COMMISSIONING

If everything is going well until now, it is time to start the operation and to take advantages of THERMA V.

Before starting operation, pre-check points are described in this chapter. Some comments about maintenance and how to do troubleshooting are presented.

Check List before Starting Operation

⚠ CAUTION

Turn off the power before changing wiring or handling product

No	Category	Item	Check Point
1	Electricity	Field wiring	• All switches having contacts for different poles should be wired tightly according to regional or national legislation. • Only qualified person can proceed wiring. • Wiring and local-supplied electric parts should be complied with European and regional regulations. • Wiring should be following the wiring diagram supplied with the product.
2		Protective devices	• Install ELB (earth leakage breaker) with 30mA. • ELB inside the control box of the unit should be turned on before starting operation.
3		Earth wiring	• Earth should be connected. Do not earth to gas or city water pipe, metallic section of a building, surge absorber, etc.
4		Power supply	• Use dedicated power line.
5		Terminal block wiring	• Connections on the terminal block (inside the control box of the unit) should be tightened.
6	Water	Charged water pressure	• After water charging, the pressure gage (in front of the unit) should indicate 2.0~2.5 bar. Do not exceed 3.0 bar.
7		Air purge	• During water charging, air should be taken out through the hole of the air purge. • If water does not splash out when the tip (at the top of the hole) is pressed, then air purging is not completed yet. If well purged, the water will splash out like fountain. • Be careful when testing air purge. Splashed water may make your dress wet.
8		Shut-off valve	• Two shut-off valves (located at the end of water inlet pipe and water outlet pipe of the unit) should be open.
9		By-pass valve	• By-pass valve should be installed and adjusted to secure enough water flow rate. If water flow rate is low, flow switch error (CH14) can be occurred.
10	Product Installation	Hang to the wall	• As the unit is hung on the wall, vibration or noise can be heard if the unit is not fixed tightly. • If the unit is not fixed tightly, it can fall down during operation.
11		Parts inspection	• There should be no apparently damaged parts inside the unit.
12		Refrigerant leakage	• Refrigerant leakage degrades the performance. If leakage found, contact qualified LG air conditioning installation person.
13		Drainage treatment	• While cooling operation, condensed dew can drop down to the bottom of the unit. In this case, prepare drainage treatment (for example, vessel to contain condensed dew) to avoid water drop.

To assure best performance of THERMA V, it is required to perform periodical check and maintenance. It is recommended to proceed following check list for once a year.

CAUTION

Turn off the power before proceeding maintenance

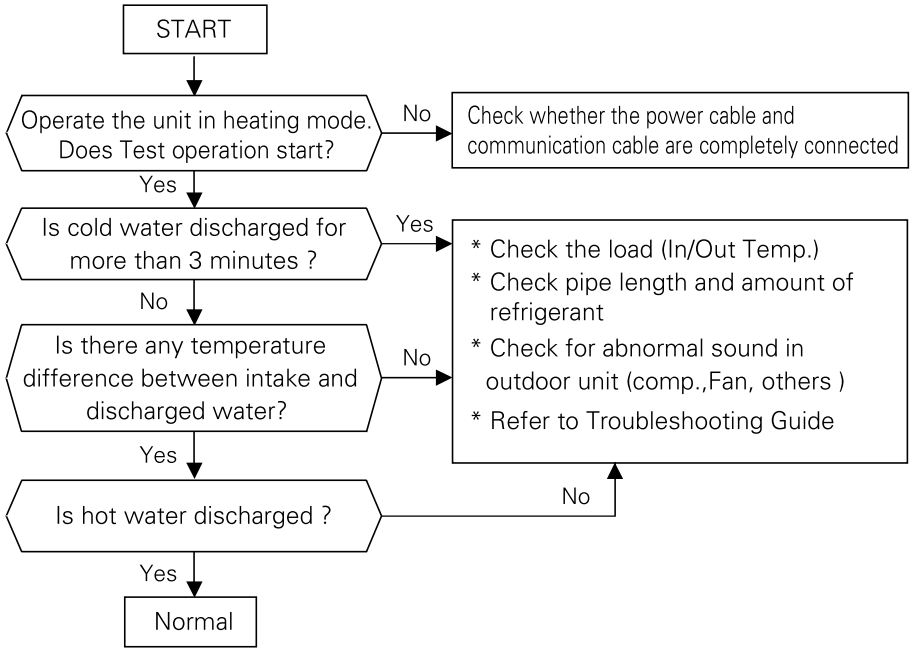
No	Category	Item	Check Point
1	Water	Water pressure	• In normal state, the pressure gage (in front of the unit) should indicate 2.0~2.5 bar. • If the pressure is less than 0.3 bar, please recharge the water.
2		Strainer(Water filter)	• Close the shut-off valves and disassemble strainer. Then wash the strainer to make it clean. • While disassembling the strainer, be careful for water flood out.
3		Safety valve	• Open the switch of the safety valve and check if water is flood out through the drain hose. • After checking, close the safety valve.
4	Electricity	Terminal block wiring	• Look and inspect if there is loosen or defected connection on the terminal block.

Starting Operation

Check before Starting Operation

1	Check to see whether there is any refrigerant leakage, and check whether the power or transmission cable is connected properly.
2	Confirm that 500 V megger shows 2.0 MΩ or more between power supply terminal block and ground. Do not operate in the case of 2.0 MΩ or less. NOTE: Never carry out mega ohm check over terminal control board. Otherwise the control board may break. Immediately after mounting the unit or after leaving it turned off for an extended length of time, the resistance of the insulation between the power supply terminal board and the ground may decrease to approx. 2.0 MΩ as a result of refrigerant accumulation in the internal compressor. If the insulation resistance is less than 2.0 MΩ, turn on the main power supply.
3	When the power is applied for the first time, operate the product after preheating for 2 hours. To protect the unit by increasing the oil temperature of the compressor.

Starting Operation flow chart



Airborne Noise Emission

The A-weighted sound pressure emitted by this product is below 70 dB.

** The noise level can vary depending on the site.

The figures quoted are emission level and are not necessarily safe working levels.

Whilst there is a correlation between the emission and exposure levels, this cannot be used reliably to determine whether or not further precautions are required.

Factor that influence the actual level of exposure of the workforce include the characteristics of the work room and the other sources of noise, i.e. the number of equipment and other adjacent processes and the length of time for which an operator exposed to the noise.

Also, the permissible exposure level can vary from country to country.

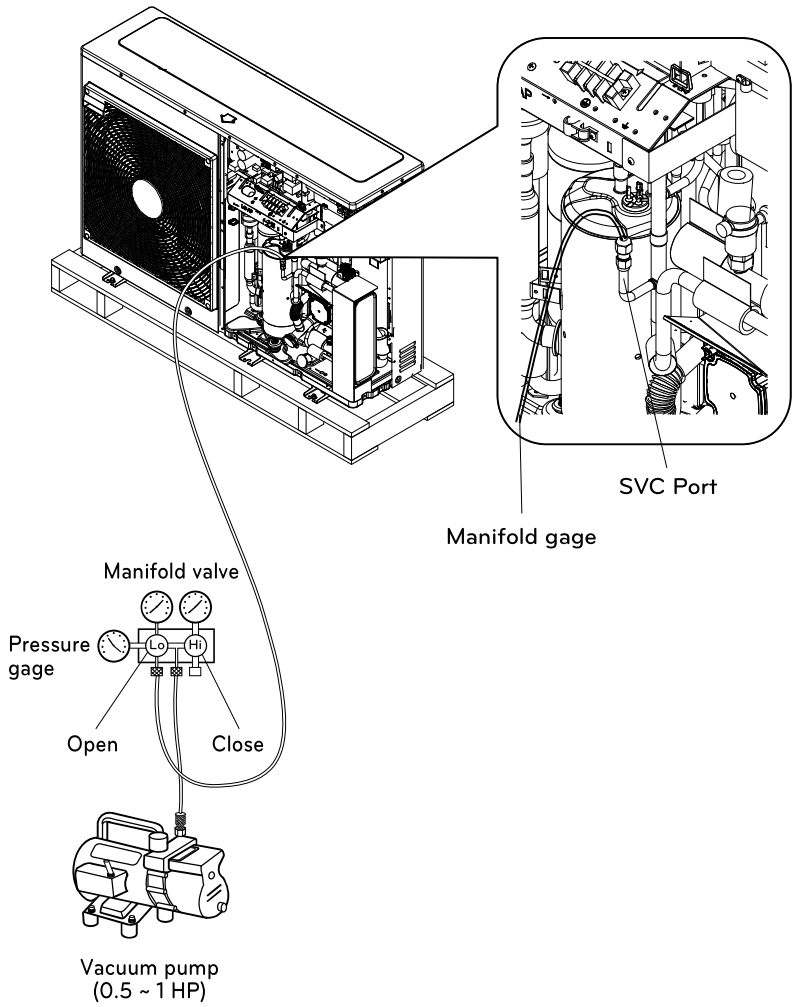
This information, however, will enable the user of the equipment to make a better evaluation of the hazard and risk.

Vacuum & Charge of Refrigerant

By default, the product was charged of refrigerant.
Vacuum and refrigerant charge, If there is leak refrigerant.

1. Vacuum

To work of vacuum action. when the leak of refrigerant.

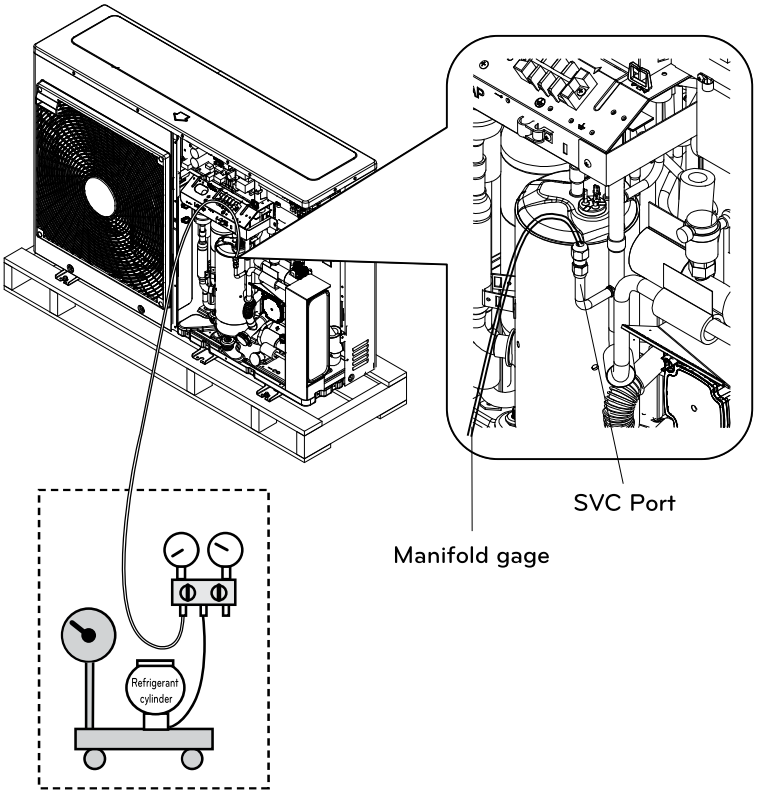


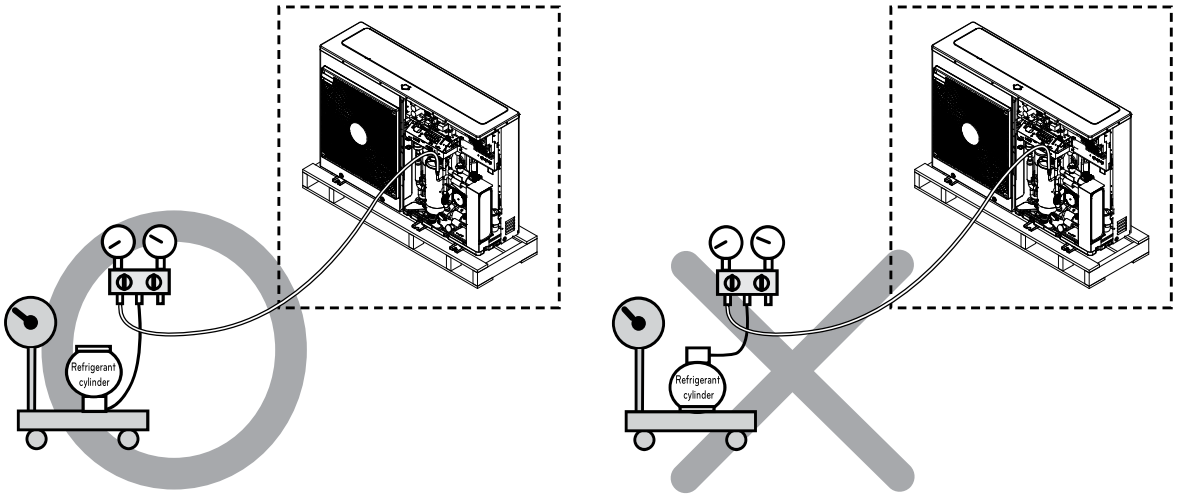
When selecting a vacuum, you should select one which is capable of achieving 0.2 Torr of ultimate vacuum.
Degree of vacuum is expressed in Torr, micron,mmHg, and Pascal (Pa). The units correlate as follows:

	Unit	Standard atmospheric pressure	Perfect vacuum
Gage Pressure	Pa	0	-1.033
Absolute Pressure	Pa	1.033	0
Torr	Torr	760	0
Micron	Micron	760000	0
mmHg	mmHg	0	760
Pa	Pa	1013.33	0

2. Charge of refrigerant

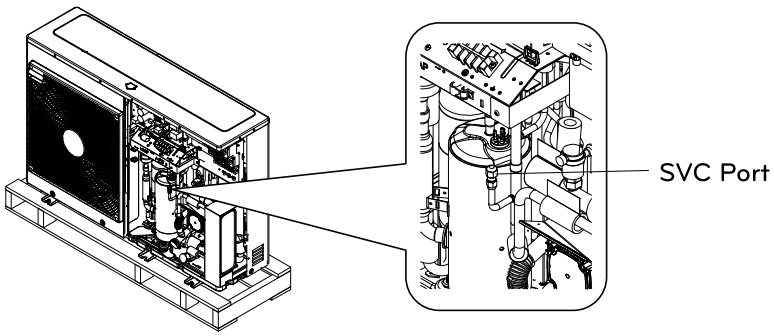
You should be charged after vacuum.
You can see amount of refrigerant at quality label.
Please to charge at cooling mode when there is not full charging.





3. Location of SVC port

1Ø : 5 kW, 7 kW, 9 kW



1Ø : 12 kW, 14 kW, 16 kW
3Ø : 12 kW, 14 kW, 16 kW