

FLOOR CONSOLE MINI SPLIT SYSTEM
AIR CONDITIONER / HEAT PUMP



FAB / FYB Series

FAB: Cooling Only Version

FYB Cooling and Heating Version

Inverter+ and Inverter++ Models

9,000 BTU/h. through 12,000 BTU/h.



Installation Manual

IMPORTANT NOTICE:

Please read this manual carefully before installing
or operating your new air conditioning system.
Make sure to save this manual for future reference.



- If used as a part of a MULTI Split System, please refer to the Installation & Operation manuals packed with the multi split outdoor unit.

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1. PRECAUTIONS

- **Be sure to be in compliance with all local, national, and international laws and regulations.**
- **Read all of "PRECAUTIONS" carefully before installation.**
- **The following precautions include important safety steps. Observe them in their entirety to avoid being in violation.**
- **Keep this manual, along with the owner's manual, in a handy place for your future reference.**
- **Installation must be performed in accordance with the requirement of NEC and CEC by authorized personnel only. (Applicable to the North American area only)**

The safety precautions listed here are divided into two categories. In either case, essential safety information is listed, which must be read and absorbed carefully.



WARNING

Failure to observe a warning may result in death.



CAUTION

Failure to observe a caution may result in injury or damage to the equipment.

After completing installation, make sure that the unit operates properly during the start-up operation. Please instruct the customer on how to operate the unit and keep it properly maintained. Also, inform customers that they should store this installation manual, along with the owner's manual, for their future reference.



WARNING

Be sure to only hire trained and qualified service personnel to install, repair, or service the equipment.

Improper installation, repair, and maintenance may result in electrical shocks, short-circuits, leaks, fires, or other damage to the equipment.

Strictly adhere to these installation instructions.

If installation is done improperly, it may cause water leakage, electrical shock, and possibly fire.

When installing the unit inside a small room, take measures toward keeping refrigerant concentration from exceeding allowable safety limits, in the event of refrigerant leakage. Contact the place of purchase for more information.

Excessive refrigerant inside a closed environment can lead to oxygen deficiency.

Use only the attached accessories and specified parts for installation.

Unauthorized parts and accessories can cause the set to fall, develop water leakage, or cause electrical shock or fire.

Install in a strong, stable location that will be able to withstand the full weight of the set.

If the mount location's stability is insufficient, or the installation is improperly done, the set can possibly drop and cause injury.

The appliance shall not be installed in, or near, the laundry room.

Before obtaining access to the terminals, all supply circuits must be disconnected.

The appliance must be positioned so that the plug is easily accessible.

The enclosure of the appliance shall be marked by words, or by symbols, with the direction of the fluid flow.

For electrical work, follow all local and national wiring standards and regulations, as well as these installation instructions. An independent circuit and single outlet must be used.

If the electrical circuit capacity is insufficient, or there is a defect in the electrical work, it will cause electrical shock fire.

Use the specified cable and connect tightly and clamp the cable so that no external force will act upon the terminal.

If the connection or fixture is not perfect, it will cause heating-up of, or fire at, the connection.

Wiring routing must be properly arranged, so that the control board cover is fixed properly.

If control board cover is not fixed perfectly, it will lead to heating-up at the connection point of terminal, fire, or electrical shock.

If the supply cord is damaged, it must be replaced by the manufacturer, service agent, or similarly qualified personnel, in order to avoid a hazard.

An all-pole disconnection switch, having a contact separation of at least 3mm in all poles, should be implemented within the fixed wiring.

When carrying out a piping connection, take care not to let air pockets leak into the refrigeration cycle.

Otherwise, it can lead to lowered capacity, abnormally high pressure in the refrigeration cycle, explosion, and injury.

Do not modify the length of the power supply cord, or use of extension cord, and do not share the single outlet with other electrical appliances.

It can lead to possible fire or electrical shock.

Carry out the specified installation work only after taking into account strong winds, typhoons, or earthquakes.

Improper installation work may result in the equipment falling and causing accidents during possible natural disasters.

If the refrigerant leaks during installation, ventilate the area immediately.

Toxic gas may be produced if the refrigerant comes into contact, whether direct or indirect, with fire.

Since the temperature of the refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.

After completion of all installation work, check that the refrigerant does not leak.

Toxic gas may be produced if the refrigerant leaks into the room and comes into contact with a fire source, such as a fan heater, stove, or cooker.

The appliance shall be installed in accordance with national wiring regulations.

Do not operate your air conditioner in a wet room, such as a bathroom or laundry room.

An all-pole disconnection device, which has at least 3mm clearances in all poles, and has a leakage current that may exceed 10mA, and the residual current device (RCD) having a rated residual operating current not exceeding 30mA, with disconnection, must be incorporated in the fixed wiring, in accordance with all relevant wiring laws.



CAUTION

Ground the air conditioner.

Do not connect the ground wire to gas or water pipes, lightning rods, or telephone ground wires. Incomplete grounding may result in electric shocks.

Be sure to install an earth leakage breaker.

Failure to install an earth leakage breaker may result in electrical shocks.

Connect the outdoor unit wires before connecting the indoor unit wires.

You are not permitted to connect the air conditioner with the power source until the wiring and piping for the air conditioner is completed.

When following the instructions in this installation manual, be sure to install drain piping to ensure proper drainage, and insulate piping in order to prevent condensation.

Improper or lack of drain piping may result in water leakage and property damage.

Install the indoor and outdoor units, power supply wiring, and connecting wires at least 1 meter away from any televisions or radios, in order to prevent possible image interference or noise.

Depending on the radio waves, a distance of 1 meter may not be sufficient enough to eliminate the noise.

This appliance is not intended for use by young children, or infirm persons, without supervision.

Don't install the air conditioner in the following locations:

- Anywhere that contains unsealed petrolatum.
- Areas with salt-saturated air (such as near the coast).
- Areas with caustic gas (sulfide, for example) existent in the air (such as near a hot spring).
- Areas with fluctuations in incoming power supply (or unstable power where the voltage fluctuates). This can happen in some factories where some large machinery can cause noise on power lines.
- In buses or cabinets.
- In kitchens that contain gas or oil.
- Areas with electromagnetic waves.
- Areas with inflammable gases or other materials.
- Anywhere near evaporating acids or alkaline liquids.
- Any locations undergoing special delicate conditions.

2. INSTALLATION INFORMATION

- **To guarantee proper installation, please first read this "installation manual" in its entirety.**
 - **The air conditioner must be installed by qualified persons.**
 - **When installing the indoor unit or its tubing, please follow this manual as strictly as possible.**
 - **If the air conditioner is installed on a metallic part of the building, it must be electrically insulated according to the relevant standards for electrical appliances.**
 - **When all of the installation work is finished, please turn on the power only after a thorough inspection is performed.**
 - **This handbook guarantees successful system operation. However, future manuals will contain the latest information.**
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


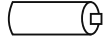
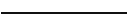

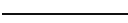
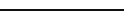

INSTALLATION ORDER

- Select the location
- Install the indoor unit
- Install the outdoor unit
- Install the connecting pipe
- Connect the drain pipe
- Complete all wiring
- Test the system operation

3. ACCESSORIES

Please check whether the following list of accessories are of full scope. If there are some spare items, please store them carefully aside.

Table 3-1

	NAME	SHAPE	QUANTITY
Installation Fittings	1.Hook		2
Remote Controller & Its Frame	2. Remote Controller		1
	3. Frame		1
	4. Mounting Screw (ST2.9×10-C-H)		2
	5. Alkaline Dry Batteries (AM4)		2
Others	6. Owner's Manual		1
	7. Installation Manual		1
	8. Transfer Connector(ϕ .52- ϕ 2.7) (Packed with the Indoor Unit, used for Multi-Type models only) (NOTE: Pipe sizes differ from appliance to appliance.To meet different pipe size requirements, sometimes the pipe connections need the transfer connector to be installed on the outdoor unit)		1 (on some models)
	9. Magnetic Ring (Hitch onto the communication cable and wind for two coils.)		1 (on some models)
	10. Red Short Connected Wire (Applied to the W/L pin of outdoor unit terminal block, to be short-circuited)		1 (on some models)

Cautions regarding Remote Controller installation:

- Try to prevent dropping or tossing of the controller.
- Before unit installation, operate the remote controller to determine its ideal location with regards to reception range in relation to the unit.
- Keep the remote controller at least 1m away from the nearest TV set or stereo equipment (This is necessary to prevent image disturbances or noise interferences).
- Do not install the remote controller in a place that is exposed to direct sunlight or close to a heating source, such as a stove.
- Note that the positive and negative poles are in their proper positions when loading batteries.
- This manual is subject to changes due to technological improvement, without further notices.

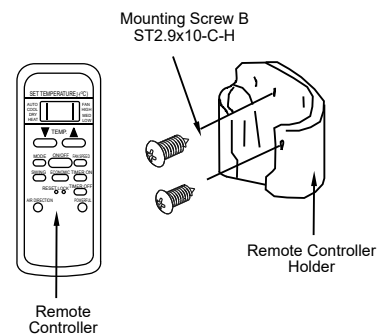




Fig.3-1

4. INSPECTING AND HANDLING THE UNIT

On delivery, the package should be inspected, and any damage should be reported to the service agent immediately.

When handling the unit, take into account the following:

- 1  - Fragile, handle the unit with care.
- 1  - Keep the unit upright, in order to avoid compressor damage.
- 2 Pre-determine the path along which the unit is to be brought in.
- 3 Move and carry this unit without changing its original packaging position, by as much as possible.
- 4 When lifting the unit, always use protectors to prevent belt damage, and pay special attention to the position of the unit's center of gravity.

5. INDOOR UNIT INSTALLATION

5.1 Installation Location

The indoor unit should be installed in a location that meets the following requirements:

- There is sufficient room for installation and maintenance.
(Refer to Fig. 5-1 and Fig. 5-2)
- The outlet and the inlet are not impeded, and the influence of external air is minimized.
- The air flow has reach throughout the room.
- The connecting pipe and drainpipe can be easily removed.
- There is no direct radiation from heaters.



CAUTION

Keep indoor unit, outdoor unit, power supply wiring, and transmission wiring at least 1 meter away from televisions and radios. This is to prevent image interference and noise coming from those electrical appliances. (Noise may be generated depending on the conditions under which the electric wave is generated, even if a 1 meter distance is kept.)

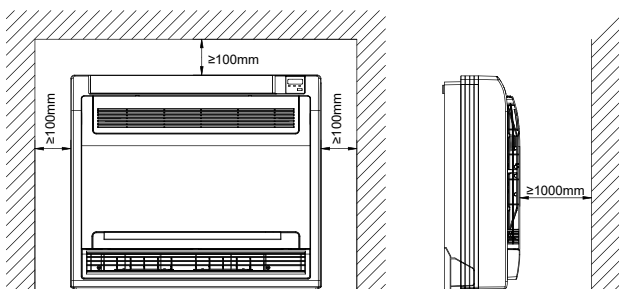


Fig.5-1

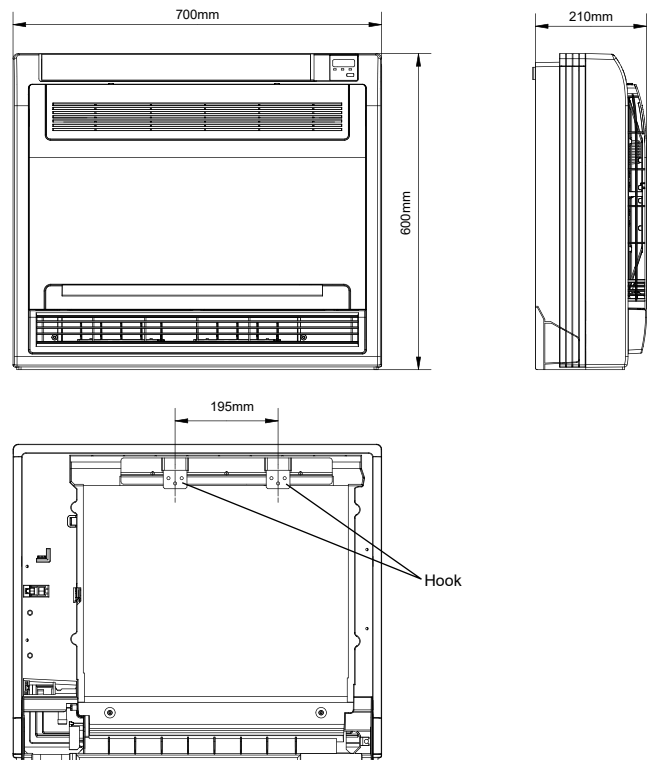


Fig.5-2

5.2 Installing the Main Body

- Fix the hook by tapping a screw into the wall (Refer to Fig.5-3).

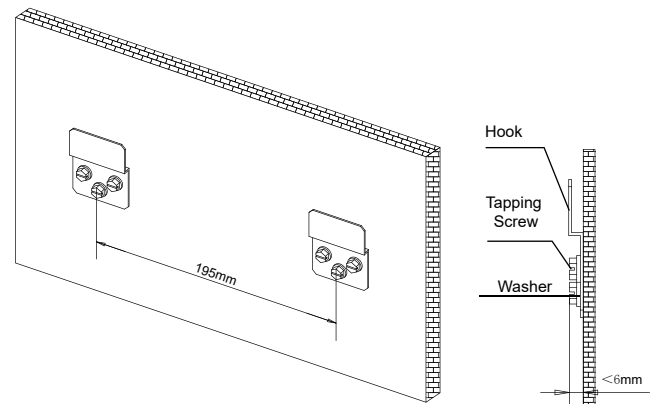


Fig.5-3

- Hang the indoor unit onto the hook.
(The bottom of body can either touch the floor or be suspended, but the body must be installed vertically.)

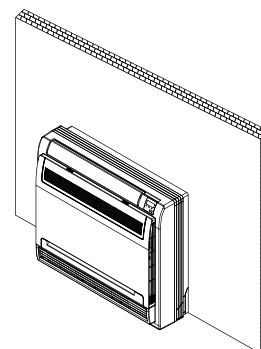


Fig.5-4

6. OUTDOOR UNIT INSTALLATION

6.1 Installation Location

■ The outdoor unit should be installed in a location that meets the following requirements:

- There is enough spatial clearance for maintenance.
- The air outlet and the air inlet are not impeded, and cannot be affected by strong winds.
- The location is dry and well-ventilated.
- The support is flat, horizontal, and can stand the weight of the outdoor unit. The location should add no additional noise or vibration.
- Neighbors will not feel uncomfortable from the noise or expelled air.
- It should be easy to install the connecting pipes or cables.
- The air outlet direction should be determined as somewhere where the discharged air is not blocked.
- There is no danger of fire from leakage of inflammable gas.
- The piping length between the outdoor unit and the indoor unit will not exceed the allowable piping length.
- In the case that the installation place may be exposed to strong winds, such as a seaside gusts, make sure that the fan is operating properly by putting the unit lengthwise along the wall, or by using a dust shield. (Refer to Fig. 6-1)
- If possible, do not install the unit in a location where it is exposed to direct sunlight.
- If necessary, install a blind that does not interfere with the air flow.
- During heating mode, all water drained from the outdoor unit, as well as all condensate, should be directed towards the drain hole and drained away to an appropriate place, so as not to affect other nearby people.
- Select the best position that will not be subject to snow drifts, accumulation of leaves, or other seasonal debris. If unavoidable, please cover the unit with a shelter.
- Install the unit in a location that is as close as possible to the indoor unit.
- If possible, remove all nearby obstacles, so as to prevent air circulation efficiency from dropping, due to nearby obstructions.
- The minimum distance between the outdoor unit and any obstacles described in the installation chart does not mean that the same is applicable to the situation of an airtight room. Leave clear two of the three directions. (Refer to Fig.6-3)

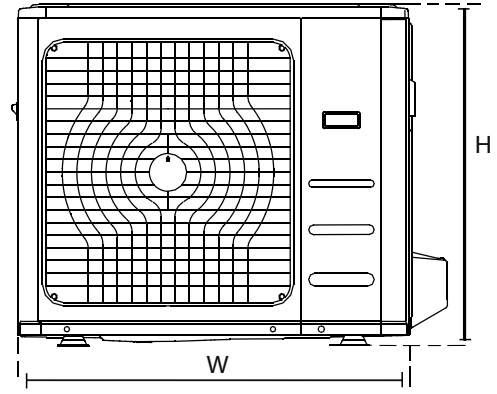


Fig.6-2

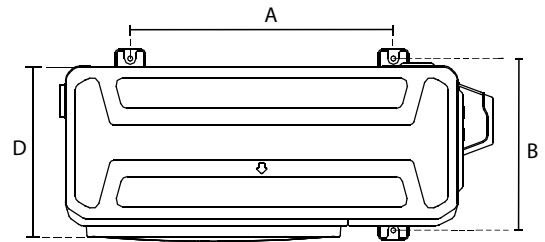


Fig.6-3

Table 6.1: Length Specifications of Split Type Outdoor Unit (unit: mm/inch)

Outdoor Unit Dimensions W x H x D	Mounting Dimensions	
	Distance A	Distance B
780x540x250 (30.7x21.25x9.85)	549 (21.6)	276 (10.85)
760x590x285 (29.9x23.2x11.2)	530 (20.85)	290 (11.4)
810x558x310 (31.9x22x12.2)	549 (21.6)	325 (12.8)
845x700x320 (33.27x27.5x12.6)	560 (22)	335 (13.2)
770x555x300 (30.3x21.85x11.8)	487 (19.2)	298 (11.73)
800x554x333 (31.5x21.8x13.1)	514 (20.24)	340 (13.39)
845x702x363 (33.27x27.6x14.3)	540 (21.26)	350 (13.8)

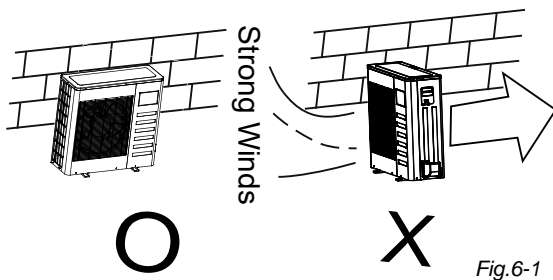


Fig.6-1



NOTE

All pictures in this manual are for explanatory purposes only. They may slightly differ from the air conditioner that you purchased (dependent on model). The actual shape shall prevail.

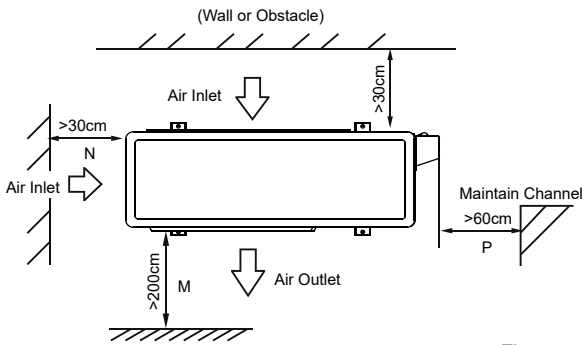


Fig.6-4



NOTE

All pictures in this manual are for explanatory purposes only. They may slightly differ from the air conditioner that you purchased (dependent on model). The actual shape shall prevail.

6.2 Moving and Installation

- Since the center of gravity of the unit is not at its actual physical center, please be careful when lifting it using a sling.
- Never directly hold onto the inlet of the outdoor unit, to prevent it from deforming.
- Do not touch the fan with your hands or any other objects.
- Do not lean the unit more than 45°, and do not lay it sideways.
- Create a concrete foundation according to the specifications of the outdoor units. (Refer to Fig. 6-5)
- Firmly fasten the feet of this unit with bolts, to prevent it from collapsing in case of earthquake or strong winds. (Refer to Fig. 6-5)

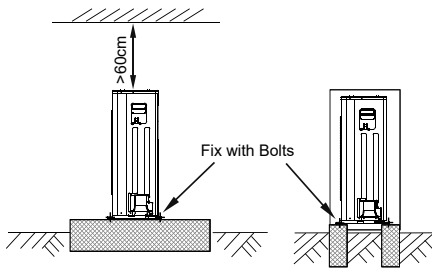


Fig.6-5



NOTE

All pictures in this manual are for explanatory purposes only. They may slightly differ from the air conditioner that you purchased (dependent on model). The actual shape shall prevail.

7. INSTALL THE CONNECTING PIPE

Check to ensure that the height drop between the indoor unit and outdoor unit, the length of refrigerant pipe, and the number of bends meet the following requirements:

Table 7-1

Capacity (Btu/Hr)	12000	16000~18000
Max Height Drop	5m	10m
Length of Refrigerant Pipe	Less than 10m	Less than 20m
Number of Bends	Less than 5	Less than 8

7.1 Pipe Connection Procedure



CAUTION

All field piping must be performed by a licensed refrigeration technician, and must comply with the relevant local and national codes.

Do not let air, dust, or other impurities fall into the pipe system during the process of installation. Connecting pipes should not be installed until the indoor and outdoor units have already been fixed into place.

Keep the connecting pipes dry, and do not let moisture inside during installation.

Heat insulation work should be installed properly and fully, on both sides of the gas piping and the liquid piping. Otherwise, there can be a risk of water leakage.

- 1 Drill a hole into the wall (suitable for just the size of the wall conduit), and set the fittings (such as the wall conduit and its cover) onto the wall.
- 2 Bind the connecting pipe and the cables together tightly with the use of binding tape. Pass the bound connecting pipe through the wall conduit from outside. Be careful with the pipe movement, to avoid doing damage to the tubing.
- 3 Connect the pipes. Refer to "How to Connect the Pipes" for further details.
- 4 Expel all air with a vacuum pump. Refer to "How to Expel the Air with a Vacuum Pump" for details.
- 5 Open the stop valves of the outdoor unit, to set the refrigerant pipe connecting the indoor unit with the outdoor unit in fluent flow.
- 6 Check for leakage. Check all joints with a leak detector or soapy water.
- 7 Cover the joints of the connecting pipe with soundproof/insulating sheaths (fittings), and bind it well with the tapes to prevent leakage.



CAUTION

Be sure that the insulating materials cover all of the exposed parts of the flare pipe joints and refrigerant pipes on the liquid-side and the gas-side. Ensure that there is no gap between these layers.

Improper insulation may cause water condensation.

■ How to Take Indoor Unit Apart to Connect the Pipes

1 Open the Front Panel

- Slide the two stoppers on the left and right sides inward until they click. (Refer to Fig. 7-1)

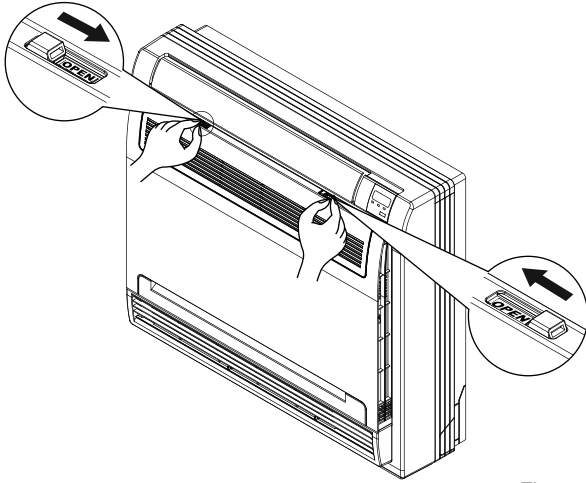


Fig. 7-1

2 Remove the Front Panel.

- Remove the fastening string. (Refer to Fig. 7-2)
- Allow the front panel to fall forward, which will enable you to then remove it.

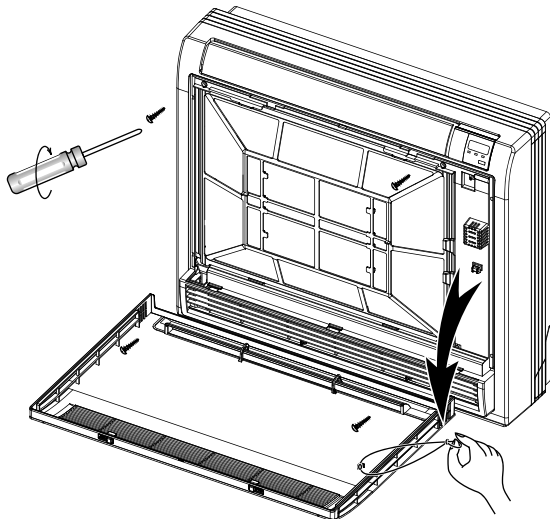


Fig. 7-2

3 Remove the Face Plate.

- Remove the four screws. (Refer to Fig. 7-2)
- Open the bottom of the faceplate at a 30 degree angle, then the top of face plate can be lifted. (Refer to Fig. 7-3)

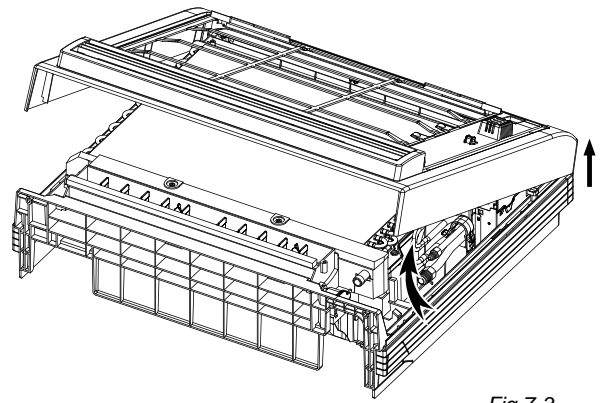


Fig. 7-3

■ How to take outdoor unit apart to connect the pipes

Remove the water tray (Refer to Fig. 7-4).

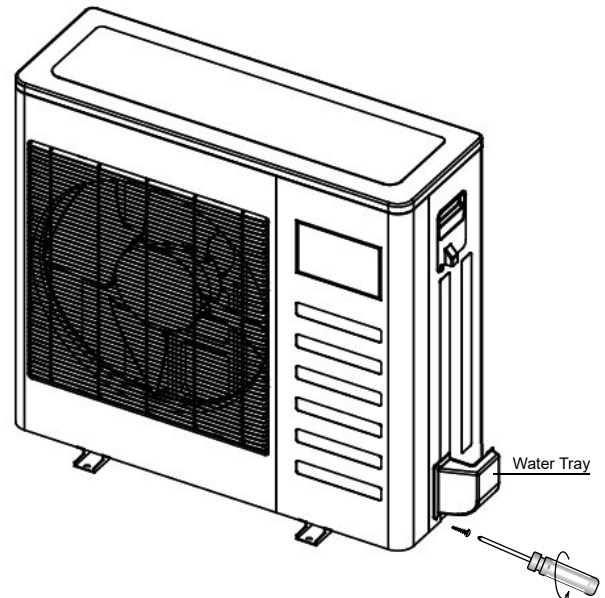


Fig. 7-4

■ How to Connect the Pipes

1 Flaring

- Cut pipe using a pipe cutter. (Refer to Fig. 7-5)

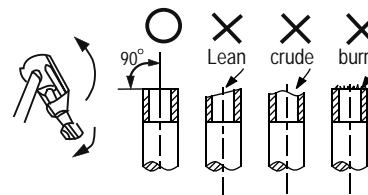


Fig. 7-5

- Insert a flare nut into the pipe, then flare the pipe.
- Refer to Table 7-2 for the dimension of flare nut spacings.

Table 7-2

Pipe Gauge	Tightening Torque	Flare dimension A min (mm)	max	Flare Shape
Ø6.35	15~16 N.m (153~163 kgf.cm)	8.3	8.7	
Ø9.52	25~26 N.m (255~265 kgf.cm)	12.0	12.4	
Ø12.7	35~36 N.m (357~367 kgf.cm)	15.4	15.8	
Ø15.9	45~47 N.m (459~480 kgf.cm)	18.6	19.0	
Ø19.1	65~67 N.m (663~684 kgf.cm)	22.9	23.3	

2 Connect the indoor unit BEFORE the outdoor unit.

- Important: Ensure the pipe is bent appropriately.

Bend the pipe with thumb



min-radius 100mm

Fig.7-6

- The bending angle should not exceed 90°.
- Bending position is preferably located somewhere in the middle of the bendable pipe. The larger the bending radius, the better.
- Do not bend the pipe more than three times.
- When connecting the flare nut, coat the nut both inside and outside with either ester oil or similar, and initially tighten by hand 3 or 4 turns, before tightening firmly.

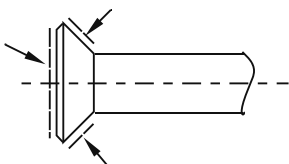


Fig.7-7

- Be sure to use both a spanner and torque wrench together when connecting or disconnecting pipes to/from the unit.

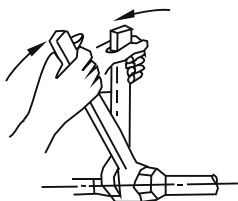


Fig.7-8



CAUTION

Too large of a torque will damage the flare cone, and too little will cause a leakage. Please determine the proper torque by referring to Table 4.

After the connecting work is finished, be sure to check that there is no gas leak.

EVACUATION OF LINE SET/INDOOR UNIT

Preparations and Precautions

Air and foreign matter in the refrigerant circuit can cause abnormal rises in pressure, which can damage the air conditioner, reduce its efficiency, and even cause injury. Use a vacuum pump and a manifold gauge to evacuate the line set and the Indoor Unit, removing any non-condensable gas and moisture from the system.

Evacuation should be performed upon initial installation, and whenever the unit is relocated.

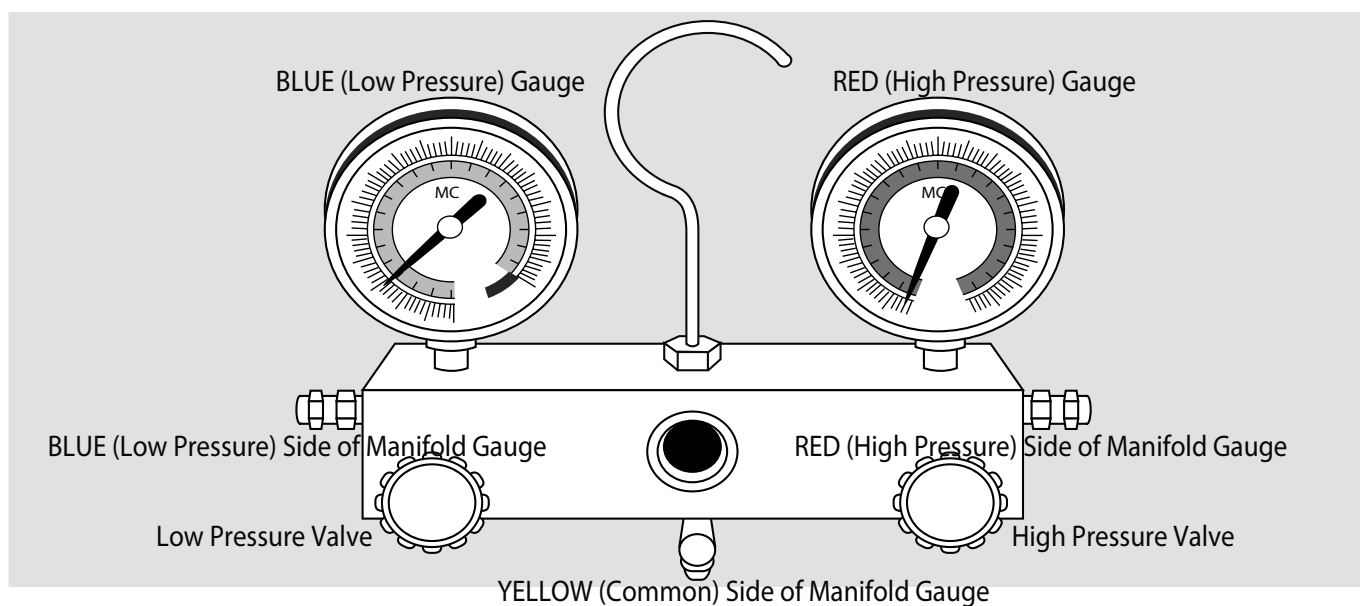
BEFORE PERFORMING EVACUATION

- Check to make sure that both the LIQUID SIDE and GAS SIDE pipes between the indoor and outdoor units are connected properly, in accordance with the Refrigerant Piping Connection section of this manual.
- Check to make sure all wiring is connected properly.

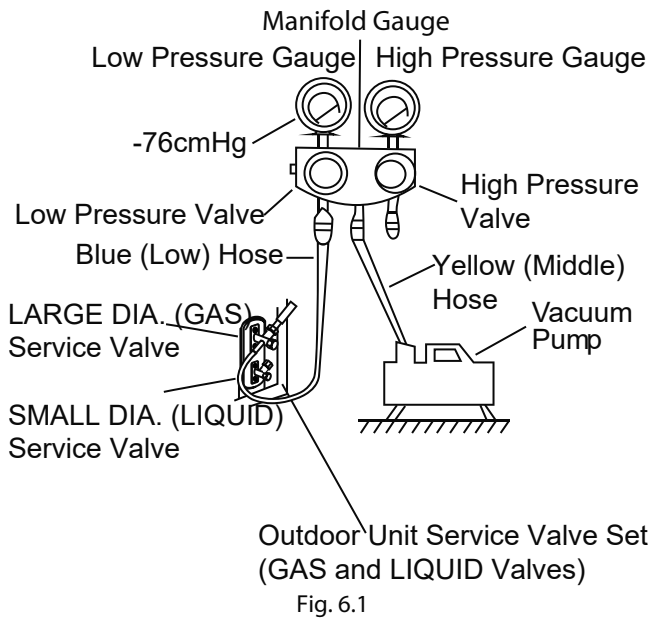
Before using the manifold gauge and the vacuum pump, read their operation manuals to familiarize yourself with how to use them properly.

Table 4

Tightening Torque Lb•Ft (Turn clockwise to close)				
Service Valve size	Shaft (Valve Body)		Cap (Valve Core)	Service Port Cap
Ø 1/4	4~5	Hexagonal wrench 4 mm (5/32")	10~12	8.5~10.2
Ø 3/8			13~16	
Ø 1/2	6~7.5	Hexagonal wrench 6 mm	17~20	
Ø 5/8	10~12	Hexagonal wrench 6 mm	17~20	
Ø 3/4	20~25	Hexagonal wrench 10 mm	26~32	
Ø 1"			26~32	



Evacuation Instructions



1. Connect the blue (low side) hose of the manifold gauge to the service port on the outdoor unit's GAS SIDE valve (use a 1/4" to 5/16" port adapter, if needed (sold separately))
2. Connect yellow (middle, or common) hose from the manifold gauge to the vacuum pump.

3. Open the BLUE (Low Pressure) valve of the Manifold Gauge. Keep the RED (High Pressure) valve closed.
4. Turn the vacuum pump ON to start evacuating the air from the line set and indoor unit circuits.
5. Run the vacuum pump for at least 15 minutes, or until the Low Pressure Gauge reads -76cmHG (-100 kPa or -30 In Hg). (Negative value)
6. Close the Blue (Low Pressure) valve of the Manifold Gauge, then turn the vacuum pump OFF.
7. Wait for 5 minutes, then check that there has been no rise in Low Pressure Gauge reading.
8. If there is a rise (Vacuum Loss), refer to the Gas Leak Check section for information on how to check for leaks. If there is no change in vacuum reading, unscrew the cap from the LIQUID Side Service Valve (Fig. 6.2)
9. Insert hexagonal wrench into the service valve (LIQUID Side Valve) and open the valve by turning the wrench in a 1/4 counterclockwise turn. Listen for the sound of gas exiting the system, then close the valve after 5 seconds.
10. The Low Pressure Gauge should now show a positive pressure value (Above Zero). Watch the Pressure Gauge for a few minutes to make sure that there is no drop in the pressure value (indicating a leak).

Note on Adding Refrigerant

Some systems require additional charging, depending on pipe lengths. The pipe length varies according to the locations of the indoor and outdoor units. The system has been factory charged with sufficient R410a refrigerant for the standard pipe length of 5m (16'). The additional refrigerant to be charged can be calculated using the following formula. This is necessary only if the length exceeds 7.5m (25 feet).

ADDITIONAL REFRIGERANT PER PIPE LENGTH

Connective Pipe Length (m)	Air Purging Method	Additional Refrigerant	
≤ Standard pipe length	Vacuum Pump	N/A	
> Standard pipe length (5m)	Vacuum Pump	Liquid Side: Ø 6.35 (Ø 1/4") Gas side either Ø 9.52 (Ø 3/8") or Ø 12.7 (Ø 1/2") Add for lengths beyond 5m (16 feet) (Per additional meter) x 15g /m (Per additional feet) x 0.16 oz/ft	Liquid Side: Ø 9.52 (Ø 3/8") Gas side either Ø 15.87 (Ø 5/8") or Ø 19.05 (Ø 3/4") Add for lengths beyond 5m (16 feet) (Per additional meter) x 30 g/m (Per additional feet) x 0.32 oz/ft

! CAUTION

DO NOT mix refrigerant types. Use only the same type of refrigerant (R410a).

8. CONNECT THE DRAIN PIPE

■ Install the Drainpipe of the Indoor Unit

The outlet has a PTI screw thread. Please use sealing materials and pipe sheath (fittings) when connecting PVC pipes.



CAUTION

- The drain pipe of the indoor unit must be heat-insulated, or it, as well as the connections of the indoor unit, will condense dew.
- Hard PVC binder must be used for the pipe connection. Make sure there is no leakage.
- With the connection part to the indoor unit, please ensure not to apply pressure on the side of indoor unit pipes.
- When the declivity of the drain pipe downwards is over 1/100, there should not be any winding.
- The total length of the drain pipe, when pulled out transversely, shall not exceed 20m. When the pipe is overlong, a prop stand must be installed to prevent winding.
- Refer to the figures below for the installation of the pipes.

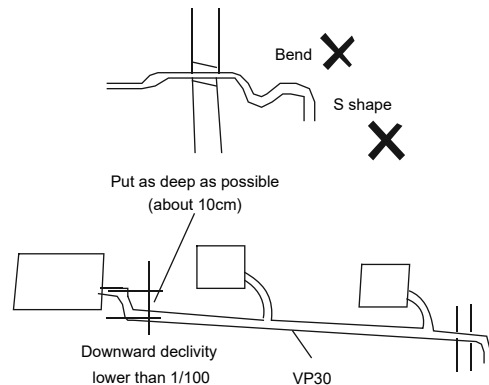
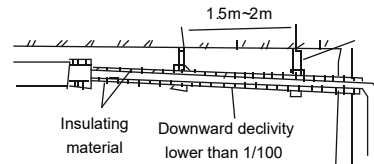


Fig. 8-1

■ Drainage Test

- Check whether the drainpipe is unhindered.
- Newly-built houses should have this test done before paving the ceiling.

■ Install the Drain Joint of the Outdoor Unit

Fit the seal into the drain joint, then insert the drain joint into the base pan hole of outdoor unit, rotate 90 to securely assemble them. Connect the drain joint with an extension drain hose (locally purchased), in case of condensate draining off the outdoor unit during heating mode. (Refer to Fig. 8-2)

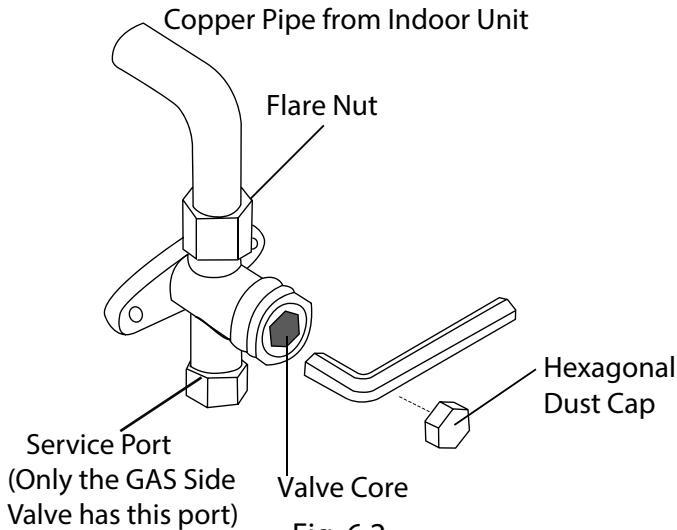


Fig. 6.2

11. Using a hexagonal wrench, fully open both the LIQUID side and GAS side service valves.
12. Remove the charging hose from the service port.
13. Tighten valve caps on all three valves (Service Port, Liquid Side, Gas Side) by hand. Then, tighten it further using a torque wrench, if needed.



OPEN VALVE STEMS GENTLY

When opening valve stems, turn the hexagonal wrench until it seats against the stopper. Do not try to force the valve to open further.

• Service Valve Operation Instructions

1. Opening the Service Valves

1. Remove the cap and turn the valve counter-clock-wise with the hexagonal wrench.
2. Turn until the shaft stops. Do not apply excessive force to the service valve. Doing so may break the valve body, as the valve is not of the backseat type. Always use the special tool.
3. Make sure to tighten the brass cap securely.

2. Closing the Service Valves

1. Remove the cap, and turn the valve clockwise with the hexagonal wrench.
2. Securely tighten the valve until the shaft contacts the main body seal.

Make sure to tighten the brass cap securely.

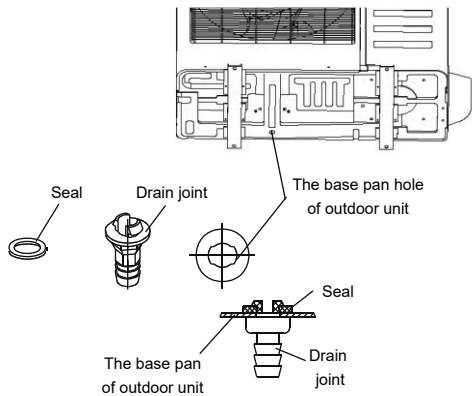


Fig.8-2



NOTE

All pictures in this manual are for explanatory purposes only. They may slightly differ from the air conditioner you purchased (dependent on model). The actual shape shall prevail.

9. WIRING



CAUTION

The appliance shall be installed in accordance with all national wiring regulations.

The air conditioner should use an independent power supply with a properly-rated voltage.

The external power supply to the air conditioner should have ground wiring, which is linked to the ground wiring of the indoor and outdoor unit.

The wiring work should be done by qualified persons, and done according to the circuit drawing.

An all-pole disconnection device, which has at least 3mm separation distance in all-pole, and a residual current device (RCD) with a rating above 10mA, shall be incorporated in the fixed wiring, according to the national rules.

Be sure to locate the power wiring and the signal wiring well to avoid cross-disturbance.

Do not turn on the power until you have checked everything carefully after wiring.



NOTE

Remark per EMC Directive 89/336/EEC
To prevent flicker impressions during the start of the compressor (technical process), the following installation conditions apply.

- 1 The power connection for the air conditioner has to be done at the main power distribution source. The distribution has to be of a low impedance; normally the required impedance is reached at a 32A fusing point.
- 2 No other equipment should be connected with this power line.
- 3 For detailed installation exceptions, please refer to your power supplier, to confirm if restrictions apply for products like washing machines, A/Cs, or electrical ovens.

4 For power details of the air conditioner, refer to the rating plate on the product.

5 For any other questions, please contact your local dealer.

9.1 Connect the Cable

- The installation bearer of the sensing device should be rotated to another side, and then taken off the cover of electrical box. (Take off the electrical box cover as well, if the capacity is 18000btu/hr, and is using the network function.) Refer to Fig.9-1.

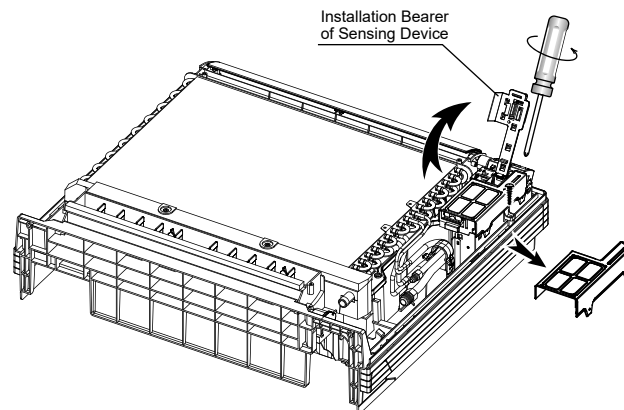


Fig.9-1

- Remove the electric cover of the outdoor unit. If there is no cover on the outdoor unit, disassemble the bolts from the maintenance board and remove the protection board. (See Fig. 9-2)

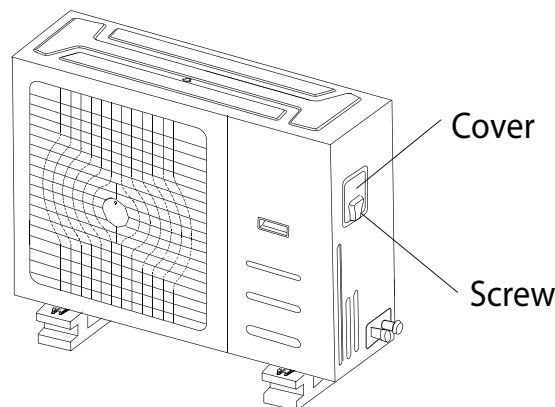


Fig.9-2



NOTE

All pictures in this manual are for explanatory purposes only. They may slightly differ from the air conditioner you purchased (dependent on model). The actual shape shall prevail.

- Link the connective cables to the terminals, as identified with their respective matching numbers on the terminal block of the indoor and outdoor units.
- Re-install the indoor unit and outdoor unit in their original way.

9.2 Power Specification

(Refer to Table 9-2)

9.3 Wiring Figure













(Refer to Fig. 9-4–Fig. 9-7)

9.4 Network Address Set

(Only the 18000Btu/hr unit has the "Network Address Set" function)

Every air-conditioner within the network has only one network address to distinguish from each other. The address code of the air-conditioner in LAN is set by code switches S1 & S2 on the Main Control Board of the indoor unit, and the set range is 0-63.

Table 9-1

Toggle switch set			Network address code
S1	S2		
			00~15
			16~31
			32~47
			48-63

10. TEST OPERATION

- 1 The test operation must be carried out after the entire installation has been completed.
- 2 Please confirm the following points before the test operation:
 - The indoor unit and outdoor unit are installed properly.
 - Tubing and wiring are correctly implemented.
 - The refrigerant pipe system is leakage-checked.
 - The drainage is unimpeded.
 - The heating insulation works well.
 - The ground wiring is connected correctly.
 - The length of the tubing and the added stow capacity of the refrigerant have been recorded.
 - The power voltage fits the rated voltage of the air conditioner.
 - There is no obstacle at the outlet and inlet of the outdoor and indoor units.
 - The gas-side and liquid-side stop valves are both open.
 - The air conditioner is pre-heated by turning on the power.
- 3 According to the user's requirements, install the remote controller frame in a place where the remote controller's signal can reach the indoor unit easily.
- 4 Test the operation.
 - Set the air conditioner to "COOLING" mode with the remote controller, and check the following points. If there are any malfunctions, please resolve it according to the chapter "Troubleshooting" in the "Owner's Manual".
 - 1) The Indoor Unit. Check:
 - a. Whether the switch on the remote controller works well.
 - b. Whether the buttons on the remote controller work well.
 - c. Whether the air flow louver moves normally.
 - d. Whether the room temperature is adjusted well.
 - e. Whether the indicator lights work normally.
 - f. Whether the temporary buttons work well.
 - g. Whether the drainage is normal.
 - h. Whether there is vibration or abnormal noise during operation.
 - i. Whether the air conditioner heats well, in the case of the HEATING/COOLING type.
 - 2) The Outdoor Unit. Check:
 - a. Whether there are any vibrations or abnormal noises during operation.
 - b. Whether the generated wind, noise, or condensation from the air conditioner create any local disturbances.
 - c. Whether any of the refrigerant has leaked.



CAUTION

After restarting, a protection feature prevents the air conditioner from being activated for approximately 3 minutes after shut off.

The Specification of Power

Table 9-2

TYPE		Cooling & Heating 12,000 BTU/hr	Cooling & Heating 16,000-18,000 BTU/hr
POWER	PHASE	1-PHASE	1-PHASE
	FREQUENCY & VOLTAGE	208-240V~, 50Hz/60Hz	208-240V~, 50Hz/60Hz
CIRCUIT BREAKER/FUSE (A)		20/16	20/16
INDOOR UNIT POWER WIRING (mm ²)		———	3x1.0
INDOOR/OUTDOOR CONNECTING WIRING (mm ²)	GROUND WIRING	1.5	2.5
	OUTDOOR UNIT POWER WIRING	3X1.5	3x2.5
	STRONG ELECTRIC SIGNAL	4X1.0	———
	WEAK ELECTRIC SIGNAL	———	3X0.5

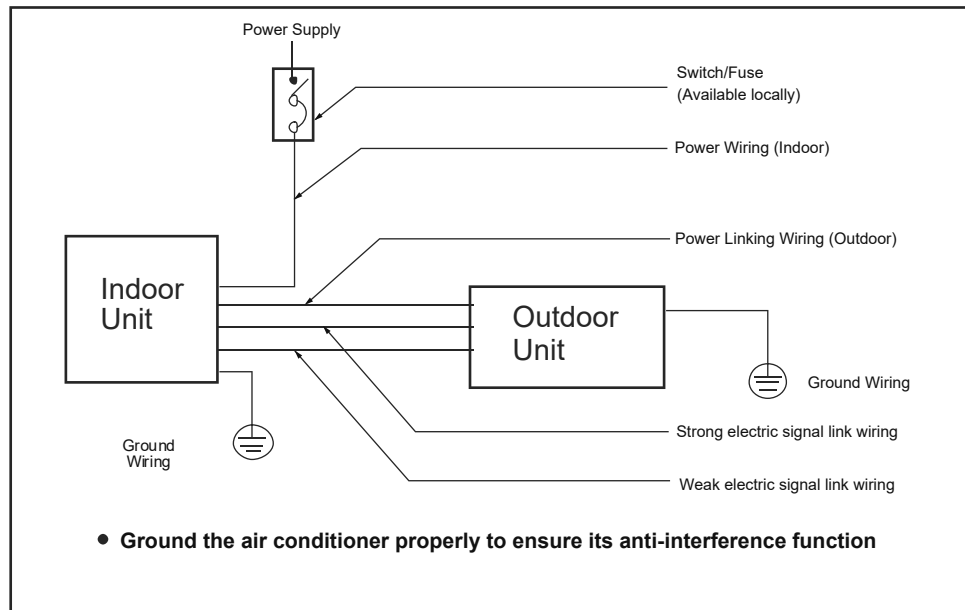


CAUTION

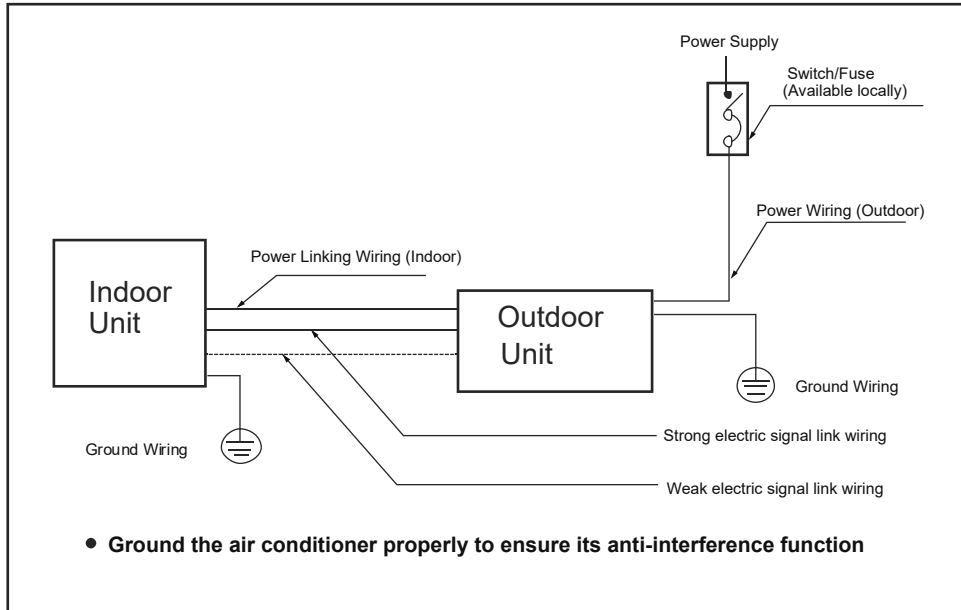
The power supply included in the above mentioned can be applied to the table.
Before obtaining access to terminals, all supply circuits must be disconnected.

Wiring Figure

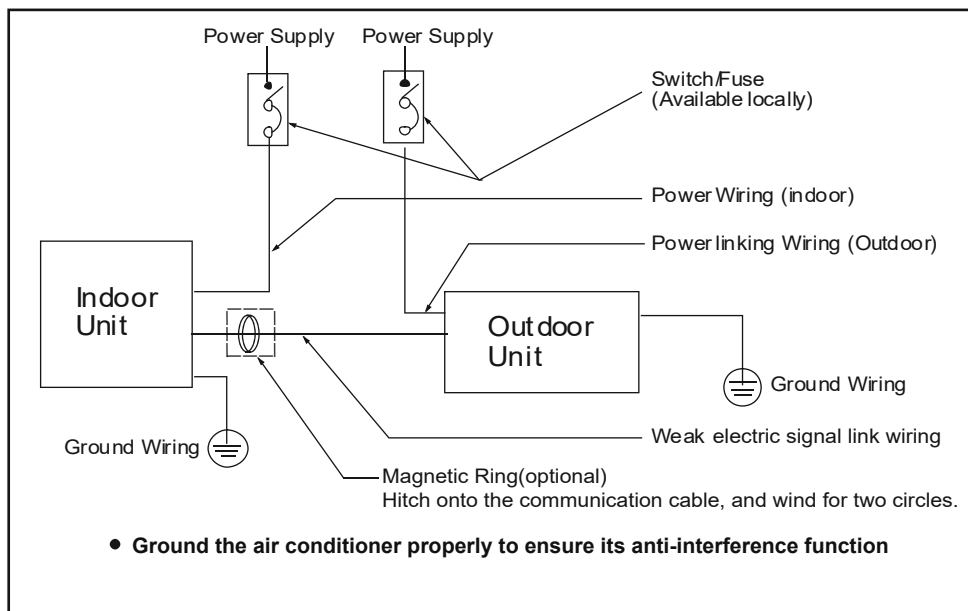
■ Fig.9-4



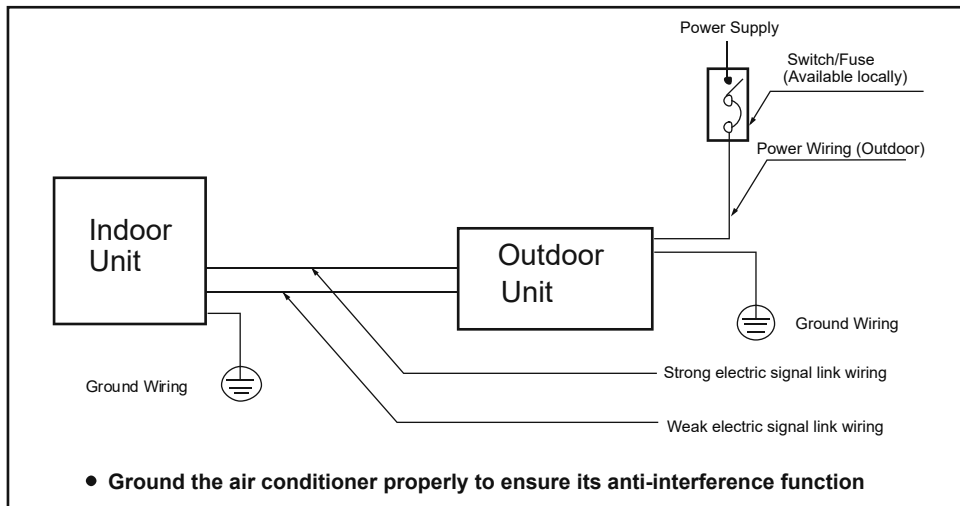
■ Fig.9-5



■ Fig.10-6



■ Fig.9-7



CAUTION

A disconnection device having an air-gap contact separation in all active conductors should be incorporated in the fixed wiring, according to the National Wiring Regulation.

When wiring, please choose the corresponding chart, or it may lead to damage. The signs of the indoor terminal block in some of following figures may be replaced by L N L1 N1.