

# Vacuum Generators / Vacuum Pressure Sensors

Union Straight / Square Union / Union

### Vacuum Generators – Union Straight

**VUHK**

For nozzle diameter, see the schematic drawing.

Part Number	Type	D <sub>1</sub>	D <sub>2</sub>	Nozzle Dia. Nominal	Nozzle Dia. (mm)	B	C <sub>1</sub>	C <sub>2</sub>	Ultimate Vacuum (-kPa)	Suction Flow Rate (L/min (ANR))	Flow Consumption (L/min (ANR))	Mass (g)
VUHK	4	4	5	0.5	49.3	11	11	90	7	11.5	18.5	
				0.7	56.1	92	12.5	23	20			
	6	6	5	51.2	11.7	11.7	90	7	11.5	17.5		
			0.7	57.7	92	12.5	23	18.5				

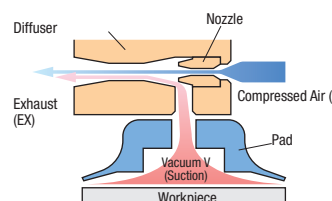
**Part Number Example**

Part Number	D <sub>1</sub>	D <sub>2</sub>	Nozzle Dia. Nominal
VUHK4	4	4	5
VUB6	6	6	7

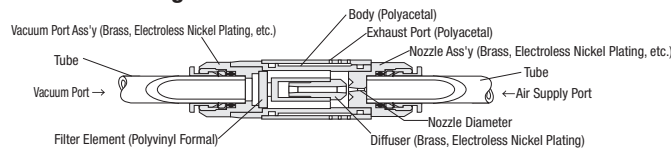
Larger nozzle diameter provides more suction flow and shortens time required to vacuum inner volume from the generator to work. In this case, however, air consumption is larger.

### Principle of Vacuum Generation

Compressed air introduced draws secondary air through its viscosity, generating vacuum function force.



### Structure Diagram



### Cautions

- Dusts on work material may cause damage to the vacuum generator.
- Use in combination with the vacuum filter on the next page.

### Specification of Sensor Head

Applicable Fluid	Compressed Air
Pressure Detection Method	Diffusion Semiconductor Pressure Switch
Power Supply	DC10.8-30V (Ripple Included)
Power Consumption	20 mA or less (at DC24V, No Load)
Operating Press. Range	-100-0 kPa
Max. Pressure	200 kPa
Storage Temp. Range	-20-70°C (Atmospheric Pressure, Humidity 60% or less)
Operating Temp. Range	0-60°C (Not to be frozen)
Operating Humidity Range	35-85% (Not to be frozen)
Protection Structure	IEC Standards (conforming to IP40)
Switch Output	No. of Pressured Positions: 1
Operation Indicator	NPN Open Connector Output 30V80mA or less Residual Voltage 0.8V or less Residual Voltage 0.8V or Less
Operating Difference	N.O. (Red LED On at or above set pressure)
Operation Accuracy	Fixed (2%F.S. or less)
Response	±3% F.S. Max. (at Ta = 25°)
Set Pressure Range	Approx. 1 m. sec
	-100-0 kPa

**Part Number Example**

Part Number	Part Number
VUSS4	VUSS4

# Vacuum Filters

Elements for Replacement

### Vacuum Filters (Elements for Replacement)

**VFLT**

**VFLTE Element for Replacement**

Material: Body : Polycarbonate  
Element : Polyvinyl Formal

Part Number	Type	D	B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>	B <sub>4</sub>	L <sub>1</sub>	L <sub>2</sub>	P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>	C	F <sub>1</sub>	F <sub>2</sub>	Filtration Area (cm <sup>2</sup> )	Mass (g)
VFLT	4	58	33	18	24	11.9	11.9	18.2	20	17.5	14.9	10	20	7.5	18	
	6	60	33	18	24	13	13	18.2	20	17.5	16	10	20	7.5	19	

Part Number	(D)	(D)	(L)
VFLTE	12	8	20

Applicable to both VFLT4 and VFLT6.

### Vacuum Filters (Elements for Replacement) – Small

**VFS**

**VFSE Element for Replacement**

Material: Body : Polycarbonate  
Element : Polyvinyl Formal

Part Number	Type	D	B	C	L <sub>1</sub>	(L <sub>2</sub> )	L <sub>3</sub>	L <sub>4</sub>	d	X	Element Length	Filtration Area (cm <sup>2</sup> )	Mass (g)
VFS	4	48.5	11	10.8	12.7	8.2	4	10	9.8	9.8	15	2.8	5.1
	6	53.4	11.6	13.2	15.2	10.6	4.5	10.5	11.8	11.8	15	2.8	6

Part Number	(D)	(D)	(L)
VFSE	6	4	15

**Part Number Example**

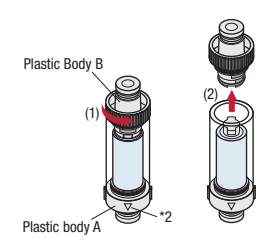
Part Number	Part Number
VFS4	VFS4

### Application Example

### Element Replacements

- How to Remove**
- Turn plastic body B 45° counterclockwise.\*
  - Pull out plastic body B.

\*Do not turn the plastic body B beyond 45°. It may damage the plastic body.



\*2. Be sure that the vacuum generator is installed on Δ the marked side. If installed on the opposite side, the element inside will become fouled, making it impossible to know the proper time for maintenance.

### Specifications

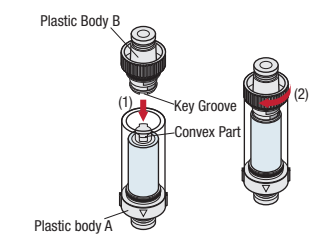
Applicable Fluid	Air
Operating Temperature Range	0-60°C
Operating Pressure Range	-100-0kPa
Filtration Accuracy	5 μm

### How to Lock

- Press-fit plastic body B completely to plastic body A. Be sure that the lug of plastic body A aligns with the key slot in plastic body B.
- Turn plastic body B 45° clockwise\*1 to lock.

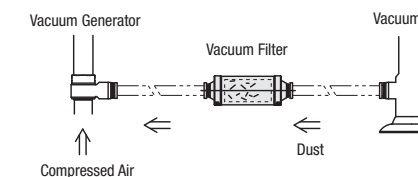
\*1. Do not turn the plastic body B beyond 45°. It may damage the plastic body.

\*2. When locking, be sure that the lug of plastic body A comes to the center of the hole in plastic body B.



### Piping Example

Piping between Vacuum Generator and Vacuum Pad removes dusts entered from Pad and prevent Generator from failures.



### Vacuum Pressure Sensor – Union

**VUSS**

For 2-M3 Mounting Hole of Flash Screw

Part Number	Type	D	C	A	B	Mass (g)
VUSS	4	11	29.2	14.6	48	
	6	11.6	30	15	48	

**Electrical Circuit**