

# AIR CONDITIONER

- Please read this installation manual completely before installing the product.
- Installation work must be performed in accordance with the national wiring standards by authorized personnel only.
- Please retain this installation manual for future reference after reading it thoroughly.

TYPE: Vertical Air Handling Unit



P/NO : MFL67206503

http://www.lghvac.com www.lg.com

## **IMPORTANT!**

## Please read this instruction sheet completely before installing the product. This air conditioning system meets strict safety and operating standards. As the installer or service person,

it is an important part of your job to install or service the system so it operates safely and efficiently.

	irs made by unqualified persons can result in hazards to you and others.
Installation of all fie	eld wiring and components MUST conform with local building codes or, in the absence of local
codes, with the Na	tional Electrical Code 70 and the National Building Construction and Safety Code or Canadian
Electrical code and	d National Building Code of Canada.
	intained in the manual is intended for use by a gualified service technician familiar with safety
	juipped with the proper tools and test instruments.
	read and follow all instructions in this manual can result in equipment malfunction, property injury and/or death.
The weigh	installation, adjustment, alteration, service or maintenance can void the warranty. t of the condensing unit requires caution and proper handling procedures when lifting to avoid personal injury. Use care to avoid contact with sharp or pointed edges.
	ar safety eye wear and work gloves when installing equipment.
	me electrical power is disconnected. Check with meter and equipment.
	s out of fan areas when power is connected to equipment.
	ises frostbite burns.
	oxic when burned.
	ING DEALER: The Owners Instructions and Warranty are to be given to the owner
	or prominently displayed near the indoor Furnace/Air Handler Unit
	/\ Special warnings
When wiring:	
<ul> <li>Highly dangerd instructions where</li> <li>Ground the user of the operation of the operatio</li></ul>	y power to the unit until all wiring and tubing are completed or reconnected and checked. ous electrical voltages are used in this system. Carefully refer to the wiring diagram and these nen wiring. Improper connections and inadequate grounding can cause accidental injury or death unit following local electrical codes. ing tightly. Loose wiring may cause overheating at connection points and a possible fire hazard. materials and installations must comply with the applicable local/national or international standard: <b>ring</b> .
Be careful who	en picking up and moving the indoor and outdoor units. Get a partner to help, and
the air condition	ees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on oner can cut your finger.
	oner can cut your finger.
the air condition When installing in a wall: M	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight.
the air condition When installing in a wall: M It in a room:	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause
the air condition When installing in a wall: M It in a room: d	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors.
the air condition When installing in a wall: M It in a room: d in moist o	oner can cut your finger. g., lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors. r uneven locatinons: Use a raised concrete pad or concrete blocks provide a solid,
the air condition When installing in a wall: M It in a room: d in moist o le	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors. <b>r uneven locatinons:</b> Use a raised concrete pad or concrete blocks provide a solid, ivel foundation for the outdoor unit. This prevents water damage and abnormal vibration.
the air conditio When installing in a wall: M It in a room: d in moist o le in an area	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors. r uneven locatinons: Use a raised concrete pad or concrete blocks provide a solid, evel foundation for the outdoor unit. This prevents water damage and abnormal vibration. with high winds: Securely anchor the outdoor unit down with bolts and a metal
the air condition When installing in a wall: M tr in a room: d in moist o le in an area fr	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors. r uneven locatinons: Use a raised concrete pad or concrete blocks provide a solid, evel foundation for the outdoor unit. This prevents water damage and abnormal vibration. with high winds: Securely anchor the outdoor unit down with bolts and a metal ame. Provide a suitable air baffle.
the air condition When installing in a wall: Mi if in a room: d in moist o le in an area fr in a snowy	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors. <b>r uneven locatinons:</b> Use a raised concrete pad or concrete blocks provide a solid, evel foundation for the outdoor unit. This prevents water damage and abnormal vibration. <b>with high winds:</b> Securely anchor the outdoor unit down with bolts and a metal ame. Provide a suitable air baffle. <b>area(for Heat Pump Model):</b> Install the outdoor unit on a raised platform that is
the air condition When installing in a wall: M It in a room: d in moist o le in an area fr in a snowy h	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors. <b>r uneven locatinons:</b> Use a raised concrete pad or concrete blocks provide a solid, ivel foundation for the outdoor unit. This prevents water damage and abnormal vibration. <b>with high winds:</b> Securely anchor the outdoor unit down with bolts and a metal ame. Provide a suitable air baffle. <b>y area(for Heat Pump Model):</b> Install the outdoor unit on a raised platform that is igher than drifting snow. Provide snow vents.
the air condition When installing in a wall: M in a room: d in moist o le in an area fr in a snowy Mhen connecti	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors. r uneven locatinons: Use a raised concrete pad or concrete blocks provide a solid, evel foundation for the outdoor unit. This prevents water damage and abnormal vibration. with high winds: Securely anchor the outdoor unit down with bolts and a metal ame. Provide a suitable air baffle. r area(for Heat Pump Model): Install the outdoor unit on a raised platform that is igher than drifting snow. Provide snow vents. Ing refrigerant tubing
the air condition When installing in a wall: M If the second second in a room: If the second second in a second second When connection · Keep all tubion	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors. <b>r uneven locatinons:</b> Use a raised concrete pad or concrete blocks provide a solid, evel foundation for the outdoor unit. This prevents water damage and abnormal vibration. <b>with high winds:</b> Securely anchor the outdoor unit down with bolts and a metal mame. Provide a suitable air baffle. <b>rarea(for Heat Pump Model):</b> Install the outdoor unit on a raised platform that is igher than drifting snow. Provide snow vents. <b>ing refigerant tubing</b> ng runs as short as possible.
the air condition When installing in a wall: M It in a room: d in moist o le in an area fr. in a snowy Mhen connecti · Keep all tubi · Use the flare	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors. <b>r uneven locatinons</b> : Use a raised concrete pad or concrete blocks provide a solid, evel foundation for the outdoor unit. This prevents water damage and abnormal vibration. <b>with high winds</b> : Securely anchor the outdoor unit down with bolts and a metal rame. Provide a suitable air baffle. <b>area</b> (for <b>Heat Pump Model</b> ): Install the outdoor unit on a raised platform that is ligher than drifting snow. Provide snow vents. <b>Ing refrigerant tubing</b> ng runs as short as possible. <b>a method</b> for connecting tubing.
the air condition When installing in a wall: M d in a room: d in moist o le in an area fr. in a snowy When connecti · Keep all tubi · Use the flare · Check careft	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors. r uneven locatinons: Use a raised concrete pad or concrete blocks provide a solid, wel foundation for the outdoor unit. This prevents water damage and abnormal vibration. with high winds: Securely anchor the outdoor unit down with bolts and a metal ame. Provide a suitable air baffle. r area(for Heat Pump Model): Install the outdoor unit on a raised platform that is igher than drifting snow. Provide snow vents. ing refrigerant tubing ng runs as short as possible. e method for connecting tubing. ully for leaks before starting the test run.
the air condition When installing in a wall: M in a room: d in moist o le in an area fr in a snowy When connect · Keep all tubi · Use the flare · Check carefu When servicing	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors. <b>r uneven locatinons:</b> Use a raised concrete pad or concrete blocks provide a solid, wel foundation for the outdoor unit. This prevents water damage and abnormal vibration. <b>with high winds:</b> Securely anchor the outdoor unit down with bolts and a metal me. Provide a suitable air baffle. <b>race(for Heat Pump Model):</b> Install the outdoor unit on a raised platform that is igher than drifting snow. Provide snow vents. <b>ing refigerant tubing</b> ng runs as short as possible. e method for connecting tubing. ully for leaks before starting the test run. <b>g</b>
the air condition When installing in a wall: M in a room: in a room: in moist o in moist o in an area fr: in a snowy Muhen connection . Use the flare . Check carefu When servicing . Turn the pow	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors. <b>r uneven locatinons:</b> Use a raised concrete pad or concrete blocks provide a solid, evel foundation for the outdoor unit. This prevents water damage and abnormal vibration. <b>with high winds:</b> Securely anchor the outdoor unit down with bolts and a metal ame. Provide a suitable air baffle. <b>area(for Heat Pump Model):</b> Install the outdoor unit on a raised platform that is igher than drifting snow. Provide snow vents. <b>ing refrigerant tubing</b> ng runs as short as possible. e method for connecting tubing. ully for leaks before starting the test run. <b>g</b> ver OFF at the main power box(mains) before opening the unit to check or repair
the air condition When installing in a wall: M It in a room: d in moist o le in an area frr in a snowy When connecti · Keep all tubi · Use the flare · Check careft When servicing · Turn the pow electrical par	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors. r uneven locatinons: Use a raised concrete pad or concrete blocks provide a solid, wel foundation for the outdoor unit. This prevents water damage and abnormal vibration. with high winds: Securely anchor the outdoor unit down with bolts and a metal ame. Provide a suitable air baffle. r area(for Heat Pump Model): Install the outdoor unit on a raised platform that is igher than drifting snow. Provide snow vents. ing refrigerant tubing ng runs as short as possible. e method for connecting tubing. ully for leaks before starting the test run. g ver OFF at the main power box(mains) before opening the unit to check or repair ts and wiring.
the air condition When installing in a wall: M It in a room: d in moist o le in an area fr in a snowy Mhen connecti · Keep all tubi · Use the flare · Check careff When servicing · Turn the pow electrical par · Keep your fir	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors. <b>r uneven locatinons:</b> Use a raised concrete pad or concrete blocks provide a solid, welf foundation for the outdoor unit. This prevents water damage and abnormal vibration. <b>with high winds:</b> Securely anchor the outdoor unit down with bolts and a metal ame. Provide a suitable air baffle. <b>rarea(for Heat Pump Model):</b> Install the outdoor unit on a raised platform that is igher than drifting snow. Provide snow vents. <b>ing refrigerant tubing</b> ng runs as short as possible. <b>a method for connecting tubing.</b> ully for leaks before starting the test run. <b>g</b> ver OFF at the main power box(mains) before opening the unit to check or repair rts and wiring. ngers and clothing away from any moving parts.
the air condition When installing in a wall: M in a room: d in moist o le in an area fr in a snowy h When connecti · Keep all tubi · Use the flare · Check careft When servicing · Turn the pow electrical par · Keep your fin · Clean up the	oner can cut your finger. g lake sure the wall is strong enough to hold the unit's weight. may be necessary to construct a strong wood or metal frame to provide added support. Properly insulate any tubing run inside a room to prevent "sweating" that can cause ripping and water damage to wall and floors. r uneven locatinons: Use a raised concrete pad or concrete blocks provide a solid, wel foundation for the outdoor unit. This prevents water damage and abnormal vibration. with high winds: Securely anchor the outdoor unit down with bolts and a metal ame. Provide a suitable air baffle. r area(for Heat Pump Model): Install the outdoor unit on a raised platform that is igher than drifting snow. Provide snow vents. ing refrigerant tubing ng runs as short as possible. e method for connecting tubing. ully for leaks before starting the test run. g ver OFF at the main power box(mains) before opening the unit to check or repair ts and wiring.

MULTI Vertical Air Handling Unit Installation Manual

## **TABLE OF CONTENTS**

#### Installation Requirements

**Required Parts** 

**Required Tools** 

Safety Precautions4
Features
Accessories6
Duct Connection Dimensions7
Installation8
Selection of the best location8
Upflow Installation9
Duct work10
Horizontal-left Installation11
Combination indoor units12
Flaring work13
Connection of piping
- Outdoor, BD Unit14
Insulation16
Condensate Drain17
Wiring Connection19
Name and function of wired re-
mote controller(Accessory)21
Name and function of wireless re-
mote controller(Accessory)22
How to Set E.S.P?23
Electric Heater25
Dip Switch Setting of Indoor unit PCB26
Product Data
External Static Pressure & Air
Flow27
Minimum airflow by heater ca-
pacity28
Electric Heater Static pressure
drop factors
Air Filter (Field supply) Static
pressure drop factors29

□ Four type "A" screws

 Pipes: Gas side Liquid side (Refer to Product Data)
 Insulation materials
 Additional drain pipe

- Level gauge
   Screw driver
   Electric drill
   Hole core drill
- Hexagonal wrench
- Gas-leak detector
- UXACUUM pump
- Gauge manifold

Owner's manual
 Thermometer

Electric Heater installation manual

Installation Manual 3

## **Safety Precautions**

To prevent injury to the user or other people and property damage, the following instructions must be followed.

- Be sure to read before installing the air conditioner.
- Be sure to observe the cautions specified here as they include important items related to safety.
- Incorrect operation due to ignoring instruction will cause harm or damage. The seriousness is classified by the following indications.

WARNING This symbol indicates the possibility of death or serious injury.
 CAUTION This symbol indicates the possibility of injury or damage to properties only.

Meanings of symbols used in this manual are as shown below.

$\bigcirc$	Be sure not to do.									
	Be sure to follow the instruction.									
Installation —										
Do not use a defect derrated circuit breat this appliance on a circuit.	eaker. Use	For electrical work, contact the dealer, seller, a qualified electrician, or an Authorized Service Center.	Always ground the product.							
There is risk of fire or electric shock.		• Do not disassemble or repair the product. There is risk of fire or electric shock.	There is risk of fire or electric shock.							
Install the panel an cover of control bo		Always install a dedicated circuit and breaker.	Use the correctly rated breaker or fuse.							
There is risk of fire shock.	or electric	<ul> <li>Improper wiring or installation may cause fire or electric shock.</li> </ul>	There is risk of fire or electric shock.							
Do not modify or extend the power cable.		Do not let the air conditioner run for a long time when the humidity is very high and a door or a window is left open.	Be cautious when unpacking and installing the product.							
There is risk of fire shock.	or electric	Moisture may condense and wet or damage furniture.	• Sharp edges could cause in- jury. Be especially careful of the case edges and the fins on the condenser and evapo- rator.							

For installation, always contact the dealer or an Authorized Service Center.

• There is risk of fire, electric shock, explosion, or injury.

## Do not install the product on a defective installation stand.

• It may cause injury, accident, or damage to the product.

## Be sure the installation area does not deteriorate with age.

 If the base collapses, the air conditioner could fall with it, causing property damage, product failure, and personal injury.

Use a vacuum pump or Inert (nitrogen) gas when doing leakage test or air purge. Do not compress air or Oxygen and do not use Flammable gases. Otherwise, it may cause fire or explosion.

- There is the risk of death, injury, fire or explosion.
- Operation -

Do not store or use flammable gas or combustibles near the product.

There is risk of fire or failure of product.

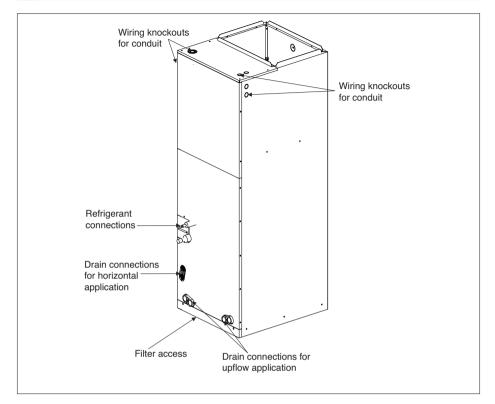


#### Installation –

Always check for gas (refrig- erant) leakage after installa- tion or repair of product.	Install the dra sure that wate away properly	er is drained	Keep level even when in- stalling the product.
Low refrigerant levels may cause failure of product.	<ul> <li>A bad connecti water leakage.</li> </ul>		To avoid vibration or water leakage.
Do not install the product where the noise or hot air from the outdoor unit could dam- age the neighborhoods.	Use two or mo and transport	ore people to lift the product.	Do not install the product where it will be exposed to sea wind (salt spray) directly.
<ul> <li>It may cause a problem for your neighbors.</li> </ul>	Avoid personal	injury.	<ul> <li>It may cause corrosion on the product. Corrosion, particularly on the condenser and evaporator fins, could cause product malfunc- tion or inefficient operation.</li> </ul>
If you eat the liquid from the batteries, brush your teeth and a not use the remote if the batterio		Safely dispose	of the packing materials.
The chemicals in batteries could c other health hazards.	ause burns or	wooden parts, m	ls, such as nails and other metal or nay cause stabs or other injuries. hrow away plastic packaging bags

• Tear apart and throw away plastic packaging bags so that children may not play with them. If children play with a plastic bag which was not torn apart, they face the risk of suffocation.

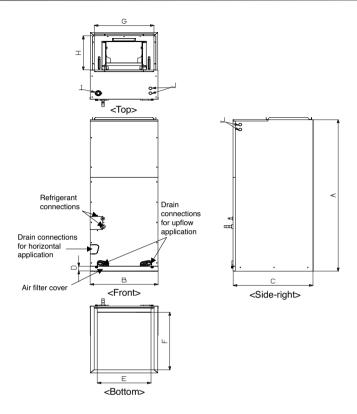
## Features



#### Accessories

Accessory	Model Name
Wired remote controller	PREMTB10U
Wireless remote controller	PQWRHDF0
Electric heater	ANEH053B1 ANEH103B2

## Duct Connection Dimensions



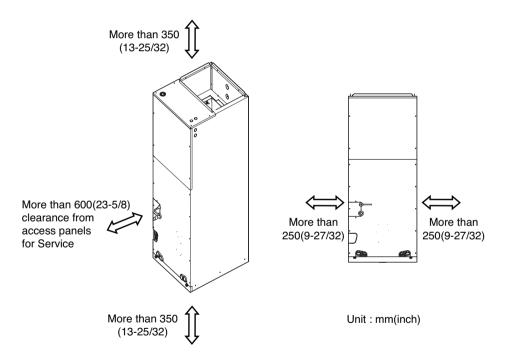
(Unit: inch(mm))

	Dimensions						ring k out	Refrig Conne	gerant						
Capacity (kBtu/h)	A	В	С	D	DE		DEE		E F G		GН	Ι	J		size
	Height	Width	Depth	DE		G		Power	Commu- nication	Liquid	Gas				
24	48-5/8 (1236)	18 (457)	21-3/8 (540)	1-9/16 (40)	17-1/2 (445)	20 (530)	17 (432)	12-1/8 (308)	1-11/16 (43)	7/8 (22)	1/4 (6.35)	1/2 (12.7)			
36	48-5/8 (1236)	18 (457)	21-3/8 (540)	1-9/16 (40)	17-1/2 (445)	20 (530)	17 (432)	12-1/8 (308)	1-11/16 (43)	7/8 (22)	3/8 (9.52)	5/8 (15.88)			

## Installation

#### Selection of the best location

- · Where optimum air distribution can be ensured.
- Where nothing blocks air passage and install the duct work.
- · Where condensate can be properly drained.
- · Where the ceiling is strong enough to bear the indoor unit weight.
- · Where the false ceiling is not noticeably on an incline.
- Where sufficient clearance for maintenance and service can be ensured.
- Where piping between indoor and outdoor units is possible within the allowable limit. Refer to the installation manual for the outdoor unit.
- Vertical Air Handling Unit can be installed for upflow and horizontal-left positions.



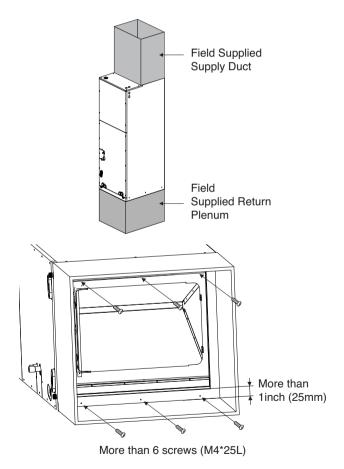
NOTE : The primary and secondary drain line must be trapped to allow proper drainage of condensate water, If the secondary drain line is not used, it must be capped.

### 

In the case of sea coast installation, salt residue may cause corrosion of cabinet and component parts. Please take appropriate anti-corrosion measures.

#### **Upflow Installation**

- Position unit for plenum installation.
- The plenum should be secured in order to support the installation of adapter callers accommodate the installation of any duct work.
- Seal all duct work according to local codes to prevent air leakage. Ensure that filter access is unobstructed.
- The air handler support platform should be sturdy enough to support the cabinet plus any accessory components including filter box.
- The minimum height clearance is 14inches(350mm) to maintain proper air flow.
- Vibration isolators (purchased locally) must be placed between the unit and the pedestal.
- An illustration showing an example of where a vibration isolator should be added would clarify what the installing contractor should do to properly position the isolator.



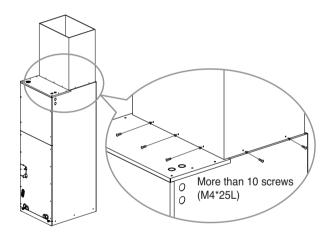
#### 

Do not connect the screws on Front and Rear side, it may cause the filter can not be mounted.

#### Installation

#### Duct work

- · Over 10 screws should be used for joining supply duct with the unit.
- To prevent vibration transmission, exploit flexible connectors between duct and the unit. It is mandatory that the flexible connector between unit and duct at discharge connection should be made off heat resistive material when electric heater is installed.
- Duct work must be insulated and covered with vapor barrier when routed through unconditioned space.
- · To prevent the formation of condensation, insulate the duct well.
- Internal acoustical insulation lining may necessary for the metal duct system if it do not have 90° elbow and 10ft. of main duct to first branch takeoff.
- It is advised that a fibrous duct work could be used as a substitute if built and installed in accordance with the most recent edition of SMACNA construction standard on fibrous glass ducts.
- Collectively fibrous duct work and acoustical lining shall obey National Fire Protection Association standards 90A or B as tested by UL standard 181 for class 1 air ducts.
- Seal around the delivery duct subsequent to when the duct is secured so that to facilitate prevention of air leakage.

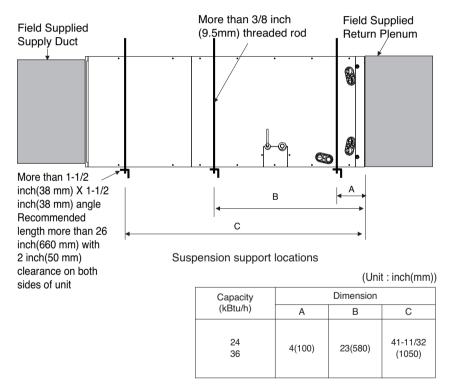


#### Horizontal-left Installation

- It is particular that the units should not be installed in such a manner that the access panels facing up or down
- It should be confirmed that the installation is in accordance with all relevant building codes that may necessitate installation of external condensate pan.

-Set up a support for unit by locating it in or above external condensate pan.

- Angle steel support brackets with threaded rods which supporting the units from the underside should be used as shown in the figure below if the units are suspended.
- If not suspended then also it should be supported as same as mentioned above and also carefully isolated to avoid sound transmission. The size of the support should comparatively bigger than the unit and the unit must be place at centre of the support.
- · Locally available vibration isolators must be placed between the unit and the support.
- The same installation method of up flow type has to be used in the case of Return Plenum and supply duct.



#### 

To ensure proper drainage for horizontal installations, unit must be installed so it is within 1/8" level of the length and width of unit.

#### Combination indoor units

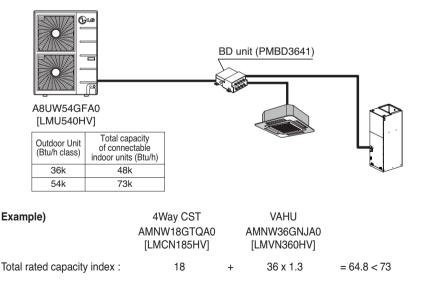
Indoo	r Unit	Outdoor Unit	(Btu/h class)
Type Capacity (Btu/h class)		36k	54k
Vertical AHU	24k	0	0
	36k	х	0
Ceiling Concealed Duct	24k	0	0
(High Static)	36k	Х	0

The indoor units connectable to the outdoor unit are shown below

- **NOTICE**: 1. The total capacity(in Btu/h unit) of connected indoor unit models represents the total sum of the figures expressed in the indoor model name.
  - 2. Combinations in which the total capacity of the connected indoor units exceeds the capacity of the outdoor unit will reduce the capacity of each indoor unit below the rated capacity during simultaneous operation. Therefore, if circumstances allows, combine indoor units within the capacity of the outdoor unit.
  - 3. VAHU, Ceiling Concealed Duct(High Static) type indoor unit's combination calculation method as below.

Calculation method for total capacity of connectable indoor unit to an outdoor unit = (Sum of all VAHU & Ceiling Concealed Duct(High Static) type indoor units capacity

x 1.3) + Sum of all other indoor unit's capacity



#### Flaring work

Main cause of gas leakage is defect in flaring work. Carry out correct flaring work in the following procedure.

#### 1) Cut the pipes

- Use the accessory piping kit or the pipes purchased locally.
- Measure the distance between the indoor and the outdoor unit.
- Cut the pipes a little longer than measured distance.
- Cut the cable 1.5m(4.9ft) longer than the pipe length.

#### 2) Burrs removal

- Completely remove all burrs from the cut cross section of pipe/tube.
- Put the end of the copper tube/pipe to downward direction as you remove burrs in order to avoid to let burrs drop in the tubing.

#### 3) Putting nut on

Remove flare nuts attached to indoor and outdoor units, than put them on pipe/tube having completed burr removal.

(Not possible to put them on after flaring work)

#### 4) Flaring work

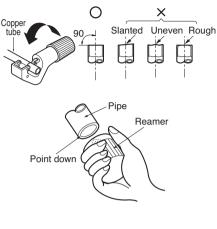
Carry out flaring work using flaring tool as shown below.

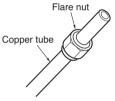
Outside	diameter	ŀ	Ą
mm	inch	mm	inch
Ø6.35	1/4	1.1~1.3	0.04~0.05
Ø9.52	3/8	1.5~1.7	0.06~0.07
Ø12.7	1/2	1.6~1.8	0.06~0.07
Ø15.88	5/8	1.6~1.8	0.06~0.07
Ø19.05	3/4	1.9~2.1	0.07~0.08

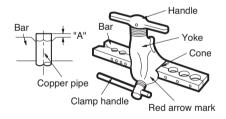
Firmly hold copper tube in a bar(or die) as indicated dimension in the table above.

#### 5) Check

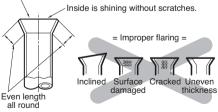
- Compare the flared work with figure.
- If flare is noted to be defective, cut off the flared section and do flaring work again.







Smooth all round



#### Connection of piping - Indoor, Outdoor, BD Unit

Align the center of the piping and sufficiently tighten the flare nut by hand.

Capacity	Refrigerant Connections Pipe size		
(kBtu/h)	Liquid	Gas	
24	1/4 (Ø6.35)	1/2 (Ø12.7)	
36	3/8 (Ø9.52) 5/8 (Ø15.88		

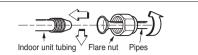
BD Unit	Refrigerant Pipe Size (	Connectable Indoor Unit Capacity	
	Liquid	Gas	(kBtu/h class)
PMBD3620	1/4 (Ø6.35) x 2EA	3/8 (Ø9.52) x 2EA	9/12/18/24k
PMBD3630	1/4 (Ø6.35) x 3EA	3/8 (Ø9.52) x 3EA	9/12/18/24k
PMBD3640	1/4 (Ø6.35) x 4EA	3/8 (Ø9.52) x 4EA	9/12/18/24k
PMBD3641	1/4 (Ø6.35)	3/8 (Ø9.52) x 3EA	9/12/18/24k (A/B/C ROOM)
	x 4EA	1/2 (Ø12.7) x 1EA	36k (D ROOM)

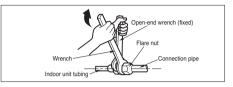
**※** BD Unit(PMBD3641) includes the sockets. (Ø 12.7 → Ø 15.88 x 1EA, Ø 6.35 → Ø 9.52 x 1EA)

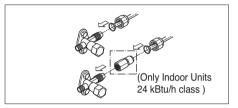
Finally, tighten the flare nut with torque wrench until the wrench clicks.

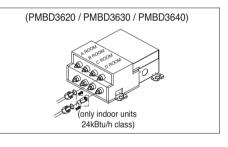
• When tightening the flare nut with torque wrench ensure the direction for tightening follows the arrow on the wrench.

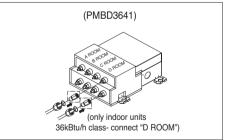
Outside diameter		Torque		
mm	inch	N. m	kgf.m	lbf.ft
Ø6.35	1/4	14~18	1.4~1.8	10~13
Ø9.52	3/8	34~42	3.5~4.3	25~31
Ø12.7	1/2	49~61	5.0~6.2	36~45
Ø15.88	5/8	69~82	7.0~8.4	51~60
Ø19.05	3/4	100~120	10.0~12.2	73~88





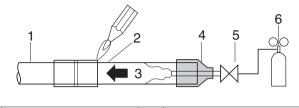






#### 

Always blow nitrogen into pipe which is brazed. Always use a non-oxidizing brazing material for brazing the parts and do not use flux. If not, oxidized film can cause clogging or damage to the compressor unit and flux can harm the copper piping or refrigerant oil.



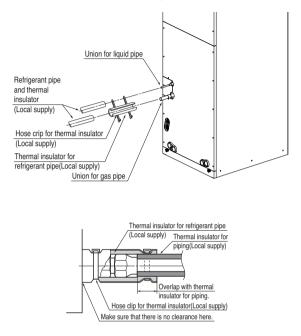
	1	Refrigerant piping	4	Taping
	2	Pipe to be brazed	5	Valve
[	3	Nitrogen	6	Pressure-reducing valve

Note : The torch tip should be positioned at the opposite angle to shop the correct way to apply heat on the pipe coupling.

#### Insulation

Insulate the joint and tubes completely.

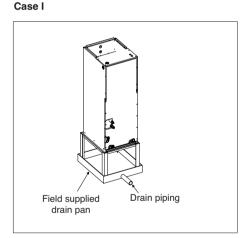
Thermal insullaton : All thermal insulation must comply with local requirement.



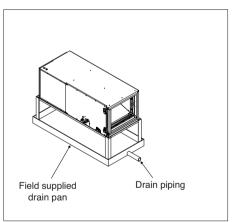
- 1. Use the heat insulation material for the refrigerant piping which has an excellent heat-resistance [over 120°C(248°F)].
- 2. Precautions in high humidity circumstance: This air conditioner has been tested according to the "KS Standard Conditions with Mist" and confirmed that there is not any default. However, if it is operated for a long time in high humid atmosphere [dew point temperature: more than 23°C(73.4°F)], water drops are liable to fall. In this case, add heat insulation material according to the following procedure:
- · Heat insulation material to be prepared... Adiabatic glass wool with thickness 10 to 20mm.
- Stick glass wool on all air conditioners that are located in ceiling atmosphere.

#### Condensate Drain

- The drainage performance has to be optimized by installing both primary and secondary drain lines along with properly sized condensate traps in order to prevent property damage.
- Care should be taken to avoid the blocking of filter access panel while connecting condensate drain lines. The primary and secondary condensate traps has to be primed after connecting to the drain pan.
- A field supplied external condensate pan has to be installed underneath the entire unit if the unit is above the living space. Other wise damage may result due to condensate over flow. Also a additional external condensate line should run from unit in to the pan.
- The entire condensate should be drained from the external condensate pan to some noticeable area. It is advised to install traps in condensate lines as near to the coil as possible. The outlet of each trap should be below its connection to the condensate pan avert condensate from overflowing drain pan.
- If located above the living area then all traps should be prime and insulated and also tested for leakage.
- PVC 3/4 inch(19.05mm) male pipe thread fitting is advised to use at condensate pan with gentle tight.
- · For easy drain flow the drain hose has to be pointed downward.
- Care should be taken to not use pipe joint connection or PVC/CPVC for units drain line connection. Use only Teflon tape.
- For preventing winter freeze up on condensate line special means should be provided for drainage.

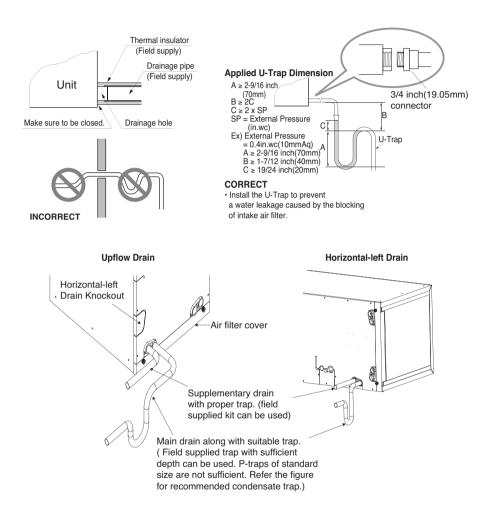


#### Case II



#### **GRADIENT OF UNIT AND DRAIN PIPING**

- Alway lay the drain with downward inclination(1/50 to 1/100).
   Prevent any upward flow or reverse flow in any part.
- 5/24 inch(5mm) or thicker formed thermal insulator shall always be provided for the drain pipe.



#### 

The supplied flexible drain hose should not be strained. A strained hose may cause leakage of water.

(±)

3

208/230V 10 60Hz

Terminal Block Indoor

2(L2)

Connected to outdoor unit or BD unit

1(L1)

#### Wiring Connection

Connect the wires to the terminals on the control board individually according to the outdoor unit connection.

Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively.

#### Connecting cable



The power connecting cable between the outdoor and indoor units must comply with the following specifications: NRTL Recognized (for example, UL or ETL recognized and CSA certified).

AWG 18-4 is the minimum recommended wire size,

however, the selected conductors must comply with local codes and be suitable for installation in wet locations.

#### Precautions when laying power wiring

Use round pressure terminals for connections to the power terminal block.

Round pressure terminal Power wire

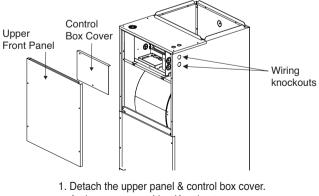
- When none are available, follow the instructions below.
  Do not connect wiring of different thicknesses to the power terminal block. (Slack in the power wiring may cause abnormal heat.)
  When connecting wiring which is the same thickness, do as
- When connecting wiring which is the same thickness, do as shown in the figure below.



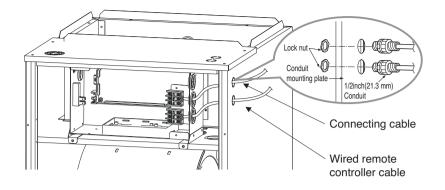




- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal block.
- Use an appropriate screwdriver for tightening the terinal screws. A screwdriver with a small head will strip the head and make proper tighterning impossible.
- Over-tightening the terminal screws may break them.



And remove two wiring Knockouts.



Install conduit to the wiring knockouts. Connect connecting/wired remote controller cable to terminal block through the wiring knockouts.

#### NOTICE

 Use connection cable NRTL(UL, ETL, CAS...) listed and stranded copper(4) THHN conductors, sunlight (UV) resistant ROHS compliant PVC jacket 600V direct burial listed, approved for wet conditions. Temperature rated for –20°C(-4°F) to 90°C(194°F). And this cable should be enclosed in conduit.

#### **WARNING**

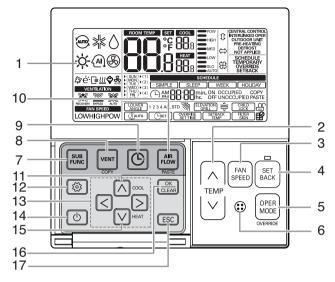
- Be sure to comply with local and national codes while running the wire from the indoor unit to the outdoor unit(size of wire and wiring method, etc).
- · Every wire must be connected firmly.
- · No wire should be allowed to touch refrigerant tubing, the compressor or any moving parts.
- The communication wirings of air conditioner should be separate and isolated from external device's electric wiring such as computers, elevator, radio & Television broadcasting facilities, as well as medical imaging offices.

#### HAND OVER

Teach the customer the operation and maintenance procedures, using the operation manual. (air filter cleaning, temperature control, etc.)

NOTE : Openings where field wiring enters the cabinet must be completely sealed.

#### Name and function of wired remote controller(Accessory)



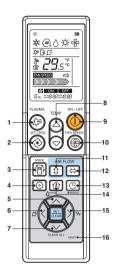
- 1. Operation indication screen
- 2. Set temperature button
- 3. Fan Speed button
- 4. Set back button
- 5. Operation mode selection button
- Wireless remote controller receiver
   Some product don't receive the wireless signals.
- 7. Sub function button
- 8. Ventilation button
- 9. Reservation button

- 10. Air flow button
- 11. Cooling desired temperature
- 12. Function setting button
- 13. Up, Down, Left, Right button
- 14. On/Off button
- 15. Heating desired temperature
- 16. Setting/Cancel button
- 17. Exit button
- \* Some functions may not be operated and displayed depending on the product type.
- \* If you want to know more information, please refer to Wide Wired Remote Control Manual.

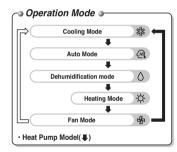
#### Model : PREMTB10U

#### Installation

#### Name and function of wireless remote controller(Accessory)



#### PQWRHDF0



\* If you want to know more information, please refer to Wireless Remote Control Manual.

- 1. Plasma button Not working.
- 2. Jet cool button Not working.
- **3. Operation mode selection button** Used to select the operation mode.
- 4. Function setting button Used to set electric heater.
- 5. Icd luminosity button Not working.
- Smart clean button Not working.
- 7. Clear all button Used to clear all timer.
- 8. Room temperature setting button Used to select the setting outlet temperature
- 9. on/off button Used to turn off/on the unit.
- 10. Indoor fan speed selection button
- 11. Auto swing button Not working.
- 12. Horizontal airflow direction control button Not working.
- Timer and time setting button Used to set the time of starting or stopping and sleeping operation.
- 14. Room temperature checking button

#### 15. °C/°F switch button

Used to switch temperature reading from Celsius to Fahrenheit.

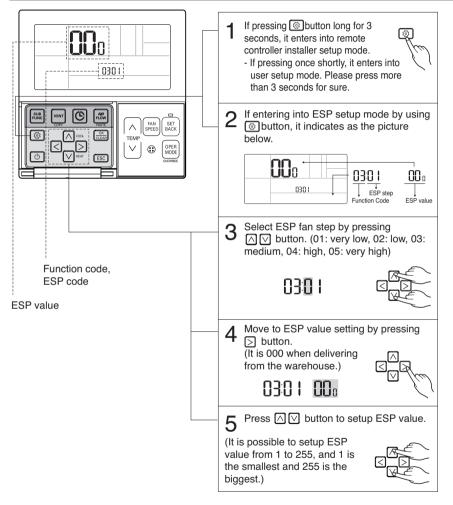
16. Reset button

Used to reset the remote controller.

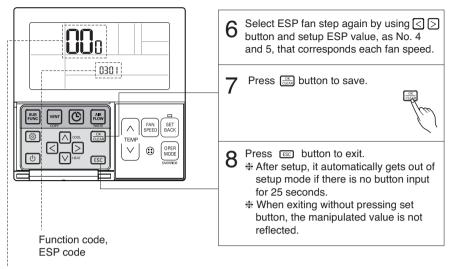
## How to Set E.S.P?

This is the function that decides the strength of the wind for each wind level and because this function is to make the installation easier.

- $\boldsymbol{\cdot}$  If you set ESP incorrectly, the air conditioner may malfunction.
- This setting must be carried out by a certificated-technician.



When setting ESP value on the product without very weak wind or power wind function, it may not work.

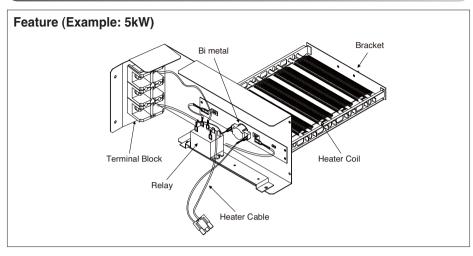




- Please be careful not to change the ESP value for each fan step.
- It does not work to setup ESP value for very low/power step for some products.
- ESP value is available for specific range belongs to the product.

## ENGLISH

#### Electric Heater



\* Note: Image shown above may vary depends on model capacity.

Available heater in model

Capacity (kBtu/h)	Heater Capacity (kW)	
(kBtu/h)	5	10
24	0	0
36	0	0

\* If you want to know more optional operation, please refer to the Electric Heater Manual.

\* Heater Model 5kW: ANEH053B1 10kW: ANEH103B2

#### Dip Switch Setting of Indoor unit PCB

	Function	Description	Setting Off	Setting On	Default
SW1	Communication	N/A (Default)	-	-	Off
SW2	Cycle	Cycle N/A (Default) -		-	Off
SW3	Group Control	Selection of Master or Slave	Master	Slave	Off
SW4	Dry Contact Mode	y Contact Mode Selection of Dry Contact Mode Wired/Wireless remote controller Selection of Manual or Auto operation Mode		Auto	Off
SW5	Installation	Fan continuous operation	Continuous operation Removall	-	Off
SW6	Heater linkage	Selection of Heating Working	-	-	Off
SW7	Etc.	Spare	-	-	Off
SW8	Etc.	Spare	-	-	Off

## 

- 1. Indoor unit without Electric Heater
  - Dip switch 1, 2, 6, 8 must be set OFF.
- 2. In the case of indoor unit with Electric Heater, Dip switch 5,6 must be set ON.
  - SW 5 ON: Fan operates continuously. (During defrosting or oil return operation, uninterrupted heating can be attained, as a result of continuous heater and fan operation.)
  - SW5 OFF: Fan discontinuous operation (There would be reduction in heating capacity while defrosting or oil return operation.)
  - SW6 ON: Automatic Heater operation (Heater operates automatically according to the heater logic without owner's intervene.)
  - SW6 OFF: Heater manual operation (Owner's involvement is required for on/off operation. But the heater operation would be as per the heater logic.)

## **Product Data**

#### External Static Pressure & Air Flow

Capacity Flow rate		Setting Value @ ESP(in.wc)									
(kBtu/h(RT)) (CFM)	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
	High(990)	80	85	90	95	100	103	*103	*103	*103	*103
36(3.0)	Middle(880)	65	72	80	85	92	98	103	*103	*103	*103
	Low(800)	65	69	77	82	90	96	101	*101	*101	*101
	High(710)	56	67	74	78	87	94	98	*98	*98	*98
24(2.0)	Middle(640)	53	65	70	75	85	91	96	*96	*96	*96
	Low(480)	53	55	64	70	79	84	92	*92	*92	*92

#### Notes :

1. Air handler units are UL Listed up to 0.5 in.wc external static pressure, including air filter, set coil, and largest kW size heater, unless otherwise noted.

2. \* Mark means that flow rate(CFM) is decreased by 3% per 0.1in.wc

3. Upper limit of flow rate(CFM) is 400CFM per ton. (In case of 24kBtu/h, maximum flow rate is 2.0 x 400 = 800 CFM.) If flow rate should be increased to upper limit, ESP value should be increased from high speed setting value to as much as below value.

- from 24kBtu/h of capacity : 4

- from 36kBtu/h of capacity : 5

4. in.wc = inch Water Column, inAq High static pressure is 0.5 in.wc (Factory set Default) Low static pressure is 0.3 in.wc

5. If you set ESP incorrectly, the air conditioner may cause cooling & heating capacity down and malfunction.

#### Minimum airflow by heater capacity

(Unit : CFM)

Capacity	Heater Capacity (kW)		
(kBtu/h)	5	10	
24	480	480	
36	780	780	

#### 

Do not use less than minimum airflow.

There is risk of fire or damage to the product.

#### Electric Heater Static pressure drop factors

Heater Capacity(kW)	Static pressure drop (in.wc)	
0	0	
5	- 0.01	
10	- 0.02	

If the electric heater has been installed, then the ESP value has to be set.

For every increase in static pressure by 0.01 inWC, the ESP value should be increased by 1.

If the setting ESP value is inappropriate, the provided safety device will turn off the heater according to the airflow.

\* in.wc = inch Water Column, inAq

#### Air Filter (Field supply) Static pressure drop factors

Capacity(kBtu/h)	Flow Rate(CFM)	Static pressure drop (in.WC)
	High(710)	-0.04
24	Middle(640)	-0.03
	Low(480)	-0.02
36	High(990)	-0.07
	Middle(880)	-0.05
	Low(800)	-0.05

If the air filter has been installed, then the ESP value has to be set. For every increase in static pressure by 0.01 in.wc, the ESP value should be increased by 1.

#### NOTICE

Factory testing used filter media with a MERV 4 rating. The (fan speed) Setting Value must be modified when the unit is used in conjunction with field supplied filter media.

