

Mini Keyboard Pump

Max. vacuum level : VKX pump **-92 kPa** (-27.16 inHg)
VKM pump **-85 kPa** (-25.1 inHg)

Max. flow rate : VKX pump **23 NL/min** (0.81 scfm)
VKM pump **26 NL/min** (0.91 scfm)

Supply air pressure : **3~6 bar, Max. 7 bar**
(43.5~87 psi, max 101.5 psi)

Supply air type : Dry compressed air

Working temperature : -20°C to +80°C

Noise level : 50~65 dBA



Main Advantages

- High efficiency Mini vacuum pump (Multi-Nozzle type).
- Available of individual control.
- Long life time and Low noise level.
- Easy to install and Compact size (10mm).
- Lightweight.
- Built-in check valve.
- Integrated Vacuum Pump, Air supply & vacuum release control valve, Vacuum Switch & Filter, Blowing flow control valve and silencer in a body.

Order No.

VKM5 - M6 - A 4 N V

| | | | | |
① ② ③ ④ ⑤ ⑥ ⑦

① Model-Vacuum Flow

VKX5 - 23 NL/min

● VKM5 - 26 NL/min

② Body type

S - single unit

● M - manifold unit

E - manifold unit with central exhaust unit

③ Vacuum Stack

1-1 Stack

● 6-6 Stack

2-2 Stack

7-7 Stack

3-3 Stack

8-8 Stack

4-4 Stack

9-9 Stack

5-5 Stack

10-10 Stack

④ Valves

	Air Supply Control Valve	Vacuum Release Control Valve	Vacuum Switch
● A	Ⓐ (N.C. : Normal Closed)	Ⓐ (N.C. : Normal Closed)	Ⓐ
B	Ⓐ (N.O. : Normal open)	Ⓐ (N.C. : Normal Closed)	Ⓐ
C	Ⓐ (N.C. : Normal Closed)	Ⓐ (N.C. : Normal Closed)	
D	Ⓐ (N.O. : Normal open)	Ⓐ (N.C. : Normal Closed)	
E	Ⓐ (N.C. : Normal Closed)		Ⓐ
F	Ⓐ (N.O. : Normal open)		Ⓐ
G	Ⓐ (N.C. : Normal Closed)		
H	Ⓐ (N.O. : Normal open)		
I		Ⓐ (N.C. : Normal Closed)	Ⓐ
J			Ⓐ
K		Ⓐ (N.C. : Normal Closed)	

* Remark : A...P)

→ Output type : PNP open collector

Only DC24V is available for valve

Connector type with 0.3m lead wire& lamp

⑤ Vacuum port

● 4 - Ø4 (O,D: standard)

6 - Ø6 (O,D)

⑥ Non return valve

no mark - standard

● N - non return valve

⑦ Sealing

no mark - standard (NBR)

● V - Viton®

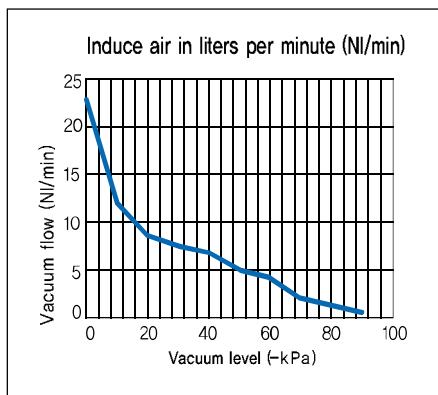
E - EPDM

Characteristics

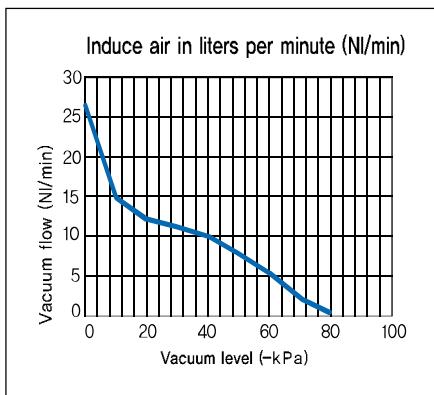
Model	max. vacuum -kPa (-inHg)	Max. vacuum flow (NI/m)/ each stack	air consumption (NI/m)/ each stack	noise level (dBA)	weight (g) /each stack
VKX5	92 (27.17)	23	13 ~ 22	50~65	96
VKM5	85 (25.1)	26	12 ~ 21	50~65	96

※ Remark : Manifold unit type weight = 86g X N + 22g (N : stack)

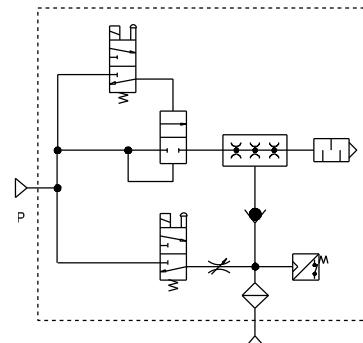
VKX5



VKM5

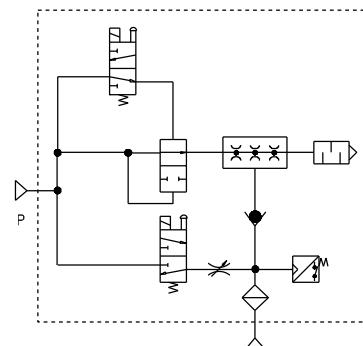


N.C. TYPE



P : Compressed air supply port
V : Vacuum port

N.O. TYPE



P : Compressed air supply port
V : Vacuum port

Induce air in liters per minute (NI/m)

Model	-inHg -kPa	0	2.95 10	5.9 20	8.85 30	11.81 40	14.76 50	17.71 60	20.67 70	23.62 80	26.57 90
VKX5		23	12	8	7	6	5	4	2.7	1.2	0.45
VKM5		26	15	12	11	10	8	5.5	2.8	0.7	

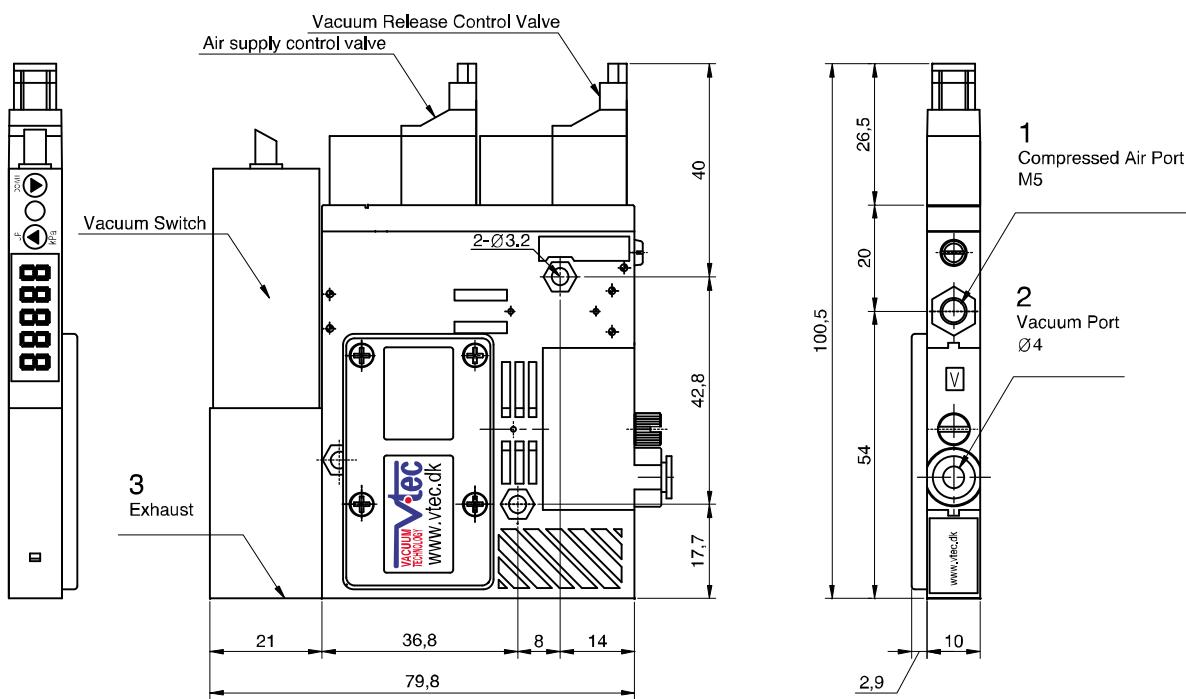
Time in seconds to evacuate to vacuum level (sec/l)

Model	-inHg -kPa	2.95 10	5.9 20	8.85 30	11.81 40	14.76 50	17.71 60	20.67 70	23.62 80	26.57 90
VKX5		0.26	0.80	1.52	2.4	3.38	4.91	6.89	10.16	19
VKM5		0.22	0.56	1.18	1.58	2.36	3.44	5.27	10.22	

Dimensional Information

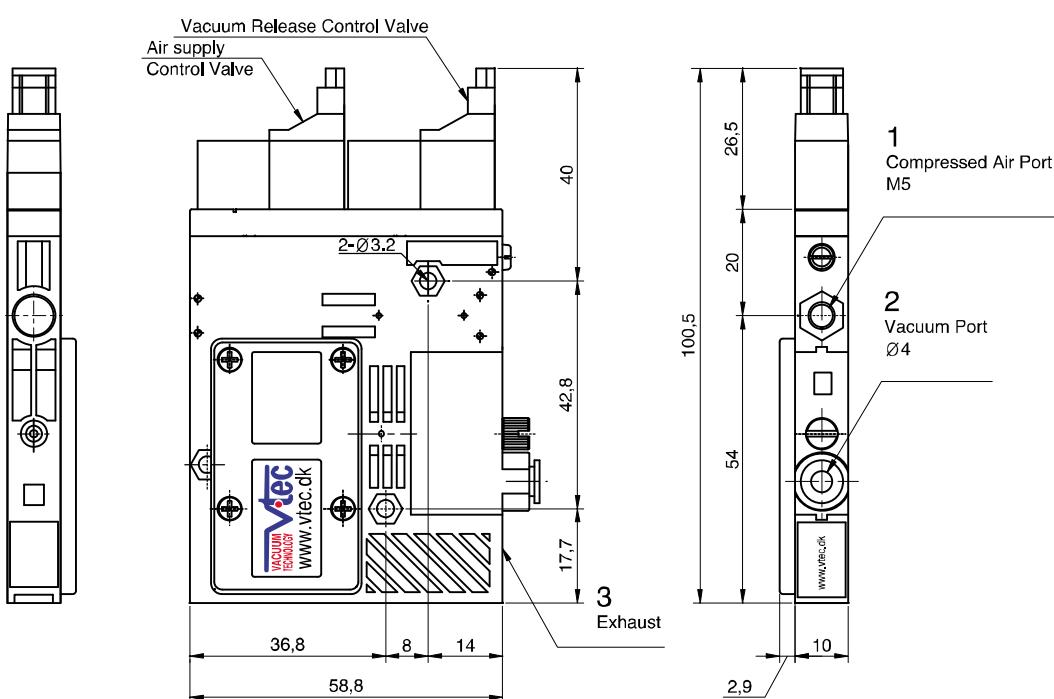
Single unit

Single Unit (A,B - Type)



[Measure unit : mm]

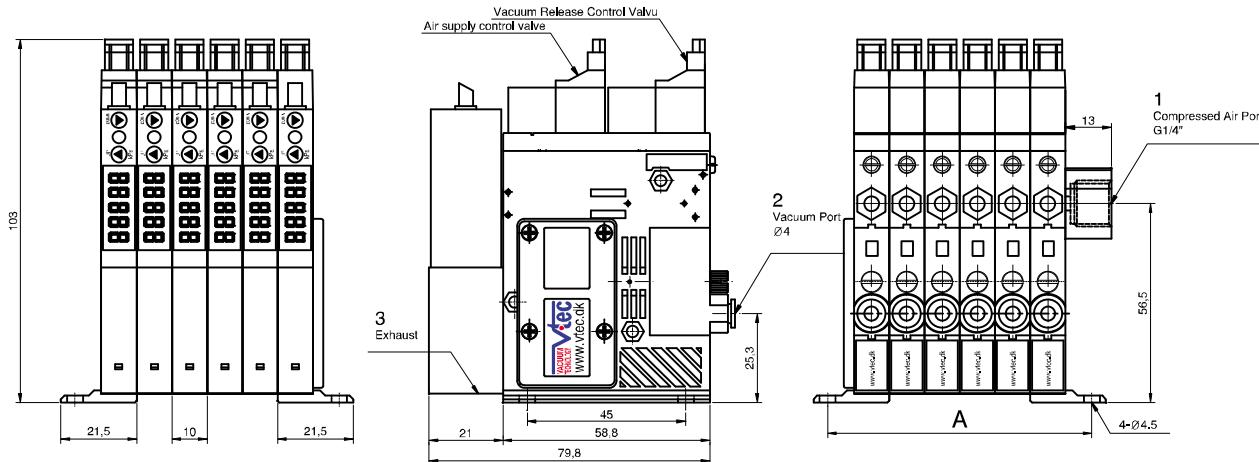
Single Unit (C,D - Type)



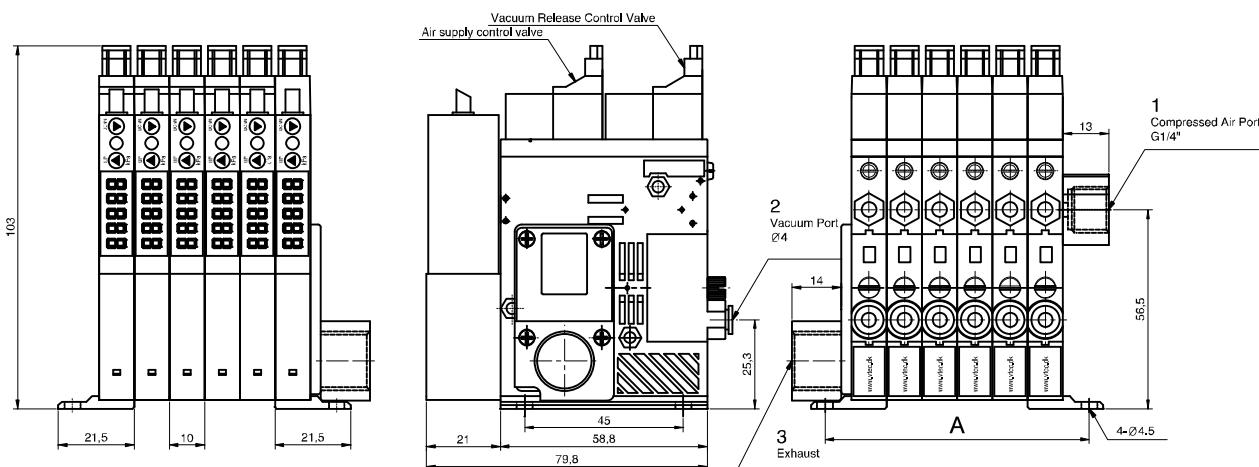
[Measure unit : inch]

Dimensional Information

Manifold unit



Manifold unit with central exhaust unit



[Measure unit : mm]

Stack	A (mm)
2stack	35
3stack	45
4stack	55
5stack	65
6stack	75
7stack	85
8stack	95
9stack	105
10stack	115

Midi Keyboard Pump

Max. vacuum level : VKX pump **-92 kPa** (-27.16 inHg)
VKM pump **-85 kPa** (-25.1 inHg)

Max. flow rate : VKX pump **62 NI/min** (2.19 scfm)
VKM pump **74 NI/min** (2.61 scfm)

Supply air pressure : **3~6 bar, Max. 7 bar**
(43.5~87 psi, max 101.5 psi)

Supply air type : Dry compressed air

Working temperature : -20°C to +80°C

Noise level : 50~65 dBA



Main Advantages

- High efficiency Midi vacuum pump (Multi-Nozzle type).
- Available of individual control.
- Vacuum filter self cleaning system.
- Long life time and Low noise level.
- Easy to install and Compact size (17mm).
- Lightweight. • Built-in check valve.
- Integrated Vacuum Pump, Air supply & vacuum release control valve, Vacuum Switch & Filter, Blowing flow control valve and silencer in a body.

Order No.

VKM62 - M4 - A 3 3 - C N V

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Model-Vacuum Flow

VKM61 - 37 NI/min

● **VKM62** - 74 NI/min

VKX61 - 31 NI/min

VKX62 - 62 NI/min

② Body-type

S - Single unit

● M - Manifold unit

E - Manifold unit with central exhaust unit

③ Vacuum Stack

1 - 1 stack 5 - 5 stack

2 - 2 stack 6 - 6 stack

3 - 3 stack 7 - 7 stack

● **4 - 4 stack 8 - 8 stack**

④ Valves

	Air supply control valve	Vacuum release control valve
● A	◎ (N. C. :Normal Closed)	◎ (N. C. :Normal Closed)
B	◎ (N. O. :Normal Open)	◎ (N. C. :Normal Closed)
C	◎ (N. C. :Normal Closed)	
D	◎ (N. O. :Normal Open)	
E		◎ (N. C. :Normal Closed)
W*	◎ Double solenoid valve	◎ (N. C. :Normal Closed)

* Only for DC24V and connector type.

⑤ Voltage

1 - AC 110V

2 - AC 220V

● **3 - DC 24V**

⑥ Solenoid Terminal

1* - DIN type without lead wire

2* - DIN type with lamp without lead wire

● **3 - Connector type with lamp & 0.3 m lead wire**

2B* - DIN type with '2 in 1' BUS cable
(Air control v/v + Vacuum release v/v)

3B* - DIN type with '3 in 1' BUS cable
(Air control v/v + Vacuum release v/v + Digital switch)

* Can not available with double solenoid valve

※ Remark

3 : Available only with DC24V

3B : Available only with DC24V

Available only with 'C' or 'PC', section ⑦

☞ About 'BUS cable' (340, 341)

⑦ Vacuum switch

● (P)C - Digital display output 2points, No analog supply
M8 4-Pin connector type.

(P)G - Digital display output 2points, No analog supply
4-Core 2m Grommet lead wire.

(P)GA - Digital display output 2points, Analog supply
5-Core 2m Grommet lead wire.

S1 - Mechanical vacuum switch

S4 - Flashing LED light display NPN output 2points,
No analog supply, 4-Core 1m lead wire.

S5 - Flashing LED light display PNP output 1point,
No analog supply, 3-Core 1m lead wire.

※ Remark : (P)..

→ Output type : PNP open collector

⑧ Non return valve

no mark - standard

● **N** - Non return valve

⑨ Sealing

no mark - standard (NBR)

● **V** - Viton®

E - EPDM

Characteristics

Model	max. vacuum -kPa(-inHg)	Max. vacuum flow (NI/m) eachstack	air consumption (NI/m)/eachstack	noise level (dBA)	weight (g) eachstack		min hose inner Ø (within 2m)		
					Connector Valve	DIN Valve	air supply	vacuum	
							single unit	manifold unit	
VKX61	92 (27.17)	31	21~24	50~65	213.5	291.5	≥4	≥8~12	≥6
VKX62		62	43~48	50~65	213.5	291.5	≥4	≥8~12	≥6
VKM61	85 (25.1)	37	15~21	50~65	213.5	291.5	≥4	≥8~12	≥6
VKM62		74	30~42	50~65	213.5	291.5	≥4	≥8~12	≥6

※ Remark : Manifold unit type weight = each stack weight X N + 56g (N: stack)

Induce air in liters per minute (NI/m)

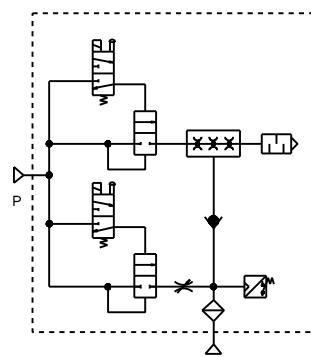
Model	-inHg -kPa	0	2.95	5.9	8.85	11.81	14.76	17.71	20.67	23.62	26.57
		0	10	20	30	40	50	60	70	80	90
VKX61×(N)	31	18	9	8	7	5	4	2.7	1.2	0.46	
VKX62×(N)	62	36	18	16	13	11	9	5.4	2.4	0.9	
VKM61×(N)	37	26	16	14	10	8	6	2.7	0.66		
VKM62×(N)	74	52	31	28	20	16	12	4.8	1.32		

Time in seconds to evacuate to vacuum level (sec/l)

Model	-inHg -kPa	2.95	5.9	8.85	11.81	14.76	17.71	20.67	23.62	26.57
		10	20	30	40	50	60	70	80	90
VKX61	0.258	0.796	1.516	2.4	3.56	4.91	6.896	10.16	19.19	
VKX62	0.129	0.398	0.758	1.2	1.78	2.455	3.445	5.08	9.549	
VKM61	0.218	0.556	1	1.576	2.356	3.44	5.27	10.216		
VKM62	0.109	0.278	0.5	0.788	1.178	1.72	2.635	5.158		

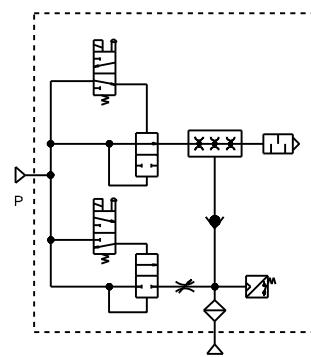
The composition of the Midi Keyboard pump

N.C. TYPE



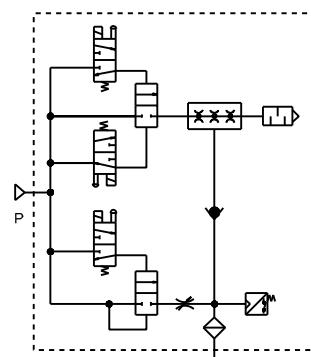
P : Compressed air supply port
v : Vacuum port

N.O. TYPE



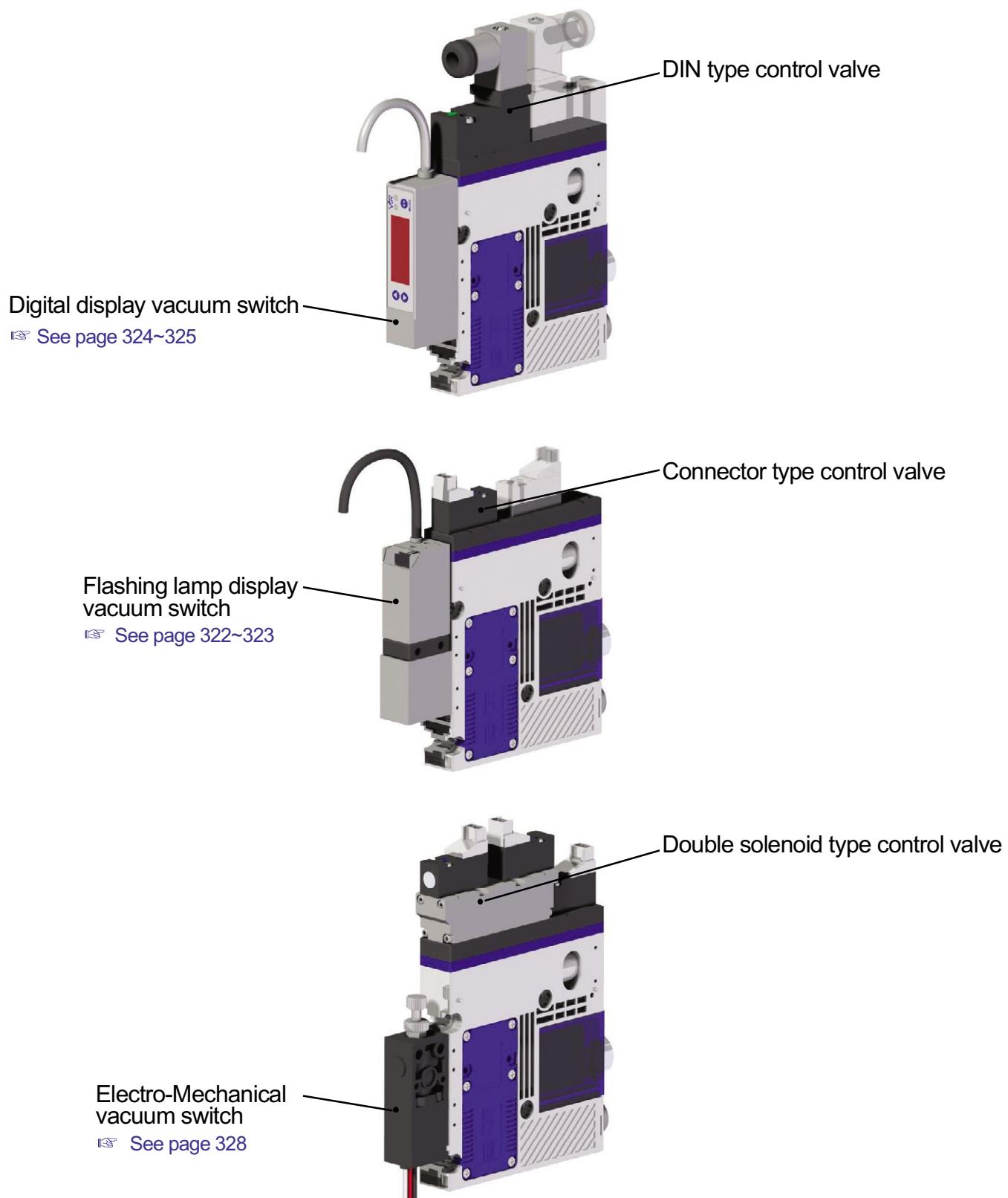
P : Compressed air supply port
v : Vacuum port

DOUBLE SOLENOID TYPE



P : Compressed air supply port
v : Vacuum port

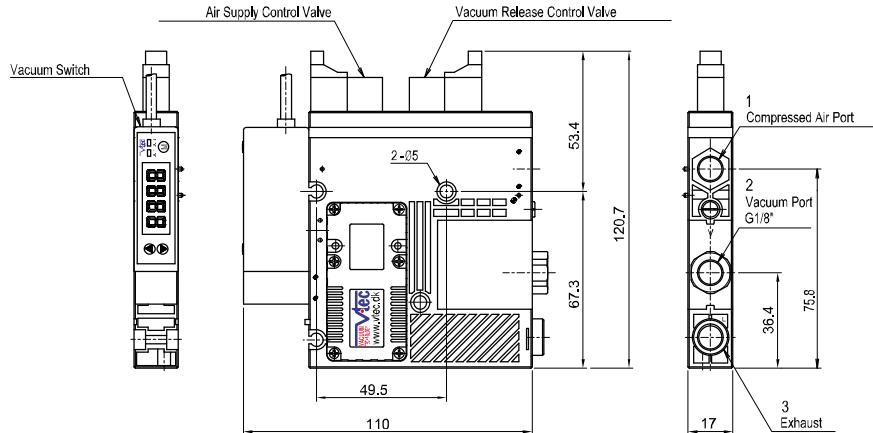
Selectable wide range of valves and switches.



Dimensional Information

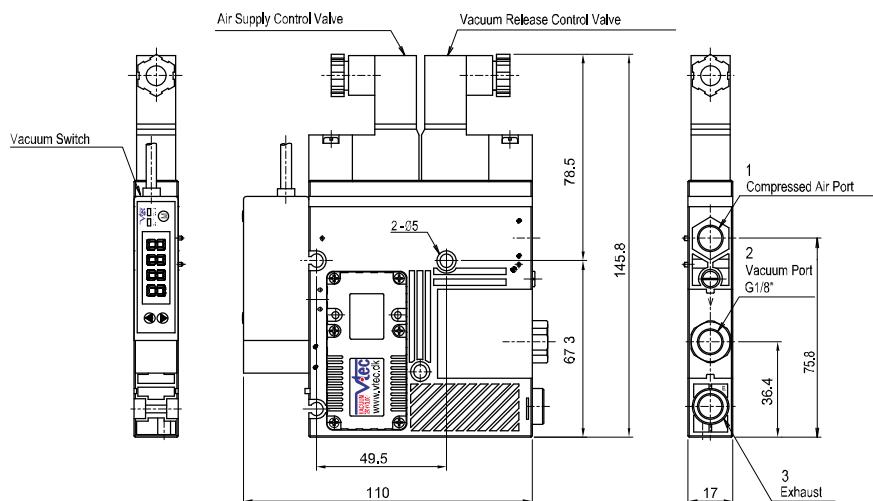
Single unit

Control valve Connector type / Digital vacuum switch



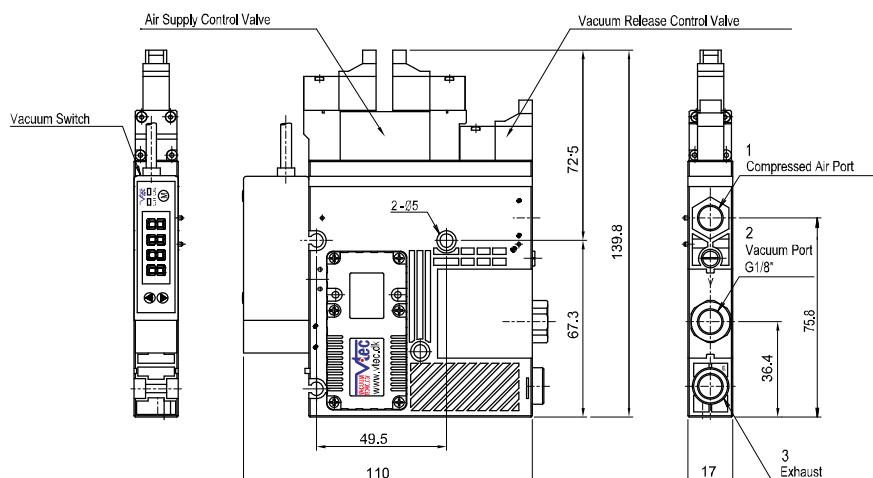
Single unit

Control valve DIN type / Digital vacuum switch



Single unit

Control valve double solenoid type / Digital vacuum switch

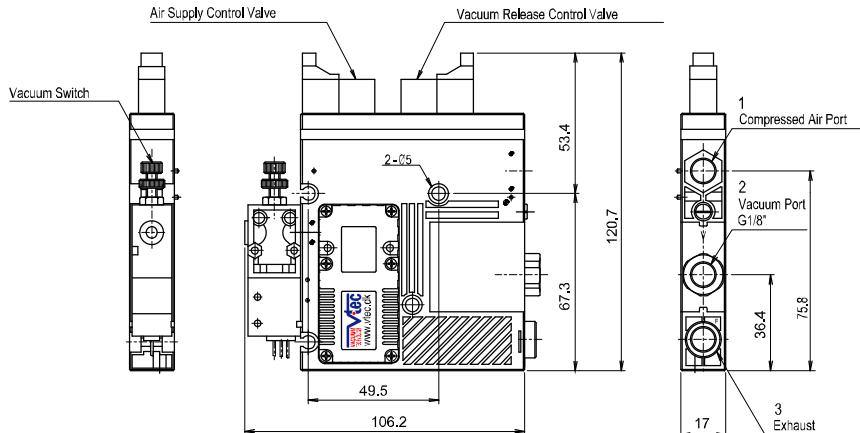


[Measure unit : mm]

Dimensional Information

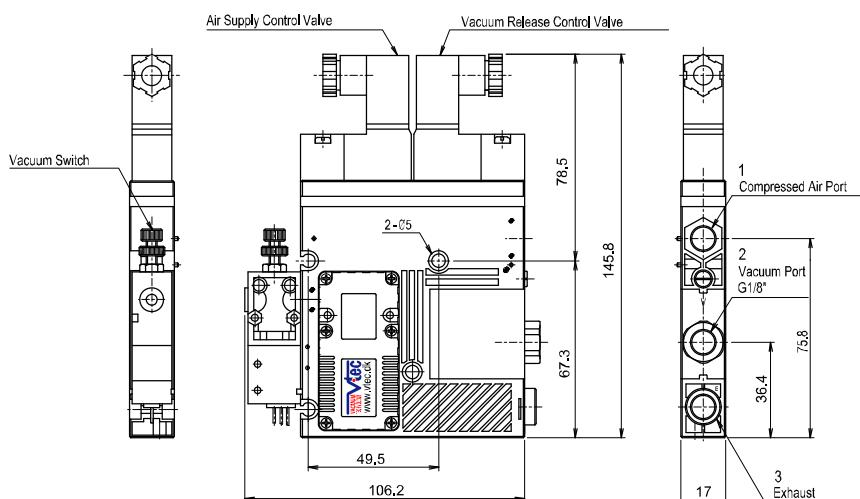
Single unit

Control valve Connector type / Mechanical vacuum switch



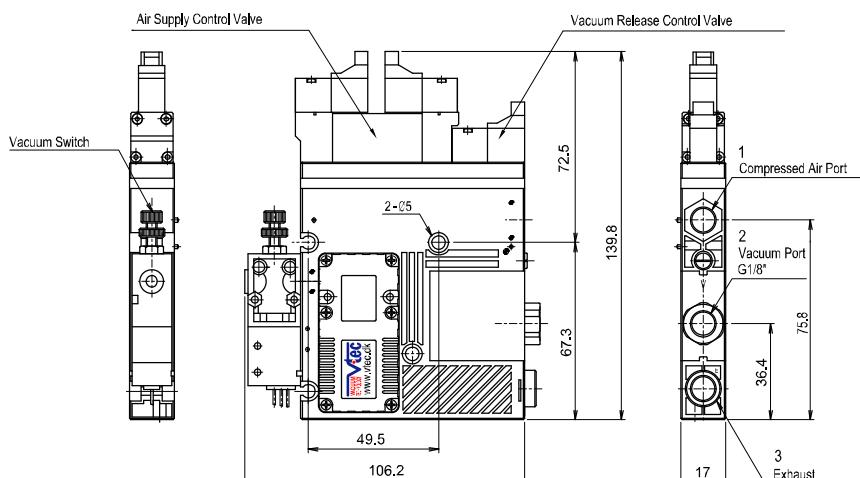
Single unit

Control valve DIN type / Mechanical vacuum switch



Single unit

Control valve double solenoid type / Mechanical vacuum switch

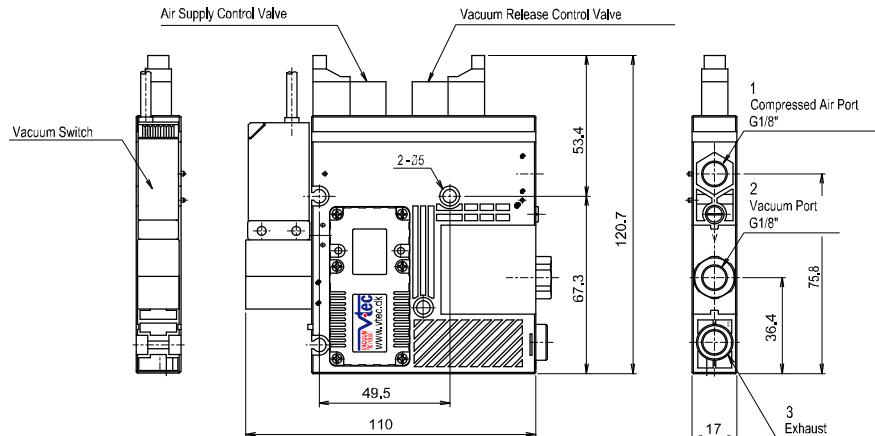


[Measure unit : mm]

Dimensional Information

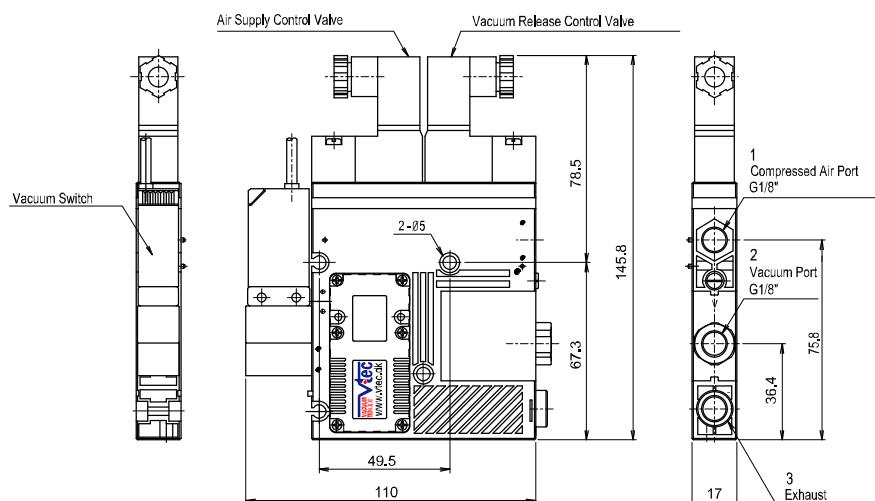
Single unit

Control valve Connector type / Flashing lamp display vacuum switch



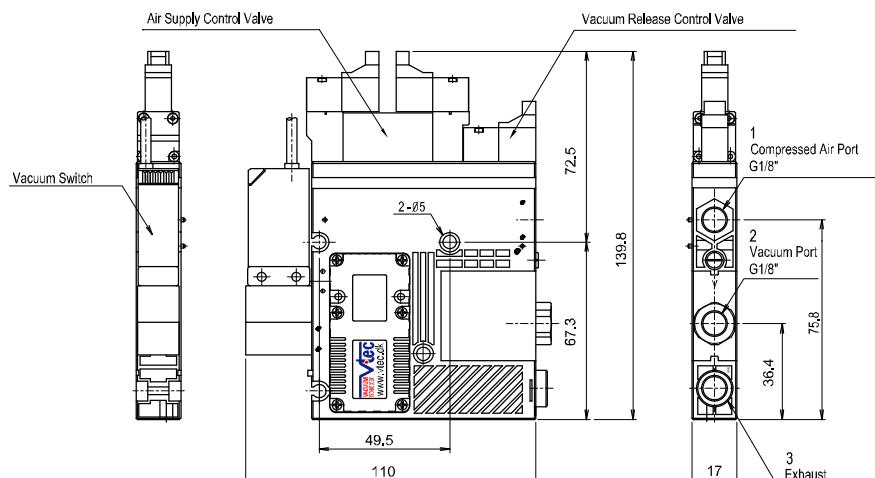
Single unit

Control valve DIN type / Flashing lamp display vacuum switch



Single unit

Control valve double solenoid type / Flashing lamp display vacuum switch

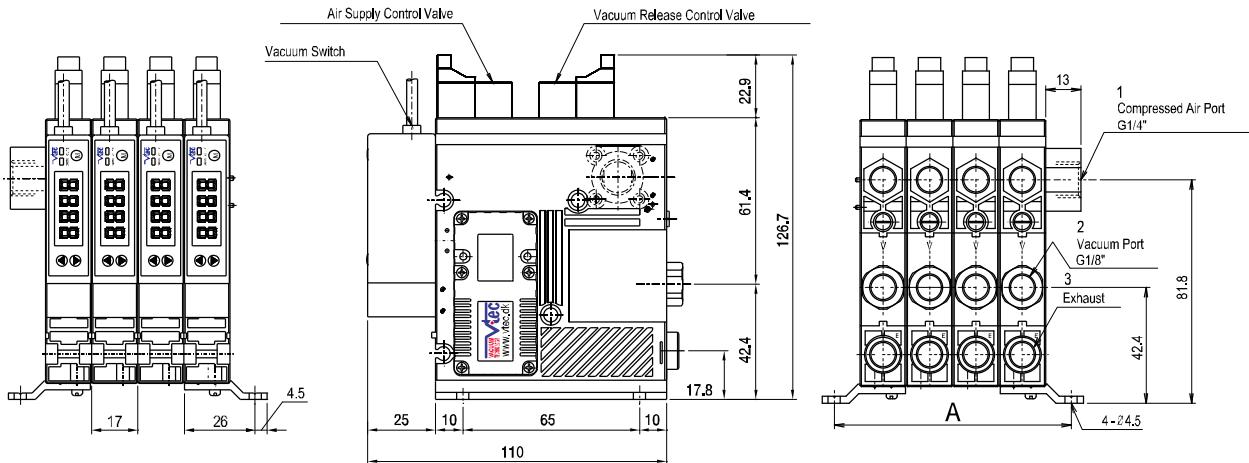


[Measure unit : mm]

Dimensional Information

Manifold unit

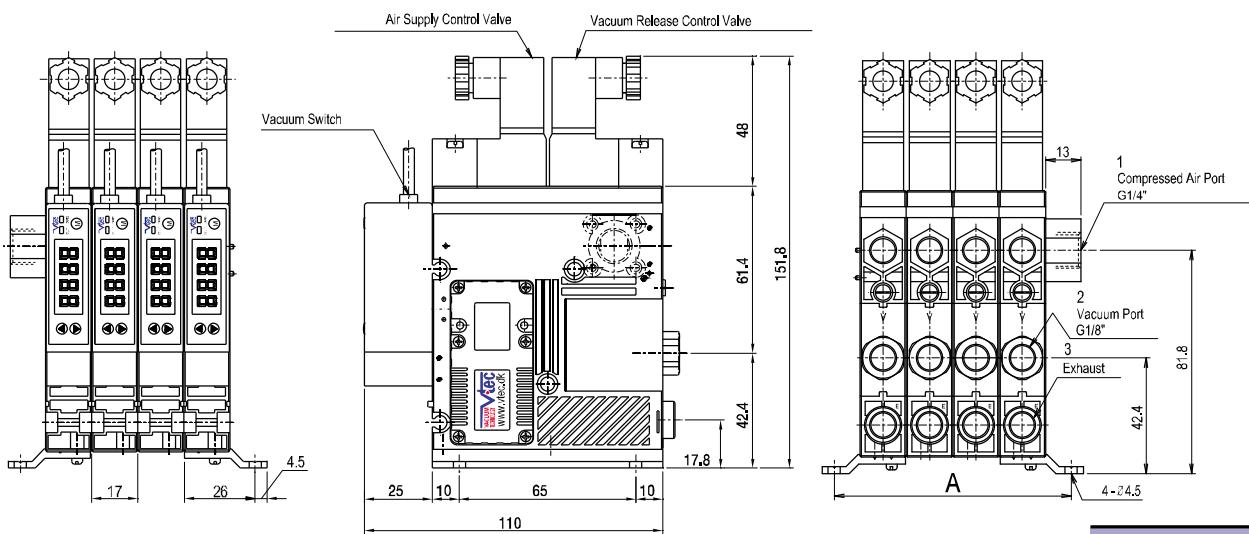
Control valve Connector type / Digital vacuum switch



Manifold unit

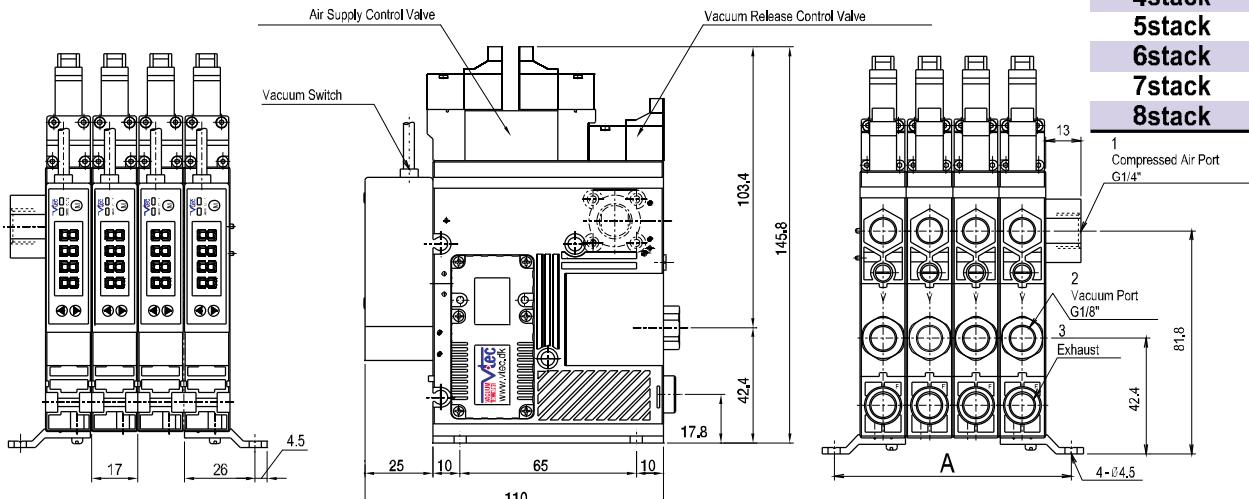
Control valve DIN type / Digital vacuum switch

[Measure unit : mm]



Manifold unit

Control valve double solenoid type / Digital vacuum switch

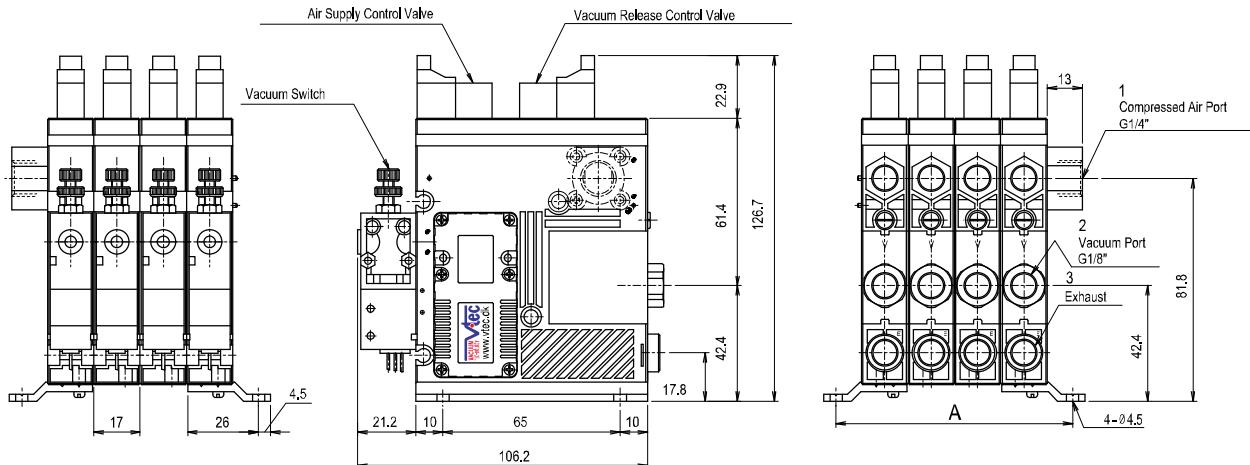


Stack	A (mm)
2stack	52.8
3stack	69.8
4stack	86.8
5stack	103.8
6stack	120.8
7stack	137.8
8stack	154.8

Dimensional Information

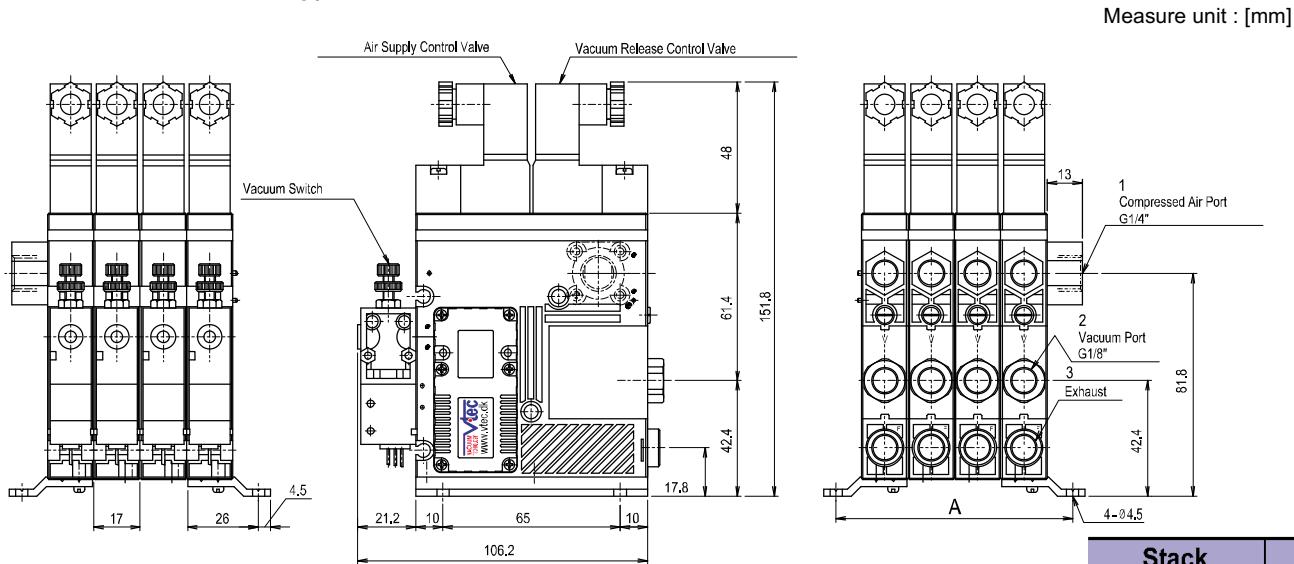
Manifold unit

Control valve Connector type / Mechanical vacuum switch



Manifold unit

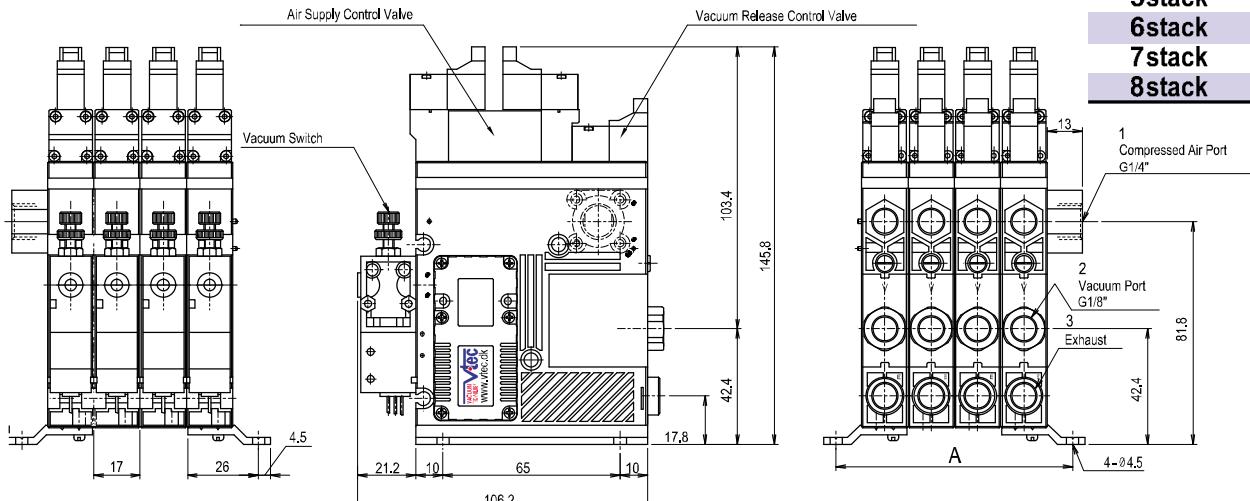
Control valve DIN type / Mechanical vacuum switch



VACUUM
PUMPS

Manifold unit

Control valve double solenoid type / Mechanical vacuum switch



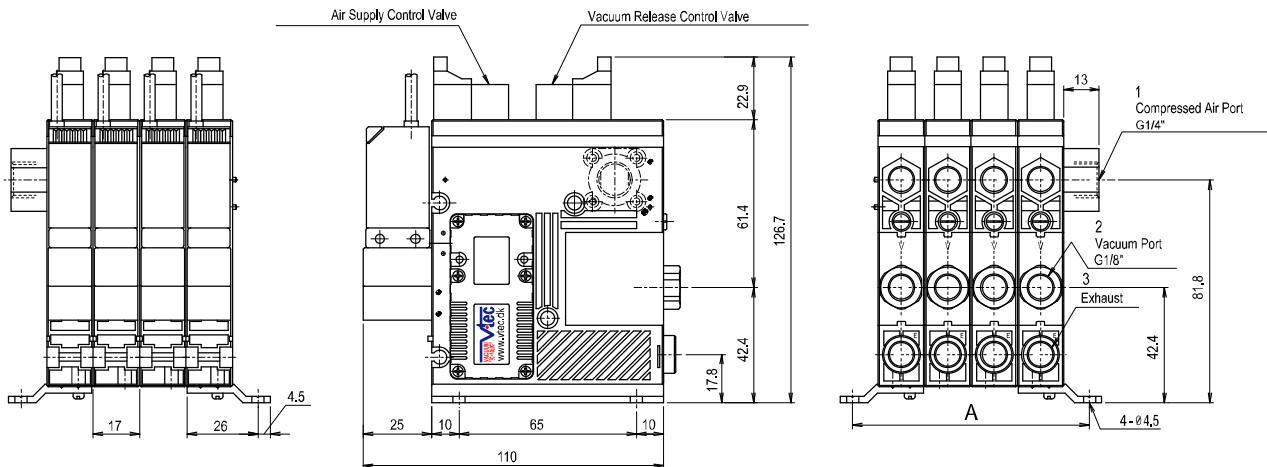
Stack	A (mm)
2stack	52.8
3stack	69.8
4stack	86.8
5stack	103.8
6stack	120.8
7stack	137.8
8stack	154.8

Specifications subject to change without notice.

Dimensional Information

Manifold unit

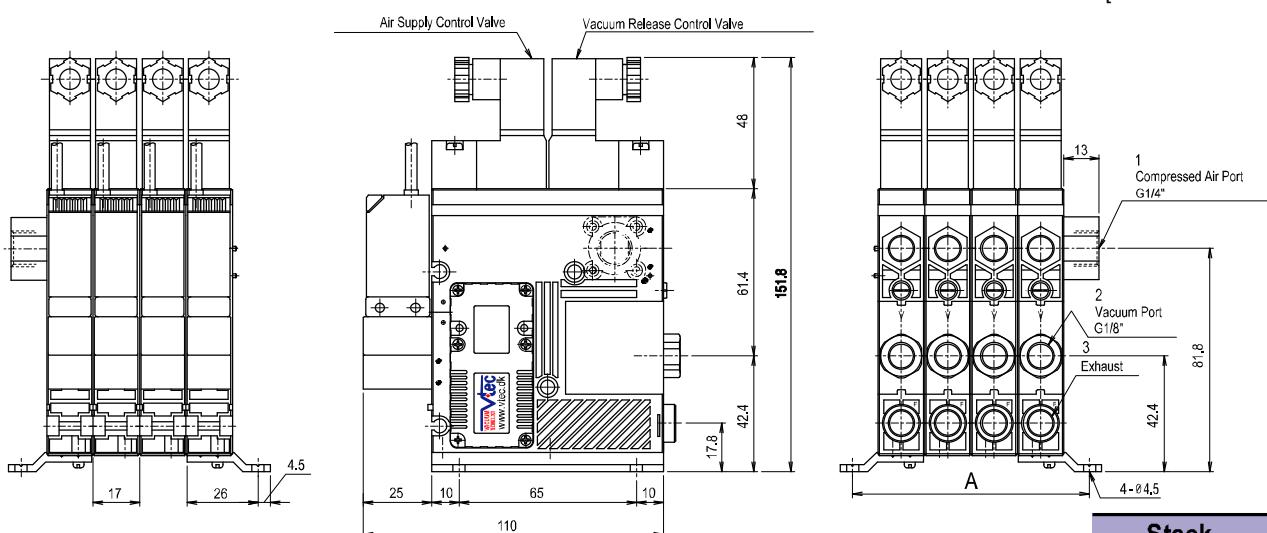
Control valve Connector type / Flashing lamp display vacuum switch



Manifold unit

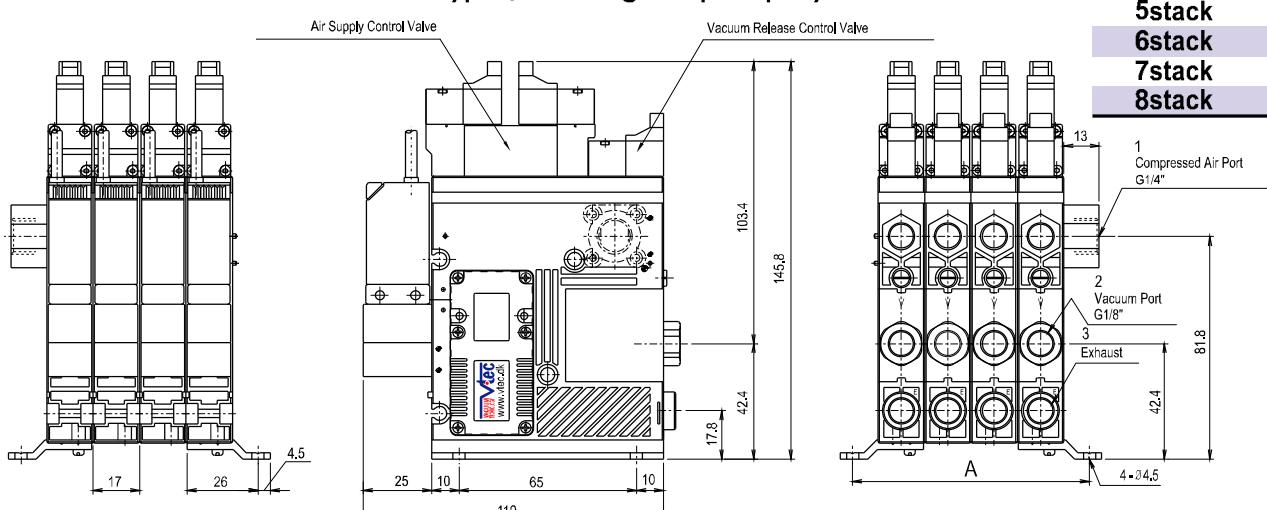
Control valve DIN type / Flashing lamp display vacuum switch

[Measure unit : mm]



Manifold unit

Control valve double solenoid type / Flashing lamp display vacuum switch

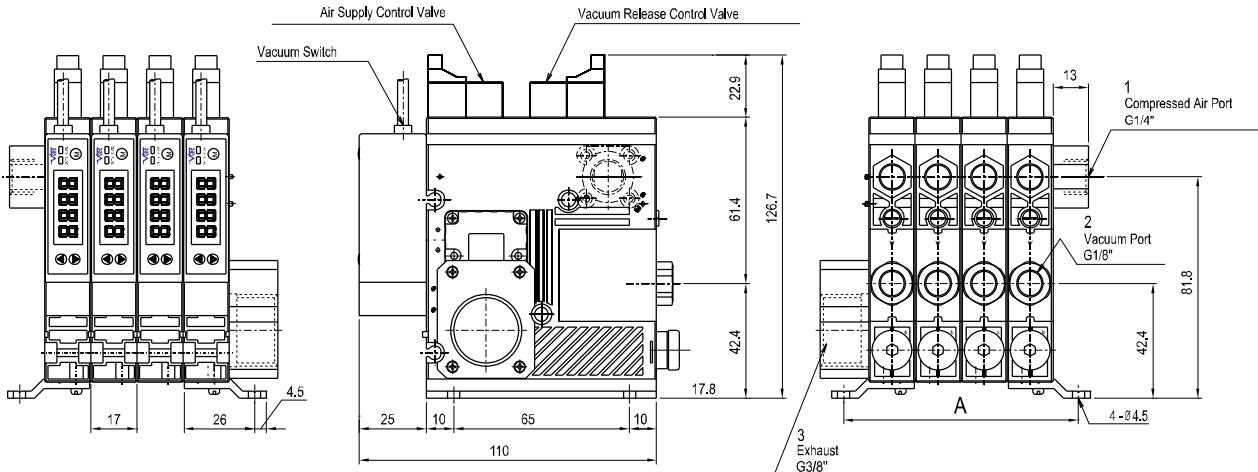


Stack	A (mm)
2stack	52.8
3stack	69.8
4stack	86.8
5stack	103.8
6stack	120.8
7stack	137.8
8stack	154.8

Dimensional Information

Manifold unit with central exhaust

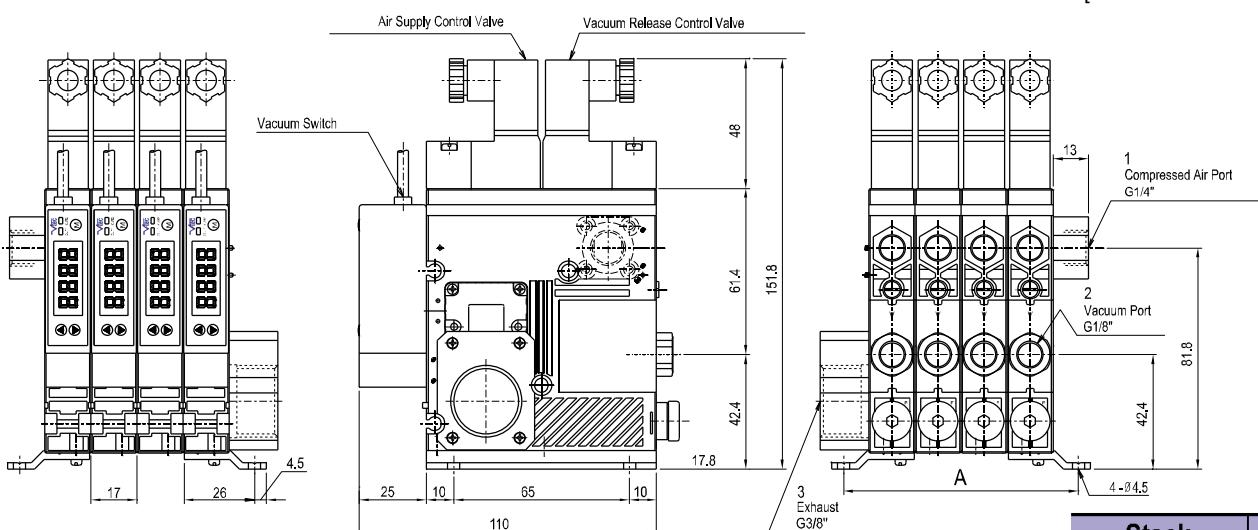
Control valve Connector type / Digital vacuum switch



Manifold unit with central exhaust

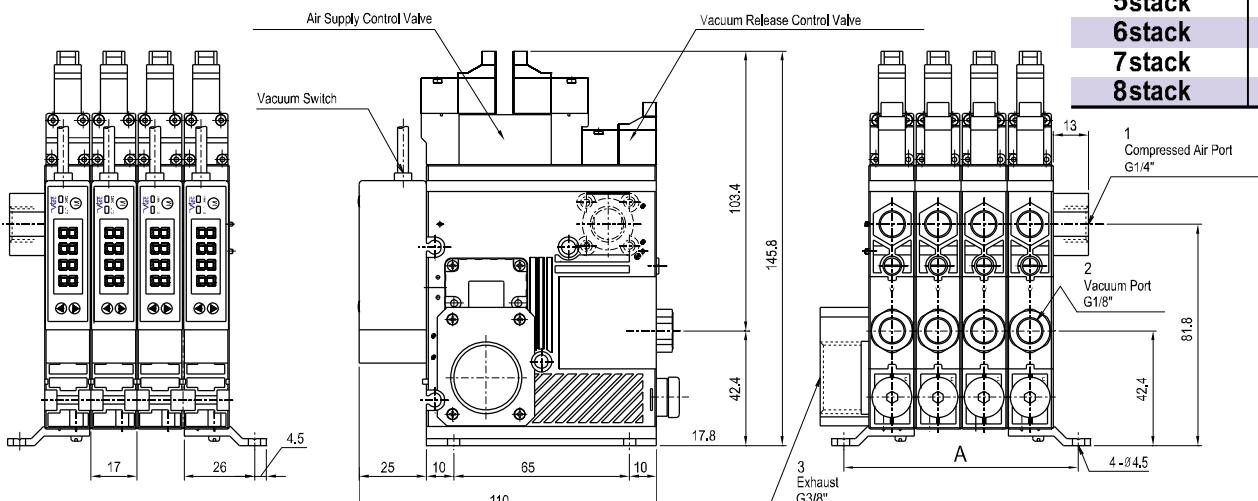
Control valve DIN type / Digital vacuum switch

[Measure unit : mm]



Manifold unit with central exhaust

Control valve double solenoid type / Digital vacuum switch

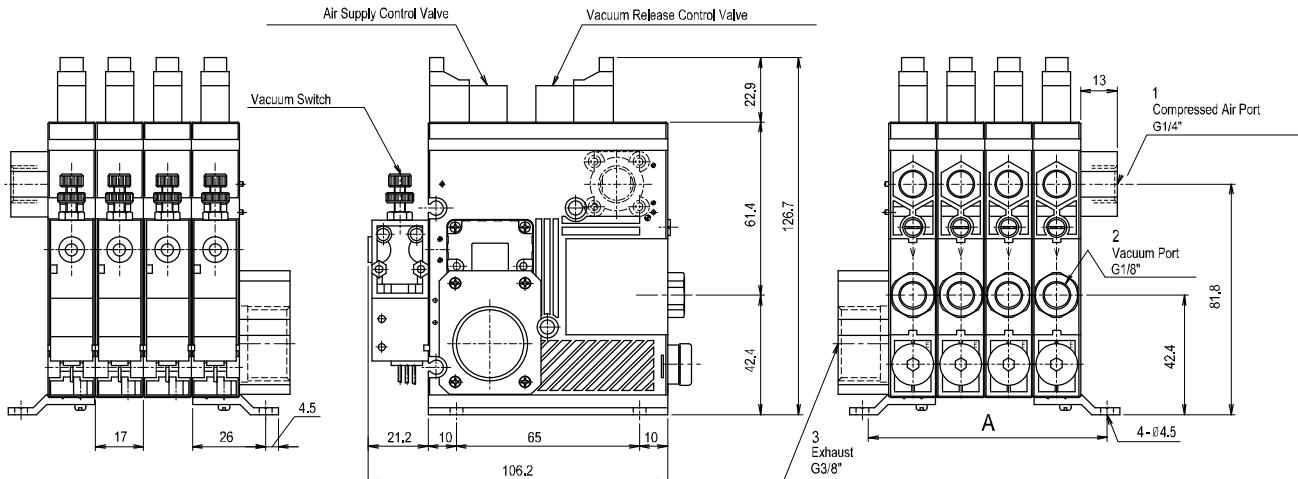


Specifications subject to change without notice.

Dimensional Information

Manifold unit with central exhaust

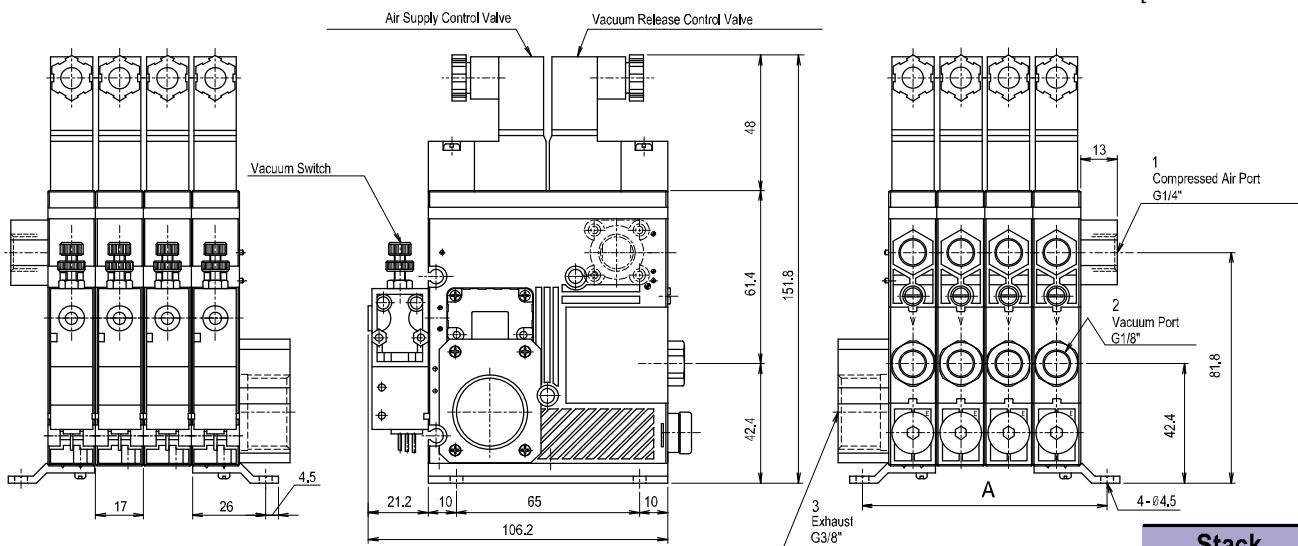
Control valve Connector type / Mechanical vacuum switch



Manifold unit with central exhaust

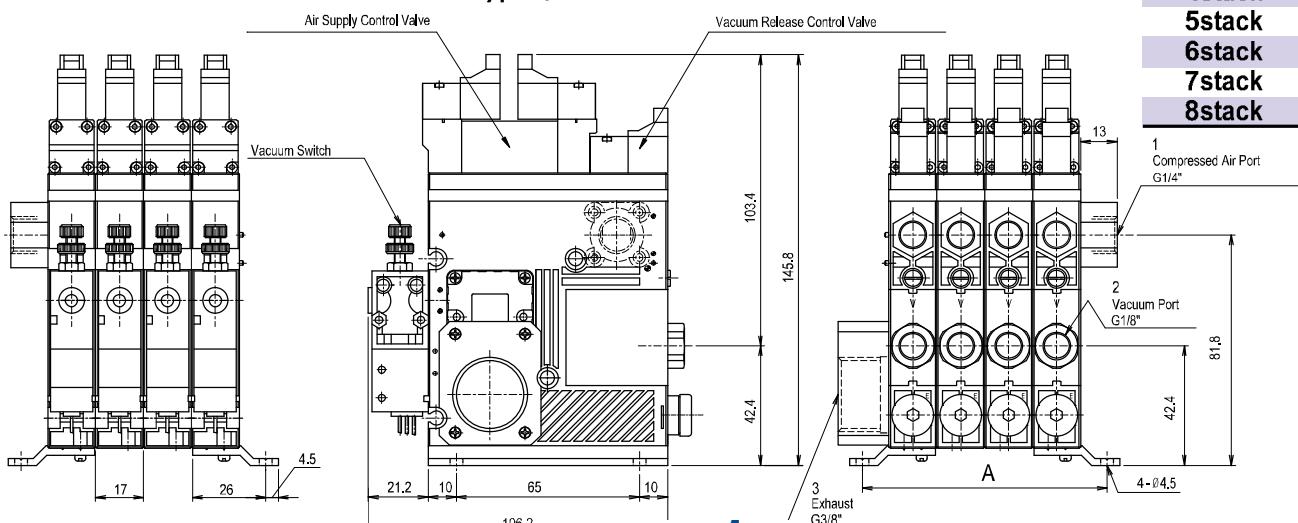
Control valve DIN type / Mechanical vacuum switch

[Measure unit : mm]



Manifold unit with central exhaust

Control valve double solenoid type / Mechanical vacuum switch

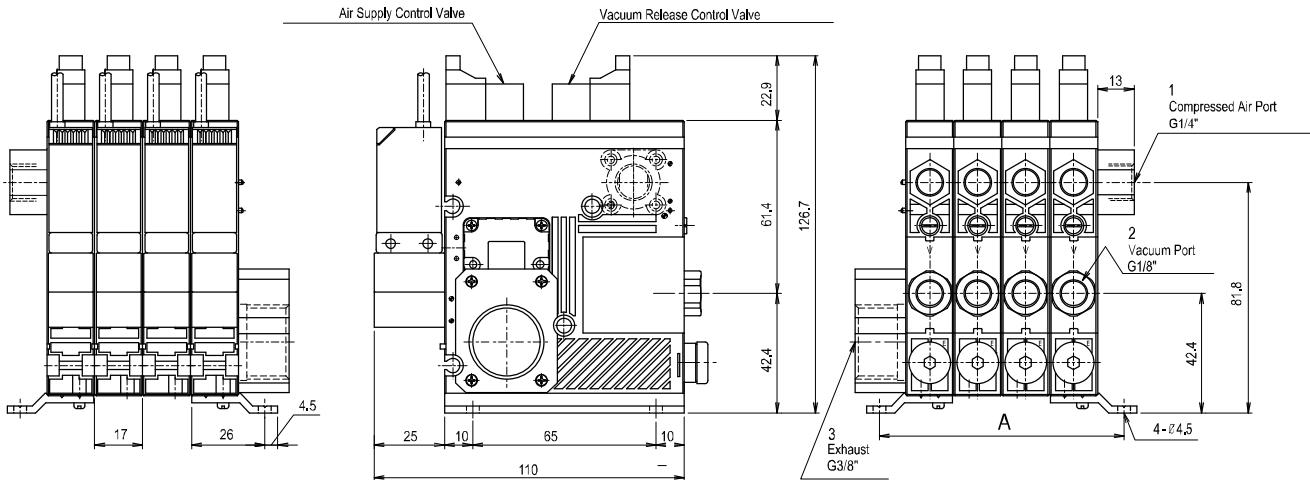


Stack	A (mm)
2stack	52.8
3stack	69.8
4stack	86.8
5stack	103.8
6stack	120.8
7stack	137.8
8stack	154.8

Dimensional Information

Manifold unit with central exhaust

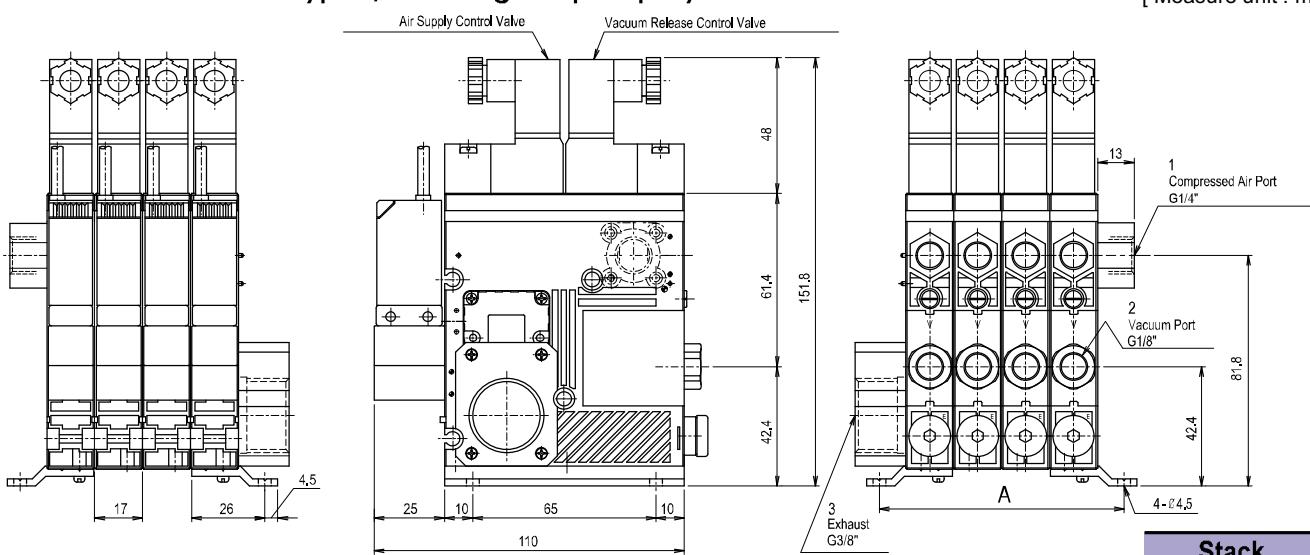
Control valve Connector type / Flashing lamp display vacuum switch



Manifold unit with central exhaust

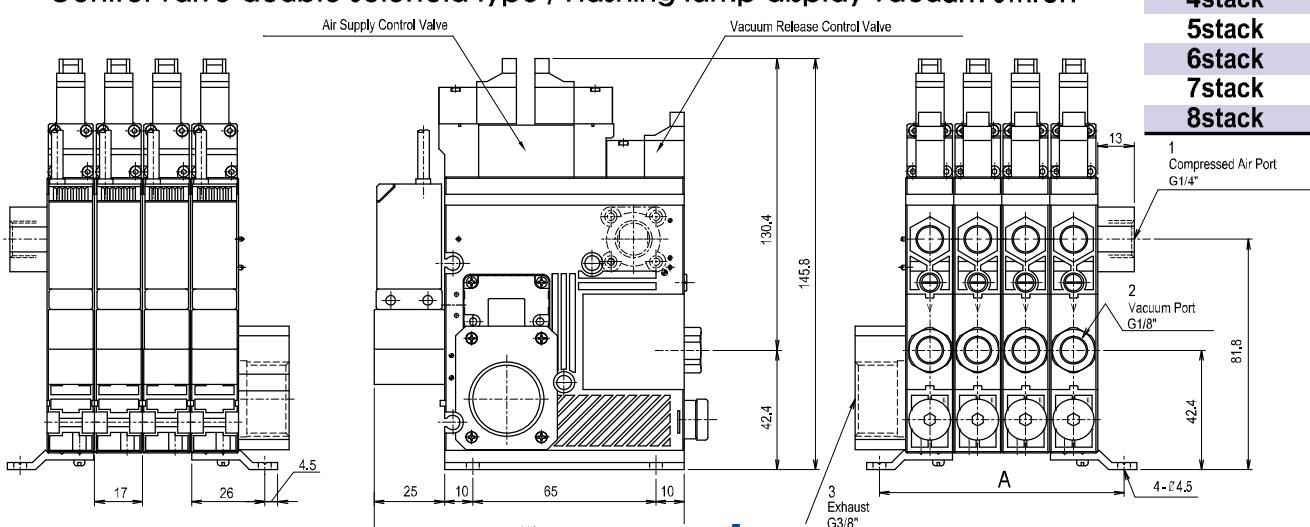
Control valve DIN type / Flashing lamp display vacuum switch

[Measure unit : mm]



Manifold unit with central exhaust

Control valve double solenoid type / Flashing lamp display vacuum switch



Stack	A (mm)
2stack	52.8
3stack	69.8
4stack	86.8
5stack	103.8
6stack	120.8
7stack	137.8
8stack	154.8

Specifications subject to change without notice.

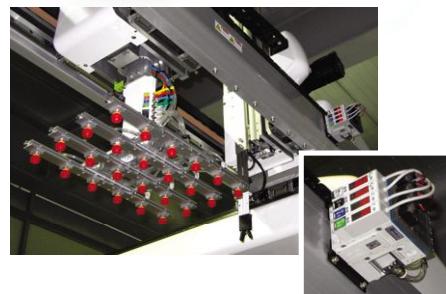
Mega Keyboard Pump

Max. vacuum level	: VKX pump -92 kPa (-27.16 inHg) VKM pump -85 kPa (-25.1 inHg)
Max. flow rate	: VKX pump 109 NL/min (3.85 scfm) VKM pump 135 NL/min (4.76 scfm)
Supply air pressure	: 3~6bar, max 7bar (43.5~87 psi, max 101.5psi)
Supply air type	: Dry compressed air
Working temperature	: -20°C to +80°C
Noise level	: 50~65 dBA



Main Advantages

- High efficiency Mega vacuum pump (Multi-Nozzle type).
- Available of individual control.
- Vacuum filter self cleaning system.
- Long life time and Low noise level.
- Easy to install and Compact size (17mm).
- Lightweight. • Built-in check valve.
- Integrated Vacuum Pump, Air supply & vacuum release control valve, Vacuum Switch & Filter, Blowing flow control valve and silencer in a body.



Order No.

VKX74 - M4 - W 3 3 - C N V

① Model-Vacuum Flow

VKX73	-	94 NL/min
● VKX74	-	109 NL/min
VKM73	-	111 NL/min
VKM74	-	135 NL/min

② Body-type

S	- Single unit
● M	- Manifold unit
E	- Manifold unit with central exhaust unit

③ Vacuum Stack

1 - 1 stack	5 - 5 stack
2 - 2 stack	6 - 6 stack
3 - 3 stack	7 - 7 stack
● 4 - 4 stack	8 - 8 stack

④ Valves

	Air supply control valve	Vacuum release control valve
A	◎ (N. C. :Normal Closed)	◎ (N. C. :Normal Closed)
B	◎ (N. O. :Normal Open)	◎ (N. C. :Normal Closed)
C	◎ (N. C. :Normal Closed)	
D	◎ (N. O. :Normal Open)	
E		◎ (N. C. :Normal Closed)
● W*	◎ Double solenoid valve	◎ (N. C. :Normal Closed)

* Only for DC24V and connector type.

Specifications subject to change without notice.

⑦ Vacuum switch

● (P)C	- Digital display output 2points, No analog supply M8 4-Pin connector type.
(P)G	- Digital display output 2points, No analog supply 4-Core 2m Grommet lead wire.
(P)GA	- Digital display output 2points, Analog supply 5-Core 2m Grommet lead wire.
S1	- Mechanical vacuum switch
S4	- Flashing LED light display NPN output 2points, No analog supply, 4-Core 1m lead wire.
S5	- Flashing LED light display PNP output 1point, No analog supply, 3-Core 1m lead wire.

* Remark : (P)..

→ Output type : PNP open collector

⑧ Non return valve

no mark - standard

● **N** - Non return valve

⑨ Sealing

no mark - standard (NBR)

● **V** - Viton®

E - EPDM

Characteristics

Model	max. vacuum -kPa (-inHg)	Max. vacuum flow (NI/m)/ eachstack	air consumption (NI/m)/eachstack	noise level (dBA)	weight(g) eachstack		min hose inner Ø (within 2m)		
					Connector Valve	DIN Valve	air supply	vacuum	
VKX73	92 (27.17)	94	49 ~ 66	50~65	212	290	≥4	≥8~12	≥8
VKX74		109	66 ~ 88	50~65	212	290	≥4	≥8~12	≥8
VKM73	85 (25.1)	111	40 ~ 58	50~65	212	290	≥4	≥8~12	≥8
VKM74		135	54 ~ 78	50~65	212	290	≥4	≥8~12	≥8

※ Remark : Manifold unit type weight = each stack weight X N + 56g (N: stack)

Induce air in liters per minute (NI/m)

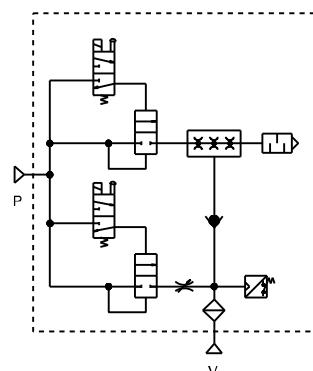
Model	-inHg -kPa	0	2.95	5.9	8.85	11.81	14.76	17.71	20.67	23.62	26.57
		0	10	20	30	40	50	60	70	80	90
VKX73	94	54	27	24	21	17	13.5	9	3.6	1.35	
VKX74	109	72	35	32	27	22	18	12	4.8	1.8	
VKM73	111	78	47	42	30	24	18	7.2	1.98		
VKM74	135	99	62	54	40	32	24	9.6	2.64		

Time in seconds to evacuate to vacuum level (sec/l)

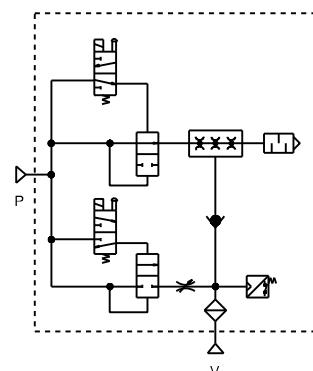
Model	-inHg -kPa	2.95	5.9	8.85	11.81	14.76	17.71	20.67	23.62	26.57
		10	20	30	40	50	60	70	80	90
VKX73	0.1	0.3	0.57	0.9	1.34	1.84	2.58	3.81	7.2	
VKX74	0.06	0.2	0.38	0.6	0.89	1.23	1.72	2.54	4.8	
VKM73	0.08	0.21	0.38	0.59	0.88	1.29	1.98	3.87		
VKM74	0.05	0.14	0.25	0.39	0.59	0.86	1.32	2.58		

The composition of the Mega keyboard pump

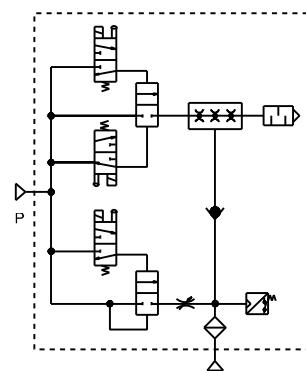
N.C. TYPE



N.O. TYPE



DOUBLE SOLENOID TYPE

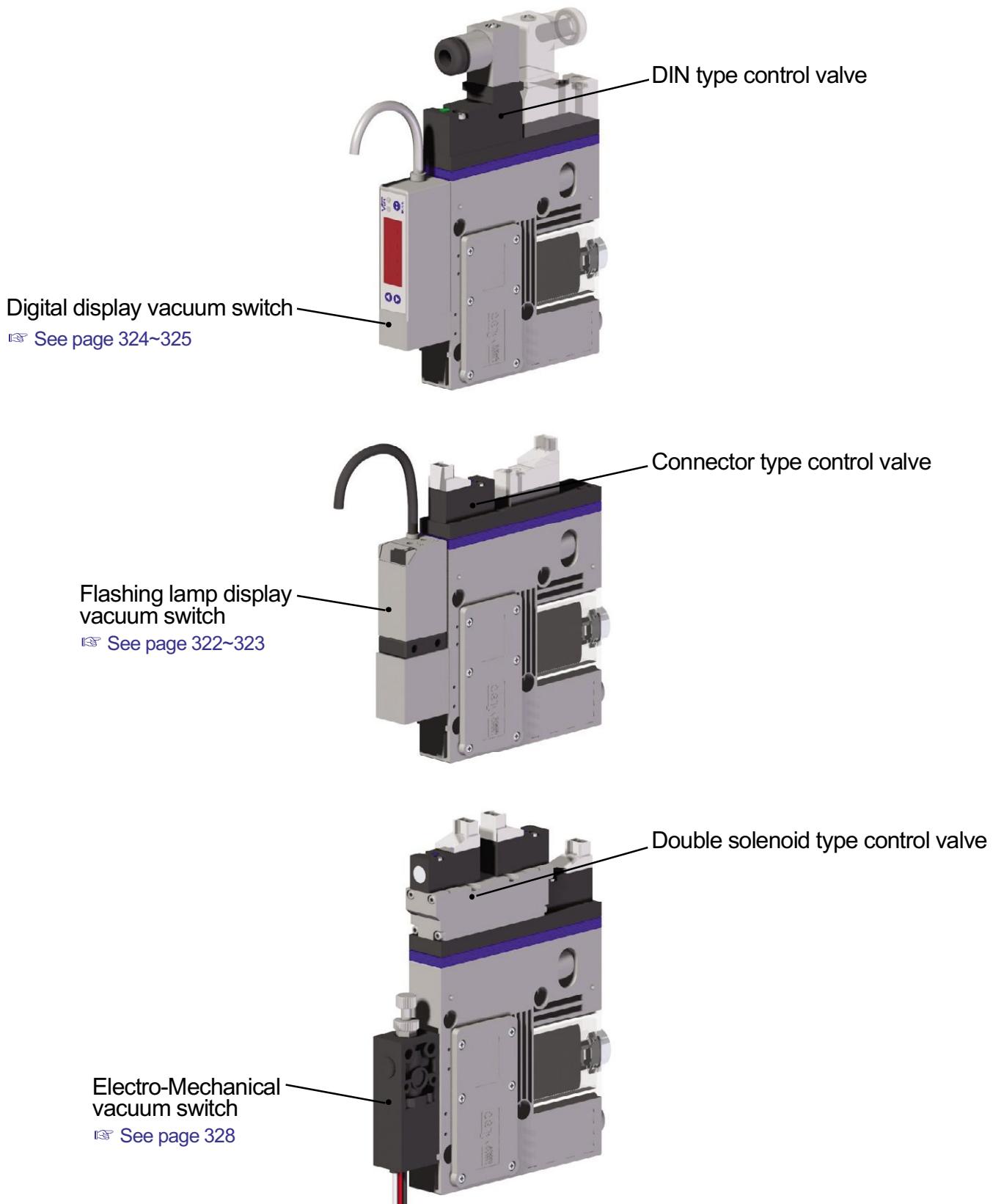


P : Compressed air supply port
v : Vacuum port

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v : Vacuum port

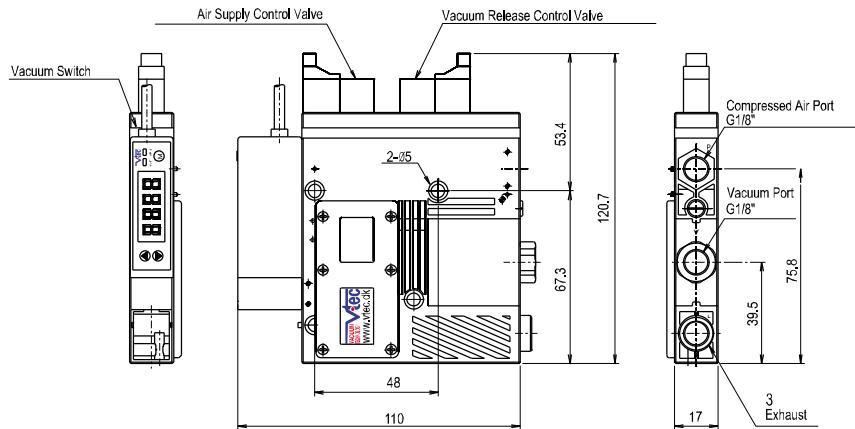
Selectable wide range of valves and switches.



Dimensional Information

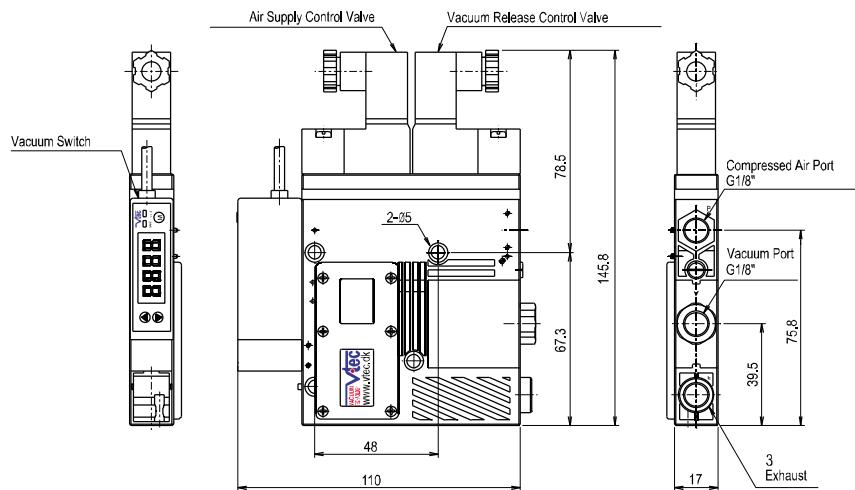
Single unit

Control valve Connector type / Digital vacuum switch



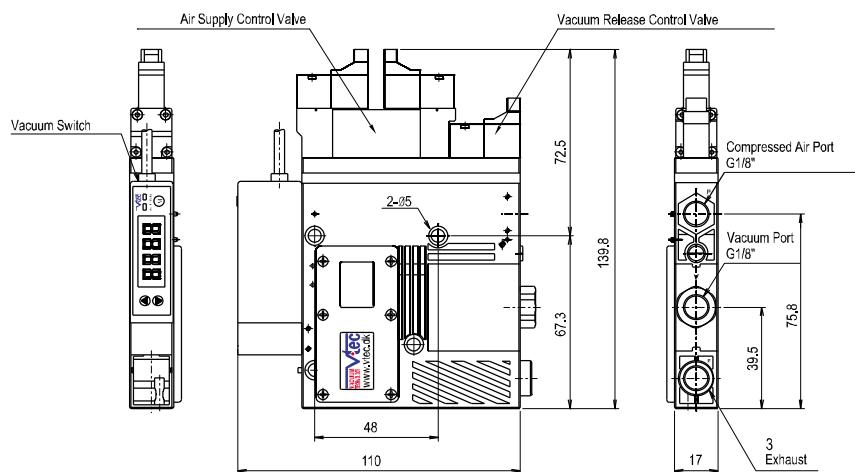
Single unit

Control valve DIN type / Digital vacuum switch



Single unit

Control valve double solenoid type / Digital vacuum switch

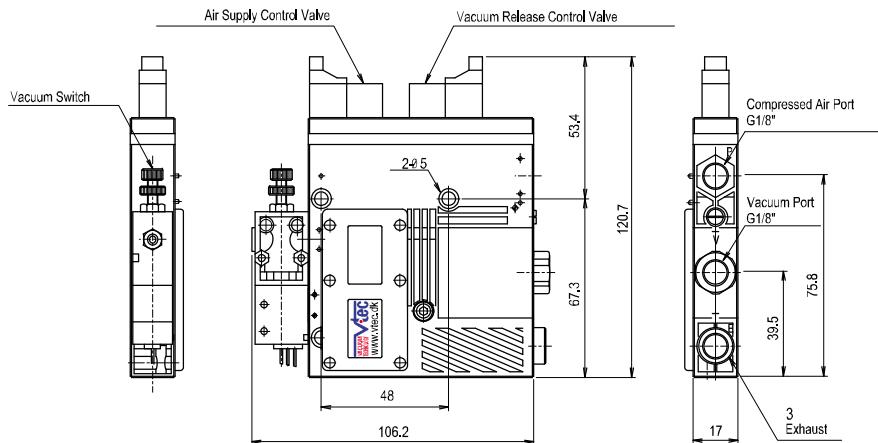


[Measure unit : mm]

Dimensional Information

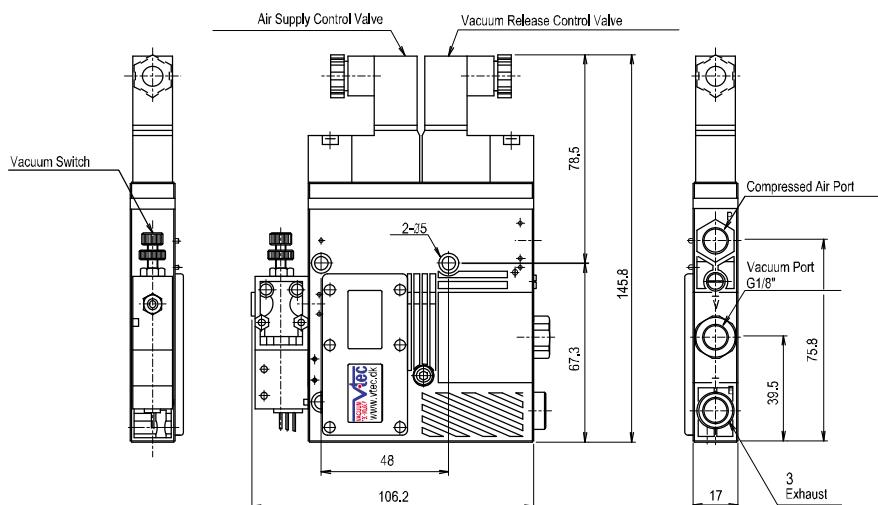
Single unit

Control valve Connector type / Mechanical vacuum switch



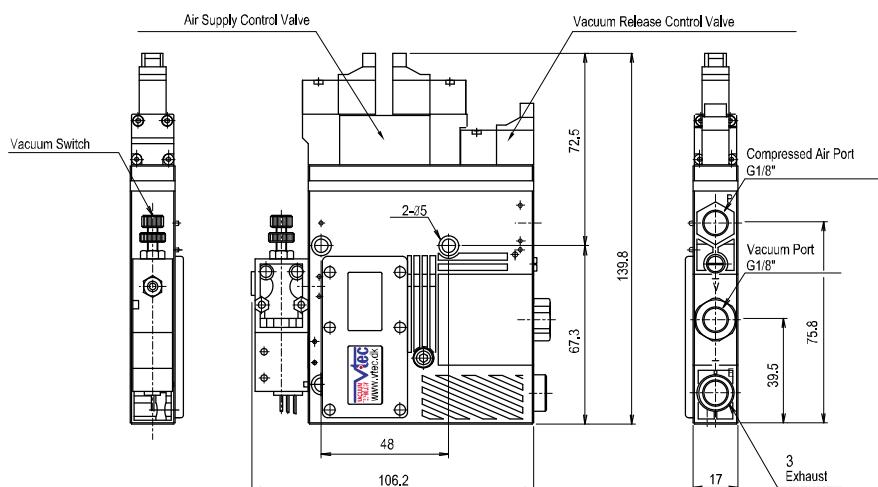
Single unit

Control valve DIN type / Mechanical vacuum switch



Single unit

Control valve double solenoid type / Mechanical vacuum switch

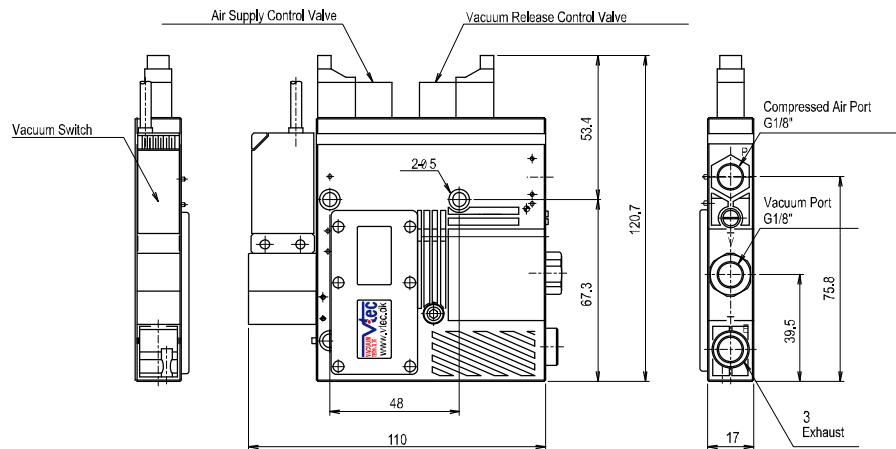


[Measure unit : mm]

Dimensional Information

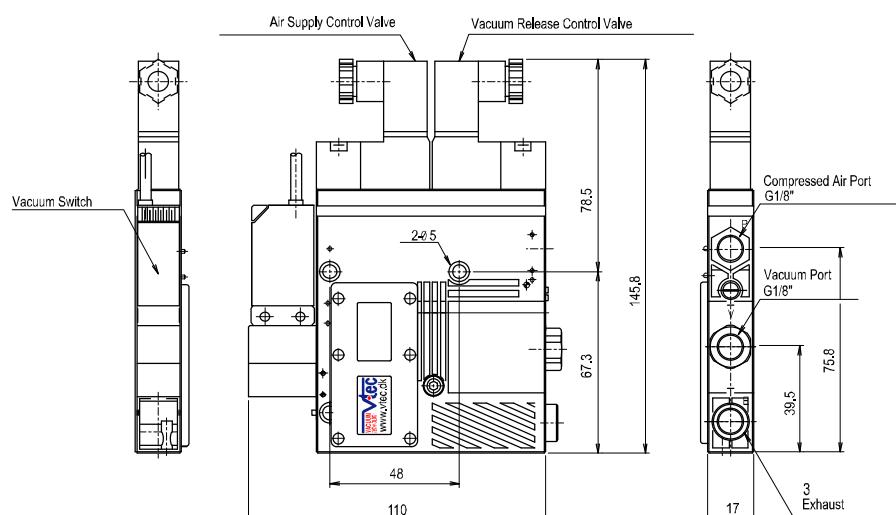
Single unit

Control valve Connector type / Flashing lamp display vacuum switch



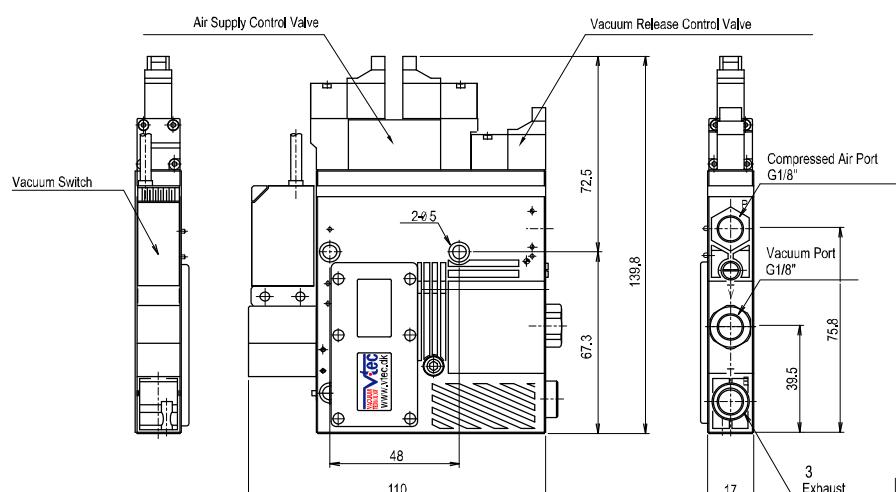
Single unit

Control valve DIN type / Flashing lamp display vacuum switch



Single unit

Control valve double solenoid type / Flashing lamp display vacuum switch

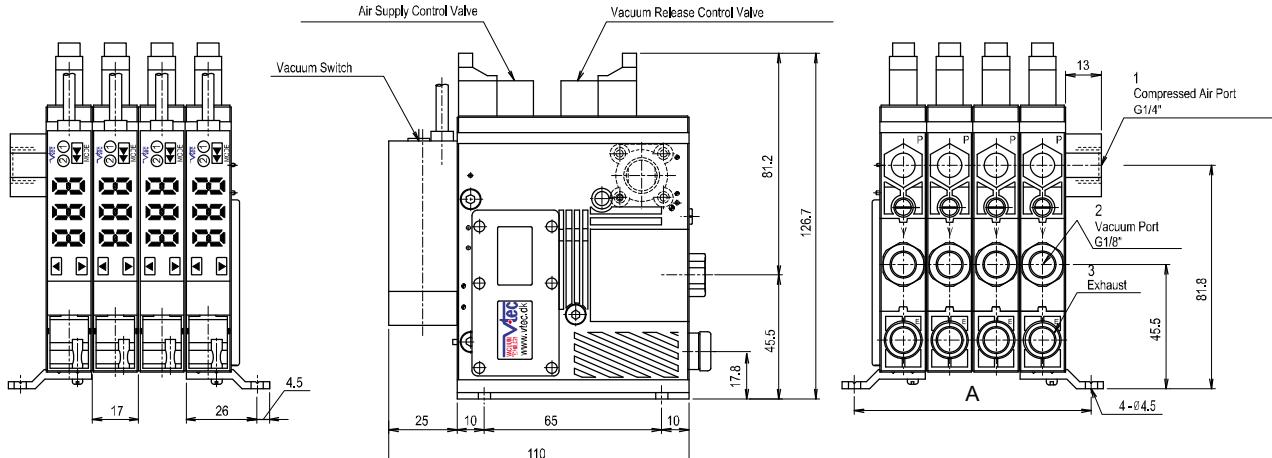


[Measure unit : mm]

Dimensional Information

Manifold unit

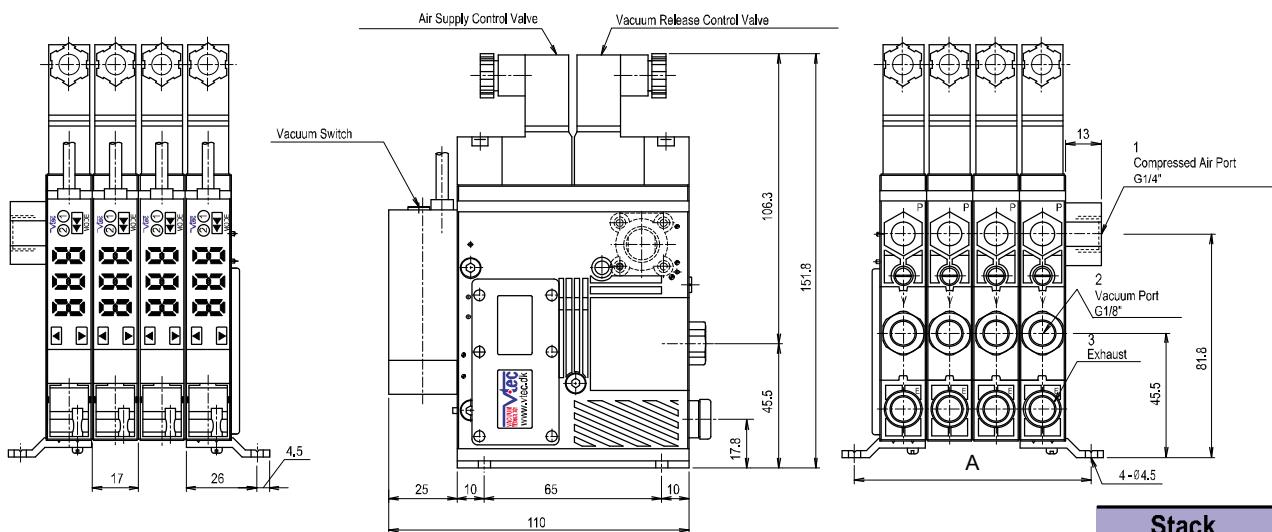
Control valve Connector type / Digital vacuum switch



[Measure unit : mm]

Manifold unit

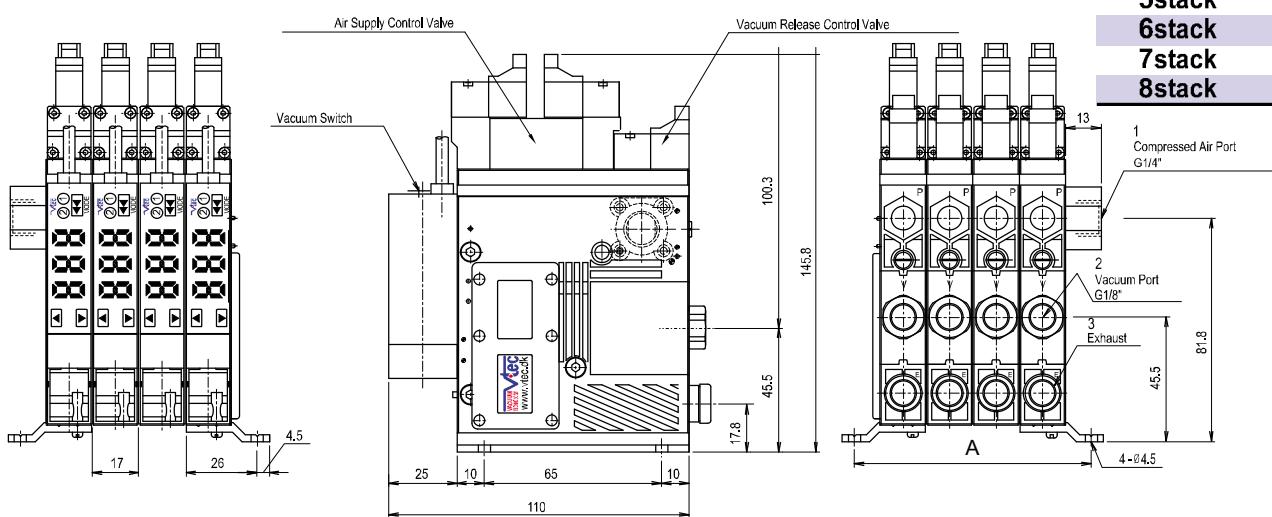
Control valve DIN type / Digital vacuum switch



Manifold unit

Control valve double solenoid type / Digital vacuum switch

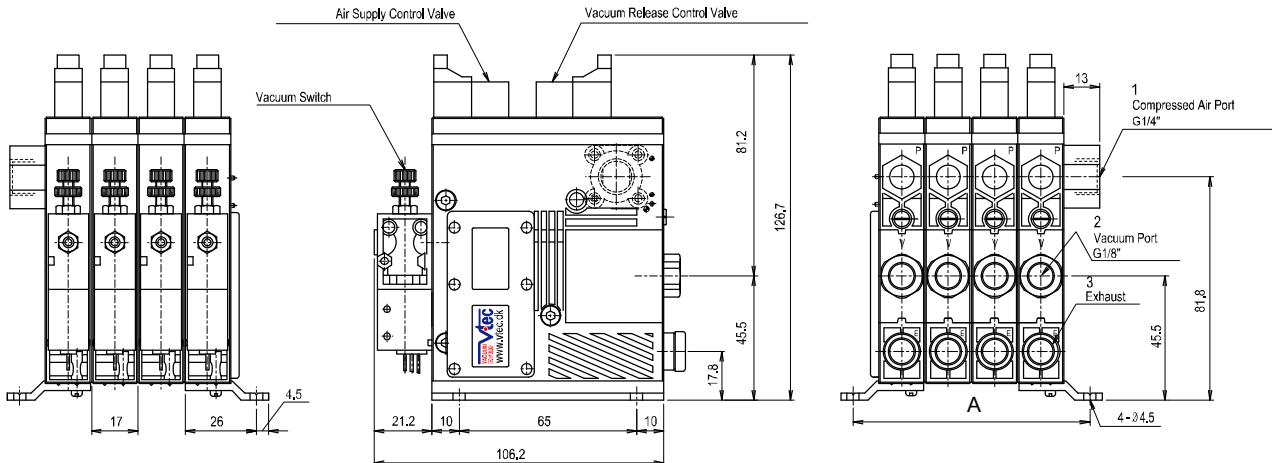
Stack	A (mm)
2stack	52.8
3stack	69.8
4stack	86.8
5stack	103.8
6stack	120.8
7stack	137.8
8stack	154.8



Dimensional Information

Manifold unit

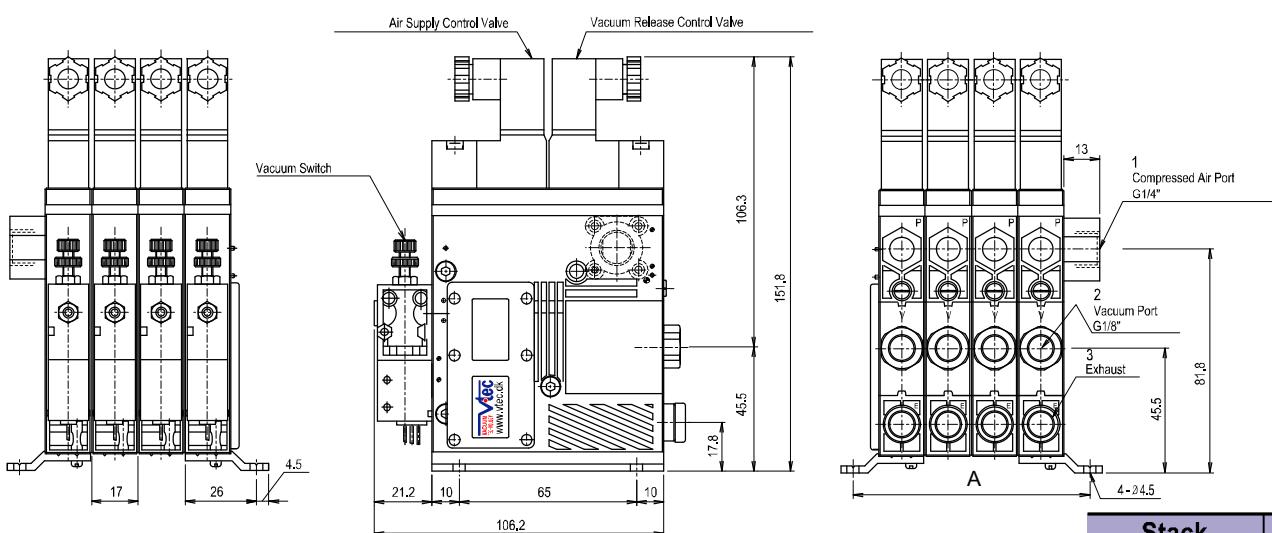
Control valve Connector type / Mechanical vacuum switch



[Measure unit : mm]

Manifold unit

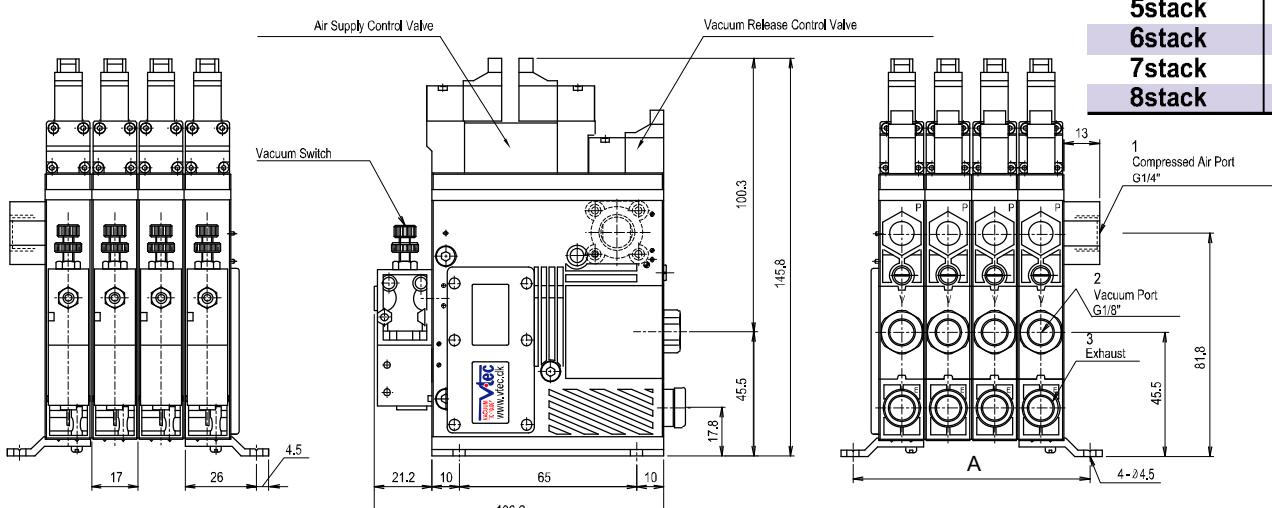
Control valve DIN type / Mechanical vacuum switch



**VACUUM
PUMPS**

Manifold unit

Control valve double solenoid type / Mechanical vacuum switch

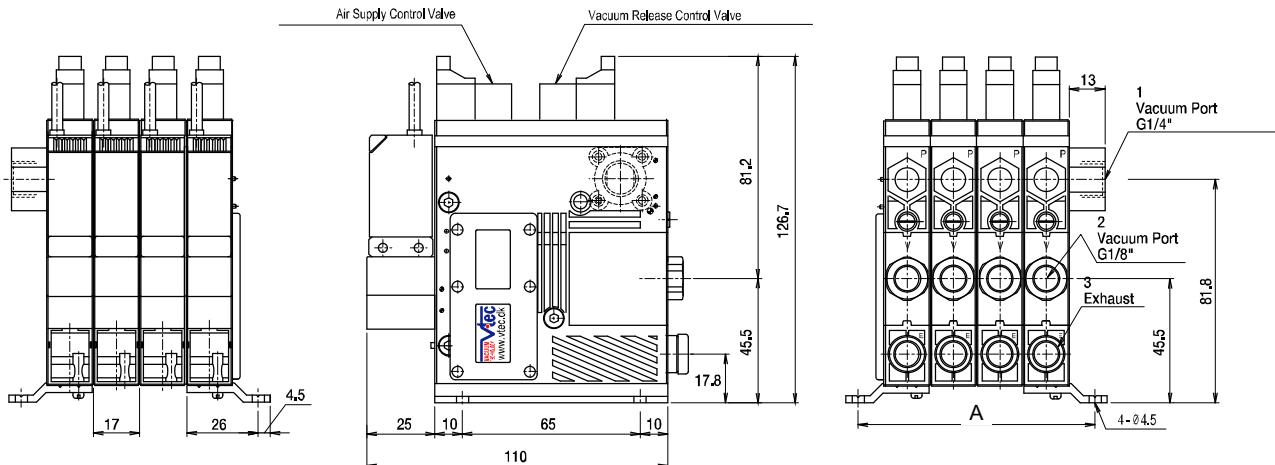


Stack	A (mm)
2stack	52.8
3stack	69.8
4stack	86.8
5stack	103.8
6stack	120.8
7stack	137.8
8stack	154.8

Dimensional Information

Manifold unit

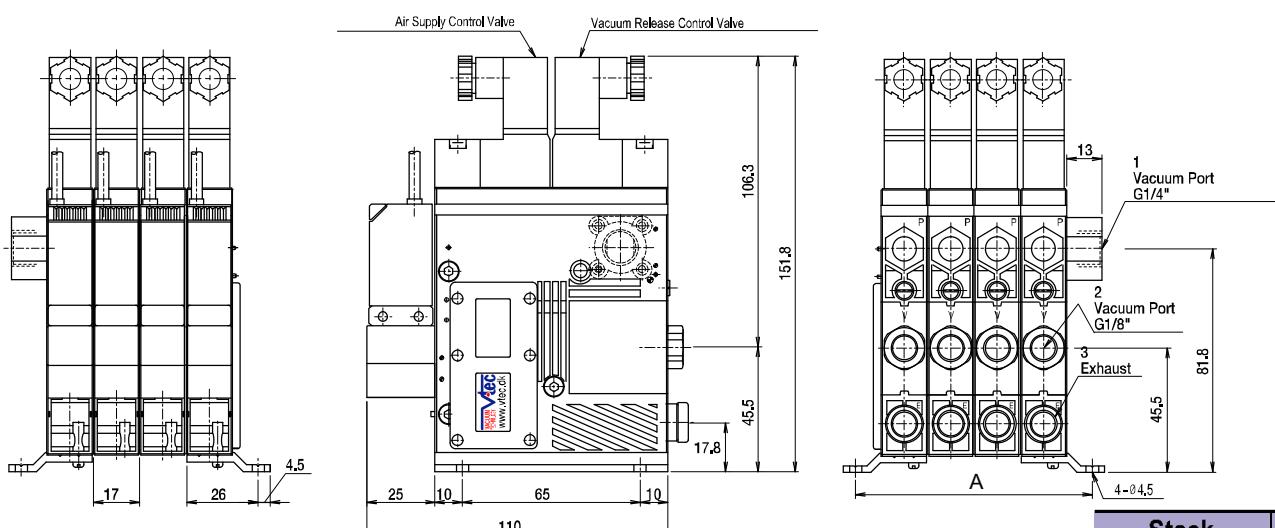
Control valve Connector type / Flashing lamp display vacuum



[Measure unit : mm]

Manifold unit

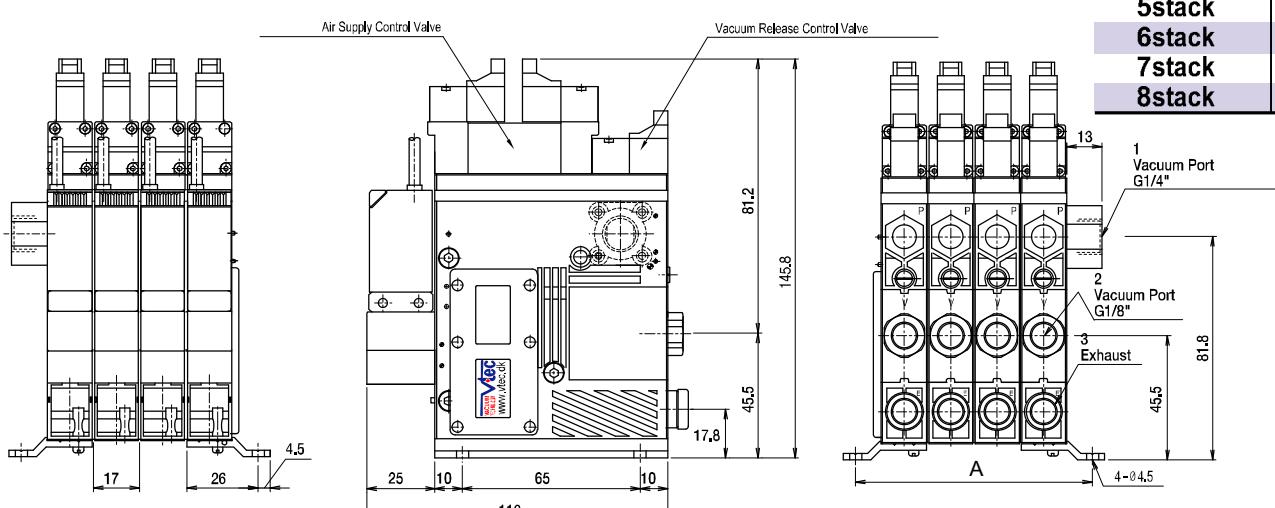
Control valve DIN type / Flashing lamp display vacuum switch



Stack	A (mm)
2stack	52.8
3stack	69.8
4stack	86.8
5stack	103.8
6stack	120.8
7stack	137.8
8stack	154.8

Manifold unit

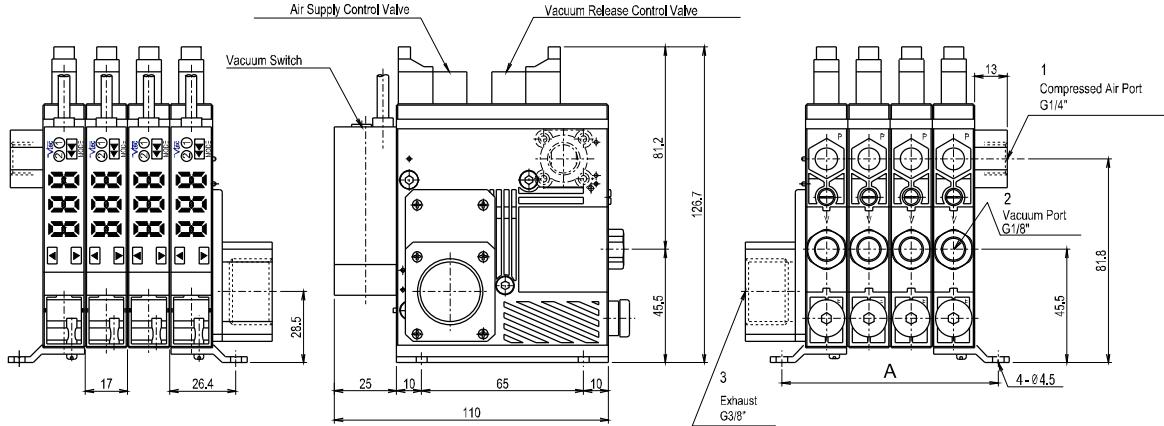
Control valve double solenoid type / Flashing lamp display vacuum switch



Dimensional Information

Manifold unit with central exhaust

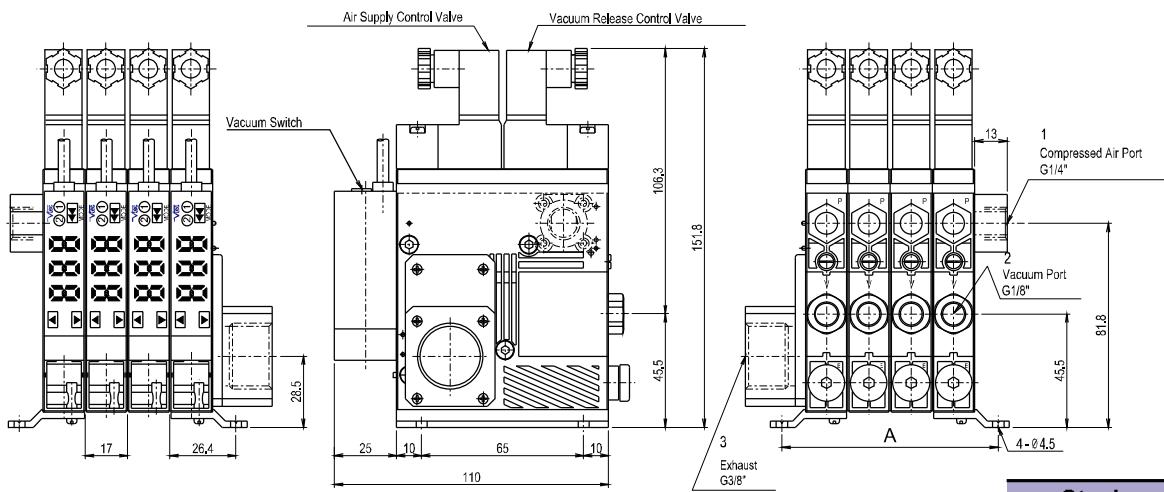
Control valve Connector type / Digital vacuum switch



[Measure unit : mm]

Manifold unit with central exhaust

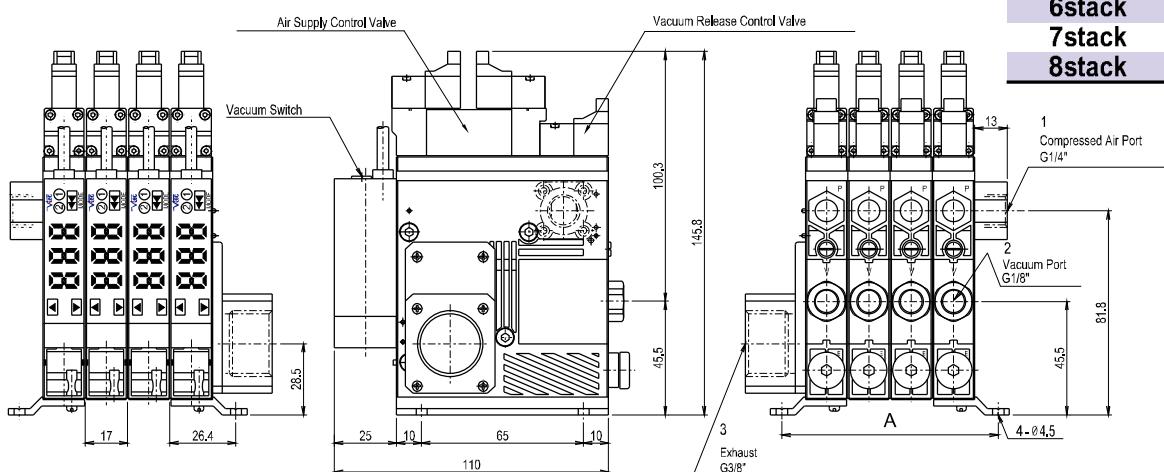
Control valve DIN type / Digital vacuum switch



Stack	A (mm)
2stack	52.8
3stack	69.8
4stack	86.8
5stack	103.8
6stack	120.8
7stack	137.8
8stack	154.8

Manifold unit with central exhaust

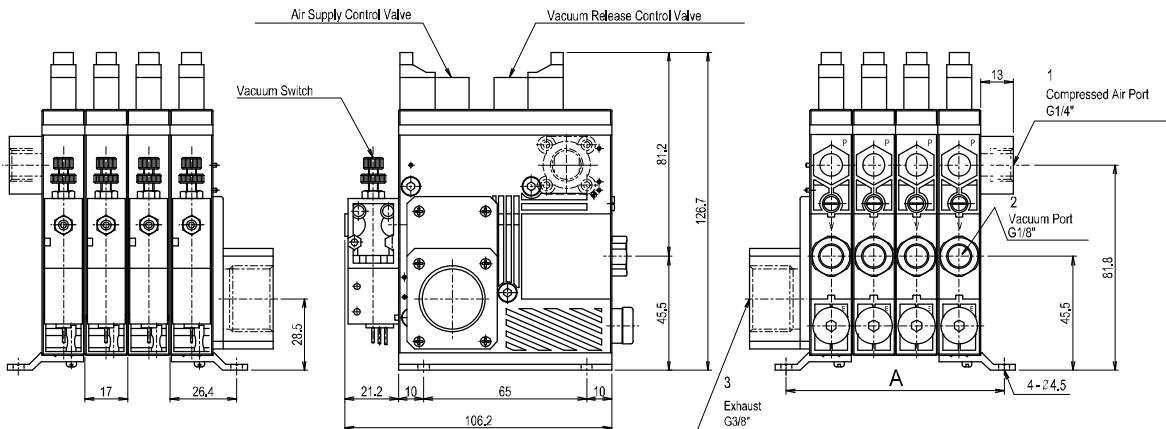
Control valve double solenoid type / Digital vacuum switch



Dimensional Information

Manifold unit with central exhaust

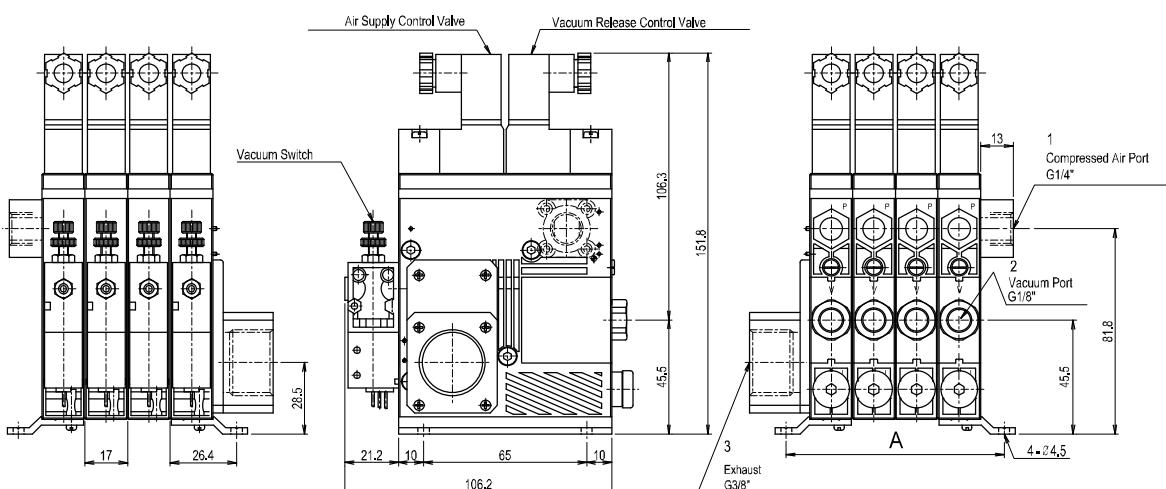
Control valve Connector type / Mechanical vacuum switch



Manifold unit with central exhaust

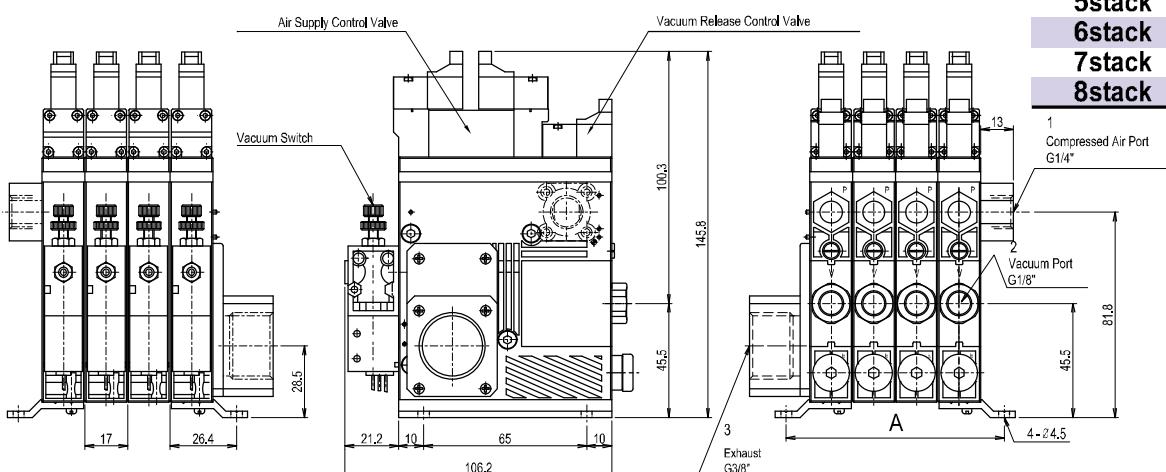
Control valve DIN type / Mechanical vacuum switch

[Measure unit : mm]



Manifold unit with central exhaust

Control valve double solenoid type / Mechanical vacuum switch

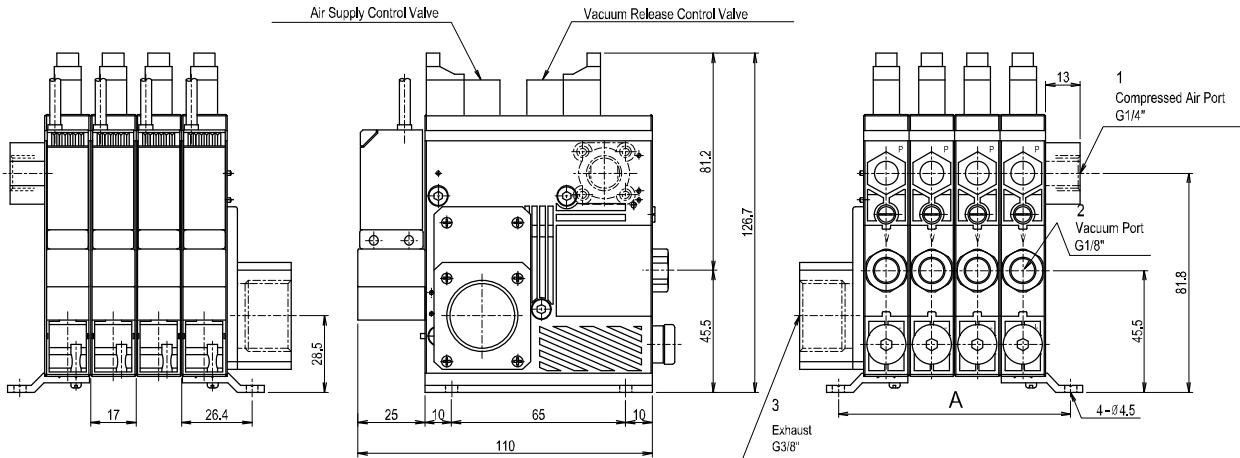


Stack	A (mm)
2stack	52.8
3stack	69.8
4stack	86.8
5stack	103.8
6stack	120.8
7stack	137.8
8stack	154.8

Dimensional Information

Manifold unit with central exhaust

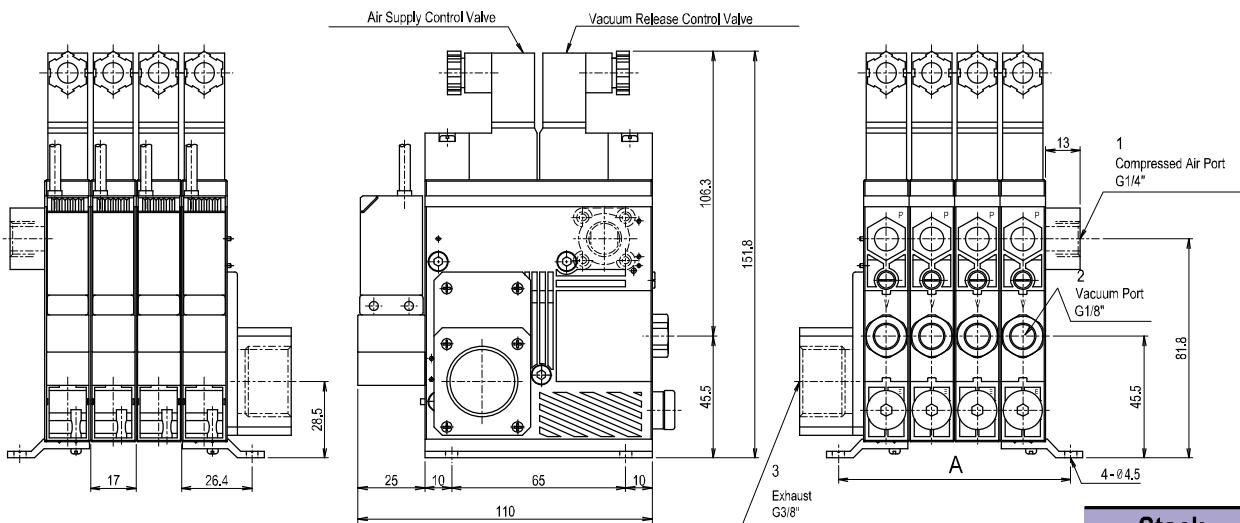
Control valve Connector type / Flashing lamp display vacuum switch



[Measure unit : mm]

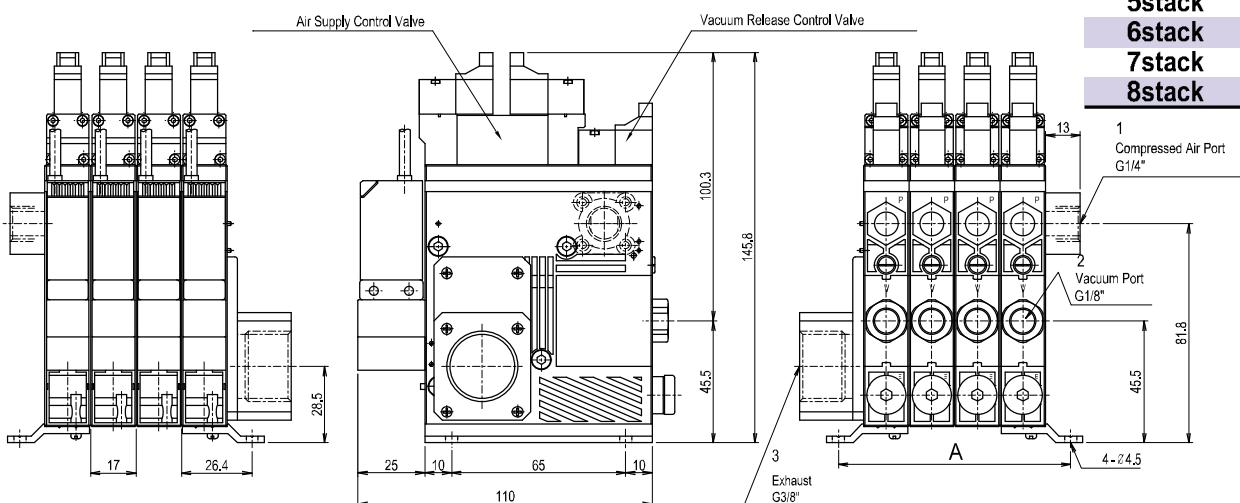
Manifold unit with central exhaust

Control valve DIN type / Flashing lamp display vacuum switch



Manifold unit with central exhaust

Control valve double solenoid type / Flashing lamp display vacuum switch



Stack	A (mm)
2stack	52.8
3stack	69.8
4stack	86.8
5stack	103.8
6stack	120.8
7stack	137.8
8stack	154.8