



Installation, Operation, and Maintenance

Multi Variable Air Conditioners

Cassette Type Indoor Unit

Model Number:

TRN-IC09F4A1
TRN-IC12F4A1
TRN-IC15F4A1
TRN-IC18F4A1
TRN-IC22F4A1
TRN-IC24F4A1
TRN-IC30F4A1
TRN-IC36F4A1
TRN-IC42F4A1
TRN-IC48F4A1

⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

⚠ AVERTISSEMENT DE SÉCURITÉ

Seul le personnel qualifié doit installer et procéder à l'entretien des équipements. L'installation, le démarrage et la réparation des équipements de chauffage, de ventilation et de climatisation peuvent être dangereux et nécessitent une formation et des connaissances spécifiques. Un équipement mal installé, réglé ou modifié par un individu non qualifié peut entraîner des blessures graves, voire mortelles. Lors de toute intervention sur l'équipement, respectez toutes les précautions figurant dans la documentation et sur les étiquettes et autocollants fixés à l'équipement.

Preface

For correct installation and operation, please read all instructions carefully. Before reading the instructions, please be aware of the following items:

⚠ DANGER	If not abide them strictly, it may cause severe damage to the unit or the people.
⚠ WARNING	If not abide them strictly, it may cause slight or medium damage to the unit or the people.
⚠ CAUTION	This sign indicates that the items must be prohibited. Improper operation may cause severe damage or death to people.
NOTICE	This sign indicates that the items must be observed. Improper operation may cause damage to people or property.

⚠ WARNING	
(1)	The design standard of multi VRF system conforms to related standard of sales countries.
(2)	To ensure safety when operating this system, please strictly follow the instructions in this manual.
(3)	The total capacity of running indoor units must not exceed that of the outdoor units. Otherwise, the cooling (heating) effect of each IDU would be poor.
(4)	Make sure that this manual is kept by direct operators and maintainers.
(5)	If the product needs to be installed, moved or maintained, please contact our designated dealer or local service center for professional support. Users should not disassemble or maintain the unit by themselves, otherwise it may cause relative damage, and our company will bear no responsibilities.
(6)	All the illustrations and information in the instruction manual are only for reference. In order to make the product better, we will continuously conduct improvement and innovation. If there is adjustment in the product, please subject to actual product.
(7)	Under the standby status, the unit will consume a little power for ensuring reliability of the complete unit, maintaining normal communication and preheating refrigerant. When the unit won't be used for a long time, please cut off the power of the complete unit. However, please preheat it when operating the unit next time.

User Notice

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

DISPOSAL: Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.



Exception Clauses

Manufacturer will bear no responsibilities when personal injury or property loss is caused by the following reasons:

(1) Damage the product due to improper use or misuse of the product;

(2) Alter, change, maintain or use the product with other equipment without abiding by the instruction manual of manufacturer;

(3) After verification, the defect of product is directly caused by corrosive gas;

(4) After verification, defects are due to improper operation during transportation of product;

(5) Operate, repair, maintain the unit without abiding by instruction manual or related regulations;

(6) After verification, the problem or dispute is caused by the quality specification or performance of parts and components that produced by other manufacturers;

(7) The damage is caused by natural calamities, bad using environment or force majeure.

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1 Safety Precautions

WARNING

- (1) This product can't be installed at corrosive, inflammable or explosive environment or the place with special requirements, such as kitchen. Otherwise, it will affect the normal operation or shorten the service life of the unit, or even cause fire hazard or serious injury. As for the above special places, please adopt special air conditioner with anti-corrosive or anti-explosion function.
- (2) Follow this manual to complete the installation work. Please read this manual carefully before turning on or repairing the unit.
- (3) Installation should be conducted by the dealer or qualified personnel. Please do not attempt to install the air conditioner by yourself. Improper installation may lead to water leakage, electric shock or fire hazard, etc.
- (4) Before installation, please check whether the power supply is complied with that specified on the nameplate and check the safety of the power supply.
- (5) The air conditioner must be grounded reliably for avoiding electric shock. Please do not connect the earthing wire to gas pipe, water pipe, lightning rod or telephone line.
- (6) Be sure to use special accessories and parts for installation to prevent water leakage, electric shock and fire hazard, etc.
- (7) If refrigerant leakage happens, please ventilate the room immediately.
- (8) Diameter of power cord should be large enough. The damaged power cord and connection wire must be replaced with special cables.
- (9) When the power cord is connected, please fix the electric box cover properly to avoid safety accidents.
- (10) Never fail to comply with the nitrogen-charging welding process. Do charge nitrogen when welding the pipes.
- (11) Never short circuit or cancel the pressure switch to prevent unit damage.
- (12) As for the unit controlled by the wired controller, connect the wired controller well firstly and then energize the unit; otherwise, the unit can't operate normally.
- (13) When installation is finished, please check whether the drainage pipes, pipelines and electric wires are connected correctly to avoid water leakage, refrigerant leakage, electric shock or fire, etc.
- (14) Do not insert fingers or objects into air outlet or air return grille.
- (15) Open the door and window frequently to keep good ventilation for avoiding oxygen deficit when gas heater or oil heater is used in the room.
- (16) Never plug in or unplug the power plug directly to turn on or turn off the air conditioner.
- (17) Once the air conditioner is turned on, it can be turned off only after it has operated for 5min at least; otherwise, it will affect the oil return of compressor.
- (18) Do not allow children to operate this air conditioner.
- (19) Do not operate this air conditioner with wet hands.
- (20) The air conditioner can be cleaned only when it has been turned off and the power has been cut off; otherwise, it may cause electric shock or injury.
- (21) Never spray or flush water towards the air conditioner; otherwise, malfunction or electric shock may happen.
- (22) Do not expose the air conditioner to the moist or corrosive environment.
- (23) Put through the power 8 hours in advance before operation. Do not cut off the power when the air conditioner stops operation for only about one night (protect the compressor).
- (24) Volatile liquid, such as diluent or gasoline, will damage the appearance of air conditioner. Only soft dry cloth and wet cloth dipped with neutral detergent can be used to clean the outer case of air conditioner.
- (25) Under cooling mode, please don't set the room temperature too low.
- (26) If there are any abnormal circumstances (such as burning smell, etc.), please turn off the unit and cut off the main power supply immediately, and then contact our designated dealer or local service center. If those abnormal circumstances still exit, the unit may be damaged and it may lead to electric shock or fire hazard.
- (27) Do not repair the unit by yourself. Wrong maintenance may cause electric shock or fire hazard. Please contact our designated dealer or local service center for help.

⚠ WARNING	
(28)	HVAC systems may experience operational disruptions due to electromagnetic interference (EMI), potentially affecting medical devices and broadcast signal transmissions. Conversely, variable-frequency drives (VFDs), dedicated generators, high-frequency medical devices, and radio communication equipment may also interfere with HVAC system operation.
(29)	The mounting bracket shall remain structurally sound throughout its service life. Any degradation must be repaired immediately; failure to do so may cause equipment detachment, resulting in personal injury or property damage.
(30)	Handle equipment with care during transportation. Team handling is required; use appropriate handling equipment. Never grasp the packaging straps; wear safety gloves during unpacking and handling to prevent injury.
(31)	Do not turn off the power immediately after stopping operation. Always wait for at least 5 minutes before turning off the power. Otherwise, it may cause water leakage or equipment damage.
(32)	Consult local building codes and National Electrical Code (NEC) for special requirements. Recognize safety information. In Canada, refer to the current editions of the Canadian Electrical Code CSA C22.1.

If the product needs to be installed, moved or maintained, please contact our designated dealer or local service center for professional support, otherwise our company would bear no legal reliability for the related damages arising therefrom.

2 Product Introduction

2.1 Names of Key Components

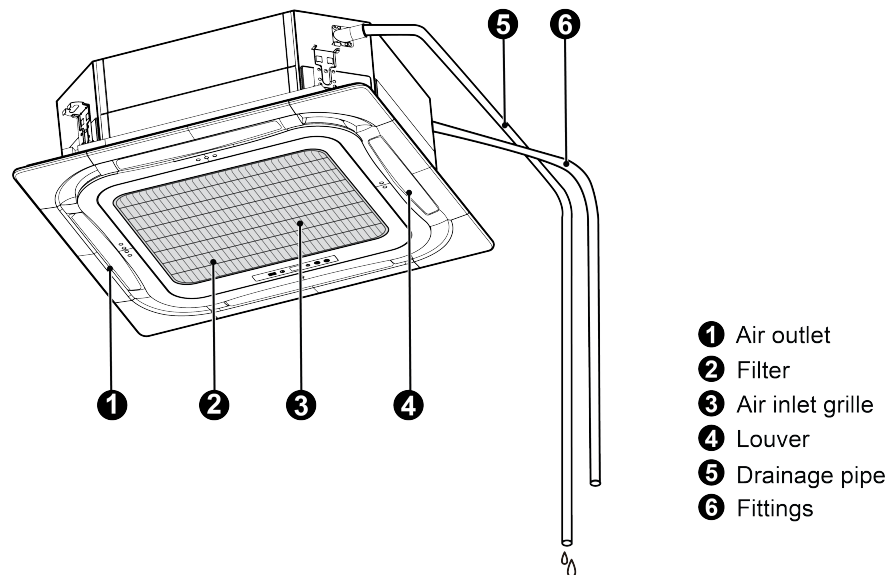


Fig.2.1.1

2.2 Rated Working Condition

—	Indoor Side Condition		Outdoor Side Condition	
	Dry Bulb Temp °C(°F)	Wet Bulb Temp °C(°F)	Dry Bulb Temp °C(°F)	Wet Bulb Temp °C(°F)
Rated Cooling	26.7(80.0)	19.4(67.0)	35(95.0)	23.9(75.0)
Rated Heating	21.1(70.0)	15.6(60.0)	8.3(47.0)	6.1(43.0)

2.3 The Range of Production Working Temperature

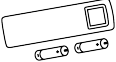
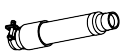
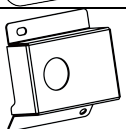
—	Cooling	Heating
Indoor temperature	14°C(57.2°F)~25°C(77°F)WB	15°C(59°F)~27°C(80.6°F)DB
Indoor humidity	≤80%	

3 Preparations for Installation

NOTICE Product graphics are only for reference. Please refer to actual products. Unspecified measure unit is mm (inch).

3.1 Standard Fittings

Please use the supplied standard fittings listed below as instructed.

No.	Name	Appearance	Q'ty	Usage
1	Wireless controller		1	To control the indoor unit.
2	Paper pattern for installation		1	Locate the drill hole on ceiling.
3	Washer fixing plate		4	Prevent the washer from falling off.
4	Drain Hose Assembly		1	To connect with the hard PVC drain pipe.
5	Special Nut		2	GMV-ND07~48T/D-T(U)
6	Insulation		2	To insulate the gas/liquid pipe.
7	Locking joint bracket		1	For Wiring
8	Locking joint bracket		1	For Wiring
9	Tapping screw		1	To fix the locking joint bracket.

3.2 Installation Position Selection

- (1) The appliance shall not be installed in the laundry.
- (2) The location should be able to withstand the weight of unit.
- (3) The water can be drained conveniently from drainage pipe.
- (4) There should be no obstruction near air inlet and air outlet.
- (5) Follow the installation distance required in the fig below to ensure sufficient space for maintenance.
- (6) The installation location should be far from heat sources, flammable or explosive gas, or smog spread in the air.
- (7) The indoor unit, outdoor unit, power cord and connection electricity wire should be at least 1m from television and radio in order to prevent interference and noise (Even though 1m distance is ensure, there may be noise if the electric wave is too strong).

Unit: mm (inch)

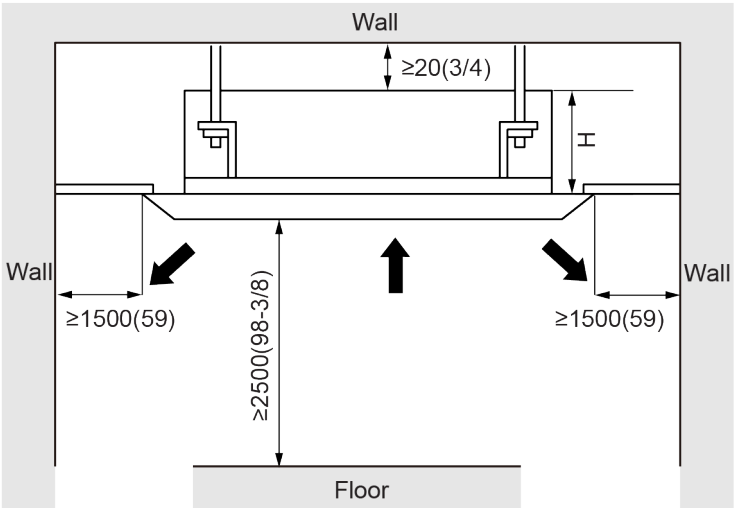


Fig.3.2.1

Unit: mm (inch)

Model	H
GMV-ND07~22T/D-T(U)	275(10-3/4)
GMV-ND24~48T/D-T(U)	325(12-3/4)

NOTICE
(1) The unit shall be installed in accordance with national standards or local regulations.
(2) Only qualified personnel can carry out installation work, please contact with local dealer before installation.
(3) Make sure all the installation work completed before energizing.
(4) The appliances are not accessible to general public.

3.3 Requirements for Communication Line

NOTICE If air conditioner used under strong electronic-magnetic interference circumstance, STP (shielded twisted pair) communication cable must be adopted.

3.3.1 Select Communication Line for Indoor Unit and Wired Controller

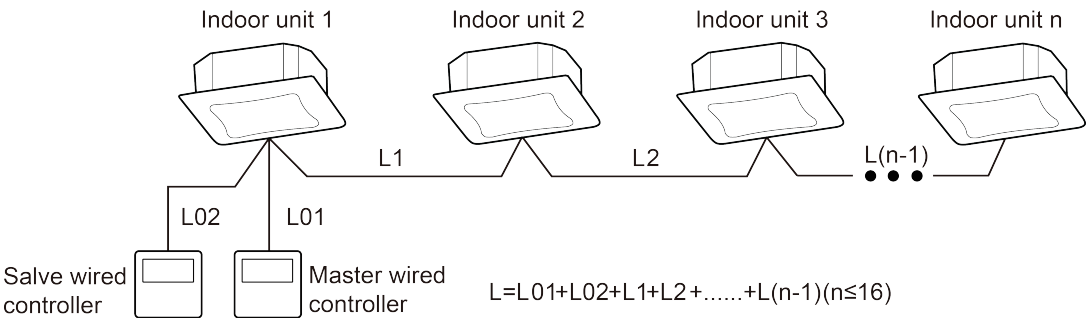


Fig.3.3.1

Material Type	Total Length of Communication Line Between Indoor Unit And Wired Controller L (m/ft.)	Wire Size (AWG)	Remarks
Light/Ordinary polyvinyl chloride sheathed cord.	$L \leq 250$ ($L \leq 820$)	$2 \times \text{AWG}18$ $\sim 2 \times \text{AWG}16$	1. Total length of communication line can't exceed 250m (820ft.). The average length of the communication line between indoor unit and wired controller is 15m(49ft). 2. The cord shall be Circular cord (The cores shall be twisted together.). 3. If unit is installed in places with intense magnetic field or strong interference, it is necessary to use shielded wire.

3.3.2 Selection of Communication Wire between Indoor Unit and Indoor Unit (or Outdoor Unit)

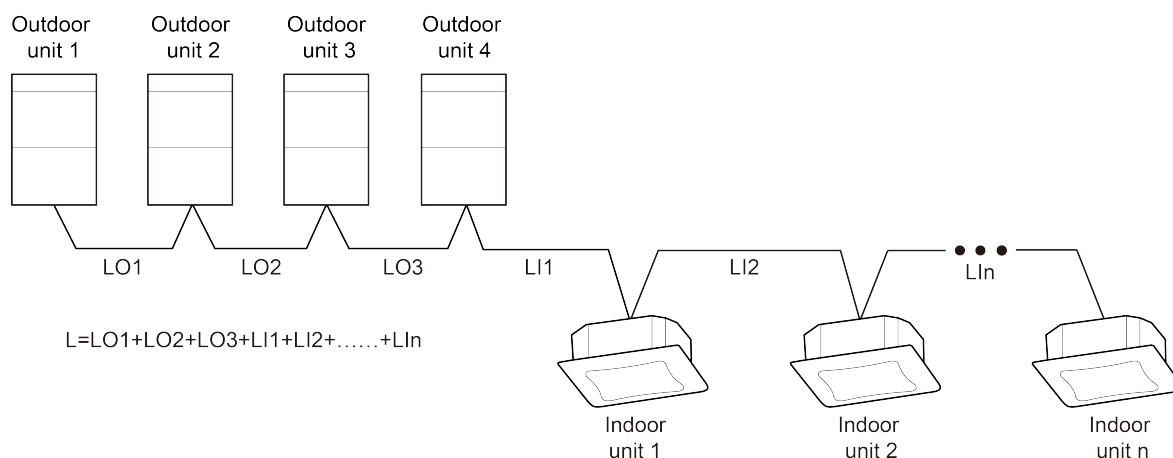


Fig.3.3.2

Material Type	Total Length L (m/ft.) of Communication Line Between Indoor Unit And Indoor (Outdoor)	Wire Size (AWG)	Remarks
Light/Ordinary polyvinyl chloride sheathed cord.	$L \leq 1000$ ($L \leq 3280$)	$\geq 2 \times \text{AWG}18$	1.If the wire diameter is enlarged to $2 \times \text{AWG}16$, the total communication line length can reach 1500m (4920ft.). The average length of communication line between units is 12.5 m(41ft). 2.The cord shall be Circular cord (The cores shall be twisted together). 3.If unit is installed in places with intense magnetic field or strong interference, it is necessary to use shielded wire.

3.4 Wiring Requirements and Fuse Capacity

Power Cord Size and Air Switch Capacity and Fuse Capacity

Model	Power Supply	MCA(A)	MOP(A)	Fuse Capacity (A)
GMV-ND07T/D-T(U)	208/230V-1ph-60Hz	0.7	15	3.15
GMV-ND09T/D-T(U)		0.7	15	
GMV-ND12T/D-T(U)		0.7	15	
GMV-ND15T/D-T(U)		0.7	15	
GMV-ND18T/D-T(U)		0.7	15	
GMV-ND22T/D-T(U)		0.7	15	
GMV-ND24T/D-T(U)		0.8	15	

Model	Power Supply	MCA(A)	MOP(A)	Fuse Capacity (A)
GMV-ND30T/D-T(U)	208/230V-1ph-60Hz	1.5	15	3.15
GMV-ND36T/D-T(U)		1.5	15	
GMV-ND42T/D-T(U)		1.5	15	
GMV-ND48T/D-T(U)		1.5	15	

NOTICE
(1) Fuse is located on the main board.
(2) An all-pole disconnection switch having a contact separation of at least 3mm (1/8 inch) in all poles should be connected in fixed wiring.
(3) The circuit breaker and power cord specification in above sheet is based on max power (max current) of the unit.
(4) The power cord specification in above sheet is based on ambient temperature of 40°C(104°F).
(5) The circuit breaker specification in above sheet is based on ambient temperature of 40°C(104°F). If the working condition is different, please adjust it according to the specification sheet of circuit breaker.

4 Installation Instructions

NOTICE

- ① These cassette type indoor units are limited to be installed for one room.
- ② Vibration isolation, acoustic insulation, and noise control measures must be implemented during installation.
- ③ When removing the air filter, wear appropriate eye protection. Include gas handling procedures to prevent exposure to toxic and hazardous gases.

4.1 Installation of Indoor Unit

4.1.1Ceiling opening Dimension and suspension bolt position.

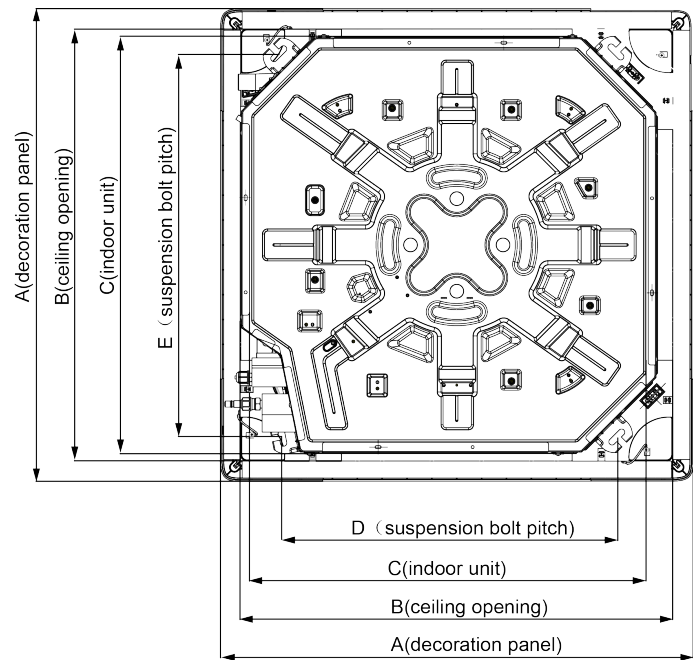


Fig.4.1.1

Unit: mm (inch)

Model	A	B	C	D	E
GMV-ND07~48T/D-T(U)	950(37 3/8)	890(35)	840(33 1/16)	680(26 3/4)	780(30 3/4)

4.1.2 Suspend the Indoor Unit

(1) Drill bolt holes and install bolts.

- 1) Stick the reference cardboard on the installation position; drill 4 holes according to the hole site on the cardboard as shown in Fig.4.1.2; Diameter of drilling hole is according to the diameter of expansion bolt and the depth is 60-70mm (2-3/8~2-3/4 inch), as shown in Fig.4.1.3.

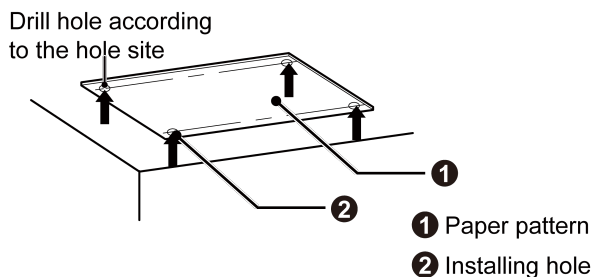


Fig.4.1.2

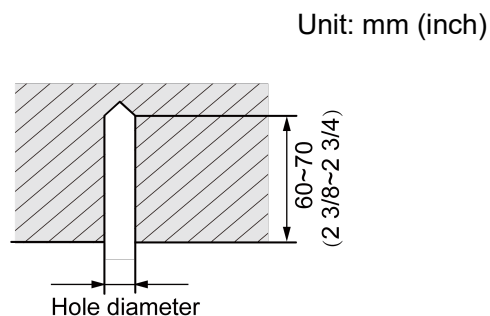


Fig.4.1.3

- 2) Insert the M10 expansion bolt into the hole and then knock the nail into the bolt, as shown in Fig.4.1.4.

NOTICE The length of bolt depends on the installation height of the unit, bolts are field supplied.

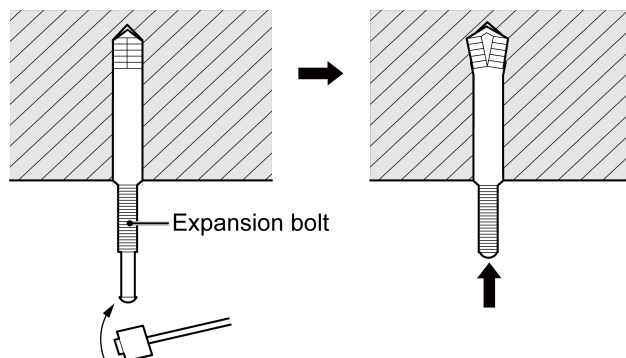


Fig.4.1.4

(2) Install the indoor unit temporarily.

Assemble suspension bolt on the expansion bolt, attach the hanger bracket to the suspension bolt. Be sure to fix it securely by using a nut and washer from upper and lower sides of the hanger bracket. The washer fixing plate will prevent the washer from falling.

(3) The usage of paper pattern.

Refer to paper pattern of installation for ceiling opening dimension. The center of ceiling opening is indicated on the paper pattern. Fix the paper pattern to the unit with 4 screws and fix the corners of the waterspout at the drainage pipe by screws.

(4) Adjust the unit to the right position.

(5) Check the level of the unit.

The indoor unit is equipped with build-in water pump and float switch, verify the levelness of 4 directions by level gauge or vinyl tube (filled with water) respectively.

(6) Remove the washer locating plate and then tighten the nut on it.

(7) Remove the paper pattern.

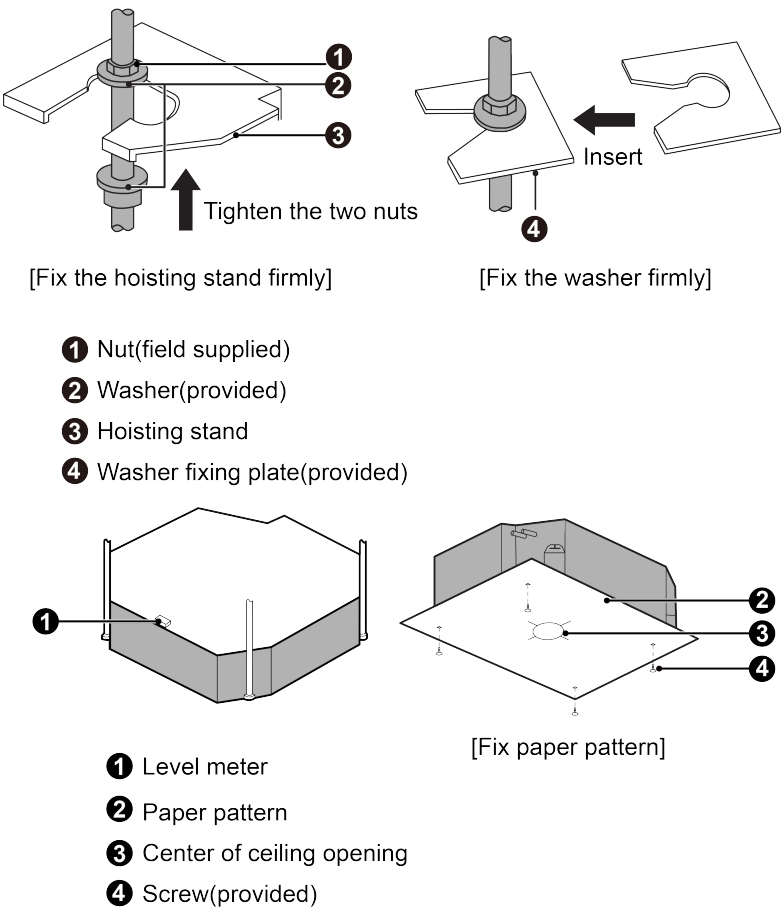


Fig.4.1.5

4.2 Refrigerant Pipe Connection

- (1) Aim the flaring port of copper pipe at the center of screwed joint and then tighten the flaring nut with hand as shown in Fig.4.2.1.
- (2) Tighten the flaring nut with torque wrench.

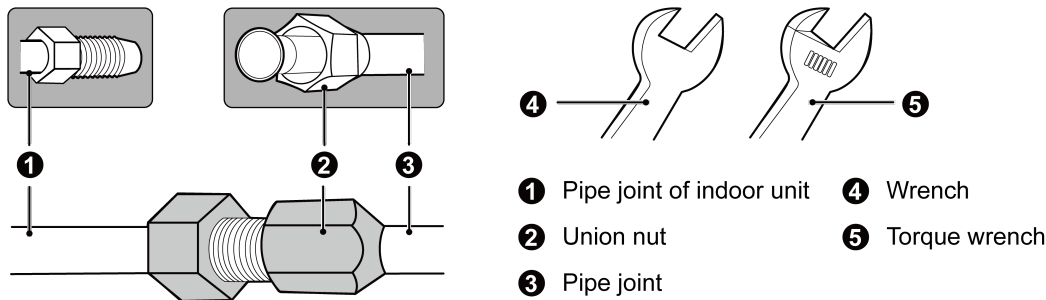


Fig.4.2.1

Pipe Diameter mm(inch)	Torque(N•m)
Φ6.35(1/4)	15~30
Φ9.52(3/8)	35~40
Φ12.7(1/2)	45~50
Φ15.9(5/8)	60~65
Φ19.05(3/4)	70~75

- (3) Use pipe bend when bending the pipe and the bending angle should not be too small.
- (4) Wrap the connection pipe and joint with sponge and then tie them firmly with tape.
- (5) Prior to installation, the internal piping must be free of contaminants and protected against dust ingress. Any contamination may compromise the unit's operational integrity.

- (6) When cutting or deburring pipes, do not allow cutting chips or other foreign matters to enter the pipes. If cutting chips or other foreign matters enter pipes, wipe them off the inside of the pipes.
- (7) Tighten all flare nuts to specification using a torque wrench. If tightened too much, the flare nut can break after an extended period and refrigerant can leak out.

4.3 Drainage Pipe Installation and Drainage System Testing

4.3.1 Notice for Installation of Drain Pipe

- (1) It is not allowed to connect the condensate drain pipe into waste pipe or other pipelines which are likely to produce corrosive or peculiar smell to prevent the smell from entering indoors or corrupt the unit.
- (2) Incorrect installation of the indoor unit may result in inadequate drainage, potentially causing bacterial growth and associated health hazards. Inadequate drainage may also lead to corrosion of the unit
- (3) Setting the unit at an angle opposite to the drain piping might cause leaks.
- (4) It is not allowed to connect the condensate drain pipe into rain pipe to prevent rain water from pouring in and cause property loss or personal injury.
- (5) Condensate drain pipe should be connected into special drain system for air conditioner.
- (6) The drainage pipe should be short and the gradient downwards should be at least 1%~2% in order to drain condensation water smoothly.
- (7) The diameter of drainage hose should be bigger or equal to the diameter of drainage pipe joint.
- (8) Install drainage pipe according to the following Fig.4.3.1 and arrange insulation to the drainage pipe. Improper installation may lead to water leakage and damp the furniture and other things in the room.
- (9) You can buy normal hard PVC pipe used as the drainage pipe. During connection, insert the end of PVC pipe into the drainage hole and then tighten it with drainage hole and wire binder. Can't connect the drainage hole and drainage hole with glue.
- (10) When the drainage pipelines are used for several units, the position of pipeline should be about 100mm (4 inch) lower than the drainage port of each unit. In this case, thicker pipes should be applied.

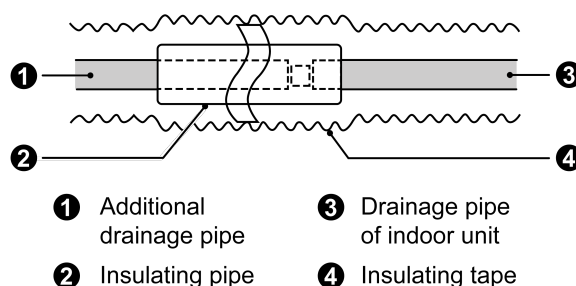


Fig.4.3.1

4.3.2 Drainage Pipe Installation

- (1) Drainage pipe should have the same diameter or larger diameter than the connecting pipes

(PVC pipe, outside diameter 25mm (1 inch), thickness $\geq$ 1.5mm (1/16 inch)).

- (2) Keep drainage pipe short and sloping downwards at a gradient of at least 1% for preventing forming air bubbles.
- (3) If the gradient of drainage pipe could not meet the installation requirements, raising pipe should be applied.
- (4) Insert the drainage hose into drain socket, tighten the metal clamp securely.
- (5) Warp the sealing pad over drain hose and metal clamp for heat insulation.
- (6) Make sure to perform insulation work for all drainage piping in order to prevent any possible water drop due to dew condensation.
- (7) Apply the suitable diameter for converging drainage pipe according to the operating capacity of the unit.

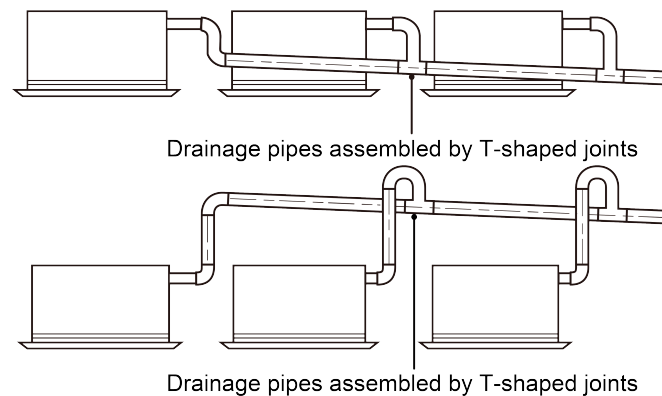


Fig.4.3.2

- (8) The installation height of raising pipe for drainage should be lower than B. The gradient from raising pipe towards drainage direction should be at least 1%~2%. If the raising pipe is vertical with the unit, the raising height should be less than C, as shown in Fig.4.3.3.

Unit: mm (inch)

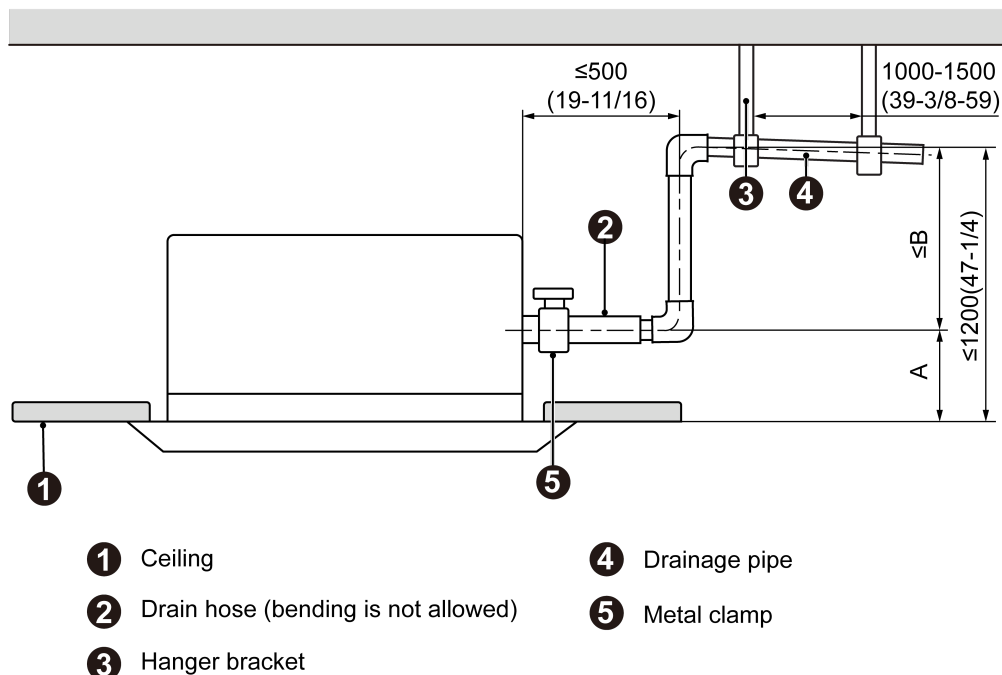


Fig.4.3.3

Unit: mm (inch)

Model	A	B	C
GMV-ND07~48T/D-T(U)	220(8 5/8)	980(38 5/8)	930(36 5/8)

- (9) Drain pipes should have a downward slope of at least 1%~2%, in order to prevent pipes from sagging, install hanger bracket at intervals of 1000~1500mm (39-3/8~59 inch).

Unit: mm (inch)

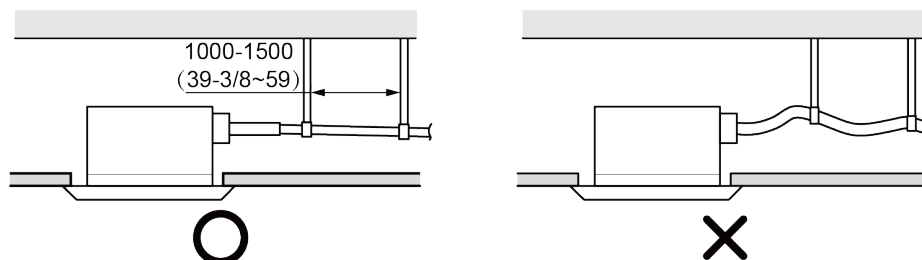


Fig.4.3.4

- (10) During the installation, distance from soft drain pipe to the gasket is C when the bolt is tightened. It is not allowed to apply PVC or other related glue in the joints of two ends of drain pipe.

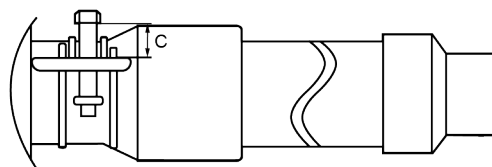


Fig.4.3.5

Unit: mm (inch)

Model	C
GMV-ND07~48T/D-T(U)	12~18(1/2~11/16)

4.3.3 Test of Drainage System

- (1) Please test drainage system after electric work is finished.

Inject approximately 1L purified water to drain pan from air vent, ensure that not to splash the water over the electrical components (e.g. water pump. etc.).

- 1) In case of commissioning finished, please energize the IDUs and switch to cooling or dry mode, meanwhile, the water pump operates, you can check the draining through the drain socket.
 - 2) If communication wire is not connected, communication malfunction "C0" will occur after 60s of energizing. In this case, the water pump operates automatically. Check if the water pump drains normally through drainage port. The water pump will stop automatically after running for 10mins.
- (2) During the test, please carefully check the drainage joint, make sure no any leakage occur.
- (3) It's strongly recommend to do the drain test before ceiling decoration.

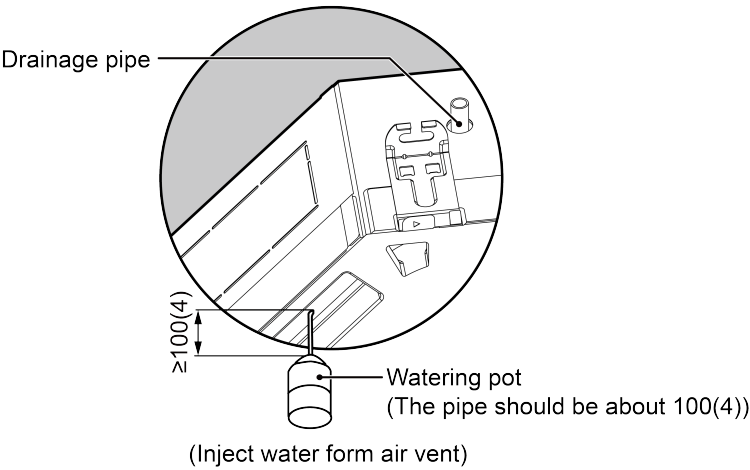


Fig.4.3.6

4.4 Locking Joint Installation

When the power cable and communication line of the unit are connected, the power cable and communication line need to be fixed through the side panel locking connector. The fixing process is as follows.

- (1) Attach the locking joint to the locking joint bracket.

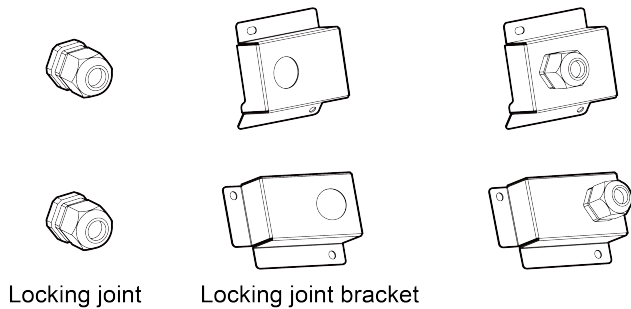


Fig.4.4.1

- (2) Power cable (communication line) passes through the locking joint and the side plate engineering line over the wire crossing hole.
- (3) Finally, reattach the locking joint bracket to the side panel.

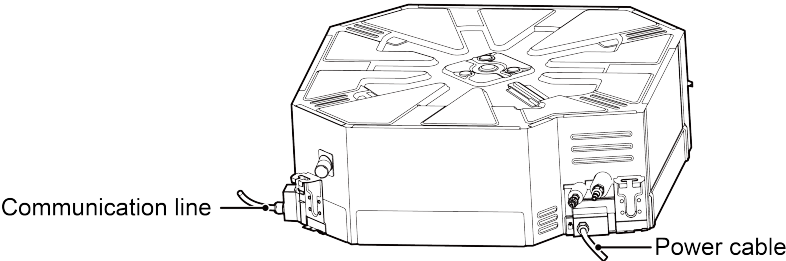


Fig.4.4.2

4.5 Panel Installation

4.5.1 Notices for Installation

- (1) Improper decorative panel installation could cause the following problems.

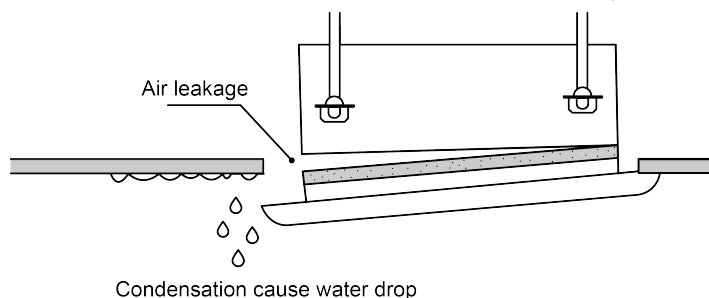


Fig.4.5.1

- (2) Ensure that it's clearance-free between decoration panel and ceiling board after installation, if not, please adjust the body position.

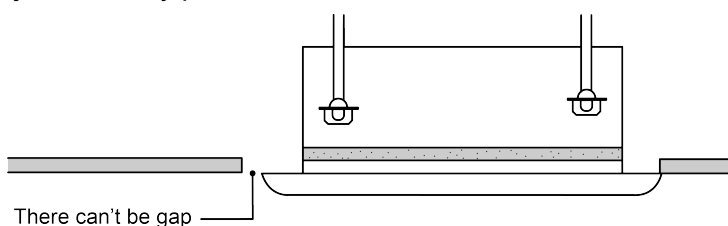


Fig.4.5.2

- (3) Connect the decoration panel terminals (Female) to body terminals (Male) as shown in Fig.4.5.3.

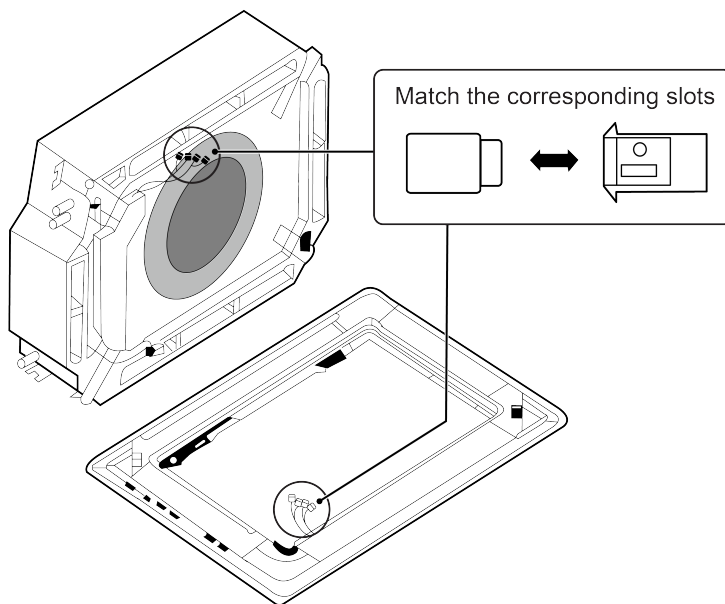


Fig.4.5.3

4.5.2 Panel Installation

- (1) Detach the panel's Corner Cap, there is a mark "piping side" on one of the 4 corners, adjust the panel direction so as to keep the mark and fittings on the same corner.
- (2) Temporarily hang the panel to body (there are four hangers on each corner of the panel, hang the hangers to corresponding hooks on the body), as shown in Fig.4.5.4.
- (3) Detach the air inlet grille from panel, make a wiring connection of signal receiver. Notices that the connection wire not stuck in the middle of body and panel, or may cause air leakage and

lead to condensation water drop.

- (4) Tighten 4 screws at each corner of panel respectively, fix the panel on the body firmly
- (5) After tightening screws, reinstall the air inlet grille.
- (6) Fit the two screws in the Panel Accessory, please refer to Fig. 4.5.5

Unit: mm (inch)

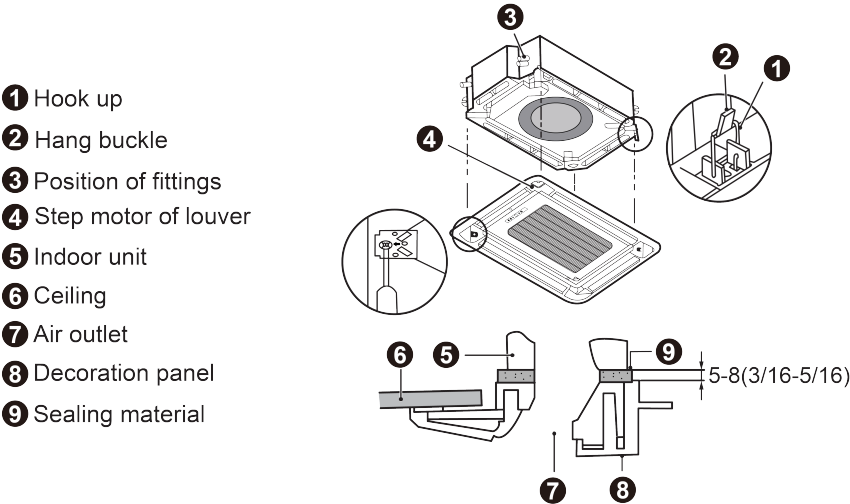


Fig.4.5.4

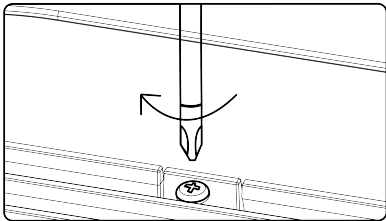


Fig.4.5.5

4.6 Installation of Wired Controller

Please refer to User Manual of Wired Controller for the installation details.

NOTICE When installation is finished, the unit must be tested and debugged before operation.
Please refer to Instruction Manual of ODU for auto addressing and debugging details.

5 Wiring Work

⚠ WARNING	
Before obtaining access to terminals, all supply circuits must be disconnected.	
NOTICE	
(1)	Units must be earthed securely, or it may cause electric shock.
(2)	Please carefully read the wiring diagram before carry out the wiring work, incorrect wiring could cause malfunction or even damage the unit.
(3)	The unit should be powered by independent circuit and specific socket.
(4)	The wiring should be in accordance with related regulations in order to ensure the units reliable running.
(5)	Install circuit breaker for branch circuit according to related regulations and electrical standards.
(6)	Keep cable away from refrigerant pipings, compressor and fan motor.
(7)	The communication wires should be separated from power cord and connection wire between indoor unit
(8)	Adjust the static pressure via wired controller according to site circumstance.

NOTICE

- | |
|---|
| (9) When wiring, position the wires so that the electrical components box lid can be securely fastened. |
| (10) Be sure to attach the sealing material or putty (field supplied) to hole of wiring to prevent the infiltration of water as well as any insects and other small creatures from outside. Otherwise a short-circuit may occur inside the electrical components box. |
| (11) Use round crimp-style terminals for connecting wires to the power supply terminal block. |
| (12) Never connect power supply wiring to the terminal block for remote controller wiring. A mistake of the sort could damage the entire system. |
| (13) A single switch can be used to supply power to units on the same system. However, branch switches and branch ground fault circuit interrupters must be selected carefully. |
| (14) If the connecting wire is incorrectly connected to the terminal block, the unit does not operate normally. |

5.1 Connection of Wire and Patch Board Terminal

(1) The connection of wire (as shown in Fig.5.1.1)

- 1) Strip about 25mm (1 inch) insulation of the wire end by stripping and cutting tool.
- 2) Remove the wiring screws on the terminal board.
- 3) Shape the tail of wire into ring by needle nose plier, and keep the gauge of ring in accordance with screw.
- 4) Use the screwdriver for tightening the terminal.

(2) The connection of stranded wire (as shown in Fig.5.1.2)

- 1) Strip about 10mm (3/8 inch) insulation of the end of stranded wire by stripping and cutting tool.
- 2) Loosen the wiring screws on terminal board.
- 3) Insert the wire into the ring tongue terminal and tighten by crimping tool.
- 4) Use the screwdriver for tightening the terminal.

Unit: mm (inch)

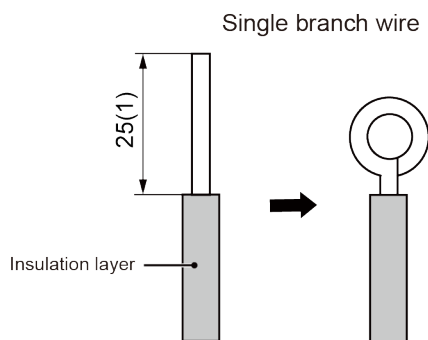


Fig.5.1.1

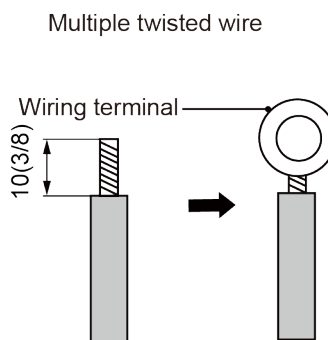
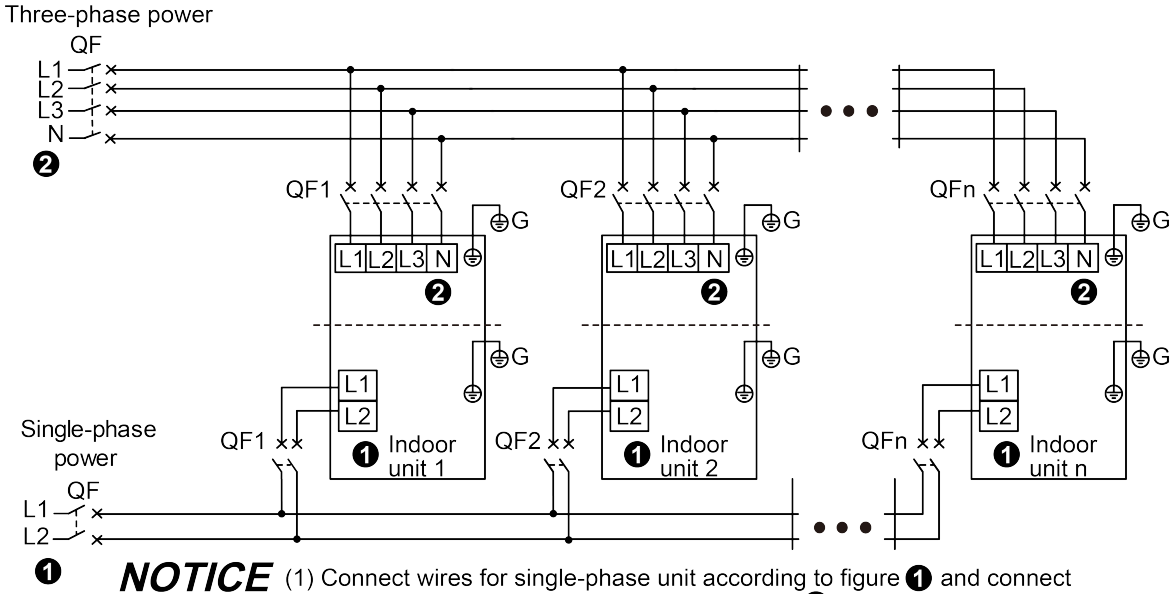


Fig.5.1.2

5.2 Power Cord Connection

NOTICE Every unit should be equipped with a circuit breaker for short-circuit and overload protection. In general, circuit breaker is at OFF status.

During operation, all indoor units and outdoor units belonging to the same system must be kept energized status. Otherwise, the unit can't operate normally.



- 1 NOTICE** (1) Connect wires for single-phase unit according to figure ① and connect wires for three-phase unit according to figure ②. As for some areas where there's no neutral wire, please refer to the wiring diagram of unit for details.
- (2) The maximum connection quantity "n" for indoor unit is decided by the capacity of outdoor unit. Please refer to the unit capacity of unit for details.

Fig.5.2.1

- (1) Detach the electric box lid.
- (2) Let the power cord pass through the wiring through-holes.
- (3) Connect wires according to Fig. 5.2.1.
- (4) Fix the power cord with wiring clamp.
- (5) The wire diameter of power cord can't be less than 18AWG.

5.3 Connection of Communication Wire between Indoor Unit and Outdoor Unit (or Indoor Unit)

- (1) Detach the electric box lid.
- (2) Let the Communication cable pass through the wiring through-holes.
- (3) Connect the communication wire to terminal D1 and D2 of indoor 4-bit wiring board, as shown in Fig.5.3.1.

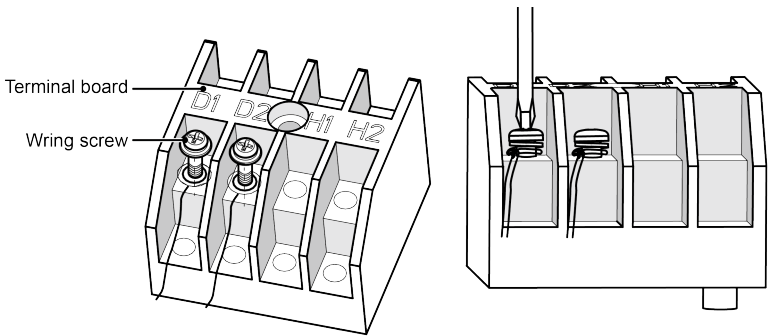
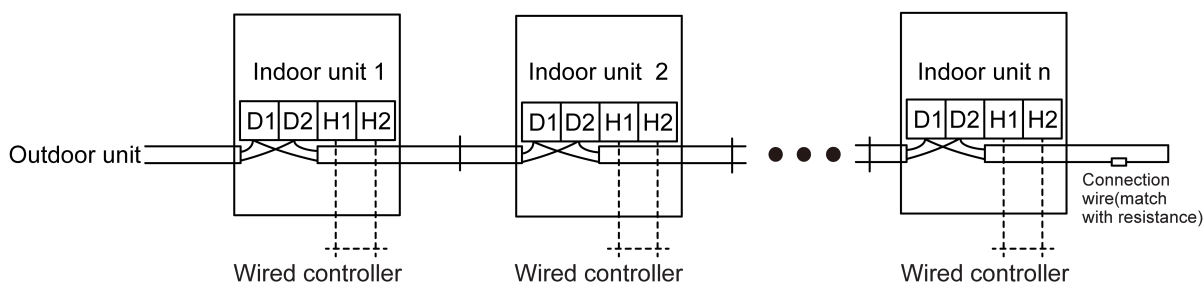


Fig.5.3.1



NOTICE Indoor unit quantity n is according to the outdoor unit capacity.

Fig.5.3.2

- (4) Fix the communication cable with clamp of electric box.
- (5) For more reliable communication, make sure connect the terminal resistor to the most downstream IDU of the communication bus (terminal D1 and D2), as shown in Fig. 5.3.2, terminal resistor is provided with each ODU.

5.4 Connect Communication Wire of Wired Controller

- (1) Open electric box cover of indoor unit.
- (2) Let the communication wire go through the rubber ring.
- (3) Connect the communication wire to terminal H1 and H2 of indoor 4-bit wiring board.
- (4) Fix the communication wire with wire clip on the electric box.
- (5) Wiring instructions of remote receiving light board and wired controller:
 - 1) Wired controller is shown as Fig.5.4.1, wireless controller is shown as Fig.5.4.2, signal receiver is provided with panel as standard accessory.

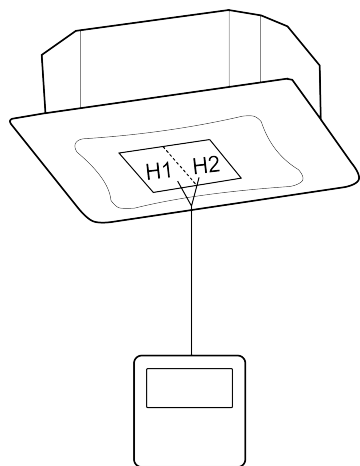


Fig.5.4.1

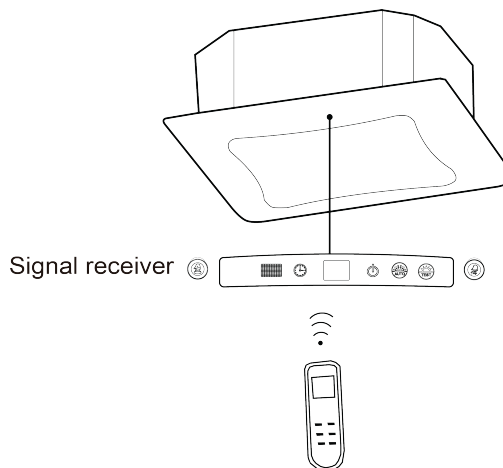


Fig.5.4.2

- 2) Both IDU and wired controller are equipped with signal receiver, and available for wireless control respectively.

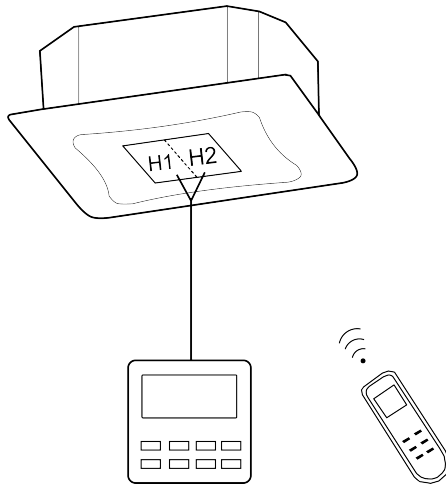


Fig.5.4.3

5.5 Illustrate for Connection of Wired Controller and Indoor Units Network

- (1) Communication wire of indoor unit and outdoor unit (or indoor unit) is connected to D1, D2.
- (2) Wired controller is connected to H1, H2.
- (3) One indoor unit can connect two wired controllers that must be set as master one and slave one.
- (4) One wired controller can control 16 indoor units in maximum at the same time (as shown in Fig.5.5.1).

NOTICE

- (1) The type of indoor units must be the same if they are controlled by the same wired controller.
- (2) When the indoor unit is controlled by two wired controllers, the addresses of the two wired controllers should be different through address setting. Address 1 is for main controller; Address 2 is for slave controller. Detailed setting please refer to the instruction manual of wired controller.

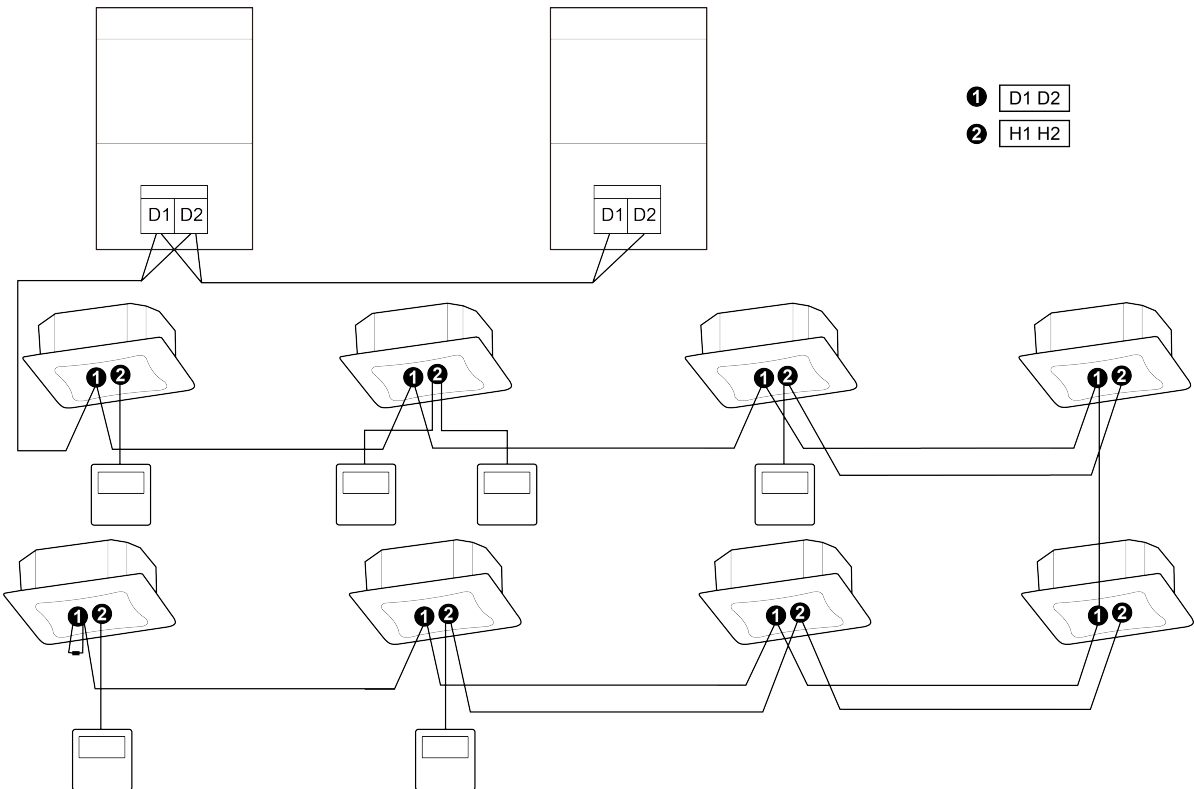


Fig.5.5.1

6 Routine Maintenance

NOTICE

(1) Do turn off the unit and cut off the main power supply when cleaning the air conditioner to avoid electric shock or injury.
(2) Stand at solid table when cleaning the unit.
(3) Do not clean the unit with hot water whose temperature is higher than 45°C to prevent fade or deformation.
(4) Do not dry the filters by fire, or it may catch fire or become deformed.
(5) Clean the filter with a wet cloth dipped in neutral detergent.
(6) Please contact after-sales service staff if there is abnormal situation.
(7) Non-professional person is not allowed to open the air-in grille of indoor unit.

6.1 Cleaning of Filter

- (1) Remove the filters from inlet of IDU. Use a vacuum cleaner to remove dust. If the filters are dirty, wash them with warm water and mild detergent, and dry the filters in the shade.
- (2) If the unit used in the environment with much dust, please clean it regularly (Usually once every two weeks).

6.2 Maintenance before the Seasonal Use

- (1) Check if the air inlet and air outlet of indoor and outdoor unit are blocked.
- (2) Check if securely grounded.
- (3) Check if all the power cord and communication cable are securely connected.
- (4) Check if any error code displayed after energized.

6.3 Maintenance after the Seasonal Use

- (1) Set the unit in fan mode for half a day in a sunny day to dry the inner part of unit;
- (2) When the unit won't be used for a long time, please cut off power supply for energy saving; the characters on the wired controller screen will disappear after cutting off the power supply.

7 Table of Error Codes for Indoor Unit

Error Code	Content	Error Code	Content	Error Code	Content
L0	Indoor Unit Error	LA	Indoor Units Incompatibility Error	d9	Jumper Cap Error
L1	Indoor Fan Protection	LH	Low Air Quality Warning	dA	Indoor Unit Network Address Error
L2	E-heater Protection	LC	ODU-IDU Incompatibility Error	dH	Wired Controller PCB Error
L3	Water Full Protection	d1	Indoor Unit PCB Error	dC	Capacity DIP Switch Setting Error.
L4	Wired Controller Power Supply Error	d3	Ambient Temperature Sensor Error	dL	Indoor Unit CO ₂ Sensor Error
L5	Freeze Protection	d4	Inlet Pipe Temperature Sensor Error	dE	Capacity DIP Switch Setting Error.
L7	No Master Indoor Unit Error	d6	Outlet Pipe Temperature Sensor Error	db	Special Code: Field Debugging Code
L8	Power Insufficiency Protection	d7	Humidity Sensor Error	C0	Communication Error

Multi Variable Air Conditioners Cassette Type Indoor Unit

Error Code	Content	Error Code	Content	Error Code	Content
L9	Quantity Of Group Control Indoor Units Setting Error	d8	Water Temperature Sensor Error	AJ	Filter Cleaning Reminder
o1	Low Bus bar Voltage of Indoor Unit	o2	High Bus bar Voltage of Indoor Unit	o3	IPM Module Protection of Indoor Unit
o4	Failure Startup of Indoor Unit	o5	Overcurrent Protection of Indoor Unit	o6	Current Detection Circuit Malfunction of Indoor Unit
o7	Desynchronizing Protection of Indoor Unit	o8	Communication Malfunction of Indoor Unit's Drive	o9	Communication Malfunction of Main Mater of Indoor Unit
oA	High Temperature of Indoor Unit's Module	ob	Malfunction of Temperature Sensor of Indoor Unit's Module	oC	Charging Circuit Malfunction of Indoor Unit
o0	Other Drive Malfunction	db	Special Code: Field Debugging Code		

8 Troubleshooting

The air conditioner is not expected to be serviced by users. Incorrect repair may cause electric shock or fire, so please contact an authorized service center for professional service. The following checks prior to contact may save your time and money.

Phenomenon	Troubleshooting
The unit can't start.	① Power supply is not connected. ② Circuit breaker tripping caused by leakage of electricity. ③ Input voltage is too low. ④ Defect of main PC-board.
The unit stops after running for a while.	① The inlet or outlets of ODU or IDU are blocked by obstacle.
Poor cooling effect.	① The filter is dirty. ② Too heavy heat load of room (e.g. too many people). ③ Door or windows is open. ④ Inlet and outlet of IDU are blocked. ⑤ Setting temperature is too high. ⑥ Refrigerant is insufficient (e.g. refrigerant leakage).
Poor heating effect.	① The filter is dirty. ② Door or window is open. ③ Setting temperature is too low. ④ Refrigerant is insufficient (e.g. refrigerant leakage).
Indoor fan doesn't start up during heating.	① At starting, the IDU fan could not operate till the heat exchange become hot, for preventing delivering the cool air. ② At defrosting, the IDU fan stopped due to system switch to cooling mode. For preventing delivering the cool air, and resume operating after defrosting.

NOTICE If air conditioner still fails to work normally after checking and handling as described above, please stop using it immediately and contact local service center for assistance.

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