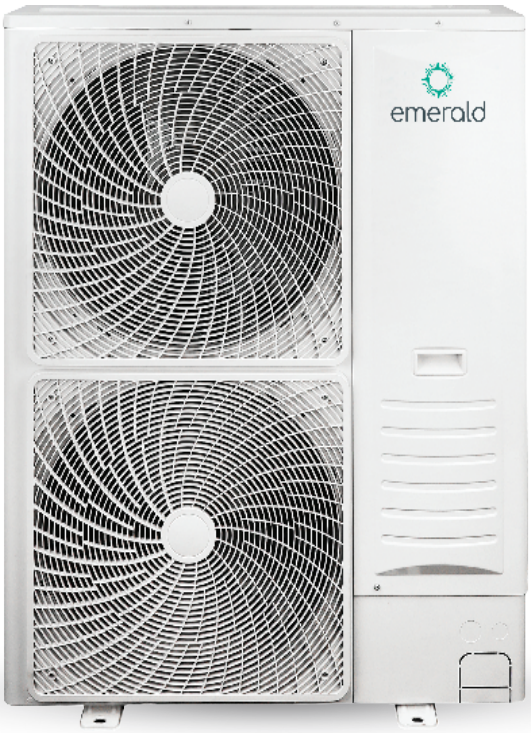
emerald

User guide and installation manual

Air Conditioning Split System Select



ACSS99

IMPORTANT NOTICE

Please read this manual before installing the product and retain for future use. Not following the instructions may result in the product not functioning as intended.

Installer information

Installer company:

Contact number:

Installer full name:

Install date:

Notes:

Contents

Important notice: Please read and keep this manual carefully before installing this product. Failure to do so may result in the product not working according to its design.

Caution statements

Alert symbol

⚠ DANGER

Hazard which can result in severe personal injury or death.

⚠ WARNING

Hazard or an unsafe practice which may result in severe personal injury or death.

⚠ CAUTION

Hazard or an unsafe practice which may result in personal injury, product or property damage.

NOTE

Useful information for operation, maintenance, and service.

- We recommend having this air conditioner installed by qualified technicians, following the installation instructions supplied with the unit.
- Before installation, ensure the power supply voltage matches the voltage shown on the nameplate.
- Installation must allow safe access for servicing. Service work should only be carried out from a safe position.

⚠ DANGER

- Do not modify this product, as it may cause water leakage, breakdown, short circuit, electric shock, or fire.
- Work such as pipe welding must be carried out away from flammable or explosive materials, including the air conditioner refrigerant, to ensure site safety.
- To prevent severe corrosion, avoid installing the outdoor unit where it may be directly exposed to salty seawater or sulphurous air near a spa. Do not install it near objects that generate excessive heat.

⚠ WARNING

- The wiring diagram, showing connections to external control devices and the supply cord, is provided in the section below
- The method for connecting the appliance to the electrical supply and linking separate components is detailed in the section below.
- The appliance must be able to be disconnected from the power supply after installation. This can be done by incorporating a switch in the fixed wiring in accordance with wiring rules.
- CAUTION: To avoid hazards from accidental resetting of the thermal cut-out, do not supply this appliance through an external switching device such as a timer, or connect it to a circuit that is regularly switched on and off by the utility.
- The required installation space, including minimum permissible distances from adjacent structures, is detailed in the section below.
- Instructions for adding refrigerant are provided in the section below.

Read this manual carefully before using the air conditioner. If you have any difficulties or issues, contact your dealer for assistance.

This air conditioner is designed to create comfortable room conditions. Use it only as described in this manual.

⚠ WARNING

- Never use petrol or other flammable gases near the air conditioner, as this is extremely dangerous.
- If the air conditioner shows signs of a fault - such as a burning smell, visible damage, fire, or smoke - stop using it immediately, switch it off at the main power, and contact your dealer.

⚠ CAUTION

- Do not switch the air conditioner on or off at the main power switch. Use the ON/OFF button instead.
- Do not insert objects into the air inlet or outlet of the indoor or outdoor units. The fan rotates at high speed and can cause injury.
- Avoid excessive cooling or heating if babies or unwell persons are present.

This air conditioner is designed for the following temperatures.

It should be operated within this range:

Model	Outdoor operation temperature range (°C)	
	Maximum	Minimum
Cooling Operation	50	-10
Heating Operation	24	-15

Storage condition: Temperature -25°C~60°C
Humidity 30%~80%

NOTE: Heating and electric heating function are not available for single cooling only models.

Safety precautions

Precautions for using R32 refrigerant

The basic installation work procedures are the same as the conventional refrigerant (R22 or R410A).

However, pay attention to the following points:

⚠ WARNING

1. Transportation equipment containing flammable refrigerants.

Pay attention to the fact that additional transportation regulations may exist with respect to equipment containing flammable gas. The maximum number of pieces of equipment or the configuration of the equipment, permitted to be transported together will be determined by the applicable transport regulations.

2. Equipment signs

Signs for similar appliances (containing flammable refrigerants) used in a work area generally are addressed by local regulations and give the minimum requirements for the provision of safety and/or health signs for a work location. All required signs are to be maintained and employers should ensure that employees receive suitable and sufficient instruction and training on the meaning of appropriate safety signs and the actions that need to be taken in accordance with these signs.

The effectiveness of signs should not be diminished by too many signs being placed together. Any pictograms used should be as simple as possible and contain only essential details.

3. Disposal of equipment containing flammable refrigerants

In compliance with national regulations.

4. Storage of equipment/appliances

The storage of equipment should be in accordance with the manufacturer's instructions.

5. Storage of packed (unsold) equipment

- Storage package protection should be constructed so that mechanical damage to the equipment inside the package will not cause a leak of the refrigerant.
- The maximum number of pieces of equipment permitted to be stored together will be determined by local regulations.

6. Servicing information

6-1 Area checks

Before working on systems containing flammable refrigerants, carry out safety checks to minimise the risk of ignition. Follow the precautions below before beginning any repairs.

6-2 Work procedure

Work must follow a controlled procedure to minimise the risk of flammable gas or vapour escaping during the task.

6-3 General working area

- All maintenance staff and nearby workers must be informed of the work being carried out.
- Avoid working in confined spaces.
- Section off the work area and remove or control any flammable materials.

6-4 Refrigerant leakage checks

- Use an appropriate refrigerant detector to check the area before and during work to monitor for flammable atmospheres
- Only use leak detection equipment that is suitable for flammable refrigerants, such as non-sparking, sealed, or intrinsically safe devices.

6-5 Fire extinguisher

- If hot work is required on the refrigeration system or related parts, have suitable fire extinguishing equipment readily available.
- Keep a dry powder or CO_2 fire extinguisher near the charging area.

6-6 No ignition sources

- Do not use any ignition sources when working on refrigeration systems that contain or have contained flammable refrigerants.
- Keep all ignition sources, including smoking, well away from the site during installation, repair, removal, or disposal.
- Before starting work, check the area for flammable hazards and display “No Smoking” signs.

6-7 Ventilated area

- Work in an open-air location or ensure adequate ventilation before dismantling the system or carrying out hot work.
- Maintain ventilation throughout the job.
- Ventilation should safely disperse any released refrigerant, preferably to the outside atmosphere.

6-8 Checks of the refrigeration equipment

- Replace electrical components only with those of the correct specification and suitable for the application.
- Always follow the manufacturer’s maintenance and service guidelines. If in doubt, contact the manufacturer’s technical department.
- For installations using flammable refrigerants, check that:
  - The refrigerant charge is appropriate for the room size where refrigerant-containing parts are installed.
  - Ventilation systems and outlets are functioning correctly and are unobstructed.
  - For indirect refrigerating circuits, the secondary circuit is free from refrigerant leaks.
  - Equipment markings are visible and legible, and any incorrect markings are corrected.
  - Refrigeration pipes and components are positioned to avoid exposure to corrosive substances, unless made from corrosion-resistant materials or adequately protected.

6-9 Checks of electrical devices

- Repair and maintenance of electrical components must include initial safety checks and inspection procedures.
- If a fault could compromise safety, do not connect the electrical supply until it is fully resolved.
- If the fault cannot be rectified immediately but operation must continue, use an adequate temporary solution and inform the equipment owner.

Initial safety checks must confirm:

- Capacitors are safely discharged to avoid sparking.
- No live electrical components or wiring are exposed during charging, recovering, or purging.
- Earth bonding continuity is intact.

Safety precautions

7. Repairs of sealed components

- Disconnect all electrical supplies before removing sealed covers or working on sealed components.
- If it is absolutely necessary to keep the equipment powered during servicing, a permanently operating leak detector must be positioned at the most critical point to warn of potential hazards.
- Take care to ensure that repairs do not compromise the casing's protection level. Avoid:

  - Damaging cables.
  - Adding excessive connections.
  - Using non-original specification terminals.
  - Damaging seals.
  - Incorrectly fitting cable glands.
- Ensure the equipment is mounted securely.
- Check that seals and sealing materials have not deteriorated and still prevent the ingress of flammable atmospheres.
- Only use replacement parts specified by the manufacturer.

Note: Some silicone sealants can reduce the effectiveness of certain leak detection equipment. Intrinsically safe components do not need to be isolated before working on them.

8. Repairs of intrinsically safe components

- Do not apply permanent inductive or capacitive loads to the circuit without confirming they are within the equipment's permissible voltage and current limits.
- Only intrinsically safe components are suitable for operation in a flammable atmosphere. Ensure test equipment is correctly rated.
- Replace components only with manufacturer-specified parts.
- Using non-specified parts may cause ignition if refrigerant leaks into the atmosphere.

9. Cabling

Ensure cabling is protected from wear, corrosion, excessive pressure, vibration, sharp edges, and other adverse environmental effects.

Consider the impact of aging and continuous vibration from sources such as compressors or fans.

10. Detection of flammable refrigerants

- Never use potential ignition sources when searching for or detecting refrigerant leaks.
- Do not use a halide torch or any other detector with a naked flame.

11. Leak detection methods

Acceptable leak detection methods for systems containing flammable refrigerants include:

- Use electronic leak detectors suitable for flammable refrigerants. Sensitivity may require adjustment or re-calibration. Calibrate detection equipment in a refrigerant-free area.
- Ensure the detector is not a potential ignition source and is compatible with the refrigerant used.
- Set leak detection equipment to a percentage of the refrigerant's LFL (Lower Flammability Limit) and confirm calibration to the refrigerant and the appropriate gas percentage (maximum 25%).
- Leak detection fluids can be used with most refrigerants. Avoid detergents containing chlorine, as these can react with the refrigerant and corrode copper pipework.
- If a leak is suspected, extinguish or remove all naked flames.
- If brazing is required, recover all refrigerant from the system, or isolate it using shut-off valves to a section remote from the leak.
- Purge the system with oxygen-free nitrogen (OFN) both before and during brazing.

12. Removal and evacuation

- When opening the refrigerant circuit for repairs or other purposes, follow conventional procedures, with additional precautions for flammability.

Follow this procedure:

  - Recover the refrigerant.
  - Purge the circuit with inert gas.
  - Evacuate the system.
  - Purge again with inert gas.

Open the circuit by cutting or brazing.

- Recover refrigerant into approved recovery cylinders.
- Flush the system with oxygen-free nitrogen (OFN) to make it safe. This may need to be repeated several times.
- Do not use compressed air or oxygen for this task.
- Flushing is done by breaking the system vacuum with OFN, filling to working pressure, venting to atmosphere, and pulling down to a vacuum. Repeat until no refrigerant remains.
- For the final OFN charge, vent down to atmospheric pressure before starting work.
- This step is essential before brazing pipework.
- Ensure the vacuum pump outlet is away from ignition sources and the area is well-ventilated.

13. Charging procedures

- In addition to standard charging practices, observe the following requirements:

  - Prevent cross-contamination of refrigerants when using charging equipment.
  - Keep hoses or lines as short as possible to reduce refrigerant volume in them.
  - Keep cylinders upright during use.
  - Ensure the refrigeration system is earthed before charging with refrigerant.
  - Label the system once charging is complete (if not already labeled).
  - Take extreme care not to overfill the system.
  - Test system pressure with oxygen-free nitrogen (OFN) before recharging.
- Perform a leak test after charging but before commissioning.
- Conduct a follow-up leak test before leaving the site.

14. Decommissioning

Before starting, ensure you are fully familiar with the equipment and its details. All refrigerants should be recovered safely. Take oil and refrigerant samples beforehand in case analysis is required prior to reusing recovered refrigerant. Electrical power must be available before starting.

a) Familiarise yourself with the equipment and its operation.
b) Isolate the system electrically.
c) Before proceeding, ensure:

Mechanical handling equipment is available for refrigerant cylinders, if needed.

Personal protective equipment is available and used correctly.

Safety precautions

A competent person supervises the recovery process at all times.

Recovery equipment and cylinders comply with relevant standards.

d) Pump down the refrigerant system, if possible.
e) If vacuum recovery is not possible, use a manifold to remove refrigerant from various parts of the system.
f) Place the cylinder on scales before starting recovery.
g) Operate the recovery machine according to the manufacturer's instructions.
h) Do not overfill cylinders — liquid charge must not exceed 80% of volume.
i) Never exceed the cylinder's maximum working pressure, even temporarily.
j) Once cylinders are filled correctly and recovery is complete, promptly remove cylinders and equipment from the site, and close all isolation valves.
k) Do not charge recovered refrigerant into another system unless it has been cleaned and checked.

15. Labeling

Label equipment to confirm it has been decommissioned and is empty of refrigerant.

The label must be dated and signed.

Ensure labels clearly state that the equipment contains flammable refrigerant.

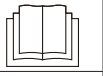
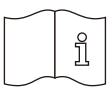
16. Recovery

- When removing refrigerant for servicing or decommissioning, ensure all refrigerant is safely recovered.
- Use only approved refrigerant recovery cylinders.
- Have enough cylinders to hold the system's total refrigerant charge.
- Use cylinders designated and labeled for the specific recovered refrigerant.
- Ensure cylinders are fitted with a pressure relief valve and shut-off valves in good working order.
- Empty recovery cylinders should be evacuated and, if possible, cooled before recovery.
- Recovery equipment must be in good working order, suitable for flammable refrigerants, and have operating instructions available.
- Calibrated weighing scales must be available and in good working order.
- Hoses must be in good condition, fitted with leak-free disconnect couplings.
- Before use, check the recovery machine is properly maintained, in satisfactory working order, and that all electrical components are sealed to prevent ignition in the event of refrigerant release.
- Consult the manufacturer if unsure.
- Return recovered refrigerant to the supplier in the correct recovery cylinder and arrange the relevant Waste Transfer Note.
- Do not mix refrigerants in recovery units or cylinders.
- When removing compressors or compressor oil, ensure they are evacuated to a safe level so that no flammable refrigerant remains in the lubricant.
- Evacuate the compressor before returning it to the supplier.
- Use only electric heating on the compressor body to speed up evacuation.
- Drain oil from the system safely.
- The appliance must be installed, operated, and stored in a room with a floor area larger than X (see specification below).
- Pipework installation must be in a room with a floor area larger than X (see specification below).
- All pipework must comply with national gas regulations.
- When moving or relocating the air conditioner, use qualified service technicians for disconnection and re installation.
- Do not place electrical products or personal belongings under the indoor or outdoor unit, as condensation may drip and cause damage or malfunction.
- Only use defrosting or cleaning methods recommended by the manufacturer.
- Store the appliance in a room without continuously operating ignition sources (e.g. open flames, gas appliances, or electric heaters).
- Do not pierce or burn the appliance.
- Be aware that refrigerants may be odourless.
- Keep ventilation openings clear and unobstructed.
- Store the appliance in a well-ventilated room meeting the minimum size requirements for operation.
- Store the appliance away from continuously operating open flames or ignition sources.
- Anyone working on the refrigerant circuit must hold a valid industry-accredited certificate authorising them to handle refrigerants safely and in compliance with specifications.
- Servicing must be carried out only as recommended by the manufacturer.
- Maintenance and repairs requiring additional skilled personnel must be performed under the supervision of a person competent in handling flammable refrigerants.
- Install and store the appliance to prevent mechanical damage.
- Mechanical connectors used indoors must comply with ISO 14903. When reusing mechanical connectors indoors, renew sealing parts. When reusing flared joints indoors, re-fabricate the flare.
- Keep pipework installation to a minimum.
- Ensure mechanical connections are accessible for maintenance.

Required minimum room area X (m^2)

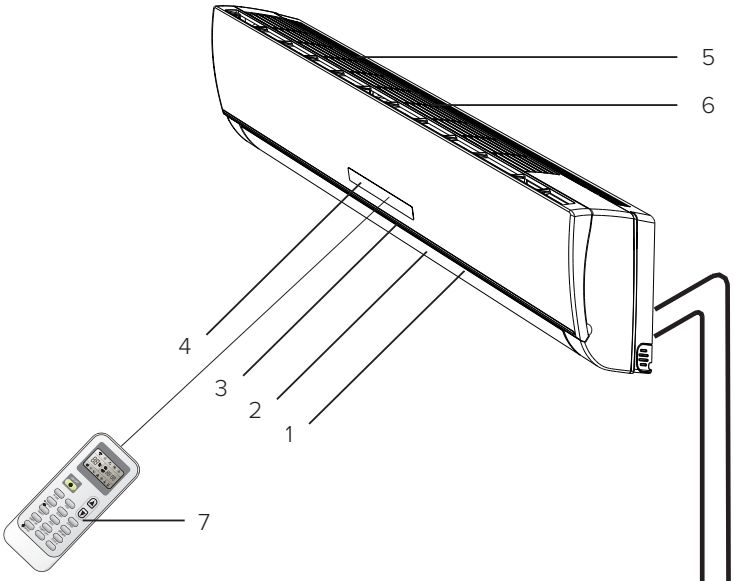
Model	Installation height (m)			
	0.6	1.0	1.8	2.2
ACSS99	81.79	29.44	9.088	6.083

Explanation of symbols displayed on the unit

	WARNING	Indicates this appliance uses a flammable refrigerant. If the refrigerant is leaked and exposed to an external ignition source, there is a risk of fire.
	CAUTION	Indicates the operation manual should be read carefully.
	CAUTION	Indicates a service personnel should be handling this equipment with reference to the installation manual
	CAUTION	Indicates information is available such as the operating manual or installation manual.

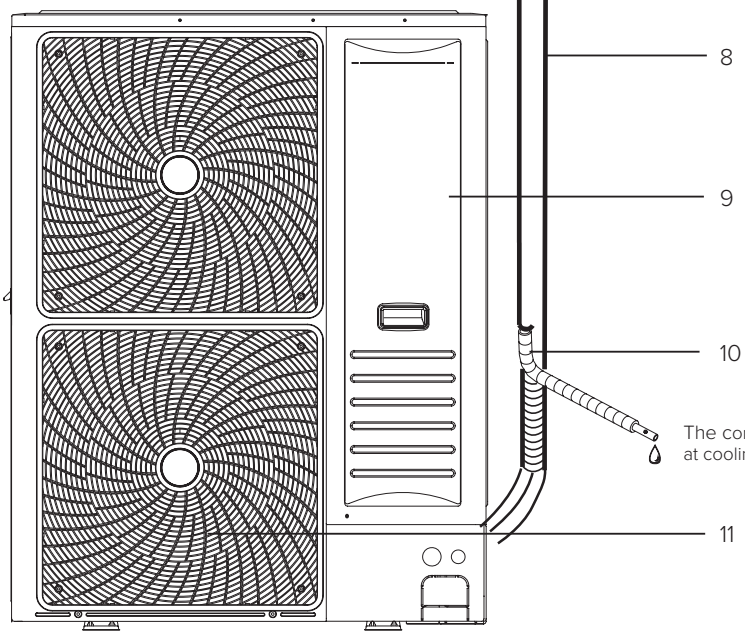
Air conditioner parts

Indoor unit



1. Air outlet
2. Horizontal louver
3. Vertical louver
4. Display panel
5. Air filter
6. Air intake
7. Remote controller
8. Connecting pipes and cables
9. Access door
10. Drain hose
11. Air outlet

Outdoor unit

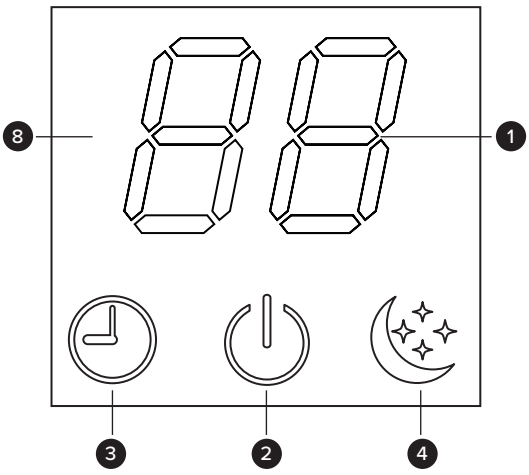


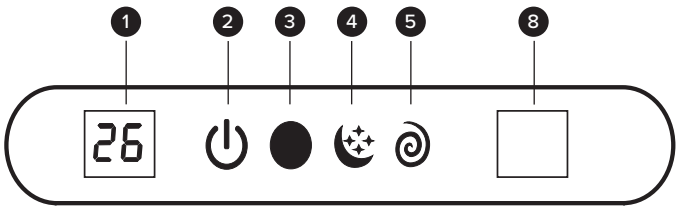
1. This figure shows the external view of a standard model. The shape may differ from the air conditioner you have purchased.
2. The remote controller operates the embedded display panel.
3. Different types of remote controllers are available; specific models depend on the product supplied.
4. Connecting pipes are not included with the product.

Display introduction

Display introduction

No	Display	Introduction
1	88	**Temperature indicator** Display set temperature. It shows FC after 200 hours of usage as reminder to clean the filter. After filter cleaning press the filter reset button located on the indoor unit behind the front panel in order to reset the display. (optional)
2		**Running indicator** It lights up when the AC is running. It flashes during defrosting.
3		**Timer indicator** It lights up during set time.
4		**Sleep indicator** It lights up in sleep mode
5		**Compressor indicator** It lights up when the compressor is on
6		**Mode indicator** Heating displays orange,others display white
7		**Fan speed indicator**
8		**Signal receptor**
9		**Smart Wi-Fi indicator** It lights up during WIFI is on
10		**NANOE indicator** It lights up in NANOE mode.
11		**FAN ONLY mode indicator** It lights up in FAN ONLY mode
12		**Airflow Follow You/Airflow Avoid You indicator**
13	%	**Humidity indicator** It lights up in humidity mode.
14	AI	**Artificial Intelligence Smart Running Indicator** It lights up in AI mode





The symbols may be different from these models, but the functions are similar.

Special remarks

Compressor protection

3-minute protection: After stopping, the compressor remains off for at least three minutes to protect it from damage.

5-minute protection: Once operating, the compressor runs for at least five minutes. It will not stop within this time, even if the set temperature is reached, unless turned off using the remote controller (all indoor units can be switched off by the user).

Cooling operation

The indoor unit fan runs continuously during cooling, even if the compressor stops.

Heating operation

Heating capacity depends on outdoor temperature and may decrease in very low conditions.

Anti-freezing function (cooling mode)

If the indoor outlet air temperature becomes too low, the unit switches to ventilating mode briefly to prevent frost or ice forming on the indoor heat exchanger.

Cold air prevention

When heating mode starts, the indoor unit fan will not operate until the heat exchanger reaches a set temperature, preventing cold drafts.

Defrosting

In low outdoor temperatures, frost or ice may form on the outdoor heat exchanger, reducing performance.

The defrosting system activates, and the indoor fan stops or runs at low speed to prevent cold drafts.

Once defrosting is complete, heating and fan speed return to normal.

Residual heat removal

When the unit stops during heating, the indoor fan runs at low speed briefly to release remaining warm air.

Auto restart after power outage

When power is restored, the air conditioner resumes operation with the previous settings.

Troubleshooting

⚠ CAUTION

When power is restored after an outage, all presets remain active, and the air conditioner will operate according to the previous settings.

If trouble persists

If the problem remains after carrying out the following checks, contact your dealer and provide:
1. Unit model name.
2. Description of the problem.

No operation

Check that the set temperature is correctly adjusted.

Not cooling or heating well

Check for airflow obstructions in the indoor or outdoor unit.

Check if there are excessive heat sources in the room.

Check if the air filter is clogged with dust.

Check if doors or windows are open.

Check if the temperature is within the operating range.

This is normal

Smells from indoor unit: Odours may adhere to the unit over time. Clean the air filter and panels, or improve ventilation.

Sound from deforming parts: A rubbing or creaking sound may occur when starting or stopping due to thermal expansion or contraction of plastic parts. This is normal.

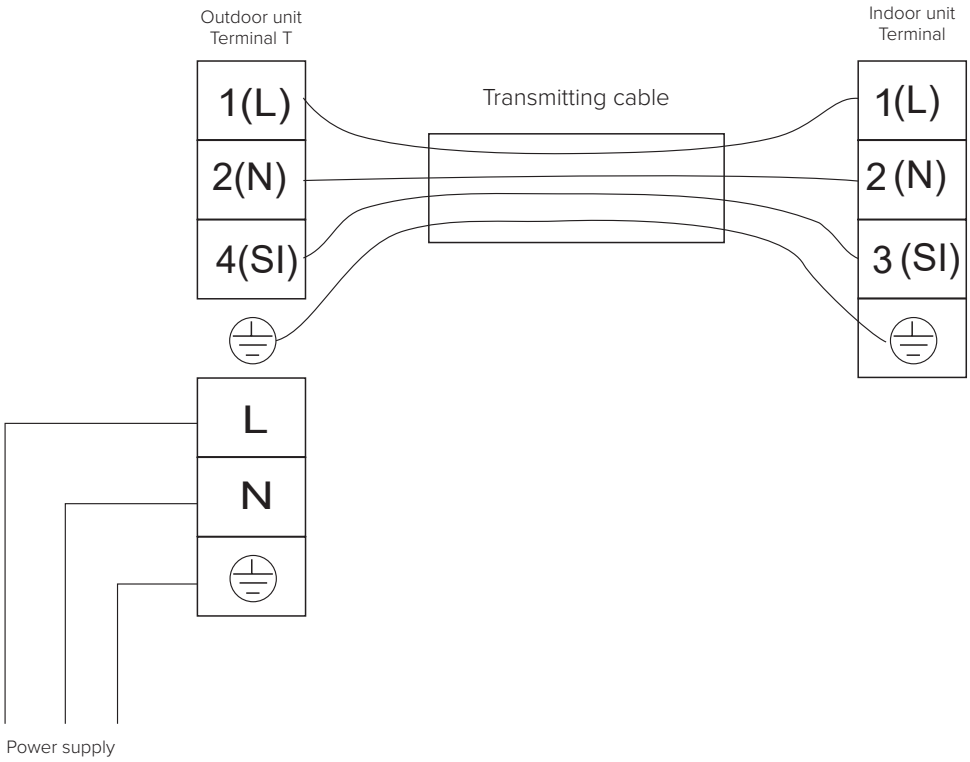
Steam from outdoor heat exchanger: During defrosting, melting ice on the outdoor heat exchanger may produce steam.

Dew on air panel: In prolonged cooling under high humidity, dew may form. Set the fan to high speed and adjust the louvers to the widest angle.

Refrigerant flow sound: A sound from refrigerant flow may be heard when the system starts or stops.

Electrical wiring diagram

Electrical wiring diagram



Installation and maintenance

Safety notice

⚠ WARNING

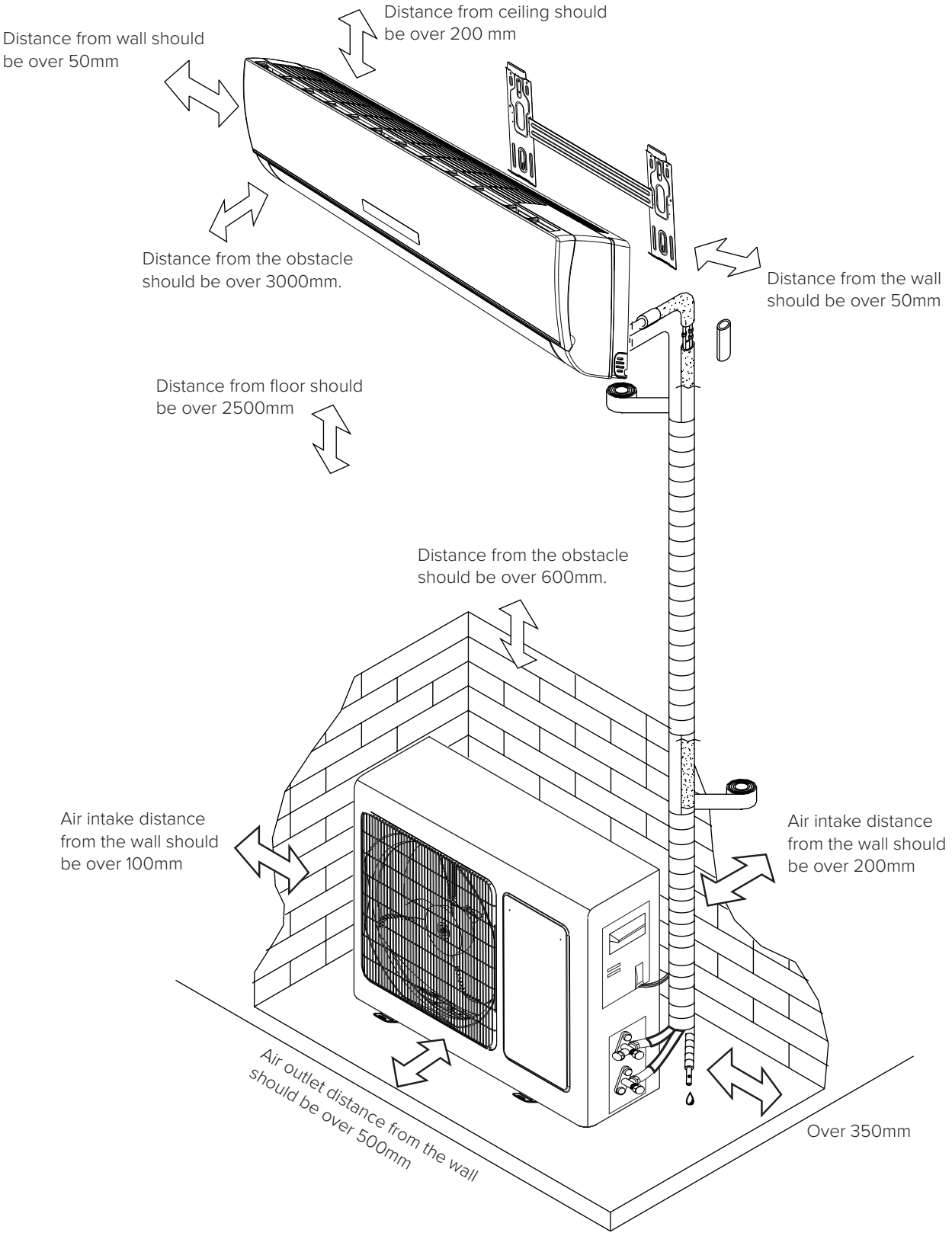
- Installation must be carried out by the dealer or other qualified professionals. Improper installation may cause water leakage, electric shock, or fire.
- Install the unit according to this manual. Incomplete installation may cause water leakage, electric shock, or fire.
- Use only the supplied or specified installation parts. Using other parts may cause the unit to loosen, water leakage, electric shock, or fire.
- Mount the air conditioner on a solid base that can support its weight. An inadequate base or incomplete installation may cause injury if the unit falls.
- Electrical work must comply with the installation manual and local/national electrical wiring rules or codes of practice. Insufficient capacity or incomplete electrical work may cause electric shock or fire.
- Use a dedicated power circuit. Do not share the power supply with other appliances.
- Use a cable long enough to reach without connections; do not use extension cords.
- Do not place other loads on the power supply. Failure to use a dedicated power circuit may cause overheating, electric shock, or fire.
- Use the specified wire types for electrical connections between indoor and outdoor units. Clamp interconnecting wires securely so terminals are not under stress.
- Incomplete connections or clamping may cause terminal overheating or fire.
- After connecting interconnecting and supply wiring, ensure cables do not place stress on electrical covers or panels. Install covers properly to avoid overheating, electric shock, or fire.
- When installing or relocating, keep the refrigerant circuit free from air or substances other than the specified refrigerant. Contamination can cause abnormal pressure, rupture, and injury.
- If refrigerant leaks during installation, ventilate the area. Refrigerant can produce toxic gas if exposed to flames.
- After installation, check thoroughly for refrigerant leaks.
- During piping connection, prevent air or foreign substances from entering the refrigerant cycle. Contamination can reduce performance, cause high pressure, explosion, and injury.
- Ensure the unit is earthed. Do not earth to a utility pipe, arrester, or telephone earth. Poor earthing can cause electric shock. A high surge current from lightning or other sources may damage the air conditioner.
- An earth leakage circuit breaker may be required depending on site conditions to prevent electric shock.
- Disconnect the power supply before completing wiring, piping, or inspections.
- When moving the indoor or outdoor unit, avoid inclining the outdoor unit more than 45°. Take care to avoid injury from sharp edges.

⚠ CAUTION

- Do not install the air conditioner where there is a risk of flammable gas leakage. Gas buildup around the unit may ignite.
- Install drain piping as instructed in this manual. Inadequate piping may cause water leakage or flooding.
- Tighten flare nuts using the specified method (e.g. torque wrench). Over-tightening may cause the flare nut to crack over time, leading to refrigerant leakage.

Installation and maintenance

Installation diagram of air conditioner



The figure shown is a simplified representation and may not match the exact external appearance of the unit you purchased. Installation must be carried out by authorised personnel in accordance with national wiring standards.

Installation and maintenance

Tools and instruments for installation

Number	Tool
1	Standard screwdriver
2	Vacuum pump
3	Charge hose
4	Pipe bender
5	Adjustable wrench
6	Tube cutter
7	Cross head screw-driver
8	Knife or wire stripper
9	Gradienter
10	Hammer
11	Churn drill
12	Tube expander
13	Inner hexagon spanner
14	Tape measure

Installation of the indoor unit

⚠ CAUTION

During installation, do not damage the insulation material on the surface of the indoor unit.

Before installation

- When moving the unit during or after unpacking, avoid applying pressure to refrigerant or drain piping.
- Wear appropriate protective gear, such as gloves, when installing the unit.
- Install the unit correctly and in accordance with the installation manual.
- Confirm the following points:
  - Unit type/Power supply specification.
  - Pipes/Wires.
  - Accessory items.

Installation locations selection

Selection of installation location

When installing the unit, ensure adequate space for maintenance and keep ventilation outlets clear of any obstructions to maintain proper airflow.

Avoid installing in the following locations:

Continuous operation sites – e.g. mobile communication base stations, highway toll stations.

Hazardous areas – locations with flammable or explosive substances such as coal dust, metal dust, cotton lint, petroleum, natural gas; mines; gas stations; or production workshops in industries such as garment manufacturing, woodworking, cement, or cotton quilt production.

High heat/steam environments – places with strong heat sources, steam, constant temperature, and humidity, such as fruit preservation warehouses or bath centres.

Corrosive or sulphurous gas environments – e.g. areas with sulphur, acid, salt, paper making sites, sulphur springs, or chemical plants.

Electromagnetic interference zones – near welding machines, frequency converters, radio transmitters, or medical equipment.

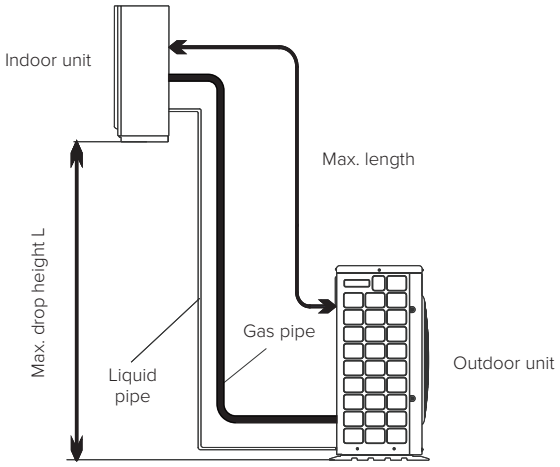
Oil-fume environments – kitchens or other locations with mineral oil fumes, spray, or steam. Oil buildup on the heat exchanger can reduce performance and damage plastic components.

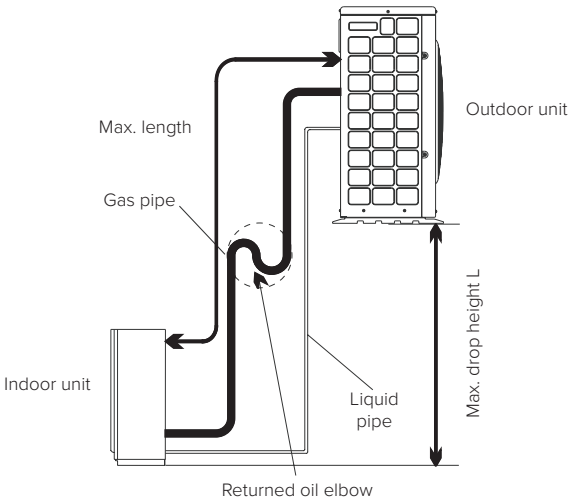
Installation and maintenance

Pipe length

Pipe length and drop height should comply with the scope required below.

Model Capacity (Btu/h)	Limit Pipe Length (m)	Max. Drop Length (m)
ACSS99	3-50	30





⚠ CAUTION

To maintain capacity, keep the refrigerant piping as short as possible.

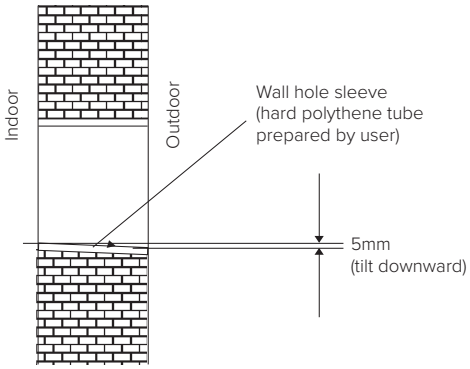
If the indoor unit is installed lower than the outdoor unit and the height difference exceeds 10m, install a return-oil elbow on the vertical gas pipe for every 6m of height.

Wall hole

1. Determine the pipe hole position based on the unit's location.

2. Drill a wall hole approximately 50 mm in diameter, sloping slightly downward toward the outside.

3. Insert a sleeve into the wall hole to keep the wall neat and clean.



Installation and maintenance

Indoor unit installation

Installing the mounting plate

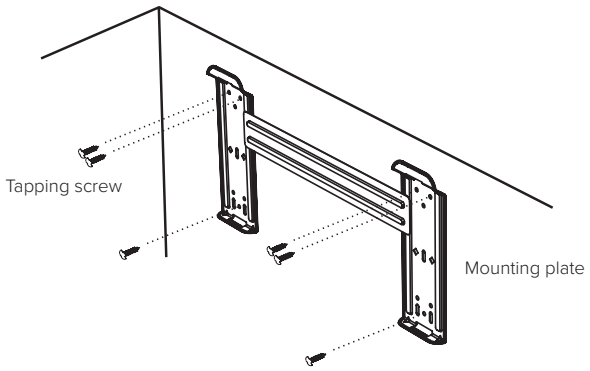
1. Select the mounting plate position based on the indoor unit location and pipe direction.

2. Use a spirit level or horizontal ruler to ensure the mounting plate is perfectly level.

3. Drill holes in the wall to a depth of approximately 32 mm for securing the plate.

4. Insert plastic plugs into the holes, then fix the mounting plate with tapping screws.

5. Check that the mounting plate is firmly secured, then drill the pipe hole.



Note: The shape of your mounting plate may differ from the example shown, but the installation procedure is the same.

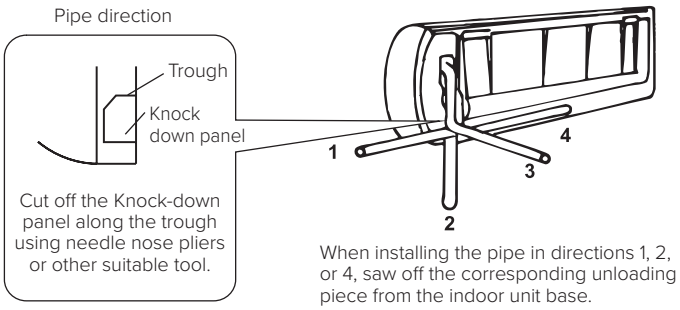
As shown in the figure, the six holes aligned with the tapping screws on the mounting plate must be used to secure it.

Other holes are provided as spare or for optional use if additional fixing is required.

Pipe installation

1. Feed the liquid and gas pipes, along with the cables, through the wall hole. This can be done from the outside in, or from the inside out after completing the indoor pipe and cable connections, so they are ready to connect to the outdoor unit.

2. Determine whether to saw off the unloading piece based on the chosen pipe direction (as shown in the reference diagram).

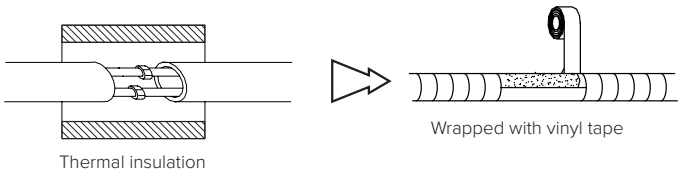


When installing the pipe in directions 1, 2, or 4, saw off the corresponding unloading piece from the indoor unit base.

3. After connecting the refrigerant pipes, install the drain hose, connect the power cords, and wrap them together with thermal insulation material.

Pipe joints thermal insulation

Wrap the pipe joints with thermal insulation material, then secure them with vinyl tape.



Pipes thermal insulation

a. Place the drain hose under the pipes.

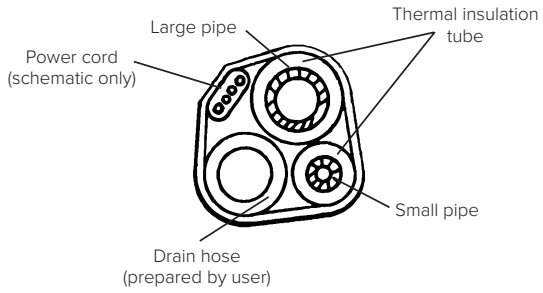
b. Insulation material uses polythene foam over 6mm in thickness.

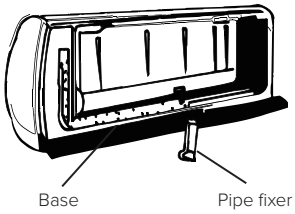
Note: Drain hose is prepared by user.

1. Ensure that the drain pipe is oriented downward to facilitate proper drainage flow. Avoid twisting, sticking out, or creating unnecessary bends in the drain pipe. Additionally, refrain from submerging the end of the drain pipe in water.

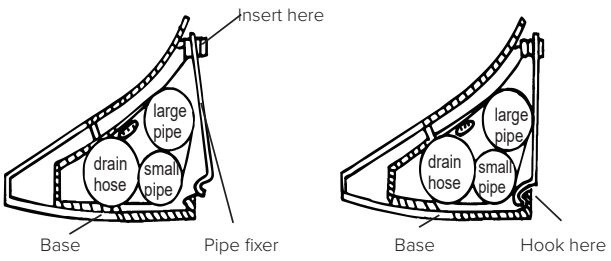
2. If you connect an extension drain hose to the drain pipe, it's important to insulate it thermally when passing it along the indoor unit for better insulation.

3. When the pipes are directed to the right, it is essential to thermally insulate and secure the pipes, power cord, and drain pipe onto the back of the unit using a pipe fixer.





A. Insert the pipe fixer to the slot.



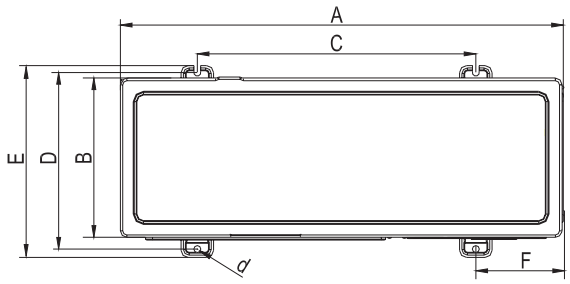
B. Press to hook the pipe fixer onto the base.

Installation and maintenance

Outdoor unit installation

Fix the outdoor unit using four bolts, washers, and nuts to minimise noise and vibration, following the specified installation dimensions.

Model Capacity (Btu/h)	A	B	C	D	E	F	d
ACSS99	900	320	535	357	385	195	2×Φ12



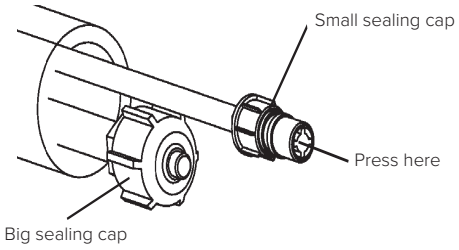
Pipes connection

1. Remove the two sealing caps from the indoor pipes.

a. Before unscrewing the large and small sealing caps, press the small cap with your finger until any exhaust noise stops, then release.

b. Connect the indoor unit pipes using two wrenches, following the specified torque values to avoid deforming or damaging the pipes, connectors, or flare nuts.

c. Pre-tighten the connections by hand, then finish tightening with the wrenches.



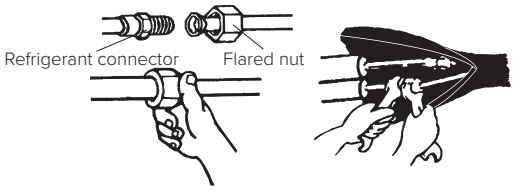
If you do not hear the exhaust noise, contact the merchant for assistance.

2. Connect the connecting pipes to the indoor unit connectors.

a. Ensure the indoor pipes and connecting pipes are aligned on the same axis during connection.

b. Hand-tighten the flared nuts clockwise first, then tighten them using torque wrenches.

c. Follow the specified torque values in the reference table to prevent deformation or damage to the pipes, connectors, or flared nuts.



Tube size	Torque (N.m)
φ6.35mm	20
φ9.52mm	40
φ15.88mm	80
φ19.05mm	100
φ22.22mm	120

3. Thermal insulation for connecting joints

Wrap the connecting joints to prevent condensate from forming and dripping. Wrap the liquid and gas pipes separately.

4. Connect the connecting pipes to the outdoor unit

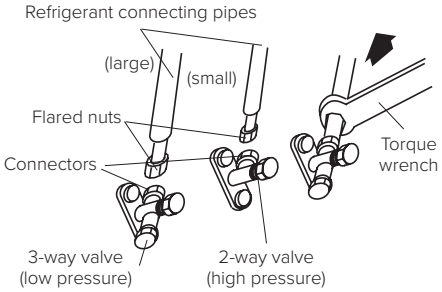
a. Remove the flared nuts from the 2-way and 3-way valves.

b. Remove the plastic seal caps from the connecting pipes.

c. Hand-tighten the flared nuts first, then tighten them with torque wrenches, keeping the connectors and pipes aligned on the same axis. Follow the specified torque requirements to prevent damage.

5. The connection positions of the pipe are shown below

Model capacity (Btu/h)	Gas pipe	Liquid pipe
ACSS99	Φ15.88mm	Φ9.52mm



⚠ CAUTION

Pass the pipe through the hole with the seal, and do not place the pipes directly on the floor.

Vacuum pumping

Vacuum pumping is required to remove all moisture and air from the system.

1. Connect the equipment

Attach the manifold pressure gauge and vacuum pump to the service port of the three-way stop valve using a charging hose.

2. Vacuumise the system

Use a 4 L vacuum pump with an electronic check valve (recommended).

Vacuum for more than 15 minutes until the pressure gauge drops below –0.1 MPa (–756 mmHg).

Close the vacuum gauge valve, stop the pump, and let the system stand for 1–2 minutes.

If the pressure rises, there is a leak in the refrigerant piping. Locate and repair the leak before repeating the vacuum process.

3. Disconnect equipment

Once vacuumising is complete, quickly remove the manifold pressure gauge from the service port of the stop valve.

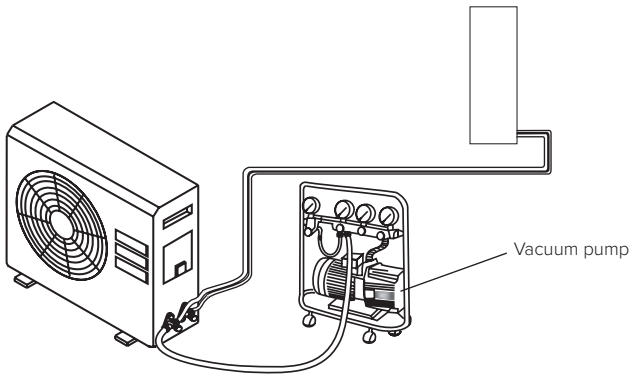
4. Open stop valves

Using a 4 mm Allen wrench, turn the gas and liquid stop valves on the outdoor unit anti-clockwise to open them.

After connecting the indoor and outdoor units , it is necessary to exhaust the air inside the pipes completely as follows:

⚠ CAUTION

This system is designed for R32 refrigerant only, and both the pressure gauge and charging hose must be specifically for R32; if the gauge does not reach –0.1 MPa (–756 mmHg), check for leaks at the valve connections between the indoor and outdoor units, repair any leaks found, and then continue to the next step.



Methods for opening and closing the stop valve

The stop valve is in the closed position before installation. Refer to Fig. 1 for the names of each component required to operate the valve.

Opening the stop valve: Insert a hexagon wrench into the valve stem, rotate it counterclockwise, and stop when it no longer turns - the valve is now fully open.

Closing the stop valve: Insert a hexagon wrench into the valve stem, rotate it clockwise, and stop when it no longer turns - the valve is now fully closed.

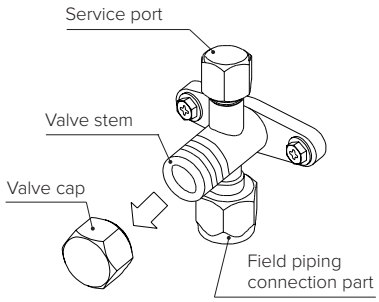


Fig 1

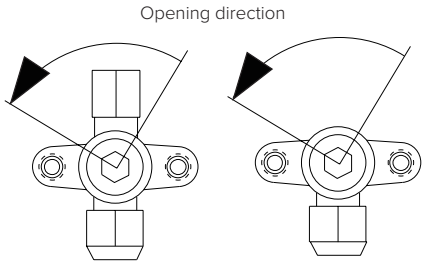


Fig 2 Liquid pipe

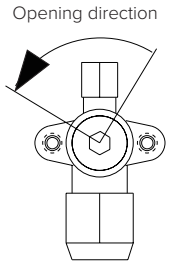


Fig 2 Gas pipe

Charging additional refrigerant

The refrigerant charge volume is calculated for a 5m (38 K) connecting pipe.

If the connecting pipe exceeds 5 m, additional refrigerant should be added to ensure optimal operation.

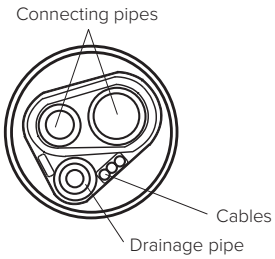
For ACSS99 model: Additional Refrigerant=(L-5)×0.035kg
(* "L" refers to length of connection pipe.)

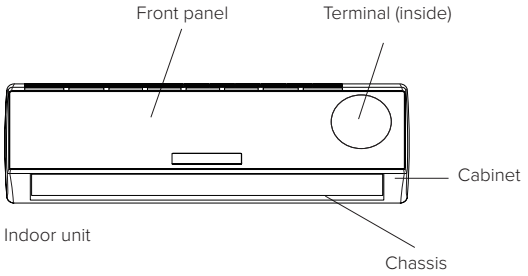
Charge the additional refrigerant through the service port of the 3-way valve while the unit is running in cooling mode, taking care not to let air enter the refrigeration system during the process.

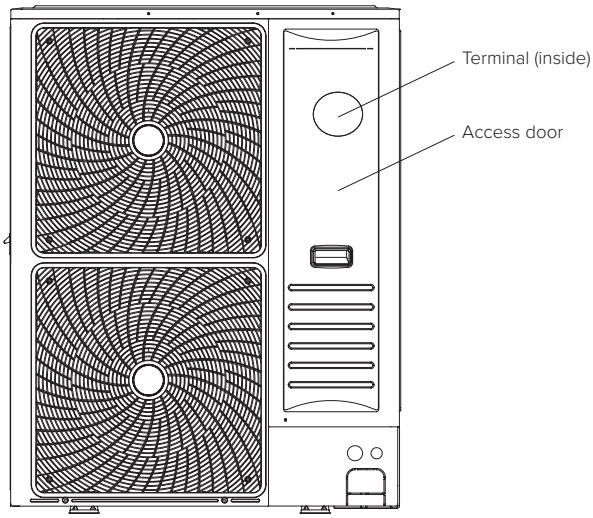
Installation and maintenance

Wrapping the piping

- Wrap the connecting pipes and cables together with tape, excluding the drainage pipe, which can be fixed alongside them separately.
- Start wrapping from the joint at the outdoor unit to the joint at the indoor unit, ensuring each turn of tape overlaps the previous one by half its width.







Wiring connection

Important notice

- The user is responsible for ensuring the external wiring is connected correctly.
- All external wiring must be carried out by a licensed electrician in compliance with local codes or ordinances.
- Pay special attention to the power supply specifications shown on the rating plate.
- The appliance must be correctly earthed, with the earth wire provided by the user.
- Never alter the internal wiring of the appliance.

Steps for external wiring connection

- Remove the front panel and the electric box cover of the indoor unit.
- Remove the access door of the outdoor unit.
- Connect the power supply cable between the indoor and outdoor units, and connect the indoor unit's electric heater power supply (if equipped).
- Refer to the detailed wiring instructions in the following pages of the manual.
- After connecting, securely fix the cables with effective anchorage.
- Ensure grounding is completed for both indoor and outdoor units.
- Reinstall all components removed from the units.

Demand Response

This product is Demand Response ready and compliant with DRM1, DRM2 & DRM3. It has the capacity to receive signals from electricity providers with an additional connection. The Demand Response features are future provisions to enable the unit to support grid stability by switching off (DRM1), reducing output to a lower level (DRM2), or operating at a moderate reduced level (DRM3) during periods of high electricity demand.

Cable specification

⚠ WARNING

- Use an ELB (Earth Leakage Breaker). Failure to do so may result in electric shock or fire.
- Do not operate the system until all checklist items have been confirmed as complete.

a. Check that the insulation resistance is above 2 MΩ by measuring between the ground and the terminals of the electrical parts.
If the resistance is below this value, do not operate the system until the source of the electrical leakage is located and repaired.

b. Ensure the outdoor unit's stop valves are fully open before starting the system.

Model Capacity (Btu/h)	Power Supply	ELB		Power Source Cable Size	Transmitting Cable Size	Circuit Breaker (A)
		Nominal Current (A)	Nominal Sensitive Current (mA)	IEC60335-1*1	IEC60335-1*1	
ACSS99	220-240V ~50Hz	32	30	3x4.0mm²	3x1.5mm²	32

NOTE:

1. Follow local codes and regulations when selecting field wires; all values stated are minimum wire sizes.

2. Use wires no lighter than ordinary polypropylene sheathed flexible cord (designation H07RN-F).

3. Wire sizes marked *1 in the table are based on the unit's maximum current rating per IEC 60335-1 or national/regional standards.

4. If the transmitting cable length exceeds 15 m, select a larger wire size.

5. Install a main switch and a separate ELB (Earth Leakage Breaker) for each system. Use a high-response ELB that activates within 0.1 seconds. For recommended capacities, refer to the outdoor unit's switch capacity.

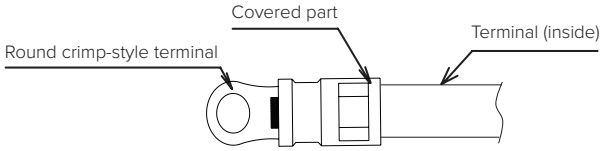
6. When power cables are connected in series, add the maximum current of each unit to determine the required wire size.

Current i (A)	Wire Size (mm²)
i≤6	0.75
6<i≤10	1
10<i≤16	1.5
16<i≤25	2.5
25<i≤32	4
32<i≤40	6
40<i≤63	10
63<i	*

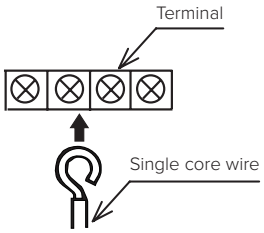
*If the current exceeds 63 A, do not connect the cables in series.

Attention when connecting the power supply wiring

1. When connecting the terminal block with stranded wire, use round crimp-style terminals for the power supply connection. Fit the terminal onto the wire up to the covered section and secure it firmly.



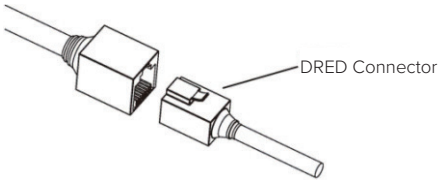
2. When connecting the terminal block with single-core wire, ensure the ends are properly treated before connection.



DRED (Demand Response Enable System) connector

A demand communication cable is supplied with the outdoor unit.

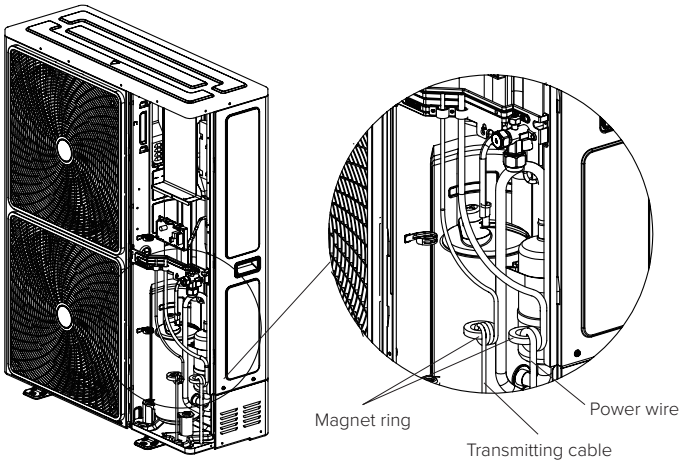
It can be connected to a DRED system to set power consumption limits if required.



Magnet Ring Connector

Two magnetic rings are required - one for the power wire and one for the transmitting cable.

- The power wire must be wound once around its magnetic ring.
- The transmitting cable must be wound three times around its magnetic ring.



Test run

Before testing

Only operate the unit after all the following checks have been completed:

1. Confirm the insulation resistance between the terminals and ground is above 2 MΩ; if not, locate and repair any electrical leakage before operation.

2. Ensure the stop valves are fully open.

3. Verify the power supply has been connected for at least six hours before starting the unit.

4. Make sure the power supply and unit are functioning correctly before plugging in.

Function test

1. After completing all checks, power on the appliance and press the control panel buttons to confirm they work correctly.

2. Ensure the display screen operates normally.

While the system is running, observe the following precautions:

High temperature caution: Do not touch any parts on the discharge gas side, as the compressor chamber and discharge pipes can exceed 90 °C.

Magnetic switch safety: Do not press the magnetic switch (ES) button, as this may cause serious injury or damage.

Operation check: Operate the unit using the remote controller and confirm that both room temperature control and functions work properly. After the test, switch off the electrical power.

Installation of the appliance is generally complete once the above steps have been carried out.

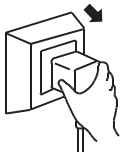
If you experience any further issues, contact your local technical service centre for assistance.

Maintenance

Front panel maintenance

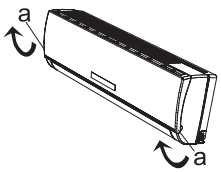
1. Cut off power supply

Turn off the appliance first before disconnecting from the power supply.



2. Remove front panel

Grasp position 'a' and pull outward to remove the front panel.



3. Wipe with a soft dry cloth

Use a soft moist cloth to clean the front panel.

4. Never use volatile substances

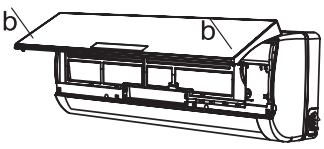
Such as gasoline or polishing powder to clean the appliance.

5. Never spray water onto the indoor unit

Dangerous electric shock.

6. Reinstall and shut the front panel

Reinstall and shut the front panel by pressing position 'b' downward.



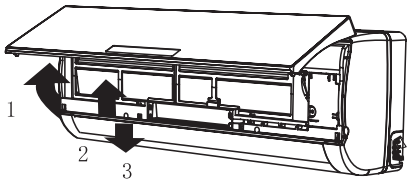
Air filter maintenance

1. Stop the appliance, cut off the power supply and remove the air filter

1. Open the front panel.

2. Press the handle of the filter gently from the front.

3. Grasp the handle and slide out the filter.



2. Clean and reinstall the air filter

If there is dirt present, wash it with a solution of detergent in lukewarm water.

After cleaning, dry well in shade.

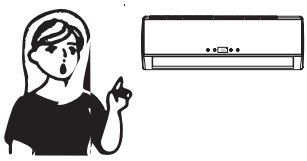
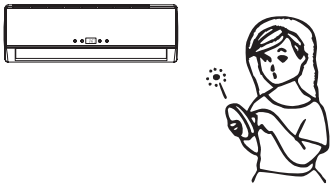
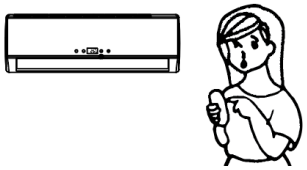
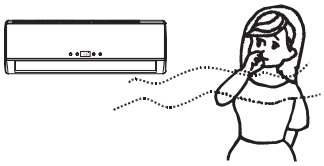
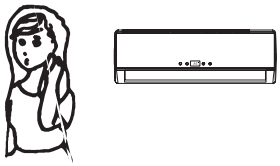
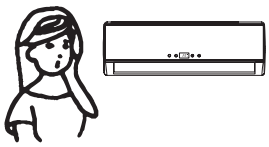
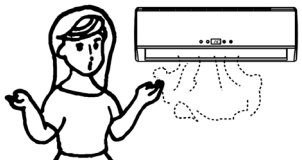
3. Close the front panel

Clean the air filter every two weeks if the air conditioner operates in an extremely dusty environment.

It is necessary to clean the air filter after using it for about 100 hours.

Troubleshooting

The following cases may not always be a malfunction, please check it before requesting a service.

Problem	Solution
Does not run 	• The circuit breaker or fuse has blown. • Wait for 3 minutes and try again - the protection device may be preventing the unit from operating. • The batteries in the remote controller are flat. • The unit is not properly plugged in.
No cooling or heating air 	• Is the air filter dirty? • Are the air conditioner's inlets and outlets blocked? • Is the temperature set correctly?
Ineffective control 	• When exposed to strong interference, such as excessive static electricity discharge or abnormal power supply voltage, the control system may become ineffective and cause abnormal operation. In such cases, disconnect the power supply, wait 2–3 seconds, and then reconnect it.
Does not operate immediately 	• Changing the mode during operation will cause a 3-minute delay.
Strange odour 	• The odour may be coming from another source. Check that other odours are not being drawn into the unit and blown out with the air.
Sound of flowing water 	• Caused by the flow of refrigerant in the air conditioner, which is normal. • Defrosting noise during heating mode.
Hearing a cracking sound 	• The sound may be caused by the expansion or contraction of the front panel due to changes in temperature.
Mist spray from outlet 	• Mist may appear when the room air becomes very cold due to cool air being discharged from the indoor unit during COOLING or DRY mode.
The compressor indicator (red) light is on constantly and indoor fan stops	• The unit is shifting from heating mode to defrost mode. The indicator light will turn off within 10 minutes and the unit will return to heating mode.

After sales service

If your air conditioner is not operating normally, turn off the unit and disconnect the power supply immediately. Contact your service centre or technical department.

emerald.com.au/contact

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