Pressure gauge
	Operating pressure range	-100kPa - 300kPa
	Pressure proof	1.471MPa
Power supply	Rated voltage	DC12~24V ± 10%
	Current consumption	30mA Max
Display	Panel lock function	On/Off by push button
	Non-display function	On/Off by push button
	Pressure display unit	kPa
	Display resolution	1kPa
	Indication accuracy	±3%F.S. (0~50° C, at Ta=25° C)
	Zero point adjustment	Adjustable by zero adjusting mode
Switch	Output points	2 point switch outputs
	Output method	NPN open collector
	Switch capacity	DC30V 80mA Max
	Residual voltage	1.2V Max (at load current 80mA)
	Output mode	Separate mode, Window comparator mode
	Pressure setting range	-8~30 counts (kPa setting)
	Operational indication	Output On : LED ON (SW1 : Red, SW2 : Greend)
	Temperature characteristics	±5%F.S. (0~50° C, at Ta=25° C)
	Repeat accuracy	±3%F.S.
	Response time	Filter setting at 0 msec : 5msec
	Hysteresis adjustment	0~30counts
	Overload protection	Equipped
	Analog output	Output voltage
Voltage with max negative pressure applied (-100kPa)		1~5V
Voltage with negative pressure applied (-90kPa)		1.1±0.06V
Zero point voltage		2±0.06V
Voltage with Max positive pressure applied (300kPa)		5±0.06V
Linearity		±0.5%F.S.
Repeat accuracy		±0.5%F.S.
Temperature characteristics		±5%F.S. (0-50° C, at Ta=25° C)

※ Please refer to the 'VJ Vacuum Generator' electronic sensor (V4) instruction manual for LED display type digital vacuum sensor (V4) instruction manual.

Circuit diagram (Solenoid valve)



24VDC Supply/Blow-off solenoid valve



24VDC Supply/Blow-off solenoid valve

VJP Series Weight List

① Stand-alone type

Type	Model code	Weight(g)	Remarks
With vacuum switch	VJP□-□□□□-□□-□	152.0	Vacuum port: φ 4, φ 6
	VJP□-8□□□-□□-□	158.5	Vacuum port: φ 8
Without vacuum switch	VJP□-□□□□-□□	125.5	Vacuum port: φ 4, φ 6
	VJP□-8□□□-□□	132.0	Vacuum port: φ 8

② Manifold intermediate block

	Weight(g)	Remarks
Manifold intermediate block	18.5	Per station

③ Manifold Side block

	Weight(g)	Remarks
External Vacuum Controller	106.0	Cartridge qty: 6pcs

④ Cartridge (Supply and Exhaust ports)

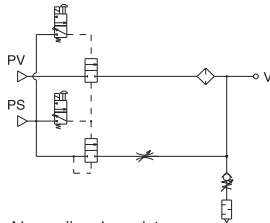
Model code	Weight(g)	Remarks
CJC14-06	11.5	For φ 6
CJC14-08	10.0	For φ 8
CJC14-10	13.0	For φ 10

- Calculate the total weight by the following calculation formula.

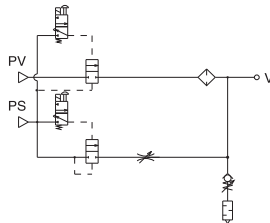
$$\text{Total weight of manifold type} = (\text{①VJP Stand-alone unit} + \text{②Manifold intermediate block}) \times \text{station qty} + \text{③Manifold Side block} + \text{④Cartridge} \times \text{qty}$$

Standard Size List

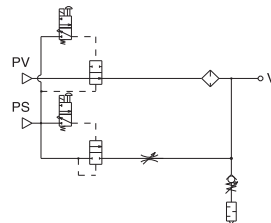
Wire lead-out direction: top or side
Double solenoid type



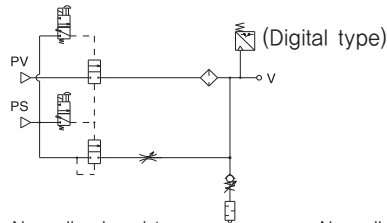
Normally closed type



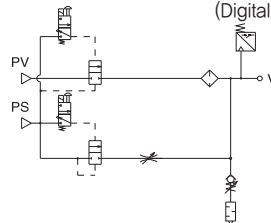
Normally open type



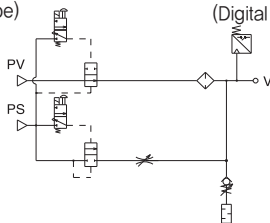
With vacuum switch, Wire lead-out direction: top or side
Double solenoid type



Normally closed type



Normally open type

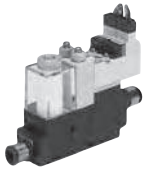


Type	Page to refer	Vacuum port	Air supply port		Vacuum supply port
			4mm	6mm	
VJP	265	4mm	●	●	8mm
			●	●	With Silencer
		6mm	●	●	8mm
			●	●	With Silencer
8mm	●	●	8mm		
	●	●	With Silencer		

Type	Page to refer	Vacuum port	Air supply port		Vacuum supply port
			4mm	6mm	
VJP	266	4mm	●	●	8mm
			●	●	With Silencer
		6mm	●	●	8mm
			●	●	With Silencer
8mm	●	●	8mm		
	●	●	With Silencer		

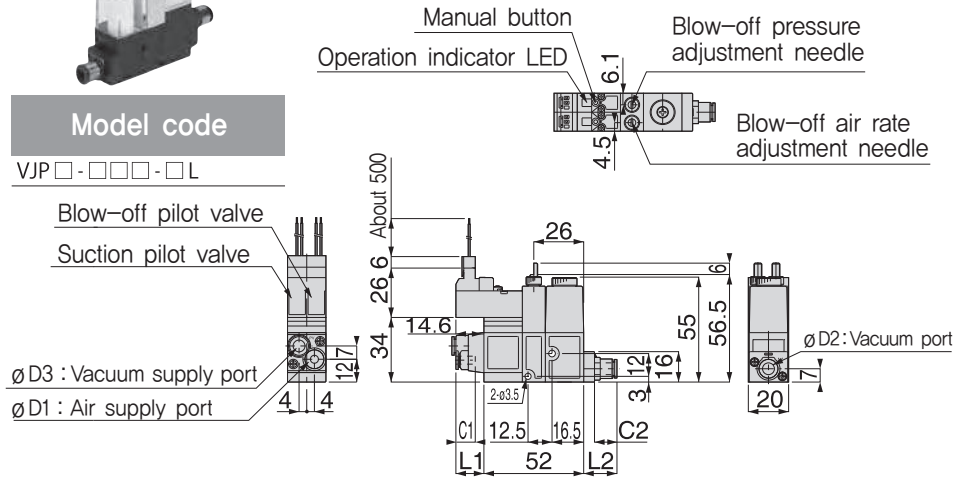
Dimensional drawing

Wire lead-out direction: Top VJP



Model code

VJP□-□□□-□L

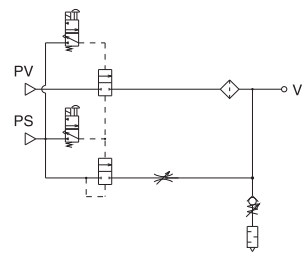


Air supply port		Unit: mm	
Applicable tube size: øD1, øD3	C1	L1	
4	11.2	14.6	
6	11.7	17.1	

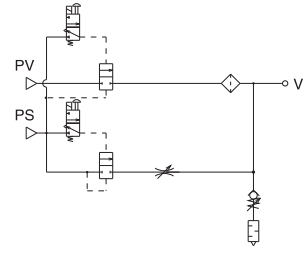
Vacuum port		Unit: mm	
Applicable tube size: øD2	C2	L2	
4	10.9	14.3	
6	11.7	17.2	
8	21.7	25.8	

Circuit diagram

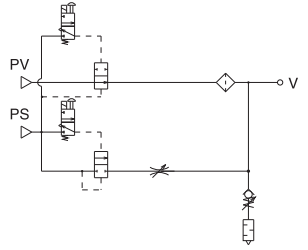
VJPA... (Double solenoid stand-alone type)



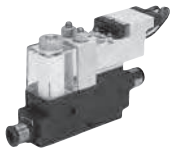
VJPB... (Normally closed stand-alone type)



VJPC... (Normally open stand-alone type)

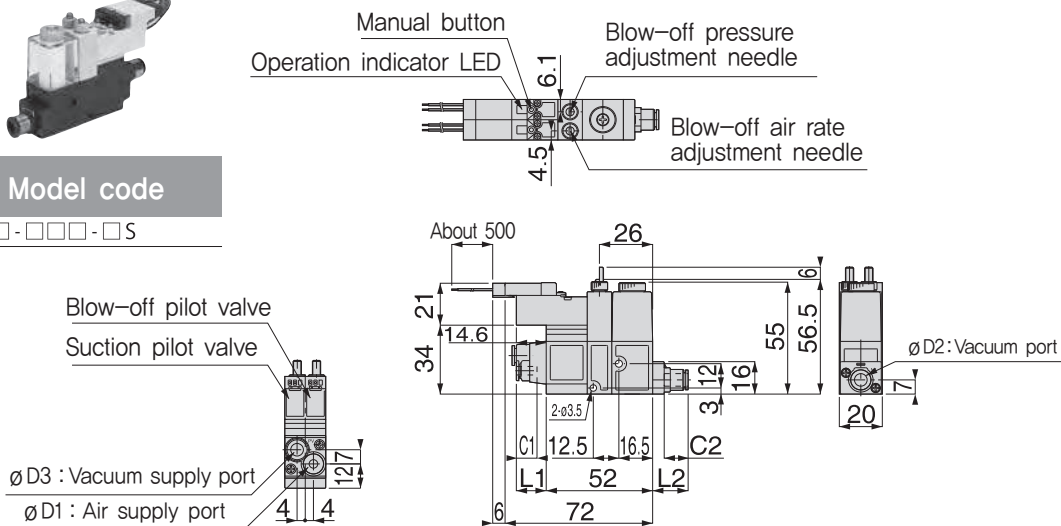


Wire lead-out direction: Side VJP



Model code

VJP□-□□□-□S



Air supply port		Unit: mm	
Applicable tube size: øD1, øD3	C1	L1	
4	11.2	14.6	
6	11.7	17.1	

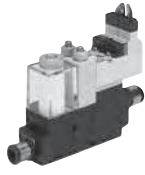
Vacuum port		Unit: mm	
Applicable tube size: øD2	C2	L2	
4	10.9	14.3	
6	11.7	17.2	
8	21.7	25.8	

Circuit diagram

See the above circuit diagram for the one for this type.

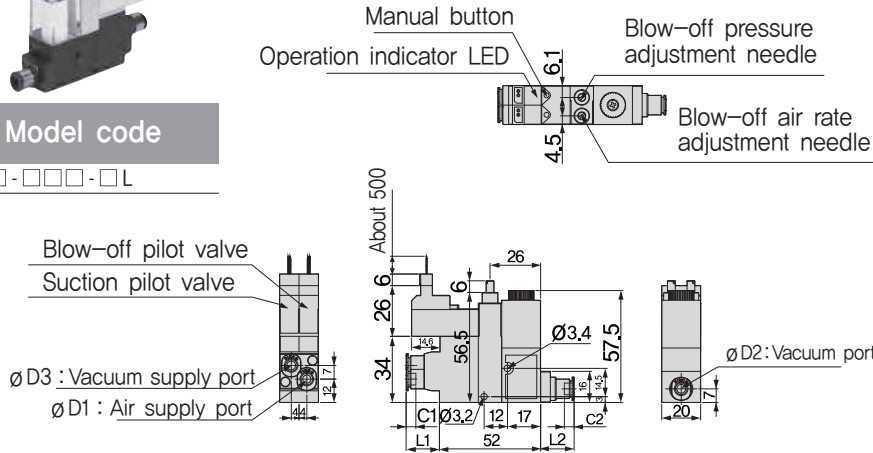
Dimensional drawing

With vacuum switch, Wire lead-out direction: Top VJP



Model code

VJP□-□□□-□L

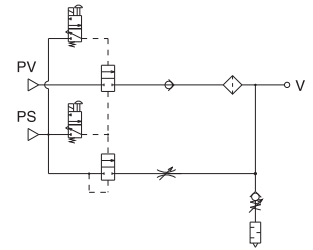


		Unit: mm	
Air supply port Applicable tube size: øD1, øD3		C1	L1
4		11.2	14.6
6		11.7	17.1

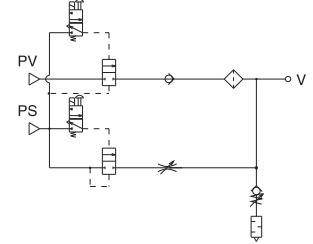
		Unit: mm	
Vacuum port Applicable tube size: øD2		C2	L2
4		10.9	14.3
6		11.7	17.2
8		21.7	25.8

Circuit diagram

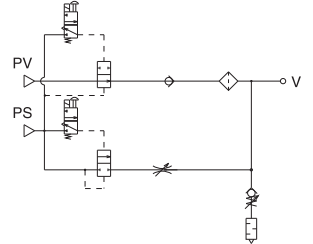
VJPA...(Double solenoid stand-alone type)



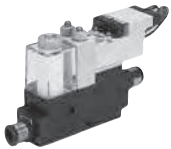
VJPB...(Normally closed stand-alone type)



VJPC...(Normally open stand-alone type)

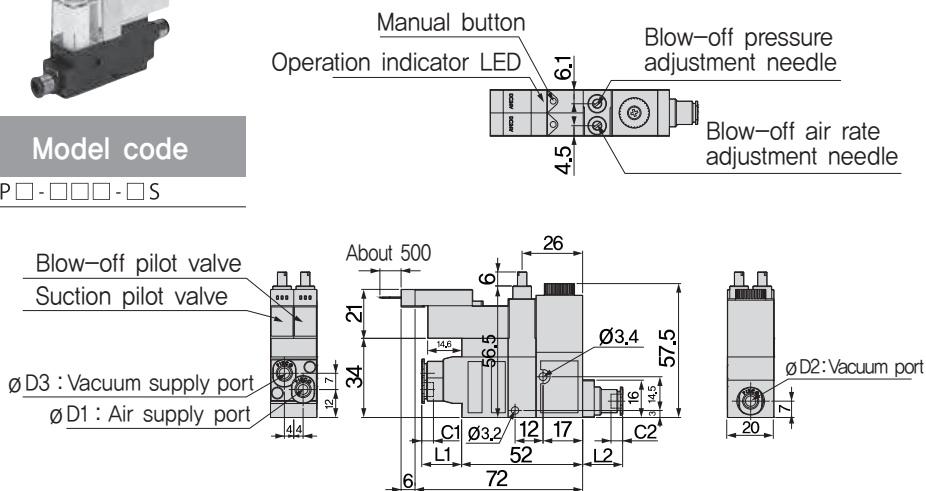


Wire lead-out direction: Side VJP



Model code

VJP□-□□□-□S

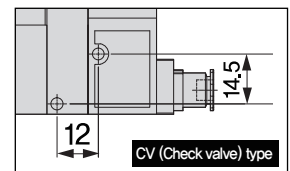
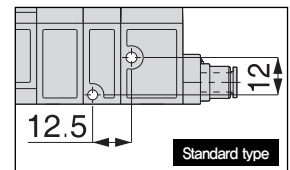


		Unit: mm	
Air supply port Applicable tube size: øD1, øD3		C1	L1
4		11.2	14.6
6		11.7	17.1

		Unit: mm	
Vacuum port Applicable tube size: øD2		C2	L2
4		10.9	14.3
6		11.7	17.2
8		21.7	25.8

Circuit diagram

See the above circuit diagram for the one for this type.



※ Please be careful when using the CV type and standard because they have different attachment size.

Dimensional drawing

With V4 switch, Wire lead-out direction : Top VJP

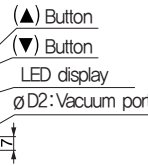
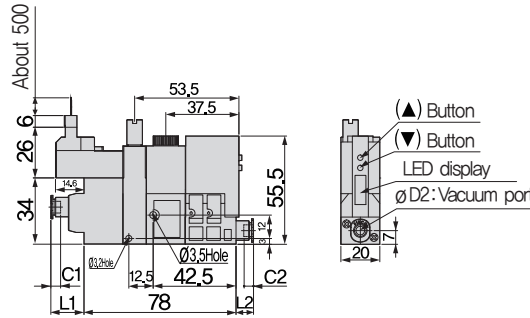
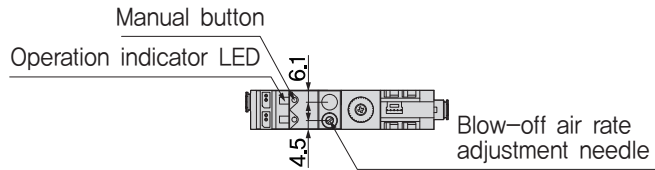


Model code

VJP□-□□□□-□L-□

Blow-off pilot valve
Suction pilot valve

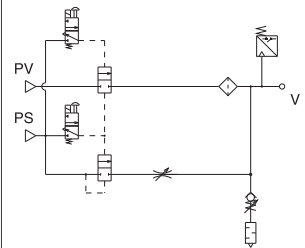
∅D3 : Vacuum supply port
∅D1 : Air supply port



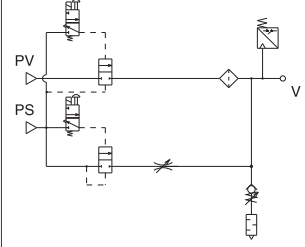
Unit: mm			Unit: mm		
Air supply port Applicable tube size: ∅D1, ∅D3	C1	L1	Vacuum port Applicable tube size: ∅D2	C2	L2
4	11.2	14.6	4	10.9	5.8
6	11.7	17.1	6	11.7	8.7
			8	18.2	17.3

Circuit diagram

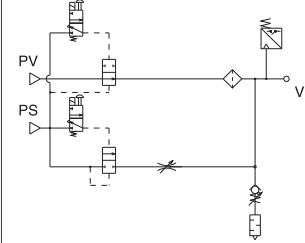
VJPA... (Double solenoid stand-alone type)



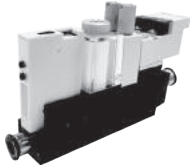
VJPB... (Normally closed stand-alone type)



VJPC... (Normally open stand-alone type)



With V4 Switch, Wire lead-out direction : Side VJP

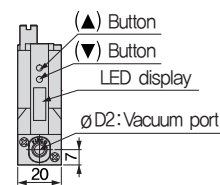
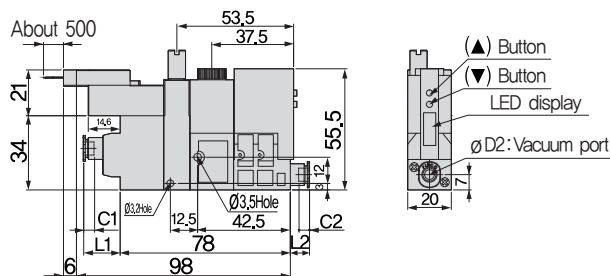
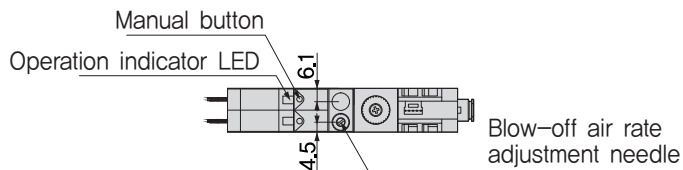


Model code

VJP□-□□□□-□S-□

Blow-off pilot valve
Suction pilot valve

∅D3 : Vacuum supply port
∅D1 : Air supply port



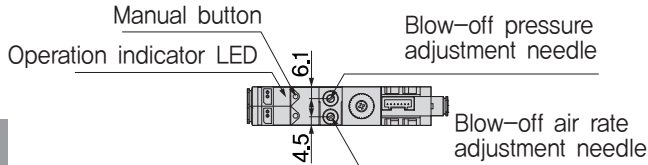
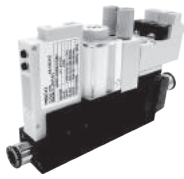
Unit: mm			Unit: mm		
Air supply port Applicable tube size: ∅D1, ∅D3	C1	L1	Vacuum port Applicable tube size: ∅D2	C2	L2
4	11.2	14.6	4	10.9	5.8
6	11.7	17.1	6	11.7	8.7
			8	18.2	17.3

Circuit diagram

See the above circuit diagram for the one for this type.

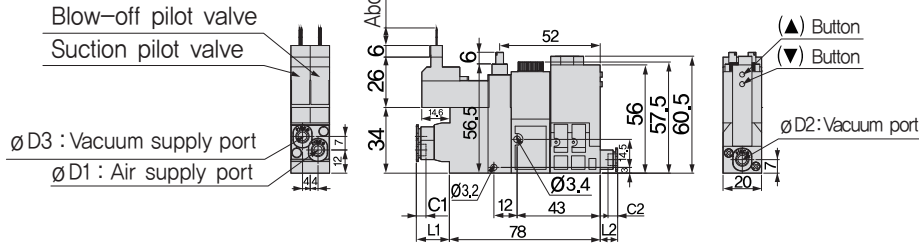
Dimensional drawing

CV(Check Valve) + With V4 switch, Wire lead-out direction : Top VJP



Model code

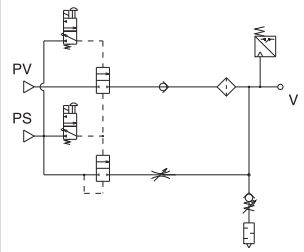
VJP□-□□□-□L-□



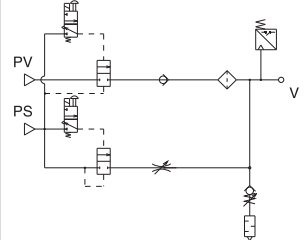
Unit: mm			Unit: mm		
Air supply port Applicable tube size: ϕ D1, ϕ D3	C1	L1	Vacuum port Applicable tube size: ϕ D2	C2	L2
4	11.2	14.6	4	10.9	5.8
6	11.7	17.1	6	11.7	8.7
			8	18.2	17.3

Circuit diagram

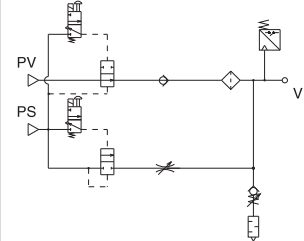
VJPA... (Double solenoid stand-alone type)



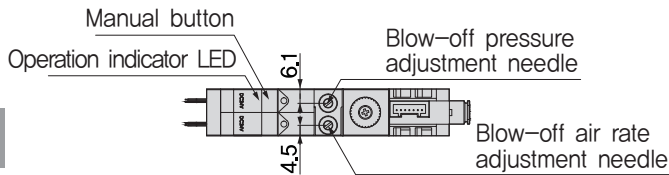
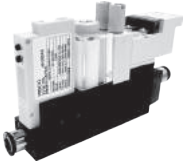
VJPB... (Normally closed stand-alone type)



VJPC... (Normally open stand-alone type)

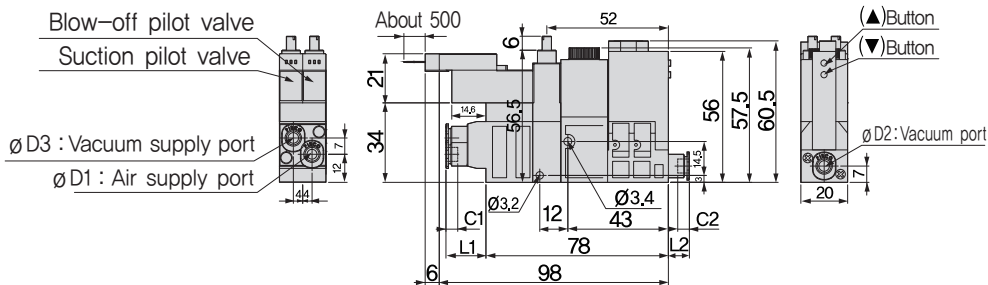


CV(Check Valve) + With V4 switch, Wire lead-out direction : Side VJP



Model code

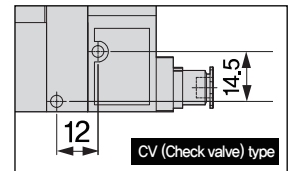
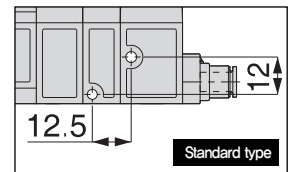
VJP□-□□□-□S-□



Unit: mm			Unit: mm		
Air supply port Applicable tube size: ϕ D1, ϕ D3	C1	L1	Vacuum port Applicable tube size: ϕ D2	C2	L2
4	11.2	14.6	4	10.9	5.8
6	11.7	17.1	6	11.7	8.7
			8	18.2	17.3

Circuit diagram

See the above circuit diagram for the one for this type.



※ Please be careful when using the CV type and standard because they have different attachment size.

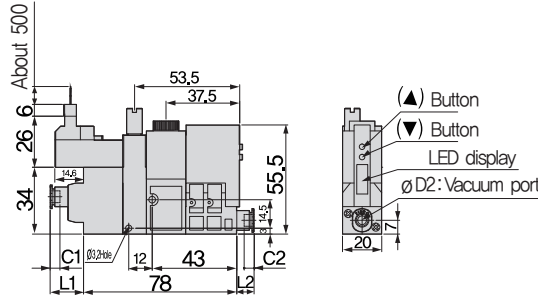
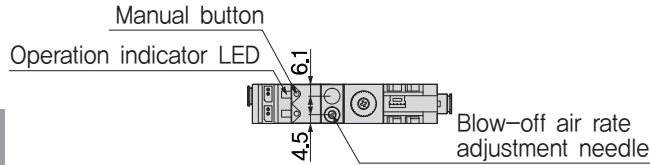
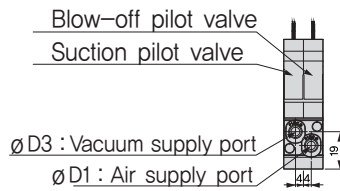
Dimensional drawing

CV(Check Valve) + With DWE switch, Wire lead-out direction : Top VJP



Model code

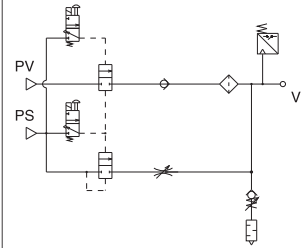
VJP□-□□□□-□L-□



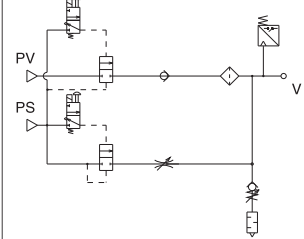
		Unit: mm				Unit: mm	
Air supply port Applicable tube size: ø D1, ø D3		C1	L1	Vacuum port Applicable tube size: ø D2		C2	L2
4		11.2	14.6	4		10.9	5.8
6		11.7	17.1	6		11.7	8.7
				8		18.2	17.3

Circuit diagram

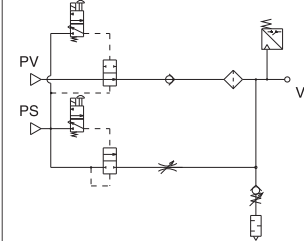
VJPA... (Double solenoid stand-alone type)



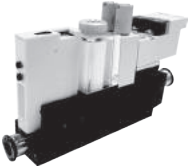
VJPB... (Normally closed stand-alone type)



VJPC... (Normally open stand-alone type)

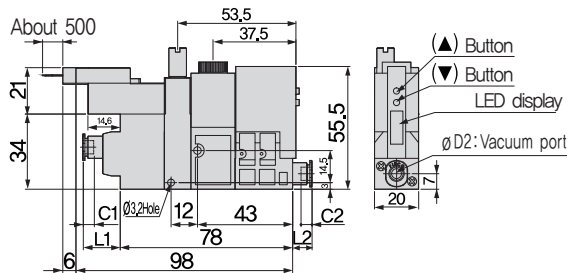
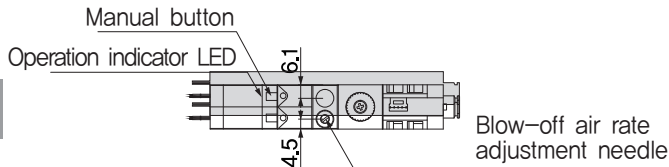
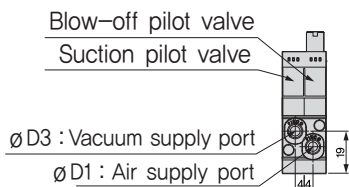


CV(Check Valve) + With DWE switch, Wire lead-out direction : Side VJP



Model code

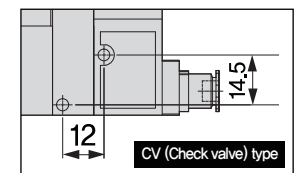
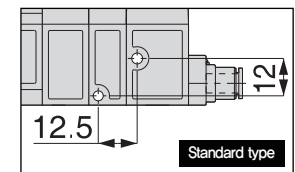
VJP□-□□□□-□S-□



		Unit: mm				Unit: mm	
Air supply port Applicable tube size: ø D1, ø D3		C1	L1	Vacuum port Applicable tube size: ø D2		C2	L2
4		11.2	14.6	4		10.9	5.8
6		11.7	17.1	6		11.7	8.7
				8		18.2	17.3

Circuit diagram

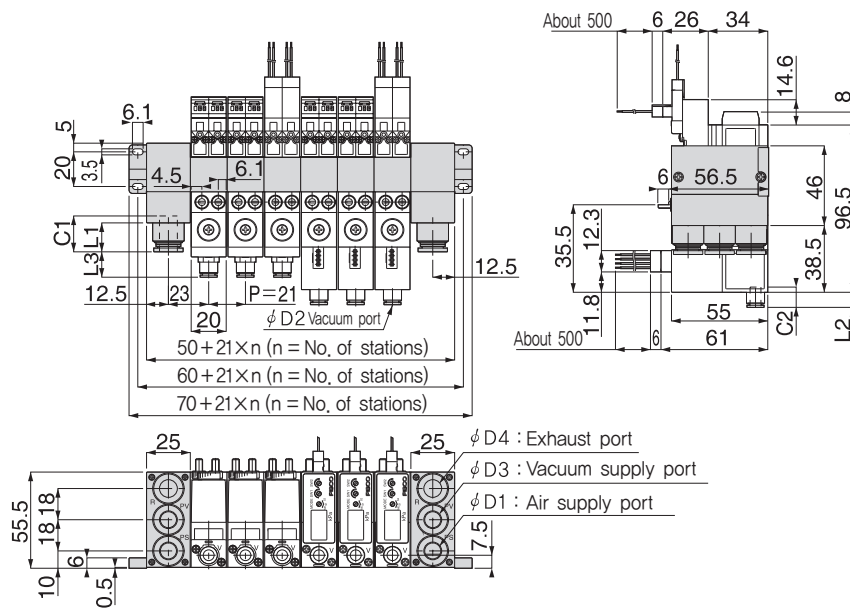
See the above circuit diagram for the one for this type.



※ Please be careful when using the CV type and standard because they have different attachment size.

Dimensional drawing

Manifold type, Lead-out direction of PS & EX ports: Vacuum port side VJP

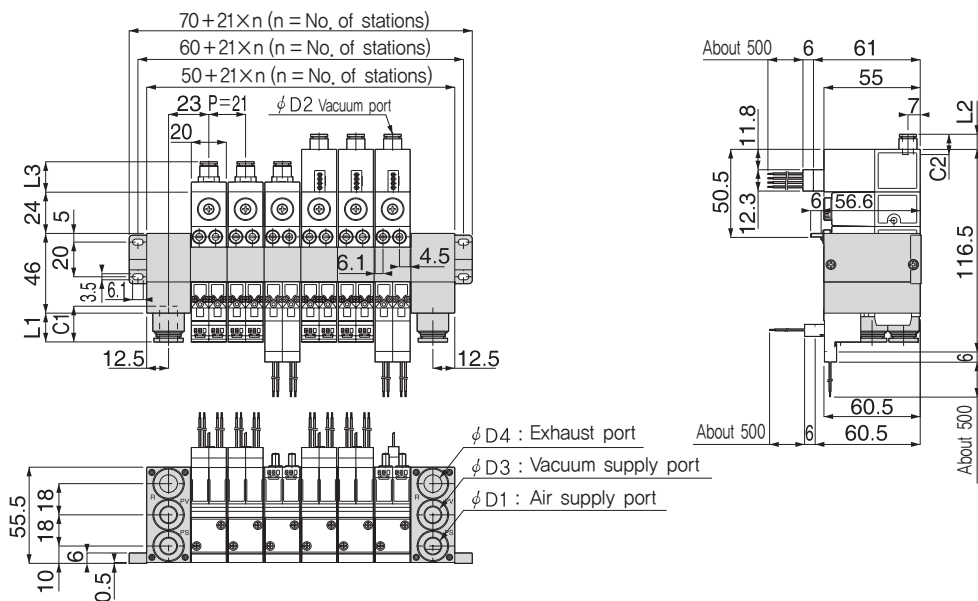


Model code
 VJP□-□□□□-□□-□A-□

		Unit: mm	
Air supply port		C1	L1
Applicable tube size: $\phi D1, \phi D3$			
6		16.95	11.55
8		18.2	13.1
10		20.7	16.7

		Unit: mm		
Vacuum port		C2	L2	L3
Applicable tube size: $\phi D2$				
4		10.9	5.8	14.3
6		11.7	8.7	17.2
8		18.2	17.3	23.0

Manifold type, Lead-out direction of PS & EX ports: Solenoid valve side VJP



Model code
 VJP□-□□□□-□□-□B-□

		Unit: mm	
Air supply port		C1	L1
Applicable tube size: $\phi D1, \phi D3$			
6		16.95	11.55
8		18.2	13.1
10		20.7	16.7

		Unit: mm		
Vacuum port		C2	L2	L3
Applicable tube size: $\phi D2$				
4		10.9	5.8	14.3
6		11.7	8.7	17.2
8		18.2	17.3	23.0

Detailed Safety Instructions

Before using PISCO products, be sure to read “Safety Instructions” and “Safety Instruction Manual” on page 35–39 and “Common Safety Instructions for Vacuum Series” on page 47–49.

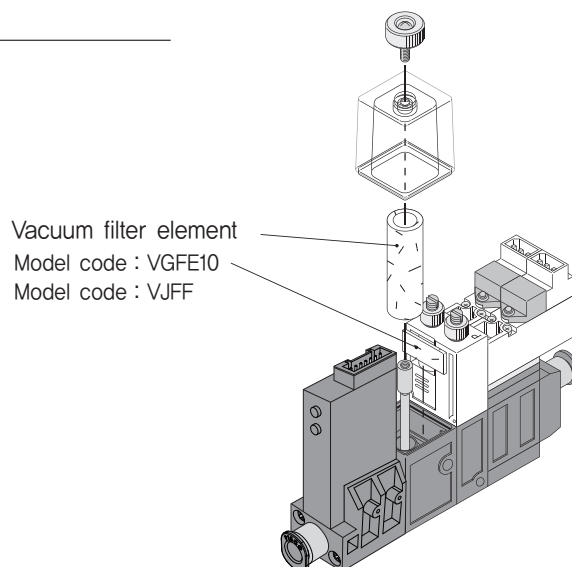
Warning

1. Make sure that the leakage current is less than 1mA, when operating a valve unit. Leakage current larger than that may cause malfunction.
2. External vacuum controller with vacuum retention function permits some vacuum leakage. Provide an appropriate safety measure when vacuum retention for long period of time is required.
3. The coil in a pilot solenoid valve generates heat under the following ① to ③ conditions. The heat may cause dropping life cycle, malfunctions and burn or may affect negatively on peripheral machines. Contact us when the power is applied to the vacuum generator under the following conditions:
 - ① The power is continuously ON for over 2 hours.
 - ② High-cycle operation.
 - ③ Even when intermittent running of the generator is carried out, the total operation time per day is longer than non-operation time.
4. When the electricity is applied to valves continuously for a long time, the coils generate heat. It may cause dropping life cycle, malfunctions, getting burnt or damaging peripheral machines due to the heat.
5. Regarding double-solenoid types (VJPA...), the switchover valve (main valve) is placed in neutral after the supply of pilot air has been suspended (the same is true when the valve is being operated for the first time after shipment). When resuming the supply of pilot air, be sure to send a signal to the pilot valve, or conduct switchover operations manually as required.

Caution

1. Do not give an excessive tensile strength and bending on a lead wire. Otherwise, breaking wire or damage on connector may be caused.
2. When manifold type is selected, dropping the performance or having an effect to other vacuum ports can be caused depending on number of stations or a combination of mounting units. Contact us for any unclear points.
3. Compressed air contains many kinds of drains such as water, oxidized oil, tar and other foreign substances. Dehumidify the compressed air by using an after-cooler or a dryer and improve the air condition, since those drains seriously impair the performance of the vacuum generator.
4. Do not use lubricators.
5. Since pipe rust cause malfunctions, a filter finer than 5 μ m should be placed right before the air supply port.
6. Do not use the vacuum generator under the condition of corrosive and / or inflammable gas. Also do not use these gasses as fluid medium.
7. Do not operate a blow-off valve during vacuum generating.
8. When replacing vacuum port cartridge, first remove any foreign matter clinging to them and the surrounding areas, then firmly insert pins into cartridges.
9. When replacing a supply port block, make sure not to lose the seal rubber and remove the foreign substances stuck around the block. Tighten the screw to fix the block with 0,27–0,3Nm of the tightening torque.

Replacement of Element



PISCO