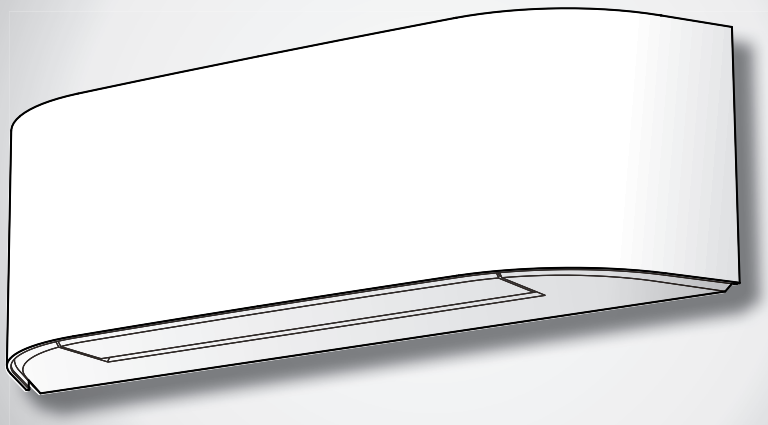
TOSHIBA

R32
INVERTER

INSTALLATION MANUAL

AIR CONDITIONER (MULTIPLE TYPE)



Indoor unit
RAS-M10S4KCVRG-SG
RAS-M13S4KCVRG-SG
RAS-M18S4KCVRG-SG

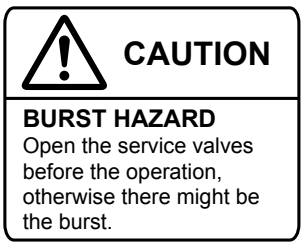
1129850115

EN **CONTENTS**

PRECAUTIONS FOR SAFETY

	Read the precautions in this manual carefully before operating the unit.		This appliance is filled with R32.

■ Warning indications on the air conditioner unit

Warning indication	Description
	**CAUTION** **BURST HAZARD** Open the service valves before the operation, otherwise there might be the burst.

- Before installation, please read these precautions for safety carefully.
- Be sure to follow the precautions provided here to avoid safety risks.
  The symbols and their meanings are shown below.

WARNING : It indicates that incorrect use of this unit may cause severe injury or death.

CAUTION : It indicates that incorrect use of this unit may cause personal injury (*1), or property damage (*2).

*1: Personal injury means a slight accident, burn, or electrical shock which does not require admission or repeated hospital treatment.

*2: Property damage means greater damage which affects assets or resources.

For general public use

Power supply cord and connecting cable of appliance use shall be at least polychloroprene sheathed flexible cord (design H07RN-F) or cord designation 60245 IEC66. (Shall be installed in accordance with national wiring regulations.)

CAUTION **To disconnect the appliance from the main power supply**

This appliance must be connected to the main power supply by means of a circuit breaker or a switch with a contact separation of at least 3 mm in all poles.

DANGER

- FOR USE BY QUALIFIED PERSONS ONLY.
- TURN OFF MAIN POWER SUPPLY BEFORE ATTEMPTING ANY ELECTRICAL WORK. MAKE SURE ALL POWER SWITCHES ARE OFF.
  FAILURE TO DO SO MAY CAUSE ELECTRIC SHOCK.
- CONNECT THE CONNECTING CABLE CORRECTLY. IF THE CONNECTING CABLE IS CONNECTED WRONGLY, ELECTRIC PARTS MAY BE DAMAGED.
- CHECK THE EARTH WIRE THAT IT IS NOT BROKEN OR DISCONNECTED BEFORE INSTALLATION.
- DO NOT INSTALL NEAR CONCENTRATIONS OF COMBUSTIBLE GAS OR GAS VAPORS.
  FAILURE TO FOLLOW THIS INSTRUCTION CAN RESULT IN FIRE OR EXPLOSION.
- TO PREVENT OVERHEATING THE INDOOR UNIT AND CAUSING A FIRE HAZARD, PLACE THE UNIT WELL AWAY (MORE THAN 2 M) FROM HEAT SOURCES SUCH AS RADIATORS, HEATERS, FURNACE, STOVES, ETC.
- WHEN MOVING THE AIR CONDITIONER FOR INSTALLING IT IN ANOTHER PLACE AGAIN, BE VERY CAREFUL NOT TO GET THE SPECIFIED REFRIGERANT (R32) WITH ANY OTHER GASEOUS BODY INTO THE REFRIGERATION CYCLE. IF AIR OR ANY OTHER GAS IS MIXED IN THE REFRIGERANT, THE GAS PRESSURE IN THE REFRIGERATION CYCLE BECOMES ABNORMALLY HIGH AND IT RESULTINGLY CAUSES BURST OF THE PIPE AND INJURIES ON PERSONS.
- IN THE EVENT THAT THE REFRIGERANT GAS LEAKS OUT OF THE PIPE DURING THE INSTALLATION WORK, IMMEDIATELY LET FRESH AIR INTO THE ROOM. IF THE REFRIGERANT GAS IS HEATED BY FIRE OR SOMETHING ELSE, IT CAUSES GENERATION OF POISONOUS GAS.

WARNING

- Never modify this unit by removing any of the safety guards or bypassing any of the safety interlock switches.
- Do not install in a place which cannot bear the weight of the unit.
  Personal injury and property damage can result if the unit falls.
- Before doing the electrical work, attach an approved plug to the power supply cord.
  Also, make sure the equipment is properly earthed.
- Appliance shall be installed in accordance with national wiring regulations.
  If you detect any damage, do not install the unit. Contact your dealer immediately.
- Do not use any refrigerant different from the one specified for complement or replacement.
  Otherwise, abnormally high pressure may be generated in the refrigeration cycle, which may result in a failure or explosion of the product or an injury to your body.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).
- Be aware that refrigerants may not contain an odour.
- Do not pierce or burn as the appliance is pressurized. Do not expose the appliance to heat, flame, sparks, or other sources or ignition. Else, it may explode and cause injury or death.
- A special tool for the R32 refrigerant is required for installation.
- Thickness of copper pipes used R32 must be more than 0.8 mm. Never use copper pipes thinner than 0.8 mm.
- After completion of installation or service, confirm there is no leakage of refrigerant gas. It may generate toxic gas when the refrigerant contacts with fire.
- When the indoor unit is connected with multi-split R32 outdoor unit 2M21, 3M31 3M41, 4M41 and 5M41.
  Please see IMS outdoor unit installation manual and consult your dealer about the minimum floor area.
- Comply with national gas regulations.
- Do not add any other devices without factory advice.

CAUTION

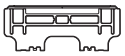
- Exposure of unit to water or other moisture before installation could result in electric shock.
  Do not store it in a wet basement or expose to rain or water.
- After unpacking the unit, examine it carefully for possible damage.
- Do not install the unit at place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause of fire.
- Do not install in a place that can increase the vibration of the unit. Do not install in a place that can amplify the noise level of the unit or where noise and discharged air might disturb neighbors.
- To avoid personal injury, be careful when handling parts with sharp edges.
- Please read this installation manual carefully before installing the unit. It contains further important instructions for proper installation.
- The manufacturer shall not assume any liability for the damage caused by not observing the description of this manual.

REQUIREMENT OF REPORT TO THE LOCAL POWER SUPPLIER

Please make absolutely sure that the installation of this appliance is reported to the local power supplier before installation. If you experience any problems or if the installation is not accepted by the supplier, the service agency will take adequate countermeasures.

■ **Important information regarding the refrigerant used**
This product contains fluorinated greenhouse gases.
Do not vent gases into the atmosphere.
Refrigerant type: **R32**
GWP(1) value: **675** * (ex. R32 ref. AR4)
(1)GWP = global warming potential
The refrigerant quantity is indicated on the unit name plate.
* This value is based on F gas regulation 517/2014

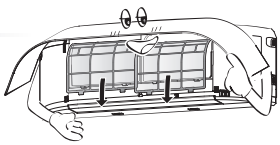
ACCESSORY AND INSTALLATION PARTS

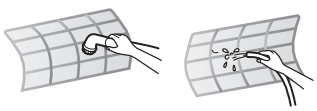
Indoor Unit			
No.	**Part name**	**No.**	**Part name**
①	 Installation plate × 1	②	 Wireless remote controller × 1
③	 Battery × 2	④	 Remote controller holder × 1
⑤	 Toshiba Ultra pure filter × 2	⑥	Mounting screw × 10
⑦	Flat head wood screw × 2	⑧	Screw × 2
⑨	 Owner's Manual × 1	⑩	 Installation Manual × 1
⑪	 B Label × 2 (for Multi model)		

Air filter

Clean every 2 weeks.

1. Open the air inlet grille.
2. Remove the air filters.
3. Vacuum or wash and then dry them.
4. Reinstall the air filters and close the air inlet grille.





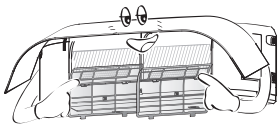
Filter

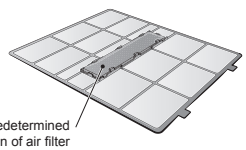
Maintenance & Shelf-life

Clean every 3-6 months when dust stuck or covers the filter.

1. Recommend to use vacuum to clean by sucking the dusts which stick or dip inside the filter or use the blower to blow the dust go out through the filter.
2. If necessary to use water to clean, simply use the plain water to wash the filter, dry with the sunlight for 3-4 hours or until it completely dry.
   Nevertheless, use hair drier to dry it. However, washing with water, it may reduce the performance of the filter.
3. Replace every 2 years or sooner. (contact your dealer to purchase new filter) **(P/N : RB-A622DA)**

Note: Filter life depends on the level of impurities in your operating environment. Higher levels of impurities may require more frequent cleaning and replacement. In all cases, we recommend an additional set of filters to improve the purifying and deodorizing performance of your air conditioner.





Decorative fabric

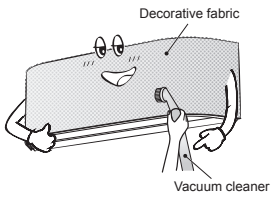
Maintenance & Shelf-life

Clean when dust stuck or covers the decorative fabric.

Take extra care when cleaning the decorative fabric.

Vacuum the decorative fabric with soft brush nozzle that use for cleaning on furniture or curtain.

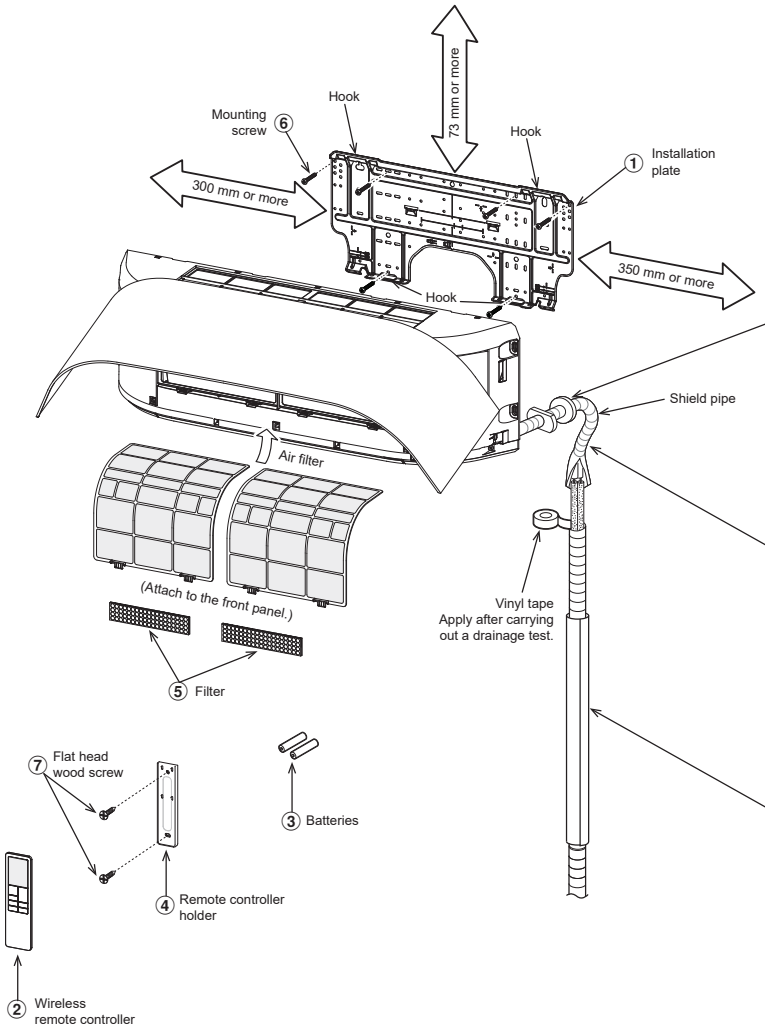
In case of getting heavy dirty on decorative fabric, please use dry cleaning service or wash by hand with warm water separated from other clothes (to avoid color staining), then line dry in the shade.



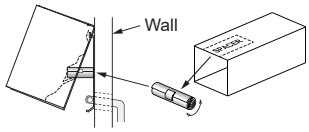
Note:

- Switch 'OFF' and unplug the air conditioner before removing the grille and decorative fabric.
- Ensure decorative fabric are completely dry before refitting to the grille.
- Do not put the decorative fabric in a dishwasher, washing machine, tumble dryer, oven, microwave or near an open flame.

INSTALLATION DIAGRAM OF INDOOR UNIT

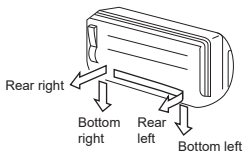


For the rear left and bottom left piping

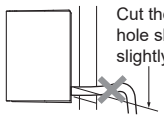


Cut out a piece of SPACER from indoor unit packaging box, roll it and insert between the indoor unit and wall to tilt the indoor unit for better operation.

The auxiliary piping can be connected to rear left, rear right, bottom right or bottom left.



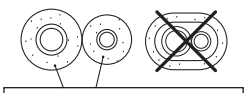
Do not allow the drain hose to get slack.



Make sure to run the drain hose sloped downward.

Refrigerant piping must be protected from physical damage.
Install a plastic cover or equivalent.

Insulate the refrigerant pipes separately with insulation, not together.



6 mm thick heat resisting polyethylene foam

Optional Installation Parts

Part code	Parts name	Q'ty
Ⓐ	Refrigerant piping Liquid side : Ø6.35 mm Gas side : Ø9.52 mm (RAS-M10, 13S4KCVRG-SG) : Ø12.70 mm (RAS-M18S4KCVRG-SG)	One each
Ⓑ	Pipe insulating material (polyethylene foam, 6 mm thick)	1
Ⓒ	Putty, PVC tapes	One each

INDOOR UNIT

Installation Place

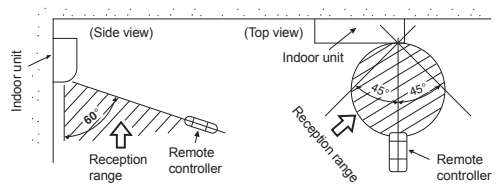
- A place which provides the spaces around the indoor unit as shown in the diagram
- A place where there are no obstacles near the air inlet and outlet
- A place which allows easy installation of the piping to the outdoor unit
- A place which allows the front panel to be opened
- The indoor unit shall be installed at least 2.5 m height. Also, it must be avoided to put anything on the top of the indoor unit.

CAUTION

- Direct sunlight to the indoor unit's wireless receiver should be avoided.
- The microprocessor in the indoor unit should not be too close to RF noise sources.
  (For details, see the owner's manual.)

Remote controller

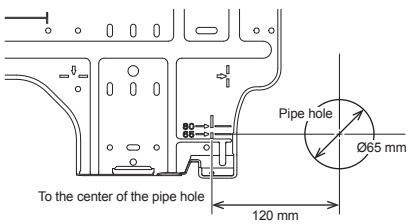
- A place where there are no obstacles such as a curtain that may block the signal from the indoor unit
- Do not install the remote controller in a place exposed to direct sunlight or close to a heating source such as a stove.
- Keep the remote controller at least 1 m apart from the nearest TV set or stereo equipment. (This is necessary to prevent image disturbances or noise interference.)
- The location of the remote controller should be determined as shown below.



Cutting a Hole and Mounting Installation Plate

Cutting a hole

When installing the refrigerant pipes from the rear

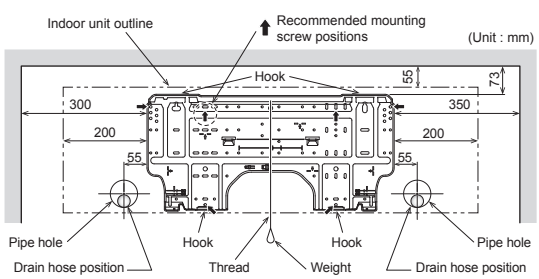


1. After determining the pipe hole position on the mounting plate (➡), drill the pipe hole (Ø65 mm) at a slight downward slant to the outdoor side.

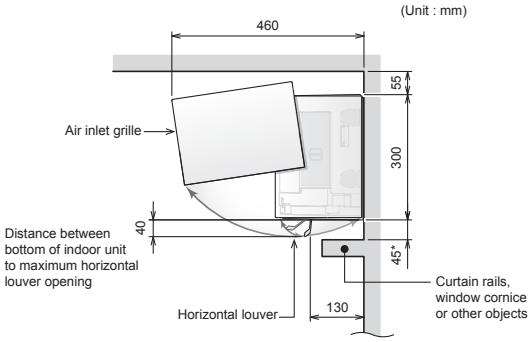
NOTE

- When drilling a wall that contains a metal lath, wire lath or metal plate, be sure to use a pipe hole brim ring sold separately.

Mounting the installation plate



- Space allows for moving range of the air inlet grille and horizontal louver in operation above curtain rails, window cornice or other objects.



CAUTION

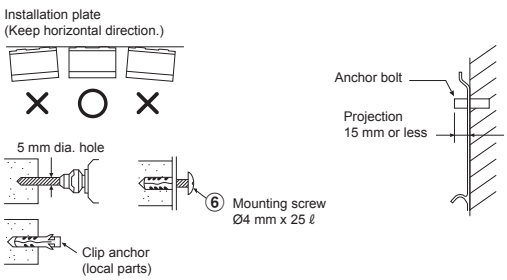
- If have curtain rails, window cornice or other objects, allow space from the indoor unit should be 45 mm or more.
- If allow space is less than 45 mm, this can affect the opening and closing of the air inlet grille and the horizontal louver.
- However, there should be no objects in the air outlet position. It will block the air flow direction and drop performance.

When the installation plate is directly mounted on the wall

1. Securely fit the installation plate onto the wall by screwing it in the upper and lower parts to hook up the indoor unit.
2. To mount the installation plate on a concrete wall with anchor bolts, use the anchor bolt holes as illustrated in the below figure.
3. Install the installation plate horizontally in the wall.

CAUTION

When installing the installation plate with a mounting screw, do not use the anchor bolt holes. Otherwise, the unit may fall down and result in personal injury and property damage.



CAUTION

Failure to firmly install the unit may result in personal injury and property damage if the unit falls.

- In case of block, brick, concrete or similar type walls, make 5 mm dia. holes in the wall.
- Insert clip anchors for appropriate mounting screws ⑥.

NOTE

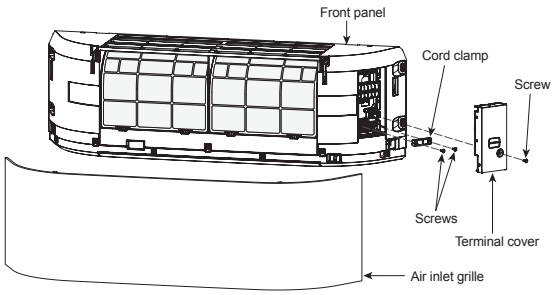
- Secure four corners and lower parts of the installation plate with 4 to 6 mounting screws to install it.

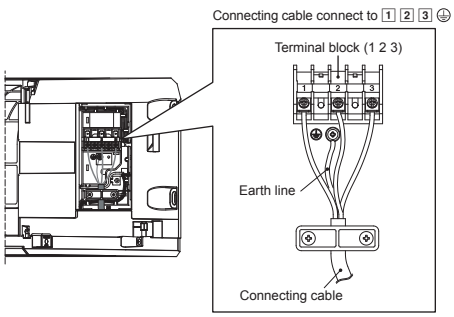
Wiring Connection

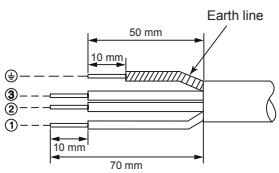
Indoor unit

Wiring of the connecting cable can be carried out without removing the front panel.

1. Remove the air inlet grille.
   Open the air inlet grille upward and pull it toward you.
2. Remove the terminal cover and cord clamp.
3. Insert the connecting cable (according to the local cords) into the pipe hole on the wall.
4. Take out the connecting cable through the cable slot on the rear panel so that it protrudes about 20 cm from the front.
5. Insert the connecting cable fully into the terminal block and secure it tightly with screws.
6. Tightening torque : 1.2 N·m (0.12 kgf·m)
7. Secure the connecting cable with the cord clamp.
8. Fix the terminal cover, rear plate bushing and air inlet grille on the indoor unit.





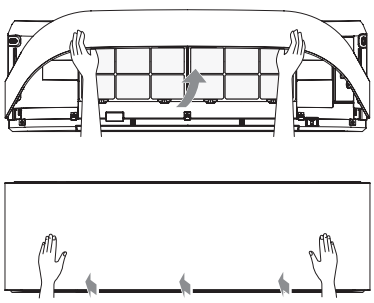


NOTE

- Use stranded wire only.
- Wire type : More than H07RN-F or 60245 IEC66 (1.5 mm² or more)

How to install the air inlet grille on the indoor unit

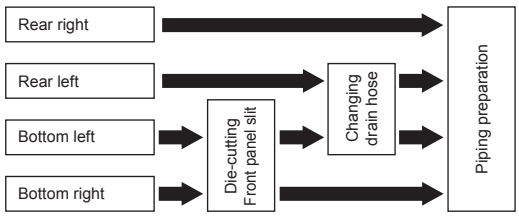
- When attaching the air inlet grille, the contrary of the removed operation is performed.



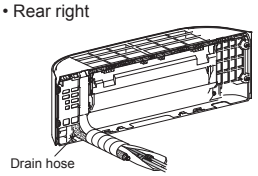
Piping and Drain Hose Installation

Piping and drain hose forming

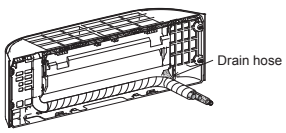
- Since dewing results in a machine trouble, make sure to insulate both connecting pipes. (Use polyethylene foam as insulating material.)
- The connection of pipes can be installed in the following directions.



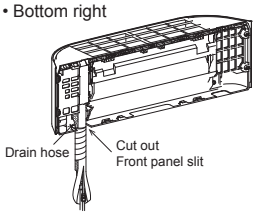
• Rear right



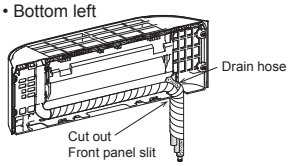
• Rear left



• Bottom right



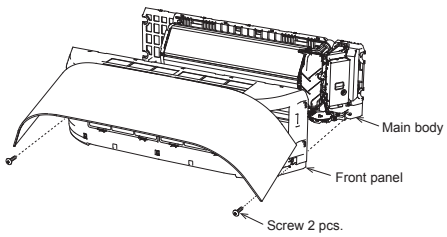
• Bottom left



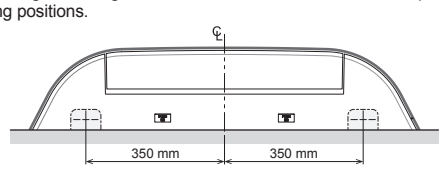
1. **Die-cutting Front panel slit**
   - Cut out the slit on the bottom left or bottom right side of the Front panel for the bottom left or bottom right connection with a coping saw.
2. **Changing drain hose**
   - The factory default of the drain hose is installed on the right side.
   - For bottom-leftward connection and rear leftward connection's piping, it is necessary to change the drain hose and drain cap.

How to cutting the Front panel

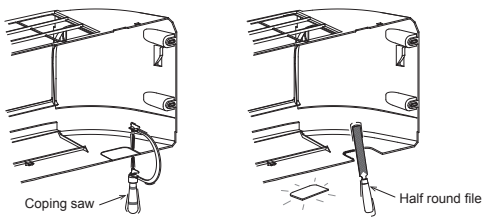
- To connect piping to the bottom side, the Front panel must be cut off.
- The front panel can be removed by removing 2 screws securing then secure remove the front panel from the main body.



- The marking for cutting are indicated on the inside of the Front panel in the following positions.



- Cut off the pipe exist from inside of Front panel using a coping saw or an equivalent tool.
- The plastic burrs from the cutting process should be removed with a half round file or an equivalent tool.

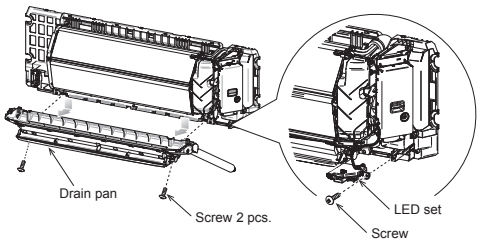


CAUTION

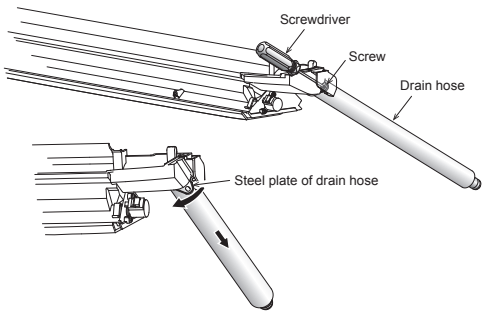
When cutting the Front panel, be careful of cutting tools and any sharp edges of plastic. It can cause injuries.

How to remove the drain hose

- Removed fixing screw of LED set then pull out it from the main body.
- Removed 2 screws to fix drain pan then secure remove the drain pan from the main body.

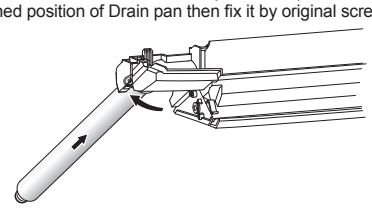


- The drain hose can be removed by removing the screw securing the drain hose then secure rotate steel plate of drain hose to out of the Drain pan and pulling out the drain hose.



How to fix the drain hose

- To install the drain hose, insert the drain hose firmly until the connection part contacts with heat insulator, secure push steel plate of drain hose to predetermined position of Drain pan then fix it by original screw.

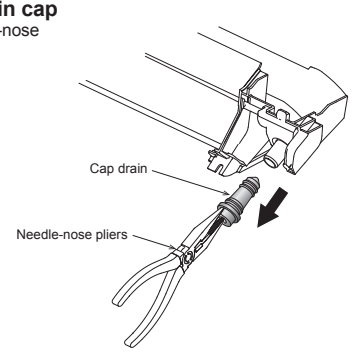


CAUTION

When removing or install the drain hose, be careful of any sharp edges of steel plate. The edges can cause injuries.

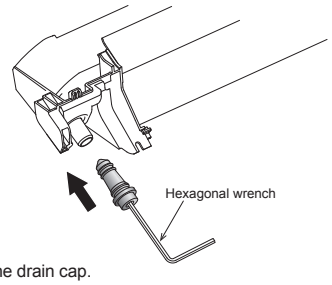
How to remove the drain cap

- Clip the drain cap by needle-nose pliers and pull out.

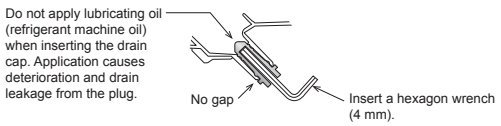


How to fix the drain cap

- Insert hexagonal wrench (dia. 4 mm) in a center head.



- Firmly insert the drain cap.



CAUTION

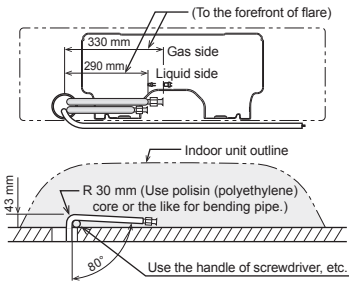
Firmly insert the drain hose and drain cap; otherwise, water may leak.

Left-hand connection with piping

- Bend the connecting pipe so that it is laid within 43 mm above the wall surface. If the connecting pipe is laid exceeding 43 mm above the wall surface, the indoor unit may unstably be set on the wall.
  When bending the connecting pipe, make sure to use a spring bender so as not to crush the pipe.

Bend the connecting pipe within a radius of 30 mm.

To connect the pipe after installation of the unit (figure)

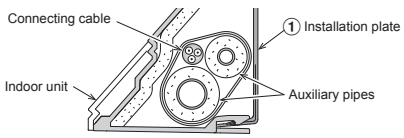


NOTE

If the pipe is bent incorrectly, the indoor unit may unstably be set on the wall. After passing the connecting pipe through the pipe hole, connect the connecting pipes to the auxiliary pipes and wrap the facing tape around them.

CAUTION

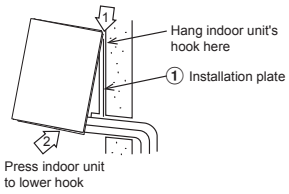
- Bind the auxiliary pipes (two) and connecting cable with facing tape tightly.



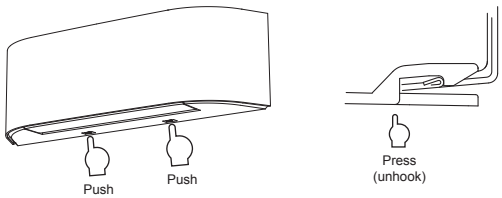
- Carefully arrange pipes so that any pipe does not stick out of the rear plate of the indoor unit.
- Carefully connect the auxiliary pipes and connecting pipes to one another and cut off the insulating tape wound on the connecting pipe to avoid double-taping at the joint;
  moreover, seal the joint with the vinyl tape, etc.
- Since dewing results in a machine trouble, make sure to insulate both connecting pipes. (Use polyethylene foam as insulating material.)
- When bending a pipe, carefully do it, not to crush it.

Indoor Unit Fixing

1. Pass the pipe through the hole in the wall and hook the indoor unit on the installation plate at the upper hook.
2. Swing the indoor unit to right and left to confirm that it is firmly hooked up on the installation plate.
3. While pressing the indoor unit onto the wall, hook it at the lower part on the installation plate. Pull the indoor unit toward you to confirm that it is firmly hooked up on the installation plate.



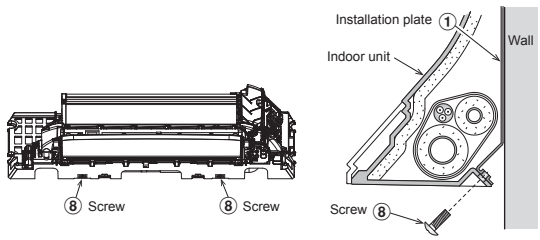
- For detaching the indoor unit from the installation plate, pull the indoor unit toward you while pushing its bottom up at the specified parts.



CAUTION

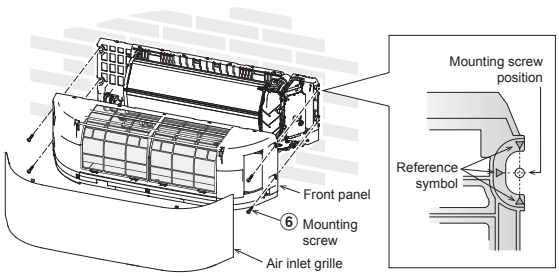
MOUNTING INDOOR UNIT TO THE INSTALLATION PLATE

- The lower part of indoor unit may float, due to the condition of piping and installer cannot fix it to the installation plate. In that case, use the screws provided to fix the indoor unit with the installation plate.
- Especially when the pipes are pulled out to the left side, the indoor unit must be screwed to the installation plate.



DIRECTLY MOUNTING INDOOR UNIT TO THE WALL

- In case left side or right of indoor unit may float, the provided screws should be used to fix the indoor unit directly to the wall at the predetermined position.
- In the case of block, brick, concrete or similar type wall, determining the mount screw position on the wall can be used symbol (►) on the main body of indoor unit for drill hole to insert clip anchors for appropriate mounting screw.

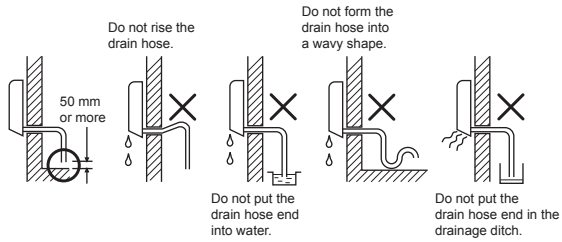


Drainage

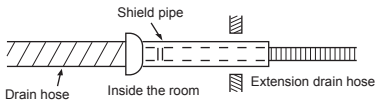
1. Run the drain hose sloped downwards.

NOTE

- The hole should be made at a slight downward slant on the outdoor side.



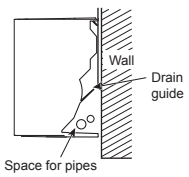
2. Put water in the drain pan and make sure that the water is drained out of doors.
3. When connecting extension drain hose, insulate the connecting part of extension drain hose with shield pipe.



CAUTION

Arrange the drain pipe for proper drainage from the unit.
Improper drainage can result in dew-dropping.

This air conditioner has the structure designed to drain water collected from dew, which forms on the back of the indoor unit, to the drain pan. Therefore, do not store the power cord and other parts at a height above the drain guide.



OTHERS

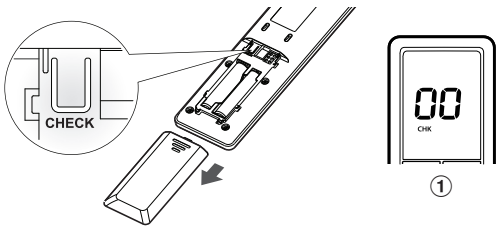
Remote Control A-B Selection

- When two indoor units are installed in the same room or adjacent two rooms, if operating a unit, two units may receive the remote control signal simultaneously and operate. In this case, the operation can be preserved by setting either one remote control to B setting. (Both are set to A setting in factory shipment.)
- The remote control signal is not received when the settings of indoor unit and remote control are different.
- There is no relation between A setting/B setting and A room/B room when connecting the piping and cables.

To separate using of remote control for each indoor unit in case of 2 air conditioner are installed near.

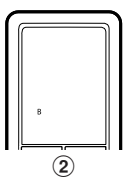
Remote Control B Setup.

1. Press [RESET] button on the indoor unit to turn the air conditioner ON.
2. Point the remote control at the indoor unit.
3. Push and hold [CHECK] button on back side of Remote Control. "00" will be shown on the display (Picture ①).



①

4. Press [MODE] during pushing [CHECK]. "B" will show on the display and "00" will disappear and the air conditioner will turn OFF. The Remote Control B is memorized (Picture ②).

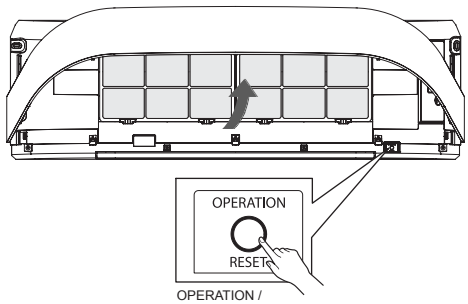


②

Note : 1. Repeat above step to reset Remote Control to be A.
2. Remote Control A have not "A" display.
3. Default setting of Remote Control from factory is A.

Test Operation

To switch the TEST RUN (COOL) mode, press [RESET] button for 10 seconds. (The beeper will make a short beep.)



OPERATION / RESET Button

Auto Restart Function Setting

This product is designed so that, after a power failure, it can restart automatically in the same operating mode as before the power failure.

Information

The product was shipped with Auto Restart function in the OFF position. Turn it ON as required.

How to turn ON the Auto Restart Function

- Press and hold the [OPERATION] button on the indoor unit for 3 seconds (3 Beep sound and OPERATION lamp blink 5 time/sec for 5 seconds).

How to turn OFF the Auto Restart Function

- Press and hold the [OPERATION] button on the indoor unit for 3 seconds (3 Beep sound but OPERATION lamp does not blink).

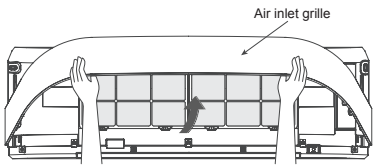
NOTE

- In case of ON timer or OFF timer are set, AUTO RESTART OPERATION does not activate.

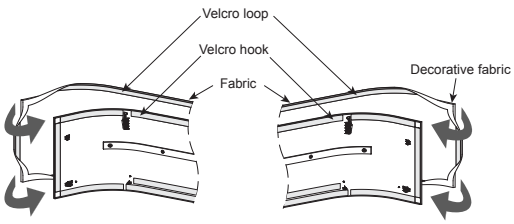
Decorative Fabric Installation

The decorative fabric for cover on the air inlet grille of indoor unit was put in the accessories. User can use it as required.
The method of installation is as follows.

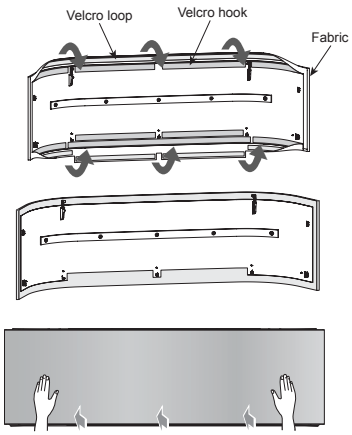
1. Remove the air inlet grille.
   Open the air inlet grille upward and pull it toward you.
   As shown on figure as below.



2. Prepare the fabric that you choose for install.
3. Insert the fabric into the left and right side of the air inlet grille and adjust corner position of decorative fabric is smooth.
   Attach the hook and loop of velcro tape fully together.
   As shown on figure as below.



4. Insert the fabric into the top and bottom side of the air inlet grille.
   Attach the hook and loop of velcro tape fully together.
   As shown on figure as below.



5. Reassembly the air inlet grille by reverse process of 1.

NOTE

- The tightness of the fabric depends on attaching the hook and loop of velcro around the air inlet grille, take appropriate action.

CAUTION

- If clean decorative fabric by washing, it may affect to appearance and fitting of the decorative fabric.
  Recommend to use vacuum cleaner to removing the dusts from decorative fabric.

APPENDIX

Work instructions

The existing R22 and R410A piping can be reused for inverter R32 product installations.

⚠ WARNING

Confirming the existence of scratches or dents on the existing pipes and confirming the reliability of the pipe strength are conventionally referred to the local site.
If the specified conditions can be cleared, it is possible to update existing R22 and R410A pipes to those for R32 models.

Basic conditions needed to reuse existing pipes

Check and observe the presence of three conditions in the refrigerant piping works.

1. **Dry** (There is no moisture inside of the pipes.)
2. **Clean** (There is no dust inside of the pipes.)
3. **Tight** (There are no refrigerant leaks.)

Restrictions for use of existing pipes

In the following cases, the existing pipes should not be reused as they are. Clean the existing pipes or exchange them with new pipes.

1. When a scratch or dent is heavy, be sure to use new pipes for the refrigerant piping works.
2. When the existing pipe thickness is thinner than the specified "Pipe diameter and thickness," be sure to use new pipes for the refrigerant piping works.
   - The operating pressure of R32 is high (1.6 times that of R22). If there is a scratch or dent on the pipe or a thinner pipe is used, the pressure strength may be inadequate, which may cause the pipe to break in the worst case.

* **Pipe diameter and thickness (mm)**

Pipe outer diameter		Ø6.4	Ø9.5	Ø12.7
Thickness	R32, R410A	0.8	0.8	0.8
	R22			

3. When the outdoor unit was left with the pipes disconnected, or the gas leaked from the pipes and the pipes were not repaired and refilled.
   - There is the possibility of rain water or air, including moisture, entering the pipe.
4. When refrigerant cannot be recovered using a refrigerant recovery unit.
   - There is the possibility that a large quantity of dirty oil or moisture remains inside the pipes.
5. When a commercially available dryer is attached to the existing pipes.
   - There is the possibility that copper green rust has been generated.
6. When the existing air conditioner is removed after refrigerant has been recovered.
   Check if the oil is judged to be clearly different from normal oil.
   - The refrigerator oil is copper rust green in color: There is the possibility that moisture has mixed with the oil and rust has been generated inside the pipe.
   - There is discolored oil, a large quantity of residue, or a bad smell.
   - A large quantity of shiny metal dust or other wear residue can be seen in the refrigerant oil.
7. When the air conditioner has a history of the compressor failing and being replaced.
   - When discolored oil, a large quantity of residue, shiny metal dust, or other wear residue or mixture of foreign matter is observed, trouble will occur.
8. When temporary installation and removal of the air conditioner are repeated such as when leased etc.
9. If the type of refrigerator oil of the existing air conditioner is other than the following oil (Mineral oil), Suniso, Freol-S, MS (Synthetic oil), alkyl benzene (HAB, Barrel-freeze), ester series, PVE only of ether series.
   - The winding-insulation of the compressor may deteriorate.

NOTE

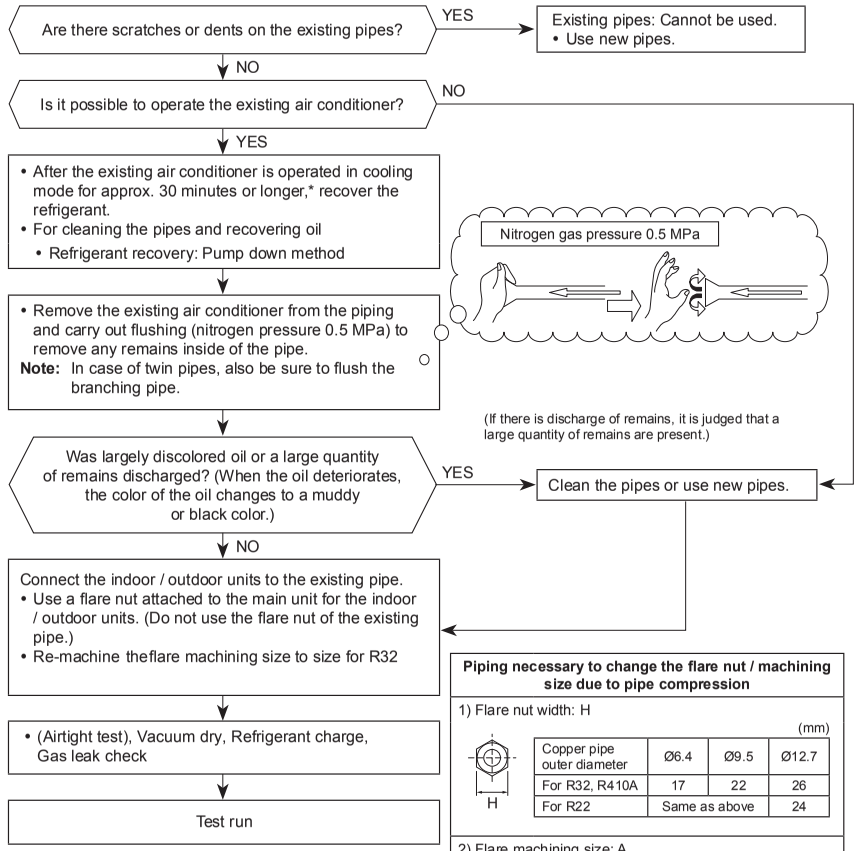
The above descriptions are results have been confirmed by our company and represent our views on our air conditioners, but do not guarantee the use of the existing pipes of air conditioners that have adopted R32 in other companies.

Curing of pipes

When removing and opening the indoor or outdoor unit for a long time, cure the pipes as follows:

- Otherwise rust may be generated when moisture or foreign matter due to condensation enters the pipes.
- The rust cannot be removed by cleaning, and new pipes are necessary.

Placement location	Term	Curing manner
Outdoors	1 month or more	Pinching
	Less than 1 month	Pinching or taping
Indoors	Every time	



Piping necessary to change the flare nut / machining size due to pipe compression

1) Flare nut width: H

(mm)

Copper pipe outer diameter	Ø6.4	Ø9.5	Ø12.7
For R32, R410A	17	22	26
For R22	Same as above		24

2) Flare machining size: A

(mm)

Copper pipe outer diameter	Ø6.4	Ø9.5	Ø12.7
For R32, R410A	9.1	13.2	16.6
For R22	9.0	13.0	16.2

Becomes a little larger for R32

Do not apply refrigerator oil to the flare surface.

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