

INSTALLATION MANUAL 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.



PRHR083A/PRHR063A/PRHR043A/PRHR033A/PRHR023A (Heat Recovery Unit) Original instruction



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TIPS FOR SAVING ENERGY

Here are some tips that will help you minimize power consumption when you use the air conditioner. You can use your air conditioner more efficiently by referring to the instructions below:

- Do not cool excessively indoors. This may consume more electricity.
- Block sunlight with blinds or curtains while you are operating the air conditioner.
- Keep doors or windows closed tightly while you are operating the air conditioner.
- Adjust the direction of the air flow vertically or horizontally to circulate indoor air.
- Clean the air filter once every 2 weeks. Dust and impurities collected in the air filter may block the air flow or weaken the cooling / dehumidifying functions.

For your records

Staple your receipt to this page in case you need it to prove the date of purchase or for warranty purposes. Write the model number and the serial number here:

Model number :

Serial number :

You can find them on a label on the side of each unit.

Dealer's name :

Date of purchase :

IMPORTANT SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS BEFORE USING THE APPLIANCE.

Always comply with the following precautions to avoid dangerous situations and ensure peak performance of your product

A WARNING

It can result in serious injury or death when the directions are ignored

It can result in minor injury or product damage when the directions are ignored

A WARNING

- Installation or repairs made by unqualified persons can result in hazards to you and others.
- The information contained in the manual is intended for use by a qualified service contractor familiar with safety procedures and equipped with the proper tools and test instruments.
- Failure to carefully read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury and/or death.

A 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 contractor 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.
 - All work should be performed by a qualified, licensed contractor.
 - Do not store or use flammable gas or combustibles near the HR Unit.
 - There is risk of fire or failure of product.
 - Use a properly 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 puncture wounds or other injuries.
 - Tear apart and throw away plastic packaging bags so that children may not play with them and risk suffocation and death.

- Avoid a place where rain may enter since the HR unit is for indoor installations only.
 - There is risk of property damage, failure of product, or electric shock.
- Do not install a HR unit in a space where persons exists such as living room, office or meeting room with not only low but also open ceiling.
- 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.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
 - Children should be supervised to ensure that they do not play with the appliance.

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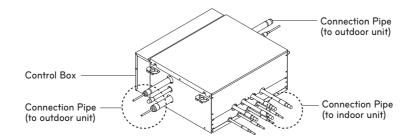
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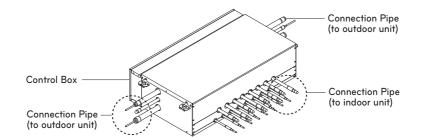
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FEATURES



Model		PRHR023A	PRHR033A	PRHR043A	
Max. Connectable No. of Indoor Units		16	24	32	
Max. Connectable No. of Indoor Units of a branch		8	8	8	
D. I. I.	Cooling [W]			39.8	
Power Input	wer Input Heating [W]			37.2	
	kg		14.9	16.7	18.2
Net. Weight	lbs		32.8	36.8	40.1
Shipping	kg		20.7	22.5	24.0
Weight	lbs		45.6	49.6	52.9
Dimensions	mm			786 X 218 X 657	
(WxHxD)	Inch			30.9 X 8.6 X 25.9	
Casing			Galvanized steel plate		
		Liquid Pipe [mm/inch]	Ø9.52[3/8] – Ø6.35[1/4]		
	Indoor side	Gas Pipe [mm/inch]	Ø1	Ø15.88[5/8] – Ø12.7[1	1/2]
Connecting Pipes		Liquid [mm/inch]	Ø9.52[3/8]	Ø12.7[1/2]	Ø15.88[5/8]
	Outdoor side	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		Polyethylene Foam		1	
0	Minimum circuit	t Amps(MCA)		0.17	
Current	Maximum fuse	Amps(MFA)		15	
Power Supply	,		1Ø, 208/230 V, 60 Hz		lz



Model		PRHR063A	PRHR083A	
Max. Connectable No. of Indoor Units		48	64	
Max. Connect	able No. of	Indoor Units of a branch	8	8
Davian la sut	Cooling [W]	75	.9
Power Input	Heating	[W]	72	.1
	kg		27.2	30.7
Net. Weight	lbs		60.0	67.7
Shipping	kg		33.8	37.3
Weight	lbs		74.5	82.2
Dimensions	mm		1 113 X 218 X 657	
(WxHxD)	Inch		43.8 X 8.6 X 25.9	
Casing	·		Galvanized steel plate	
	Indoor	Liquid Pipe [mm/inch]	Ø9.52[3/8] – Ø6.35[1/4]	
	side	Gas Pipe [mm/inch]	Ø15.88[5/8] – Ø12.7[1/2]	
Connecting Pipes		Liquid [mm/inch]	Ø15.88[5/8]	
	Outdoor side	Low Pressure [mm/inch]	Ø28.58[1-1/8]	
	0.00	High Pressure [mm/inch]	Ø22.2[7/8]	
Sound Absorbing Insulation Material		Polyethylene Foam		
Current	Minimun	n circuit Amps(MCA)	0.2	27
	Maximur	m fuse Amps(MFA)	1	5
Power Supply			1Ø, 208/23	0 V, 60 Hz

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INSTALLATION PART

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

[Unit : mm(inch)]

			Gas pi	pe	
Mod	els	Liquid pipe	High pressure	Low pressure	
HR unit	PRHR023A	OD9.52(3/8) Ø6.35(1/4)	OD19.05(3/4) Ø15.88(5/8) Ø12.7(1/2) OD19.05(3/4) Ø15.88(5/8) Ø12.7(1/2) OD12.7(1/2) Ø9.52(3/8)	OD22.2(7/8) Ø19.05(3/4) Ø15.88(5/8)	
reducer	PRHR033A PRHR043A PRHR063A PRHR083A	OD15.88(5/8) Ø12.7(1/2) Ø9.52(3/8)	OD22.2(7/8) Ø19.05(3/4) Ø15.88(5/8)	OD28.58(1-1/8) Ø22.2(7/8) Ø19.05(3/4)	

INSTALLATION

Selection of the best location

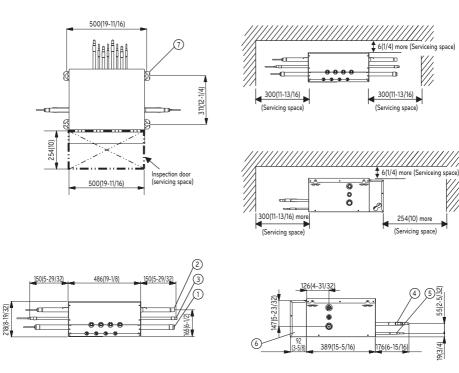
Select installation location of the HR unit suitable for following conditions

- Avoid a place where rain may enter since the HR unit is for indoor.
- Sufficient service space must be available to service in place.
- 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 in a place which it is not affected by operation noise. (Installation within a space such as meeting room etc. may cause disturbance.)
- Place where refrigerant piping, drain piping and electrical wiring works are easy.

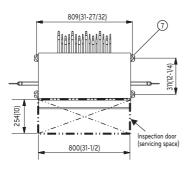
Dimensional drawings

PRHR023A/PRHR033A/PRHR043A

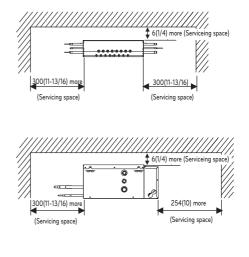
[Unit : mm(inch)]

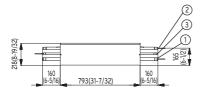


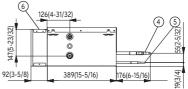
[Unit : mm(inch)]



PRHR063A/PRHR083A







[Unit : mm(inch)]

		Description		
No.	Part Name	PRHR033A / PRHR043A PRHR063A / PRHR083A	PRHR023A	
1	Low pressure Gas pipe connection port	Ø28.58(1-1/8) Brazing connection	Ø22.2(7/8) Brazing connection	
2	High pressure Gas pipe connection port	Ø22.2(7/8) Brazing connection	Ø19.05(3/4) Brazing connection	
3	Liquid pipe connection port	Ø15.88(5/8) Brazing connection Ø12.7(1/2) Brazing connection (PRHR033A)	Ø9.52(3/8) Brazing connection	
4	Indoor unit Gas pipe connection port	Ø15.88(5/8)– Ø12.7(1/2) Brazing connection	Ø15.88(5/8)– Ø12.7(1/2) Brazing connection	
5	Indoor unit Liquid pipe connection port	Ø9.52(3/8)– Ø6.35(1/4) Brazing connection	Ø9.52(3/8)– Ø6.35(1/4) Brazing connection	
6	Control box	-	-	
7	Hanger metal	Suspension bolt M10 or M8	Suspension bolt M10 or M8	

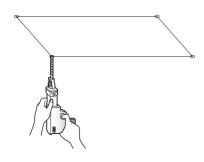
NOTE-

* 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.

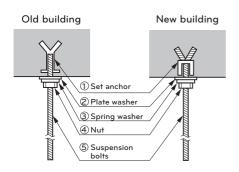
HR Unit Installation

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

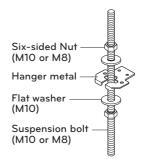


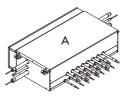
Tighten the nut and bolt to prevent unit falling.

- 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.



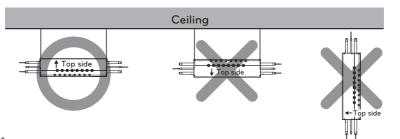
- 1 Using an insert-hole-in- anchor, hang the suspension bolt.
- 2 Install a six-sided nut and a flat washer (locally-procured)to the suspension bolt as shown in the figure in the bottom, and fit the main unit to hang on the hanger metal.
- 3 After checking with a level that the unit is level, tighten 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.



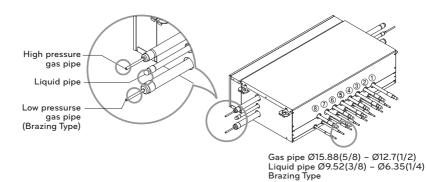


- 🕂 CAUTION-

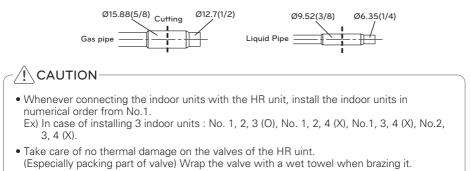
HR Unit should be installed that top side is facing up. If not, it may cause failure of the product.



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.



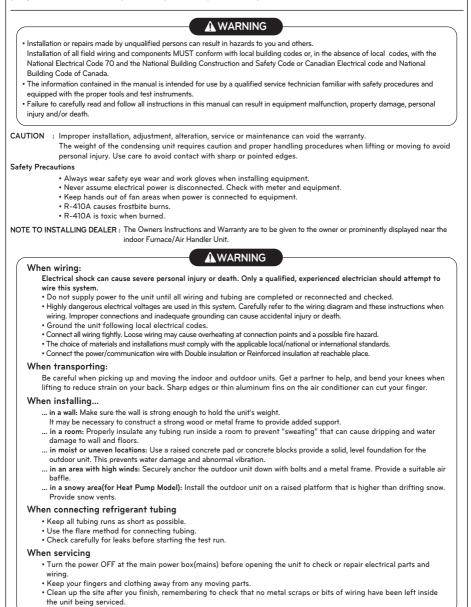
After considering the indoor unit capacity, determine the pipe sizes and cut the pipes connected to the indoor unit.



IMPORTANT!

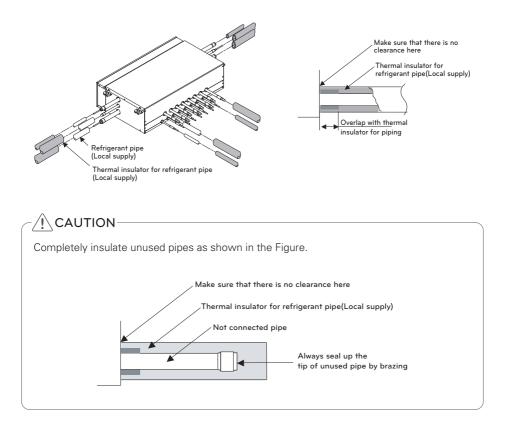
Please read this instruction sheet completely before installing the product.

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.



Insulation

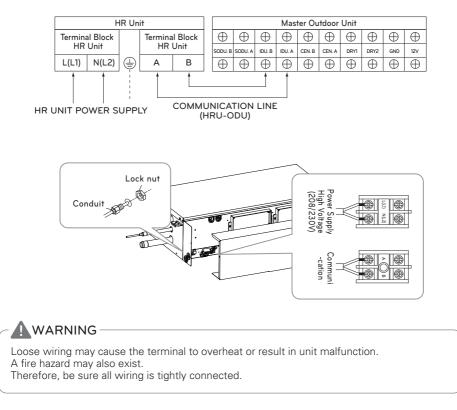
Insulate the connected pipes completely(all thermal insulation must comply with local requirement)



Wiring Connection

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

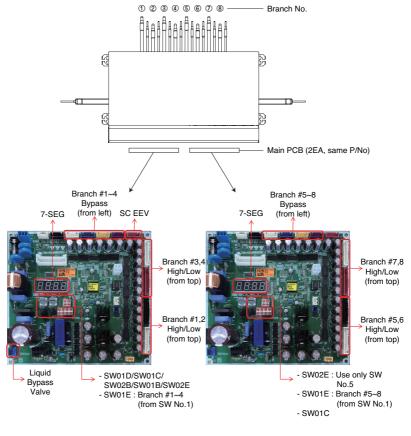
- Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of HR Unit respectively.



WARNING

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

HR Unit PCB



Main PCB (Master)

Main PCB (Slave)

- * Number from left in sequence for less-than-8 branch model.
- ** PRHR043A / PRHR033A / PRHR023A : Master Only

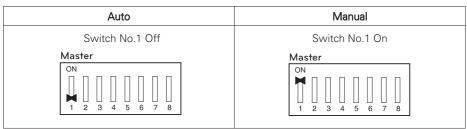
Setting the HR Unit switches

	SW		Function
Dip SW	ON 1 2 3 4 5 6 7 8	SW02E (8pin Dip SW)	Selection of the method for pipe detection Selection of Master/Slave Main PCB Setting the Zoning Control Selection of the No. of connected branches
	ON 1 2 3 4	SW01E (4pin Dip SW)	Selection of the valve to address
Rotary	Datasi	SW01D (Left)	Selection of the Valve Group Control
SW		SW01C (Right)	Manual addressing of zoning indoor units Setting to address HR units
Push SW		SW02B (Left)	Increase in the digit of 10
		SW01B (Right)	Increase in the digit of 1

Main function of SW02E

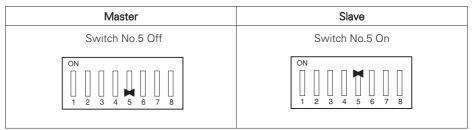
ON S/W	Selection			
No.1	Method for pipe detection of an HR Unit (Auto/Manual)			
No.2				
No.3	No. of connected branches			
No.4				
No.5	Master/Slave (Main PCB) Setting			
No.6	EEPROM factory initialization (4,5,6)			
No.7	Use only in factory production (preset to "OFF")			
No.8	Use only in factory production (preset to "OFF")	F") Zoning setting ("ON")		

1) Selection of the method for pipe detection of an HR unit (Auto/Manual)

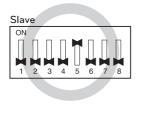


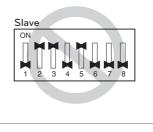
* Master Only

2) Selection of Master/Slave Main PCB



Do not turn on any SW02E on Slave Main PCB except No.5.





3) Setting the zoning control

	SW02E setting	SW01E setting
Normal control	* Master Only Master ON 0N 1 2 3 4 5 6 7 8	ON 1 2 3 4 SW01E
Zoning control	* Master Only Master ON 0N 1 2 3 4 5 6 7 8	Master Turn the dip switch of the zoning branch on. EX) Branch 1,2 are zoning control.

4) Selection of the No. of connected branches

1 branch Connected	$ \begin{array}{c} ON\\ 1\\ 1\\ 2\\ 3\\ 4\\ 5\\ 6\\ 7\\ 8\\ 8\\ 8\\ 7\\ 8\\ 8\\ 8\\ 8\\ 8\\ 8\\ 8\\ 8\\ 8\\ 8\\ 8\\ 8\\ 8\\$	5 branch Connected	$\begin{bmatrix} ON \\ 1 \\ 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \end{bmatrix}$
2 branches	ON	6 branch	$\left[\begin{array}{c} ON\\ 1\\ 1\\ 2\\ 3\end{array}\right]_{2}\left[\begin{array}{c} O\\ $
Connected	1 2 3 4 5 6 7 8	Connected	
3 branches	ON	7 branch	$\left[\begin{array}{c} ON\\ 1\\ 1\\ 2\\ 3\\ 4\\ 5\\ 6\\ 7\\ 8\end{array}\right]$
Connected	1 2 3 4 5 6 7 8	Connected	
4 branches	ON	8 branch	ON
Connected	1 2 3 4 5 6 7 8	Connected	1 2 3 4 5 6 7 8

* Master Only

 $\ensuremath{\#}$ Each model is shipped with the switches No.2, 3, 4 pre-adjusted as above in the factory.

WARNING

If you want to use a "Model" for "No. of using branch(es)" HR Unit after closing the "Closing pipe No.", set the dip switch for "No. of using branch(es)" HR Unit.

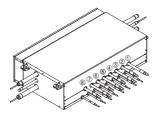
Ex) If you want to use a PRHR083A for 4 branches HR Unit after closing the 5~8th pipes, set the dip switch for 4 branches HR Unit.

Main function of SW01D

1) Selection of the Valve Group Control

NOTE-

Use the Valve Group Control when 2 branches are connected with only 1 indoor unit which has higher capacity than 61 kBTU.



* Master Only

Valve Group	SW01D Setting	Valve Group	SW01D Setting
Not control	0	No. 5,6/7,8 Valve Control	8
No. 1,2 Valve Control	1	No. 1,2/5,6 Valve Control	9
No. 2,3 Valve Control	2	No. 1,2/7,8 Valve Control	А
No. 3,4 Valve Control	3	No. 3,4/5,6 Valve Control	В
No. 5,6 Valve Control	4	No. 3,4/7,8 Valve Control	С
No. 6,7 Valve Control	5	No. 1,2/3,4/5,6 Valve Control	D
No. 7,8 Valve Control	6	No. 1,2/3,4/6,7 Valve Control	E
No. 1,2/3,4 Valve Control	7	No. 1,2/3,4/7,8 Valve Control	F

NOTE-

If the large capacity indoor units are installed, below Y branch pipe should be used.

* Y branch pipe

[Unit : mm(inch)]

Models	Low Pressure Gas Pipe	Liquid pipe	High Pressure Gas Pipe
ARBLB03321	L322 2(7)8) L076 5(3)4) L076 5(3)4) L076 5(3)4) L076 5(3)4) L076 5(3)4) L076 5(3)4) L076 5(3)4) L076 5(3)4) L076 5(3)4) L077 5	L9522(3/8) L9522(3/8)	LD19:05(2)(4) LD19:05(2)(4) LD2:27(16) LD2:27(16) LD2:27(16) LD2:27(16) LD2:27(16) LD2:54(16) LD2:54(16) LD2:54(16) LD2:17(2) LD2:54(16) LD2:71(2) LD2:71(2) LD2:71(2) LD2:54(16) LD2:71(2) LD2:54(16) LD2:71(2) LD2:54(16) LD2:71(2) LD

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SW01C (Rotary S/W for addressing HR unit)

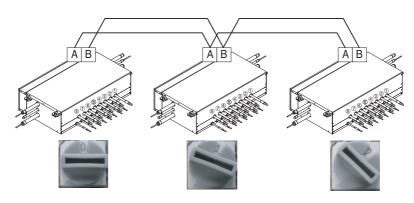
Must be set to '0' when installing only one HR unit.

When installing multiple HR units, address the HR units with sequentially increasing numbers starting from '0'.

Maximum 16 HR Units can be installed.

Ex) Installation of 3 HR units

* Master Only



SW01B/SW01C/SW01E/SW02B (Dip S/W and push S/W for Manual pipe detection)

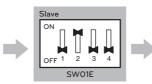
- Set the address of the valve of the HR unit to the central control address of the connected indoor unit.
- SW01E: selection of the valve to address
- SW02B: increase in the digit of 10 of valve address
- SW01B: increase in the last digit of valve address
- SW01C: Manual addressing of zoning indoor units (use for Zoning setting)
- Prerequisite for Manual pipe detection : central control address of each indoor unit must be preset differently at its wired remote control.

	S/W No.	Setup
ON	No.1	Manual addressing of valve #1 (Master) / #5 (Slave)
	No.2	Manual addressing of valve #2 (Master) / #6 (Slave)
SWOIE	No.3	Manual addressing of valve #3 (Master) / #7 (Slave)
	No.4	Manual addressing of valve #4 (Master) / #8 (Slave)
SW02B	SW02B	Increase in the digit of 10 of valve address
SW01B	SW01B	Increase in the last digit of valve address
* Use for Zoning setting sworc	SW01C	Manual addressing of zoning indoor units

- 1) Normal setting (Non-Zoning setting)
- ex) Manual pipe detection of Valve #1, 6.



SW #1 On : Select Valve #1



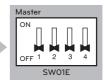
SW #2 On : Select Valve #6



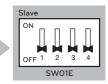
Input the central control address of Indoor unit



Input the central control address of Indoor unit



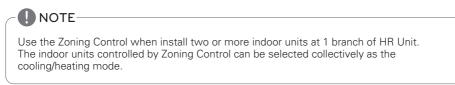
SW #1 Off : Finish Valve #1



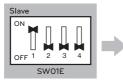
SW #2 Off : Finish Valve #6

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2) Zoning setting



ex) Manual pipe detection of Valve #5 with three zoning indoor units, #6 without zoning unit.



SW #1 On : Select Valve #5



After selecting No.1 zoning indoor unit, input the central control address of indoor unit.



After selecting No.2 zoning indoor unit, input the central control address of indoor unit.



After selecting No.3 zoning indoor unit, input the central control address of indoor unit.



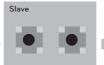
Setting SW01C to '0'



SW #1 Off : Finish Valve #5



SW #2 On : Select Valve #6



SW02B SW01B

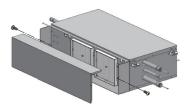
Input the central control address of Indoor unit



SW #2 Off : Finish Valve #6

COIL EXCHANGING METHOD

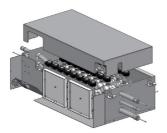
- 1 Remove the 2 securing screws. Remove the cover by pulling on the bottom of the cover and lifting up.
- 2 Remove the 6 securing screws. Lift up and pull on the cover.



3 Lift up and pull on the insulator.

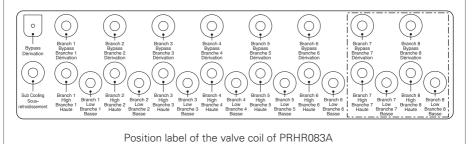


4 Exchange the coil.



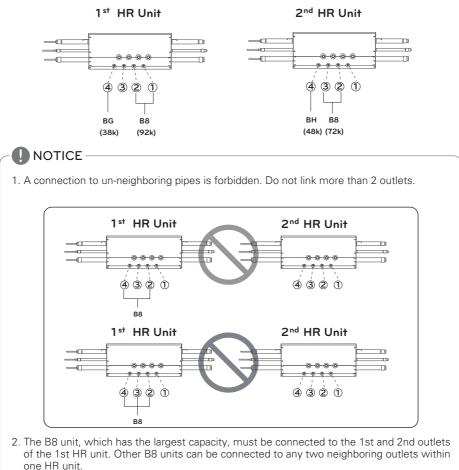


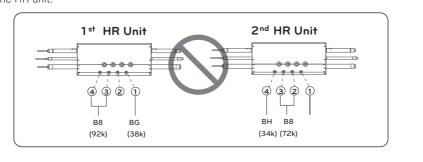
Be sure that system power off before exchanging the coil. Check the position of the valve coil with the label attached on the cover inside when abnormal noise is heard loudly during operation.



JOINT METHOD OF HR UNIT

Joint Method is required when use indoor unit that exceed 61 kBtu is installed. In Joint Method, two neighboring outlets of one HR unit are linked by Y branch pipe and connected to one indoor unit.







US	Please call the installing contractor of your product, as warranty service will be provided by them.
CANADA	Service call Number # : (888) LG Canada, (888) 542-2623 Numéro pour les appels de service : LG Canada, 1-888-542-2623