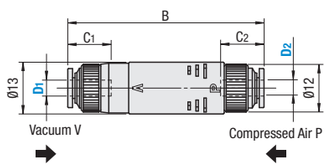
Vacuum Generators / Vacuum Pressure Sensors

Union Straight / Square Union / Union

Vacuum Generators – Union Straight

VUHK



For nozzle diameter, see the schematic drawing.

Part Number Type	D_1	D_2	Nozzle Dia. Nominal	Nozzle Dia. (mm)	B	C_1	C_2	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
			7	0.7	56.1			92	12.5	23	20
	6	6	5	0.5	51.2	11.7	11.7	90	7	11.5	17.5
			7	0.7	57.7			92	12.5	23	18.5

Part Number Example

Part Number - D_2 - Nozzle Dia. Nominal

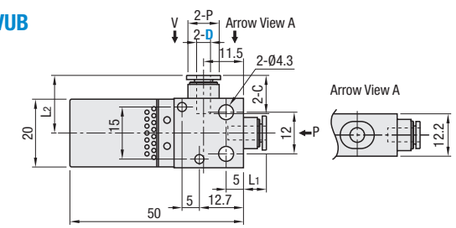
VUHK4 - 4 - 7

VUB6

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.

Vacuum Generators – Square Union

VUB



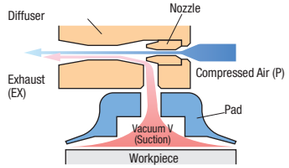
Part Number Type	D	Nozzle Dia. (mm)	P	C	L_1	L_2	Operating Pressure (Mpa)	Ultimate Vacuum (-kPa)	Suction Flow Rate (ℓ/min (ANR))	Flow Consumption (ℓ/min (ANR))	Mass (g)
VUB	4	0.5	9	11	6.6	16.6	0.5	90	7	11.5	18
	6	0.7	10.5	11.6	7	17	0.5	93	13	23	18.5

Specification

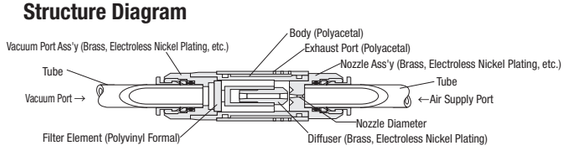
Applicable Fluid	Air
Operating Temperature Range	0–60°C
Operating Pressure Range	0.15–0.7 MPa
Rated Supply Pressure	0.5 MPa

Principle of Vacuum Generation

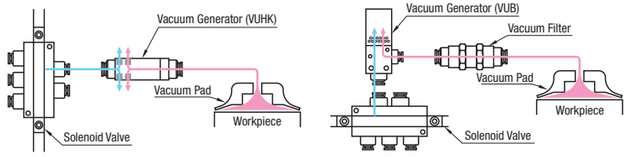
Compressed air introduced draws secondary air through its viscosity, generating vacuum function force.



Structure Diagram



Application Example



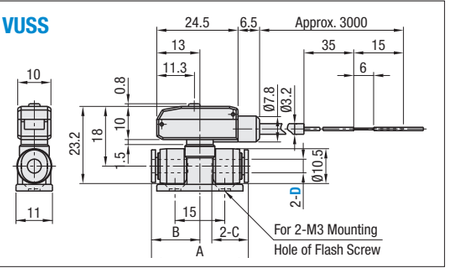
Cautions

– Dusts on work material may cause damage to the vacuum generator.

– Use in combination with the vacuum filter on the next page.

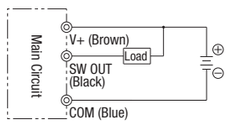
Vacuum Pressure Sensor – Union

VUSS



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



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
	Switch Output	NPN Open Connector Output 30V80mA or less Residual Voltage 0.8V or less Residual Voltage 0.8V or Less
	Operation Indicator	N.O. (Red LED On at or above set pressure)
	Operating Difference	Fixed (2%F.S. or less)
	Operation Accuracy	±3% F.S. Max. (at Ta = 25°)
	Response	Approx. 1 m. sec
	Set Pressure Range	-100–0 kPa

Part Number Example

Part Number

VUSS4

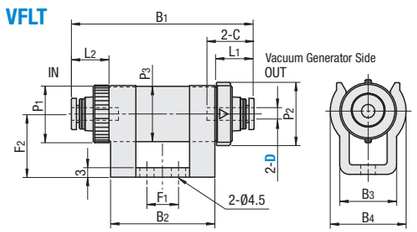
Vacuum Filters

Elements for Replacement

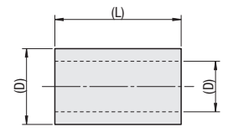
Vacuum Filters (Elements for Replacement)

RoHS10

VFLT



VFLTE Element for Replacement



Material: Body : Polycarbonate
Element : Polyvinyl Formal

Part Number Type	D	B_1	B_2	B_3	B_4	L_1	L_2	P_1	P_2	P_3	C	F_1	F_2	Filtration Area (cm^2)	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				13	13				16				19

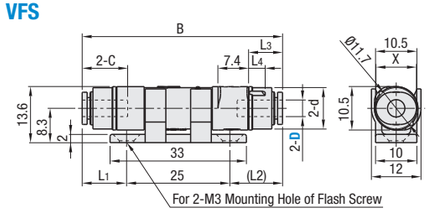
Part Number	(D)	(D)	(L)
VFLTE	12	8	20

Applicable to both VFLT4 and VFLT6.

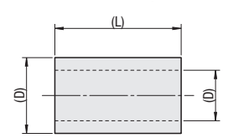
Vacuum Filters (Elements for Replacement) – Small

RoHS10

VFS



VFSE Element for Replacement



Material: Body : Polycarbonate
Element : Polyvinyl Formal

Part Number Type	D	B	C	L_1	(L_2)	L_3	L_4	d	X	Element Length	Filtration Area (cm^2)	Mass (g)
VFS	4	48.5	11	10.8	12.7	8.2	4	10	9.8	15	2.8	5.1
	6	53.4	11.6	13.2	15.2	10.6	4.5	10.5	11.8			6

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

Part Number Example

Part Number

VFS4

Specifications

Applicable Fluid	Air
Operating Temperature Range	0–60°C
Operating Pressure Range	-100–0kPa
Filtration Accuracy	10 µm

Application Example

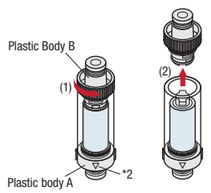
Element Replacements

How to Remove

(1) Turn plastic body B 45° counterclockwise.*

(2) 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.

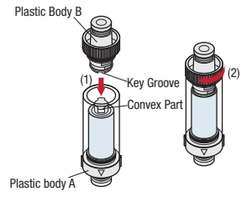
How to Lock

(1) 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.

(2) 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.

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.