Haier

Ductless Split Heat Pump

Indoor
AM24LP2VHA
AM36LP2VHA
AM48LP2VHA
AL24LP2VHA
AL36LP2VHA
AL48LP2VHA
AW24LP2VHA
AW36LP2VHA

Outdoor
1U24LP2VHA
1U36LP2VHA
1U48LP2VHA

Installation Manual



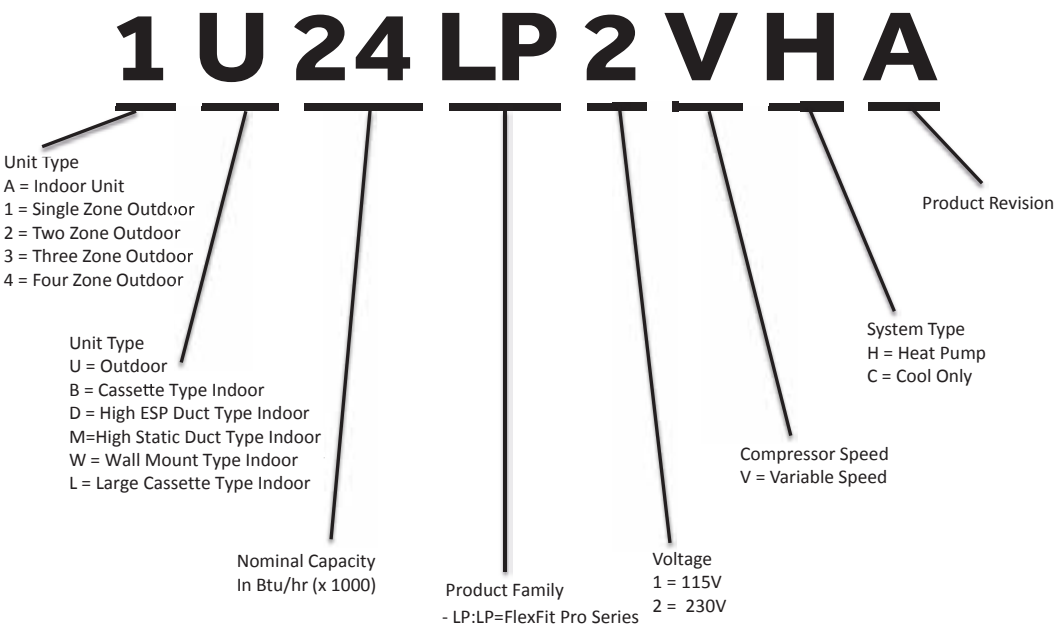






Table of Contents

Nomenclature



System Specifications

Model Name	System	AW24LP	AW36LP	AM24LP	AM36LP	AM48LP	AL24LP	AL36LP	AL48LP
	Outdoor	1U24LP2VH	1U36LP2VH	1U24LP2VH	1U36LP2VH	1U48LP2VH	1U24LP2VH	1U36LP2VH	1U48LP2VH
	Indoor	AW24LP2VH	AW36LP2VH	AM24LP2VH	AM36LP2VH	AM48LP2VH	AL24LP2VH	AL36LP2VH	AL48LP2VH
Operating Range	Cooling *°F(°C)*	0~115 (-18~46)	0~115 (-18~46)	0~115 (-18~46)	0~115 (-18~46)	0~115 (-18~46)	0~115 (-18~46)	0~115 (-18~46)	0~115 (-18~46)
	Heating *°F(°C)*	-4~75 (-20~24)	-4~75 (-20~24)	-4~75 (-20~24)	-4~75 (-20~24)	-4~75 (-20~24)	-4~75 (-20~24)	-4~75 (-20~24)	-4~75 (-20~24)
Power Supply	Voltage, Cycle, Phase *V/Hz/-*	208-230/60/7	208-230/60/10	208-230/60/8	208-230/60/11	208-230/60/13	208-230/60/9	208-230/60/12	208-230/60/14
Outdoor Unit	Compressor	DC Inverter Driven Rotary							
	Maximum Fuse Size *A*	25.0	30	25.0	30	40	25.0	30	40
	Minimum Circuit Amp *A*	21.0	26.0	21.0	26.0	35.0	21.0	26.0	35.0
	Dimension: Height *in (mm)*	38 (965)	38 (965)	38 (965)	38 (965)	53 1/8 (1350)	38 (965)	38 (965)	53 1/8 (1350)
	Dimension: Width *in (mm)*	37 3/8(950)	37 3/8(950)	37 3/8(950)	37 3/8(950)	37 3/8(950)	37 3/8(950)	37 3/8(950)	37 3/8(950)
	Dimension: Depth *in (mm)*	14 5/8(370)	14 5/8(370)	14 5/8(370)	14 5/8(370)	14 5/8(370)	14 5/8(370)	14 5/8(370)	14 5/8(370)
	Weight (Ship/Net)- *lbs (kg)*	202.8/ 176.4 (92/80)	207.2/180.7 (94/82)	202.8/ 176.4 (92/80)	207.2/180.7 (94/82)	260.1/231.5 (118/105)	202.8/ 176.4 (92/80)	207.2/180.7 (94/82)	260.1/231.5 (118/105)
Indoor Unit	Dimension: Height *in (mm)*	13 1/4(336)	14 3/8(365)	9 7/8 (250)	9 7/8 (250)	9 7/8 (250)	9 5/8 (246)	9 5/8 (246)	11 3/8 (288)
	Dimension: Width *in (mm)*	43 7/8(1115)	51 13/16(1316)	37 5/8 (957)	59 (1500)	59 (1500)	33 1/8(840)	33 1/8(840)	33 1/8(840)
	Dimension: Depth *in (mm)*	9 9/16(243)	10 7/8(275)	25 3/4 (655)	28 3/8 (720)	28 3/8 (720)	33 1/8(840)	33 1/8(840)	33 1/8(840)
	Max. External Static Pressure *in.W.G(Pa)*	NA	NA	0.6(150)	0.6(150)	0.6(150)	NA	NA	NA
	Drainpipe Size O.D. *in*	NA	NA	1 1/4	1 1/4	1 1/4	1	1	1
	Internal Condensate	NA	NA	Standard	Standard	Standard	Standard	Standard	Standard
	Max. Drain-Lift height *in(mm)*	NA	NA	27 9/16(700)	27 9/16(700)	27 9/16(700)	39 3/8 (1000)	39 3/8 (1000)	39 3/8 (1000)
	Grill Model	NA	NA	NA	NA	NA	PB-950KB	PB-950KB	PB-950KB
	Weight (Ship/Net)- *lbs (kg)*	45.4/37.5(20.6/17)	55.1/46.3(25.5/21)	81.1/68.8 (36.8/31.2)	130.1/121.3 (59/55)	132.3/114.6 (60/52)	79.4/68.3 (36/31)	79.4/68.3 (36/31)	83.8/70.5 (38/32)
Refrigerant Line	Connections	Flare	Flare	Flare	Flare	Flare	Flare	Flare	Flare
	Liquid O.D. *in*	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
	Suction O.D. *in*	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8
	Factory Charge *Oz*	88.2	88.2	88.2	88.2	131	88.2	88.2	131
	Maximum Line Length *Ft / m*	165 (50)	165 (50)	165/50	165/50	230/75	165/50	165/50	230/75
	Maximum Height *Ft / m*	100/30	100/30	100/30	100/30	100/30	100/30	100/30	100/30

SAFETY OVERVIEW

Read These Safety Precautions

Be sure to read the safety precautions before conducting work. The items are classified into “Warning” and “Caution.” The “Warning" items are especially important since they can lead to death or serious injury if not followed closely. Under certain conditions, the "Caution" items can also lead to accident or injury if they are not followed. Therefore, be sure to observe all safety precautions listed here.

Δ This symbol means be careful when doing this procedure or touching this equipment.

o This symbol indicates a prohibited action.

● This symbol means that an action must be taken; the action will be listed next to the symbol.

After the repair work is complete, be sure to conduct a test operation to ensure that the equipment operates properly; explain the safety precautions for operating the equipment to the customer.

Warning

Disconnect the power cable from electrical supply before disassembling equipment for repair.	
If the refrigerant discharges during the repair work, DO NOT touch the discharging refrigerant. The refrigerant can cause frostbite.	
Before disconnecting the suction or discharge pipe of the compressor at the brazed connections, recover the refrigerant in a well-ventilated area. If refrigerant remains inside the compressor, the refrigerant or the refrigerating machine oil will discharge when the pipe is disconnected and may cause injury.	
If the refrigerant leaks during the repair work, ventilate the area. The refrigerant can generate toxic gases when it contacts flames.	
The step-up capacitor supplies high-voltage electricity to the electrical components of the outdoor unit. Be sure to discharge the capacitor completely before conducting repair work. A charged capacitor can cause electrical shock.	
	
Be sure to use parts listed in the service parts of the applicable model and appropriate tools to conduct repair work. Never attempt to modify the equipment. The use of inappropriate parts or tools can cause electrical shock, excessive heat generation, or fire.	
When relocating the equipment make sure that the new installation site has sufficient strength to withstand the weight of the equipment. If the new installation site does not have sufficient strength and if the installation work is not conducted securely, the equipment can fall and cause injury.	

Be sure to install the product correctly by using the standard installation frame provided. Incorrect use of the installation frame and improper installation can cause equipment to fall, resulting in injury.	For integral units only
Do not repair the electrical components with wet hands. Working on equipment with wet hands can cause electrical shock.	
Do not clean the equipment by splashing water. Washing the unit with water can cause an electrical shock.	
Make sure that the unit is grounded when reparing the equipment in a wet or humid place to avoid electrical shocks.	
Be sure to turn off the power switch when cleaning the equipment; the internal fan rotates at a high speed and may cause injury.	
Do not tilt the unit when removing it. Water inside the unit can spill, wetting the floor.	
Be sure to check that the refrigeration cycle section has cooled down sufficiently before conducting repair work. Working on the unit when the refrigerating cycle is hot can cause burns.	
Use the brazing equipment in a well-ventilated place. Using the brazing equipment in an enclosed room can cause oxygen deficiency.	
Be sure to use a dedicated power circuit for the equipment; follow appropriate technical standards for the electrical equipment, the internal wiring regulations, and the instruction manual for installation when conducting electrical work. Insufficient power circuit capacity and improper electrical work can cause an electrical shock or fire.	

Read These Safety Precautions

Be sure to use the specified cable to connect between the indoor and outdoor units. Make the connections securely and route the cable properly so that there is no force pulling the cable at the connection terminals.	
When connecting the cable between the indoor and outdoor units make sure that the terminal cover does not lift off or dismount because of the cable. If the cover is not mounted properly, the terminal connection section can cause an electrical shock, excessive heat generation, or fire.	
Do not damage or modify the power cable. Damaged or modified power cables can cause electrical shock or fire. Placing heavy items on the power cable and heating or pulling the power cable can damage the cable.	
Do not introduce air into the refrigerant system. If air enters the refrigerant system, an excessively high pressure results, causing equipment damage and injury.	
If the refrigerant leaks, be sure to locate the leak and repair it before charging the system with additional refrigerant. If the leak cannot be located and the repair work cannot be stopped, be sure to perform pump-down and close the service valve to prevent the refrigerant from leaking into the room. The refrigerant itself is harmless, but it can generate toxic gases when it contacts a heat source such as another appliance or an open flame.	
When replacing the remote control battery, be sure to safely dispose of the battery.	
Do not install the equipment in a place where there is a possibility of combustable gas leaks. If combustible gas leaks and remains near the unit, it may cause a fire.	
Be sure to install the packing and seal on the installation frame correctly. If the packing and seal are not properly installed, water can spill out, wetting furniture and the floor.	

Replace power cables and lead wires if they are scratched or deteriorated. Damaged cable and wires can cause electrical shock, excessive heat generation, or fire.	
Check to see if the parts are mounted correctly, that the wires are connected correctly, and that connections at soldered or crimped terminals are secure. Improper installation and connections can cause excessive heat generation, electrical shock, and fire.	
If the installation platform or frame has deteriorated or corroded, replace it. Corroded platform or frames can cause the unit to fall, resulting in injury.	
Check to make sure that the equipment is grounded. Repair it if it is not properly grounded. Improper grounding can cause an electrical shock.	
Be sure to measure the installation resistance of the repair. Be sure that the resistance is 1 M ohm or higher. Faulty installation can cause an electric shock.	
Be sure to check the drainage of the indoor unit after the repair. Faulty drainage can cause a water leak from indoor unit and could cause property damage.	

Important Safety Related Installation Information

Indoor Clearances: If noncompliant may lead to temperature control complaints.

Wire Sizing: If noncompliant may lead to communication errors and inverter irregular operation.

Splices in Field Wiring: Splices between the wires that connect between the outdoor and indoor unit should be avoided.

Sealing Penetrations: If penetrations at back of unit are not sealed, unconditioned air may be drawn into the back of the indoor wall mount unit. Temperature control and capacity complaints may occur.

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Section A - Outdoor Unit Installation

Step 1 - Installation of the Outdoor Unit

Attaching Drain Elbow to Outdoor Unit

(Heat Pump models only)

1.1 Step - 1.1

If attaching the supplied drain elbow to the outdoor unit, do so prior to attaching the refrigerant lines and wiring. Extension piping to attach to this fitting is field supplied.

Step 1.1

Step1.2

Electrical Connections for the Outdoor Unit

1.2 Step - 1.2

Remove the cover plate of the outdoor unit to expose the terminal block connections.

1.3 Step - 1.3

Connect the wiring for both the power source and indoor wiring.
Wire the system according to applicable national / local codes.
Verify that the wiring connections for the indoor unit match wire for wire.
(1-1, 2-2, 3-3, Gnd-Gnd). Failure to wire the system correctly may lead to improper operation or component damage.

Step 1.3

Step 1.4

1.4 Step - 1.4

Replace the cover plate.

Step 2 - Connecting the Indoor Unit

*See indoor section A, B, or C for electrical connections.

Piping

The standard lineset length is 25ft. If the installation length is different, adjust the refrigerant charge by 0.5oz/ft.for the 24k,36k,42k and 48k model. (Illustration 4)

Cut the lineset to length, flare and attach the piping to the outdoor unit valves.
Torque the fittings to the specifications shown in the torque chart.

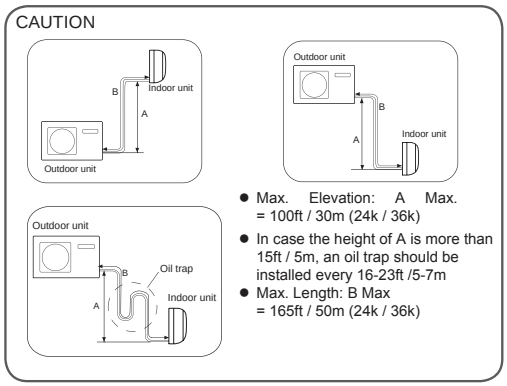


Illustration 4

2.1 Step - 2.1

Refrigerant piping connections at the indoor unit are made utilizing flare joints. Follow standard practices for creating pipe flares. When cutting and reaming the tubing, use caution to prevent dirt or debris from entering the tubing. Remember to place the nut on the pipe before creating the flare.

Step 2.1

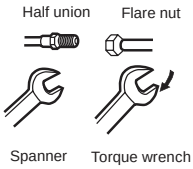
Step 2.2

2.2 Step - 2.2

To join the lineset piping together, directly align the piping flare to the fitting on the other pipe, then slide the nut onto the fitting and tighten. Misalignment may result in a leaking connection.

2.3 Step - 2.3

Two wrenches are required to join the flare connections, one standard wrench, and one torque wrench. See Table 1 for the specific torque per piping diameter.



Forced fastening without careful centering may damage the threads and cause a leakage of gas.

Pipe Diameter(ø)	Fastening torque
Liquid side6.35mm(1/4")	18N.m/13.3Ft.lbs
Liquid/Gas side9.52mm(3/8")	42 N.m/30.1Ft.lbs
Gas side 12.7mm(1/2")	55N.m/40.6Ft.lbs
Gas side 15.88mm(5/8")	60 N.m/44.3Ft.lbs

Table 1

Step 2.3

Step 3 - Leak Test and Evacuation

Leak Test

Hazard of Explosion! Never use an open flame to detect refrigerant leaks.. Explosive conditions may occur. Use a leak test solution or other approved methods for leak testing. Failure to follow recommended safe leak test procedures could result In death or serious injury or equipment or property damage.

Use only dry nitrogen with a pressure regulator for pressurizing unit. Do not use acetylene, oxygen or compressed air or mixtures containing them for pressure testing. Do not use mixtures of a hydrogen containing refrigerant and air above atmospheric pressure for pressure testing as they may become flammable and could result in an explosion. Refrigerant used as a trace gas should only be mixed with dry nitrogen for pressurizing units. Failure to follow these recommendations could result in death or serious injury or equipment or property damage.

Step 3.1

Step 3.2

3.1 Step - 3.1

Using a tank of nitrogen with attached regulator, charge the system with 150 PSIG of dry nitrogen. Use adapter AD-87 (field supplied) to connect to the service valve. Check for leaks at the flare fittings using soap bubbles or other detection methods. If a leak is detected, repair and recheck. If no leaks are detected, proceed to evacuate the system.

System Evacuation

3.2 Step - 3.2

Attach a manifold gauge, micron gauge, and vacuum pump to the suction line port using adapter AD-87 (field supplied). (Illustration 5)

Evacuate the system to 350 microns.
Close the vacuum pump valve and check the micron gauge. If the gauge rises above 500 microns in 60 seconds, evacuation is incomplete or there is a leak in the system. If the gauge does not rise above 500 microns in 60 seconds, evacuation is complete.

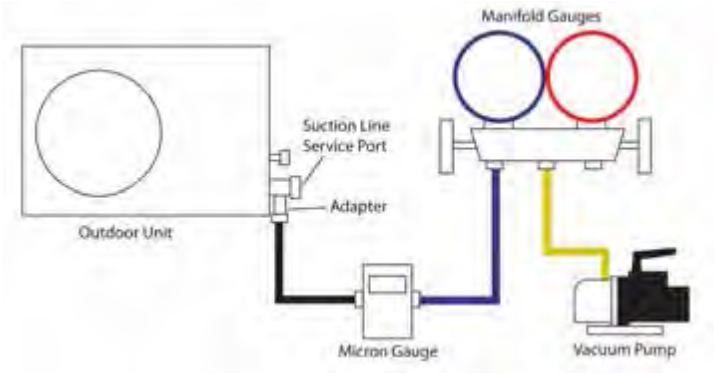


Illustration 5

3.3 Step - 3.3

Remove the adapter and hose connection from the suction line port, and replace the cap. Hoses should not be removed and service valves should not be opened until any additional refrigerant needed for a refrigerant line longer than 25 ft. has first been added.

3.4 Step - 3.4A & 3.4B

Remove the cap from the liquid line valve. Using the hex wrench, open the valve, then replace and tighten the cap.

3.5 Step - 3.5A & 3.5B

Remove the cap from the suction line valve. Using the hex wrench, open the valve, then replace and tighten the cap.

3.6 Step - 3.6

Wrap the lineset, drain line, and wiring starting at the bottom of the bundle with an overlap type wrap, concluding at the piping hole. Use a sealant to seal the piping hole opening to prevent weather elements from entering the building. (Illustration 6)

Verify the condensate drain line has a constant pitch downward for proper water flow. There should be no kinks or rises in the tubing which may cause a trapping effect resulting in the failure of the condensate to exit the piping.

Step 3.3

Step 3.4A

Step 3.4B

Step 3.5A

Step 3.5B

Step 3.6

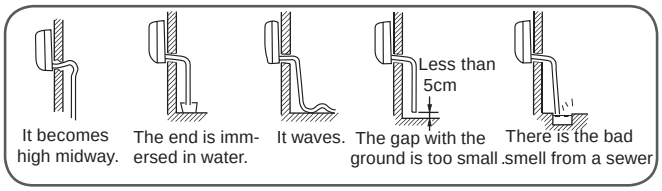


Illustration 6

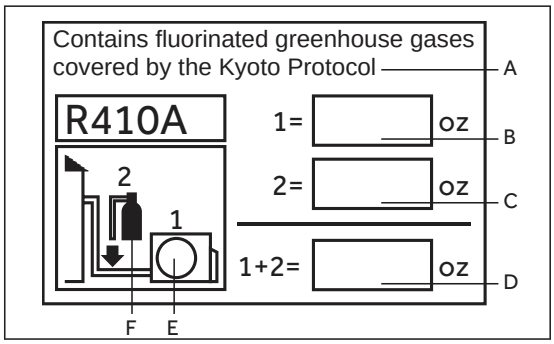
Step 4 - Charging

See Steps 5.2 - 5.5 for evacuating the system prior to charging. The standard lineset length is 25ft. If the installation length is different, adjust the refrigerant charge by .5 oz / ft. for the 24K, 36K and 48K model. (Step 4 - Illustration 4)

Refrigerant Charge Label

This product contains fluorinated greenhouse gases covered by the Kyoto Protocol. Do not vent into the atmosphere.
Refrigerant type: R410A
GWP* value: 1975
GWP = global warming potential
Please fill in with indelible ink,
• 1 the factory refrigerant charge of the product
• 2 the additional refrigerant amount charged in the field and
• 1+2 the total refrigerant charge on the refrigerant charge label supplied with the product.
The filled out label must be adhered in the proximity of the product charging port (e.g. onto the inside of the stop valve cover).

A - contains fluorinated greenhouse gases covered by the Kyoto Protocol
B - factory refrigerant charge of the product: see unit name plate
C - additional refrigerant amount charged in the field
D - total refrigerant charge
E - outdoor unit
F - refrigerant cylinder and manifold for charging



System Test

Using the instruction manual, show the customer how to properly use and care for the equipment.

Check Items for Test Run

Put check mark √ in boxes

- ☐ No refrigerant leaks from line sets or other connections?
- ☐ Are the linesets insulated properly?
- ☐ Are the connecting wirings of indoor and outdoor firmly inserted to the terminal block?
- ☐ Is the connecting wiring of indoor and outdoor firmly connected?
- ☐ Is condensate draining correctly?
- ☐ Is the indoor unit securely attached?
- ☐ Is power source voltage correct according to local code?
- ☐ Is there any noise?
- ☐ Is the lamp normally lighting?
- ☐ Are cooling and heating (when in heat pump) performing normally?
- ☐ Is the operation of room temperature sensor normal?

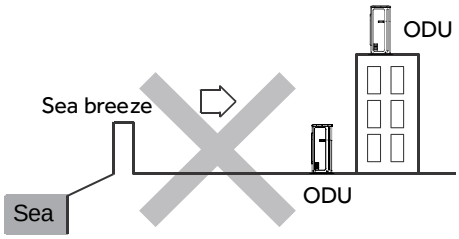
Section 5 - Explaining Operation to the End User

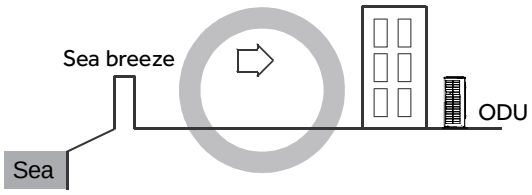
- Using the OPERATING INSTRUCTIONS, explain to the user how to use the air conditioner (the remote controller, removing the air filters, placing or removing the remote controller from the remote controller holder, cleaning methods, precautions for operation, etc.)
- Recommend that the user read the OPERATING INSTRUCTIONS carefully.

Section 6 - Seacoast Application

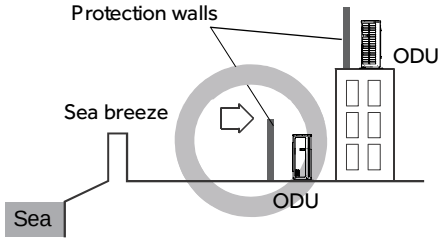
- The outdoor unit should be installed at least ½ mile away from the salt water, including seacoasts and inland waterways. If the unit installed from ½ mile to 5 miles away from the salt water, including seacoasts and inland waterways, please follow the installation instruction below.

- Install the outdoor unit in a place (such as near buildings etc.) where it can be protected from sea breeze which can damage the outdoor unit.





- If you cannot avoid installing the outdoor unit by the seashore, construct a protection wall around it to block the sea breeze.



- A protection wall should be constructed with a solid material such as concrete to block the sea breeze and the height and the width of the wall should be 1.5 times larger than the size of the outdoor unit. Also, secure over 28 in (700mm) between the protection wall and the outdoor unit for exhausted air to ventilate.

- Install the outdoor unit in a place where water can drain smoothly.
- If you cannot find a place satisfying above conditions, please contact manufacturer. Make sure to clean the sea water and the dust on the outdoor coil.

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Section B - Indoor Unit Installation - Wall Mount

Step 1 - Preparation

Required Tools for Installation

- Drill
- Wire Snipper
- Hole Saw 2 3/4"
- Vacuum pump
- Soap-and-water solution or gas leakage detector
- Torque wrench
- 17mm, 22mm, 26mm
- Tubing cutter
- Flaring tool
- Razor knife
- Measuring tape
- Level
- Micron gauge
- Nitrogen
- Mini-Split AD-87 Adapter (1/4" to 5/16")
- A - Non-adhesive Tape
- B - Adhesive Tape
- C - Saddle (L.S.) with screws
- D - Electrical wiring
- E - Drain hose (Included)
- F - Insulation
- G - Piping hole cover (Included)

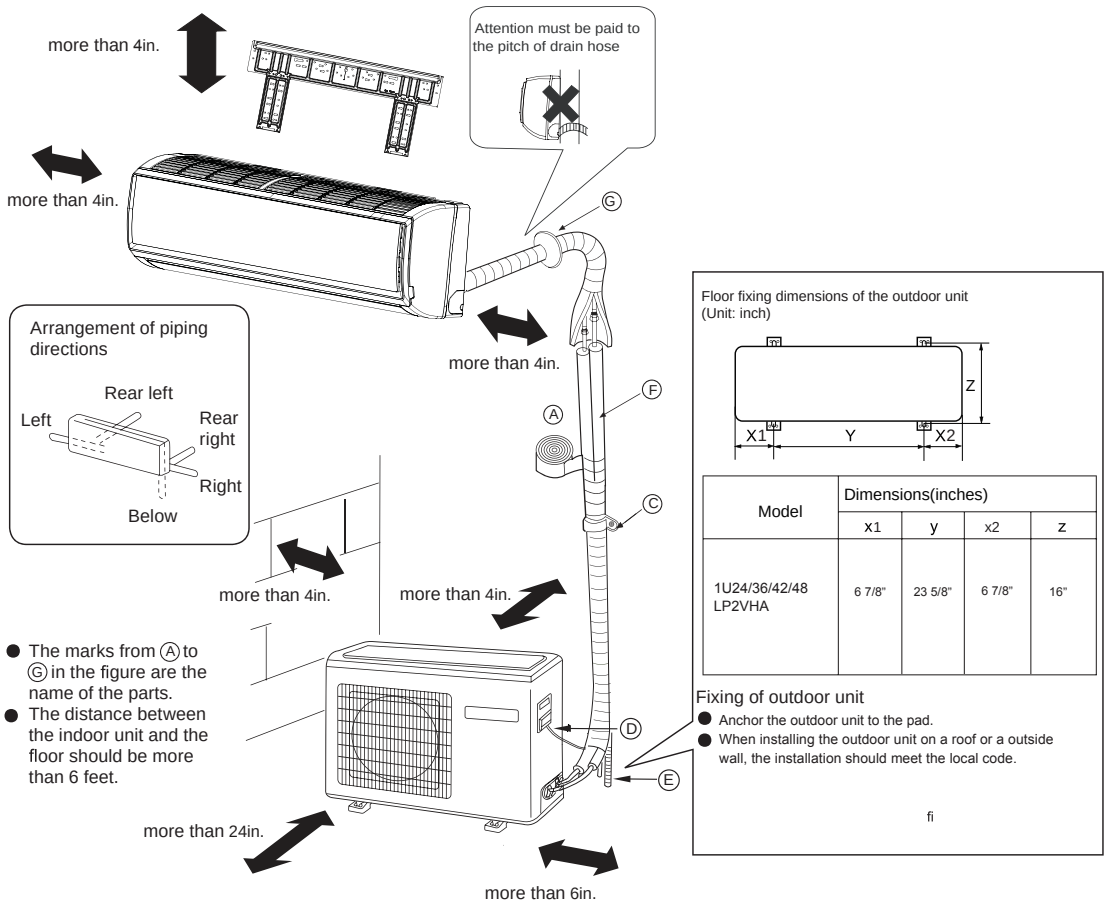
Procedure for Selecting the Location

- Choose a place solid enough to bear the weight and vibration of the unit and where the operation noise will not be amplified.
- Choose a location where the hot air discharged from the unit or the operation noise and will not cause a nuisance to the user.
- There must be sufficient space for carrying the unit into and out of the site.
- There must be sufficient space for air passage and no obstructions around the air inlet and air outlet.
- The site must be free from the possibility of flammable gas leakage in a nearby place.
- Install units, power cords and inter-unit cables at least 10ft away from television and radio sets. This is to prevent interference to images and sounds. (Noise may be heard even if they are more than 10ft away depending on radio wave conditions.)

Clearances of Indoor and Outdoor Units

This picture is for reference only. Your product may look different. Read this manual before installation. Explain the operation of the unit to the user according to this manual.

The models adopt HFC free refrigerant R410A



Floor fixing dimensions of the outdoor unit
(Unit: inch)

Model	Dimensions(inches)			
	x1	y	x2	z
1U24/36/42/48 LP2VHA	6 7/8"	23 5/8"	6 7/8"	16"

Fixing of outdoor unit

- Anchor the outdoor unit to the pad.
- When installing the outdoor unit on a roof or a outside wall, the installation should meet the local code.

fi

Step 2 - Installation of Wall Mount Type Indoor Unit

Attaching the Mounting Plate to the Wall

2.1 Step 2.1

Using a stud sensor, locate and mark the stud positions in the wall where the indoor unit is to be mounted.

Step 2.1

2.2 Step 2.2

Place the mounting plate on the wall in the desired location taking into account the minimum clearances necessary for proper operation.

Using a level, verify the mounting plate is horizontal and mark the screw locations.

Step 2.2

2.3 Step 2.3

Screw the mounting plate to the wall.

Step 2.3

The piping for the indoor unit may be routed to the unit from one of several directions. Left, Left Rear, Right, Right Rear, or Below (Illustration 1).

Step 2.4

2.4 Step 2.4

Knockouts are provided on the case for Left, Right, and Right Below.

Drilling the hole through the wall for left rear or right rear installation

Step 2.5A

Step 2.5B

2.5 Step 2.5A & 2.5B

Measure and mark the location where the piping hole is to be drilled.

Step 2.6

2.6 Step 2.6

Drill the piping hole using a hole saw of the correct diameter. Angle the drill with a downward pitch to the outside wall so that the outside hole will be ¼" lower than the inside hole, giving the hole the proper angle for condensate drainage.

Step 2.7

2.7 Step 2.7

Install the piping hole cover flange at the hole opening on the inside wall.
NOTE: The cover flange may require modification to fit properly behind the wall unit housing.

Step 2.8A

Step 2.8B

2.8 Step 2.8A & 2.8B

Bundle the refrigerant piping, drain piping and wiring with tape and pass the bundle through the piping hole.
NOTE: When bundling the power cable, leave sufficient length available in the indoor unit to make the connections to the terminal block.

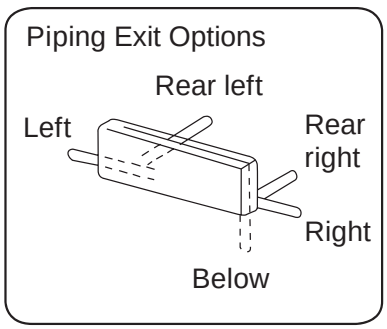


Illustration 1

Mounting the Indoor Unit Onto the Wall Plate

2.9 Step 2.9

With the top of the indoor unit closer to the wall, hang the indoor unit on the upper hooks of the mounting plate. Slide the unit slightly side to side to verify proper placement of the indoor unit on the mounting plate. Rotate the lower portion of the indoor unit to the mounting plate, and lower the unit onto the lower hooks of the mounting plate. (Illustration 2) Verify the unit is secure.

2.10 Step - 2.10

Slightly raise the entire unit vertically, pull the lower portion of the unit off the lower hooks of the mounting plate and away from the wall, then lift the upper portion of the unit off the upper hooks of the wall plate.

Step 2.9

Step 2.10

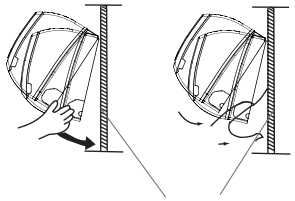


Illustration 2

Electrical Connections for the Indoor Unit

2.11 Step - 2.11A & 2.11B

To make the electrical connections for the indoor unit, two cover plates must be removed. Raise the front cover to access the screws to remove these covers.

2.13 Step - 2.13

Access the four conductor cable through the cover plate opening and make the wiring connections noting the wire color used on each terminal. The color of each wire must match the same positions on the terminal block of the outdoor unit. (Illustration 3)

Failure to wire the system correctly may lead to improper operation or component damage.

2.14 Step - 2.14A & 2.14B

After the terminal block wiring is completed, replace both cover plates.

Note: Wall mount unit ships with HG remote controller. See Section F for more information.

Step 2.11A

Step 2.11B

Step 2.12

Step 2.13A

Step 2.13B

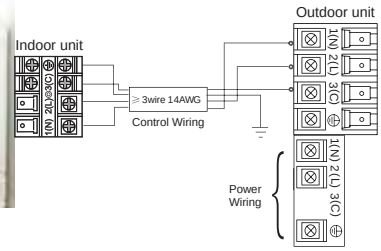


Illustration 3

Indoor Wall Unit Installation Complete

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Section C - Indoor Unit Installation - Cassette

Introduction - Overview

Cassette Product Information

The Cassette Indoor Air Handler ships consisting of a cassette assembly and operational louver. The Cassette Indoor Unit is operated via a factory supplied remote control. Wired controller is optional.

The Cassette unit will install between standard dropped ceiling grids. It is mounted using threaded rods that fit into brackets that are located at all four corners of the cassette assembly.

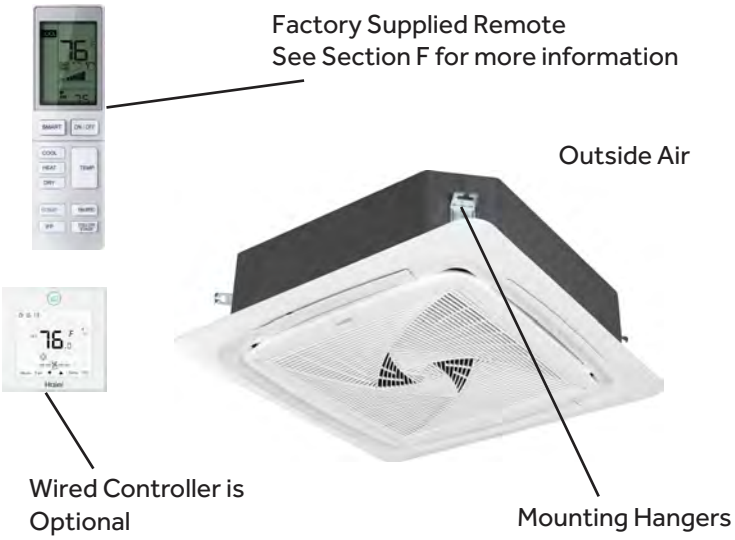
The Cassette unit receives 230 volt line voltage from a connection at the outdoor condensing unit. There is no requirement for independent line voltage connections.

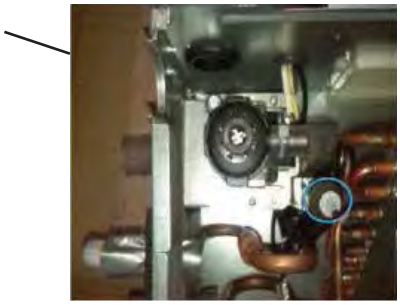
The cassette unit has a built in condensate pump and associated float switch that manages the operation of the condensate pump. A flexible hose is included with the Cassette unit. This hose connects the cassette condensate drain outlet to the building's condensate drain system.

The motorized louver is controlled via the remote control. The louver has indicator lights that communicate function and diagnostic information to the user and service technician.

Optional fresh air can be piped into the cassette assembly. The knockout is located on the side of the cassette assembly. If fresh air is desired, be certain to filter the air prior to it entering the cassette. A 4" galvanized pipe should be used to pipe in the fresh air.

Included with the cassette unit is factory provided insulating tape. This tape should be placed over the refrigerant piping connections at the indoor unit to prevent sweating.





Cassette Indoor Unit Specifications

Indoor	AL24LP2VHA	AL36LP2VHA	AL48LP2VHA
Rated Cooling Capacity Btu/hr	24,000	35,000	45,000
Rated Heating Capacity Btu/hr	27,300	36,500	49,000
Voltage, Cycle, Phase V/Hz/-	208/230/60/1	208/230/60/1	208/230/60/1
Fan Speed Stages	4+Auto	4+Auto	4+Auto
Airflow (Turbo/High/Med/Low/Quiet) CFM	740/630/480/400	990/900/776/700	1147/941/847/705
Motor Speed (Turbo/High/Med/Low/Quiet) RPM	500/400/300/250	650/550/450/400	750/650/500/400
Indoor Sound Level dB (Turbo/High/Med/Low/Quiet)	36/33/29/26	45/42/38/34	41/36/33/31
Grill Model	PB-950KB	PB-950KB	PB-950KB
Chassis Dimension: Height in (mm)	9 5/8 (246)	9 5/8 (246)	11 3/8 (288)
Chassis Dimension: Width in (mm)	33 1/8(840)	33 1/8(840)	33 1/8(840)
Chassis Dimension: Depth in (mm)	33 1/8(840)	33 1/8(840)	33 1/8(840)
Grill Dimension: Height in (mm)	2 (50)	2 (50)	2 (50)
Grill Dimension: Width in (mm)	37 3/8 (950)	37 3/8 (950)	37 3/8 (950)
Grill Dimension: Depth in (mm)	37 3/8 (950)	37 3/8 (950)	37 3/8 (950)
Weight (Ship/Net)- lbs (kg)	79.4/68.3 (36/31)	79.4/68.3 (36/31)	83.8/70.5 (38/32)
Connections	Flare	Flare	Flare
Liquid O.D. in	3/8	3/8	3/8
Suction O.D. in	5/8	5/8	5/8
Drainpipe Size O.D. in	1 1/4	1 1/4	1 1/4
Internal Condensate Pump	Standard	Standard	Standard
Max. Drain-Lift height in(mm)	39 3/8 (1000)	39 3/8 (1000)	39 3/8 (1000)

Fresh Air Intake Option

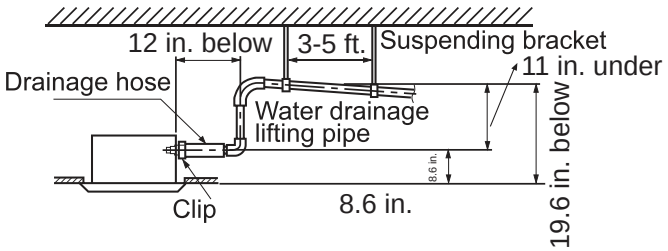
The cassette has a marked area to cut out if outside air is desired. The piping connection should be made with a 4 inch diameter pipe. Outside air should be pre-filtered prior to entry into the cassette.

Condensate Handling

The Cassette unit has a built in condensate pump and water level safety switch. There is no option for gravity drain. The condensate pump is rated to lift water up to 24" from the point of discharge on the cassette assembly.

The cassette unit comes with a grey connection hose with clamp. This hose is connected to the cassette assembly discharge hose port. The other end of the hose is sized to accept 3/4 " PVC piping.

Recommended condensate piping configurations are shown here:



Electrical Power

Follow all local codes and regulations when installing electrical wiring.

Route required electrical power to area where cassette is to be located. Maintain at least a 10 foot separation between TV and Radio wiring and the power to the indoor unit.

14 Gauge AWG stranded wire should be used to make the electrical connection between indoor and outdoor units. This wiring will serve to power the indoor unit and establish a communication link between indoor and outdoor units.

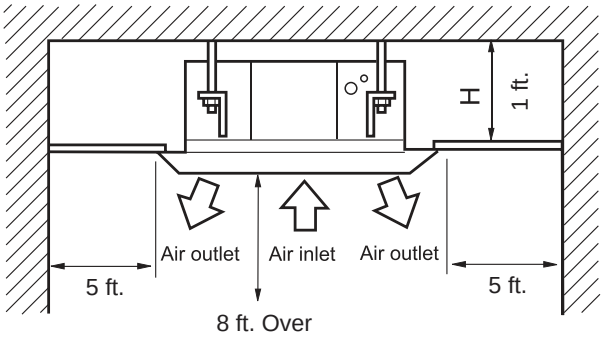
The wiring is connected at the indoor unit electrical terminal blocks screws 1, 2, 3 and ground. There should be no splices in the wires connected to terminals 1 or 3 as these serve as communication signal wires and electrical power connections. If a safety switch needs to be in place to shut off power to the indoor unit, break wire 2 only.

Air Delivery Clearances

Be certain to maintain proper clearances around the cassette as specified in the installation instructions. Standard clearances for cassette air handlers require 5 feet of clearance in each direction. There should be 8 feet of clearance from the face of the cassette louver to the floor. Inadequate clearances can cause system freezing and temperature control problems.

Service and Maintenance Clearances

Make sure there are adequate clearances for future maintenance and service. Allow enough room to access the condensate pump assembly and the electrical control box.



Step 1 - Preparation

Required Tools for Installation

- Drill
- Wire Snipper
- Hole Saw 2 3/4"
- Vacuum pump
- Soap-and-water solution or gas leakage detector
- Torque wrench
- 17mm, 22mm, 26mm
- Tubing cutter
- Flaring tool
- Razor knife
- Measuring tape
- Level
- Micron gauge
- Nitrogen
- Mini-Split AD-87 Adapter (1/4" to 5/16")
- A - Non-adhesive Tape
- B - Adhesive Tape
- C - Saddle (L.S.) with screws
- D - Electrical wiring
- E - Drain hose (Included)
- F - Insulation
- G - Piping hole cover (Included)

Procedure for Selecting the Location

- Place above the ceiling where you have enough space to position the unit.
- Place where the drainage pipe can be properly positioned.
- Place where the inlet and outlet air of the indoor unit will not be blocked.
- Do not install the unit in a place with heavy oil or moisture (e.g. - kitchens and workshops)
- Do not install in a location with destructive gas (such as sulfuric acid gas) or pungent gas (thinner and gasoline) are used or stored.
- Choose a place solid enough to bear the weight and vibration of the unit and where the operation noise will not be amplified.
- Install where there are no expensive items like a television or piano below the indoor unit.
- Leave enough space for maintenance.
- Install at least 3 ft. away from televisions and radios to avoid interference.

Note:

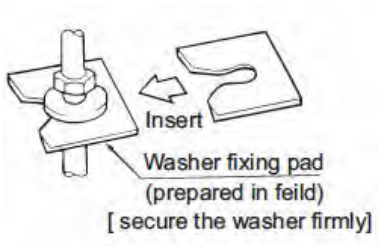
1) R-410A refrigerant is a safe, nontoxic and nonflammable refrigerant. However, if there is a concern about a dangerous level of refrigerant concentration in the case of refrigerant leakage, add extra ventilation.

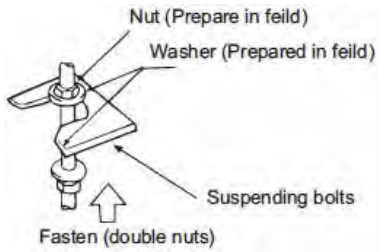
Threaded Rod Mounting Information

The Cassette unit should be mounted to the building structure using threaded rods. The threaded rods should have washers and nuts to allow the height and level of the cassette to be adjusted.

The threaded rods and attachment brackets are field supplied items. The materials required for mounting to the brackets on the cassette assembly include:

4- 3/8" Threaded Rods
4- Mounting Brackets
8- Washers
8- Nuts (Double nut the assembly as shown)





Step 2 - Installation of the Cassette Unit

Step By Step Guide To Cassette Installation

2.1 Step 2.1

Use cardboard template to locate center point of cassette for mounting. Use a plumb bob and string to position cassette by referencing center hole of template. Mark the mounting positions of the threaded rods using the guides on the cardboard template.

2.2 Step 2.2

Install threaded rods to structure using appropriate fasteners.

2.3 Step 2.3

Lift the cassette and position the threaded rods into the 4 mounting clips on each corner of the cassette unit.

2.4 Step 2.4

Using a level, adjust the nuts on the threaded rods to obtain a level reading across the bottom of the cassette unit.

2.5 Step 2.5A & 2.5B

Prior to routing the refrigerant lines to the unit, install the supplied flare nuts onto the refrigerant lines. Using a flaring tool, flare the refrigerant lines. Remove the caps attached to the ends of the refrigerant line connections at the cassette. Holding charge will be released.

Using a torque wrench, torque the fittings to the proper specifications. (See Outdoor Unit Section for flare torque settings.)

2.6 Step 2.6

Connect the grey flexible drain hose supplied with the cassette unit to the condensate pump discharge pipe of the cassette. Tighten the clamp securely. Using 3/4 " PVC, connect the flexible hose to the building's condensate drain system.

2.7 Step 2.7

Remove the electrical box cover. Remove the rubber grommet and insert a 1/2 inch electrical connector and reducing washer. Route electrical wiring into cassette unit. Connect to wire terminas as indicated in schematic drawing. (USE 14 AWG Stranded wire only.)

2.8 Step 2.8A & 2.8B ,C, D

Connect Louver assembly to cassette assembly. Connect wires from louver to the harness on the cassette assembly. There are two wire connections. (See photo for connections.) Secure louver with four screws.

Reinstall electrical box cover.
Install return air grille into louver assembly.

Installation is now complete.

Step 2.1

Step 2.2

Step 2.3

Step 2.4

Step 2.5A

Step 2.5B

Step 2.6

Step 2.7

Step 2.8A

Step 2.8B

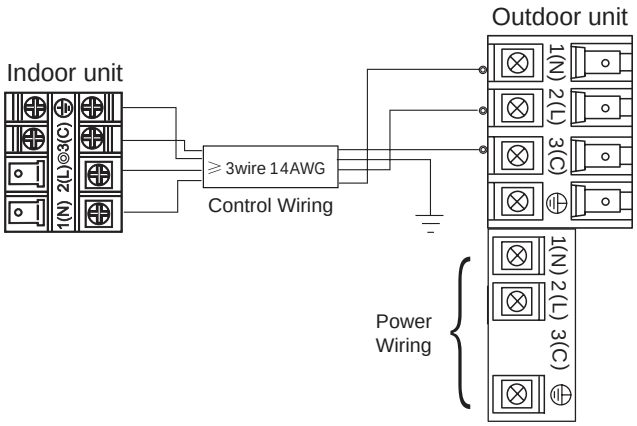
Step 2.8C

Step 2.8D

Step 3 - Electrical Connections

Electrical Connections Indoor and Outdoor Units

14 AWG Stranded Wire Only. (Central Controller Not Used)
Maintain 10 feet of separation between TV and any Radio wiring.



Note: Cassette unit ships with YR-HBS01 remote controller. See Section F for more information.

Step 4 - Louver Installation

To mount the louver cover onto the cassette assembly. Install 2 screws at the keyhole slot positions shown in the first photo. Place louver onto the 2 screws and press louver onto cassette housing. Swing hang clip into position. (White circle.) Install remaining 2 screws and tighten the 4 screws. Connect electrical plugs to socket shown below. Install the electrical cover box and then snap the return air grille into position.






Step 5 - Pull Vacuum on System

See Step 3.2 of the outdoor unit installation section for how to pull a vacuum.

Indoor Cassette Unit Installation Complete

Section D - Indoor Unit Installation - High ESP Duct

Introduction - Overview

High ESP Duct Product Information

The High ESP Duct Indoor Air Handler ships consisting of a single assembly. The High ESP Duct indoor unit is operated via a factory supplied wired remote control.

The High ESP Duct unit will install above the ceiling or in a soffit area. It is mounted using threaded rods that fit into brackets that are located at all four corners of the High ESP Duct assembly.

The High ESP Duct unit receives 230 volt line voltage from a connection at the outdoor condensing unit. There is no requirement for independent line voltage connections.
The High ESP Duct unit has a built-in condensate pump and associated float switch that manages the operation of the condensate pump. A flexible hose is included with the High ESP Duct unit. This hose connects the High ESP Duct condensate drain outlet to the building's condensate drain system.
Included with the High ESP Duct unit is factory provided insulating tape. This tape should be placed over the refrigerant piping connections at the indoor unit to prevent sweating.

YR-E17 Wired Controller
See Section E for more information

Built-in Condensate Pump and Float Switch

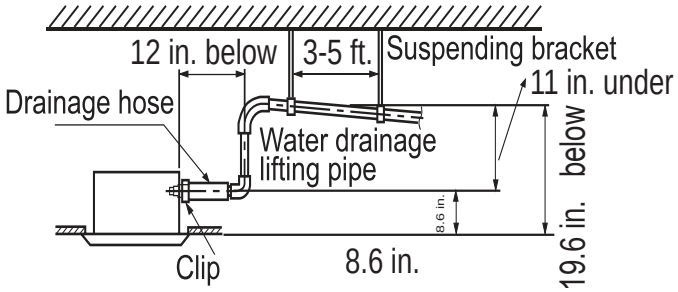
Slim Duct Indoor Unit Specifications

Indoor	AM24LP2VHA	AM36LP2VHA	AM48LP2VHA
Rated Cooling Capacity Btu/hr	24,000	35,000	47,000
Rated Heating Capacity Btu/hr	26,500	37,500	52,000
Voltage, Cycle, Phase V/Hz/-	208/230/60/1	208/230/60/1	208/230/60/1
Fan Speed Stages	4+Auto	4+Auto	4+Auto
Airflow (Turbo/High/ Med/Low/Quiet) CFM	845/670/530/470	1100/950/735/675	1350/1150/930/765
Motor Speed (Turbo/High/ Med/Low/Quiet) RPM	950/860/760/700	1000/920/860/810	1180/1080/1010/960
Max. External Static Pressure in.W.G (Pa)	0.6(150)	0.6(150)	0.6(150)
Indoor Sound Level dB (Turbo/High/ Med/Low)	38/35/32/29	32/28/25/23	41/36/33/31
Dimension: Height in (mm)	9 7/8 (250)	9 7/8 (250)	9 7/8 (250)
Dimension: Width in (mm)	37 5/8 (957)	59 (1500)	59 (1500)
Dimension: Depth in (mm)	25 3/4 (655)	28 3/8 (720)	28 3/8 (720)
Weight (Ship/Net)- lbs (kg)	81.1/68.8(36.8/31.2)	130.1/121.3 (59/55)	132.3/114.6 (60/52)
Connections	Flare	Flare	Flare
Liquid O.D. in	3/8	3/8	3/8
Suction O.D. in	5/8	5/8	5/8
Drainpipe Size O.D. in	1 1/4	1 1/4	1 1/4
Internal Condensate Pump	Standard	Standard	Standard
Max. Drain-Lift height in(mm)	27 9/16(700)	27 9/16(700)	27 9/16 (700)

Condensate Handling

The High ESP Duct unit has a built-in condensate pump and water level safety switch. There are also two optional ports for gravity drainage. The condensate pump is rated to lift water up to 24" from the point of discharge on the High ESP Duct unit.
The High ESP Duct unit comes with a grey connection hose with clamp. This hose is connected to the High ESP Duct unit condensate discharge hose port. The other end of the hose is sized to accept 3/4 inch PVC piping.

Recommended condensate piping configurations are shown here:



Electrical Power

Follow all local codes and regulations when installing electrical wiring.

Route required electrical power to area where the High ESP Duct unit is to be located. Maintain at least a 10 foot separation between TV and Radio wiring and the power to the indoor unit.

14 Gauge AWG stranded wire should be used to make the electrical connection between indoor and outdoor units. This wiring will serve to power the indoor unit and establish a communication link between indoor and outdoor units.

The wiring is connected at the indoor unit electrical terminal blocks screws 1, 2, 3 and ground. There should be no splices in the wires connected to terminals 1 or 3 as these serve as communication signal wires and electrical power connections. If a safety switch needs to be in place to shut off power to the indoor unit, break wire 2 only.

Air Delivery Clearances

Make certain to maintain proper clearances around the High ESP Duct unit.

Inadequate clearances can cause system freezing and temperature control problems.

Service and Maintenance Clearances

Make sure there are adequate clearances for future maintenance and service. Allow enough room to access the condensate pump assembly and the electrical control box.

Step 1 - Preparation

Required Tools for Installation

- Drill
- Wire Snipper
- Hole Saw 2 3/4"
- Vacuum pump
- Soap-and-water solution or gas leakage detector
- Torque wrench
- 17mm, 22mm, 26mm
- Tubing cutter
- Flaring tool
- Razor knife
- Measuring tape
- Level
- Micron gauge
- Nitrogen
- Mini-Split AD-87 Adapter (1/4" to 5/16")
- A - Non-adhesive Tape
- B - Adhesive Tape
- C - Saddle (L.S.) with screws
- D - Electrical wiring
- E - Drain hose (Included)
- F - Insulation
- G - Piping hole cover (Included)

Procedure for Selecting the Location

- Place above the ceiling or in soffit area where you have enough space to position the unit.
- Place where the drainage pipe can be properly positioned.
- Place where the inlet and outlet air of the indoor unit will not be blocked.
- Do not install the unit in a place with heavy oil or moisture (e.g. - kitchens and workshops)
- Do not install in a location with destructive gas (such as sulfuric acid gas) or pungent gas (thinner and gasoline) are used or stored.
- Choose a place solid enough to bear the weight and vibration of the unit and where the operation noise will not be amplified.
- Install where there are no expensive items like a television or piano below the indoor unit.
- Leave enough space for maintenance.
- Install at least 3 ft. away from televisions and radios to avoid interference.

Note:

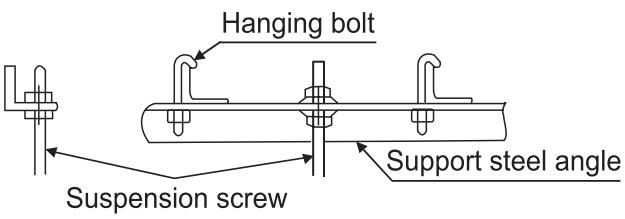
1) R-410A refrigerant is a safe, nontoxic and nonflammable refrigerant. However, if there is a concern about a dangerous level of refrigerant concentration in the case of refrigerant leakage, add extra ventilation.

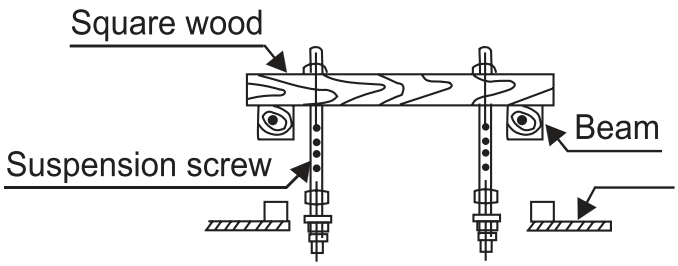
Threaded Rod Mounting Information

The High ESP Duct unit should be mounted to the building structure using threaded rods. The threaded rods should have washers and nuts to allow the height and level of the High ESP Duct unit to be adjusted.

The threaded rods and attachment brackets are field supplied items. The materials required for mounting to the brackets on the High ESP Duct unit include:

4- 3/8" Threaded Rods
4- Mounting Brackets
Washers
Nuts (Double nut the assembly as shown in step 2.3)





Step 2 - Installation of the High ESP Duct Unit

Step By Step Guide To High ESP Duct Unit Installa

2.1 Step 2.1

Determine and mark the position of where the High ESP Duct unit is to be installed. Install the hardware necessary to mount the threaded rods. Always select a location strong enough to support the indoor High ESP Duct unit.

2.2 Step 2.2

Install the threaded rods to the hardware attached to the structure.

2.3 Step 2.3

Lift the High ESP Duct unit and position the threaded rods into the 4 mounting clips, one located on each corner of the unit.

2.4 Step 2.4

Using a level, adjust the nuts on the threaded rods to obtain level readings both side to side and front to back on the High ESP Duct unit.

2.5 Step 2.5 - 2.5A

Prior to routing the refrigerant lines to the unit, install the supplied flare nuts onto the refrigerant lines. Using a flaring tool, flare the refrigerant lines. Remove the caps attached to the ends of the refrigerant line connections at the High ESP Duct unit. Holding charge should leak out. Attach the refrigerant lines to the air handler.

Using a torque wrench, torque the fittings to the proper specifications. (See Outdoor Unit Section for flare torque settings.)

2.6 Step 2.6

Connect the grey flexible drain hose supplied with the High ESP Duct unit to the condensate pump discharge pipe of the High ESP Duct unit. Tighten the clamp securely. Using 3/4 " PVC, connect the flexible hose to the building's condensate drain system.

2.7 Steps 2.7 - 2.7A - 2.7B

Route the 14AWG stranded 4 conductor power/ communication cable and the wired remote cable to the air handler. Use reducing washers and appropriate connector to attach the power/communication cable to the unit. The wired remote cable will enter the unit through a rubber grommet. The 4 conductor cable connects to the terminal block at terminals 1, 2, 3, and ground. The wired remote cable connects to the air handler main board at connector CN1. Re-install electrical box cover.

2.8 Step 2.8

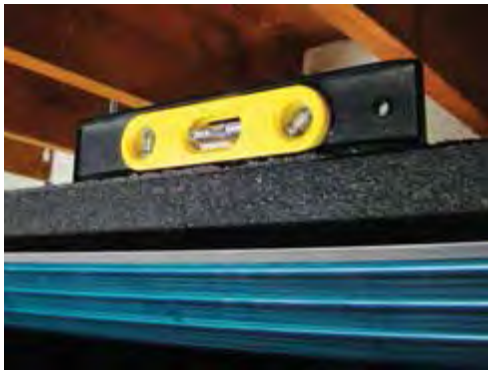
The unit is now ready for connection to the ductwork. The return air duct can be configured as either a rear side inlet or bottom side inlet.

Step 2.1

Step 2.2

Step 2.3

Step 2.4



Step 2 - Installation of the High ESP Duct Unit

Step 2.5

Step 2.5A

Step 2.6

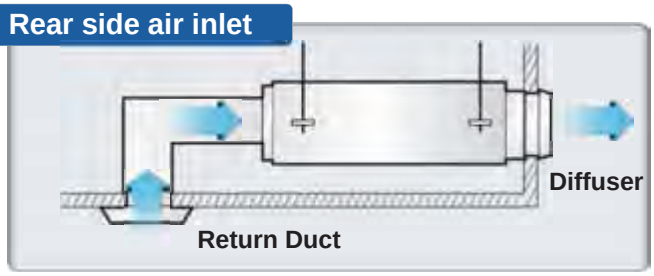
Step 2.7

Step 2.7A

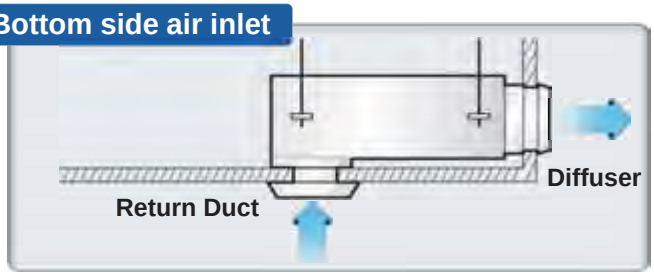
Step 2.7B
Re-install electrical box cover

Step 2.8

Rear side air inlet



Bottom side air inlet

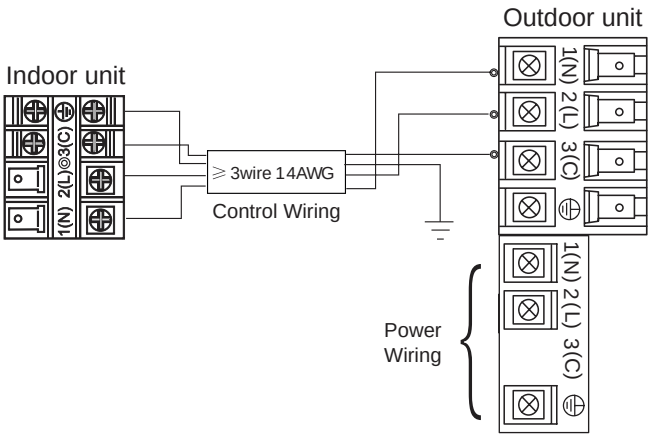


INSTALLATION IS NOW COMPLETE

Step 3 - Electrical Connections

Electrical Connections Indoor and Outdoor Units

14 AWG Stranded Wire Only. (Central Controller Not Used)
Maintain 10 feet of separation between TV and any Radio wiring.



Note: High ESP Duct unit ships with YR-E17 wired controller. See Section E for more information.

Step 4 - Pull Vacuum on System

See Step 3.2 of the outdoor unit installation section for how to pull a vacuum.

Indoor High ESP Duct Unit Installation Complete

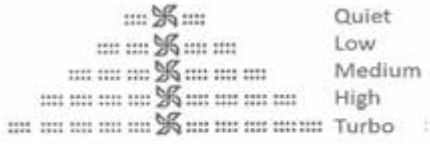
Section E - Wired Controller YR-E17

WIRED CONTROL PANEL FUNCTIONS

Features and Interface

88:88	Clock; Parameter setting/Inquiry; Malfunction display
88:88 ON OFF	Timer ON/OFF; Sleep function; Parameter setting/Inquiry; Malfunction display
ROOM SET 88.8	ROOM/SET temp. and humidity display, each step is 0.5°C (1°F). For example, if the temp is 25°C (77°F), it will display 25.°C (77°F). Humidity display function is reserved.
ECO	Energy Saving function. This icon will be displayed only when energy saving function is set.
	Filter Cleaning
	Child Lock
/	Lock/Central
	Motion Sensing (Reserved)
	Left/Right Swing. This icon is displayed only when in swing function
	Up/Down Swing. This icon is displayed only when in swing function

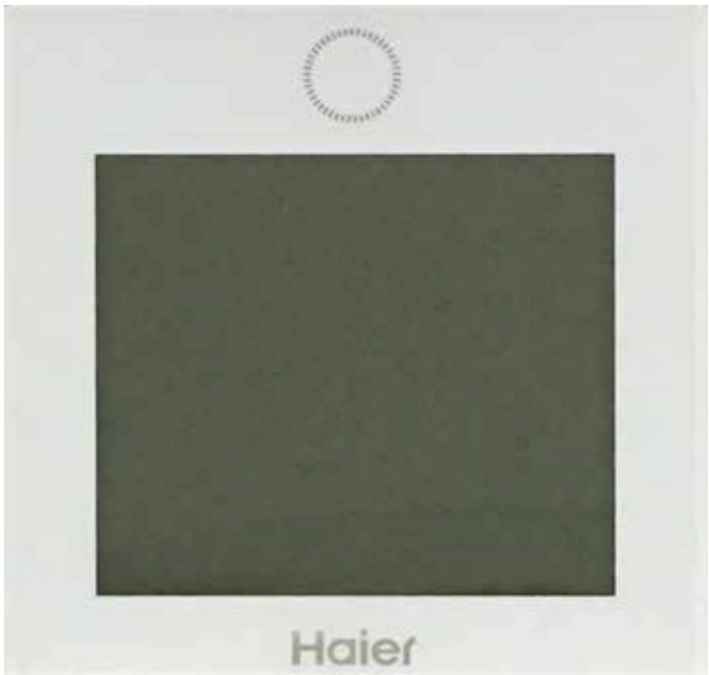
	Sleep function. This icon is displayed when setting the sleep function. Remaining sleeping time is displayed in the top right corner.
	Heat Reclaim Ventilation. This icon is displayed when setting the heat reclaim ventilation.
	Electrical Heating. This icon is displayed when electrical heating is set on DC wired control.
	Intelligent Mode--automatic cycling.
	Cooling Mode
	Heating Mode
	Fan Mode
	Dry Mode



Fan speed will be changed in sequence as :
Quiet → Low → Medium → High → Turbo → Auto

User Friendly: Back light; Room temperature display

Functions: Clock; Timer; Sleep Function; Heat Reclaim Ventilation; ECO; Filter Cleaning; Error Code display; Child Lock; Parameter Inquiry; Unit NO. Setting; Static Pressure Grade Inquiry; Temp. Compensation setting; Forced Cooling/Heating

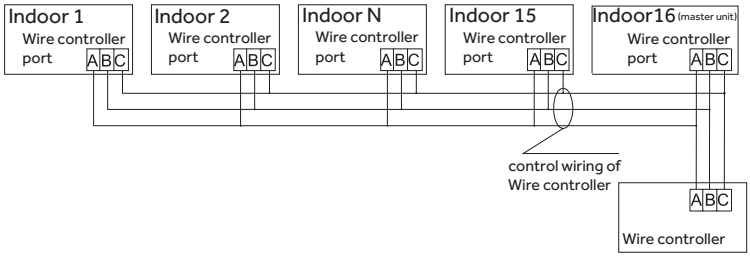


WIRED CONTROLLER INSTALLATION

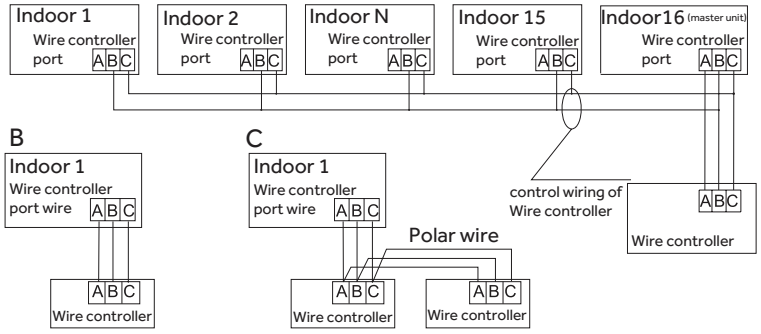
Wired Controller Wiring Instructions

Step By Step Guide To Installation

A TYPE 1, FOR AL24/36/42/48LP2VHA, AM24LP2VHA



TYPE 2, FOR AM36/42/48LP2VHA



There are three methods to connection wire controller and the indoor units:

A: One wired controller can control max.up to 16 sets of indoor units, for Flexifit Pro series indoor units, there are two connection method :

Type 1: for model AL24/36/42/48LP2VHA,AM24LP2VHA,the wiring connection between wired controller - the master unit (directly connected to the wired controller), master unit - slave unit, slave unit-slave unit should be one to one match of all three lines.

Type 2: for model AM36/42/48LP2VHA,The wiring connection between wired controller-the master unit (directly connected to the wired controller) should be three polar wire, and the wiring between master unit - slave unit, slave unit-slave unit should be one to one match of two polar lines.

Note: PCB DIP switches are used for setting slave units, please refer to indoor unit wiring diagram.

B. One wire controller controls one indoor unit, and the indoor unit connects with the wire controller through 3 pieces of polar wire.

C. Two wired controllers control one indoor unit. The wire controller connected with indoor unit is called master one, the other is called slave one. Master wire controller and indoor unit; master and slave wire controllers are all connected through 3 pieces of polar wire.

Note: There are PCB DIP switches for slave or master units selection, please refer to the indoor unit wiring diagram to get details.

About the wire:

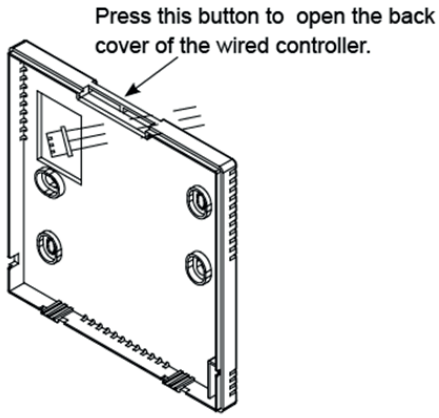
The wire controller is equipped with special communication wiring in the accessories. 3-core terminal (1-white 2-yellow 3-red) is connected with the terminal A, B, C of wire controller respectively.

The communication wiring is 189ft (4.8 meter) long; if the actual length is more than it, please distribute wiring according to below table:

Communication Wiring

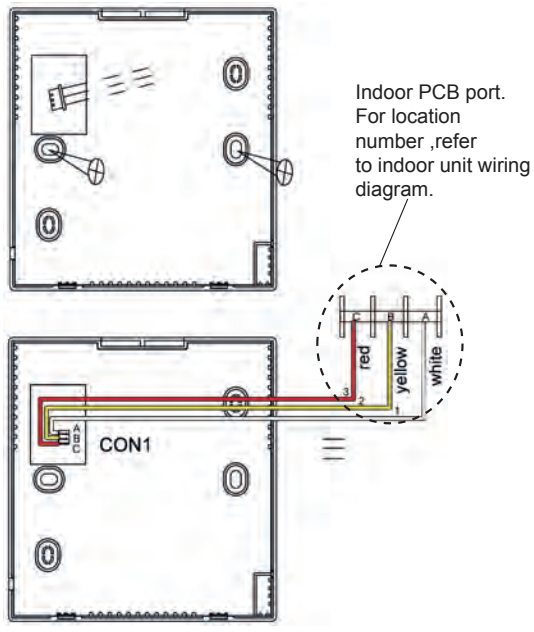
Communication Wiring length	Dimension of Wiring
0~100 ft (0~30m)	22AWG(0.3mm^2)x3-core shielded wire
100~200 ft (30~60m)	20AWG(0.5mm^2)x3-core shielded wire
200~300 ft (0~90m)	18AWG(0.75mm^2)x3-core shielded wire
300-400 ft (90~120m)	16AWG(1.25mm^2)x3-coreshielded wire

*One side of the shielded sheet of communication wire must be earthed.



. Put communication wire through the hole in the back cover as shown

Mount the back cover in the desired location, making sure not to pinch the communication wire. Then connect the communication wire to CON1 port of the wired controller. Replac

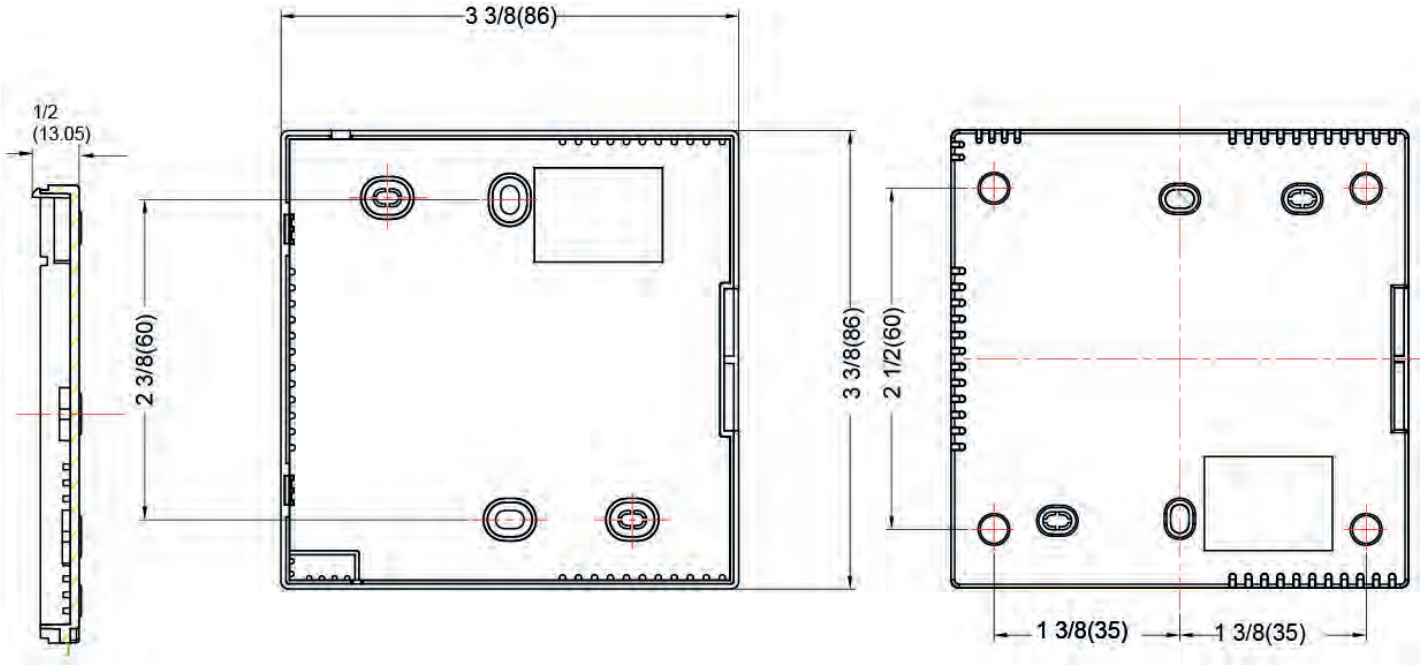


WIRED CONTROLLER INSTALLATION

Wired Controller Wiring Instructions

Dimensions

Unit: inch (mm)



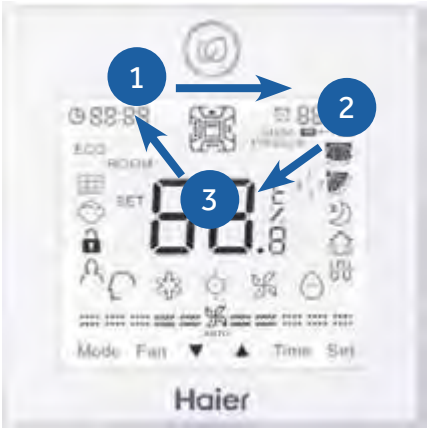
Dip Switch

Dip Switch	ON/OFF	Function	Default Setting
SW1-1	ON	Set as the slave controller	OFF
	OFF	Set as the master controller	
SW1-2	ON	Ambient temp. display available	OFF
	OFF	Ambient temp. display unavailable	
SW1-3	ON	Display ambient temp. from PCB of indoor	OFF
	OFF	Display ambient Temp. from wired controller	
SW1-4	ON	Auto-restart invalid	OFF
	OFF	Auto-restart valid	
SW1-5	ON	Fahrenheit	OFF
	OFF	Celsius	
SW1-6	ON	Swing angle adjustment available	OFF
	OFF	Swing angle adjustment unavailable	
SW1-7	ON	Up/Down and Left/Right swing	OFF
	OFF	Up/Down swing	
SW1-8	ON	Fresh Air unit	OFF
	OFF	General unit	

WIRED CONTROLLER OPERATION

Settings & Functions

Initialization



The wired controller will momentarily display all display icons upon powering up or when resetting the system.

During the initialization process, the controller will display, in a repeating order: 88:88 (upper left corner), 88:88 (upper right corner) 88.8 (main temperature). This cycle keeps repeating until initialization is complete. The green ON/OFF LED will also flash continuously until initialization is complete.

If the wired controller is unable to communicate with the indoor unit PCB after powering on, initialization will terminate in 4 minutes. The communication malfunction can be checked using the malfunction inquiry function. (See Malfunction Display)

Mode Setting

NOTE: This function requires the ON/OFF key LED to be turned OFF and the screen backlight to be illuminated.
Press and hold the MODE key for 5 seconds, the number of the mode currently being used will display in the upper left corner of the screen. (Default is 0) Press the ▲▼ keys to change to one the different modes available: 0, 1, 2, or 3. Press SET to confirm the setting.

NOTE: Corresponding modes
0 – [Intelligent] [Cooling] [Heating] [Fan] [Dry]
1 – [Cooling] [Heating] [Fan] [Dry]
2 – [Cooling] [Fan] [Dry]
3 – [Cooling] [Heating] [Fan] [Dry] (same as 1)

Error Code Display

Note: This function requires the ON/OFF key LED to be turned OFF and the screen backlight to be illuminated.
Press and hold the TIME key for 10 seconds. The unit number will display in the upper left corner of the screen. The error code/historical error code will display in the upper right corner of the screen. Press ▲▼ keys to select the unit number to view its error codes. Under Error Code display screen, press and hold the TIME key for 5 seconds to clear the fault codes of all the units.

Press the MODE, FAN, TIME, SET, or ON/OFF key to exit the function. If no key is pressed in 10 seconds, the function will also exit. If there are no current errors or historical error codes, "--" will be displayed.

Switching between Fahrenheit & Celsius

To switch from Celsius to Fahrenheit, select the mode you wish to operate (COOL, HEAT, DRY, INTELLIGENT/AUTO). Press and hold the ▲ key to reach 30 °C then continue holding the ▲ key for 15 seconds until the display reads 86 °F. Use the ▲▼ keys to adjust to desired temperature.

To switch from Fahrenheit to Celsius, select the mode you wish to operate (COOL, HEAT, DRY, INTELLIGENT/AUTO). Press and hold the ▼ key to reach 60 °F then continue holding the ▼ key for 15 seconds until the display reads 16 °C. Use the ▲▼ keys to adjust to desired temperature.

Clock Function

1. The clock is displayed in 24 Hour time
A. It cannot be set for AM/PM.
B. The clock function cannot be set when SLEEP function or a timer function is currently set.

When the system is first powered up, after initialization, the clock will default to 12:00. Within 10 seconds of the clock being displayed, the time can be set. The clock icon and minutes portion of the time display will be flashing. Press the ▲▼ keys to adjust the minutes. (Pressing and holding the ▲▼ keys will accelerate the time adjustment.) With the minutes set, press the TIME key. The clock icon and hours portion of the time display will now begin flashing. Press the ▲▼ keys to adjust the hours. Press the SET key to confirm the setting.

To set the clock after initial power up or reset time has expired, press and hold the TIME key for 5 seconds. The clock icon and minutes portion of the time display will begin flashing. Press the ▲▼ keys to adjust the minutes. With the minutes set, press the TIME key. The clock icon and hours portion of the time display will now begin flashing. Press the ▲▼ keys to adjust the hours. Press the SET key to confirm the setting. If neither ▲▼ key is pressed within 10 seconds, or if the MODE, FAN, or ON/OFF keys are pressed prior to pressing the SET key, the setting function is canceled and the time reverts back to the previous setting.

Screen Saving

With the system turned off, tap the TIME key to activate the screen backlight (if not already lit).
1. Press and hold the TIME and ▼ keys for 5 seconds to set the backlight "on" time. The set time will be displayed in the upper right corner of the screen.
2. Press the ▲▼ keys to adjust the time. Set times available are: 0 seconds (backlight always on), 15 seconds, 30 seconds, and 60 seconds. Initial default time is 15 seconds.
3. With time selection made, press the SET key to confirm the setting.

If neither ▲▼ key is pressed within 10 seconds, or if the MODE, FAN, or ON/OFF keys are pressed prior to pressing the SET key, the setting function is canceled and reverts back to the previous setting.

Settings & Functions

ECO Energy Saving Function

NOTE: This function requires the ON/OFF key LED to be turned ON and the screen backlight to be illuminated.

ECO

Press the SET key. The swing louver function icon will be displayed. Press the ▲▼ keys to advance through the functions to select ECO function. (The icon will be flashing) Press the SET key to confirm the setting. The ECO icon will remain on.

To cancel ECO function, repeat the above steps.

NOTE: The energy saving default parameters are listed below:
74°F Lowest temperature limit of Cooling and Dry mode.
78°F Highest temperature limit of Heating mode.
74°F – 86°F Temperature adjustment range in Cooling and Dry mode.
60°F – 78°F Temperature adjustment range in Heating mode.

ECO Parameter Setting

NOTE: This function requires the ON/OFF key LED to be turned ON and the screen backlight to be illuminated.

For Cooling
Under Cooling mode, set the temperature to 86°F. Press and hold the FAN key for 5 seconds. The Cooling ECO parameter (flashing) will be displayed in the upper left corner of the screen. Default temperature is 74°F. Press the ▲▼ keys to adjust the lowest target cooling temperature. Press the SET key to confirm the setting and exit setup.

For Heating
Under Heating mode, set the temperature to 60°F. Press and hold the FAN key for 5 seconds. The Heating ECO parameter (flashing) will be displayed in the upper right corner of the screen. Default temperature is 78°F. Press the ▲▼ keys to adjust the highest target heating temperature. Press the SET key to confirm the setting and exit setup.

Static Pressure Grade Inquiry & Adjustment

NOTE: This function requires the ON/OFF key LED to be turned ON and the screen backlight to be illuminated.

Press and hold the SET and FAN keys for 5 seconds. The current static pressure will be displayed in the upper right corner of the screen and the "Static Pressure" icon will begin to flash.

Press the TIME key to shift the unit no. displayed in the upper left corner of the screen. The unit numbers are from 00-15. Press the ▲▼ keys to change the static pressure grade, shown in the upper right corner of the screen.
Number range is 01-04. Press the SET key to confirm the setting. Press the MODE, FAN, or ON/OFF key to exit the function. If no key is pressed in 10 seconds, the function will also exit.

Timer Function Setting

NOTE: The display backlight must be illuminated before proceeding. To turn the backlight on, press any key (MODE, FAN, ▲▼, TIME, or SET) located at the bottom of the display, or press the ON/OFF key located at the top of the display.

Timer ON
Press the TIMER key once, the ON timer icon will appear in the upper right corner of the screen. The ON icon and hour position are flashing. Press the ▲▼ keys to set the hour. Press the TIMER key again, the ON icon and minutes position are now flashing. Press the ▲▼ keys to set the minutes. Press the SET key to confirm the setting.

Timer OFF
Press the TIMER key 3 times, the OFF timer icon will appear in the upper right corner of the screen. The OFF icon and hour position are flashing. Press the ▲▼ keys to set the hour. Press the TIMER key again, the OFF icon and minutes position are now flashing. Press the ▲▼ keys to set the minutes. Press the SET key to confirm the setting.

Timer ON/OFF
Press the TIMER key 5 times, the ON/OFF timer icon will appear in the upper right corner of the screen. The ON icon and hour position are flashing. Press the ▲▼ keys to set the hour. Press the TIMER key again, the ON icon and minutes position are now flashing. Press the ▲▼ keys to set the minutes. Press the TIMER key again, the OFF icon and hour position are now flashing. Press the ▲▼ keys to set the hour. Press the TIMER key again, the OFF icon and minutes position are now flashing. Press the ▲▼ keys to set the minutes. Press the SET key to confirm the setting. Based on the times set, the indoor unit will determine which event happens first (ON-OFF or OFF-ON) and adjusts the arrow direction accordingly.

If neither ▲▼ key is pressed within 10 seconds, or if the MODE, FAN, or ON/OFF keys are pressed prior to pressing the SET key, the setting function is canceled and reverts back to the previous setting.

Timer Cancel
Press the TIME key up to 9 times to cycle through the timer settings. When the timer icon disappears, the timer function is canceled.

Note: An active timer function will remain displayed on screen until the set time has been reached and command completed.

WIRED CONTROLLER OPERATION

Settings & Functions

Left/Right/Up/Down Swing

The swing function determines air circulation.

1. Press SET key to access Swing function circulation.
2. Use ▲▼keys to select desired swing function.

If **SW7** is on, air will circulate **UP/DOWN/LEFT/RIGHT.**

3. Press SET key to confirm swing function selection.

Parameter Inquiry

NOTE: This function requires the screen backlight to be illuminated. The ON/OFF key LED can be either On or Off.

Press and hold the SET key for 5 seconds. The unit number will be displayed in the upper left corner of the screen. The data type and current data will be displayed in the upper right corner of the screen.
Press the ▲▼ keys to scroll through the data types. (See chart for data type/current data)

Press the MODE, FAN, SET, or ON/OFF key to exit the function. If no key is pressed in 10 seconds, the function will also exit.

Data	Type meaning	System
A	Indoor sensor Tai temp.	Actual value, decimal sys.
b	Indoor sensor Tc1 temp.	Actual value, decimal sys.
C	Indoor sensor Tc2 temp.	Actual value, decimal sys.
d	Indoor unit PMV opening/2	Actual value, decimal sys.
E	Indoor unit address	Actual value, hexadecimal sys.
F	Indoor unit central address	Actual value, hexadecimal sys.

Unit Number Setting

NOTE: This function requires the screen backlight to be illuminated. The ON/OFF key LED can be either On or Off.

Press and hold the SET key for 10 seconds. The wired controller address and communication address between the indoor and outdoor unit are displayed in the upper left corner of the screen. The central address is displayed in the upper right corner of the screen.

Press the ▲▼ keys to select the indoor unit number: 0 - 3F. Press the SET key to confirm the setting. Press the MODE, FAN, or ON/OFF key to exit the function. If no key is pressed in 10 seconds, the function will also exit.

Forced Cooling/Heating

Note: This function requires the ON/OFF key LED to be turned OFF and the screen backlight to be illuminated.

Forced Cooling
When the system is turned off in cooling mode, press and hold the ON/OFF key for 10 seconds. The system will enter forced cooling. The temperature display will display a flashing "LL". Press the ON/OFF key to exit forced cooling mode.

Forced Heating
When the system is turned off in heating mode, press and hold the ON/OFF key for 10 seconds. The system will enter forced heating. The temperature display will display a flashing "HH". Press the ON/OFF key to exit forced heating mode.

NOTE: When in forced cooling or heating, all keys are disabled except for the ON/OFF key.

Child Lock Function

NOTE: This function requires the screen backlight to be illuminated. The ON/OFF key LED can be either On or Off.

Child Lock can be used to prevent unintended operation of the control unit.

1. Press SET and the ▼ keys together for 5 seconds to activate the Child Lock function. The child lock icon will be displayed on the left side of the screen. All normal functions of the keys will be disabled.

2. To unlock the Child Lock function, press the SET key and the ▼ arrow together for 5 seconds. The child lock icon will disappear from the screen. All normal functions of the keys will be restored.

Temperature Compensation Setting

Note: This function requires the ON/OFF key LED to be turned OFF and the screen backlight to be illuminated.

Press and hold the FAN keys for 5 seconds, the current temperature compensation value is displayed in the upper right corner of the screen. (The default value is 00). Press the ▲▼ keys to change the temperature compensation value. The adjustment range is -07°F to +07°F. Press the SET key to confirm the setting. Press the MODE, FAN, TIME, or ON/OFF key to exit the function. If no key is pressed in 10 seconds, the function will also exit.

NOTE: The compensation value is used for ambient temperature and is valid only for the wired controller sensor.

WIRED CONTROLLER OPERATION

Settings & Functions

Sleep Function

NOTE: This function requires the ON/OFF key LED to be turned ON and the screen backlight to be illuminated.

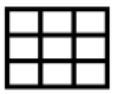
Press the SET key. The swing louver function icon will be displayed. Press the ▲▼ keys to advance through the functions to select the SLEEP function. The Sleep and Sleep "off" time icons will be displayed. (The Sleep icon will be flashing) Press the TIME key, the "off" icon will begin to flash. Press the ▲▼ keys to set the "off" time. (Time range is 0.5h to 72h) Press the SET key to confirm the setting. The Sleep function and "off" time icons will remain on.

If neither ▲▼ key is pressed within 10 seconds, or if the MODE, FAN, or ON/OFF keys are pressed prior to pressing the SET key, the setting function is canceled and reverts back to the previous setting.

To cancel the Sleep function. Press the SET key. The swing louver function icon will be displayed. Press the ▲▼ keys to advance through the functions to select the SLEEP function. The Sleep and Sleep "off" time icons will be displayed. (The Sleep icon will be flashing) Press the SET key to cancel the function.

Filter Cleaning

NOTE: This function requires the ON/OFF key LED to be turned ON and the screen backlight to be illuminated.



The Filter Cleaning icon will start flashing when the indoor unit has reached 500 hours of operating time.

After cleaning or replacing the filter, press the SET key to clear the icon and reset the operating time.

Heat Reclaim Ventilation

NOTE: This function requires the ON/OFF key LED to be turned ON and the screen backlight to be illuminated.

Press the SET key. The swing louver function icon will be displayed. Press the ▲▼ keys to advance through the functions to select the Heat Reclaim Ventilation function. (The icon will be flashing) Press the SET key to confirm the setting.

To cancel the Heat Reclaim Ventilation function, repeat the above steps.

If neither ▲▼ key is pressed within 10 seconds, or if the MODE, FAN, or ON/OFF keys are pressed prior to pressing the SET key, the setting function is canceled and reverts back to the previous setting.

This function is reserved for future models.

Other Functions

Note: These functions require the ON/OFF key LED to be turned OFF and the screen backlight to be illuminated.

Auto Restart

Setting DIP switch SW1-4 located on the PCB of the wired control to the "on" position will disable the auto restart function. When the switch is in the "off" position, auto-restart is enabled (default position). When the switch is in the "on" position, auto-restart is disabled.

Information retained in auto-restart are: Mode, Fan Speed, Temperature Setting, Swing State, and Heat Reclaim Ventilation function.

Communication Error of Wired Controller

If there is no communication between the wired controller and indoor unit for 4 minutes, when checking error codes, "07" will be displayed in the upper right corner of the display.

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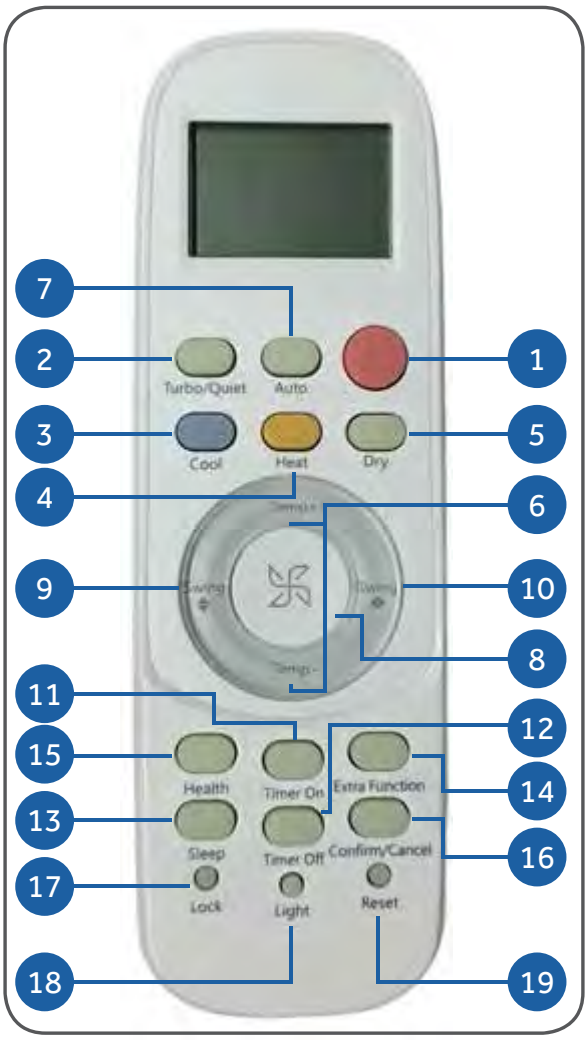
Section F - Wireless Remote Controller

Functions



1 Power Button

Press the ON/OFF button on the remote control to start the unit.

2 TURBO/QUIET Button

The TURBO function is used for fast heating or cooling.

Press the TURBO/QUIET button once and the remote control will display the TURBO icon on the bottom right side of the remote display and switch the unit to the TURBO function.

The QUIET function may be used when silence is needed for fast rest or reading. Press the TURBO/QUIET button again to switch to QUIET mode and the remote control will display the QUIET icon on the bottom left side of the remote display.

Press the TURBO/QUIET button a third time to cancel TURBO/QUIET and return to normal operation.

Note:
TURBO/QUIET modes are only available when the unit is under cooling or heating mode (not for auto or fan mode).

Running the unit in QUIET mode for a long period of time may cause the room temperature to not reach the set temperature. If this occurs, cancel QUIET mode and set the fan speed to a higher setting.

3 COOL Button

In COOL mode, the unit operates in cooling. When FAN is set to AUTO, the air conditioner automatically adjusts the fan speed according to room temperature. The will be displayed during COOL mode.

4 HEAT Button

In HEAT mode, warm air will blow out after a short period of the time due to cold-air prevention function. When FAN is set to AUTO, the air conditioner automatically adjusts the fan speed according to room temperature. The will be displayed during HEAT mode.

5 DRY Button

DRY mode is used to reduce humidity. In DRY mode, when room temperature becomes lower than temp. setting +2°F, unit will run intermittently at LOW speed regardless of FAN setting. The will be displayed during DRY mode.

6 Temperature +/- Buttons

Temp + Every time the button is pressed, the temperature setting increases.
Temp - Every time the button is pressed, temperature setting decreases.
The operating temperature range is 60°F-86°F.

7 AUTO Button

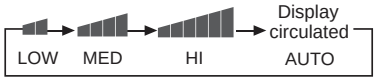
Under the mode of auto operation, the air conditioner will automatically select Cool, Heat, or Fan operation according to set temperature. When FAN is set to AUTO the air conditioner automatically adjusts the fan speed according to room temperature. The will be displayed during AUTO mode.

8 FAN Button

Fan speed selection

Press the FAN button. For each press, fan speed changes as follows:

Remote control:



The air conditioner fan will run according to the displayed fan speed.
When FAN is set to AUTO, the air conditioner automatically adjusts the fan speed according to room temperature.

WIRELESS REMOTE CONTROLLER OPERATION

9 Louver SWING Button - Vertical

Air Flow Direction Adjustment
Press the SWING UP/DOWN button to choose the position of the vertical airflow louvers.

Status display of air flow
COOL/DRY:

HEAT:

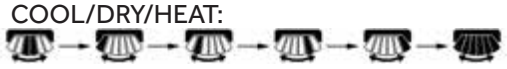
Caution:
- It is advisable not to keep the vertical louver in the downward position for an extended period of time in COOL or DRY mode, otherwise condensate water may form on the louver.
-

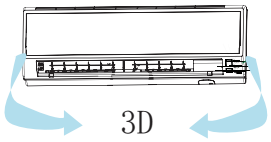
Note:
When turning the unit on, the remote control will automatically return the louver to the previous set swing position. When turning the unit off, the louver will rotate to the full open position prior to closing.

10 Louver SWING Button - Horizontal

Press the SWING UP/DOWN button to choose the position of the horizontal airflow louvers.

Status display of air flow
COOL/DRY/HEAT:





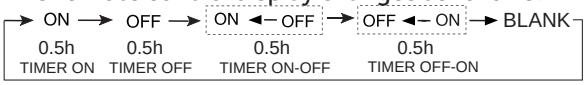
Caution:
- When humidity levels are high, condensate water may occur at the air outlet if all horizontal louvers are adjusted to left or right.

Note:
When turning the unit on, the remote control will automatically return the louver to the previous set swing position. When turning the unit off, the louver will rotate to the full open position prior to closing.

11 Timer ON Button

On-Off Operation
1. Start the unit and select the desired operating mode.
2. Press the TIMER ON button to enter the TIMER ON mode. The remote control will start flashing “ON”.
3. Every time the TIMER ON button is pressed the length of time increases in 0.5 hour increments between hours 0 and 12, and 1 hour increments for times between hours 12 and 24.
4. Once the desired length of time is selected for the unit to turn on, press the CONFIRM/CANCEL to confirm this setting.

The remote control display changes as follows:



Cancel TIMER ON setting:
With a TIMER ON set, press the CONFIRM/CANCEL button once to cancel the TIMER ON.

Turning the unit ON with the TIMER from it being OFF will look like this on the remote control display:

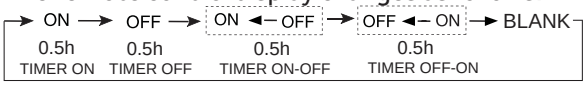
Note:
Holding the TIMER ON button down will rapidly cycle the time. After replacing batteries or a power failure occurs, the time setting will need to be reset.

According to the Time setting sequence of TIMER ON or TIMER OFF, either Start-Stop or Stop-Start can be achieved.

12 Timer OFF Button

On-Off Operation
1. Start the unit and select the desired operating mode.
2. Press the TIMER OFF button to enter the TIMER OFF mode. The remote control will start flashing “OFF”.
3. Every time the TIMER OFF button is pressed the length of time decreases in 0.5 hour increments between hours 0 and 12, and 1 hour increments for times between hours 12 and 24.
4. Once the desired length of time is selected for the unit to turn off, press the CONFIRM/CANCEL to confirm this setting.

The remote control display changes as follows:



Cancel TIMER OFF setting:
With a TIMER OFF set, press the CONFIRM/CANCEL button once to cancel the TIMER OFF.

Turning the unit OFF with the TIMER from it being ON will look like this on the remote control display:

Note:
Holding the TIMER OFF button down will rapidly cycle

the time. After replacing batteries or a power failure occurs, the time setting will need to be reset.

According to the Time setting sequence of TIMER ON or TIMER OFF, either Start-Stop or Stop-Start can be achieved.

13 SLEEP Button

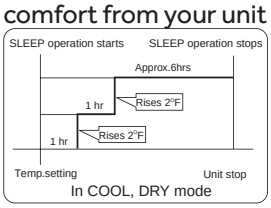
Sleep mode

Press the Extra Function button to enter additional options, cycle the button to display the icon, the icon will flash. Press the Confirm/Cancel button to enter the sleep function.

Sleep Operation Mode

1. SLEEP mode during COOL, DRY modes

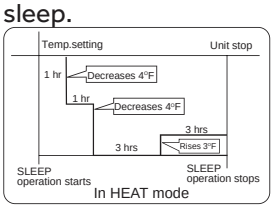
One hour after SLEEP mode starts, the temperature will rise 2°F above set temperature, after another hour, the temperature rises an additional 2°F. The unit will run for an additional six hours, then turns off. The final temperature is 4°F higher than the initial set temperature. Using this feature will help with achieving maximum efficiency and comfort from your unit while you sleep.



In COOL, DRY mode

2. SLEEP mode during HEAT mode

One hour after SLEEP mode starts, the temperature will decrease 4°F below set temperature, after another hour, the temperature will decrease an additional 4°F. After an additional three hours, the temperature will rise by 2°F. The unit will run for an additional three hours, then turns off. The final temperature is 6°F lower than the initial set temperature. Using this feature will help with achieving maximum efficiency and comfort from your unit while you sleep.



In HEAT mode

3. In AUTO mode

The unit operates in corresponding sleep mode adapted to the automatically selected operation mode.

Note:

-When the unit is set to sleep mode, the fan speed will be set to low speed and cannot be changed.

-When the TIMER function is set, the sleeping function cannot be set. If the sleeping function has been set, and the user sets the TIMER function, the sleeping function will be canceled, and the unit will be set to the timer function.

14 EXTRA FUNCTION Button

Function:

A) Refresh air - Feature not available on this series.

B) A-B Yard - This will allow you to control two separate units with a single remote control.

Note: this feature would be setup at the time of installation by the contractor.

C) Fan Mode - Is indicated by the icon. Only the fan will operate in this mode. See section 8 "FAN Button" for changing the fan settings.

D) Intelligent upward airflow, E) Intelligent downward airflow, F) Reset intelligent airflow position

1. Press the ON/OFF button on the remote control to turn the unit on.

Select the desired operating mode.

2. Setting the intelligent airflow function

Press the EXTRA FUNCTION button to enter additional options. Press this button repeatedly to access the louver settings. The louver icon will cycle through the following three settings.

Select the desired position, then press the CONFIRM/CANCEL button to set the function.

3. Canceling the intelligent airflow function

Press the EXTRA FUNCTION button to enter additional options. Press this button repeatedly to access the louver settings. Cycle the button to the louver icon "present" position, then press the CONFIRM/CANCEL button to cancel the function.

Notice: Do not reposition the horizontal louver by hand. This may cause the louver to run incorrectly and not match the icon displayed on the remote control. If the louver is not running correctly, turn the unit off for one minute, then back on, and adjust the louver setting with the remote control.

Note:

1. After setting the intelligent airflow function, the louver position is fixed.
2. In cooling, it is better to select the mode.
3. In heating, it is better to select the mode.
4. In cooling and dry modes, using the air conditioner for a long period of time under high humidity conditions, condensate water may form on the grille/louver.

G) Fahrenheit/Celsius mode shift on unit and remote - To switch between Fahrenheit and Celsius press the EXTRA FUNCTION button until either Celsius or Fahrenheit is displayed. Press the CONFIRM/CANCEL button to apply the change.

H) 50°F low temperature heating - Feature not available on this series.

I) Electrical heating - Feature not available on this series.

15 HEALTH Button

Feature not available on this series.

16 Confirm/Cancel Button

Function: Setting and canceling timer and other functions.

17 LOCK Button

Used to lock buttons and LCD display

18 LIGHT Button

Turns indoor unit display on and off

19 RESET Button

If the remote control is not functioning properly, use a pen point or similar object to depress this button to reset the remote.

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Model #: 1U24LP2VHA, 1U36LP2VHA,
1U48LP2VHA, AM24LP2VHA, AM36LP2VHA,
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Haier America,
Wayne, NJ 07470