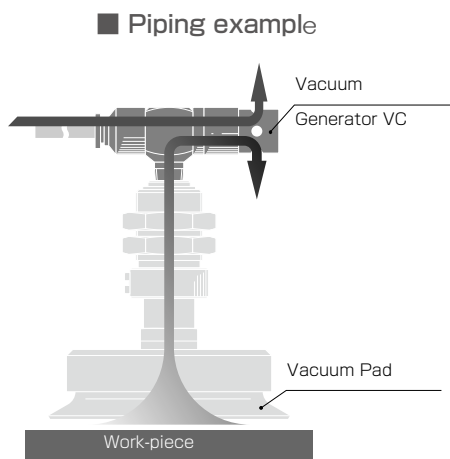


Vacuum Generators

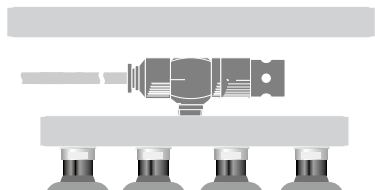
Venturi Vacuum Generator VM, VC



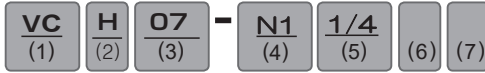
- **VC, VM Type (Vacuum pad Direct Mounting)**
- **Nozzle bore of $\varnothing 0.3$ and $\varnothing 0.4$ mm are recently added**
- **Nozzle bore : $\varnothing 0.3$ to $\varnothing 2.0$ mm are now available in the series**



- **Light-weight and compact design (Main body of large VC models with taper thread are made of aluminum)**
- **Low profile VC, VM Type is ideal for applications with space and weight restriction**



Model Designation (Example)



(1) Type - Pad directly mounting

(2) **H**: High-vacuum type (Rated air supply pressure: 72.5psi (0.5MPa))

L: Large-flow type (Rated air supply pressure: 72.5psi (0.5MPa))

E: High-vacuum at Low air pressure supply type (Rated air supply pressure: 50.8psi (0.35MPa))

(3) Nozzle size

• Air supply pressure is 72.5psi (0.5MPa) for H and L types or 50.8psi (0.35MPa) for E type.

• The flow rate in SCFM is a reference value converted by multiplying $l/min(ANR)$ by 0.035.

Code	Bore (mm)	H type		L type		E type	
		Vacuum level and suction flow		Vacuum level and suction flow		Vacuum level and suction flow	
03	ø0.3	-26.8in. Hg (-90kPa)		-19.7in. Hg (-66kPa)		-	
		0.07SCFM (2l/min(ANR))		0.11SCFM (3l/min(ANR))			
04	ø0.4	-26.8in. Hg (-90kPa)		-19.7in. Hg (-66kPa)		-	
		0.14SCFM (4l/min(ANR))		0.25SCFM (7l/min(ANR))			
05	ø0.5	-26.8in. Hg (-90kPa)		-19.7in. Hg (-66kPa)		-	
		0.25SCFM (7l/min(ANR))		0.42SCFM (12l/min(ANR))			
07	ø0.7	-27.6in. Hg (-93kPa)		-19.7in. Hg (-66kPa)		-27.2in. Hg (-92kPa)	
		0.46SCFM (13l/min(ANR))		0.92SCFM (26l/min(ANR))		0.37SCFM (10.5l/min(ANR))	
10	ø1.0	-27.6in. Hg (-93kPa)		-19.7in. Hg (-66kPa)		-27.2in. Hg (-92kPa)	
		0.99SCFM (28l/min(ANR))		1.48SCFM (42l/min(ANR))		0.74SCFM (21l/min(ANR))	
12	ø1.2	-27.6in. Hg (-93kPa)		-		-27.2in. Hg (-92kPa)	
		1.34SCFM (38l/min(ANR))				0.95SCFM (27l/min(ANR))	
15	ø1.5	-27.6in. Hg (-93kPa)		-19.7in. Hg (-66kPa)		-27.2in. Hg (-92kPa)	
		2.22SCFM (63l/min(ANR))		3.35SCFM (95l/min(ANR))		1.48SCFM (42l/min(ANR))	
20	ø2.0	-27.6in. Hg (-93kPa)		-19.7in. Hg (-66kPa)		-27.2in. Hg (-92kPa)	
		3.85SCFM (110l/min(ANR))		6.30SCFM (180l/min(ANR))		2.94SCFM (84l/min(ANR))	

*1. The suction flow in the table is representing value and varies by vacuum port size.

(4) Vacuum port size (V)

■ Thread size

Code	Unified thread	Metric thread		Taper pipe thread					
	U10	M5	M6	N1	N2	N3	O1	O2	O3
Size	10-32UNF	M5×0.8	M6×1	1/8NPT	1/4NPT	3/8NPT	R1/8	R1/4	R3/8

❖ R thread is same as BSPT

(5) Air supply port (P)

■ Tube dia.

Code	Inch tube size (Inch)				Metric tube size (mm)				
	5/32	1/4C	5/16C	3/8C	3	4	6C	8C	10C
		1/4L	5/16L	3/8L					6L
Dia.	ø5/32	ø1/4	ø5/16	ø3/8	ø3	ø4	ø6	ø8	ø10

* C stands for Straight connection and L stands for Elbow connection.

(6) Exhaust port

J: Tube exhaust type

No code: Silencer vent

(7) Material option (only for tube exhaust type)

No code: Standard spec.

-S3: No Cu alloy spec. & HNBR seal for air passage.

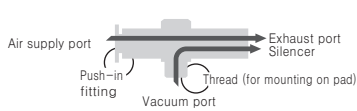
Vacuum Generator Series

Vacuum Generator VM,VC

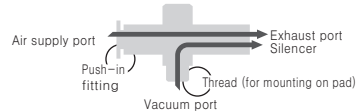
Specification

Fluid medium	Air
Operating pressure range	21.8 ~ 102psi (0.15 ~ 0.7MPa)
Rated pressure supply	H, L type : 72.5psi (0.5MPa), E type : 51psi (0.35MPa)
Operating temp. range	32 ~ 140°F (0 ~ 60°C) (No freezing)

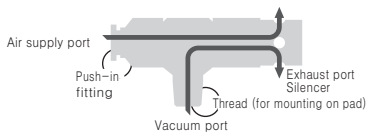
Pad Direct Mouting type (Nozzle dia. : \varnothing 0.3mm, \varnothing 0.4mm, \varnothing 0.5mm, \varnothing 0.7mm, \varnothing 1.0mm, \varnothing 1.2mm, \varnothing 1.5mm, \varnothing 2.0mm)



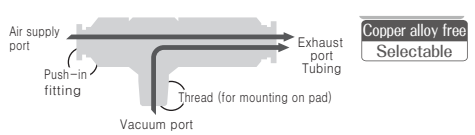
Model	Vacuum port	Air supply port		
		5/32"	3mm	4mm
VM Elbow (Silencer vent)	10-32UNF	●		
	M5x0.8		●	●
	M6x1			●



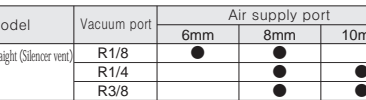
Model	Vacuum port	Air supply port		
		5/32"	3mm	4mm
VC Straight (Silencer vent)	10-32UNF	●		
	M5x0.8		●	●
	M6x1			●



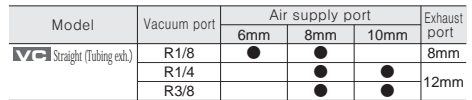
Model	Vacuum port	Air supply port		
		1/4"	5/16"	3/8"
VC Straight (Silencer vent)	1/8NPT	●	●	
	1/4NPT		●	●
	3/8NPT		●	●



Model	Vacuum port	Air supply port			Exhaust port
		1/4"	5/16"	3/8"	
VC Straight (Tubing ext.)	1/8NPT	●	●		5/16"
	1/4NPT		●	●	1/2"
	3/8NPT		●	●	

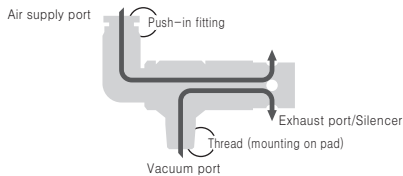


Model	Vacuum port	Air supply port		
		6mm	8mm	10mm
VC Straight (Silencer vent)	R1/8	●		
	R1/4		●	●
	R3/8		●	●

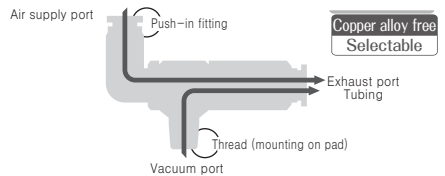


Model	Vacuum port	Air supply port			Exhaust port
		6mm	8mm	10mm	
VC Straight (Tubing ext.)	R1/8	●			8mm
	R1/4		●	●	12mm
	R3/8		●	●	

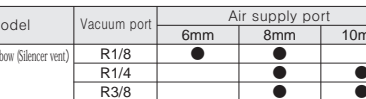
❖ R thread is same as BSPT



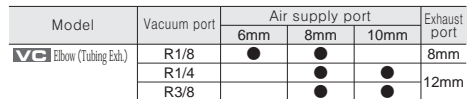
Model	Vacuum port	Air supply port		
		1/4"	5/16"	3/8"
VC Elbow (Silencer vent)	1/8NPT	●	●	
	1/4NPT		●	●
	3/8NPT		●	●



Model	Vacuum port	Air supply port			Exhaust port
		1/4"	5/16"	3/8"	
VC Elbow (Tubing Ext.)	1/8NPT	●	●		5/16"
	1/4NPT		●	●	1/2"
	3/8NPT		●	●	



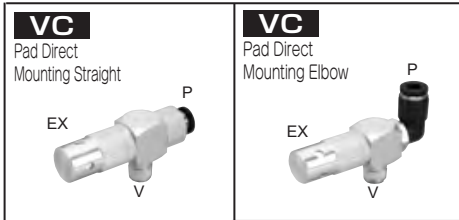
Model	Vacuum port	Air supply port		
		6mm	8mm	10mm
VC Elbow (Silencer vent)	R1/8	●		
	R1/4		●	●
	R3/8		●	●




Model	Vacuum port	Air supply port			Exhaust port
		6mm	8mm	10mm	
VC Elbow (Tubing Ext.)	R1/8	●			8mm
	R1/4		●	●	12mm
	R3/8		●	●	


❖ R thread is same as BSPT



Pad Direct Mounting Type



Model VC2(3)-V-PC		Model VC2(3)-V-PL	
VCH07-N1-1/4C	VCH07-016C	VCH07-N1-1/4L	VCH07-016L
VCH07-N1-5/16C	VCH07-018C	VCH07-N1-5/16L	VCH07-018L
VCH10-N1-1/4C	VCH10-016C	VCH10-N1-1/4L	VCH10-016L
VCH10-N1-5/16C	VCH10-018C	VCH10-N1-5/16L	VCH10-018L
VCH12-N1-1/4C	VCH12-016C	VCH12-N1-1/4L	VCH12-016L
VCH12-N1-5/16C	VCH12-018C	VCH12-N1-5/16L	VCH12-018L
VCH15-N2-5/16C	VCH15-028C	VCH15-N2-5/16L	VCH15-028L
VCH15-N3-5/16C	VCH15-038C	VCH15-N3-5/16L	VCH15-038L
VCH15-N2-3/8C	VCH15-0210C	VCH15-N2-3/8L	VCH15-0210L
VCH15-N3-3/8C	VCH15-0310C	VCH15-N3-3/8L	VCH15-0310L
VCH20-N2-5/16C	VCH20-028C	VCH20-N2-5/16L	VCH20-028L
VCH20-N3-5/16C	VCH20-038C	VCH20-N3-5/16L	VCH20-038L
VCH20-N2-3/8C	VCH20-0210C	VCH20-N2-3/8L	VCH20-0210L
VCH20-N3-3/8C	VCH20-0310C	VCH20-N3-3/8L	VCH20-0310L
VCL07-N1-1/4C	VCL07-016C	VCL07-N1-1/4L	VCL07-016L
VCL07-N1-5/16C	VCL07-018C	VCL07-N1-5/16L	VCL07-018L
VCL10-N1-1/4C	VCL10-016C	VCL10-N1-1/4L	VCL10-016L
VCL10-N1-5/16C	VCL10-018C	VCL10-N1-5/16L	VCL10-018L
VCL15-N2-5/16C	VCL15-028C	VCL15-N2-5/16L	VCL15-028L
VCL15-N3-5/16C	VCL15-038C	VCL15-N3-5/16L	VCL15-038L
VCL15-N2-3/8C	VCL15-0210C	VCL15-N2-3/8L	VCL15-0210L
VCL15-N3-3/8C	VCL15-0310C	VCL15-N3-3/8L	VCL15-0310L
VCL20-N2-5/16C	VCL20-028C	VCL20-N2-5/16L	VCL20-028L
VCL20-N3-5/16C	VCL20-038C	VCL20-N3-5/16L	VCL20-038L
VCL20-N2-3/8C	VCL20-0210C	VCL20-N2-3/8L	VCL20-0210L
VCL20-N3-3/8C	VCL20-0310C	VCL20-N3-3/8L	VCL20-0310L
VCE07-N1-1/4C	VCE07-016C	VCE07-N1-1/4L	VCE07-016L
VCE07-N1-5/16C	VCE07-018C	VCE07-N1-5/16L	VCE07-018L
VCE10-N1-1/4C	VCE10-016C	VCE10-N1-1/4L	VCE10-016L
VCE10-N1-5/16C	VCE10-018C	VCE10-N1-5/16L	VCE10-018L
VCE12-N1-1/4C	VCE12-016C	VCE12-N1-1/4L	VCE12-016L
VCE12-N1-5/16C	VCE12-018C	VCE12-N1-5/16L	VCE12-018L
VCE15-N2-5/16C	VCE15-028C	VCE15-N2-5/16L	VCE15-028L
VCE15-N3-5/16C	VCE15-038C	VCE15-N3-5/16L	VCE15-038L
VCE15-N2-3/8C	VCE15-0210C	VCE15-N2-3/8L	VCE15-0210L
VCE15-N3-3/8C	VCE15-0310C	VCE15-N3-3/8L	VCE15-0310L
VCE20-N2-5/16C	VCE20-028C	VCE20-N2-5/16L	VCE20-028L
VCE20-N3-5/16C	VCE20-038C	VCE20-N3-5/16L	VCE20-038L
VCE20-N2-3/8C	VCE20-0210C	VCE20-N2-3/8L	VCE20-0210L
VCE20-N3-3/8C	VCE20-0310C	VCE20-N3-3/8L	VCE20-0310L

<p>VM Pad Direct Mounting Elbow</p> 	Model	
	VM2(3)-V-P	VM2(3)-V-PU
	VMH03-M53	VMH05-U10 ⁹ /32U
	VMH03-M54	VML05-U10 ⁹ /32U
	VMH04-M53	10-32UNF thread
	VMH04-M54	
	VMH05-M54	
	VMH05-M64	
	VML03-M53	
	VML03-M54	
	VML04-M53	
	VML04-M54	
	VML05-M54	
	VML05-M64	

<p>VC Pad Direct Mounting Straight</p> 	Model	
	VC2(3)-V-P	VC2(3)-V-PU
	VCH03-M53	VCH05-U10 ⁹ /32U
	VCH03-M54	VCL05-U10 ⁹ /32U
	VCH04-M53	10-32UNF thread
	VCH04-M54	
	VCH05-M54	
	VCH05-M64	
	VCL03-M53	
	VCL03-M54	
	VCL04-M53	
	VCL04-M54	
	VCL05-M54	
	VCL05-M64	

VC Pad Direct Mounting Straight	Standard Model	Standard Model	"-S3" spec. Model	VC Pad Direct Mounting Elbow	Standard Model	Standard Model	"-S3" spec. Model
	VC2②③-V-PCJ	VC2②③-V-PCJ	VC2②③-V-PCJ-S3		VC2②③-V-PLJ	VC2②③-V-PLJ	VC2②③-V-PLJ-S3
	VCH07-N1-1/4CJ	VCH07-016CJ	VCH07-016CJ-S3		VCH07-N1-1/4LJ	VCH07-016LJ	VCH07-016LJ-S3
	VCH07-N1-5/16CJ	VCH07-018CJ	VCH07-018CJ-S3		VCH07-N1-5/16LJ	VCH07-018LJ	VCH07-018LJ-S3
	VCH10-N1-1/4CJ	VCH10-016CJ	VCH10-016CJ-S3		VCH10-N1-1/4LJ	VCH10-016LJ	VCH10-016LJ-S3
	VCH10-N1-5/16CJ	VCH10-018CJ	VCH10-018CJ-S3		VCH10-N1-5/16LJ	VCH10-018LJ	VCH10-018LJ-S3
	VCH12-N1-1/4CJ	VCH12-016CJ	VCH12-016CJ-S3		VCH12-N1-1/4LJ	VCH12-016LJ	VCH12-016LJ-S3
	VCH12-N1-5/16CJ	VCH12-018CJ	VCH12-018CJ-S3		VCH12-N1-5/16LJ	VCH12-018LJ	VCH12-018LJ-S3
	VCH15-N2-5/16CJ	VCH15-028CJ	VCH15-028CJ-S3		VCH15-N2-5/16LJ	VCH15-028LJ	VCH15-028LJ-S3
	VCH15-N3-5/16CJ	VCH15-038CJ	VCH15-038CJ-S3		VCH15-N3-5/16LJ	VCH15-038LJ	VCH15-038LJ-S3
	VCH15-N2-3/8CJ	VCH15-0210CJ	VCH15-0210CJ-S3		VCH15-N2-3/8LJ	VCH15-0210LJ	VCH15-0210LJ-S3
	VCH15-N3-3/8CJ	VCH15-0310CJ	VCH15-0310CJ-S3		VCH15-N3-3/8LJ	VCH15-0310LJ	VCH15-0310LJ-S3
	VCH20-N2-5/16CJ	VCH20-028CJ	VCH20-028CJ-S3		VCH20-N2-5/16LJ	VCH20-028LJ	VCH20-028LJ-S3
	VCH20-N3-5/16CJ	VCH20-038CJ	VCH20-038CJ-S3		VCH20-N3-5/16LJ	VCH20-038LJ	VCH20-038LJ-S3
	VCH20-N2-3/8CJ	VCH20-0210CJ	VCH20-0210CJ-S3		VCH20-N2-3/8LJ	VCH20-0210LJ	VCH20-0210LJ-S3
	VCH20-N3-3/8CJ	VCH20-0310CJ	VCH20-0310CJ-S3		VCH20-N3-3/8LJ	VCH20-0310LJ	VCH20-0310LJ-S3
	VCL07-N1-1/4CJ	VCL07-016CJ	VCL07-016CJ-S3		VCL07-N1-1/4LJ	VCL07-016LJ	VCL07-016LJ-S3
	VCL07-N1-5/16CJ	VCL07-018CJ	VCL07-018CJ-S3		VCL07-N1-5/16LJ	VCL07-018LJ	VCL07-018LJ-S3
	VCL10-N1-1/4CJ	VCL10-016CJ	VCL10-016CJ-S3		VCL10-N1-1/4LJ	VCL10-016LJ	VCL10-016LJ-S3
	VCL10-N1-5/16CJ	VCL10-018CJ	VCL10-018CJ-S3		VCL10-N1-5/16LJ	VCL10-018LJ	VCL10-018LJ-S3
	VCL15-N2-5/16CJ	VCL15-028CJ	VCL15-028CJ-S3		VCL15-N2-5/16LJ	VCL15-028LJ	VCL15-028LJ-S3
	VCL15-N3-5/16CJ	VCL15-038CJ	VCL15-038CJ-S3		VCL15-N3-5/16LJ	VCL15-038LJ	VCL15-038LJ-S3
	VCL15-N2-3/8CJ	VCL15-0210CJ	VCL15-0210CJ-S3		VCL15-N2-3/8LJ	VCL15-0210LJ	VCL15-0210LJ-S3
	VCL15-N3-3/8CJ	VCL15-0310CJ	VCL15-0310CJ-S3		VCL15-N3-3/8LJ	VCL15-0310LJ	VCL15-0310LJ-S3
	VCL20-N2-5/16CJ	VCL20-028CJ	VCL20-028CJ-S3		VCL20-N2-5/16LJ	VCL20-028LJ	VCL20-028LJ-S3
	VCL20-N3-5/16CJ	VCL20-038CJ	VCL20-038CJ-S3		VCL20-N3-5/16LJ	VCL20-038LJ	VCL20-038LJ-S3
	VCL20-N2-3/8CJ	VCL20-0210CJ	VCL20-0210CJ-S3		VCL20-N2-3/8LJ	VCL20-0210LJ	VCL20-0210LJ-S3
	VCL20-N3-3/8CJ	VCL20-0310CJ	VCL20-0310CJ-S3		VCL20-N3-3/8LJ	VCL20-0310LJ	VCL20-0310LJ-S3
	VCE07-N1-1/4CJ	VCE07-016CJ	VCE07-016CJ-S3		VCE07-N1-1/4LJ	VCE07-016LJ	VCE07-016LJ-S3
	VCE07-N1-5/16CJ	VCE07-018CJ	VCE07-018CJ-S3		VCE07-N1-5/16LJ	VCE07-018LJ	VCE07-018LJ-S3
	VCE10-N1-1/4CJ	VCE10-016CJ	VCE10-016CJ-S3		VCE10-N1-1/4LJ	VCE10-016LJ	VCE10-016LJ-S3
	VCE10-N1-5/16CJ	VCE10-018CJ	VCE10-018CJ-S3		VCE10-N1-5/16LJ	VCE10-018LJ	VCE10-018LJ-S3
	VCE12-N1-1/4CJ	VCE12-016CJ	VCE12-016CJ-S3		VCE12-N1-1/4LJ	VCE12-016LJ	VCE12-016LJ-S3
	VCE12-N1-5/16CJ	VCE12-018CJ	VCE12-018CJ-S3		VCE12-N1-5/16LJ	VCE12-018LJ	VCE12-018LJ-S3
VCE15-N2-5/16CJ	VCE15-028CJ	VCE15-028CJ-S3	VCE15-N2-5/16LJ	VCE15-028LJ	VCE15-028LJ-S3		
VCE15-N3-5/16CJ	VCE15-038CJ	VCE15-038CJ-S3	VCE15-N3-5/16LJ	VCE15-038LJ	VCE15-038LJ-S3		
VCE15-N2-3/8CJ	VCE15-0210CJ	VCE15-0210CJ-S3	VCE15-N2-3/8LJ	VCE15-0210LJ	VCE15-0210LJ-S3		
VCE15-N3-3/8CJ	VCE15-0310CJ	VCE15-0310CJ-S3	VCE15-N3-3/8LJ	VCE15-0310LJ	VCE15-0310LJ-S3		
VCE20-N2-5/16CJ	VCE20-028CJ	VCE20-028CJ-S3	VCE20-N2-5/16LJ	VCE20-028LJ	VCE20-028LJ-S3		
VCE20-N3-5/16CJ	VCE20-038CJ	VCE20-038CJ-S3	VCE20-N3-5/16LJ	VCE20-038LJ	VCE20-038LJ-S3		
VCE20-N2-3/8CJ	VCE20-0210CJ	VCE20-0210CJ-S3	VCE20-N2-3/8LJ	VCE20-0210LJ	VCE20-0210LJ-S3		
VCE20-N3-3/8CJ	VCE20-0310CJ	VCE20-0310CJ-S3	VCE20-N3-3/8LJ	VCE20-0310LJ	VCE20-0310LJ-S3		

*Vacuum port → Exhaust port
 N1 → ø5/16", 01 → ø8mm
 N2, N3 → ø1/2", 02, 03 → ø12mm

*Vacuum port → Exhaust port
 N1 → ø5/16", 01 → ø8mm
 N2, N3 → ø1/2", 02, 03 → ø12mm



Cautions

- *1. The white-letter model type in is new model.
- *2. "-S3" spec.: no Cu alloy with HNBR seal
- *3. The model with low sales average may be build to order production. For details, please contact Pisco USA.



Package specification

1 pc. in a bag

Vacuum Generator Series

Vacuum Generator VM,VC

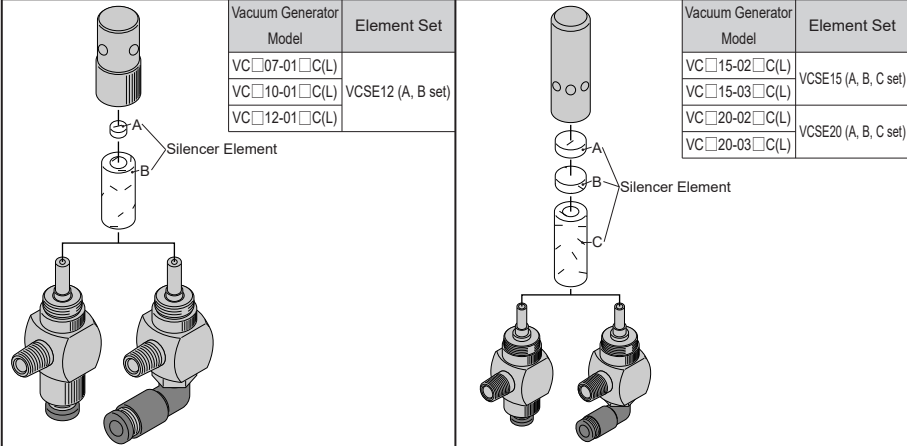
Element for Vacuum Generators

VC07, 10, 12 Type

VC15, 20 Type

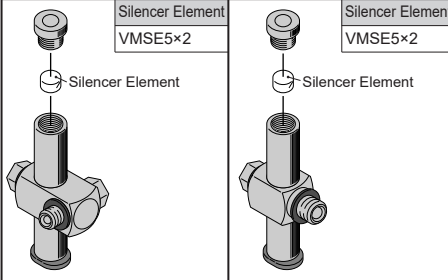
Vacuum Generator Model	Element Set
VC□07-01□C(L)	VCSE12 (A, B set)
VC□10-01□C(L)	
VC□12-01□C(L)	

Vacuum Generator Model	Element Set
VC□15-02□C(L)	VCSE15 (A, B, C set)
VC□15-03□C(L)	
VC□20-02□C(L)	
VC□20-03□C(L)	VCSE20 (A, B, C set)



VM03, 04, 05 Type VC03, 04, 05 Type

Silencer Element	Silencer Element
VMSE5×2	VMSE5×2



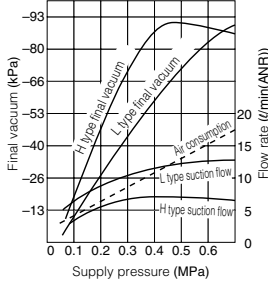

Package specification
10 pcs. in a bag

Characteristics

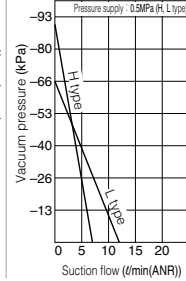
Supply pressure - Final vacuum / Suction Flow / Air Consumption

VMH05, VML05, VCH05, VCL05

Vacuum characteristics

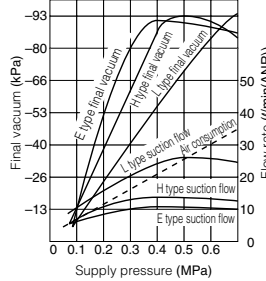


Flow characteristics

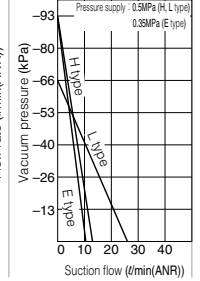


VCH07, VCL07, VCE07

Vacuum characteristics

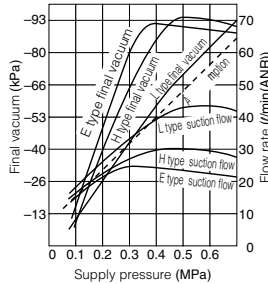


Flow characteristics

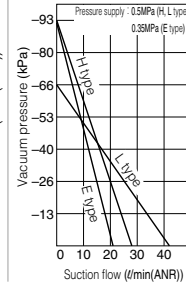


VCH10, VCL10, VCE10

Vacuum characteristics

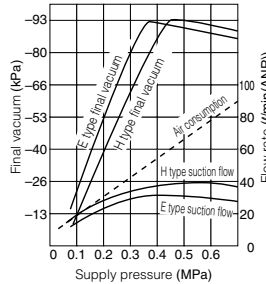


Flow characteristics

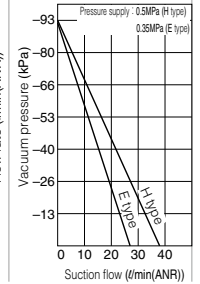


VCH12, VCE12

Vacuum characteristics

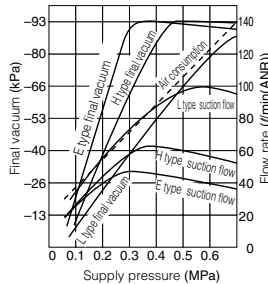


Flow characteristics

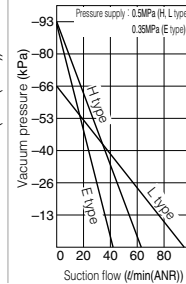


VCH15, VCL15, VCE15

Vacuum characteristics

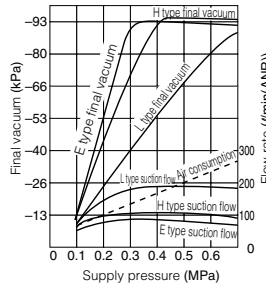


Flow characteristics

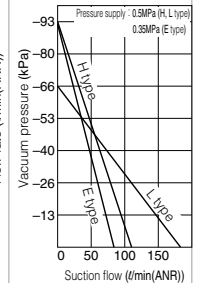


VCH20, VCL20, VCE20

Vacuum characteristics



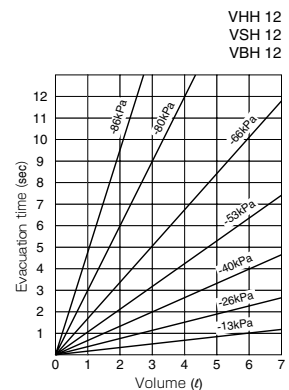
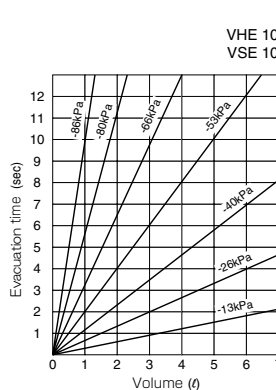
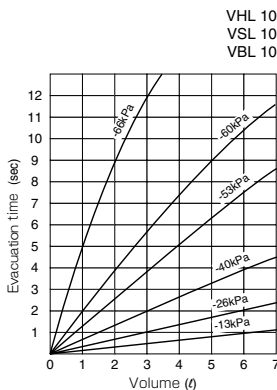
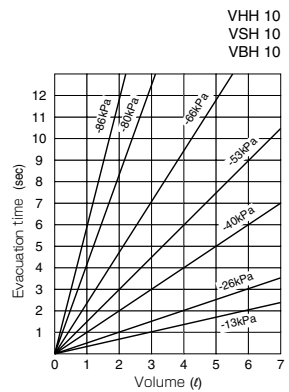
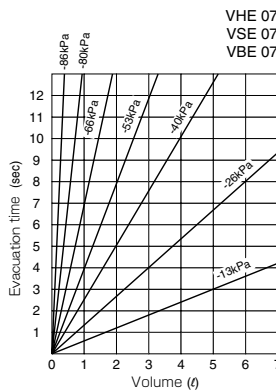
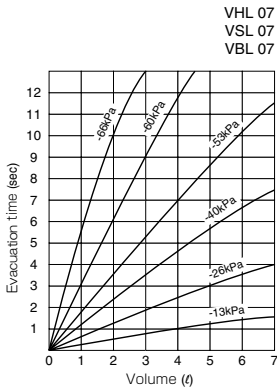
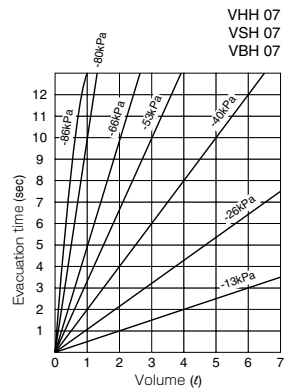
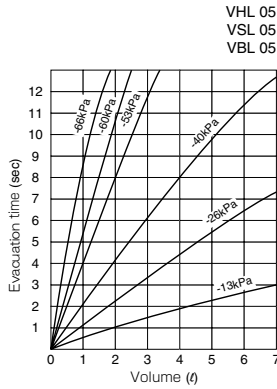
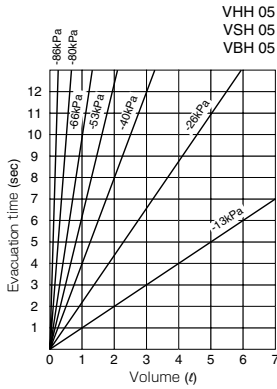
Flow characteristics



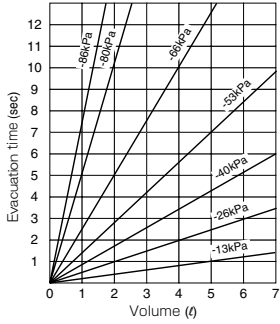
Characteristics

Evacuation time (Supply pressure H and L types: 0.5MPa, E type: 0.3 to 0.5Mpa)

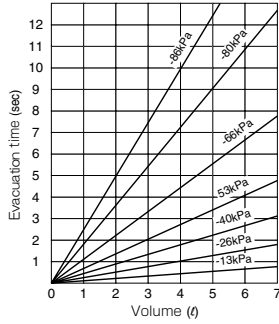
※ The following charts are for reference only since the values vary according to the piping arrangement.



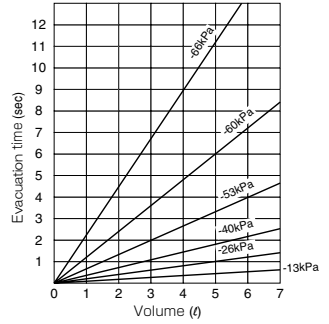
VHE 12
VSE 12
VBE 12



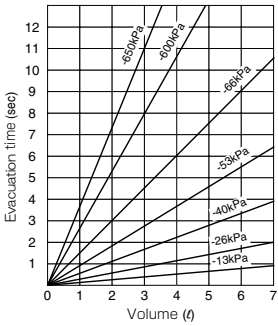
VHH 15
VSH 15



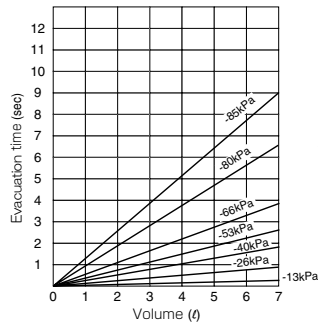
VHL 15
VSL 15



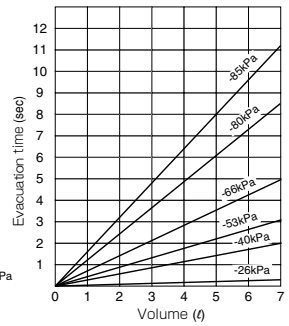
VHE 15
VSE 15



VCH 20



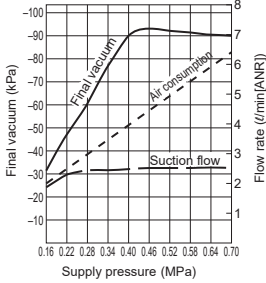
VCE 20



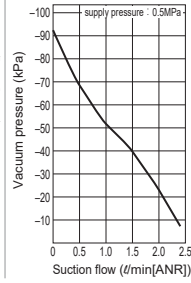
Characteristics

VCH03, VMH03

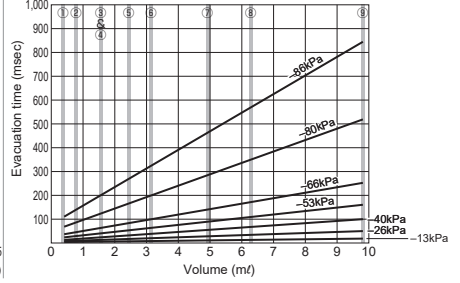
Vacuum characteristics



Flow characteristics

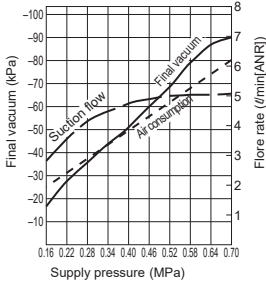


Evacuation time

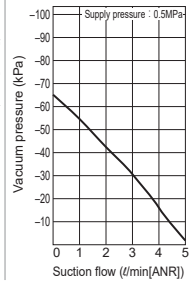


VCL03, VML03

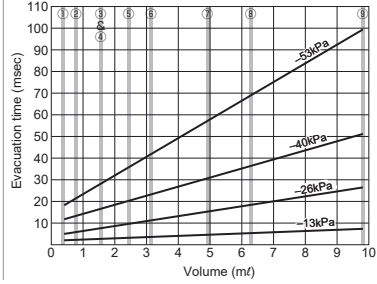
Vacuum characteristics



Flow characteristics

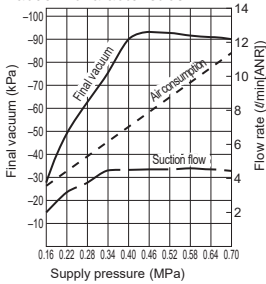


Evacuation time

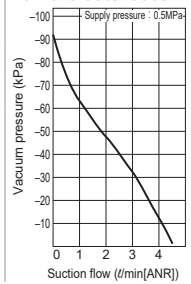


VCH04, VMH04

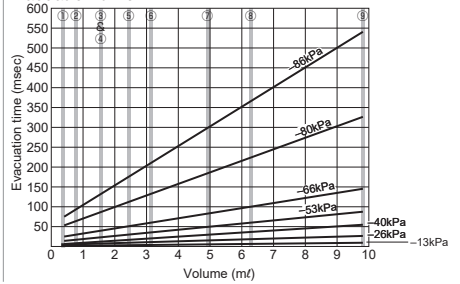
Vacuum characteristics



Flow characteristics

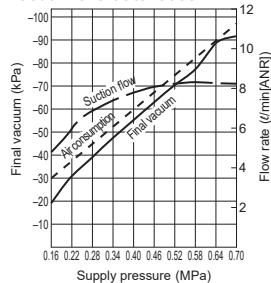


Evacuation time

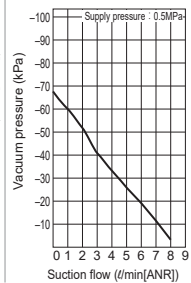


VCL04, VML04

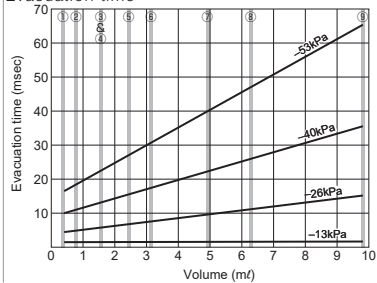
Vacuum characteristics



Flow characteristics



Evacuation time



※①~⑨ column described by ■ shows volume in piping of the following tubing size and length.

- ① UB01810 (L: 500)
- ② UB01810 (L: 1,000)
- ③ UB0320 (L: 500)
- ④ UB01810 (L: 2,000)
- ⑤ UB0425 (L: 500)
- ⑥ UB0320 (L: 1,000)
- ⑦ UB0425 (L: 1,000)
- ⑧ UB0320 (L: 2,000)
- ⑨ UB0425 (L: 2,000)

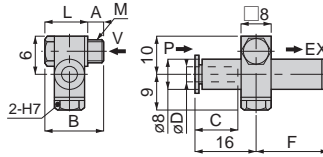
Vacuum Generator Series

Vacuum Generator VM,VC

VM Pad Direct Mounting Type Elbow (Silencer vent)

RoHS compliant

Added ▶ Nozzle dia. : $\phi 0.3, \phi 0.4\text{mm}$



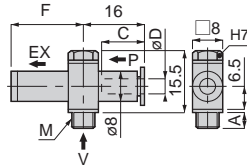
Unit : mm

Model code	Tube O.D. ϕD	M	A	B	L	C	F	Nozzle bore (mm)	Final vacuum (-kPa)	Suction flow (l/min[ANR])	Consumption (l/min[ANR])	Weight (g)	CAD file	
VMH03-M53	3	M5×0.8	3.5	14.5	11	9.4	15	0.3	90	2	4.5	16	—	
VMH03-M54	4					10.9								
VMH04-M53	3	M5×0.8	3.5	14.5	11	9.4	17	0.4		4	8	17	—	
VMH04-M54	4					10.9								
VMH05-M54	4	M5×0.8	3.5	14.5	11	10.9	19	0.5	66	7	11.5	18	VM_05-M54	
VMH05-M64		M6×1	5.5	15.5	10								VM_05-M64	
VML03-M53	3	M5×0.8	3.5	14.5	11	9.4	18.2	0.3		4	4.5	17	—	
VML03-M54	4					10.9								
VML04-M53	3	M5×0.8	3.5	14.5	11	9.4	19	0.4	7.5	8	17	—		
VML04-M54	4					10.9								
VML05-M54	4	M5×0.8	3.5	14.5	11	10.9	19	0.5	66	11	11.5	17	VM_05-M54	
VML05-M64		M6×1	5.5	15.5	10								VM_05-M64	
VMH05-U10 5/32U	5/32"	10-32UNF	3.5	14.5	11	10.9	19	0.5		90	7	11.5	17	—
VML05-U10 5/32U										66	11			

VC Pad Direct Mounting Type Straight (Silencer vent)

RoHS compliant

▶ Nozzle dia. : $\phi 0.3, \phi 0.4\text{mm}$



Unit : mm

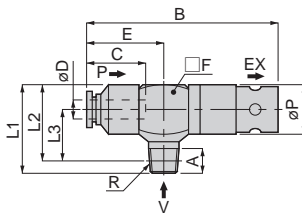
Model code	Tube O.D. ϕD	M	A	C	F	Nozzle bore (mm)	Final vacuum (-kPa)	Suction flow (l/min[ANR])	Consumption (l/min[ANR])	Weight (g)	CAD file	
VCH03-M53	3	M5×0.8	3.5	9.4	15	0.3	90	2	4.5	13	—	
VCH03-M54	4			10.9								
VCH04-M53	3	M5×0.8	3.5	9.4	17	0.4		4	8	14	—	
VCH04-M54	4			10.9								
VCH05-M54	4	M5×0.8	3	10.9	19	0.5	66	7	11.5	15	VC_05-M54	
VCH05-M64		M6×1	3.5								VC_05-M64	
VCL03-M53	3	M5×0.8	3.5	9.4	18.2	0.3		4	4.5	14	—	
VCL03-M54	4			10.9								
VCL04-M53	3	M5×0.8	3.5	9.4	19	0.4	7.5	8	14	—		
VCL04-M54	4			10.9								
VCL05-M54	4	M5×0.8	3	10.9	19	0.5	66	11	11.5	17	VC_05-M54	
VCL05-M64		M6×1	3.5								VC_05-M64	
VCH05-U10 5/32U	5/32"	10-32UNF	3	10.9	19	0.5		90	7	11.5	15	—
VCL05-U10 5/32U								66	11			



Pad Direct Mounting Type Straight (Silencer vent)

RoHS compliant

NPT thread



Unit : mm

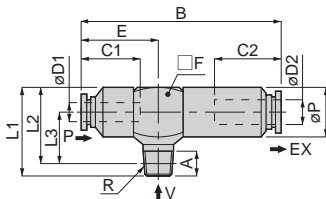
Model code	Tube O.D øD	R	A	L1	L2	L3	øP	B	E	C	□ F	Nozzle bore (mm)	Final vacuum (-kPa)	suction flow (l/min) (ANR)	Consumption (l/min) (ANR)	Weight (g)									
VCH07-N1-1/4C	1/4"	1/8 NPT	8	28	23.9	15.9	16	62.5	24.5	17	16	0.7	93	13	23	35									
VCH07-N1-5/16C	5/16"							65.2	27.2	18.2						36									
VCH10-N1-1/4C	1/4"							62.5	24.5	17						34									
VCH10-N1-5/16C	5/16"							65.2	27.2	18.2		35													
VCH12-N1-1/4C	1/4"							62.5	24.5	17		36													
VCH12-N1-5/16C	5/16"							65.2	27.2	18.2		34													
VCH15-N2-5/16C	5/16"	1/4 NPT	11	39	33.2	21.2	24	104.2	29.2	18.2	22	1.5	63	100	91										
VCH15-N3-5/16C	3/8 NPT	12	32.9		20.9	93		93																	
VCH15-N2-3/8C	3/8"	1/4 NPT	11		33.2	21.2		105.9	30.9	20.7					94										
VCH15-N3-3/8C	3/8"	3/8 NPT	12		32.9	20.9		95																	
VCH20-N2-5/16C	5/16"	1/4 NPT	11		33.2	21.2		104.2	29.2	18.2		97													
VCH20-N3-5/16C	5/16"	3/8 NPT	12		32.9	20.9		98																	
VCH20-N2-3/8C	3/8"	1/4 NPT	11	33.2	21.2	105.9	30.9	20.7	2	110	200	97													
VCH20-N3-3/8C	3/8"	3/8 NPT	12	32.9	20.9							98													
VCL07-N1-1/4C	1/4"	1/8 NPT	8	28	23.9	15.9	16	62.5	24.5	17	16	0.7	66	26	23	34									
VCL07-N1-5/16C	5/16"							65.2	27.2	18.2						35									
VCL10-N1-1/4C	1/4"							62.5	24.5	17						34									
VCL10-N1-5/16C	5/16"							65.2	27.2	18.2		35													
VCL15-N2-5/16C	5/16"							1/4 NPT	11	39		33.2				21.2	24	104.2	29.2	18.2	22	1.5	95	100	89
VCL15-N3-5/16C	3/8 NPT							12	32.9			20.9				91									
VCL15-N2-3/8C	3/8"	1/4 NPT	11	33.2	21.2	105.9	30.9	20.7	88																
VCL15-N3-3/8C	3/8"	3/8 NPT	12	32.9	20.9	90																			
VCL20-N2-5/16C	5/16"	1/4 NPT	11	33.2	21.2	104.2	29.2	18.2	91																
VCL20-N3-5/16C	5/16"	3/8 NPT	12	32.9	20.9	93																			
VCL20-N2-3/8C	3/8"	1/4 NPT	11	33.2	21.2	105.9	30.9	20.7	2	180	200	91													
VCL20-N3-3/8C	3/8"	3/8 NPT	12	32.9	20.9							93													
VCE07-N1-1/4C	1/4"	1/8 NPT	8	28	23.9	15.9	16	62.5	24.5	17	16	0.7	92	10.5	17	34									
VCE07-N1-5/16C	5/16"							65.2	27.2	18.2						35									
VCE10-N1-1/4C	1/4"							62.5	24.5	17						34									
VCE10-N1-5/16C	5/16"							65.2	27.2	18.2		35													
VCE12-N1-1/4C	1/4"							62.5	24.5	17		34													
VCE12-N1-5/16C	5/16"							65.2	27.2	18.2		35													
VCE15-N2-5/16C	5/16"	1/4 NPT	11	39	33.2	21.2	24	104.2	29.2	18.2	22	1.5	42	70	92										
VCE15-N3-5/16C	3/8 NPT	12	32.9		20.9	93																			
VCE15-N2-3/8C	3/8"	1/4 NPT	11		33.2	21.2		105.9	30.9	20.7					95										
VCE15-N3-3/8C	3/8"	3/8 NPT	12		32.9	20.9		96																	
VCE20-N2-5/16C	5/16"	1/4 NPT	11		33.2	21.2		104.2	29.2	18.2		98													
VCE20-N3-5/16C	5/16"	3/8 NPT	12		32.9	20.9		99																	
VCE20-N2-3/8C	3/8"	1/4 NPT	11	33.2	21.2	105.9	30.9	20.7	2	84	150	98													
VCE20-N3-3/8C	3/8"	3/8 NPT	12	32.9	20.9							99													

*. L2, L3 is the height after installation and is for general reference purposes.



Pad Direct Mounting Type Straight (Tubing exhaust)

RoHS compliant



Unit : mm

Model code	Tube O.D. $\phi D1$	Tube O.D. $\phi D2$	R	A	L1	L2	L3	ϕP	B	E	C1	C2	\square	Nozzle bore (mm)	Final vacuum (-kPa)	suction flow (l/min)(AV)	Consumption (l/min)(AV)	Weight (g)
VCH07-N1-1/4CJ	1/4"	5/16"	1/8 NPT	8	28	23.9	15.9	16	64.7	24.5	17	18.2	16	0.7	93	13	23	40
VCH07-N1-5/16CJ	67.4								27.2	18.2	41							
VCH10-N1-1/4CJ	1/4"	5/16"	1/8 NPT	8	28	23.9	15.9	16	64.7	24.5	17	18.2	16	1	93	28	46	40
VCH10-N1-5/16CJ	67.4								27.2	18.2	41							
VCH12-N1-1/4CJ	1/4"	5/16"	1/8 NPT	8	28	23.9	15.9	16	64.7	24.5	17	18.2	16	1.2	93	38	70	39
VCH12-N1-5/16CJ	67.4								27.2	18.2	40							
VCH15-N2-5/16CJ	5/16"	1/2"	1/4 NPT	11	38	32.2	21.2	22	93.8	29.2	18.2	23.3	22	1.5	93	63	100	103
VCH15-N3-5/16CJ	3/8 NPT		12	31.9		20.9	95.5		30.9	20.7	105							
VCH15-N2-3/8CJ	3/8"	1/2"	1/4 NPT	11	38	32.2	21.2	22	95.5	30.9	20.7	23.3	22	1.5	93	63	100	106
VCH15-N3-3/8CJ	3/8 NPT		12	31.9		20.9	95.5		30.9	20.7	106							
VCH20-N2-5/16CJ	5/16"	1/2"	1/4 NPT	11	38	32.2	21.2	22	93.8	29.2	18.2	23.3	22	2	110	200	107	
VCH20-N3-5/16CJ	3/8 NPT		12	31.9		20.9	95.5		30.9	20.7	109							
VCH20-N2-3/8CJ	3/8"	1/2"	1/4 NPT	11	38	32.2	21.2	22	95.5	30.9	20.7	23.3	22	2	110	200	109	
VCH20-N3-3/8CJ	3/8 NPT		12	31.9		20.9	95.5		30.9	20.7	110							
VCL07-N1-1/4CJ	1/4"	5/16"	1/8 NPT	8	28	23.9	15.9	16	64.7	24.5	17	18.2	16	0.7	66	26	23	40
VCL07-N1-5/16CJ	5/16"								67.4	27.2	18.2							41
VCL10-N1-1/4CJ	1/4"	5/16"	1/8 NPT	8	28	23.9	15.9	16	64.7	24.5	17	18.2	16	1	66	42	46	39
VCL10-N1-5/16CJ	5/16"								67.4	27.2	18.2							40
VCL15-N2-5/16CJ	5/16"	1/2"	1/4 NPT	11	38	32.2	21.2	22	93.8	29.2	18.2	23.3	22	1.5	66	95	100	101
VCL15-N3-5/16CJ	3/8 NPT		12	31.9		20.9	95.5		30.9	20.7	102							
VCL15-N2-3/8CJ	3/8"	1/2"	1/4 NPT	11	38	32.2	21.2	22	95.5	30.9	20.7	23.3	22	1.5	66	95	100	102
VCL15-N3-3/8CJ	3/8 NPT		12	31.9		20.9	95.5		30.9	20.7	102							
VCL20-N2-5/16CJ	5/16"	1/2"	1/4 NPT	11	38	32.2	21.2	22	93.8	29.2	18.2	23.3	22	2	180	200	104	
VCL20-N3-5/16CJ	3/8 NPT		12	31.9		20.9	95.5		30.9	20.7	103							
VCL20-N2-3/8CJ	3/8"	1/2"	1/4 NPT	11	38	32.2	21.2	22	95.5	30.9	20.7	23.3	22	2	180	200	103	
VCL20-N3-3/8CJ	3/8 NPT		12	31.9		20.9	95.5		30.9	20.7	105							
VCE07-N1-1/4CJ	1/4"	5/16"	1/8 NPT	8	28	23.9	15.9	16	64.7	24.5	17	18.2	16	0.7	92	10.5	17	40
VCE07-N1-5/16CJ	5/16"								67.4	27.2	18.2							41
VCE10-N1-1/4CJ	1/4"	5/16"	1/8 NPT	8	28	23.9	15.9	16	64.7	24.5	17	18.2	16	1	92	21	34	40
VCE10-N1-5/16CJ	5/16"								67.4	27.2	18.2							41
VCE12-N1-1/4CJ	1/4"	5/16"	1/8 NPT	8	28	23.9	15.9	16	64.7	24.5	17	18.2	16	1.2	92	27	47	39
VCE12-N1-5/16CJ	5/16"								67.4	27.2	18.2							40
VCE15-N2-5/16CJ	5/16"	1/2"	1/4 NPT	11	38	32.2	21.2	22	93.8	29.2	18.2	23.3	22	1.5	92	42	70	104
VCE15-N3-5/16CJ	3/8 NPT		12	31.9		20.9	95.5		30.9	20.7	105							
VCE15-N2-3/8CJ	3/8"	1/2"	1/4 NPT	11	38	32.2	21.2	22	95.5	30.9	20.7	23.3	22	1.5	92	42	70	107
VCE15-N3-3/8CJ	3/8 NPT		12	31.9		20.9	95.5		30.9	20.7	107							
VCE20-N2-5/16CJ	5/16"	1/2"	1/4 NPT	11	38	32.2	21.2	22	93.8	29.2	18.2	23.3	22	2	84	150	109	
VCE20-N3-5/16CJ	3/8 NPT		12	31.9		20.9	95.5		30.9	20.7	110							
VCE20-N2-3/8CJ	3/8"	1/2"	1/4 NPT	11	38	32.2	21.2	22	95.5	30.9	20.7	23.3	22	2	84	150	109	
VCE20-N3-3/8CJ	3/8 NPT		12	31.9		20.9	95.5		30.9	20.7	112							

※ "L21" and "L3" are reference dimensions after tightening the taper thread.

※ Add "-S3" at the end of model code for "Copper alloy free".

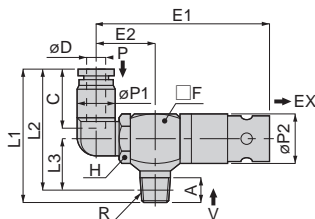


Vacuum Generator VM,VC



Pad Direct Mounting Type Elbow (Silencer vent)

RoHS compliant



Unit : mm

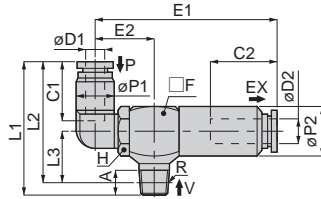
Model code	Tube O.D. øD	R	A	L1	L2	L3	E1	E2	øP1	øP2	C	H	Nozzle □ F bore (mm)	Final vacuum (-kPa)	Suction flow (l/min)(AV)	Consumption (l/min)(AV)	Weight (g)									
VCH07-N1-1/4L	1/4"	1/8 NPT	8	42.8	38.7	15.9	57.3	19.3	12.5	16	14	16	0.7	93	13	23	36									
VCH07-N1-5/16L	5/16"			45.7	41.6		58.3	20.3	14.5								18.1	38								
VCH10-N1-1/4L	1/4"			42.8	38.7		57.3	19.3	12.5								17	35								
VCH10-N1-5/16L	5/16"			45.7	41.6	58.3	20.3	14.5	18.1								38									
VCH12-N1-1/4L	1/4"			42.8	38.7	57.3	19.3	12.5	17								35									
VCH12-N1-5/16L	5/16"			45.7	41.6	58.3	20.3	14.5	18.1								37									
VCH15-N2-5/16L	5/16"	1/4 NPT	11	52.7	46.9	21.2	98.3	23.3	14.5	24	19	22	1.5	93	63	100	94									
VCH15-N3-5/16L	3/8 NPT	12	56.5	50.4	20.9	100.8	25.8	17.5	18.1								96									
VCH15-N2-3/8L	3/8"	1/4 NPT	11	56.5	50.7	21.2	100.8	25.8	17.5								20.2	100								
VCH15-N3-3/8L	3/8"	3/8 NPT	12	56.5	50.4	20.9	100.8	25.8	17.5								20.2	101								
VCH20-N2-5/16L	5/16"	1/4 NPT	11	52.7	46.9	21.2	98.3	23.3	14.5								18.1	98								
VCH20-N3-5/16L	5/16"	3/8 NPT	12	52.7	46.6	20.9	98.3	23.3	14.5								18.1	100								
VCH20-N2-3/8L	3/8"	1/4 NPT	11	56.5	50.7	21.2	100.8	25.8	17.5	20.2	19	22	2	110	200	104										
VCH20-N3-3/8L	3/8"	3/8 NPT	12	56.5	50.4	20.9	100.8	25.8	17.5							20.2	105									
VCL07-N1-1/4L	1/4"	1/8 NPT	8	42.8	38.7	15.9	57.3	19.3	12.5	16	14	16	0.7	66	26	23	35									
VCL07-N1-5/16L	5/16"			45.7	41.6		58.3	20.3	14.5								18.1	38								
VCL10-N1-1/4L	1/4"			42.8	38.7		57.3	19.3	12.5								17	34								
VCL10-N1-5/16L	5/16"			45.7	41.6	58.3	20.3	14.5	18.1								37									
VCL15-N2-5/16L	5/16"			1/4 NPT	11	52.7	46.9	21.2	98.3								23.3	14.5	24	19	22	1.5	66	95	100	93
VCL15-N3-5/16L	3/8 NPT			12	56.5	50.4	20.9	100.8	25.8								17.5	18.1								94
VCL15-N2-3/8L	3/8"	1/4 NPT	11	56.5	50.7	21.2	100.8	25.8	17.5	20.2	98															
VCL15-N3-3/8L	3/8"	3/8 NPT	12	56.5	50.4	20.9	100.8	25.8	17.5	20.2	99															
VCL20-N2-5/16L	5/16"	1/4 NPT	11	52.7	46.9	21.2	98.3	23.3	14.5	18.1	93															
VCL20-N3-5/16L	5/16"	3/8 NPT	12	52.7	46.6	20.9	98.3	23.3	14.5	18.1	95															
VCL20-N2-3/8L	3/8"	1/4 NPT	11	56.5	50.7	21.2	100.8	25.8	17.5	20.2	19	22	2	180	200	98										
VCL20-N3-3/8L	3/8"	3/8 NPT	12	56.5	50.4	20.9	100.8	25.8	17.5							20.2	100									
VCE07-N1-1/4L	1/4"	1/8 NPT	8	42.8	38.7	15.9	57.3	19.3	12.5	16	14	16	0.7	92	10.5	17	35									
VCE07-N1-5/16L	5/16"			45.7	41.6		58.3	20.3	14.5								18.1	38								
VCE10-N1-1/4L	1/4"			42.8	38.7		57.3	19.3	12.5								17	35								
VCE10-N1-5/16L	5/16"			45.7	41.6	58.3	20.3	14.5	18.1								38									
VCE12-N1-1/4L	1/4"			42.8	38.7	57.3	19.3	12.5	17								35									
VCE12-N1-5/16L	5/16"			45.7	41.6	58.3	20.3	14.5	18.1								37									
VCE15-N2-5/16L	5/16"	1/4 NPT	11	52.7	46.9	21.2	98.3	23.3	14.5	24	19	22	1.5	92	42	70	95									
VCE15-N3-5/16L	3/8 NPT	12	56.5	50.4	20.9	100.8	25.8	17.5	18.1								100									
VCE15-N2-3/8L	3/8"	1/4 NPT	11	56.5	50.7	21.2	100.8	25.8	17.5								20.2	102								
VCE15-N3-3/8L	3/8"	3/8 NPT	12	56.5	50.4	20.9	100.8	25.8	17.5								20.2	100								
VCE20-N2-5/16L	5/16"	1/4 NPT	11	52.7	46.9	21.2	98.3	23.3	14.5								18.1	100								
VCE20-N3-5/16L	5/16"	3/8 NPT	12	52.7	46.6	20.9	98.3	23.3	14.5								18.1	101								
VCE20-N2-3/8L	3/8"	1/4 NPT	11	56.5	50.7	21.2	100.8	25.8	17.5	20.2	19	22	2	84	150	105										
VCE20-N3-3/8L	3/8"	3/8 NPT	12	56.5	50.4	20.9	100.8	25.8	17.5							20.2	107									

※. L2, L3 is the height after installation and is for general reference purposes.



PadDirect Mounting Type Elbow (Tubing exhaust)

RoHS compliant



Unit : mm

Model code	Tube O.D. øD1	Tube O.D. øD2	R	A	L1	L2	L3	E1	E2	øP1	øP2	C1	C2	H	F	Nozzle bore (mm)	Final vacum (-kPa)	Suction flow (mm ³ /NR)	Consumption (mm ³ /NR)	Weight (g)
VCH07-N1-1/4LJ	1/4"	5/16"	1/8 NPT	8	42.8	38.7	15.9	59.5	19.3	12.5	16	17	18.2	14	16	0.7	93	13	23	41
VCH07-N1-5/16LJ	5/16"				45.7	41.6		60.5	20.3	14.5		18.1								44
VCH10-N1-1/4LJ	1/4"	5/16"	1/8 NPT	8	42.8	38.7	15.9	59.5	19.3	12.5	16	17	18.2	14	16	1	93	28	46	40
VCH10-N1-5/16LJ	5/16"				45.7	41.6		60.5	20.3	14.5		18.1								43
VCH12-N1-1/4LJ	1/4"	5/16"	1/8 NPT	8	42.8	38.7	15.9	59.5	19.3	12.5	16	17	18.2	14	16	1.2	93	38	70	40
VCH12-N1-5/16LJ	5/16"				45.7	41.6		60.5	20.3	14.5		18.1								43
VCH15-N2-5/16LJ	5/16"	1/2"	1/4 NPT	11	46.9	21.2	15.9	87.9	23.3	14.5	22	18.1	19	22	1.5	93	63	100	106	
VCH15-N3-5/16LJ	5/16"		3/8 NPT	12	46.6	20.9		87.9	23.3	14.5		18.1							108	
VCH15-N2-3/8LJ	3/8"	1/2"	1/4 NPT	11	50.7	21.2	15.9	90.4	25.8	17.5	22	20.2	19	22	1.5	93	63	100	112	
VCH15-N3-3/8LJ	3/8"		3/8 NPT	12	50.4	20.9		90.4	25.8	17.5		20.2							113	
VCH20-N2-5/16LJ	5/16"	1/2"	1/4 NPT	11	46.9	21.2	15.9	87.9	23.3	14.5	22	18.1	19	22	2	110	200	110	110	
VCH20-N3-5/16LJ	5/16"		3/8 NPT	12	46.6	20.9		87.9	23.3	14.5		18.1							112	
VCH20-N2-3/8LJ	3/8"	1/2"	1/4 NPT	11	50.7	21.2	15.9	90.4	25.8	17.5	22	20.2	19	22	2	110	200	110	116	
VCH20-N3-3/8LJ	3/8"		3/8 NPT	12	50.4	20.9		90.4	25.8	17.5		20.2							117	
VCL07-N1-1/4LJ	1/4"	5/16"	1/8 NPT	8	42.8	38.7	15.9	59.5	19.3	12.5	16	17	18.2	14	16	0.7	66	26	23	41
VCL07-N1-5/16LJ	5/16"				45.7	41.6		60.5	20.3	14.5		18.1								43
VCL10-N1-1/4LJ	1/4"	5/16"	1/8 NPT	8	42.8	38.7	15.9	59.5	19.3	12.5	16	17	18.2	14	16	1	66	42	46	40
VCL10-N1-5/16LJ	5/16"				45.7	41.6		60.5	20.3	14.5		18.1								42
VCL15-N2-5/16LJ	5/16"	1/2"	1/4 NPT	11	46.9	21.2	15.9	87.9	23.3	14.5	22	18.1	19	22	1.5	66	95	100	104	
VCL15-N3-5/16LJ	5/16"		3/8 NPT	12	46.6	20.9		87.9	23.3	14.5		18.1							106	
VCL15-N2-3/8LJ	3/8"	1/2"	1/4 NPT	11	50.7	21.2	15.9	90.4	25.8	17.5	22	20.2	19	22	1.5	66	95	100	109	
VCL15-N3-3/8LJ	3/8"		3/8 NPT	12	50.4	20.9		90.4	25.8	17.5		20.2							111	
VCL20-N2-5/16LJ	5/16"	1/2"	1/4 NPT	11	46.9	21.2	15.9	87.9	23.3	14.5	22	18.1	19	22	2	180	200	105	105	
VCL20-N3-5/16LJ	5/16"		3/8 NPT	12	46.6	20.9		87.9	23.3	14.5		18.1							107	
VCL20-N2-3/8LJ	3/8"	1/2"	1/4 NPT	11	50.7	21.2	15.9	90.4	25.8	17.5	22	20.2	19	22	2	180	200	105	111	
VCL20-N3-3/8LJ	3/8"		3/8 NPT	12	50.4	20.9		90.4	25.8	17.5		20.2							112	
VCE07-N1-1/4LJ	1/4"	5/16"	1/8 NPT	8	42.8	38.7	15.9	59.5	19.3	12.5	16	17	18.2	14	16	0.7	92	10.5	17	36
VCE07-N1-5/16LJ	5/16"				45.7	41.6		60.5	20.3	14.5		18.1								38
VCE10-016LJ	1/4"	5/16"	1/8 NPT	8	42.8	38.7	15.9	59.5	19.3	12.5	16	17	18.2	14	16	1	92	21	34	36
VCE10-018LJ	5/16"				45.7	41.6		60.5	20.3	14.5		18.1								38
VCE12-016LJ	1/4"	5/16"	1/8 NPT	8	42.8	38.7	15.9	59.5	19.3	12.5	16	17	18.2	14	16	1.2	92	27	47	36
VCE12-018LJ	5/16"				45.7	41.6		60.5	20.3	14.5		18.1								38
VCE15-028LJ	5/16"	1/2"	1/4 NPT	11	46.9	21.2	15.9	87.9	23.3	14.5	22	18.1	19	22	1.5	92	42	70	107	
VCE15-038LJ	5/16"		3/8 NPT	12	46.6	20.9		87.9	23.3	14.5		18.1							108	
VCE15-0210LJ	3/8"	1/2"	1/4 NPT	11	50.7	21.2	15.9	90.4	25.8	17.5	22	20.2	19	22	1.5	92	42	70	112	
VCE15-0310LJ	3/8"		3/8 NPT	12	50.4	20.9		90.4	25.8	17.5		20.2							114	
VCE20-028LJ	5/16"	1/2"	1/4 NPT	11	46.9	21.2	15.9	87.9	23.3	14.5	22	18.1	19	22	2	84	150	112	112	
VCE20-038LJ	5/16"		3/8 NPT	12	46.6	20.9		87.9	23.3	14.5		18.1							113	
VCE20-0210LJ	3/8"	1/2"	1/4 NPT	11	50.7	21.2	15.9	90.4	25.8	17.5	22	20.2	19	22	2	84	150	112	117	
VCE20-0310LJ	3/8"		3/8 NPT	12	50.4	20.9		90.4	25.8	17.5		20.2							119	

* "L21" and "L3" are reference dimensions after tightening the taper thread.

* Add "-S3" at the end of model code for "Copper alloy free".

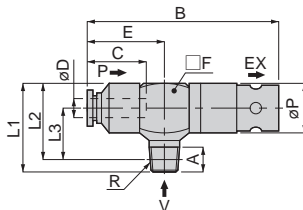
Vacuum Generator Series

Vacuum Generator VM,VC



Pad Direct Mounting Type Straight (Silencer vent)

RoHS compliant



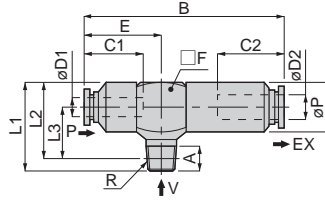
Unit : mm

Model code	Tube O.D. øD	R	A	L1	L2	L3	øP	B	E	C	F	Nozzle bore (mm)	Final vacuum (-kPa)	Exsuction flow (l/min)(ANR)	Consumption (l/min)(ANR)	Weight (g)	CAD file												
VCH07-016C	6	R1/8	8	28	24	16	16	62.5	24.5	17	16	0.7	93	13	23	32	VC_016C												
VCH07-018C	8							65.2	27.2	18.2							VC_018C												
VCH10-016C	6							62.5	24.5	17							VC_016C												
VCH10-018C	8							65.2	27.2	18.2							VC_018C												
VCH12-016C	6	R1/4	11	39	33	21	24	62.5	24.5	17	22	1.2	38	70	87	VC_016C													
VCH12-018C	8							65.2	27.2	18.2						VC_018C													
VCH15-028C	8							R3/8	12	32.7						20.7	104.2	29.2	18.2	1.5	63	100	88	VC_028C					
VCH15-038C	8							R3/8	12	32.7						20.7	105.9	30.9	20.7	1.5	63	100	89	VC_038C					
VCH15-0210C	10	R1/4	11	39	33	21	24	104.2	29.2	18.2	22	2	110	200	91	VC_0210C													
VCH15-0310C	10	R3/8	12													32.7	20.7	105.9	30.9	20.7	2	92	VC_0310C						
VCH20-028C	8	R1/4	11													33	21	104.2	29.2	18.2	2	92	VC_028C						
VCH20-038C	8	R3/8	12													32.7	20.7	105.9	30.9	20.7	2	93	VC_038C						
VCH20-0210C	10	R1/4	11	39	33	21	24	104.2	29.2	18.2	22	2	110	200	93	VC_0210C													
VCH20-0310C	10	R3/8	12													32.7	20.7	105.9	30.9	20.7	2	94	VC_0310C						
VCL07-016C	6	R1/8	8													28	24	16	16	62.5	24.5	17	16	0.7	66	26	23	32	VC_016C
VCL07-018C	8																			65.2	27.2	18.2							VC_018C
VCL10-016C	6			62.5	24.5	17	VC_016C																						
VCL10-018C	8			65.2	27.2	18.2	VC_018C																						
VCL15-028C	8	R1/4	11	39	33	21	24	104.2	29.2	18.2	22	1.5	95	100	85	VC_028C													
VCL15-038C	8	R3/8	12													32.7	20.7	105.9	30.9	20.7	1.5	86	VC_038C						
VCL15-0210C	10	R1/4	11													33	21	104.2	29.2	18.2	2	87	VC_0210C						
VCL15-0310C	10	R3/8	12													32.7	20.7	105.9	30.9	20.7	2	88	VC_0310C						
VCL20-028C	8	R1/4	11	39	33	21	24	104.2	29.2	18.2	22	2	180	200	87	VC_028C													
VCL20-038C	8	R3/8	12													32.7	20.7	104.2	29.2	18.2	2	88	VC_038C						
VCL20-0210C	10	R1/4	11													33	21	104.2	29.2	18.2	2	88	VC_0210C						
VCL20-0310C	10	R3/8	12													32.7	20.7	105.9	30.9	20.7	2	89	VC_0310C						
VCE07-016C	6	R1/8	8	28	24	16	16	62.5	24.5	17	16	0.7	92	10.5	17	32	VC_016C												
VCE07-018C	8							65.2	27.2	18.2							VC_018C												
VCE10-016C	6							62.5	24.5	17							VC_016C												
VCE10-018C	8							65.2	27.2	18.2							VC_018C												
VCE12-016C	6	R1/4	11	39	33	21	24	62.5	24.5	17	22	1.2	27	47	88	VC_016C													
VCE12-018C	8															65.2	27.2	18.2	VC_018C										
VCE15-028C	8															R3/8	12	32.7	20.7	104.2	29.2	18.2	1.5	42	70	89	VC_028C		
VCE15-038C	8															R3/8	12	32.7	20.7	105.9	30.9	20.7	1.5	42	70	90	VC_038C		
VCE15-0210C	10	R1/4	11	39	33	21	24	104.2	29.2	18.2	22	2	84	150	93	VC_0210C													
VCE15-0310C	10	R3/8	12													32.7	20.7	104.2	29.2	18.2	2	93	VC_0310C						
VCE20-028C	8	R1/4	11													33	21	104.2	29.2	18.2	2	93	VC_028C						
VCE20-038C	8	R3/8	12													32.7	20.7	104.2	29.2	18.2	2	94	VC_038C						
VCE20-0210C	10	R1/4	11	39	33	21	24	104.2	29.2	18.2	22	2	84	150	94	VC_0210C													
VCE20-0310C	10	R3/8	12													32.7	20.7	105.9	30.9	20.7	2	95	VC_0310C						

※. L2, L3 is the height after installation and is for general reference purposes.

VC Pad Direct Mounting Type Straight (Tubing exhaust)

RoHS compliant
Copper alloy free
Selectable



Unit : mm

Model code	Tube O.D. øD1	Tube O.D. øD2	R	A	L1	L2	L3	øP	B	E	C1	C2	F	Nozzle bore (mm)	Frit vacuum (-kPa)	suction flow (l/min)(AV)	Consumption (l/min)(AV)	Weight (g)	CAD file
VCH07-016CJ	6								64.6	24.5	17								VC_016CJ
VCH07-018CJ	8								67.3	27.2	18.2			0.7		13	23		VC_018CJ
VCH10-016CJ	6	8	R1/8	8	28	24	16	16	64.6	24.5	17	18.2	16	1		28	46	37	VC_016CJ
VCH10-018CJ	8								67.3	27.2	18.2								VC_018CJ
VCH12-016CJ	6								64.6	24.5	17			1.2		38	70		VC_016CJ
VCH12-018CJ	8								67.3	27.2	18.2								VC_018CJ
VCH15-028CJ	8		R1/4	11		32	21		94	29.2	18.2			1.5	93			99	VC_028CJ
VCH15-038CJ			R3/8	12		31.7	20.7											100	VC_038CJ
VCH15-0210CJ	10		R1/4	11		32	21		95.7	30.9	20.7							101	VC_0210CJ
VCH15-0310CJ		12	R3/8	12	38	31.7	20.7	22				23.3	22					103	VC_0310CJ
VCH20-028CJ	8		R1/4	11		32	21		94	29.2	18.2			2				104	VC_028CJ
VCH20-038CJ			R3/8	12		31.7	20.7											104	VC_038CJ
VCH20-0210CJ	10		R1/4	11		32	21		95.7	30.9	20.7				110			105	VC_0210CJ
VCH20-0310CJ		10	R3/8	12		31.7	20.7											105	VC_0310CJ
VCL07-016CJ	6								64.6	24.5	17								VC_016CJ
VCL07-018CJ	8								67.3	27.2	18.2			0.7		26	23		VC_018CJ
VCL10-016CJ	6	8	R1/8	8	28	24	16	16	64.6	24.5	17	18.2	16	1		42	46	37	VC_016CJ
VCL10-018CJ	8								67.3	27.2	18.2								VC_018CJ
VCL15-028CJ	8		R1/4	11		32	21		94	29.2	18.2			1.5	66			97	VC_028CJ
VCL15-038CJ			R3/8	12		31.7	20.7											98	VC_038CJ
VCL15-0210CJ	10		R1/4	11		32	21		95.7	30.9	20.7							99	VC_0210CJ
VCL15-0310CJ		12	R3/8	12	38	31.7	20.7	22				23.3	22					99	VC_0310CJ
VCL20-028CJ	8		R1/4	11		32	21		94	29.2	18.2			2				100	VC_028CJ
VCL20-038CJ			R3/8	12		31.7	20.7											100	VC_038CJ
VCL20-0210CJ	10		R1/4	11		32	21		95.7	30.9	20.7				180			100	VC_0210CJ
VCL20-0310CJ		10	R3/8	12		31.7	20.7											101	VC_0310CJ
VCE07-016CJ	6								64.6	24.5	17								VC_016CJ
VCE07-018CJ	8								67.3	27.2	18.2			0.7		10.5	17		VC_018CJ
VCE10-016CJ	6	8	R1/8	8	28	24	16	16	64.6	24.5	17	18.2	16	1		21	34	37	VC_016CJ
VCE10-018CJ	8								67.3	27.2	18.2								VC_018CJ
VCE12-016CJ	6								64.6	24.5	17			1.2		27	47		VC_016CJ
VCE12-018CJ	8								67.3	27.2	18.2								VC_018CJ
VCE15-028CJ	8		R1/4	11		32	21		94	29.2	18.2			1.5	92			100	VC_028CJ
VCE15-038CJ			R3/8	12		31.7	20.7											101	VC_038CJ
VCE15-0210CJ	10		R1/4	11		32	21		95.7	30.9	20.7							102	VC_0210CJ
VCE15-0310CJ		12	R3/8	12	38	31.7	20.7	22				23.3	22					102	VC_0310CJ
VCE20-028CJ	8		R1/4	11		32	21		94	29.2	18.2			2				105	VC_028CJ
VCE20-038CJ			R3/8	12		31.7	20.7											106	VC_038CJ
VCE20-0210CJ	10		R1/4	11		32	21		95.7	30.9	20.7				84			106	VC_0210CJ
VCE20-0310CJ		10	R3/8	12		31.7	20.7											107	VC_0310CJ

※ "L21" and "L3" are reference dimensions after tightening the taper thread.

※ Add "-S3" at the end of model code for "Copper alloy free".

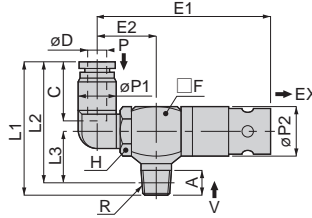
Vacuum Generator Series

Vacuum Generator VM,VC

VC Pad Direct Mounting Type Elbow (Silencer vent)

RoHS compliant

91.8



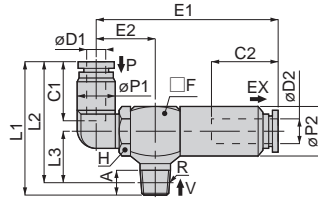
Unit : mm

Model code	Tube O.D. øD	R	A	L1	L2	L3	E1	E2	øP1	øP2	C	H	F	Nozzle bore (mm)	Final vacuum (-kPa)	Suction flow (l/min(AVR))	Consumption (l/min(AVR))	Weight (g)	CAD file								
VCH07-016L	6	R1/8	8	42.8	38.8	16	57.3	19.3	12.5	16	17	14	16	0.7	93	13	23	32	VC_016L								
VCH07-018L	8			45.7	41.7		58.3	20.3	14.5		18.2			34				VC_018L									
VCH10-016L	6			42.8	38.8		57.3	19.3	12.5		17			32				VC_016L									
VCH10-018L	8			45.7	41.7		58.3	20.3	14.5		18.2			34				VC_018L									
VCH12-016L	6			42.8	38.8		57.3	19.3	12.5		17			32				VC_016L									
VCH12-018L	8			45.7	41.7		58.3	20.3	14.5		18.2			34				VC_018L									
VCH15-028L	8			R1/4	11		46.7	21	52.7		98.3			24.3				14.5	24	19	22	1.5	93	63	100	86	VC_028L
VCH15-038L	R3/8			12	46.4		20.7	87																		VC_038L	
VCH15-0210L	10	R1/4	11	50.5	21	56.5	100.8	25.8	17.5	24	19	22	1.5	93	63	100	91	VC_0210L									
VCH15-0310L	R3/8	12	50.2	20.7	92												VC_0310L										
VCH20-028L	8	R1/4	11	46.7	21	52.7	99.3	24.3	14.5	24	19	22	2	110	200	90	VC_028L										
VCH20-038L	R3/8	12	46.4	20.7	91											VC_038L											
VCH20-0210L	10	R1/4	11	50.5	21	56.5	100.8	25.8	17.5	24	19	22	2	110	200	95	VC_0210L										
VCH20-0310L	R3/8	12	50.2	20.7	96											VC_0310L											
VCL07-016L	6	R1/8	8	42.8	38.8	16	57.3	19.3	12.5	16	17	14	16	0.7	66	26	23	32	VC_016L								
VCL07-018L	8			45.7	41.7		58.3	20.3	14.5		18.2			34				VC_018L									
VCL10-016L	6			42.8	38.8		57.3	19.3	12.5		17			32				VC_016L									
VCL10-018L	8			45.7	41.7		58.3	20.3	14.5		18.2			34				VC_018L									
VCL15-028L	8	R1/4	11	46.7	21	52.7	99.3	24.3	14.5	24	19	22	1.5	66	95	100	84	VC_028L									
VCL15-038L	R3/8	12	46.4	20.7	85												VC_038L										
VCL15-0210L	10	R1/4	11	50.5	21	56.5	100.8	25.8	17.5	24	19	22	1.5	66	95	100	89	VC_0210L									
VCL15-0310L	R3/8	12	50.2	20.7	90												VC_0310L										
VCL20-028L	8	R1/4	11	46.7	21	52.7	99.3	24.3	14.5	24	19	22	2	180	200	86	VC_028L										
VCL20-038L	R3/8	12	46.4	20.7	87											VC_038L											
VCL20-0210L	10	R1/4	11	50.5	21	56.5	100.8	25.8	17.5	24	19	22	2	180	200	91	VC_0210L										
VCL20-0310L	R3/8	12	50.2	20.7	92											VC_0310L											
VCE07-016L	6	R1/8	8	42.8	38.8	16	57.3	19.3	12.5	16	17	14	16	0.7	92	10.5	17	32	VC_016L								
VCE07-018L	8			45.7	41.7		58.3	20.3	14.5		18.2			34				VC_018L									
VCE10-016L	6			42.8	38.8		57.3	19.3	12.5		17			32				VC_016L									
VCE10-018L	8			45.7	41.7		58.3	20.3	14.5		18.2			34				VC_018L									
VCE12-016L	6			42.8	38.8		57.3	19.3	12.5		17			32				VC_016L									
VCE12-018L	8			45.7	41.7		58.3	20.3	14.5		18.2			34				VC_018L									
VCE15-028L	8			R1/4	11		46.7	21	52.7		99.3			24.3				14.5	24	19	22	1.5	92	42	70	87	VC_028L
VCE15-038L	R3/8			12	46.4		20.7	88																		VC_038L	
VCE15-0210L	10	R1/4	11	50.5	21	56.5	100.8	25.8	17.5	24	19	22	1.5	92	42	70	92	VC_0210L									
VCE15-0310L	R3/8	12	50.2	20.7	93												VC_0310L										
VCE20-028L	8	R1/4	11	46.7	21	52.7	99.3	24.3	14.5	24	19	22	2	84	150	92	VC_028L										
VCE20-038L	R3/8	12	46.4	20.7	93											VC_038L											
VCE20-0210L	10	R1/4	11	50.5	21	56.5	100.8	25.8	17.5	24	19	22	2	84	150	97	VC_0210L										
VCE20-0310L	R3/8	12	50.2	20.7	98											VC_0310L											

* L2, L3 is the height after installation and is for general reference purposes.

VC PadDirect Mounting Type Elbow (Tubing exhaust)

RoHS compliant
Copper alloy free
Selectable



Unit : mm

Model code	Tube O.D. øD1	Tube O.D. øD2	R	A	L1	L2	L3	E1	E2	øP1	øP2	C1	C2	H	F	Nozzle bore (mm)	Final vacuum (-kPa)	Suction flow (l/min)(AV)	Consumption (mm³/h)(AV)	Weight (g)	CAD file												
VCH07-016LJ	6	8	R1/8	8	42.8	38.8	16	59.4	19.3	12.5	16	17	18.2	14	16	1	93	13	23	36	VC_016LJ												
VCH07-018LJ	8				45.7	41.7		60.4	20.3	14.5		18.2								38	VC_018LJ												
VCH10-016LJ	6				42.8	38.8		59.4	19.3	12.5		17								36	VC_016LJ												
VCH10-018LJ	8				45.7	41.7		60.4	20.3	14.5		18.2								38	VC_018LJ												
VCH12-016LJ	6				42.8	38.8		59.4	19.3	12.5		17								36	VC_016LJ												
VCH12-018LJ	8				45.7	41.7		60.4	20.3	14.5		18.2								38	VC_018LJ												
VCH15-028LJ	8		12	R1/4	11	52.7	46.7	21	22	90.6	25.8	17.5						18.2	23.3	19	22	2	93	63	100	98	VC_028LJ						
VCH15-038LJ	8					46.4	20.7	89.1										24.3								14.5	18.2	99	VC_038LJ				
VCH15-0210LJ	10					R1/4	11	56.5										50.5								21	20.2	102	VC_0210LJ				
VCH15-0310LJ	10					R3/8	12	50.2										20.7								90.6	25.8	17.5	103	VC_0310LJ			
VCH20-028LJ	8					R1/4	11	46.7										21								89.1	24.3	14.5	18.2	97	VC_028LJ		
VCH20-038LJ	8					R3/8	12	52.7										46.4								20.7	18.2	103	VC_038LJ				
VCH20-0210LJ	10	R1/4		11	56.5	50.5	21	20.2	107	VC_0210LJ																							
VCH20-0310LJ	10	R3/8		12	50.2	20.7	90.6	25.8	17.5	108	VC_0310LJ																						
VCL07-016LJ	6	8		R1/8	8	42.8	38.8	16	59.4	19.3	12.5	16	17	18.2	14	16	0.7	66						26	23	36	VC_016LJ						
VCL07-018LJ	8					45.7	41.7		60.4	20.3	14.5		18.2													38	VC_018LJ						
VCL10-016LJ	6					42.8	38.8		59.4	19.3	12.5		17													36	VC_016LJ						
VCL10-018LJ	8					45.7	41.7		60.4	20.3	14.5		18.2													38	VC_018LJ						
VCL15-028LJ	8		12			R1/4	11		52.7	46.7	21		22						90.6	25.8	17.5	18.2	23.3			19	22	1.5	66	95	100	96	VC_028LJ
VCL15-038LJ	8								46.4	20.7	89.1											24.3										14.5	18.2
VCL15-0210LJ	10			R1/4	11			56.5	50.5	21	20.2	101										VC_0210LJ											
VCL15-0310LJ	10			R3/8	12			50.2	20.7	90.6	25.8	17.5										102		VC_0310LJ									
VCL20-028LJ	8			R1/4	11			46.7	21	89.1	24.3	14.5										18.2		97	VC_028LJ								
VCL20-038LJ	8			R3/8	12			52.7	46.4	20.7	18.2	98										VC_038LJ											
VCL20-0210LJ	10			R1/4	11	56.5	50.5	21	20.2	102	VC_0210LJ																						
VCL20-0310LJ	10			R3/8	12	50.2	20.7	90.6	25.8	17.5	103	VC_0310LJ																					
VCE07-016LJ	6	8		R1/8	8	42.8	38.8	16	59.4	19.3	12.5	16	17	18.2	14	16	0.7	92	10.5	17	36	VC_016LJ											
VCE07-018LJ	8					45.7	41.7		60.4	20.3	14.5		18.2								38	VC_018LJ											
VCE10-016LJ	6					42.8	38.8		59.4	19.3	12.5		17								36	VC_016LJ											
VCE10-018LJ	8					45.7	41.7		60.4	20.3	14.5		18.2								38	VC_018LJ											
VCE12-016LJ	6		42.8			38.8	59.4		19.3	12.5	17		36								VC_016LJ												
VCE12-018LJ	8		45.7			41.7	60.4		20.3	14.5	18.2		38								VC_018LJ												
VCE15-028LJ	8		12	R1/4	11	52.7	46.7	21	22	90.6	25.8	17.5	18.2						23.3	19	22	1.5	92	42	70	98	VC_028LJ						
VCE15-038LJ	8					46.4	20.7	89.1					24.3													14.5	18.2	99	VC_038LJ				
VCE15-0210LJ	10					R1/4	11	56.5					50.5													21	20.2	103	VC_0210LJ				
VCE15-0310LJ	10					R3/8	12	50.2					20.7													90.6	25.8	17.5	104	VC_0310LJ			
VCE20-028LJ	8					R1/4	11	46.7					21													89.1	24.3	14.5	18.2	103	VC_028LJ		
VCE20-038LJ	8					R3/8	12	52.7					46.4													20.7	18.2	104	VC_038LJ				
VCE20-0210LJ	10	R1/4		11	56.5	50.5	21	20.2	108	VC_0210LJ																							
VCE20-0310LJ	10	R3/8		12	50.2	20.7	90.6	25.8	17.5	109	VC_0310LJ																						

※ "L21" and "L3" are reference dimensions after tightening the taper thread.

※ Add "-S3" at the end of model code for "Copper alloy free".



SAFETY Instructions

This safety instructions aim to prevent personal injury and damage to properties by requiring proper use of PISCO products.

Be certain to follow ISO 4414 and JIS B 8370

ISO 4414 : Pneumatic fluid power...Recommendations for the application of equipment to transmission and control systems.

JIS B 8370 : General rules and safety requirements for systems and their components.

This safety instructions is classified into "Danger", "Warning" and "Caution" depending on the degree of danger or damages caused by improper use of PISCO products.



Danger

Hazardous conditions. It can cause death or serious personal injury.



Warning

Hazardous conditions depending on usages. Improper use of PISCO products can cause death or serious personal injury.



Caution

Hazardous conditions depending on usages. Improper use of PISCO products can cause personal injury or damages to properties.

⚠ Warning

1. Selection of pneumatic products

- ① A user who is a pneumatic system designer or has sufficient experience and technical expertise should select PISCO products.
- ② Due to wide variety of operating conditions and applications for PISCO products, carry out the analysis and evaluation on PISCO products. The pneumatic system designer is solely responsible for assuring that the user's requirements are met and that the application presents no health or safety hazards. All designers are required to fully understand the specifications of PISCO products and constitute all systems based on the latest catalog or information, considering any malfunctions.

2. Handle the pneumatic equipment with enough knowledge and experience

- ① Improper use of compressed air is dangerous. Assembly, operation and maintenance of machines using pneumatic equipment should be conducted by a person with enough knowledge and experience.

3. Do not operate machine / equipment or remove pneumatic equipment until safety is confirmed.

- ① Make sure that preventive measures against falling work-pieces or sudden movements of machine are completed before inspection or maintenance of these machine.
- ② Make sure the above preventive measures are completed. A compressed air supply and the power supply to the machine must be off, and also the compressed air in the systems must be exhausted.
- ③ Restart the machines with care after ensuring to take all preventive measures against sudden movements.

Disclaimer

1. PISCO does not take any responsibility for any incidental or indirect loss, such as production line stop, interruption of business, loss of benefits, personal injury, etc., caused by any failure on use or application of PISCO products.
 2. PISCO does not take any responsibility for any loss caused by natural disasters, fires not related to PISCO products, acts by third parties, and intentional or accidental damages of PISCO products due to incorrect usage.
 3. PISCO does not take any responsibility for any loss caused by improper usage of PISCO products such as exceeding the specification limit or not following the usage the published instructions and catalog allow.
 4. PISCO does not take any responsibility for any loss caused by remodeling of PISCO products, or by combinational use with non-PISCO products and other software systems.
 5. The damages caused by the defect of Pisco products shall be covered but limited to the full amount of the PISCO products paid by the customer.
-



SAFETY INSTRUCTION MANUAL

PISCO products are designed and manufactured for use in general industrial machines. Be sure to read and follow the instructions below.

Danger

1. Do not use PISCO products for the following applications.
 - ① Equipment used for maintaining / handling human life and body.
 - ② Equipment used for moving / transporting human.
 - ③ Equipment specifically used for safety purposes.

Warning

1. Do not use PISCO products under the following conditions.
 - ① Beyond the specifications or conditions stated in the catalog, or the instructions.
 - ② Under the direct sunlight or outdoors.
 - ③ Excessive vibrations and impacts.
 - ④ Exposure / adhere to corrosive gas, inflammable gas, chemicals, seawater, water and vapor. *
* Some products can be used under the condition above(④), refer to the details of specification and condition of each product.
2. Do not disassemble or modify PISCO products, which affect the performance, function, and basic structure of the product.
3. Turn off the power supply, stop the air supply to PISCO products, and make sure there is no residual air pressure in the pipes before maintenance and inspection.
4. Do not touch the release-ring of push-in fitting when there is a working pressure. The lock may be released by the physical contact, and tube may fly out or slip out.
5. Frequent switchover of compressed air may generate heat, and there is a risk of causing burn injury.
6. Avoid any load on PISCO products, such as a tensile strength, twisting and bending. Otherwise, there is a risk of causing damage to the products.
7. As for applications where threads or tubes swing / rotate, use Rotary Joints, High Rotary Joints or Multi-Circuit Rotary Block only. The other PISCO products can be damaged in these applications.
8. Use only Die Temperature Control Fitting Series, Tube Fitting Stainless SUS316 Series, Tube Fitting Stainless SUS316 Compression Fitting Series or Tube Fitting Brass Series under the condition of over 60°C (140° F) water or thermal oil. Other PISCO products can be damaged by heat and hydrolysis under the condition above.
9. As for the condition required to dissipate static electricity or provide an antistatic performance, use EG series fitting and antistatic products only, and do not use other PISCO products. There is a risk that static electricity can cause system defects or failures.
10. Use only Fittings with a characteristic of spatter-proof such as Anti-spatter or Brass series in a place where flame and weld spatter is produced. There is a risk of causing fire by sparks.
11. Turn off the power supply to PISCO products, and make sure there is no residual air pressure in the pipes and equipment before maintenance. Follow the instructions below in order to ensure safety.
 - ① Make sure the safety of all systems related to PISCO products before maintenance.
 - ② Restart of operation after maintenance shall be proceeded with care after ensuring safety of the system by preventive measures against unexpected movements of machines and devices where pneumatic equipment is used.
 - ③ Keep enough space for maintenance when designing a circuit.
12. Take safety measures such as providing a protection cover if there is a risk of causing damages or fires on machine / facilities by a fluid leakage.

⚠ Caution

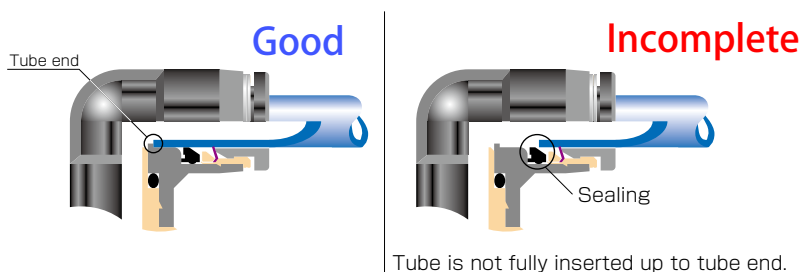
1. Remove dusts or drain before piping. They may get into the peripheral machine / facilities and cause malfunction.
2. When inserting an ultra-soft tube into push-in fitting, make sure to place an Insert Ring into the tube edge. There is a risk of causing the escape of tube and a fluid leakage without using an Insert Ring.
3. The product incorporating NBR as seal rubber material has a risk of malfunction caused by ozone crack. Ozone exists in high concentrations in static elimination air, clean-room, and near the high-voltage motors, etc. As a countermeasure, material change from NBR to HNBR or FKM is necessary. Consult with PISCO for more information.
4. Special option "Oil-free" products may cause a very small amount of a fluid leakage. When a fluid medium is liquid or the products are required to be used in harsh environments, contact us for further information.
5. In case of using non-PISCO brand tubes, make sure the tolerance of the outer tube diameter is within the limits of Table 1.

● Table 1. Tube O.D. Tolerance

mm size	Nylon tube	Polyurethane tube	inch size	Nylon tube	Polyurethane tube
ø1.8mm	—	± 0.05mm	ø1/8	± 0.1mm	± 0.15mm
ø3mm	—	± 0.15mm	ø5/32	± 0.1mm	± 0.15mm
ø4mm	± 0.1mm	± 0.15mm	ø3/16	± 0.1mm	± 0.15mm
ø6mm	± 0.1mm	± 0.15mm	ø1/4	± 0.1mm	± 0.15mm
ø8mm	± 0.1mm	± 0.15mm	ø5/16	± 0.1mm	± 0.15mm
ø10mm	± 0.1mm	± 0.15mm	ø3/8	± 0.1mm	± 0.15mm
ø12mm	± 0.1mm	± 0.15mm	ø1/2	± 0.1mm	± 0.15mm
ø16mm	± 0.1mm	± 0.15mm	ø5/8	± 0.1mm	± 0.15mm

6. Instructions for Tube Insertion

- ① Make sure that the cut end surface of the tube is at right angle without a scratch on the surface and deformations.
- ② When inserting a tube, the tube needs to be inserted fully into the push-in fitting until the tubing edge touches the tube end of the fitting as shown in the figure below. Otherwise, there is a risk of leakage.



- ③ After inserting the tube, make sure it is inserted properly and not to be disconnected by pulling it moderately.
- ※ When inserting tubes, Lock-claws may be hardly visible in the hole, observed from the front face of the release-ring. But it does not mean the tube will surely escape. Major causes of the tube escape are the followings;
- ① Shear drop of the lock-claws edge
 - ② The problem of tube diameter (usually small)
- Therefore, follow the above instructions from ① to ③, even lock-claws is hardly visible.

7. Instructions for Tube Disconnection

- ① Make sure there is no air pressure inside of the tube, before disconnecting it.
- ② Push the release-ring of the push-in fitting evenly and deeply enough to pull out the tube toward oneself. By insufficient pushing of the release-ring, the tube may not be pulled out or damaged by scratch, and tube shavings may remain inside of the fitting, which may cause the leakage later.

8. Instructions for Installing a fitting

- ① When installing a fitting, use proper tools to tighten a hexagonal-column or an inner hexagonal socket. When inserting a hex key into the inner hexagonal socket of the fitting, be careful so that the tool does not touch lock-claws. The deformation of lock-claws may result in a poor performance of systems or an escape of the tube.
- ② Refer to Table 2 which shows the recommended tightening torque. Do not exceed these limits to tighten a thread. Excessive tightening may break the thread part or deform the gasket and cause a fluid leakage. Tightening thread with tightening torque lower than these limits may cause a loosened thread or a fluid leakage.
- ③ Adjust the tube direction while tightening thread within these limits, since some PISCO products are not rotatable after the installation.

● Table 2: Recommended tightening torque / Sealock color / Gasket materials

Thread type	Thread size	Tightening torque	Sealock color	Gasket materials
Metric thread	M3 × 0.5	0.7N·m	—	SUS304 NBR
	M5 × 0.8	1.0 ~ 1.5N·m		
	M6 × 1	2 ~ 2.7N·m		
	M3 × 0.5	0.5 ~ 0.6N·m		POM
	M5 × 0.8	1 ~ 1.5N·m		
	M6 × 0.75	0.8 ~ 1N·m		
Taper pipe thread	M8 × 0.75	1 ~ 2N·m	White	—
	R1/8	7 ~ 9N·m		
	R1/4	12 ~ 14N·m		
	R3/8	22 ~ 24N·m		
Unified thread	R1/2	28 ~ 30N·m	—	SUS304, NBR
	No.10-32UNF	1.0 ~ 1.5N·m		
National pipe thread taper	1/16-27NPT	7 ~ 9N·m	White	—
	1/8-27NPT	7 ~ 9N·m		
	1/4-18NPT	12 ~ 14N·m		
	3/8-18NPT	22 ~ 24N·m		
	1/2-14NPT	28 ~ 30N·m		

※ These values may differ for some products. Refer to each specification as well.

9. Instructions for removing a fitting

- ① When removing a fitting, use proper tools to loosen a hexagonal-column or an inner hex bolt.
- ② Remove the sealant stuck on the mating equipment. The remained sealant may get into the peripheral equipment and cause malfunctions.

10. Arrange piping avoiding any load on fittings and tubes such as twist, tensile, moment load, shaking and physical impact. These may cause damages to fittings, tube deformations, bursting and the escape of tubes.

⚠ Detailed Safety Instructions

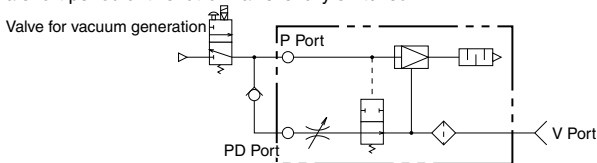
Before using PISCO products, be sure to read "Safety Instructions" and "Safety Instruction Manual", "Common Safety Instructions for Vacuum Series" and "Common Safety Instructions for Mechanical Vacuum Switch".

Warning

1. For the VC type with $M5 \times 0.8$, piping direction cannot be changed after installation of the body.
2. Before installing VY type, thoroughly read this instruction for piping method of VY Vacuum Generator. Wrong piping may cause injuries to human bodies and damage to equipments.
3. Resin body of VY vacuum filter is made of PP. Material deterioration may be caused by exposure to direct sunlight or ultra-violet rays.
4. Please do not apply load in a pulling direction to the generator VU and VUM. The tension loading may cause breakup of the generator.
5. Please avoid increasing unnecessary inner pressure for VU and VUM. Metal part may come away from resin unit.

Caution

1. In order to adjust blow-off air and blow-off time of VY Vacuum Generator, thoroughly read the catalog and understand the method.
2. The filter element of VY type is not replacable. When the replacement is necessary, replace the whole vacuum filter unit.
3. When applying different pressure level for vacuum generation and blow-off for VY, keep the blow-off pressure level under the level of vacuum generation. If the blow-off pressure level is higher than the level of vacuum generation, it may cause air leakage.
4. When the unit is used as following piping diagram, the blow-off air from check valve is exhausted from V port for a short period until shut-off valve is fully switched.



5. When connecting a tube for VY Vacuum Filter, please do not apply excessive force. It may break the inside of filter.
6. In the assembly after the maintenance of filter of VUM, confirm the plug is installed in the right position as shown in the below construction first, and then install the spacer and filter element. It is unnecessary to take out the plug at the maintenance.
7. In case of VU and VUM type, make sure to place the right part in the correct position with right method (There must not be space between the resin body and the vacuum port unit) at the filter element maintenance. Otherwise, the satisfactory product performance cannot be obtained.



Common Safety Instructions for Vacuum Series

Before selecting or using PISCO products, read the following instructions. Read the detailed instructions for individual series.

Warning

1. If there is a risk of dropping work-pieces during vacuum suction, take a safety measure against the falling of them.
2. Avoid supplying more than 0.1MPa pressure constantly in a vacuum circuit. Since vacuum generators are not explosive-proof, there is a risk of damaging the products.
3. Pay attention to drop of vacuum pressure caused by problems of the supplied air or the power supply. Decrease of suction force may lead to a danger of falling work-piece so that safety measure against the falling of them is necessary.
4. When more than 2 vacuum pads are plumbed on a single ejector and one of them has a suction problem such as vacuum leak, there is a risk of releasing work-pieces from the other pad due to the drop of the vacuum pressure.
5. Do not use in the way by which exhaust port is blocked or exhaust resistance is increased. Otherwise, there is a risk of no vacuum generation or a drop of the vacuum pressure.
6. Do not use the product in the circumstance of corrosive gas, inflammable gas, explosive gas, chemicals, seawater and vapor or do not expose the product to those. Never allow the product to suck those things.
7. Provide a protective cover on the products when it is exposed to sunlight.
8. Carry out clogging check for silencer element in an ejector and a vacuum filter periodically. Clogged element will be a cause to impair the performance or a cause of troubles.
9. Before replacing the element, thoroughly read and understand the method of filter replacement in the catalog.
10. Make sure the correct port of the vacuum generator by this catalog or marking on the products when plumbing. Wrong plumbing can be a risk to damage the product.
11. Supply clean air without sludge or dusts to an ejector. Do not lubricate by a lubricator. There is a risk of malfunction or performance impairing by impurities and oil contained in the compressed air.
12. Do not apply extreme tension, twist or bending forces on a lead wire. Otherwise, it may cause a wire breaking.
13. Locknut needs to be tightened firmly by hand. Do not use any tool to tighten. In case of using tools to tighten the locknut, it may damage the locknut or the product. Inadequate tightening may loosen the locknut and the initial setting can be changed.
14. Do not force the product to rotate or swing even its resin body is rotatable. It may cause damage to the product and a fluid leakage.
15. Do not supply an air pressure or a dry air to the products over the necessary amount. There is a risk of deteriorating rubber materials and malfunction due to oil.
16. Keep the product away from water, oil drops or dusts. These may cause malfunction. Take a proper measure to protect the product before the operation.

17. Do not use the product in the environment of inflammable or explosive gas / fluid. It can cause a fire or an explosion hazard.
18. Do not use the product in the circumstance of corrosive gas, inflammable gas, explosive gas, chemicals, seawater and vapor or do not expose the product to those. Otherwise, it may be a cause of malfunction.
19. Do not clean or paint the products by water or a solvent.

⚠ Caution

1. Operating pressure range in the catalog is the values during ejector operation. Secure the described value of the supplied air, taking a drop of the pressure into consideration. Insufficient pressure, which does not satisfy the spec, may cause abnormal noise, unstable performance and may negatively affect sensors, bringing troubles at last.
2. Effective cross-section area of the air supply side needs to be three times as large as effective cross-section area of the nozzle bore. When arranging piping or selecting PISCO products, secure required effective cross-section area. Insufficient supply pressure may be a cause to impair performance.
3. A Shorter distance of plumbing with a wider bore is preferable at vacuum system side. A long plumbing with a small bore may result in slow response time at the time of releasing work-piece as well as in failure to secure adequate suction flow rate.
4. Plumb a vacuum switch and an ejector with vacuum switch at the end of vacuum system as much as possible. A long distance between a vacuum switch and a vacuum system end may increase plumbing resistance which may lead to a high vacuum level at the sensor even when no suctioning and a malfunction of vacuum switch. Make sure to evaluate the products in an actual system.
5. Refer to "4. Instructions for Installing a fitting" and "5. Instructions for Removing a fitting" under "Common Safety Instructions for Fittings" , when installing or removing Fittings.
6. Refer to "Common Safety Instructions for Pressure Sensors" and "Detailed Safety Instructions" for the handling of digital vacuum switch sensor.
7. Refer to "Common Safety Instructions for Mechanical Vacuum Sensor" for the handling of mechanical vacuum switch.
8. The material of plastic filter cover for VG, VK, VJ, VZ and VX series is PCTG. Avoid the adherence of Chemicals below to the products, and do not use them under those chemical environments.

● Table Chemical Name

Chemical Name
Thinner
Carbon tetrachloride
Chloroform
Acetate
Aniline
Cyclohexane
Trichloroethylene
Sulfuric acid
Lactic acid
Water soluble cutting oil (alkaline)

* There are more chemicals which should be avoided. Contact us for the use under chemical circumstance.

Vacuum Generator Series

Vacuum Generator

9. The material of plastic filter cover for VQ and VFU series is PA. Avoid the adherence of chemicals below to the products, and do not use them under those chemical environments.

● Table Chemical Name

Chemical Name
Methanol
Ethanol
Nitric acid
Sulfuric acid
Hydrochloric acid
Lactic acid
Acetone
Chloroform
Aniline
Trichloroethylene
Hydrogen peroxide

* There are more chemicals which should be avoided. Contact us for the use under chemical circumstance.



Common Safety Instructions for Mechanical Vacuum Switch

Warning

1. Do not use mechanical vacuum switch in the environment of inflammable or explosive gas / fluid. Since the products are not explosive-proof structure, use in such environment may cause a fire or an explosion.
2. Keep a mechanical vacuum switch away from water, oil drops or dusts which may cause malfunction. The product is not drip / dust proof structure.
3. Applying 0.5 MPa instantaneously to a mechanical vacuum switch does not affect on its performance, but do not apply more than 0.2 MPa constantly. It may cause damage to the switch.
4. Use a vacuum switch within the described pressure setting range in the specifications. There is a risk of malfunction by a hysteresis when the products are operated with the pressure beyond the range.
5. Make sure to turn off the power supply before plumbing mechanical vacuum switch. Pay special attention to lead wire colors to prevent a wrong wiring.