

Always read before installation.

# **AISIN *GHP*** Aisin INDOOR UNITS **INSTALLATION AND MAINTENANCE INSTRUCTIONS** [ Model ] 4-way cassette Type

## ■ Applicable models

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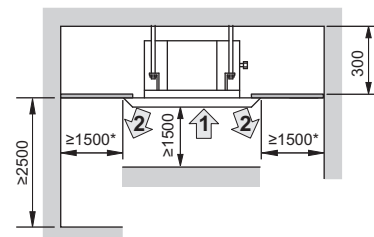
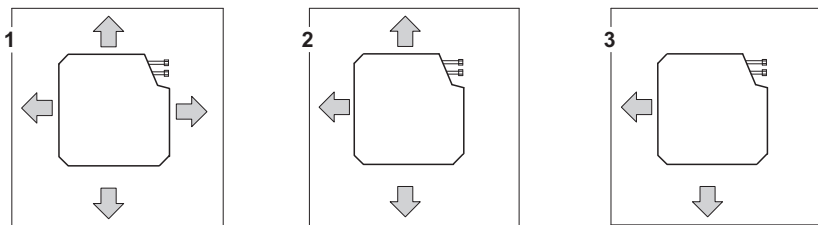
AXJP22A2D  
AXJP28A2D  
AXJP36A2D  
AXJP45A2D  
AXJP56A2D

## ■ Important reminder

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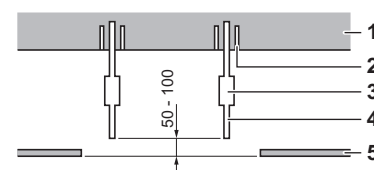
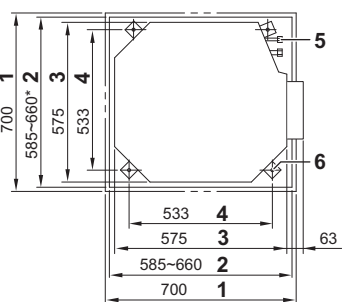
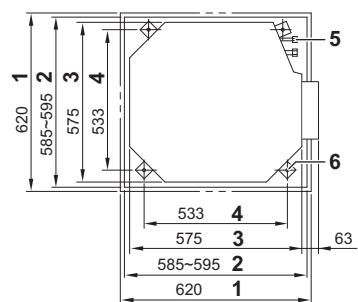
- THOROUGHLY READ THESE INSTRUCTIONS BEFORE STARTING THE INSTALLATION AND FOLLOW ALL PROCEDURES DESCRIBED WITHIN.
- KEEP THIS MANUAL IN A HANDY PLACE FOR FUTURE REFERENCE.

After installation, always use the checklist to perform a final inspection.

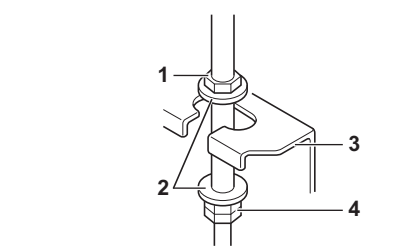
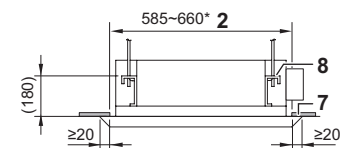
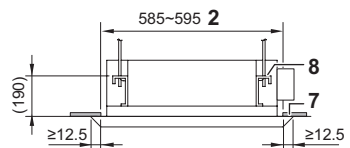


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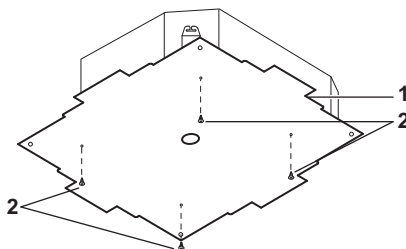
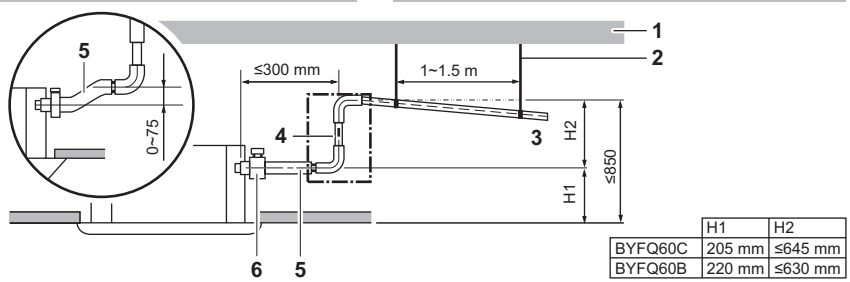
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**3.1**

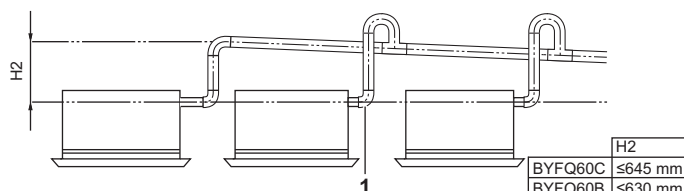
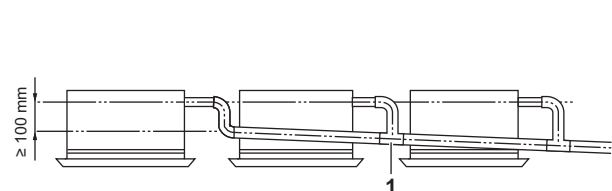
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**5**



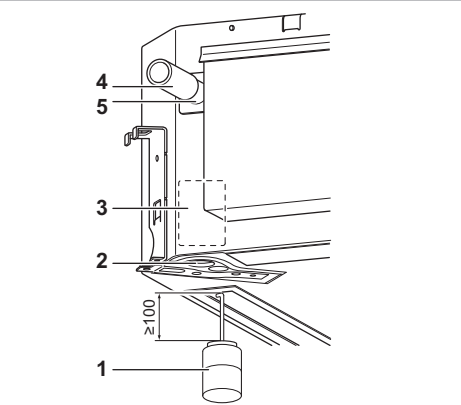
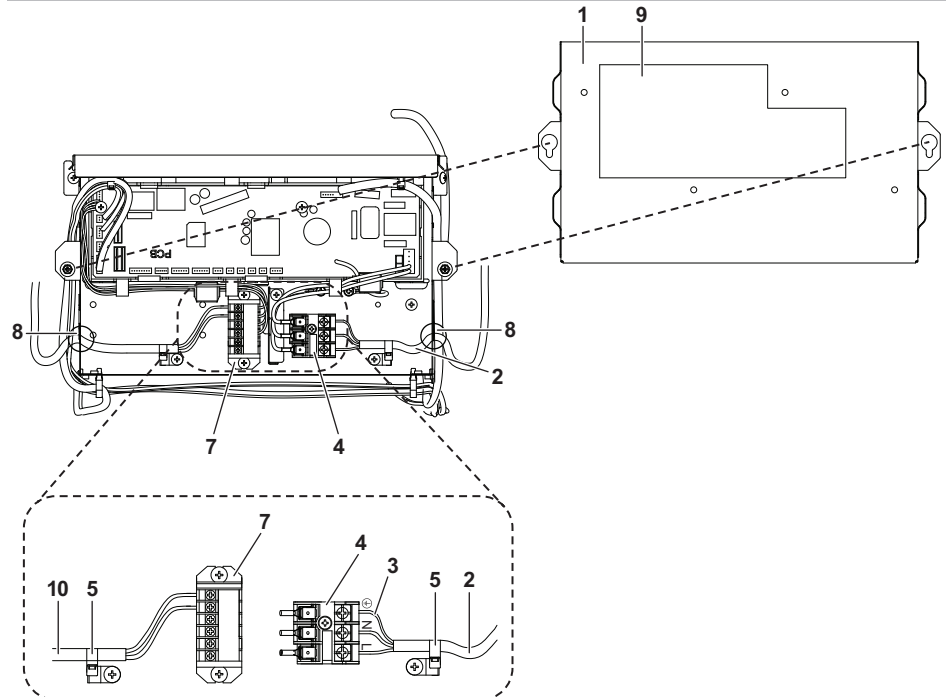
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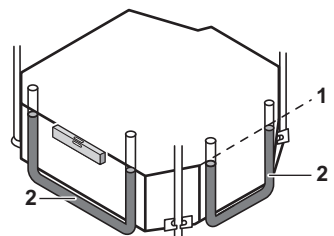


**8**

**10**



**11**



## EC Declaration of Conformity

### Dichiarazione di Conformità CE



**WE:** TECNOCASA S.p.A.  
**La:** VIA MANZONI 17  
60025 Loreto (AN)  
ITALY

**Declare under its own responsibility that the units:**

Dichiara sotto la sua Responsabilità che le Unità interne:

**Type:**

Tipo:

AXJP22A2D	AXJP28A2D	AXJP36A2D	AXJP45A2D	AXJP56A2D	
AXFP22AVD	AXFP28AVD	AXFP36AVD	AXFP45AVD	AXFP56AVD	AXFP90AVD
AXFP112 AVD	AXFP140AVD				
AXMP45P7D	AXMP56P7D	AXMP71P7D	AXMP90P7D	AXMP112P7D	AXMP140P7D
AXMP224P7D	AXMP280P7D				
AXAP22PAD	AXAP28PAD	AXAP36PAD	AXAP45PAD	AXAP56PAD	AXAP71PAD
AXLP22P2D	AXLP28P2D	AXLP36P2D	AXLP45P2D	AXLP56P2D	AXLP71P2D
AXCP22AVD	AXCP28AVD	AXCP36AVD	AXCP45AVD	AXCP56AVD	AXCP71AVD
AXCP90AVD	AXCP112AVD	AXCP140AVD			
AXSP22P7D	AXSP28P7D	AXSP36P7D	AXSP45P7D	AXSP56P7D	AXSP71P7D
AXSP90P7D	AXSP112P7D	AXSP140P7D			
AXHP36AVD	AXHP71AVD	AXHP112AVD			
AXDP22P7D	AXDP28P7D				

**Brand:** AISIN SEIKI CO.LTD

Marca:

**Serial number:** See the number on the unit label

N° di serie: vedere il numero sulla targa dati

**Year of production:** See the year on the unit label

Anno di produzione: vedere il numero sulla targa dati

**Comply with following Directives of the council of the European Community:**

**E' conforme alle seguenti Direttive della Comunità Europea:**

- 1) Directive 98/37/CE and subsequent modification, relating to machinery  
Direttiva 98/37/CE e successive modifiche, relativa alle Macchine
- 2) Directive 2006/95/CE and subsequent modification, relating to low voltage LVD  
Direttiva 2006/95/CE e successive modifiche, relativa alla Bassa Tensione LVD
- 3) Directive 2004/108/CE and subsequent modification, relating to electromagnetic compatibility EMC  
Direttiva 2004/108/CE e successive modifiche, relative alla compatibilità elettromagnetica EMC

Date: Loreto 01 Aprile 2014

Name:

TECNOCASA S.p.A.

Position:

Mr.Mogliani Graziano

Signature:

*Legal Representative*

TECNOCASA S.p.A.  
Via Manzoni, 17  
60025 LORETO - AN  
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Part. IVA 01051530424

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**READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION. KEEP THIS MANUAL IN A HANDY PLACE FOR FUTURE REFERENCE.**

IMPROPER INSTALLATION OR ATTACHMENT OF EQUIPMENT OR ACCESSORIES COULD RESULT IN ELECTRIC SHOCK, SHORT-CIRCUIT, LEAKS, FIRE OR OTHER DAMAGE TO THE EQUIPMENT. BE SURE ONLY TO USE ACCESSORIES MADE BY DAIKIN WHICH ARE SPECIFICALLY DESIGNED FOR USE WITH THE EQUIPMENT AND HAVE THEM INSTALLED BY A PROFESSIONAL.

IF UNSURE OF INSTALLATION PROCEDURES OR USE, ALWAYS CONTACT YOUR DAIKIN DEALER FOR ADVICE AND INFORMATION.

The English text is the original instruction. Other languages are translations of the original instructions.

## Before installation

- Leave the unit inside its packaging until you reach the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, this to avoid damage or scratches to the unit. When unpacking the unit or when moving the unit after unpacking, be sure to lift the unit by holding on to the hanger bracket without exerting any pressure on other parts, especially on refrigerant piping, drain piping and other resin parts.
- Refer to the installation manual of the outdoor unit for items not described in this manual.
- Caution concerning refrigerant series R410A:  
The connectable outdoor units must be designed exclusively for R410A.

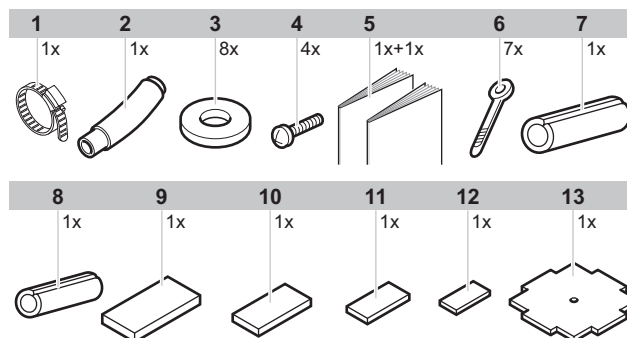
## Precautions

- 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.

- This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons.
- Do not install or operate the unit in rooms mentioned below.
  - Places with mineral oil, or filled with oil vapour or spray like in kitchens. (Plastic parts may deteriorate.)
  - Where corrosive gas like sulphurous gas exists. (Copper tubing and brazed spots may corrode.)
  - Where volatile flammable gas like thinner or gasoline is used.
  - Where machines generating electromagnetic waves exist. (Control system may malfunction.)
  - Where the air contains high levels of salt such as air near the ocean and where voltage fluctuates a lot (e.g. in factories). Also in vehicles or vessels.
- When selecting the installation site, use the supplied paper pattern for installation.
- Do not install accessories on the casing directly. Drilling holes in the casing may damage electrical wires and consequently cause fire.
- Sound pressure level is less than 70dB(A).

## Accessories

Check if the following accessories are included with your unit.



- 1 Metal clamp
- 2 Drain hose
- 3 Washer for hanger bracket
- 4 Screw
- 5 Installation and operation manual
- 6 Clamp
- 7 Insulation for fitting for gas pipe
- 8 Insulation for fitting for liquid pipe
- 9 Large sealing pad
- 10 Medium 1 sealing pad
- 11 Medium 2 sealing pad
- 12 Small sealing pad
- 13 Paper pattern for installation (included in top tray)

## Optional accessories

- There are two types of remote controllers: wired and wireless. Select a remote controller according to customers request and install in an appropriate place. Refer to catalogues and technical literature for selecting a suitable remote controller.
- This indoor unit requires installation of an optional decoration panel.

**For the following items, take special care during construction and check after installation is finished**

Tick ✓ when checked	
☐	Is the indoor unit fixed firmly? The unit may drop, vibrate or make noise.
☐	Is the gas leak test finished? It may result in insufficient cooling or heating.
☐	Is the unit fully insulated? Condensate water may drip.
☐	Does drainage flow smoothly? Condensate water may drip.
☐	Does the power supply voltage correspond to that shown on the name plate? The unit may malfunction or components may burn out.
☐	Are wiring and piping correct? The unit may malfunction or components may burn out.
☐	Is the unit safely grounded? Dangerous at electric leakage.
☐	Is the wiring size according to specifications? The unit may malfunction or components may burn out.
☐	Is nothing blocking the air outlet or inlet of either the indoor or outdoor units? It may result in insufficient cooling or heating.
☐	Are refrigerant piping length and additional refrigerant charge noted down? The refrigerant charge in the system might not be clear.

**Notes to the installer**

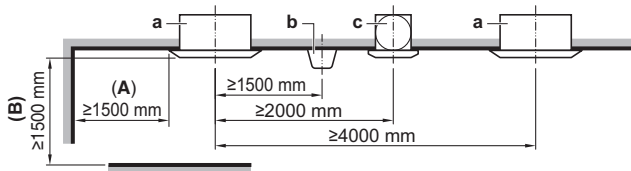
- Read this manual carefully to ensure correct installation. Be sure to instruct the customer how to properly operate the system and show him/her the enclosed operation manual.
- Explain to the customer what system is installed on the site. Be sure to fill out the appropriate installation specifications in the chapter "What to do before operation" of the outdoor unit operation manual.

**Selecting installation site**

When the conditions in the ceiling are exceeding 30°C and a relative humidity of 80%, or when fresh air is inducted into the ceiling, an additional insulation is required (minimum 10 mm thickness, polyethylene foam).

For this unit you can select different air flow directions. It is necessary to purchase an optional blocking pad kit to discharge the air in 3 or 4 (closed corners) directions.

Install the unit so that air vents, lights, or machines near the unit do not interfere with the air flow.



- a Indoor unit
- b Lighting  
The figure describes about a ceiling lighting, but a recessed ceiling light is not restricted.
- c Air fan
- A If the air outlet is closed, space marked (A) should be 500 mm at least. In addition, if both the right and left corner of this air outlet are closed, space marked (A) should be 200 mm at least.
- B ≥1500 mm from any static volume

- 1 Select an installation site where the following conditions are fulfilled and that meets your customer's approval.
  - Where optimum air distribution can be ensured.
  - Where nothing blocks air passage.
  - Where condensate water can be properly drained.
  - Where the false ceiling is not noticeably on an incline.
  - Where sufficient clearance for maintenance and service can be ensured.
  - Where there is no risk of flammable gas leaking.
  - The equipment is not intended for use in a potentially explosive atmosphere.
  - Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual of the outdoor unit.)
  - Keep indoor unit, outdoor unit, inter unit wiring and remote controller wiring at least 1 meter away from televisions and radios. This is to prevent image interference and noise in those electrical appliances. (Noise may be generated depending on the conditions under which the electric wave is generated, even if 1 meter is kept.)
  - When installing the wireless remote controller kit, the distance between wireless remote controller and indoor unit might be shorter if there are fluorescent lights who are electrically started in the room. The indoor unit must be installed as far as possible away from fluorescent lights.

**2 Ceiling height**

This indoor unit may be installed on ceilings up to 3.5 m in height. However, it becomes necessary to make field settings using the remote controller when installing the unit at a height over 2.7 m.

To avoid accidental touching, it is recommended to install the unit higher than 2.5 m.

Refer to "Field setting" on page 8 and to the decoration panel installation manual.

**3 Air flow directions**

Select the air flow directions best suited to the room and point of installation. (For air discharge in 3 directions, it is necessary to make field settings by means of the remote controller and to close the air outlet(s). Refer to the installation manual of the optional blocking pad kit and to "Field setting" on page 8. (See figure 1) (↕: air flow direction)

- 1 All-round air discharge
- 2 Air discharge in 4 directions
- 3 Air discharge in 3 directions

**NOTE** Air flow directions as shown in figure 1 merely serve as examples of possible air flow directions.

**4 Use suspension bolts for installation. Check whether the ceiling is strong enough to support the weight of the indoor unit. If there is a risk, reinforce the ceiling before installing the unit.**

(The installation pitch is marked on the paper pattern for installation. Refer to it to check for points requiring reinforcing.) Space required for installation see figure 2 (↕: air flow direction)

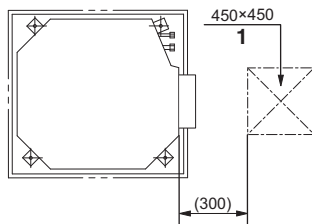
- 1 Air discharge
- 2 Air inlet

**NOTE** Leave 200 mm or more space where marked with \*, on sides where the air outlet is closed.

## Preparations before installation

- 1 Relation of ceiling opening to unit and suspension bolt position.  
In case of decoration panel  
BYFQ60C: See [figure 3.1](#)  
BYFQ60B: See [figure 3.2](#)
  - 1 Decoration panel dimensions
  - 2 Ceiling opening dimensions
  - 3 Indoor unit dimensions
  - 4 Suspension bolt pitch dimensions
  - 5 Refrigerant piping
  - 6 Suspension bolt (x4)
  - 7 False ceiling
  - 8 Hanger bracket
- Install the inspection opening on the control box side where maintenance and inspection of the control box and drain pump are easy.

- 1 Inspection opening



In case of decoration panel BYFQ60B

**NOTE** Installation is possible with a ceiling dimension of 660 mm (marked with\*). However, to achieve a ceiling-panel overlapping dimension of 20 mm, the spacing between the ceiling and the unit should be 45 mm or less. If the spacing between ceiling and the unit is over 45 mm, attach ceiling material to the part or recover the ceiling.

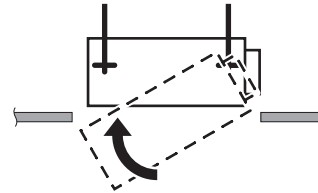
- 2 Make the ceiling opening needed for installation where applicable. (For existing ceilings.)
  - Refer to the paper pattern for installation for the ceiling opening dimensions.
  - Create the ceiling opening required for installation. From the side of the opening to the casing outlet or inspection opening, implement the refrigerant and drain piping and wiring for remote controller (unnecessary for wireless type). Refer to each piping or wiring section.
  - After making an opening in the ceiling, it may be necessary to reinforce ceiling beams to keep the ceiling level and to prevent it from vibrating. Consult the builder for details.
- 3 Install the suspension bolts. (Use either a M8~M10 size bolt.)  
Use anchors for existing ceilings, and a sunken insert, sunken anchors or other field supplied parts for new ceilings to reinforce the ceiling in order to bear the weight of the unit. Adjust clearance from the ceiling before proceeding further.  
Installation example (See [figure 4](#))
  - 1 Ceiling slab
  - 2 Anchor
  - 3 Long nut or turn-buckle
  - 4 Suspension bolt
  - 5 False ceiling

**NOTE** ■ All the above parts are field supplied.  
■ For other installation than standard installation, contact your dealer for details.

## Indoor unit installation

When installing optional accessories (except for the decoration panel), read also the installation manual of the optional accessories. Depending on the field conditions, it may be easier to install optional accessories before the indoor unit is installed. However, for existing ceilings, always install fresh air intake kit before installing the unit.

- 1 Install the unit in the ceiling opening.
  - Attach the hanger bracket to the suspension bolt. Be sure to fix it securely by using a nut and washer from the upper and lower sides of the hanger bracket.
  - Securing the hanger bracket (See [figure 5](#))
    - 1 Nut (field supply)
    - 2 Washer (supplied with the unit)
    - 3 Hanger bracket
    - 4 Double nut (field supply, tighten)



- 2 Fix the paper pattern for installation. (For new ceilings only.)
  - The paper pattern for installation corresponds with the measurements of the ceiling opening. Consult the builder for details.
  - The centre of the ceiling opening is indicated on the paper pattern for installation. The centre of the unit is indicated on the unit casing.
  - After removing the packaging material from the paper pattern for installation, attach the paper pattern for installation to the unit with the attached screws as shown in [figure 7](#).
    - 1 Paper pattern for installation
    - 2 Centre of the ceiling opening
    - 3 Centre of the unit
    - 4 Screws (supplied with the unit)
- 3 Adjust the unit to the right position for installation.  
(See "[Preparations before installation](#)" on page 3.)
- 4 Check if the unit is horizontally levelled.
  - Do not install the unit tilted. The indoor unit is equipped with a built-in drain pump and float switch. (If the unit is tilted against the direction of the condensate flow (the drain piping side is raised), the float switch may malfunction and cause water to drip.)
  - Check if the unit is levelled at all four corners with a water level or a water-filled vinyl tube as shown in [figure 11](#).
    - 1 Water level
    - 2 Vinyl tube
- 5 Remove the paper pattern for installation. (For new ceilings only.)

## Refrigerant piping work

For refrigerant piping of outdoor unit, refer to the installation manual supplied with the outdoor unit.

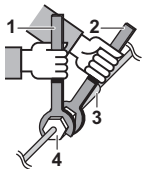
Execute heat insulation work completely on both sides of the gas piping and liquid piping. Otherwise, this can sometimes result in water leakage.

Before rigging tubes, check which type of refrigerant is used.



Installation shall be done by a licensed refrigeration technician, the choice of materials and installation shall comply with the applicable national and international codes. In Europe, EN378 is the applicable standard that shall be used.

- Use a pipe cutter and flare suitable for R410A refrigerant.
- To prevent dust, moisture or other foreign matter from infiltrating the tube, either pinch the end, or cover it with tape.
- The outdoor unit is charged with refrigerant.
- To prevent water leakage, execute heat insulation work completely on both sides of the gas and liquid piping. When using a heat pump, the temperature of the gas piping can reach up to approximately 120°C, use insulation which is sufficiently heat resistant.
- Be sure to use both a spanner and torque wrench together when connecting or disconnecting pipes to/from the unit.



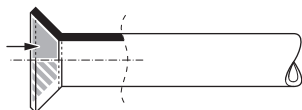
- 1 Torque wrench
- 2 Spanner
- 3 Piping union
- 4 Flare nut

- Do not mix anything other than the specified refrigerant, such as air, etc. inside the refrigerant circuit.
- Only use annealed material for flare connections.
- Refer to Table 1 for the dimensions of flare nut spaces and the appropriate tightening torque. (Overtightening may damage the flare and cause leaks.)

Table 1

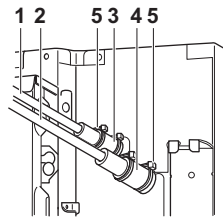
Pipe gauge	Tightening torque	Flare dimension A (mm)	Flare shape
Ø6.4	15~17 N•m	8.7~9.1	
Ø9.5	33~39 N•m	12.8~13.2	
Ø12.7	50~60 N•m	16.2~16.6	

- When connecting the flare nut, coat the flare inner surface with ether oil or ester oil and initially tighten 3 or 4 turns by hand before tightening firmly.



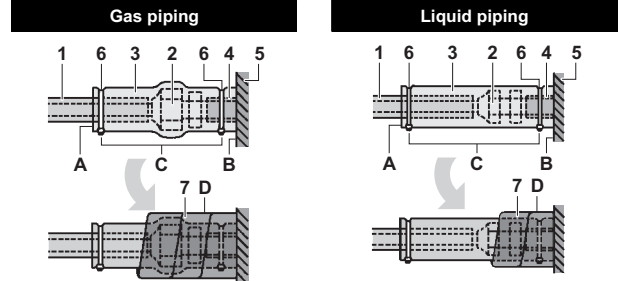
- If the refrigerant gas leaks during the work, ventilate the area. A toxic gas is emitted by the refrigerant gas being exposed to a fire.
- Make sure there is no refrigerant gas leak. A toxic gas may be released by the refrigerant gas leaking indoor and being exposed to flames from an area heater, cooking stove, etc.

- Finally, insulate as shown in the figure below (use the supplied accessory parts)



- 1 Liquid pipe
- 2 Gas pipe
- 3 Insulation for fitting for liquid pipe
- 4 Insulation for fitting for gas pipe
- 5 Clamps (use 2 clamps per insulation)

### Piping insulation procedure



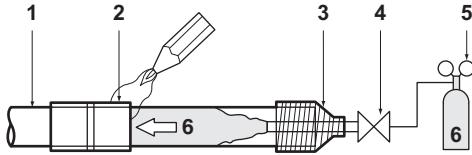
- 1 Piping insulation material (field supply)
- 2 Flare nut connection
- 3 Insulation for fitting (delivered with the unit)
- 4 Piping insulation material (main unit)
- 5 Main unit
- 6 Clamp (field supply)
- 7 Medium 1 sealing pad for gas piping (delivered with the unit)  
Medium 2 sealing pad for liquid piping (delivered with the unit)
- A Turn seams up
- B Attach to base
- C Tighten the part other than the piping insulation material
- D Wrap over from the base of the unit to the top of the flare nut connection



- For local insulation, be sure to insulate local piping all the way into the pipe connections inside the unit. Exposed piping may cause condensation or may cause burns when touched.
- Make sure that no oil remains on plastic parts of the decoration panel (optional equipment). Oil may cause degradation and damage to plastic parts.

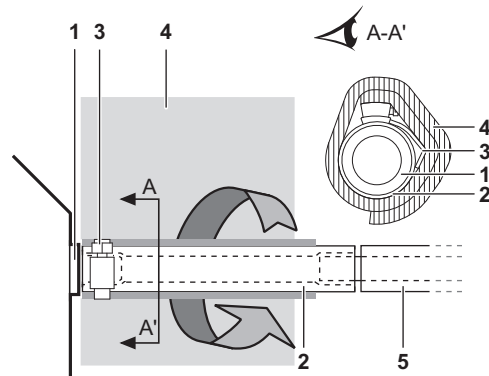
## Cautions for brazing

- Be sure to carry out a nitrogen blow when brazing. Brazing without carrying out nitrogen replacement or releasing nitrogen into the piping will create large quantities of oxidized film on the inside of the pipes, adversely affecting valves and compressors in the refrigerating system and preventing normal operation.
- When brazing while inserting nitrogen into the piping, nitrogen must be set to 0.02 MPa with a pressure-reducing valve (=just enough so that it can be felt on the skin).



- Refrigerant piping
- Part to be brazed
- Taping
- Hands valve
- Pressure-reducing valve
- Nitrogen

- After the testing of drain piping is finished, attach the drain sealing pad (4) supplied with the unit over the uncovered part of the drain socket (= between drain hose and unit body).

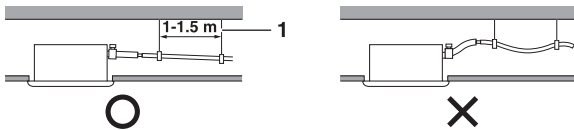


- Drain socket (attached to the unit)
- Drain hose (supplied with the unit)
- Metal clamp (supplied with the unit)  
NOTE: Bend the tip of the metal clamp without tearing the sealing.
- Large sealing pad (supplied with the unit)
- Drain piping (field supply)

## Drain piping work

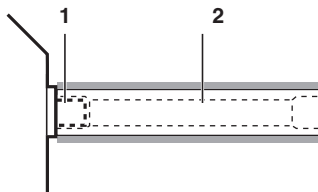
### Installation of drain piping

Install the drain piping as shown in the figure and take measures against condensation. Improperly rigged piping could lead to leaks and eventually wet furniture and belongings.



- Hanging bar

- Install the drain pipes.
  - Keep piping as short as possible and slope it downwards at a gradient of at least 1/100 so that air may not remain trapped inside the pipe.
  - Keep pipe size equal to or greater than that of the connecting pipe (vinyl pipe of 20 mm nominal diameter and 26 mm outer diameter).
  - Push the supplied drain hose as far as possible over the drain socket.



- Drain socket (attached to the unit)
- Drain hose (supplied with the unit)

- Tighten the metal clamp as indicated in the illustration.

- Wrap the supplied large sealing pad over the metal clamp and drain hose to insulate and fix it with clamps.
- Insulate the complete drain piping inside the building (field supply).
- If the drain hose cannot be sufficiently set on a slope, fit the hose with drain raising piping (field supply).

- How to perform piping (See figure 6)

- Ceiling slab
- Hanger bracket
- Adjustable range
- Drain raising pipe (nominal diameter of vinyl pipe = 25 mm)
- Drain hose (supplied with the unit)
- Metal clamp (supplied with the unit)

- Connect the drain hose to the drain raising pipes, and insulate them.
- Connect the drain hose to the drain outlet on the indoor unit, and tighten it with the clamp.

- Precautions

- Install the drain raising pipes at a height of less than H2.
- Install the drain raising pipes at a right angle to the indoor unit and no more than 300 mm from the unit.
- To prevent air bubbles, install the drain hose level or slightly tilted up ( $\leq 75$  mm).
- Drain pump mounted in this unit is high lift type. Characteristic of this pump is that the higher pump is the lower drainage sound becomes. Therefore drain pump height of 300mm is recommended.

Decoration panel	H2
BYFQ60C	645 mm
BYFQ60B	630 mm

**NOTE** The incline of attached drain hose should be 75 mm or less so that the drain socket does not have to withstand additional force.

To ensure a downward slope of 1:100, install hanging bars every 1 to 1.5 m.

When unifying multiple drain pipes, install the pipes as shown in figure 8. Select converging drain pipes whose gauge is suitable for the operating capacity of the unit.

- T-joint converging drain pipes



## Testing of drain piping

After the piping work is finished, check if drainage flows smoothly.

- Add approximately 1 l of water gradually through the air discharge outlet.

Method of adding water (See figure 10)

- 1 Plastic watering can (tube should be about 100 mm long)
- 2 Service drain outlet (with rubber plug) (Use this outlet to drain water from the drain pan)
- 3 Drain pump location
- 4 Drain pipe
- 5 Drain socket (water flow view point)

- Check the drainage flow.

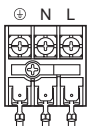
- In case electric wiring work is finished  
Check drainage flow during COOL running, explained in "Test operation" on page 9.

- In case electric wiring work is not finished

- Remove the control box lid by means of two screws. Connect the single-phase power supply (50 Hz, 230 V) to connections No. 1 and No. 2 on the inter unit wiring terminal block and connect the ground wire firmly (see figure 9).
- Reattach the control box lid and turn on the power.
- Do not touch the drain pump. It may result in electric shock.

- 1 Control box lid
- 2 Inter unit wiring
- 3 Earth cable
- 4 Terminal block for power supply
- 5 Clamp
- 6 Transmission wiring
- 7 Terminal board for transmission wiring
- 8 Opening for cables
- 9 Wiring diagram label (on the back side of the control box lid)
- 10 Remote controller wiring

Terminal block for power supply (4)

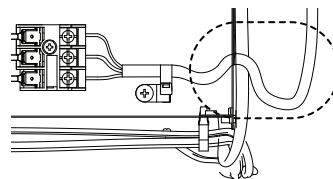


- Confirm the drain operation looking at the drain socket.
- After checking the drainage flow, turn off power, remove the control box lid and disconnect the single phase power supply from the inter unit wiring terminal block again. Attach the control box lid as before.

## Electric wiring work

### General instructions

- All field wiring and components must be installed by a licensed electrician and must comply with relevant European and national regulations.
- Use copper wire only.
- Follow the 'Wiring diagram' attached to the unit body to wire the outdoor unit, indoor units and the remote controller. For details on hooking up the remote controller, refer to the "Installation manual of the remote controller".
- All wiring must be performed by an authorized electrician.
- A main switch or other means for disconnection, having a contact separation in all poles, must be incorporated in the fixed wiring in accordance with relevant local and national legislation. Note that the operation will restart automatically if the main power supply is turned off and then turned back on again.
- Refer to the installation manual attached to the outdoor unit for the size of power supply electric wire connected to the outdoor unit, the capacity of the earth leakage circuit breaker and fuse, and wiring instructions.
- Be sure to ground the air conditioner.
- Do not connect the ground wire to:
  - gas pipes: might cause explosions or fire if gas leaks.
  - telephone ground wires or lightning rods: might cause abnormally high electric potential in the ground during lightning storms.
  - plumbing pipes: no grounding effect if hard vinyl piping is used.
- Be sure that the shape of the power supply cable and any other cable, before entering unit, should be as shown in this figure.



## Electrical characteristics

Model	Hz	Volts	Voltage range
FAXJP22~56	50	220-240	min. 198-max. 264

Model	power supply		Fan motor	
	MCA	MFA	KW	FLA
AXJP22~28	0.3	16 A	0.043	0.2
AXJP36	0.4	16 A	0.045	0.3
AXJP45	0.4	16 A	0.059	0.3
AXJP56	0.6	16 A	0.092	0.5

MCA: Min. circuit Amps (A)  
MFA: Max. Fuse Amps (A)  
KW: Fan Motor Rated Output (kW)  
FLA: Full Load Amps (A)

**NOTE** For details, refer to "Electrical data".



## Specifications for field supplied fuses and wire

Model	Power supply wiring		
	Field fuses	Wire	Size
AXJP22~56	16 A	H05VV-U3G	Local codes

Model	Transmission wiring	
	Wire	Size
FAXJP22~56	Sheathed wire (2)	0.75-1.25 mm <sup>2</sup>

**NOTE** ■ For details, refer to "Wiring example" on page 8.



- Allowable length of transmission wiring between indoor and outdoor units, and between the indoor unit and the remote controller is as follows:
  - Outdoor unit - indoor unit: max. 1000 m (total wiring length: 2000 m)
  - Indoor unit - remote controller: max 500 m

## Wiring example and how to set the remote controller

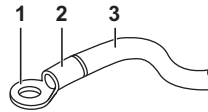
### How to connect wiring (See figure 9)

- Power supply wiring  
Remove the control box lid (1) and connect the wires to the power supply terminal block inside (L, N) and connect the ground wire to the grounding terminal. While doing this, pull the wires inside through the hole in the casing and clamp the wires along with other wires using a clamp as indicated in the figure.
- Unit transmission wiring and remote controller wiring  
Remove the control box lid (1) and pull the wires inside through the hole in the casing and connect to the terminal block for unit transmission wiring (F1, F2) and remote controller wiring (P1, P2). Securely fix the wiring using a clamp as indicated in the figure.
- After connection  
Attach the small sealing (supplied with the unit) around the cables to prevent infiltrating of water from the outside into the unit. If two or more cables are used, divide the small sealing into the required number of pieces and wrap them around all the cables.
- Attach the control box lid.

## Precautions

- 1 Observe the notes mentioned below when wiring to the power supply terminal block.

- Use a round crimp-style terminal for insulation sleeve for connection to the terminal block for wiring the units. When none are available, follow the instructions below.



- 1 Round crimp-style terminal
- 2 Attach insulation sleeve
- 3 Wiring

- Do not connect wires of different gauge to the same power supply terminal. (Looseness in the connection may cause overheating.)
- When clamping wiring, use the clamps (delivered with the unit) to prevent outside pressure being exerted on the wiring connections. Tie up firmly. When doing the wiring, make sure the wiring is neat and does not cause the control box to stick up. Close the cover firmly.
- When connecting wires of the same gauge, connect them according to the figure.



Use the specified electric wire. Connect the wire securely to the terminal. Lock the wire down without applying excessive force to the terminal. Use torques according to the table below.

Tightening torque (N·m)	
Terminal block for unit transmission and remote controller	0.79~0.97
Terminal block for power supply	1.18~1.44

- When attaching the control box lid, make sure not to pinch any wires.
  - After all wiring connections are done, fill in any gaps in the casing wiring holes with putty or insulation material (field supply) thus to prevent small animals or dirt from entering the unit from outside and causing short circuits in the control box.
- 2 Keep total current of crossover wiring between indoor units less than 12 A. Branch the line outside the terminal block of the unit in accordance with electrical equipment standards, when using two power wiring of a gauge greater than 2 mm<sup>2</sup> (Ø1.6).  
The branch must be sheathed in order to provide an equal or greater degree of insulation as power supply wiring itself.
  - 3 Do not connect wires of different gauge to the same grounding terminal. Looseness in the connection may deteriorate the protection.
  - 4 Remote controller wiring and unit transmission wiring should be located at least 50 mm away from power supply wiring. Not following this guideline may result in malfunction due to electrical noise.
  - 5 For the remote controller wiring, refer to the "Installation manual of the remote controller" supplied with the remote controller.

**NOTE** The customer has the ability to select the remote controller thermistor.



- 6 Never connect the power supply wiring to the terminal block for transmission wiring. This mistake could damage the entire system.
- 7 Use only specified wires and tightly connect wires to the terminals. Be careful that wires do not place external stress on the terminals. Keep wiring in neat order so that they do not obstruct other equipment such as popping open the service cover. Make sure the cover closes tight. Incomplete connections could result in overheating, and in the worse case, electric shock or fire.

## Wiring example

Fit the power supply wiring of each unit with a switch and fuse as shown in figure 16.

- 1 Power supply
- 2 Main switch
- 3 Power supply wiring
- 4 Unit transmission wiring
- 5 Switch
- 6 Fuse
- 7 BS unit (REYQ only)
- 8 Indoor unit
- 9 Remote controller

### Complete system example (3 systems)

See figures 12, 13 and 14.

- 1 Outdoor unit
- 2 Indoor unit
- 3 Remote controller (Optional accessories)
- 4 Most downstream indoor unit
- 5 For use with 2 remote controllers
- 6 BS unit

**When using 1 remote controller for 1 indoor unit. (Normal operation)** (See figure 12).

**For group control or use with 2 remote controllers** (See figure 13).

**When including BS unit** (See figure 14).

#### NOTE



It is not necessary to designate indoor unit address when using group control. The address is automatically set when the power is activated.

#### Precautions

1. A single switch can be used to supply power to units on the same system. However, branch switches and branch circuit breakers must be selected carefully.
2. For a group control remote controller, choose the remote controller that suits the indoor unit which has the most functions.
3. Do not ground the equipment on gas pipes, water pipes, lightning rods or crossground with telephones. Improper grounding could result in electric shock.

## Installation of the decoration panel

Refer to the installation manual delivered with the decoration panel.

After installing the decoration panel, ensure that there is no space between the unit body and decoration panel. Otherwise air may leak through the gap and cause dewdrop.

## Field setting

Field setting must be made from the remote controller in accordance with the installation condition.

- Setting can be made by changing the "Mode number", "First code No." and "Second code No."
- For setting and operation, refer to the "Field setting" in the installation manual of the remote controller.

## Summary of field settings

Mode No. (Note 1)	First code No.	Description of setting	Second code No. (Note 2)				
			01	02	03	04	
10 (20)	0	Filter contamination - Heavy/Light = Setting to define time between 2 filter cleaning display indications. (When contamination is high, setting can be changed to half the time inbetween 2 filter cleaning display indications.)	Long-life filter Light ±2,500 hrs. Heavy ±1,250 hrs.				
	2	Thermostat sensor selection	Use both the unit sensor (or remote sensor if installed) AND the remote controller sensor. (See note 5+6)	Use unit sensor only (or remote sensor if installed). (See note 5+6)	Use remote controller sensor only. (See note 5+6)		
	3	Setting for display of time between 2 filter cleaning display indications	Display	Do not display			
	5	Information to I-manager, I-touch controller	Only unit sensor value (or remote sensor value if installed).	Sensor value as set by 10-2-0X or 10-6-0X.			
	6	Thermostat sensor in group control	Use unit sensor only (or remote sensor if installed). (See note 6)	Use both the unit sensor (or remote sensor if installed) AND the remote controller sensor. (See note 4+5+6)			
12 (22)	0	Output signal X1-X2 of the optional KRP1B PCB kit	Thermostat-on + compressor run		Operation	Mal-function	
	1	ON/OFF input from outside (T1/T2 input) = Setting when forced ON/OFF is to be operated from outside.	Forced OFF	ON/OFF operation			
	2	Thermostat differential changeover = Setting when remote sensor is used.	1°C	0.5°C			
	3	Fan setting during thermostat OFF at heating operation	LL	Set speed	OFF (See note 3)		
	4	Differential automatic changeover	0°C	1°C	2°C	3°C (See note 7)	
13 (23)	0	Setting for air outlet velocity This setting is to be changed in function of ceiling height.	≥2.7 m	>2.7 ≥3.0 m	>3.0 ≥3.5 m		
	1	Selection for air flow direction This setting is to be changed when blocking pad optional kit is used.	4-way flow	3-way flow	2-way flow		
	4	Airflow direction range setting This setting is to be changed when range of swing flap movement needs to be changed.	Upper	Medium	Lower		

**Note 1:** Setting is carried out in the group mode, however, if the mode number inside parentheses is selected, indoor units can also be set individually.

**Note 2:** Factory settings of the Second code No. are marked in grey backgrounds.

**Note 3:** Only use in combination with optional remote sensor or when setting 10-2-03 is used.

**Note 4:** If group control is selected and remote sensor is to be used, then set 10-6-02 & 10-2-03.

**Note 5:** If setting 10-6-02 + 10-2-01 or 10-2-02 or 10-2-03 are set at the same time, then setting 10-2-01, 10-2-02 or 10-2-03 have priority.

**Note 6:** If setting 10-6-01 + 10-2-01 or 10-2-02 or 10-2-03 are set at the same time, then setting for group connection, 10-6-01 has priority and for individual connection, 10-2-01, 10-2-02 or 10-2-03 have priority.

**Note 7:** More settings for Differential automatic change over temperatures are:

Second code No.	05	4°C
	06	5°C
	07	6°C
	08	7°C

- When using wireless remote controllers it is necessary to use address setting. Refer to the installation manual attached to the wireless remote controller for the setting instructions.

## Control by 2 Remote Controllers (Controlling 1 indoor unit by 2 remote controllers)

When using 2 remote controllers, one must be set to "MAIN" and the other to "SUB".

### Main/sub changeover

1. Insert a wedge-head screwdriver into the recess between the upper and lower part of the remote controller and, working from the 2 positions, pry off the upper part. (See figure 18)  
(The remote controller PC board is attached to the upper part of the remote controller.)
2. Turn the main/sub changeover switch on one of the two remote controller PC boards to "S". (See figure 19)  
(Leave the switch of the other remote controller set to "M".)
  - 1 Remote controller PC board
  - 2 Factory setting
  - 3 Only one remote controller needs to be changed

### Computerised control (forced off and on/off operation)

1. Wire specifications and how to perform wiring.
  - Connect input from outside to terminals T1 and T2 of the terminal block (remote controller to transmission wiring).

Wire specification	Sheathed vinyl cord or cable (2 wire)
Gauge	0.75-1.25 mm <sup>2</sup>
Length	Max. 100 m
External terminal	Contact that can ensure the minimum applicable load of 15 V DC, 1 mA

See figure 17.

- 1 Input A
2. Actuation
  - The following table explains "forced off" and "on/off operations" in response to input A.

Forced off	on/off operation
Input "on" stops operation	input off * on: turns on the unit (impossible by remote controllers)
Input "off" enables control	input on * off: turns off the unit (by remote controller)

3. How to select forced off and on/off operation
  - Turn the power on and then use the remote controller to select operation.
  - Set the remote controller to the field set mode. For details, refer to the chapter "How to set in the field", in the remote controller manual.
  - When in the field set mode, select mode No. 12, then set the first code (switch) No. to "1". Then set second code (position) No. to "01" for forced off and to "02" for on/off operation. (forced off at factory set.) (See figure 15)
    - 1 Second code No.
    - 2 Mode No.
    - 3 First code No.
    - 4 Field set mode

### Centralized control

For centralized control, it is necessary to designate the group No. For details, refer to the manual of each optional controller for centralized control.

## Test operation

Refer to the installation manual of the outdoor unit.

**NOTE** When performing field settings or test operation without attaching the decoration panel, do not touch the drain pump. This may cause electric shock.

The operation lamp of the remote controller will flash when an error occurs. Check the error code on the liquid crystal display to identify the trouble. Refer to the installation manual attached to the outdoor unit or contact your dealer. See figure 24.

- 1 Drain pumping device (built-in) drain water is removed from the room during cooling
- 2 Air flow flap (at air outlet)
- 3 Air outlet
- 4 Remote controller
- 5 Suction grille
- 6 Air filter (inside suction grille)


## Maintenance



### CAUTION

- Only a qualified service person is allowed to perform maintenance.
- Before obtaining access to terminal devices, all power supply circuits must be interrupted.
- To clean the air conditioner, be sure to stop operation and turn the power switch off. Otherwise, an electric shock and injury may result.
- Do not wash the air conditioner with water. Doing so may result in an electric shock.
- Be careful with scaffoldings. Caution must be exercised when working in high places.
- After a long use, check the unit stand and fitting for damage. If damaged, the unit may fall and cause injury.
- Do not touch the heat exchanger fins. The fins are sharp and could result in cutting injuries.
- When cleaning the heat exchanger, be sure to remove the control box, fan motor, drain pump and float switch. Water or detergent may deteriorate the insulation of electronic components and result in burn-out of these components.

### How to clean the air filter

Clean the air filter when the display shows "  " (TIME TO CLEAN AIR FILTER).

Increase the frequency of cleaning if the unit is installed in a room where the air is extremely contaminated.

(As a yardstick for yourself, consider cleaning the filter once a half year.)

If dirt becomes impossible to clean, change the air filter. (Air filter for exchange is optional.)

**NOTE** Do not wash the air filter with hot water of more than 50°C. Doing so may result in discoloration and/or deformation.

Do not expose the unit to fire. Doing so may result in burning.

In case of decoration panel BYFQ60C see figures marked **A**  
BYFQ60B see figures marked **B**

- 1 Open the suction grille (See [figure 20](#)) (action 1 in the illustration).  
Push both levers simultaneously in the direction of the arrow as indicated in the illustration and carefully lower the grille. (Identical procedure for closing.)
- 2 Remove the air filter (actions 2 to 4 in the illustration).  
Pull the air filter clip on both the bottom left and the right side of the filter toward you, and detach the filter.
- 3 Clean the air filter. (See [figure 25](#))  
Use vacuum cleaner or wash the air filter with water.  
When the air filter is very dirty, use soft brush and neutral detergent.
- 4 Remove water and dry in the shade.
- 5 Install the air filter back in place (perform actions 2 to 4 in the illustration in reverse order).  
Attach the air filter to the suction grille by hanging it over the projected portion above the suction grille.  
Press the bottom of the air filter against the projections on the bottom of the grille to snap the air filter into its place.
- 6 Close the suction grille by performing procedure step 1 in reverse order.
- 7 After turning on the power, press the FILTER SIGN RESET button.  
The "TIME TO CLEAN AIR FILTER" display vanishes.

---

**NOTE** Do not remove the air filter except when cleaning.  
Unnecessary handling may damage the filter.

---

### How to clean the suction grille

(See [figure 20](#))

- 1 Open the suction grille (action 1 in the illustration).  
Refer to procedure step 1 in "[How to clean the air filter](#)" on [page 9](#).
- 2 Detach the suction grill  
A: Open the suction grill 90 degrees and it will hang only on the hinges.  
Press both wires hinges inward as shown in the [figure 23A](#).  
B: Open the suction grille 45 degrees and lift it upward as shown in the [figure 23B](#)
- 3 Remove the air filter (actions 2 to 4 in the illustration).  
Refer to procedure step 2 in "[How to clean the air filter](#)" on [page 9](#).
- 4 Clean the suction grille.  
Wash with a soft bristle brush and neutral detergent or water, and dry thoroughly. See [figure 26](#).

---

**NOTE** When the suction grille is very dirty, use a typical kitchen cleaner and let it sit for about 10 minutes. Then, wash it with water.

Do not wash the suction grille with hot water of more than 50°C. Doing so may result in discoloration and/or deformation.

---

- 5 Install the air filter back in place (perform actions 2 to 4 in the illustration in reverse order).
- 6 Reattach the suction grille by performing procedure step 2 in reverse order (perform actions 5 to 6 in the illustration in reverse order).
- 7 Close the suction grille by performing procedure step 1 in reverse order.

### How to clean the air outlet and outside panels

- Clean with a soft cloth.
- When it is difficult to remove stains, use water or neutral detergent.

---

**NOTE** Do not use gasoline, benzene, thinner, polishing powder, liquid insecticide. It may cause discoloring or warping.

Do not let the indoor unit get wet. It may cause an electric shock or a fire.

Do not scrub firmly when washing the blade with water. The surface sealing may peel off.

Do not use water or air of 50°C or higher for cleaning air filters and outside panels.

---

### Disposal requirements

Dismantling of the unit, treatment of the refrigerant, of oil and of other parts must be done in accordance with relevant local and national legislation.

# Wiring diagram

## Indoor unit

A1P	Printed circuit board
C105	Capacitor (M1F)
F1U	Fuse (T, 3.15 A, 250 V)
HAP	Flashing lamp (service monitor green)
M1F	Fan motor
M1P	Drain pump motor
M1S~M4S	Swing motor
R1T	Thermistor (air)
R2T,R3T	Thermistor (coil)
S1L	Float switch
V1R	Diode bridge
X1M	Terminal block
X2M	Terminal block
Y1E	Electronic expansion valve
Z1F	Noise filter
Z1C	Ferrite core
Z2C	Ferrite core
Z3C	Ferrite core
PS	Switching power supply

## Wireless remote controller (receiver/display unit)

A2P	Printed circuit board
A3P	Printed circuit board
BS1	Push button switch on PCB
H1P	Pilot lamp (on-red)
H2P	Pilot lamp (timer-green)
H3P	Pilot lamp (filter sign-green)
H4P	Pilot lamp (defrost-orange)
SS1	Selector switch (main/sub)
SS2	Selector switch (wireless address set)

## Sensor kit

A4P	Printed circuit board
A5P	Printed circuit board

## Wired remote controller

R4T	Thermistor (air)
-----	------------------




## Connector for optional parts

X24A	Connector (wiring remote controller)
X33A	Connector (adaptor for wiring)
X35A	Connector (power supply for adaptor)
X81A	Connector (sensor kit)

## Connector for optional parts

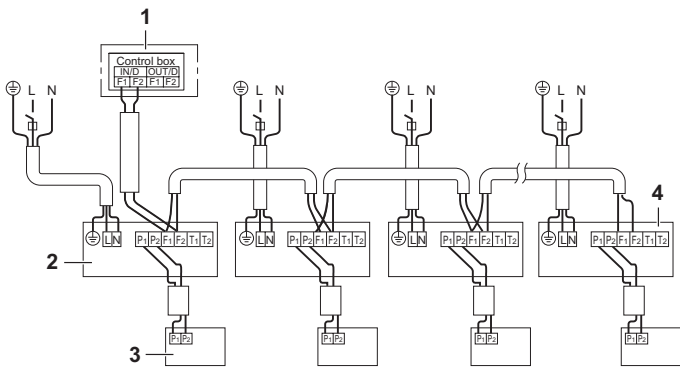
F2U	Fuse
Q1DI	Earth leak detector

## Notes

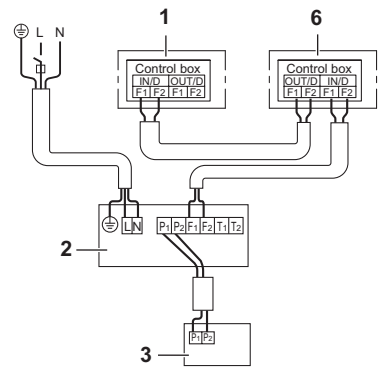
- |   |                  |   |             |   |                |
|---|------------------|---|-------------|---|----------------|
|  | : Terminal block |  | : Connector |  | : Field wiring |
|---|------------------|---|-------------|---|----------------|
- In case of using a central remote controller, connect it to the unit in accordance with the supplied installation manual.
- X2A, X8A, X24A, X33A, X35A, X36A and X38A are connected when the optional accessories are being used. In case of using a self cleaning decoration panel, see the wiring diagram of the self cleaning decoration panel.
- In case of main/sub change-over, see the installation manual supplied with the remote controller.
- Colour legend
 

BLK	: Black	BLU	: Blue	ORG	: Orange	YLW	: Yellow
PNK	: Pink	RED	: Red	WHT	: White	GRN	: Green
BRN	: Brown	GRY	: Gray				
- Applicable only in case of protected pipes. Use H07RN-F in case of no protection.
- When connecting the input wires from outside, FORCED OFF or ON/OFF CONTROL operation can be selected by the remote controller. See installation manual for more details.

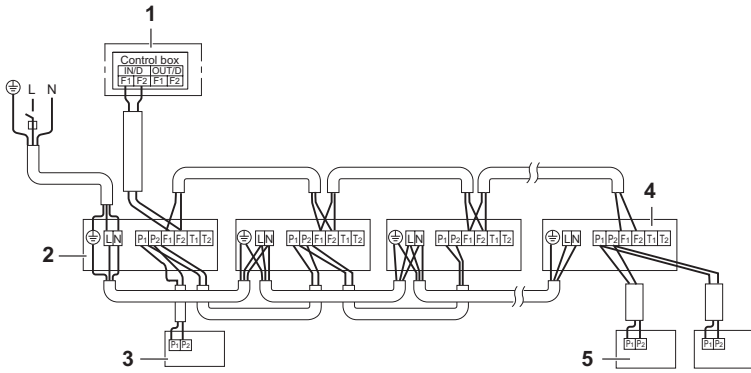
Control box	: Control box
Receiver/display unit	: Receiver/display unit
Central remote controller	: Central remote controller
Wired remote controller	: Wired remote controller
Input from outside	: Input from outside
Sensor kit	: Sensor kit
Optional accessory	: Optional accessory
Indoor unit	: Indoor unit



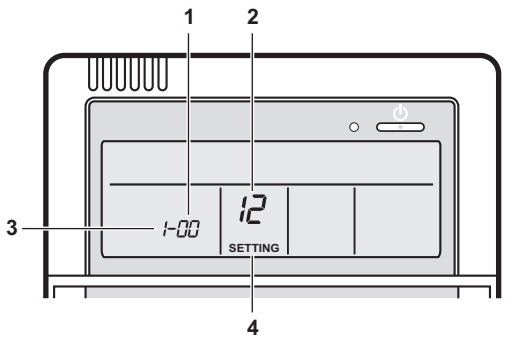
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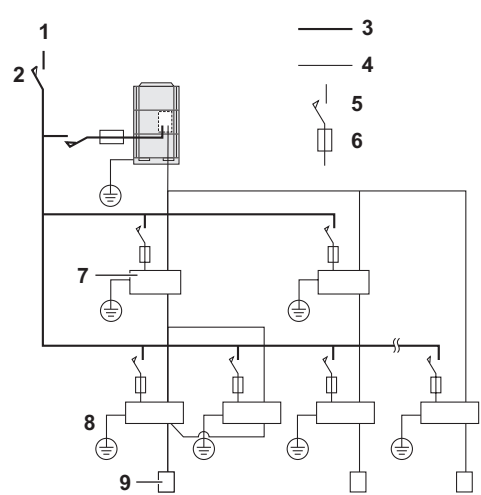
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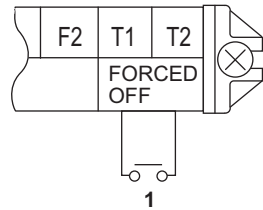
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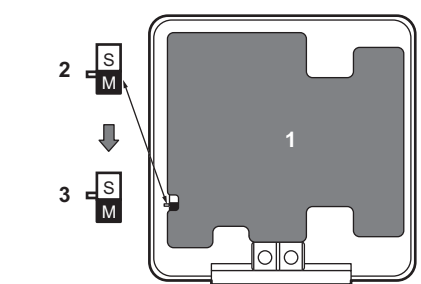
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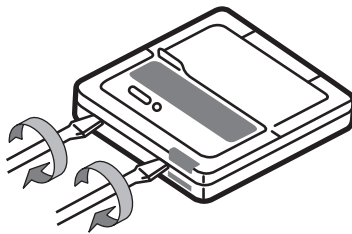
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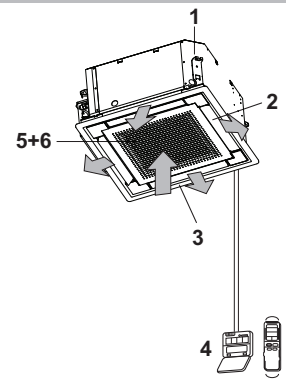
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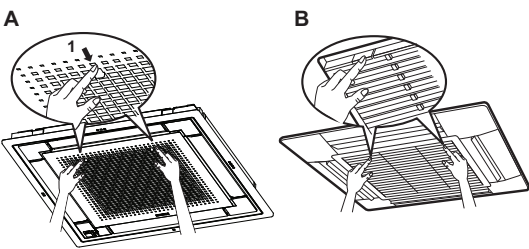
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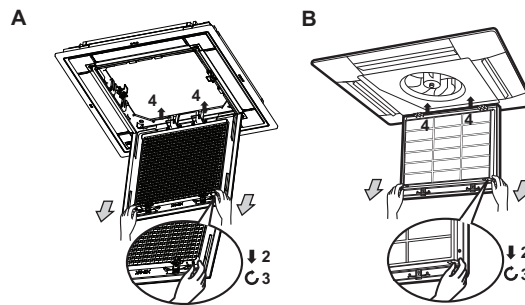
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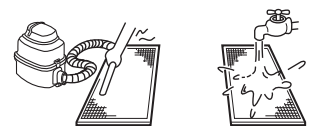
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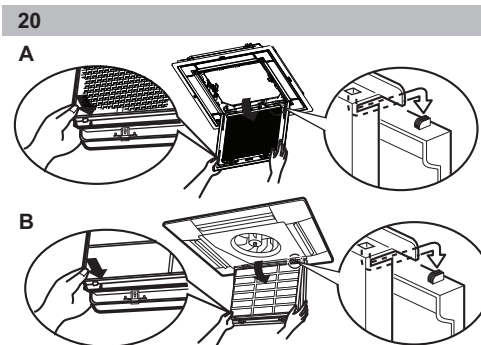
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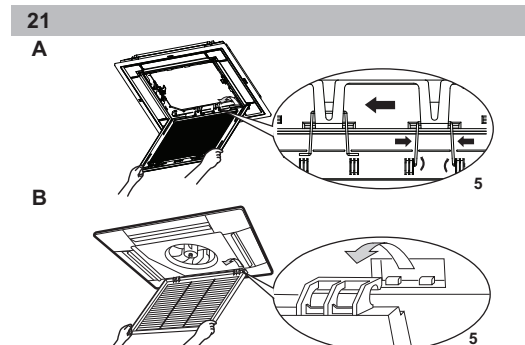
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