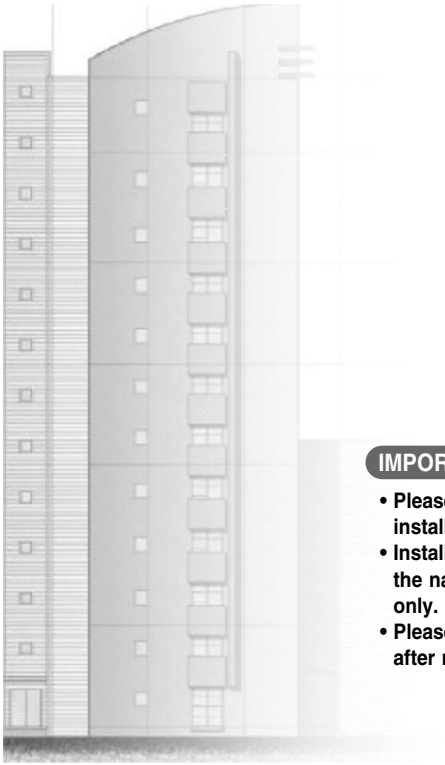
website http://www.lgservice.com

LG

MULTI V™ SYNC System
Heat Recovery Unit
INSTALLATION MANUAL

MODELS: PRHR Series



IMPORTANT

- **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.**

ENGLISH
ITALIANO
ESPAÑOL
FRANÇAIS
DEUTSCH
PORTUGUESE

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Safety Precautions

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

■ 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.

⚠WARNING

Have all electric work done by a licensed electrician according to "Electric Facility Engineering Standard" and "Interior Wire Regulations" and the instructions given in this manual and always use a special circuit.

• If the power source capacity is inadequate or electric work is performed improperly, electric shock or fire may result.

Ask the dealer or an authorized technician to install the HR unit.

• Improper installation by the user may result in water leakage, electric shock, or fire.

Always ground the product.

• There is risk of fire or electric shock.

Make the connections securely so that the outside force of the cable may not be applied to the terminals.

• Inadequate connection and fastening may generate heat and cause a fire.

For re-installation of the installed product, always contact a dealer or an Authorized Service Center.

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

Do not install, remove, or re-install the unit by yourself (customer).

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

Do not store or use flammable gas or combustibles near the HR Unit.

• There is risk of fire or failure of product.

Use the correctly rated breaker or fuse.

• There is risk of fire or electric shock.

Do not damage or use an unspecified power cord.

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

Do not touch the power switch with wet hands.

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

Securely install the cover of control box and the panel.

• If the cover and panel are not installed securely, dust or water may enter the HR unit and fire or electric shock may result.

Be cautious when unpacking and installing the product.

• Sharp edges could cause injury. Be especially careful of the case edges.

Safely dispose of the packing materials.

• Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries.
• 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.

⚠CAUTION

Avoid a place where rain may enter since the HR unit is for indoor.

• There is risk of property damage, failure of product, or electric shock.

Install the HR unit at a place in which it is not affected by operation mode changing noise.

• Installation within cell such as meeting room etc. may disturb business due to noise.

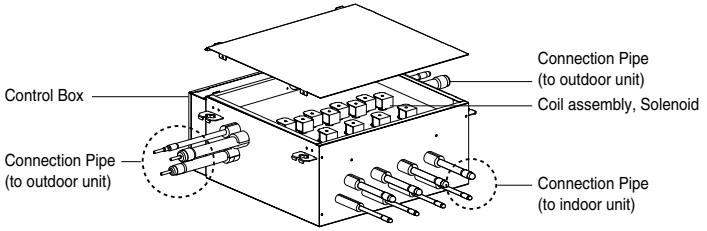
Always check for gas (refrigerant) leakage after installation or repair of product.

• Low refrigerant levels may cause failure of product.

Keep level even when installing the product.

• To avoid vibration or water leakage.

Features



Model			PRHR020	PRHR030	PRHR040
Max. Connectable No. of Indoor Units			2	3	4
Nominal Input	Cooling		26	40	40
	Heating		26	40	40
Net. Weight	kg		19	20	21
	lbs		41.9	44.1	46.3
Dimensions (W*H*D)	Inch		31.5*8.6*24.3	31.5*8.6*24.3	31.5*8.6*24.3
	mm		801*218*617	801*218*617	801*218*617
Casing			Galvanized steel plate		
Connecting Pipes	Indoor	Liquid Pipe [mm/inch]	Ø9.52[3/8		
		Gas Pipe [mm/inch]	Ø15.88[5/8]		
	Outdoor	Liquid [mm/inch]	Ø9.52[3/8)	Ø12.7[1/2]	Ø12.7[1/2]
		Low Pressure [mm/inch]	Ø22.2[7/8]	Ø28.58[1 1/8]	Ø28.58[1 1/8]
		High Pressure [mm/inch]	Ø19.05[3/4]	Ø22.2[7/8]	Ø22.2[7/8]
Sound Absorbing Insulation Material			Flame and resistant foamed polyetinylene		
Current	Minimum circuit Amps(MCA)		0.2		
	Maximum fuse Amps(MFA)		15		
Power Supply			1, 50 Hz, 220~240V		

Installation Part

- Installation Manual
- Hanging bolts (4 x M10 or M8, Nut(8 x M10 or M8), Flat washers(8 x M10)
- Reducers

Models		Liquid pipe	Gas pipe	
			High pressure	Low pressure
Indoor unit reducer		OD9.52 Ø6.35		OD15.88 Ø12.7
HR unit reducer	PRHR020	OD9.52 Ø6.35	OD19.05 Ø15.88 Ø12.7 OD12.7 Ø9.52	OD22.2 Ø19.05 Ø15.88 OD15.88 Ø12.7
	PRHR030/ PRHR040	OD12.7 Ø9.52	OD22.2 Ø19.05 Ø15.88 OD15.88 Ø12.7	OD28.58 Ø22.2 Ø19.05 OD19.05 Ø15.88

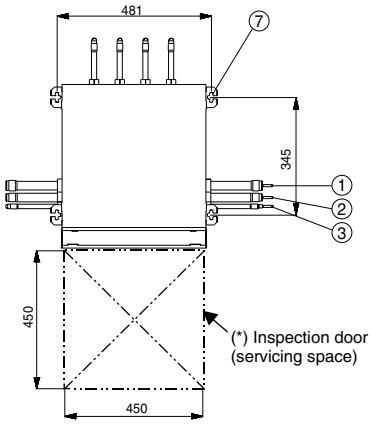
Installation

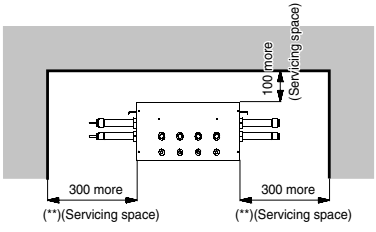
Selection of the best location

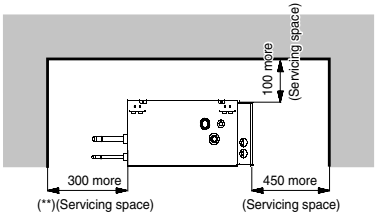
■ Select installation location of the HR unit suitable for following conditions

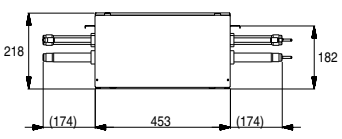
- Avoid a place where rain may enter since the HR unit is for indoor.
- Sufficient service space must be obtained.
- Refrigerant pipe must not exceed limited length.
- Avoid a place subject to a strong radiation heat from other heat source.
- Avoid a place where oil spattering, vapor spray or high frequency electric noise is expected.
- Install the unit at a place in which it is not affected by operation noise. (Installation within cell such as meeting room etc. may disturb business due to noise.)
- Place where refrigerant piping, drain piping and electrical wiring works are easy.

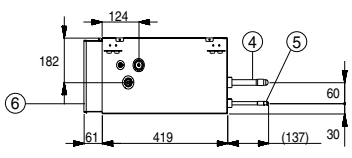
Dimensional drawings











No.	Part Name	Description	
		PRHR040/030	PRHR020
1	Low pressure Gas pipe connection port	Ø28.58 Brazing connection	Ø22.2 Brazing connection
2	High pressure Gas pipe connection port	Ø22.2 Brazing connection	Ø19.05 Brazing connection
3	Liquid pipe connection port	Ø12.7 Brazing connection	Ø9.52 Brazing connection
4	Indoor unit Gas pipe connection port	Ø15.88 Brazing connection	Ø15.88 Brazing connection
5	Indoor unit Liquid pipe connection port	Ø9.52 Brazing connection	Ø9.52 Brazing connection
6	Control box		
7	Suspension bolts	M10 or M8	M10 or M8

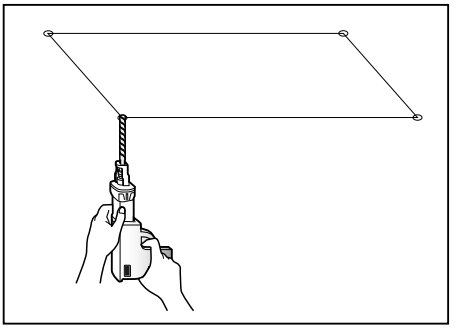
NOTES

* Be sure to install the inspection door at the electric control side.

** If reducers are used, servicing space must be increased equal to reducer's dimension.

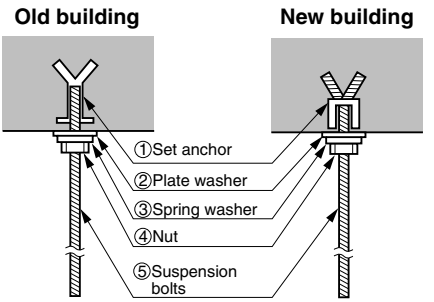
HR Unit Installation

- Select and mark the position for fixing bolts.
- Drill the hole for set anchor on the face of ceiling.

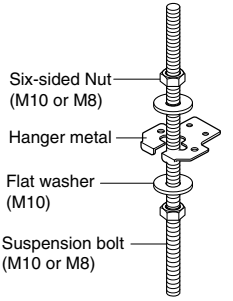


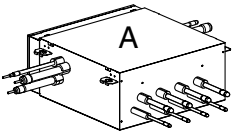
CAUTION : Tighten the nut and bolt to prevent unit falling.

- Insert the set anchor and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- Mount the suspension bolts to the set anchor firmly.
- Secure the installation plates onto the suspension bolts (adjust level roughly) using nuts, washers and spring washers.



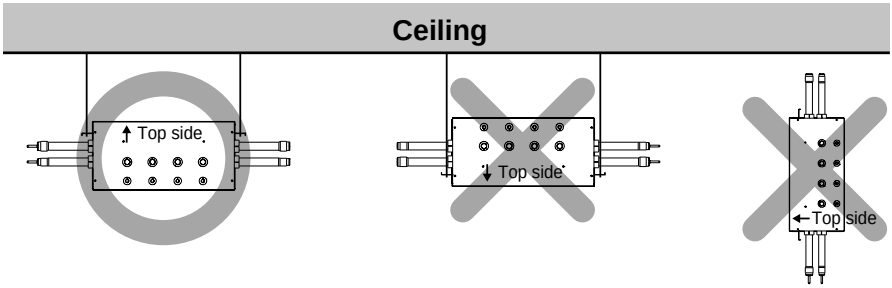
1. Using an insert-hole-in- anchor, hang the suspension bolt.
2. Install a hexagon nut and a flat washer (locally-procured)to the suspension bolt as shown in the figure in the bottom, and fit the main unit to hang on the hanger metal.
3. After checking with a level that the unit is level, tighten the hexagon nut.
   * The tilt of the unit should be within ±5° in front/back and left/right.
4. This unit should be installed suspended from ceiling and side A should always be facing up.





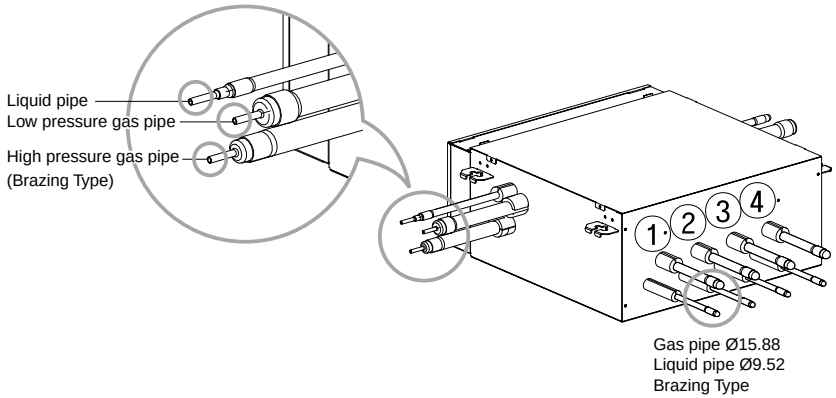
CAUTION:

HR Unit should be installed that top side is facing up. If not, it may cause failure of the product.



WARNING:

Before brazing work, remove gas in the HR Unit by cutting the three pipes in the small circles on the figure.
If not, it may cause injuries.
Remove the caps before connecting pipes.

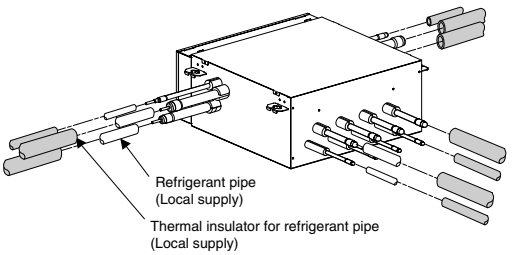


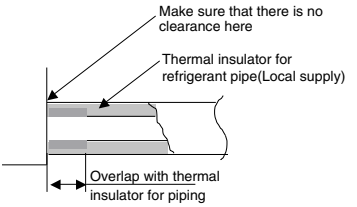
CAUTION:

- Whenever connecting the indoor units with the HR unit, install the indoor units in numerical order from No.1.
  Ex) In case of installing 3 indoor units : No. 1, 2, 3 (O), No. 1, 2, 4 (X), No.1, 3, 4 (X), No.2, 3, 4 (X).
- Take care of no thermal damage on the valves of the HR uint.
  (Especially packing part of valve) Wrap the valve with a wet towel when brazing it.

Thermal Insulation

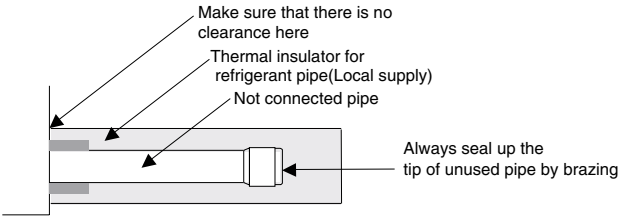
Insulate the connected pipes completely(all thermal insulation must comply with local requirement)





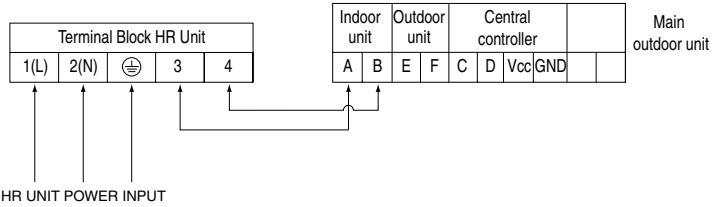
CAUTION:

Insulate completely unconnected pipes as shown in the Figure.



Wiring Connection

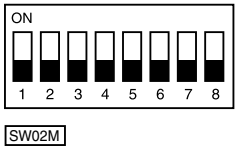
Connect the wires to the terminals on the control board individually according to the outdoor unit connection.
• Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of HR Unit respectively.



WARNING : Make sure that the screws of the terminal are free from looseness.

Setup the switch of HR Unit

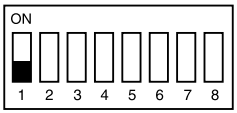
1. Main function of SW02M



ON S/W	Selection
No.1	Method for addressing valves of an HR unit (Auto/Manual)
No.2	Model of HR unit
No.3	Model of HR unit
No.4	
No.5	
No.6	
No.7	Use only in factory production (preset to “OFF”)
No.8	Use only in factory production (preset to “OFF”)

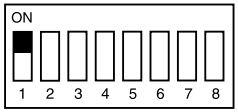
1) Selection of the method for addressing valves of an HR unit (Auto/Manual)

Switch No.1 Off



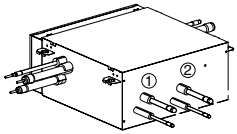
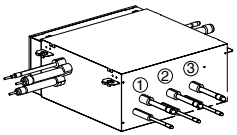
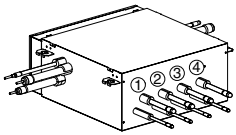
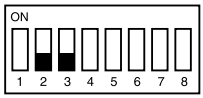
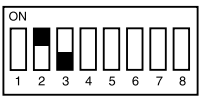
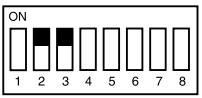
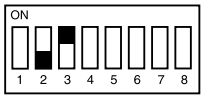
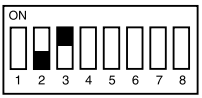
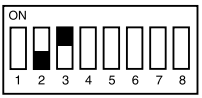
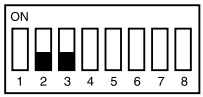
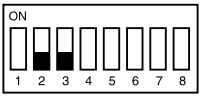
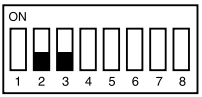
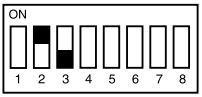
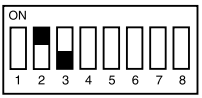
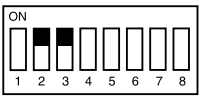
Auto

Switch No.1 On



Manual

2) Selection of the model of the HR unit

	 (For 2 rooms) PRHR020	 (For 3 rooms) PRHR030	 (For 4 rooms) PRHR040
Initial Setting			
1 room Connected			
2 rooms Connected			
3 rooms Connected			
4 rooms Connected			

❊ Each model is shipped with the switches No.2 and No.3 pre-adjusted as above in the factory.

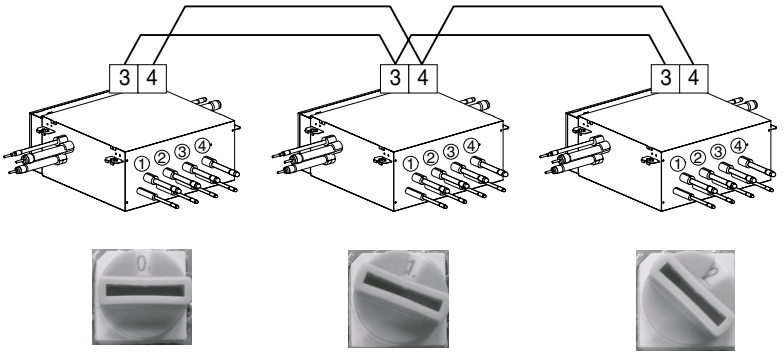
WARNING

If you want to use a PRHR030 for 2 rooms HR unit after closing the 3rd pipes, set the dip switch for 2 rooms HR unit.
If you want to use a PRHR040 for 3 rooms HR unit after closing the 4th pipes, set the dip switch for 3 rooms HR unit.
If you want to use a PRHR040 for 2 rooms HR unit after closing the 3rd and 4th pipes, set the dip switch for 2 rooms HR unit.
The unused port must be closed with a copper cap, not with a plastic cap.

2. SW05M (Rotary S/W for addressing HR unit)

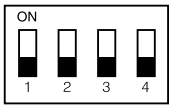
Must be set to '0' when installing only one HR unit.
When installing multiple HR units, address the HR units with sequentially increasing numbers starting from '0'.

Ex) Installation of 3 HR units



3. SW01M/SW03M/SW04M (Dip S/W and tact S/W for manual valve addressing)

- Used in manual addressing of the valve in the HR unit
- Set the address of the valve of the HR unit to the central control address of the connected indoor unit.
- SW01M: selection of the valve to address
  SW03M: increase in the digit of 10 of valve address
  SW04M: increase in the last digit of valve address
- Prerequisite for manual valve addressing : central control address of each indoor unit must be preset differently at its wired remote control.

	S/W No.	Setup
 SW01M	No.1	Manual addressing of valve #1
	No.2	Manual addressing of valve #2
	No.3	Manual addressing of valve #3
	No.4	Manual addressing of valve #4
SW03M 	SW03M	Increase in the digit of 10 of valve address
SW04M 	SW04M	Increase in the last digit of valve address

NOTICE

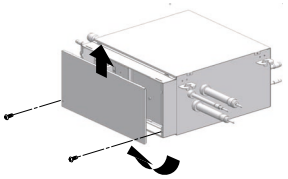
Write positions of indoor units connected with each port and Central address, also write rotary S/W number of HR Unit like below example.

HR Unit (Multi V Sync)			Rotary S/W number	
			0	
Port Number	1	2	3	4
Position of indoor unit	Lecture Room 1	Dormitory Room 2	Conference Room 1	X
Central address of indoor unit (In case of manual addressing of valves)	04	05	06	X

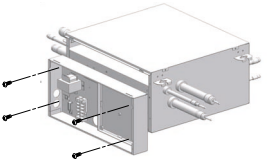
If port 4 is not connected with an indoor unit or HR unit is PRHR030,
don't write on blanks concerned with port 4.

Coil Exchanging Method

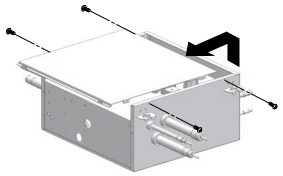
1. Remove the 2 securing screws.
   Remove the cover by pulling on the bottom of the cover and lifting up.



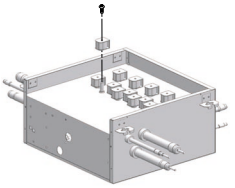
2. Take out the connectors on the pcb.
   Remove the 4 securing screws.
   Lay down the control box.



3. Remove the 4 securing screws.
   Lift up and pull on the cover.



4. Remove the securing nut with a spanner.
   Exchange the coil.

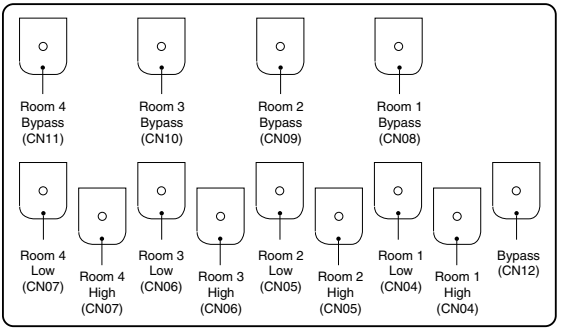


NOTES
Refer to the label concerned the solenoid coil's position attached on the cover inside.

NOTICE

Be sure that system power off before exchanging the coil.

Check the position of the solenoid coil with the label attached on the cover inside when abnormal noise is heard loudly during operation.



Position label of the solenoid coil(PRHR040)



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After reading this manual, keep it in a place easily accessible to the user for future reference.