MANUAL

Midi Keyboard pump

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Vacuum equipment / Common Precautions

Be sure to before handling

Warning

- Safe designs should be developed, which accounts for the possibility of accidents resulting from a drop in vacuum pressure due to power failure or trouble with the air supply, etc.
- Follow vacuum specifications for vacuum switching valves and vacuum breaker.
- Select vacuum pumps which have a suitable suction flow rate.
  <When there is a vacuum leak from the work piece or the piping> <When piping is long or large diameter>
- If the suction flow rate is too high, setting of vacuum switches will become difficult.
- When two or more pads are piped to one vacuum pump, if one pad released its work Piece, the other pads will also release.
- Use piping with an adequate effective sectional area

Caution

- For information on related items, such as directional control equipment, refer to the caution sections in each respective catalog.

Mounting

Warning

- Do not obstruct the exhaust port of the vacuum pump.

Piping

Caution

- Avoid disorganized piping
- use piping with a large effective sectional area on the exhaust side of the vacuum pump.
- Make sure that there are no crushed areas in the piping due to damage of bending.

Operating Environment

Warning

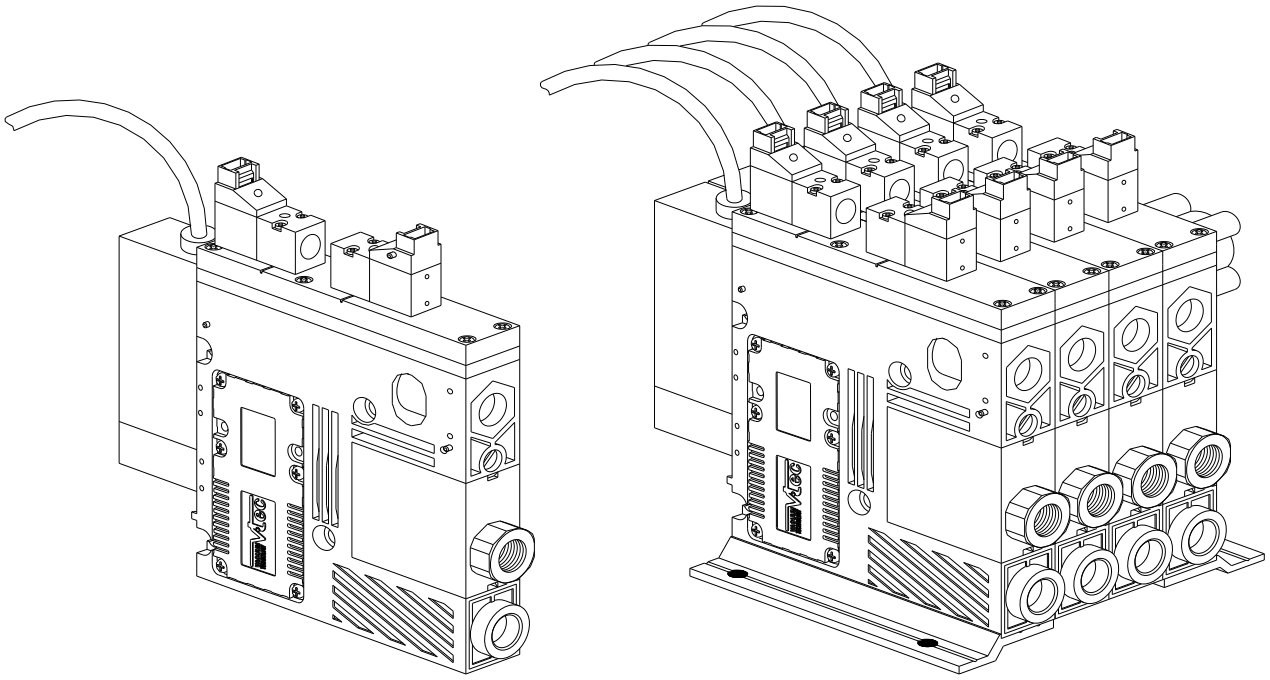
- Do not operate in atmospheres of corrosive gases, chemicals, sea water, water of steam.
- Do not operate in explosive areas.
- Do not operate in locations where vibration of impact occurs.
  Confirm the specifications for each series.
- In locations which receive direct sunlight, provide a protective cover, etc.
- In locations near heat sources, protect against radiated heat.
- In locations where there is contact with spatter from water, oil or solder, etc., implement suitable protective measures.
- In cases where the vacuum unit is surrounded by other equipment, etc., or the unit is energized for an extended time, implement measures to exhaust excess heat, so that temperatures remain within the range of the vacuum units specifications.

Maintenance

Warning

- Clean suction filters on a regular basis. (refer to specifications)

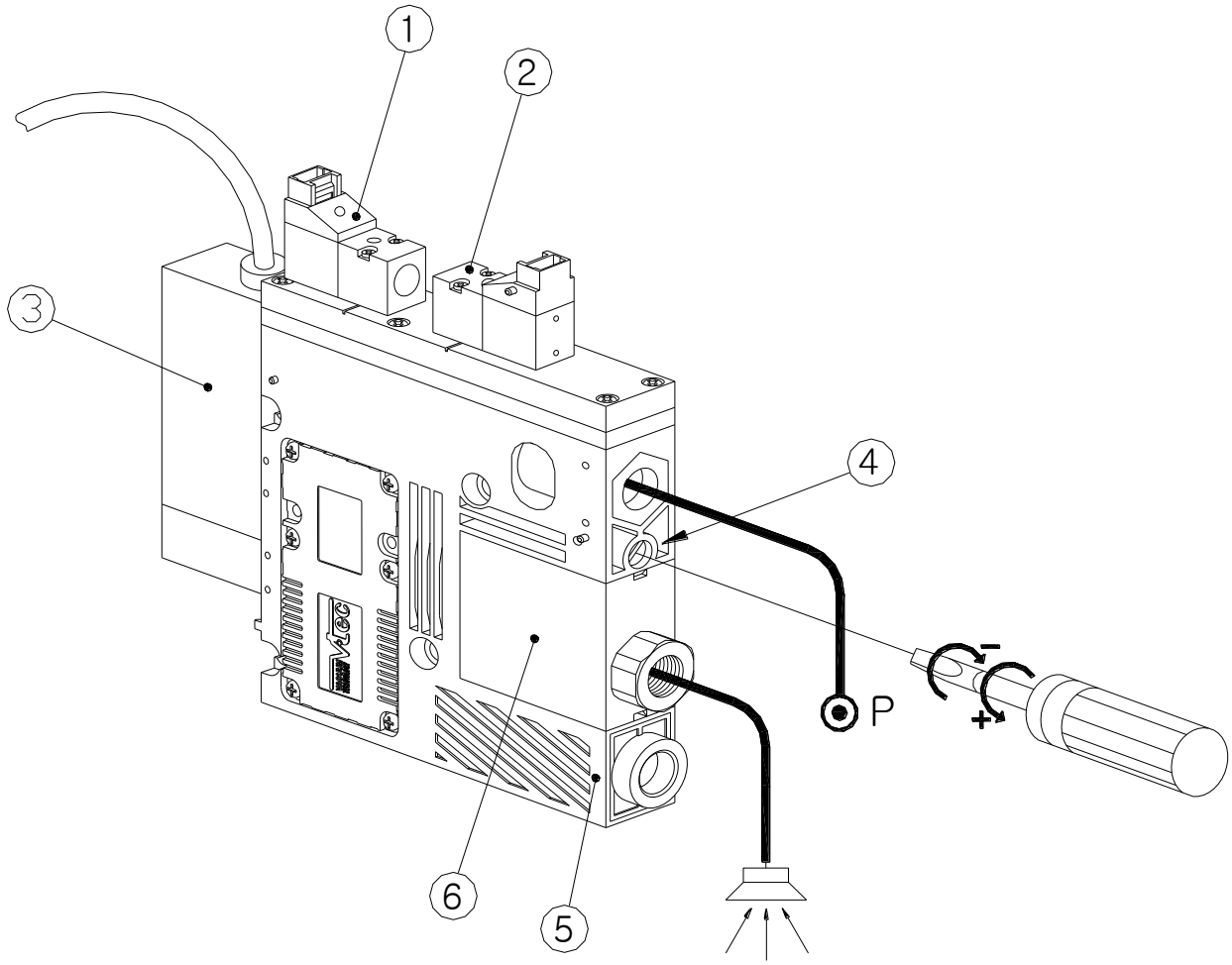
Midi keyboard pump



Main Advantages

- High efficiency midi vacuum pump. (Multi-Nozzle type)
- Available of individual control.
- High vacuum level & flow rate with low air consumption
- Available check valve (Non-return valve)
- Built in compressed air filter in the air port.
- Automatic filter cleaning system.
- Long lifetime and Low noise level.
- Light weight with special plastic body
- Integrated vacuum pump, air supply control valve, vacuum release control valve, vacuum switch, filter and silencer in a body.

1. Description



① **Air Control Valve :** It is control the air supply to generate the vacuum. Both normal close and normal open are available and normal open type can sustain the vacuum even the power failure.

② **Vacuum Release Control Valve :** Certainly place the object from vacuum pad (When the power supply to vacuum release control valve, the air supplied to open the valve.)

③ **Vacuum Switch :** It is possible to set the vacuum pressure as display screen in the switch. When the vacuum level reach the setting vacuum level, the LED lamp turned on the light (Normal open type) or turned off the light (Normal close type) and output the signal at the same time.

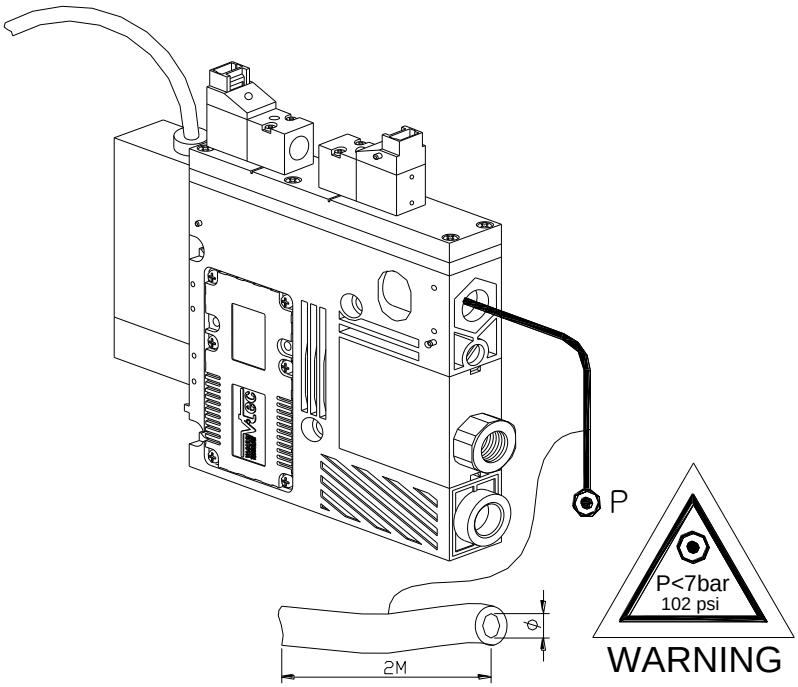
④ **Adjust Screw :** As the adjusting of vacuum release flow volume, the object can be placed on exact position and quickly.

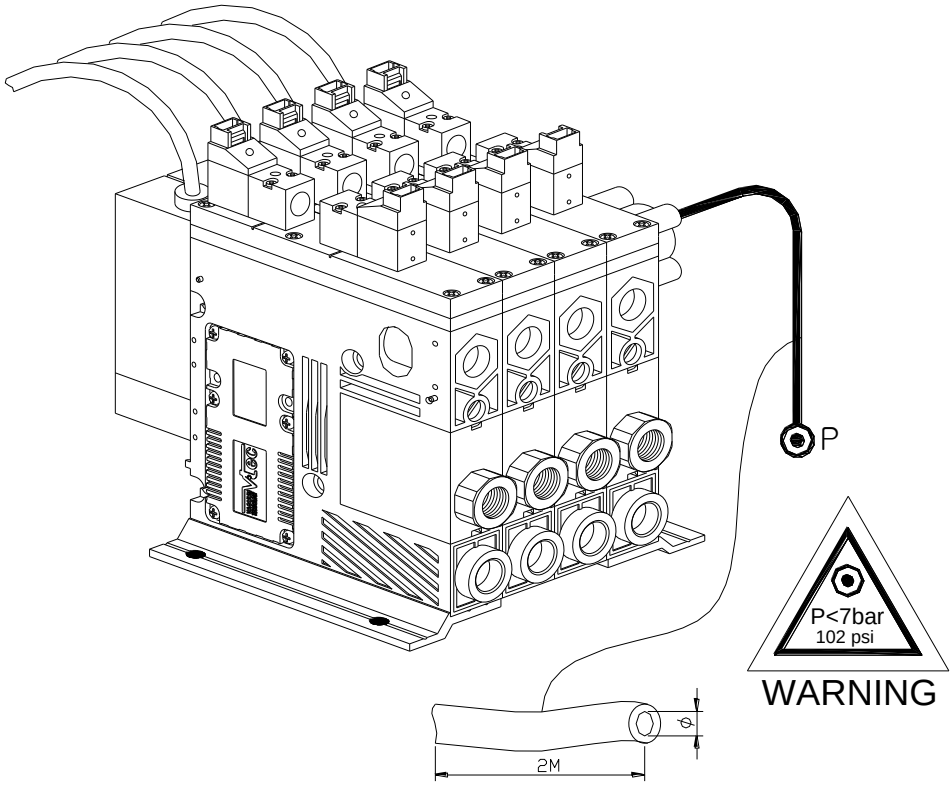
Turn Right – Vacuum release flow volume decrease
Turn Left – Vacuum release flow volume increase.

⑤ **Silencer :** It can be reduce the exhaust noise. It is necessary to check and replacement when the abnormal noise arouse.

⑥ **Vacuum Filter :** It is prevent the dust inflow from vacuum port to inside of vacuum generator. Necessary to check and replacement on a regular basis.

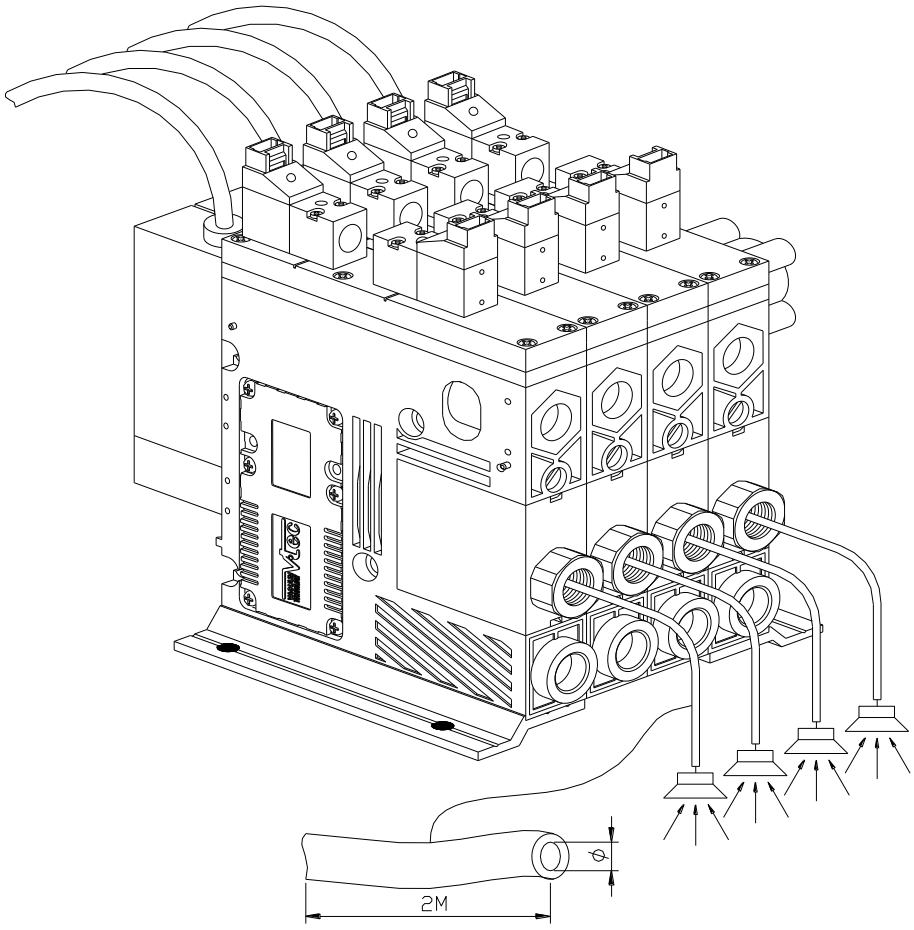
2. Compressed Air





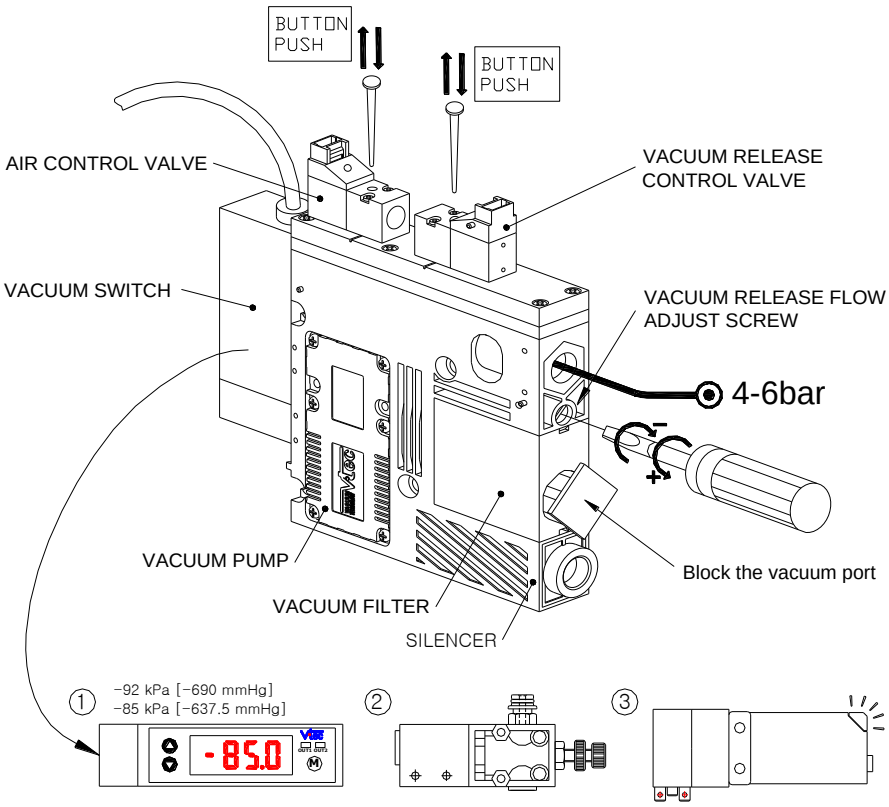
Model	Minimum hose inner Ø
VKM(X)61-S1 , VKM(X)62-S1	≥ 4
VKM(X)61-M2~8 , VKM(X)62-M2~8	≥ 8~12
VKM(X)61-E2~8 , VKM(X)62-E2~8	≥ 8~12

3. Vacuum



Model	Minimum hose inner Ø
VKM(X)61-S1 , VKM(X)62-S1	≥ 6
VKM(X)61-M2~8 , VKM(X)62-M2~8	≥ 6
VKM(X)61-E2~8 , VKM(X)62-E2~8	≥ 6

4. Test



Vacuum Switch

① Digital Vacuum Switch:
Switch will display vacuum level when you test vacuum pump after block vacuum port of the pump completely.

② Mechanical Switch
Switch operates can be wired N.C(Black & Red wire) or N.O(Black & white wire) when you test vacuum pump after block vacuum port of the pump completely.

③ LED Display Switch
Flashing LED(red) of the switch when you test vacuum pump after block vacuum port of the pump completely.

Air control Valve

[Normal Close (N.C)]
If the compressed air is supplying to vacuum pump, the pump have to work when push the button on the air control valve. (When the power supplied also)

[Normal Open (N.O)]
If the compressed air is supplying to vacuum pump, the pump have to stop working when push the button on the air control valve. (When the power supplied also)

Vacuum Release Control Valve

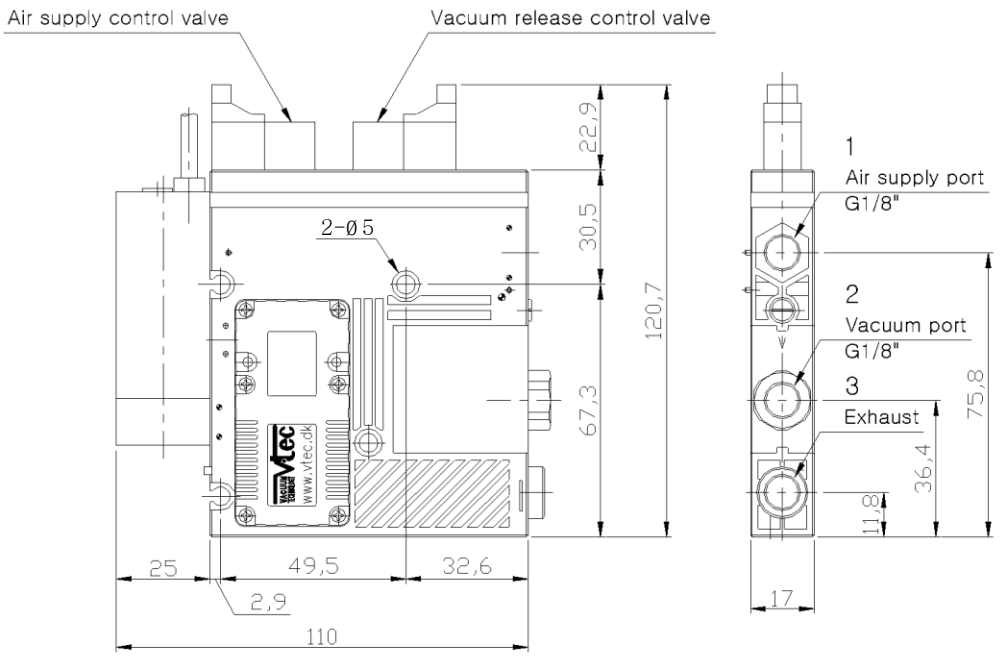
If the compressed air is supplying to vacuum pump, the compressed air must be exhausted when push the button on the vacuum release control valve
(When the power supplied also)

Vacuum Release Flow Adjust Screw

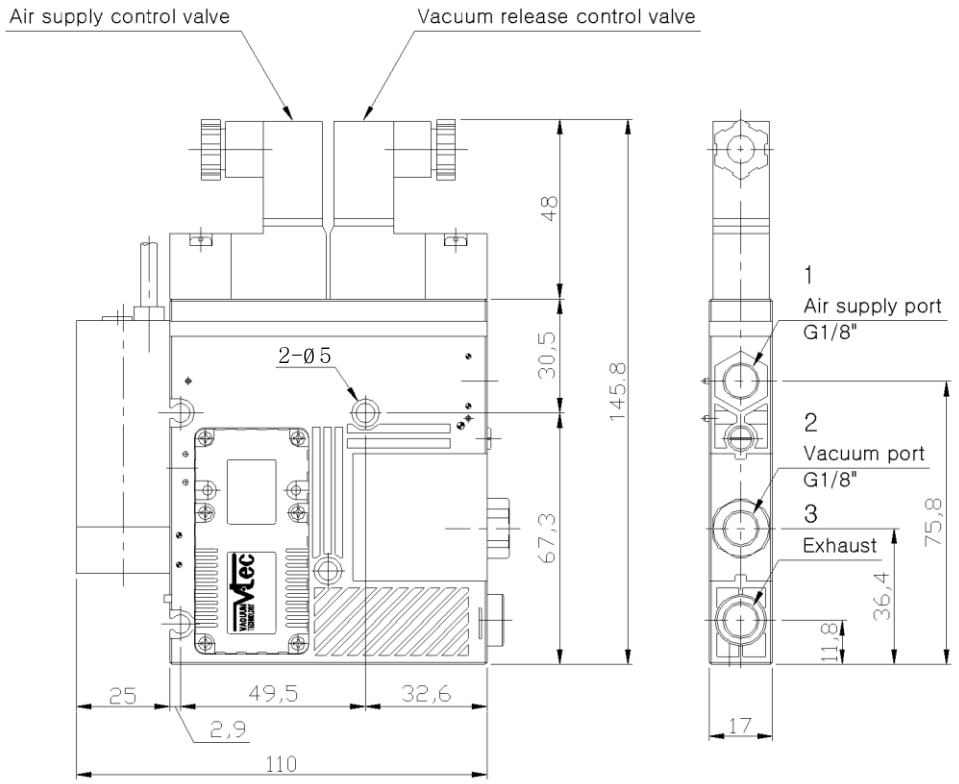
If the adjust screw turn to the right, the exhaust flow volume have to decreased.
If the adjust screw turn to the left, the exhaust flow volume have to increased.

5. Dimension

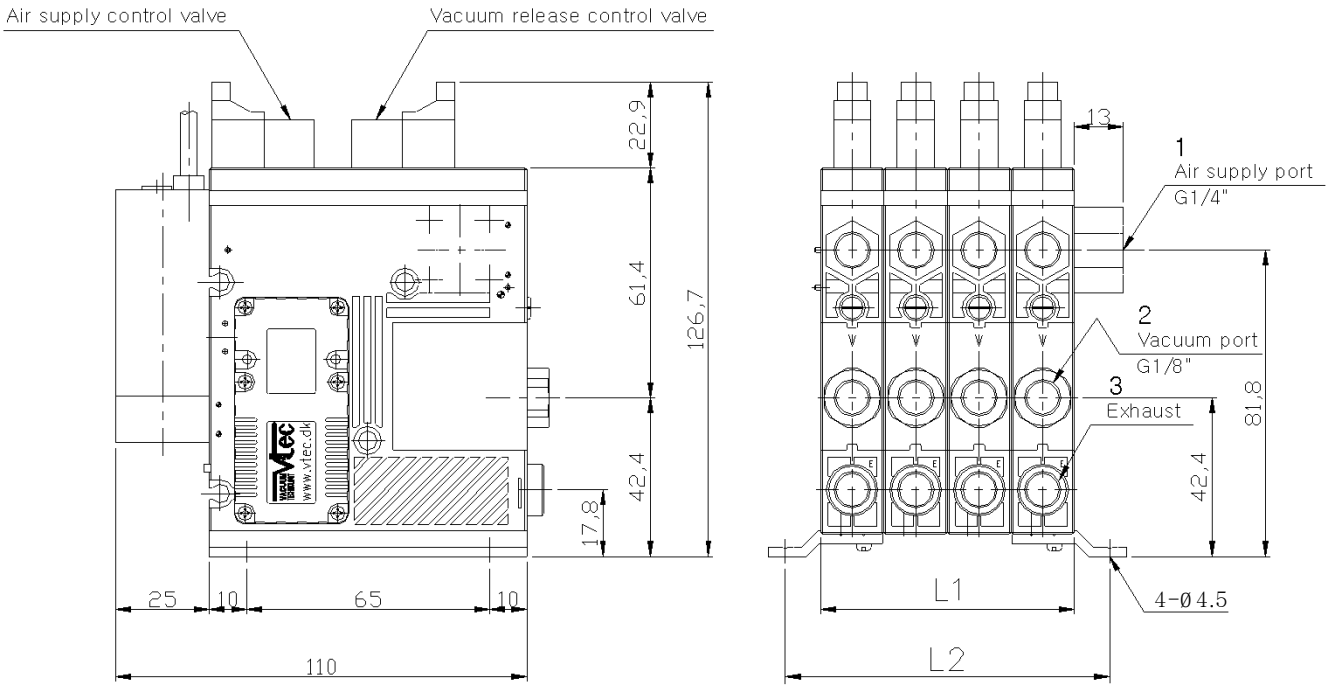
▼ Single unit (Control valve connector type)



▼ Single unit (Control valve DIN type)

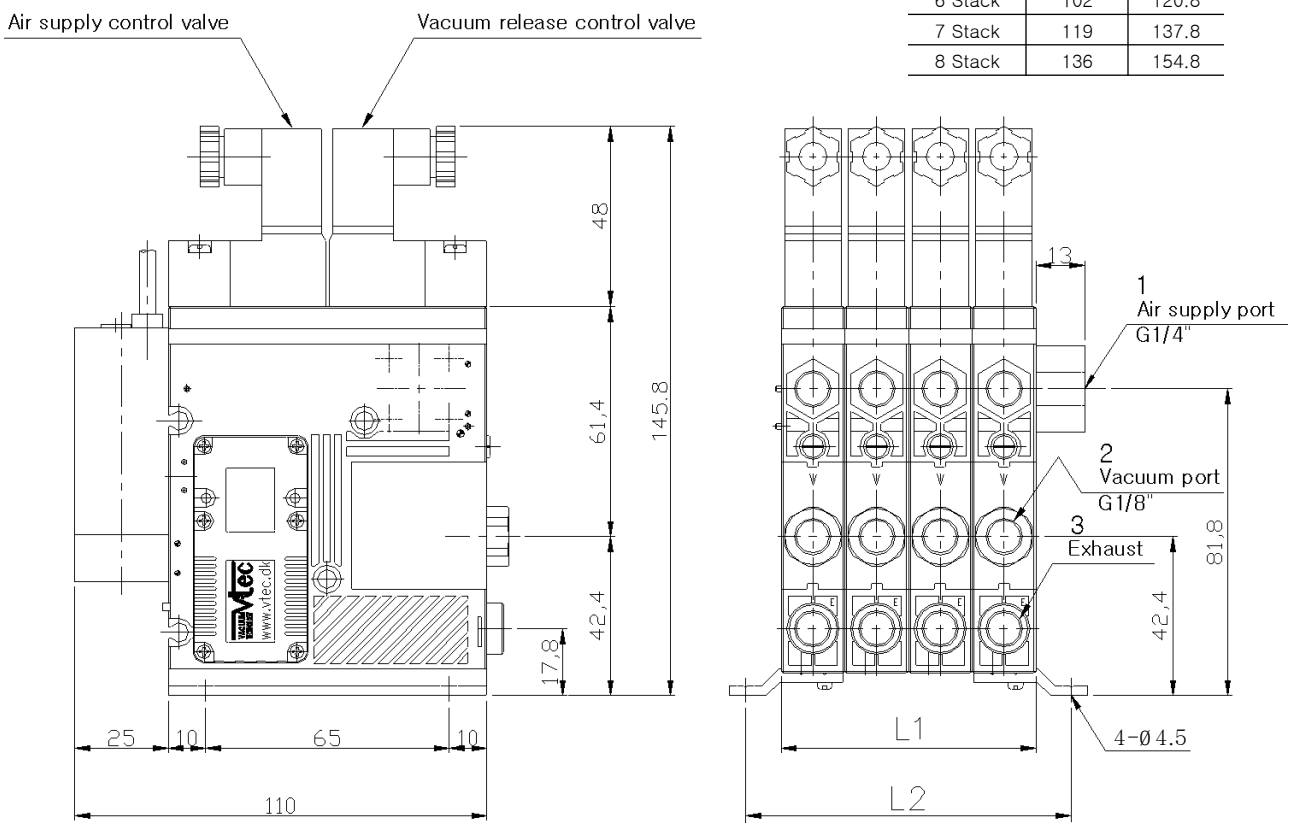


▼ Manifold unit (Control valve connector type)

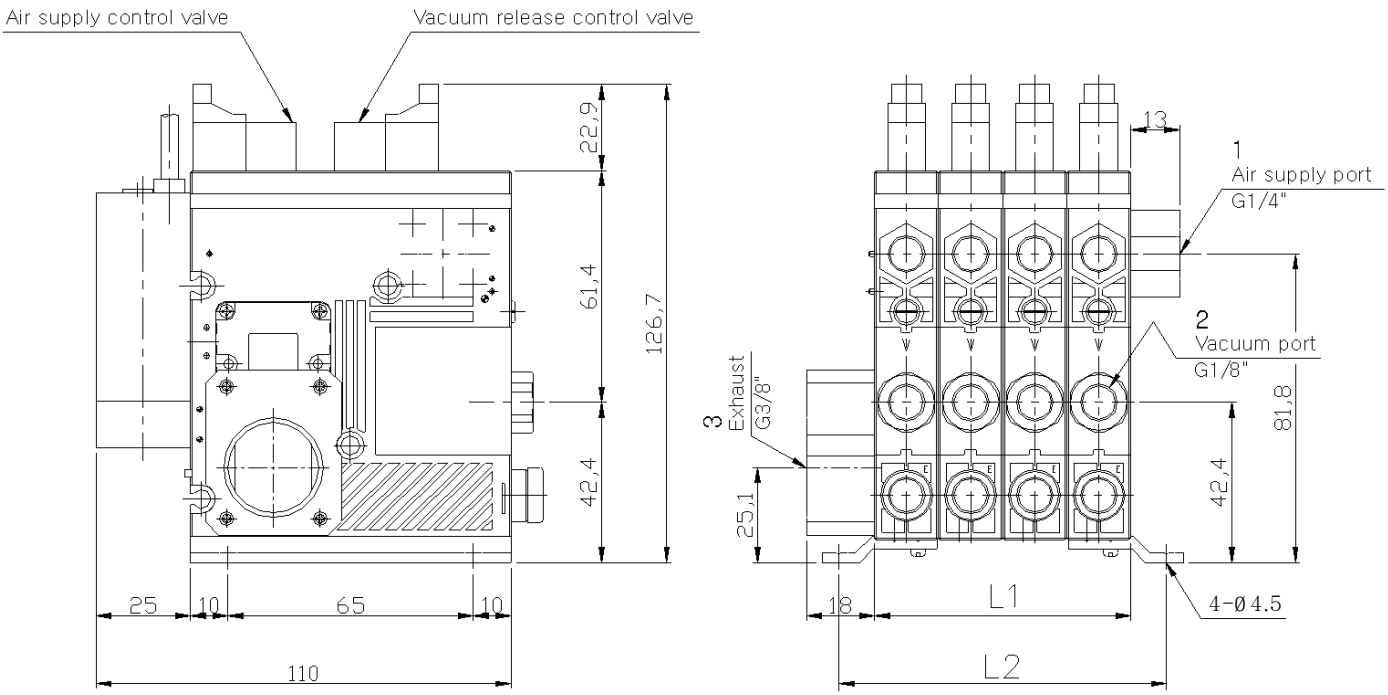


STACK	L1 (mm)	L2 (mm)
2 Stack	34	52.8
3 Stack	51	69.8
4 Stack	68	86.8
5 Stack	85	103.8
6 Stack	102	120.8
7 Stack	119	137.8
8 Stack	136	154.8

▼ Manifold unit (Control valve DIN type)



▼ Manifold unit with central exhaust unit (Control valve connector type)



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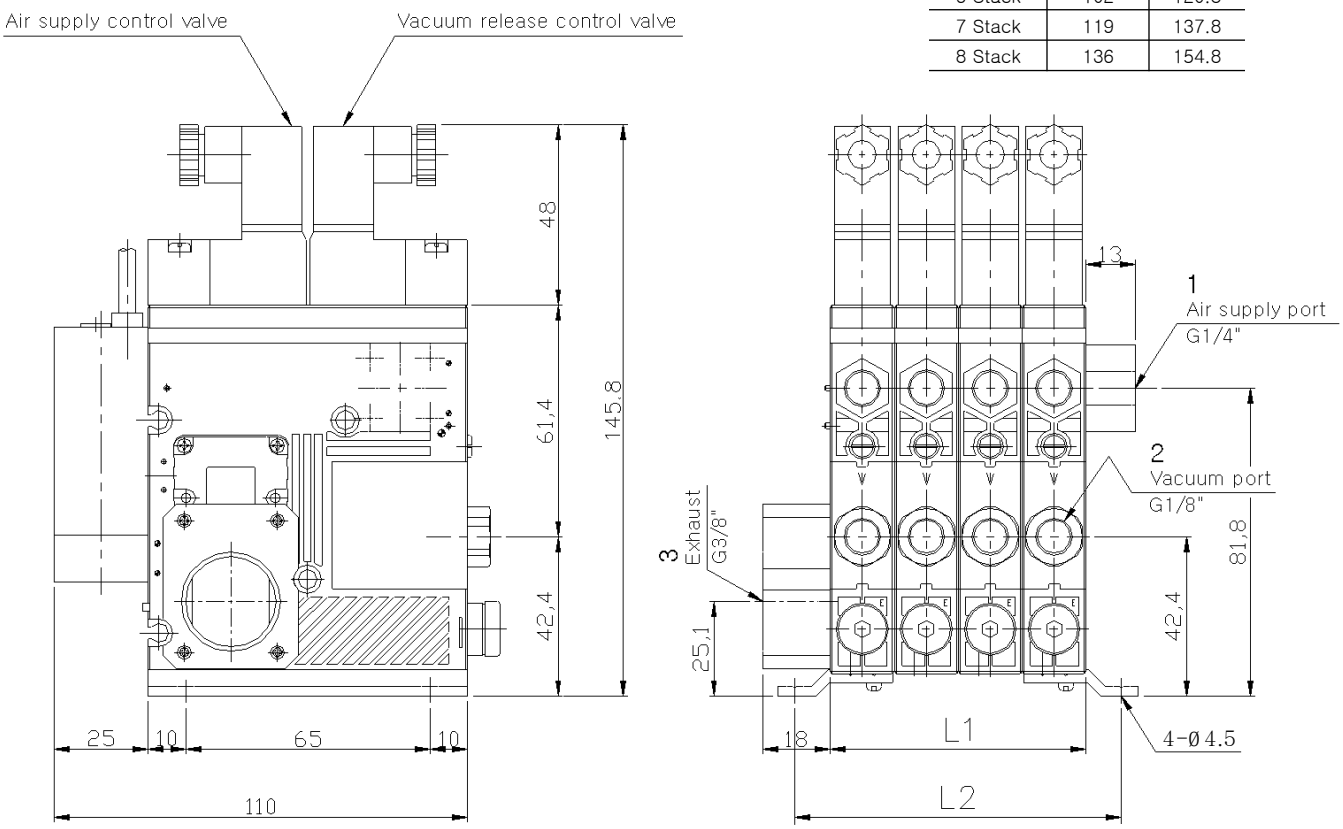
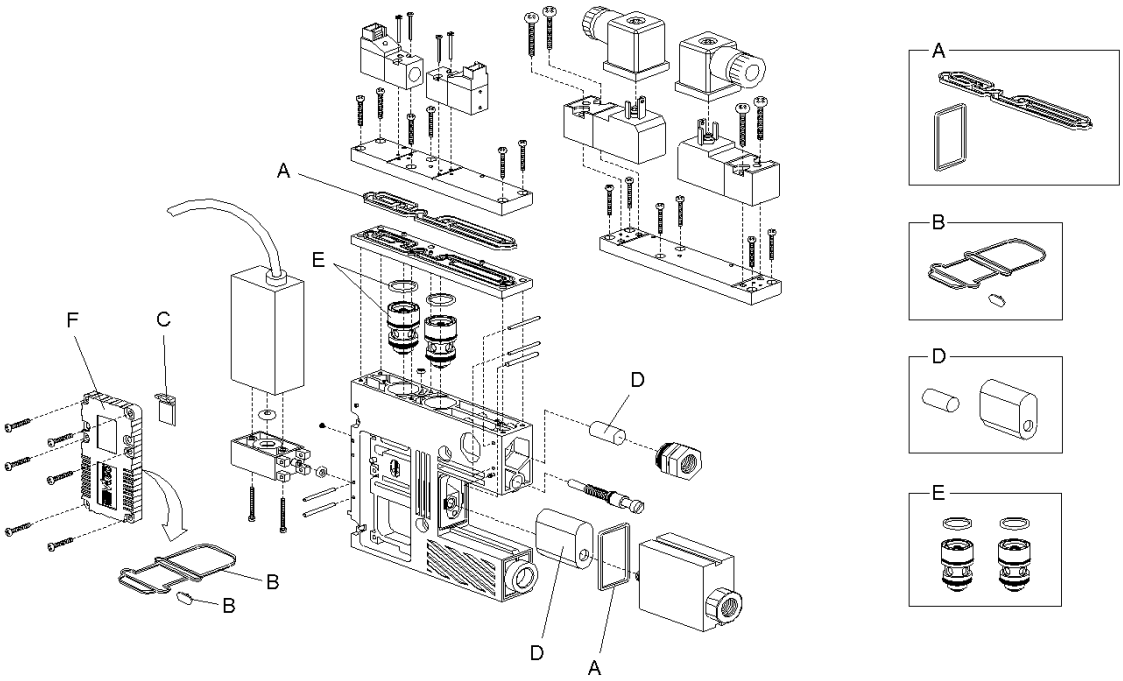
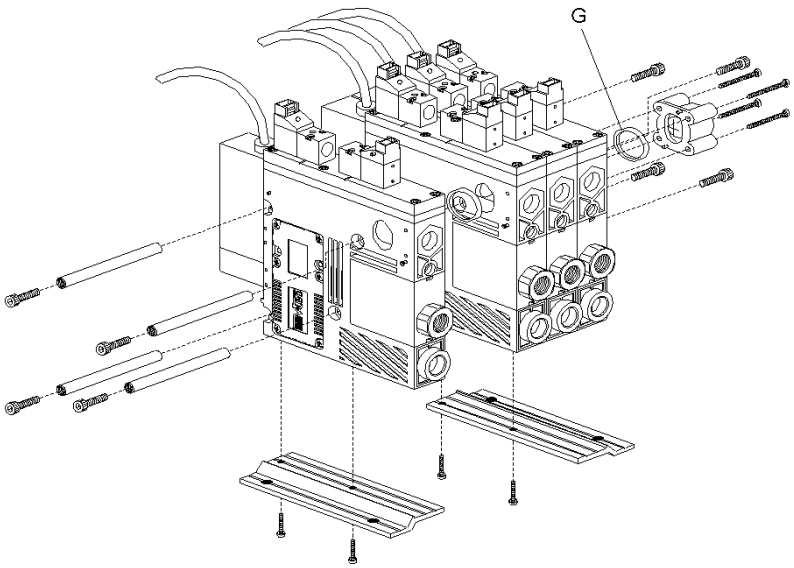
▼ Manifold unit with central exhaust unit (Control valve DIN type)



6. Maintenance





	Description	Remark	Order No.
A	Seal kit-A	(NBR Mat'l)	15B3051*
B	Seal kit-B	(NBR Mat'l)	15A1011*
C	Non-return valve	(NBR Mat'l)	15B5061*
D	Filter set		15N2210*
E	Piston assy.		15N1140*
F	Housing-M05 (Air ejector)	For VKM61..	12710000000*
	Housing-M10 (Air ejector)	For VKM62..	12720000000*
	Housing-X05 (Air ejector)	For VKX61..	12810000000*
	Housing-X10 (Air ejector)	For VKX62..	12820000000*
G	Seal ring	Available only for Manifold unit	15E2161*

* Quantity for 1 stack