

Vacuum Ejector Units with lightweight, compact designs that enable high-cycle vacuum systems.

# VSX Series

● Nozzle diameter:  $\phi 0.5$ ,  $\phi 0.7$ ,  $\phi 1.0$



## Specifications

Item	VSX
Operating Fluid	Air
Working pressure range MPa	0.3 to 0.7
Ambient temperature °C	5 to 50

## Ejector Characteristics

Model No.	Nozzle Diameter (mm)	Rated Supply Pressure (MPa)	Ultimate Vacuum Pressure (-kPa)	Suction Flow Rate (L/min (ANR))	Air Consumption (L/min (ANR))	
VSX-H05... Atmospheric Release Centralized Exhaust	0.5	0.5	90.4	7	11.5	
			66.5	12		
VSX-L05... Atmospheric Release Centralized Exhaust		0.35	0.5	90.4	3	8
				66.5	22	
VSX-E05... Atmospheric Release Centralized Exhaust		0.7	0.5	93.1	13	23
				66.5	(23) 24	
VSX-H07... Atmospheric Release Centralized Exhaust	0.35		0.5	90.4	10.5	17
				66.5	22	
VSX-L07...S Atmospheric Release Centralized Exhaust	1.0		0.5	93.1	24	46
				66.5	20	
VSX-L07...J Centralized Exhaust		0.35	0.5	90.4	26	34
				66.5	20	
VSX-E07... Atmospheric Release Centralized Exhaust		0.35	0.5	90.4	19	34
				66.5	20	
VSX-H10...S Atmospheric Release Centralized Exhaust	0.35	0.5	90.4	19	34	
			66.5	20		
VSX-H10...J Centralized Exhaust	0.35	0.5	90.4	19	34	
			66.5	20		
VSX-L10...S Atmospheric Release Centralized Exhaust	0.35	0.5	90.4	19	34	
			66.5	20		
VSX-E10...S Atmospheric Release Centralized Exhaust	0.35	0.5	90.4	19	34	
			66.5	20		
VSX-E10...J Centralized Exhaust	0.35	0.5	90.4	19	34	
			66.5	20		

Note: Values in ( ) are for vacuum port of  $\phi 4$  mm push-in fitting.

## Solenoid Valve Specifications

● Pilot Valve

Item	Vacuum Generation Valve	Vacuum Breaking Valve
Actuation Method	Direct operation	
Valve Structure	Elastomer seal, poppet valve	
Rated voltage	24 VDC	24 VDC
Allowable voltage fluctuation range	24 VDC $\pm 10\%$	24 VDC $\pm 10\%$
Surge Protection Circuit	Varistor	Varistor
Power Consumption	1.2 W (with LED)	1.2 W (with LED)
Manual Operation	Push type non-locking type	
Operation Indicator	At coil excitation operation: Red LED lights	
	Connector (cable length: 500mm)	
Wiring Method	Red: 24 VDC	Red: 24 VDC
	Black: COM	Black: COM

● Main valve

Item	Vacuum Generation Valve
Actuation Method	Pneumatically actuated by pilot valve
Valve Structure	Elastomer seal, poppet valve
Proof pressure	1.05 MPa
Valve Type	Normally Closed
Lubrication	Not required
Effective Area	Air supply port size $\phi 4$ : 3.5 mm <sup>2</sup>
	Air supply port size $\phi 6$ : 4.5 mm <sup>2</sup>

## Vacuum Pressure Switch Specifications

Item	With Digital Display Type		Without Display Type
	With 2-point Switch Output (-DW)	With Analog Output (-DA)	Analog Output Only (-AO)
Shipment default	-50kPa(SW1), -10kPa(SW2)	-50 kPa	-
Current Consumption	40 mA or less		15 mA or less
Pressure detection method	Diffused Semiconductor Pressure Switch		
Operating Pressure Range	-100 to 0 kPa		
Pressure setting range	-99 to 0 kPa		-
Proof pressure	0.2 MPa		
Storage temperature range	-20 to 80°C (atmospheric pressure, humidity 60% RH or less)		
Operating temperature range	0 to 50°C (no freezing)		
Operating Humidity Range	35 to 85% RH (no condensation)		
Power Supply Voltage	12 to 24 VDC $\pm 10\%$ ripple (P-P) 10% or less		
Protection Structure	Equivalent to IEC Standard IP40		
Pressure setting points	2	1	-
Operation precision	$\pm 3\%$ F.S. max. (at Ta = 25°C)		
Differential	Fixed ( $\leq 2\%$ F.S.)	Variable (Approx. 0 to 15% F.S.)	-
Switch Output	NPN open collector output 30V 80mA or less Residual Voltage $\leq 0.8$ V		
Analog Output	Output Voltage	-	1 to 5V
	Zero point voltage	-	1 $\pm$ 0.1V
	Span voltage	-	4 $\pm$ 0.1V
	Output current	-	1 mA or less (load resistance 5 k $\Omega$ and over)
	LIN/HYS	-	$\pm 0.5\%$ F.S. max.
Display	0 to -99 kPa (2-digit red LED display)		-
Display Update Rate	Approx. 4 times/1 second		-
Display Accuracy	$\pm 3\%$ F.S. $\pm 2$ 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% F.S.)	

## Vacuum Breaking Function Specifications

Valve Type	Break air flow rate
Normally Closed	0 to 7.5 L/min(ANR)
Self-holding Type	0.2 to 2 L/min(ANR)

\*1: Value at 0.5 MPa supply pressure.

\*2: For self-holding type, please note that outside the flow rate setting range above, the valve response time specification may not be met.

\*3: Break air flow rate varies depending on the diameter and length of the vacuum side piping (piping resistance, etc.).

## Vacuum Filter Specifications

Item	Vacuum Filter
Element Material	Polyvinyl formal
Filtration rating	10 $\mu$ m
Filter surface area	502 mm <sup>2</sup>

For details,



CKD components Products website (<https://www.ckd.co.jp/kiki/en/>) → Refer to "Model No."

P4 Series

Compatibility table by variation

	VSX	VSXM
Connection Port Size	ø4, ø6	ø4, ø6, ø8, ø10
P4	●	●

●:Applicable Models ○: Semi-Applicable models  
▲:Please inquire □:Not applicable

\*1: Applicable only for common exhaust.

Model No. Notation Method (Single Unit Type)

●10.5 mm width integrated vacuum ejector unit discrete

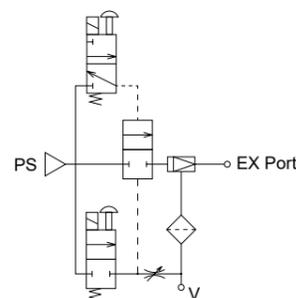
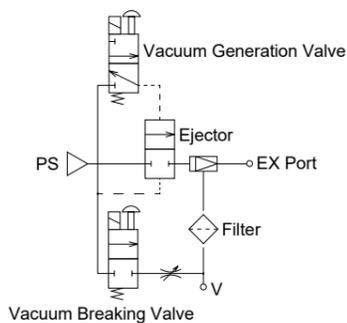
**VSX - H 07 D - 6 6 J - 3 - DW - D - P4**

Code	Content
<b>A Vacuum characteristics *1</b>	
H	High Vacuum/Medium Flow Type
L	Medium Vacuum/High Flow Type
E	High Vacuum/Low Flow Type
<b>B Nozzle diameter *1</b>	
05	ø0.5
07	ø0.7
10	ø1.0
<b>C Valve Type</b>	
B	Normally Closed Type
D	Self-holding Type
<b>D Vacuum Port (V)</b>	
4	ø4 Push-in fitting
6	ø6 Push-in fitting
<b>E Air Supply Port (PS)</b>	
4	ø4 Push-in fitting
6	ø6 Push-in fitting
<b>F Exhaust Port (EX)</b>	
J	ø6 Push-in fitting centralized exhaust
<b>G Solenoid Valve Voltage</b>	
3	24 VDC
<b>H Vacuum Pressure Switch Specifications</b>	
Blank	Without Vacuum Pressure Switch
DW	NPN Output 2 points with Digital Display
DA	NPN Output 1 point + Analog Output with Digital Display
AO	Analog Output
<b>I Mounting Method</b>	
D	DIN Rail Mounting Type
Blank	Direct Mount Type

Circuit Diagram

● Normally Closed type

● Self-hold type



Model No. Notation Method (Manifold Type)

●10.5 mm width integrated vacuum ejector unit manifold

**VSXM - H 07 D - 6 10 10 - 3 - 10 - DW - P4**

●10.5 mm width integrated vacuum ejector unit manifold single unit

**VSXM - H 07 D - 6 3 - DW - P4**

●10.5 mm width integrated vacuum ejector unit manifold only

**VSXM 10 10 10 - P4**

Ⓕ Exhaust Port (EX)

Ⓐ Vacuum Characteristics

Ⓑ Nozzle Diameter

Ⓒ Valve Type

Ⓓ Vacuum Port (V)

Ⓔ Air Supply Port (PS)

Code	Content	Type		
<b>A Vacuum Characteristics</b>				
H	High Vacuum/Medium Flow Type	●	●	
L	Medium Vacuum/High Flow Type	●	●	
E	High Vacuum/Low Flow Type	●	●	
<b>B Nozzle Diameter</b>				
05	ø0.5	●	●	
07	ø0.7	●	●	
10	ø1.0	●	●	
<b>C Valve Type</b>				
B	Normally Closed Type	●	●	
D	Self-holding Type	●	●	
<b>D Vacuum Port (V)</b>				
4	ø4 Push-in fitting	●	●	
6	ø6 Push-in fitting	●	●	
<b>E Air Supply Port (PS)</b>				
4	ø4 Push-in fitting	●	●	
6	ø6 Push-in fitting	●	●	
8	ø8 Push-in fitting	●	●	
10	ø10 Push-in fitting	●	●	
<b>F Exhaust port (EX) *1</b>				
6	ø6 Push-in fitting centralized exhaust	●	●	
8	ø8 Push-in fitting centralized exhaust	●	●	
10	ø10 Push-in fitting centralized exhaust	●	●	
<b>G Solenoid Valve Voltage</b>				
3	24 VDC	●	●	
<b>H Manifold station No. *2</b>				
2	2 stations	●	●	
to	to			
10	10 stations	●	●	
<b>I Vacuum Pressure Switch Specifications</b>				
Blank	Without Vacuum Pressure Switch	●	●	
DW	NPN Output 2 points with Digital Display	●	●	
DA	NPN Output 1 point + Analog Output with Digital Display	●	●	
AO	Analog Output	●	●	

In manifold types, exhaust air may flow around to non-operating ejectors and be output from the vacuum port. If exhaust air flow-around affects usage, please consult us.

Notes for model No. Selection

\*1: When common exhaust (6, 8, 10) is selected for Ⓕ, depending on usage conditions, exhaust air may be disrupted due to insufficient exhaust capacity. Contact CKD for details.

\*2: The number of stations that can operate simultaneously differs depending on the combination of nozzle diameter and port size. Contact CKD for details.

P4 Series

Pneumatic cylinders

Hand chuck

Related products

Cylinder switch

Vacuum Equipment

Pneumatic valves

Clean air components

Speed Controller

Fitting

Auxiliary valve

Silencer

Tube

Pneumatic auxiliary components

Manifold

Manifold Single Unit

Manifold Only

Gas Generators

Fluid Control Components

Electric Actuator

Motor specifications

Motorless specifications