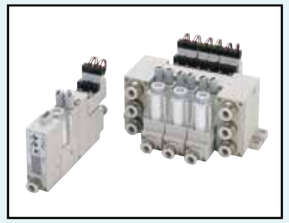


20 mm Width Integrated Type Vacuum Switching Unit

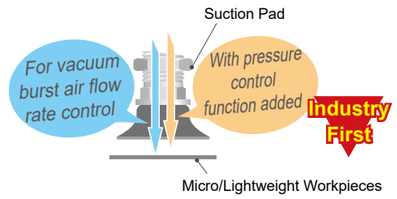
VSJP Series

RoHS

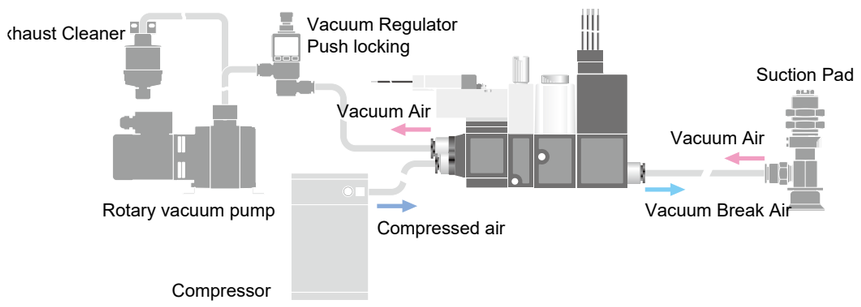
Integrated type vacuum switching unit with abundant variations including break air flow rate & pressure adjustment needle

Adds pressure control to conventional vacuum break air flow control

Prevents workpiece blow-off.



Incorporates a relief function (function to release excess pressure) in the vacuum break circuit, achieving shorter vacuum break time.



3 types of vacuum generation valves available (Normally Closed, Normally Open, Self-holding)

Self-holding (double solenoid valve) is optimal for applications involving long-duration vacuum generation and supports energy saving.

Manifold type also available (max. 10 stations)

2 types of output port piping outlets available: front and back.

Uses LED display for pressure sensor indication, improving visibility.

2 types available: With 2-point switch output and with analog output. Also, connector system adopted for wiring, facilitating wiring layout.

Model No. Indication Method (Single Unit Type)

●20 mm width integrated vacuum switching unit single unit

VSJP - A 6 6 6 - 3 - W

- VSJP: Model No.
- A: ❶ Valve-type
- 6: ❷ Vacuum Port (V)
- 6: ❸ Air Supply Port (PS)
- 6: ❹ Vacuum Supply Port (PV)
- 3: ❺ Solenoid Valve Voltage
- W: ❻ Vacuum Pressure Switch Specifications

❶ Valve-type

Code	Content
A	Normally Open Type
B	Normally Closed Type
D	Self-holding Type

❷ Vacuum Port (V)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
8	ø8 Push-in fitting

❸ Air Supply Port (PS)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting

❹ Vacuum Supply Port (PV)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting

❺ Solenoid Valve Voltage

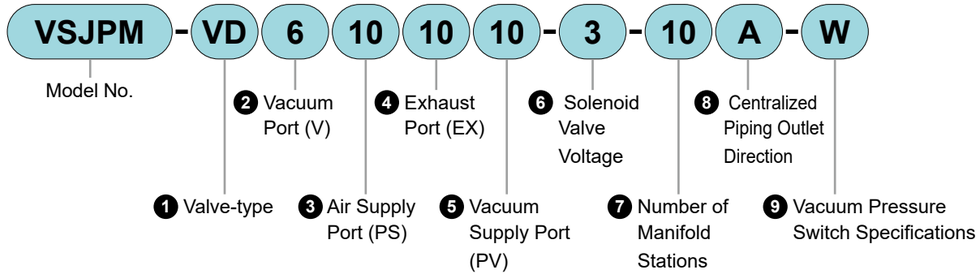
Code	Content
1	100 VAC
3	24 VDC

❻ Vacuum Pressure Switch Specifications

Code	Content
Blank	Without Vacuum Pressure Switch
W	NPN Output 2 points with Digital Display
A	NPN Output 1 point + Analog Output with Digital Display

model No. Indication Method (Manifold Type)

●20 mm width integrated vacuum switching unit manifold



1 Valve-type

Code	Content
A	Normally Open Type
B	Normally Closed Type
D	Self-holding Type
Z	For mixed specifications (Provide details in the specification sheet)

*: For mixed specifications, indicate using the "Mixed Manifold Specification Sheet". For details, refer to P. 332, 333.

2 Vacuum Port (V)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
8	ø8 Push-in fitting
CX	For fitting mix(Provide details in the specification sheet)

*: For mixed specifications, indicate using the "Mixed Manifold Specification Sheet". For details, refer to P. 332, 333.

3 Air Supply Port (PS)

Code	Content
6	ø6 Push-in fitting
8	ø8 Push-in fitting
10	ø10 Push-in fitting

4 Exhaust Port (EX)

Code	Content
6	ø6 Push-in fitting centralized exhaust
8	ø8 Push-in fitting centralized exhaust
10	ø10 Push-in fitting centralized exhaust

5 Vacuum Supply Port (PV)

Code	Content
6	ø6 Push-in fitting
8	ø8 Push-in fitting
10	ø10 Push-in fitting

6 Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

● Structure usable in rechargeable battery manufacturing processes

VSJP - ..... - P4*

VSJPM - ..... - P4*

*Please inquire for details.

7 Number of Manifold Stations

Code	Content
2	2 stations
to	t o
10	10 stations

8 Centralized Piping Outlet Direction

Code	Content
A	Vacuum Port Side
B	Supply Port Side

9 Vacuum Pressure Switch Specifications

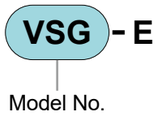
Code	Content
Blank	Without Vacuum Pressure Switch
W	NPN Output 2 points with Digital Display
A	NPN Output 1 point + Analog Output with Digital Display
Z	For mixed specifications (Provide details in the specification sheet)

*: For mixed specifications, indicate using the "Mixed Manifold Specification Sheet". For details, refer to P. 332, 333.

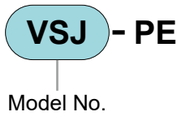
Maintenance Part Model No.

*For details of the maintenance parts, refer to P. 329.

●Filter element for vacuum side



●Burst side filter element



Specifications

Item	VSJP
Operating Fluid	Air
Operating Pressure MPa	0.3 to 0.7
Ambient Temperature/Fluid Temperature °C	5 to 50
Vacuum pressure kPa	-100 to 0

Valve (for Vacuum Generation, Vacuum Breaking) Specifications

●Pilot solenoid valve

Item	Vacuum Supply Valve		Vacuum Breaking Valve	
ValvE-type and Operation Method	Direct acting poppet valve			
Rated Voltage V	24 VDC	100 VAC	24 VDC	100 VAC
Voltage Fluctuation Range V	DC 24 ±10%	AC 100 ±10%	DC 24 ±10%	AC 100 ±10%
Surge Protection Circuit	Varistor	Bridge Diode	Varistor	Bridge Diode
Power Consumption	1.2 W (with LED)	1.5 VA (with LED)	1.2 W (with LED)	1.5 VA (with LED)
Manual Override	Push-type non-locking type			
Operation Indicator	When coil is energized: Red LED lights up			
Wiring Method	Connector (cable length: 500 mm)			
	Red: 24 VDC Black: COM	Blue	Red: 24 VDC Black: COM	Blue

●Main valve

Item	Vacuum Supply Valve		Vacuum Breaking Valve
ValvE-type and Operation Method	Pilot operated poppet valve		
Proof Pressure MPa	1.05		
Valve Type	Self-holding, Normally Closed, Normally Open		Normally Closed
Lubrication	Not required		
Effective Area (mm²)	Air Supply (PS) Port Size	ø4: 3.5	1
		ø6: 5	

Vacuum Pressure Switch with LED Display Specifications

Item		With 2-point Switch Output (-W)	With Analog Output (-A)
Factory Set Value (kPa)		-50 (SW1), -10 (SW2)	-50
Current Consumption mA		≤ 40	
Pressure Sensing Element		Diffused Semiconductor Pressure Switch	
Working pressure kPa		-100 to 0	
Set Pressure (kPa)		-99 to 0	
Proof Pressure MPa		0.2	
Storage Temperature °C		-20 to 80 (Atmospheric pressure, ≤ 60% RH humidity)	
Operating Temperature °C		0 to 50 (However, no freezing)	
Operating Humidity		35 to 85% RH(However, no freezing)	
Power Supply Voltage V		DC 12 to 24 ±10% Ripple(P-P) ≤ 10%	
Protection Structure		Equivalent to IEC Standard IP40	
Number of Output Points		2	1
Repeatability		±3% F.S. max(at Ta=25°C)	
Differential		Fixed (≤ 2% F.S. max.)	Variable (Approx. 0 to 15% of set value)
Switch Output		NPN Transistor Open Collector Output ≤ 30 V 80 mA Residual Voltage ≤ 0.8 V	
Analog Output	Output Voltage V	-	1 to 5
	Zero Point Voltage V	-	1±0.1
	Span Voltage V	-	4±0.1
	Output Current mA	-	≤ 1 (Load resistance ≥ 5 kΩ)
	Linearity/Hysteresis	-	±0.5% F.S. max.
Response time ms		2 max.	
Display kPa		-99 to 0 (2-digit Red LED display)	
Display Update Rate		Approx. 4 times/1 second	
Display Accuracy		±3% F.S. ±2 digit	
Resolution		1 digit	
Operation Indicator		SW1: Red LED lights up at or above set pressure	Red LED lights up at or above set pressure
		SW2: Green LED lights up at or above set pressure	
Functions		1. MODE Switch (ME or S1 or S2)	1. MODE Switch (ME or SW)
		2. S1 Setting Trimmer (2/3 turn trimmer)	2. SW Setting Trimmer (2/3 turn trimmer)
		3. S2 Setting Trimmer (2/3 turn trimmer)	3. HYS Setting Trimmer (Approx. 0 to 15% of set value)

Vacuum Breaking Function Specifications

Item		Vacuum Breaking Function
Break Air Flow Rate	L/min (ANR)	0 to 50 (at 0.5 MPa supply pressure)
Breaking Air Relief Valve Structure		Elastomer seal, poppet valve
Relief Pressure Setting Range	kPa	-25 to 25

Vacuum Filter Specifications

Item		Vacuum Filter
Element Material		Polyvinyl formal
Filtration Rating	μm	10
Filtration area	mm²	1,130

Weight Table

①Single Unit

VSJP		Weight (g)	Remarks
With	VSJP-□-□□□□-□□-□	152	Vacuum Port: ø4, ø6
Sensor	VSJP-□-8□□□-□□-□	159	Vacuum Port: ø8
Without	VSJP-□-□□□□-□□	126	Vacuum Port: ø4, ø6
Sensor	VSJP-□-8□□□-□□	132	Vacuum Port: ø8

②Manifold Intermediate Block

	Weight (g)	Remarks
Manifold Intermediate Block	19	For 1 station

③Manifold Side Block

VSJP	Weight (g)	Remarks
Vacuum Switching Unit	106	Number of Cartridges Used: 6 pcs

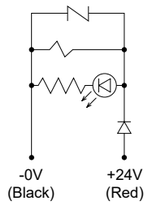
④Cartridge (Input/Exhaust Port)

	Weight (g)	Remarks
Push-in fitting for ø6	12	For ø6 mm
Push-in fitting for ø8	10	For ø8 mm
Push-in fitting for ø10	13	For ø10 mm

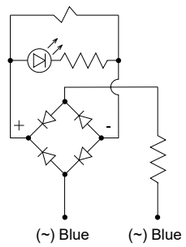
■ Use the calculation formula below to determine the Weight of the manifold type.
Manifold Weight =(①VSJP Unit Single + ②Manifold Intermediate Block) × No. of stations + ③Manifold Side Block + ④Cartridge × quantity used

Electrical Circuit (Solenoid Valve)

●24 VDC specification Valve for vacuum supply and vacuum burst

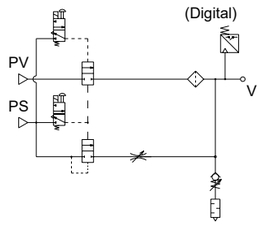


●100 VAC specification Valve for vacuum supply and vacuum burst

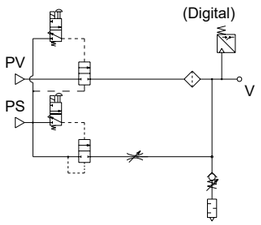


Circuit Diagram

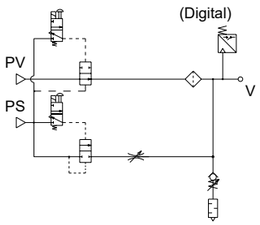
●Self-holding Type



●Normally Closed Type

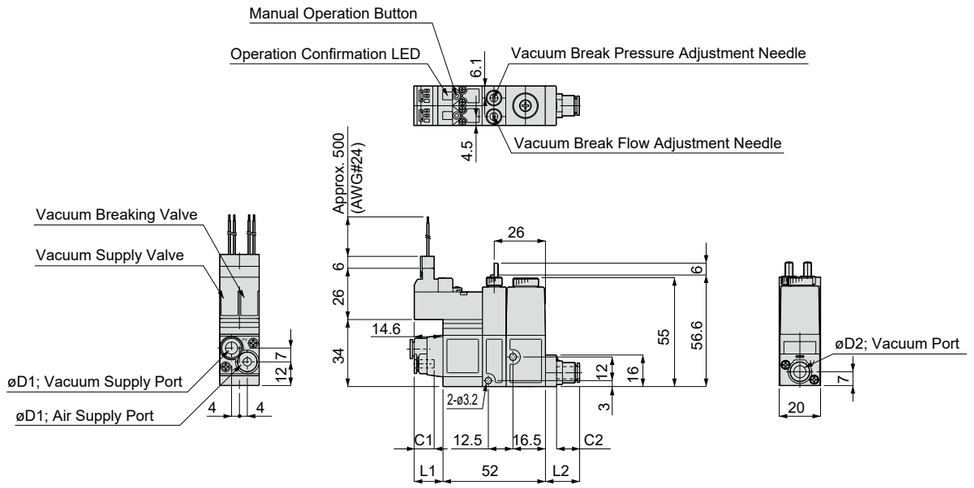


●Normally Open Type



External Dimensions Diagram (Single Unit Type)

●Without Vacuum Pressure Switch



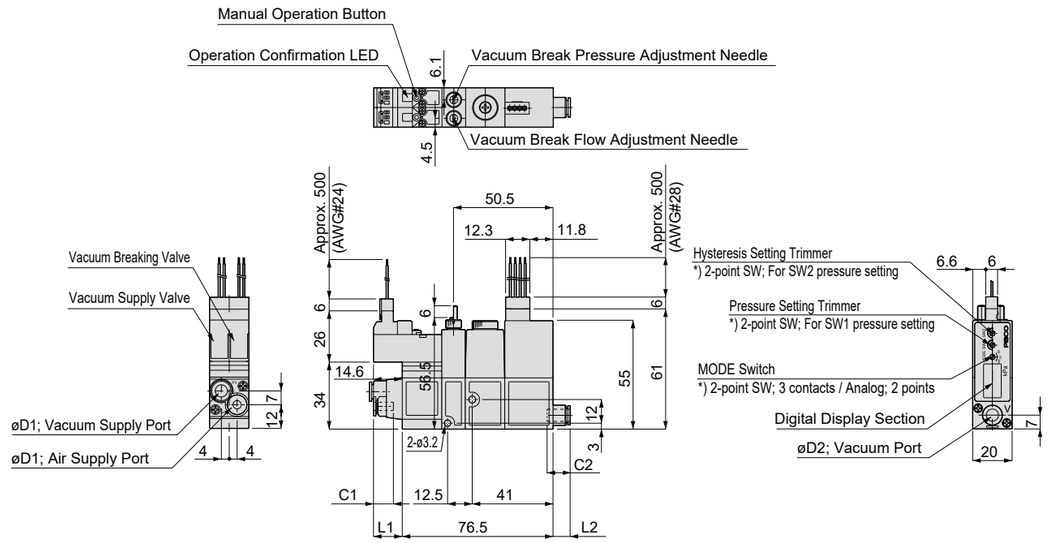
Unit: mm

Air Supply Port Bore size øD1	C1	L1
4	11.5	14.9
6	11.9	17.3

Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	14.6
6	11.9	17.4
8	18.2	25.8

●With vacuum pressure switch



Unit: mm

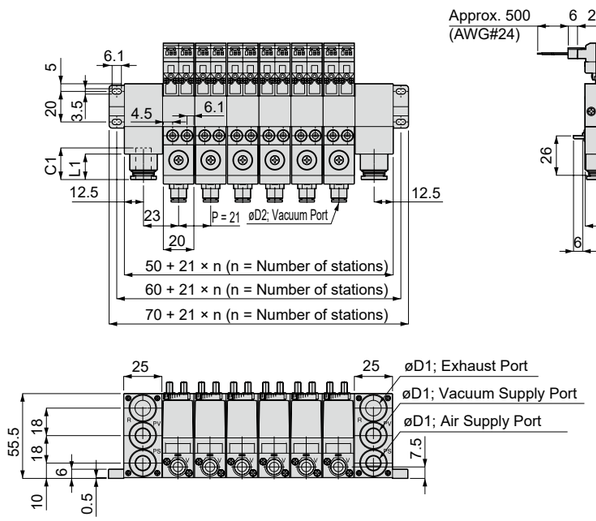
Air Supply Port Bore size øD1	C1	L1
4	11.5	14.9
6	11.9	17.3

Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	6.1
6	11.9	8.9
8	18.2	17.3

Outline Dimension Drawing (Manifold Type VSJPM)

●Common exhaust, common piping leadout direction on vacuum port side, without vacuum pressure switch



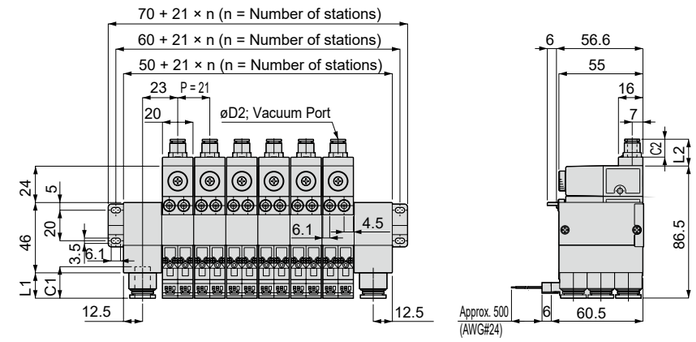
Unit: mm

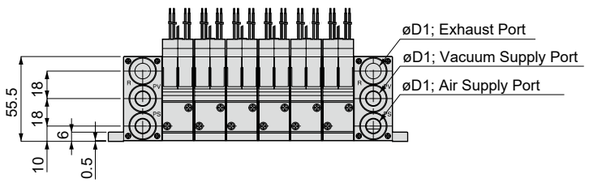
Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	14.6
6	11.9	17.4
8	18.2	23.0

●Common exhaust, common piping leadout direction on supply port side, without vacuum pressure switch





Unit: mm

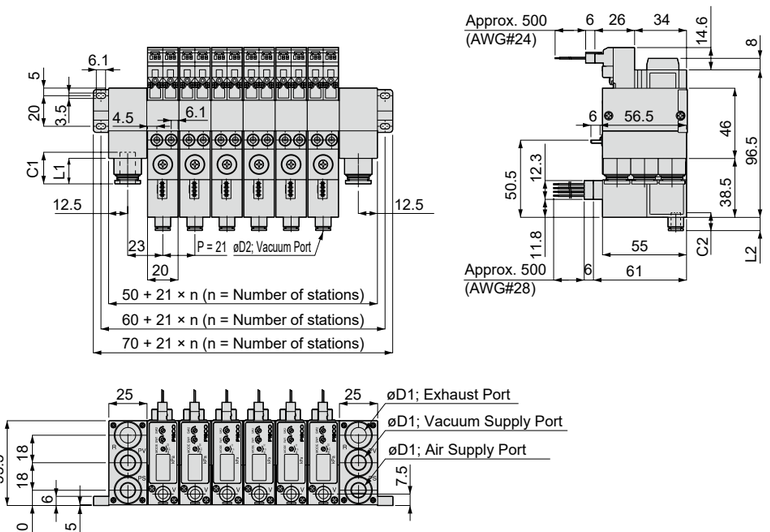
Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	14.6
6	11.9	17.4
8	18.2	23.0

Outline Dimension Drawing (Manifold Type VSJPM)

●Common exhaust, common piping leadout direction on vacuum port side, with vacuum pressure switch



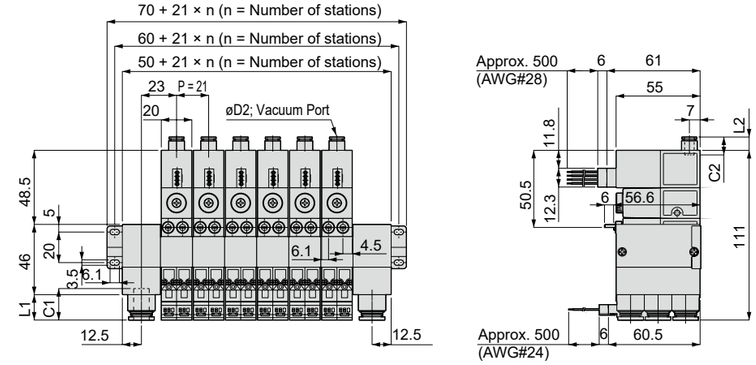
Unit: mm

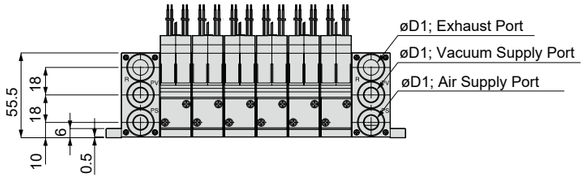
Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

Unit: mm

Vacuum port Bore size øD2	C2	L2
4	11.2	6.1
6	11.9	8.9
8	18.2	17.3

●Common exhaust, common piping leadout direction on supply port side, with vacuum pressure switch





Unit: mm

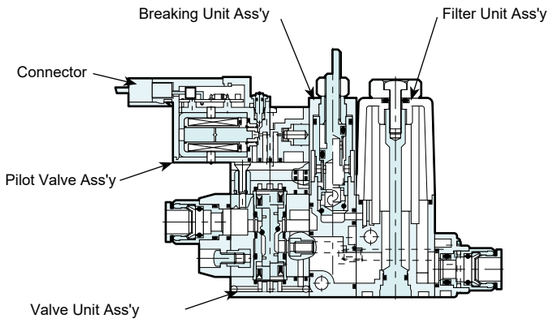
Air Supply Port Bore size øD1	C1	L1
6	17	11.6
8	18.2	13.1
10	20.7	16.7

Unit: mm

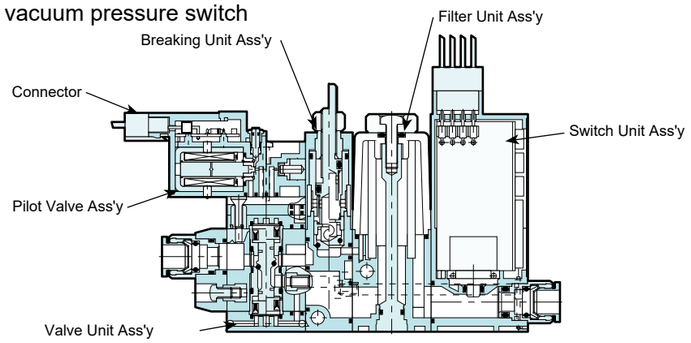
Vacuum port Bore size øD2	C2	L2
4	11.2	6.1
6	11.9	8.9
8	18.2	17.3

Internal Structure Diagram

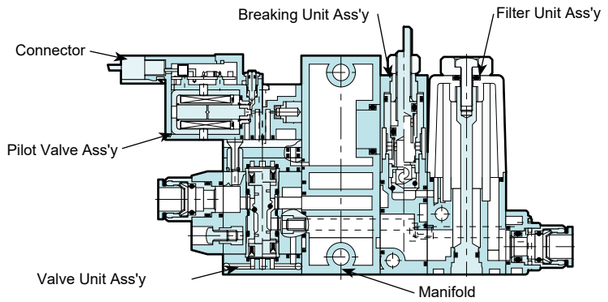
●Single unit, without vacuum pressure switch



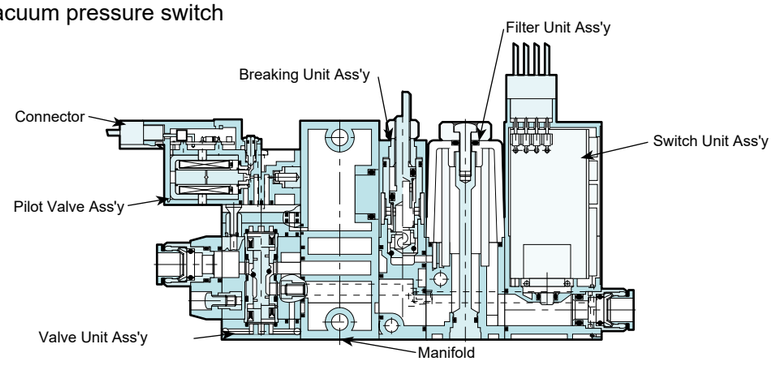
●Single unit, with vacuum pressure switch



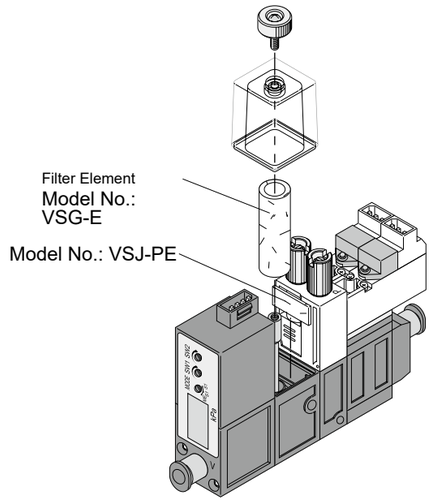
●Manifold, without vacuum pressure switch



●Manifold, with vacuum pressure switch



Maintenance Parts



Vacuum Components
Vacuum Pump System
VSJP/ VSJPM
VSNP/ VSNPM
VSXP/ VSXPM
VSQP
VSZPM
Ending

Pneumatic Components

To Use This Product Safely

Be sure to read this before use.
For general pneumatic components precautions, refer to Intro 15 for details.

Individual Precautions: 20 mm Width Integrated Type VSJP Series

Design / Selection

Warning

■Vacuum retention function allows vacuum leakage. Hence, take other safety measures if vacuum retention for long periods is required.

■For the self-hold (VSJ-□□D...), when resupplying after the pilot air supply is stopped (including the first use after shipment), the position of the switching valve is in neutral. When restarting pilot air supply, be sure to send a signal to the pilot valve or perform switching reliably by manual operation.

Caution

■Fittings When replacing the supply port sheath block, make sure that the packing has not fallen out, remove the deposits in the vicinity, then securely tighten it at the specified tightening torque.

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site(https: //www.ckd.co.jp/kiki/en/) → 'model No.' →Instruction Manual

MEMO

Vacuum Components
Vacuum Pump System
VSJP/ VSJPM
VSNP/ VSNPM
VSXP/ VSXPM
VSQP
VSZPM
Ending

How to Create VSJPM Mixed Manifold Specification Sheet

●Mix manifold model No.(example)

VSJPM - ❶Z ❷CX ❸8 ❹8 ❺8 - ❻3 - ❼5 ❽B - ❾Z

●Mix manifold specifications sheet (example)

Vacuum Switching Unit Model No. ❶❷❾	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Qty
VSJPM - B 4 - W	○	○	○								3
VSJPM - B 6 - A				○							1
VSJPM - B 8 - W					○						1
VSJPM -											
VSJPM -											

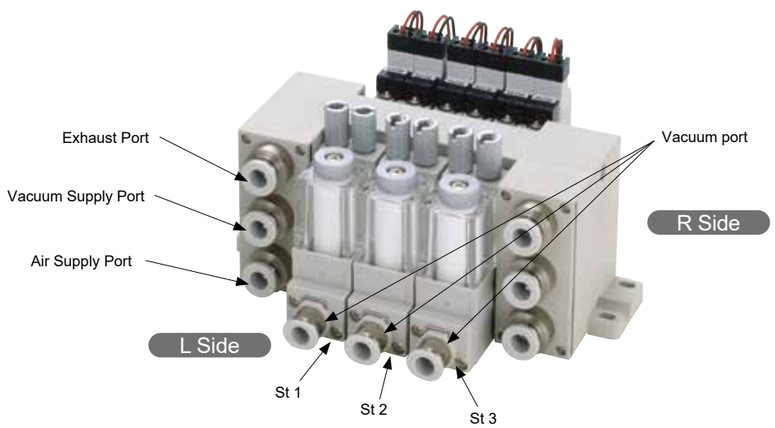
[For Fitting Mix Specification with Output Port Size Only]

●Mix manifold model No.(example)

VSJPM - ❶B ❷CX ❸6 ❹8 ❺8 - ❻3 - ❼5 ❽B - ❾W

●Mix manifold specifications sheet (example)

Vacuum Switching Unit Model No. ❶❷❾	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Qty
VSJPM - B 4 - W	○		○		○						3
VSJPM - B 6 - W		○									1
VSJPM - B 8 - W				○							1
VSJPM -											
VSJPM -											



*With the vacuum port facing forward, the stations are numbered St. 1, St. 2... St. 10, starting from the L (left) side.

[Notes for Filling Out]
- For piping position, place the vacuum port at the front and install sequentially from the left.
- In the Required Quantity column at the right end of the table, enter the total quantity of the specified product model No.s.

VSJPM Mixed Manifold Specification Sheet

Contact Person ____ Quantity Set ____ Delivery (Month/Day) ____

Voucher No. ____ Order Received No. ____

Date of Issue ____
Company ____
Attn: ____
Order No. ____

●Mix manifold model No.

VSJPM - ❶ ❷ ❸ ❹ ❺ - ❻ - ❼ ❽ - ❾

❶ Valve-type

Code	Content
A	Normally Open Type
B	Normally Closed Type
D	Self-holding Type
Z	For mixed specifications (Provide details in the specification sheet)

❷ Vacuum Port (V)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
8	ø8 Push-in fitting
CX	For fitting mix(Provide details in the specification sheet)

❸ Air Supply Port (PS)

Code	Content
6	ø6 Push-in fitting
8	ø8 Push-in fitting
10	ø10 Push-in fitting

❹ Exhaust Port (EX)

Code	Content
6	ø6 Push-in fitting centralized exhaust
8	ø8 Push-in fitting centralized exhaust
10	ø10 Push-in fitting centralized exhaust

❺ Vacuum Supply Port (PV)

Code	Content
6	ø6 Push-in fitting
8	ø8 Push-in fitting
10	ø10 Push-in fitting

❻ Solenoid Valve Voltage

Code	Content
1	100 VAC
3	24 VDC

❼ Number of Manifold Stations

Code	Content
2 to 10	2 to 10 Stations

❽ Centralized Piping Outlet Direction

Code	Content
A	Vacuum Port Side
B	Supply Port Side

❾ Vacuum Pressure Switch Specifications

Code	Content
Blank	Without Vacuum Pressure Switch
W	NPN Output 2 points with Digital Display
A	NPN Output 1 point + Analog Output with Digital Display
Z	For mixed specifications (Provide details in the specification sheet)

●Mix manifold specifications sheet

Vacuum Switching Unit Model No. ❶❷❾	Arrangement Position 1	2	3	4	5	6	7	8	9	10	Quantity
VSJPM -											
VSJPM -											
VSJPM -											
VSJPM -											
VSJPM -											