INSTALLATION MANUAL FOR ROOM AIR CONDITIONER (Split Wall-Mounted Type)



Indoor Unit: 1PAMSH30-SZW-16 1PAMSH36-SZW-14.5

Outdoor Unit: 1PAMSH30-SZO-16 1PAMSH36-SZO-14.5

SAFETY PRECAUTIONS

- 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
- Contact an authorized service technician for repair, maintenance or installation of this unit.

 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.
- All the pictures in the instructions are for explanation purposes only. The actual shape should prevail.
 The design and specifications are subject to change without prior notice for product improvement.
- Consult with the sales agency or manufacturer for details.
- The seriousness is classified by the following indications.

MARNING WARNING	This symbol indicates the possibility of death or serious injury.
<u>CAUTION</u>	This symbol indicates the possibility of injury or damage to property.

WARNING

- 1) Install according to these installation instructions. If installation is defective, it will cause water leakage, electrical shock, or fire.
- 2) It will cause the unit to fall, have water leakage, give an electrical shock and/or cause a fire.
- 3) Install the indoor unit per these instructions. Make sure it is secured properly to the wall. If not installed properly the unit could drop or fall causing injury.

 4) An independent circuit breaker must be used for each indoor unit. If the circuit breaker is not sized
- properly, it will cause an electrical shock and/or a fire.
- 5) Use the specified cable and connect properly to the terminals. If the cable is not connected properly, it will cause a hot spot or fire at the connection.
- 6) Wiring routing must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed properly, it will overheat at connection point of terminal, fire or electrical shock.
- 7) When connecting the refrigerant piping, make sure no debris or foreign matter gets into the refrigerant piping

⚠ CAUTION

- 1) This equipment must be grounded properly. Follow the local and national codes when choosing the proper outdoor electrical disconnect. The unit will not run properly and could cause an electrical shock if not installed properly.
- 2) Do not install the unit at place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause fire.
- 3) Install condensate drain pipe as mentioned in the installation instructions. If drain is not installed properly, water could back up in the system causing water damage.

SELECT THE BEST LOCATION

Indoor unit

- There should not be any heat source or stream near the unit. • There should not be any obstacles blocking the
- air circulation.
- A place where air circulation in the room is good. Place where drainage can be easily done.
- Place where noise prevention is taken into
- consideration.
- Do not install the unit near the doorway.
- Ensure the spaces indicated by arrows from the wall, ceiling, fence or other obstacles.
- There should not be any direct sunlight. If unavoidable, sunlight prevention should be taken into consideration.

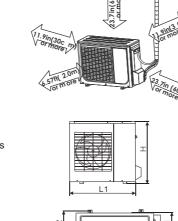
Outdoor unit

- If an awning is built over the unit to prevent direct sunlight or rain, be careful that heat radiation from the condenser is not obstructed. • There should not be any animal or plant which
- could be affected by hot air discharged.
- Keep the spaces indicated by arrow from wall ceiling, fence or other obstacles.
- Do not place any obstacles which may cause a short circuit of the discharged air.

Settlement of outdoor unit

 The outdoor unit should be installed on a concrete or plastic pad or mounted to a wall with the proper brackets and secured per local and national codes.

Outdoorunit dimension	Mounting dimensions		
inch(L1xHxW1)	L2(inch)	W2(inch)	
35.3 x 33.9 x 12.5	23.3	13.1	
39 x 38 x 13.6	24.6	14.4	



Otv

ACCESSORIES

Number Nems of Assessaries

	Number	per Name of Accessories			Qty		
	1	Installation	allation Plate			1	
	2	Self-Tapping Screw A ST3.9x25 Seal (For cooling & heating models only)			5-8 (depending on models)		
	3				5-8 (depending on models)		
	4				1		
	5				1		
	6	Connecting pipe Assembly	Liquid side	Ф1.	/4 " (6.35mm)		
				Ф3/8 " (9.52mm)		Parts you must purchase. The pipe	
			Gas side	Ф1/	/2 " (12.7mm)	size differs from appliance to appliance. Consult the technician for the proper	
				Ф5/8 " (16mm)		size.	
				Ф 3.	/8 " (9.52mm)		
	7 Remote Control		1				
8 Self-Tapping Screw B ST2.9x10 options		optional	2				
	9 Remote Control holder parts		1				

NOTE: Except the above parts provided, the other parts needed during installation you must purchase

FIT THE INSTALLATION PLATE

The mounting wall is strong and solid enough to prevent it from the vibration.

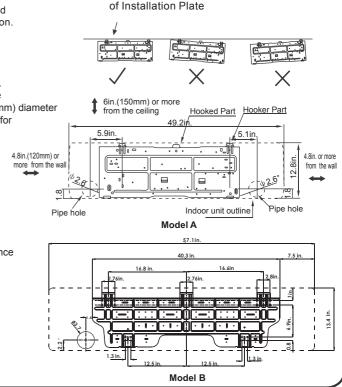
Fitthe InstallationPlate

- 1. Fit the installation plate horizontally on structural parts of the wall with spaces around the installation plate.
- 2. If the wall is made of brick, concrete or the like, drill eight (8) 0.2 inch (5mm) diameter holes in the wall. Insert Clip anchor for appropriate mounting screws.
- 3. Fit the installation plate on the wall with eight (8) type "A" screws.

NOTE:

Fit the Installation Plate and drill holes in the wall according to the wall structure and corresponding mounting points on the installation plate. The installation plate provided with the machine differs from appliance to appliance.

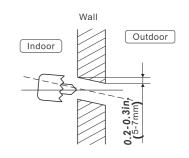
(Dimensions are in "inches" unless otherwise stated).



Correct orientation

DRILL A HOLE IN THE WALL

- 1. Determine hole positions according to left and right side of the installation plate. The hole center is obtained by measuring the distance as shown in the diagram above.
- 2. Dirll the piping plate hole with ϕ 2.5 inch (65mm) hole-core drill.
- 3. Drill the piping hole at either the right or the left and the hole should be slightly slanted to the outdoor side.



CONNECTIVE PIPE AND DRAINAGE INSTALLATION

Drainage

D

0

0

R

U

- 1. Run the drain hos e sloping down ward. Do not instal I the drain hose as illu strated in Figures
- 2. When conne cting extensio n drain hose, insulate the connecting part of extension drain hose with a shield pipe, do not let the drain hos e slack

Connective pipe installation

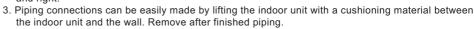
- 1. For the left-hand and right-hand piping, remove the pipe cover fro m the side p anel.
- 2. For the re ar-right-hand and rear-left-hand piping, install the piping as shown.
- 3. Bundle the tubing, connecting cable, and drain hose with tape securely, evenly as shown in Figure on the right.
- Because the condensed water from rear of the indoor unit is gathered in the drain pan and is piped out of room do not put anything else in the drain pan.

CAUTION

- Connect the indoor unit first, then the outdoor unit.
- Be careful no t to let the drain ho se slack.
- Heat insulated both of the auxiliary piping. • Be sure that the drain hose is located at
- the lowest side of the bundle. Locating at the upper sid e can cause drain pan to overflow in side the unit.
- Never intercross nor intertwist the power wire with any other wiring.
- Run the drain hose sloped downward to drain out the condensed water smoothly
- Both the liquid and suction refrigerant lines must be insulated.

Indoor unit installation

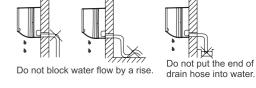
- 1. Pass the piping through the hole in the wall.
- 2. Hook the indoor unit onto the upper portion of installation plate (engage the indoor unit with the upper edge of the installation plate). Ensure the hooks are properly seated on the installation plate by moving it in left

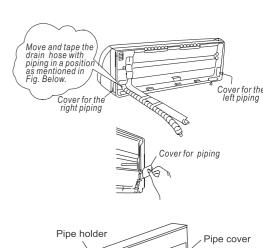


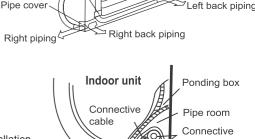
4. Press the lower left and right side of the unit against the installation plate until hooks engage with the

Outdoor unit installation

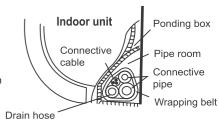
- 1. Install the outdoor unit on concrete or plastic pad or mount to a wall with the proper brackets and secure per local and national codes. Make sure the unit is level.
- 2. Make sure the unit has 12 inches of clearance on the back, 12 inches on the left side (as you face the unit), 24 inches on the right side and 6-1/2 feet in the front.
- 3. Install the outdoor unit in a location where the noise and vibration level with not be an issue.
- 4. Select a place so the warm air and noise from the outdoor unit does not disturb neighbors

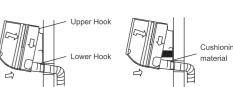


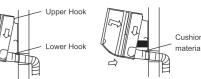




Left piping







Electric safety regulations for the initial Installation

- 1. If there is any safety concerns with the electrical power supply the technician should consult a certified electrician and have the problem resolved before installing the unit.
- 2. Power voltage should be in the range of 90%~110% of rated voltage.
- 3. The circuit breaker at the electrical panel should be no more than 1.5 times the max current of the outdoor unit. All the electrical information is located on the reverse side of the electrical cover on the on the outdoor unit. Follow all local and national electric codes.
- 4. Each outdoor unit must have its own circuit breaker
- 5. Install the proper sized electrical wire from the circuit breaker located at the electrical panel to an outdoor weather proof disconnect.
- 6. The outdoor unit must be grounded per code. If the unit is not grounded it will not operate per system specifications
- 7. Install a liquid tight electrical whip from the outdoor disconnect to the outdoor unit.
- 8. All wiring must comply with local and national codes and be installed by a certified electrician.

Minimum nominal cross-sectional area of conductors:

Rated current of appliance (A)	Nominal cross-sectional area (mm2)	
>3 and ≤6	0.75	
>6 and ≤10	1	
>10 and ≤16	1.5	
>16 and ≤25	2.5	
>25	4.0	

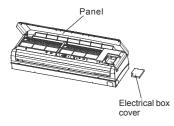
The cable size and the current of the fuse or switch are determined by the maximum current indicated on the nameplate which is located on the side panel of the unit. Please refer to the nameplate before selecting the cable, fuse and switch.

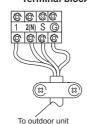
NOTE: The air conditioner can be connected only to a supply with system impedance no more than 0.0538 ohm. In case necessary, please consult your supply authority for system impedance information.

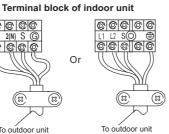
Connect the cable to the indoor unit

NOTE: Before performing any electrical work, turn off the power at the main panel to the unit.

- 1. The inside and outside connecting cable can be connected without removing the front grill.
- 2. The connecting cable required is: 14AWG, 600V, 4-conductor, direct burial, sun resistant. 3. Lift the indoor unit panel up, remove the electrical box cover by loosening the screw.
- 4. Ensure the color of wires of outdoor unit and the terminal Nos. are the same to the indoor units
- 5. Wrap those cables not connected with terminals with insulation tape, so that they will not touch any electrical components. Secure the cable onto the control board with the cord clamp.

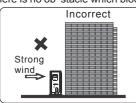


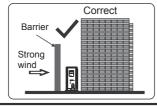




OUTDOOR INSTALLATION PRECAUTION

- Install the outdoor unit on a rig id base to p revent increasing noise level and vibration.
- Determine the air o utlet dire ction where the discharged air is not blocked.
- In the case that the in stallation place is exposed to strong wind such as a seaside, make sure the fan operates properly by putting the unit lengthwise along the wall or using a dust or shield plate
- In windy area, install the unit to prevent the admission of wind. If need suspending installation, the installation bracket should accord with technique requirement in the installation bracket diagram. The installation wall should be solid brick, concrete or the same intensity construction, or actions to reinforce, damping supporting should be taken.
- The connection between bracket and wall, bracket and the air conditioner should be firm stable and reliable.
- Be sure there is no ob stacle which block radiating air.

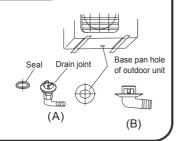




DRAIN JOINT INSTALLATION

NOTE: The drain joint is slightly different according to the different outdoor unit.

For the drain joint with the seal (Fig.A), first fit the seal onto the drain joint, then insert the drain joint into the base pan hole of outdoor unit, rotate 90° to securely assemble them. To install drain joint as shown in Fig.B, insert the drain joint into the base pan hole of outdoor unit until it remains fixed with a clicking sound. Connecting the drain joint with an extension drain hose (locally purchased), in case of the water draining off the outdoor unit during the heating mode.



REFRIGERANT PIPE CONNECTION

Flaring

- 1. Cut the copper tube with a pipe cutter. Clean and remove any burrs from the end of the pipe.
- 2. Remove the flare nuts attached to the indoor and outdoor unit. Slide the nuts on the copper tube.
- 3. Insert copper tube into a flaring block and use the table to determine how much tube should be above the block before flaring the tube. You can also figure the thickness of a nickel to use as a standard.

Outer diam.	A(inch)		
(Inch)	Max.	Min.	
Ф1/4	0.052	0.027	
Ф 3/8	0.063	0.04	
Ф1/2	0.071	0.04	
Φ 5/8	0.087	0.08	
Ф 3/4	0.095	0.08	

Tightening connection

- Align the tube to the proper connections on the indoor and outdoor units.
- Sufficiently tighten the flare nut with fingers, and then tighten it with a crescent wrench and torque wrench as shown.
- Excessive torque can break nut depending on installation conditions



6700 (683kgf.cm)

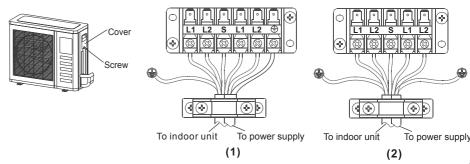
6500 (663kgf.cm)

ф 3/4

CONNECT THE CABLE TO THE OUTDOOR UNIT

- 1. Remove the eclectrical control board cover from the outdoor unit by loosening the screw. 2. Attach the electrical whip from the outdoor disconnect to the proper connections shown in the wiring diagram.
- 3. Connect the cable from the indoor unit as identified with their respective matching numbers on the terminal block of the indoor unit.
- 4. Secure the cables on the control board with the supplied clamp.
- 5. Do not allow any bare wires to touch any other wires or metal parts.

Terminal block of outdoor unit



AIR PURGING AND TEST OPERATION

1.Air purging

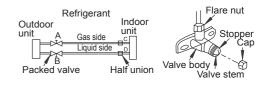
- Air and moisture in the refrigerant system have undesirable effects. Therefore, the indoor unit and tubing between the indoor and outdoor unit must be leak tested and evacuated to remove any noncondensables and moisture from the system.
- Check that each tube (both liquid and gas side tubes) between the indoor and outdoor units have been properly connected and all wiring for the test run has been completed.
- Pipe length and refrigerant amount:

Connective pipe length	Air purging method	Additional amount of refrigerant to be charged		
Less than 16.41ft(5m)	Use vacuum pump			
More than 16.41ft(5m)	Use vacuum pump	Liquid side: φ1/4 " (6.35mm) 9k,12k,18k R410A: 0.212 oz/ft	Liquid side: ϕ 3/8 " (9.52mm) : 22k, 30k, 36k R410A: 0.423 oz/ft	

- For the R407C refrigerant model, make sure the refrigerant added into air conditioner is liquid form in any case
- When relocating the unit to another place, use vacuum pump to perform evacuation.

CAUTION

- Open the valve stem until it hits against the stopper. Do not try to open it further.
- Securely tighten the valve stem cap with a spanner or the like.
- Valve stem cap tightening torque. See Tightening Torque Table.



Compound meter

Handle Lo

Charge hose

Manifold valve

Packed valve

Pressure gauge

Mmm

Handle Hi

Charge hose

Vacuum pump

2. When using the Vacuum Pump

- 1. Completely tighten the flare nuts, A, B, C, D, Connect the manifold valve charge hose to a charge port of the packed valve on the gas pipe side.
- 2. Connect the charge hose connection to the vacuum
- 3. Fully open the handle Lo of the manifold valve.
- 4. Operate the vacuum pump to evacuate. After starting evacuation, slightly loosen the flare nut of the packed valve on the gas pipe side and check that the air is entering. (Operation noise of the vacuum pump changes and a compound meter indicates 0 instead of minus)
- 5. After the evacuation is complete, fully close the handle Lo of the manifold valve and stop the operation of the vacuum pump.
- Make evacuation for 15 minutes and more and check that the compound meter indicates -76cmHg(-1.0x10⁵Pa).
- 6. Turn the stem of the packed valve B about 45° counterclockwise for 6~7 seconds after the gas coming out, then tighten the flare nut again. Make sure the pressure display in the pressure indicator is a little higher than the atmosphere pressure.
- 7. Remove the charge hose from the Low pressure charge hose.
- 8. Fully open the packed valve stems B and A.
- 9. Securely tighten the cap of the packed valve.

3. Safety and leakage check

1. Soapy water method:

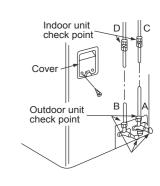
Apply a soapy water or a liquid neutral detergent on the indoor unit connections and outdoor unit connections by a soft brush to check for leakage of the connecting points of the piping. If bubbles come out, it indicates that the pipes have leakage.

Leak detector

Use the leak detector to check for leakage

CAUTION

A: Lo packed valve B: Hi packed valve C and D are ends of indoor unit connection



4. Test running

Perform test operation after completing gas leak check at the flare nut connections and electrical safety check

- Check that all tubing and wiring have been properly connected.
- Check that the gas and liquid side service valves are fully open. 1. Connect the power ,press the ON/OFF button on the remote control to turn the unit on.
- 2. Use the MODE button to select COOL, HEAT, AUTO and FAN to check if all the functions work
- 3. When the ambient temperature is too low (lower than 62.6°F(17°C)), the unit cannot be controlled by the remote control to run at cooling mode, manual operation can be taken. Manual operation is used only when the remote control is disabled or maintenance necessary.
- Hold the panel sides and lift the panel up to an angle until it remains fixed with a clicking sound.
- Press the Manual control button to select the AUTO or COOL, the unit will operate under Forced AUTO or COOL mode (see User Manual for details).
- 4. The test operation should last about 30 minutes.

