Installer's Manual

Split System (R-410A)

Air Handler for

Multi Split Inverter System

12,000 Btu/h to 24,000 Btu/h

Cassette Type Model :

4MXC8512A10N0AA

4MXC8518A10N0AA

4MXC8524A10N0AA

March 2013

MS-SVN36A-EN

CONFORMS TO
UL STD. 1995
CERTIFIED TO
CSA STD. C22.2
NO. 236

Intertek
3097844

Ingersoll Rand

Literature Order Number MS-SVN36A-EN
Date March 2013
Supersedes

The manufacturer has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice. Only qualified technicians should perform the installation and servicing of equipment referred to in this manual.

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Warnings and Cautions

Warnings and Cautions. Notice that warnings and cautions appear at appropriate intervals throughout this manual. Warnings are provided to alert installing contractors to potential hazards that could resullt in personal injury or death, while cautions are designed to alert personnel to conditions that could result in equipment damage.

Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

Attention: Warnings and Cautions appear at appropriate sections throughout this literature. Read these carefully.

⚠ **WARNING:** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION:** Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTICE: Indicates a situation that could result in equipment or property-damage only accidents.

⚠ **WARNING**

This equipment is to be serviced by professionally trained personnel ONLY. Under NO circumstances should an unqualified person service it. This equipment contains refrigerant under PRESSURE and operates at HIGH VOLTAGE. Improperly installed, adjusted or altered equipment by an unqualified person poses safety hazards including FIRE, ELECTROCUTION, or EXPLOSION, which could result in death or serious injury.

⚠ **WARNING**

Electrocution and Fire Hazards with Improperly Installed and Grounded Field Wiring!

Improperly installed and grounded field wiring poses FIRE & ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in the National Electrical Codes (NEC) and your local/state electrical codes. All field wiring MUST be performed by qualified personnel.

Failure to follow these requirements could result in death or serious injury.

Notice

- The total capacity of the indoor units which runs at the same time can not exceed 150% of that of outdoor units; otherwise, the cooling (heating) effect of each unit would be reduced.
- A breaker (or fuse) needs to be installed in every indoor unit, and the capacity should be in accordance with indoor unit's electrical parameter; all indoor units are required to be controlled by a main switch, this switch can cut off the electric power supply in case of emergency. The breaker (or fuse) on each indoor unit has the function of preventing a short circuit and avoiding abnormal overload, it should be connected in a normal situation. The main switch controls the power supply to all of the indoor units。Before cleaning and maintaining the indoor units, it is very important to turn off the main power supply switch.
- In order to turn on the units successfully, the main power switch should be applied 8 hours before the operation.
- It is normal for the indoor unit to still run for 20- 70 seconds after the indoor unit receives the "stop" signal so as to make full use of any remaining heated or cooled air.
- When the running modes of the indoor and outdoor units conflict, it will be indicated on the display of the control panel for five seconds and the indoor unit will stop. At this time, change the operation mode of the indoor unit to the one that would not conflict with the outdoor operating mode to make the operation normal. The HEAT mode will conflict with the COOL mode, DRY mode and FAN mode, while the COOL mode, DRY mode and FAN mode are compatible between each other.
- The appliance shall not be installed in moist places, such as the laundry, kitchen or bathroom.
- Power supply fluctuating range (+/-10%, +/-1Hz) .
- Humidity range: 30%~95%.
- Main switch is provided by the end user: and must comply with National, State and/or Local Codes.
- The instruction of the main power switch should be included in the user manual
- The cooling range of the unit is the outdoor ambient temp 0-110 F(-17~43℃) DB, the heating range of the unit (only for the heat pump type unit) is the outdoor ambient temp. 5-75 F (-15~24℃) DB.

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

This product must not be disposed with domestic waste. This product must be disposed at an authorized place for recycling of electrical and electronic appliances.

Thank you for selecting this product. Before use of this product, please read this instruction manual carefully and keep it for future reference.

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1 Safety Precautions

Read this manual carefully before using this unit, and operate it correctly according to the instructions in this manual.

Pay special attention to the meaning of these two marks:

⚠ **Warning!**: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **Notice!**: Indicates a situation that could result in equipment or property-damage.

⚠ **Warning!:**

◆ Do not adopt fuse with unsuitable capacity or adopt iron thread instead of fuse, otherwise malfunction or fire may happen.

◆ Turn off the main power switch immediately if a malfunction is detected.

◆ Keep good ventilation in the room to avoid oxygen deficit.

◆ Do not insert finger or stick like objects into the air inlet/outlet grill.

◆ Wall structure must be adequate to support the weight of the unit. Failure to ensure adequate structural support could result in the unit falling from its location which could result in death, serious injury, or equipment and/or property damage.

◆ Do not apply sprays, paints, or insecticides to the surface of the unit as this is a fire hazard.

◆ Do not attempt to repair, replace or relocate the unit. Contact your authorized dealer or installation professional for service, replacement or relocation of the unit.

Install a separate disconnect at the outdoor unit. The power supply, wiring and grounding of equipment must comply with National, State and/or Local Codes. The power supply must agree with the equipment nameplate.

⚠ **Warning!:**

◆ Before using the unit, please check to ensure the piping and wiring are correct to avoid water leakage, refrigerant leakage, electric shock, or fire, etc.

◆ The main power supply must be grounded to avoid the hazard of electric shock. Never connect this ground wire to the gas pipe, running water pipe, lightening rod or phone cable's ground lead.

◆ Turn off the unit after it runs at least five minutes; otherwise its service life will be shortened.

◆ Do not allow children to operate the air conditioner.

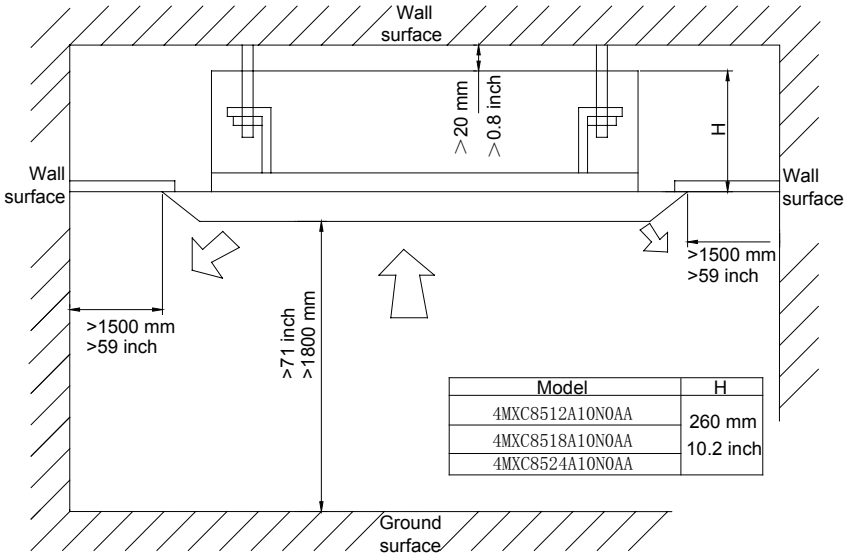
◆ Do not operate the unit while wet or if standing in water.

◆ Turn off the main power to the unit before cleaning the unit or changing the filter.

◆ Cut off the main power if the unit will not be used for an extended time.

2 Installation of the Cassette Type Indoor Unit

2.1 Schematic Diagram of Installation Spaces



Model	H
4MXC8512A10N0AA	260 mm 10.2 inch
4MXC8518A10N0AA	
4MXC8524A10N0AA	

Fig.1

2.2 Installation Location of the Indoor Unit

(1). Avoid locating the indoor unit where the return and/or supply air may be blocked or obstructed.

(2). Be sure that the installation of the indoor unit conforms to the installation dimension diagram.

(3). Select a location where the structure can withstand 4 times the weight of the indoor unit to avoid vibration, noise and possible structure or equipment damage.

(4). Ensure the installation is horizontally level.

(5). Select a location where it is easy to drain the condensing water and connect to the outdoor unit;

(6). Be sure to leave enough space to allow access for routine maintenance; clearance between the top of the indoor unit and the floor should be more than 7 feet.

(7). When installing the steeve bolt, check if the installation location can stand 4 times the weight of the units. If not, reinforce before installation. (Refer to the installation template and find where it should be reinforced)

⚠ Notice!

1). It is not recommended that this unit be installed in or near a kitchen environment. If adequate distance from the kitchen cannot be achieved, the kitchen must have adequate ventilation to prevent contamination of the units external and internal working parts.

2). Keep the indoor unit far away from heat sources, vapor and flammable gas

2.3 Important Notice:

◆ To guarantee optimum performance, the unit must be installed by a qualified technician according to the instructions in this installer's manual.

◆ This equipment is to be installed and serviced by professionally trained personnel ONLY. Under NO circumstances should an unqualified person install or service it. Any malfunction caused by improper installation or service may void all warranties.

2.4 Dimension of Ceiling Opening and Location of the Hoisting Screw (M10)

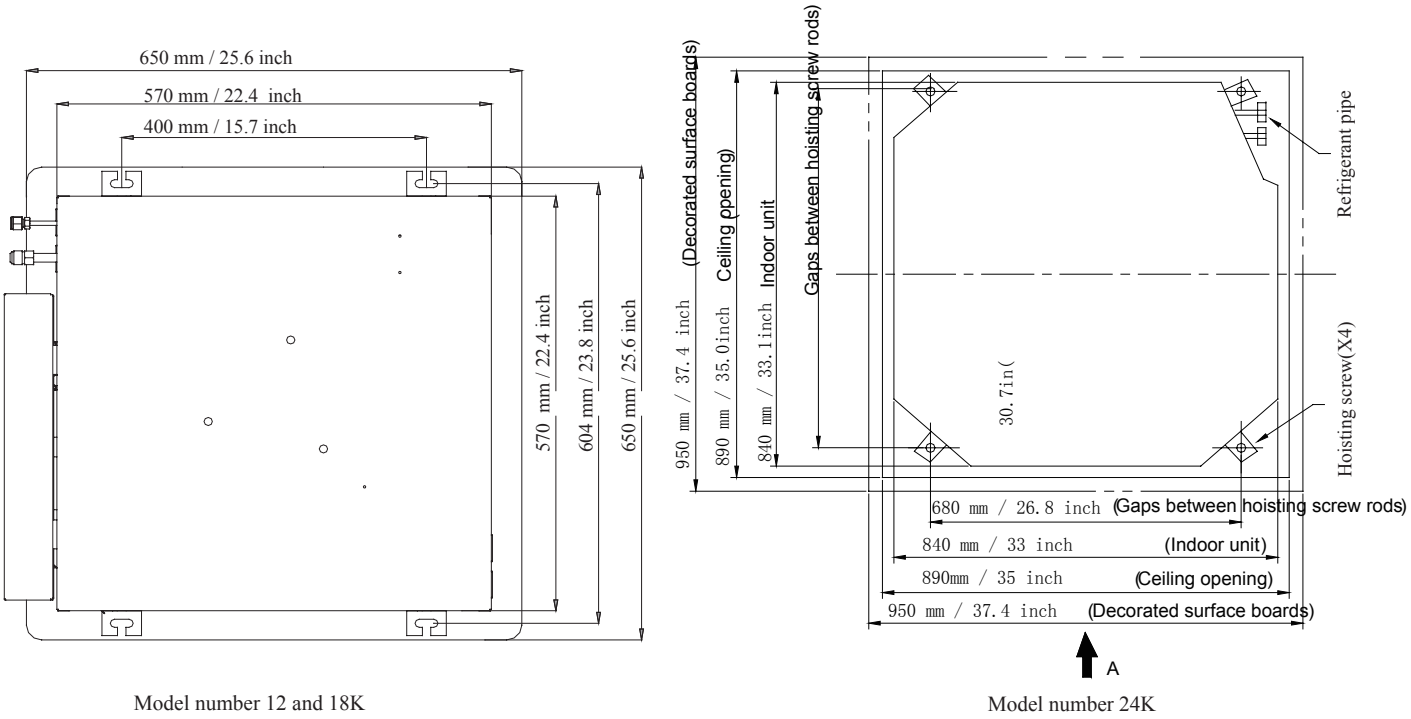


Fig.2 Install dimension of mode

◆ The drilling of holes in the ceiling must be done by the installing technician.

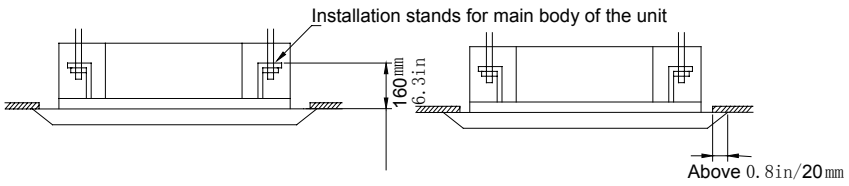


Fig.3

Notes: The dimension for the ceiling openings with * marks can be as large as 35.8 inches (910 mm). But the overlapping sections of the ceiling and any decorated surface boards should be maintained at no less than 0.8 inch (20 mm)

2.5 Main Body of Hoisting Air Conditioner

(1) The primary step for installing the indoor unit.

◆ When attaching the hoisting stand with hoisting screw, use a nut and gasket respectively at the upper and lower section of the hoisting stand to secure it. The use of a washer anchor board can prevent the washer from breaking off.

(2) Use installation template.

◆ Please refer to the installation template to verify the dimension of ceiling opening.

◆ The central mark of the ceiling opening is marked on the installation template.

◆ Install the installation template on the unit by bolts (3 pieces), and fix the angle of the drainage pipe at the outlet vent by bolt.

(3) Adjust the unit to the suitable installation location. (Refer to the fig.3)

(4) Check to ensure the unit is horizontal.

◆ Inner drainage pump and float switch are included in the indoor unit, check if the four corners of every unit are horizontal by water level. (If the unit is slanted toward the opposite side of the drain pan, there may be malfunction of the float switch and lead to water condensation and overflow.)

(5) Backout the washer anchor board used to prevent washer break off and tighten the nut on it.

(6) Backout the installation template.

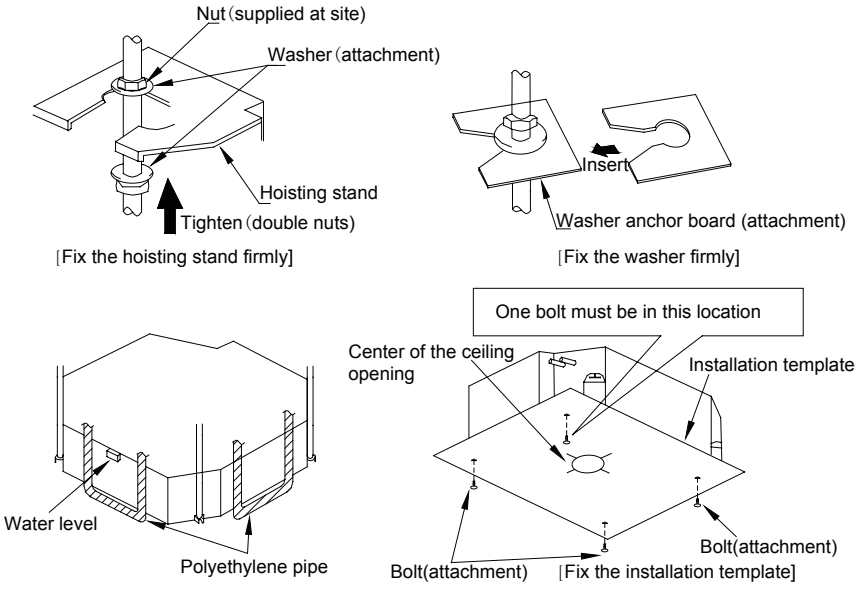


Fig.4

⚠ Notice !

Tighten the nuts and bolts to prevent the air handler from falling down.

2.6 Connection of the Refrigerant Pipe

◆ When connecting or removing the refrigerant pipe with the unit, use both spanner and

torque wrench. as shown in fig.5.

◆ When connecting, smear both inside and outside of the flare nut with freeze motor oil, screw it by hand and then tighten it with spanner.

◆ Refer to Table 1 to check if the nut has been tightened correctly (over tightening would damage the nut and lead to refrigerant leakage.).

◆ Examine the connection pipe to see if it has refrigerant leakage, then install insulation, as shown in the Fig.5.

◆ Only use medium-sized foam insulation to entwine the wiring interface of the gas pipe and insulation of the gas collection tube.

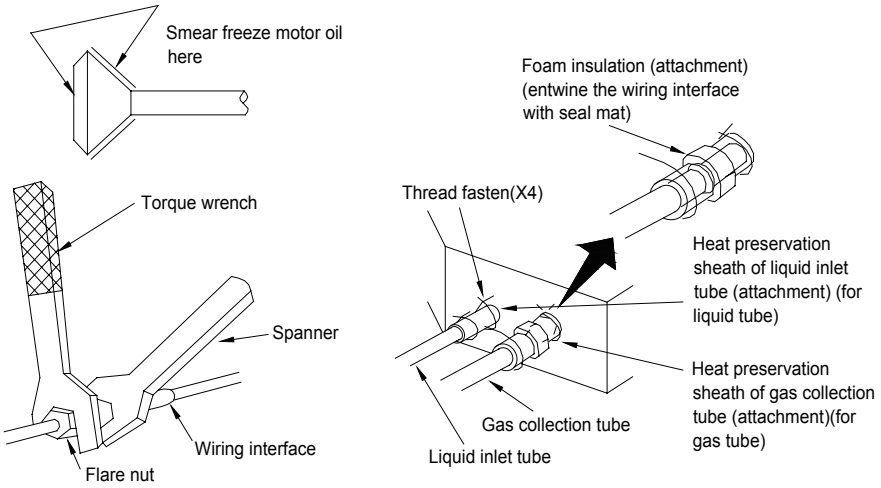


Fig.5

Form 1: The tightening torque needed for tightening nut

Pipe Diameter	Required Torque
φ6.35 (mm) / φ1/4 (inch)	15-30 (N·m) / 20.3-40.7 (ft·lbf)
φ9.52 (mm) / φ3/8 (inch)	30-40 (N·m) / 40.7-54.2 (ft·lbf)
φ12 (mm) / φ1/2 (inch)	45-50 (N·m) / 61.0-67.8 (ft·lbf)
φ15.9 (mm) / φ5/8 (inch)	60-65 (N·m) / 81.3-88.1 (ft·lbf)
φ19.05(mm)/ φ3/4 (inch)	70-75 (N·m) / 94.9-101.7 (ft·lbf)

2.7 Drain Hose

(1). Install the drain hose

◆ The diameter of the drain hose should be greater than or equal to the connection pipe's. (The diameter of polythene pipe: Outer diameter 25mm (1 inch) Surface thickness ≥1.5mm (0.06 inch))

◆ Drain hose should be as short as possible and without sags. It should be pitched away from the unit at 1/4" per foot to ensure good water drainage.

◆ If drain hose has droops and sags, drain support straps should be added.

◆ To prevent sags in the drain hose, the distance between support straps should be 39.4 to 59 inches (1 to 1.5 m).

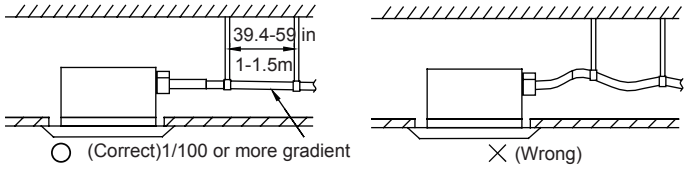


Fig.6

◆ Use the drain hose and clamp attached. Insert the drain hose to the drain vent, and then tighten the clamp.

◆ Insert drain pipe into opposite end of drain hose and clamp securely (this clamp supplied by installer). Do not use adhesive at this joint.

◆ Entwine the foam insulation wrap on the clamp of drain hose to insulate.

◆ Insulation should be done to indoor drain hose.

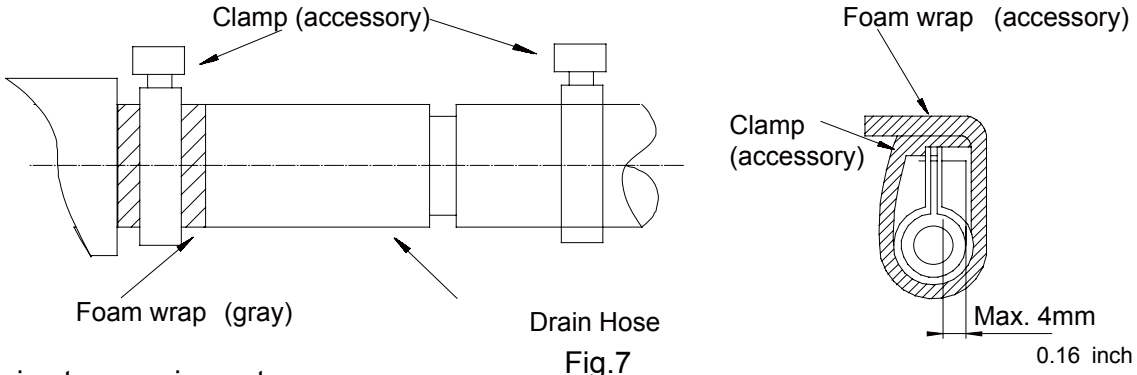


Fig.7

Drain step-up pipe note

◆ The installation height of the drain raising pipe should be less than 11 inches (280 mm).

◆ The drain raising pipe should form a right angle with the unit, and distance to unit should not go beyond 11.8 inches (300 mm).

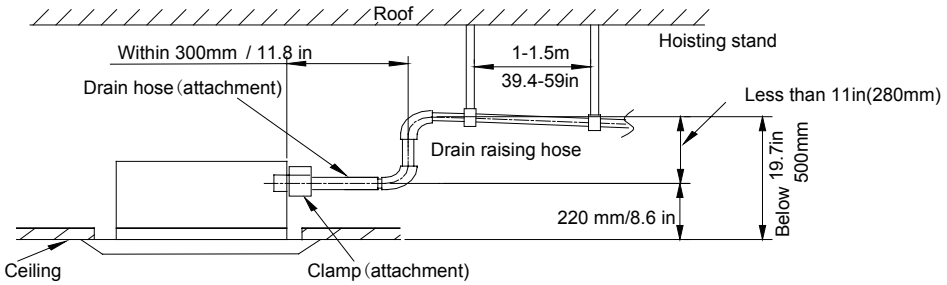


Fig.8

Instruction

◆ The fall of the attached drain hose should be within 2.95 inches (75 mm) so that the joint of the drain pipe doesn't have to endure unnecessary outside force, as shown in Fig 9.

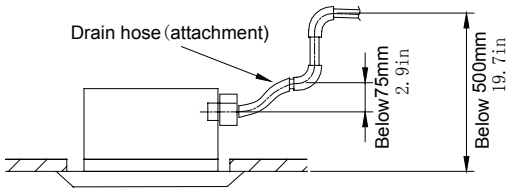


Fig.9

◆ Install the drain hose according to the following process if several drain hoses join together.

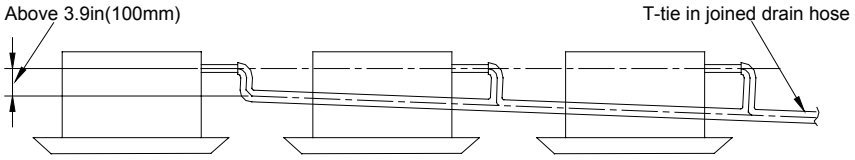


Fig.10

(2) Check for good drainage after installation. t

◆ Check the drainage state by adding 20.3 ounces (600 ml) water slowly from the outlet ven or test hole.

◆ Check the drainage under cooling mode after electric circuit installation work is done.

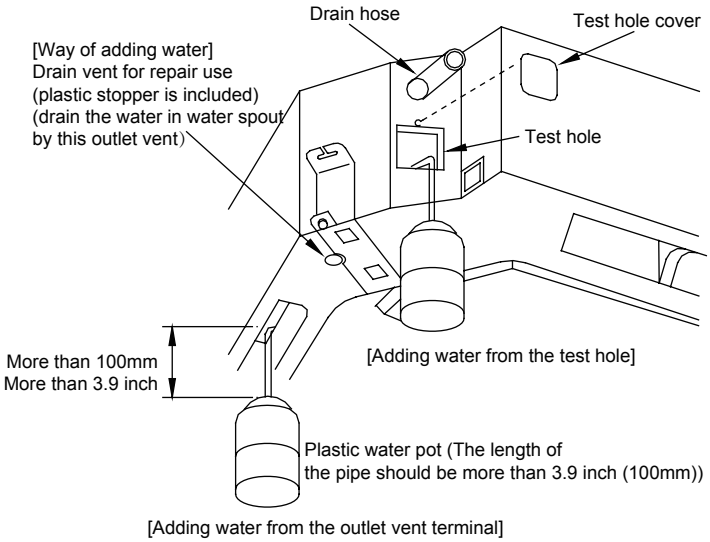


Fig.11

2.8 Electrical wiring

⚠ Notice:The power of the entire indoor unit must be connected with the outdoor unit.

◆ About the electrical wiring, please see the circuit diagram attached with the unit.

◆ All the installation of electrical wiring must be done by qualified electricians.

◆ Make sure all electrical connections are properly grounded.

Wiring Method of Connection Unit and Controller

◆ Connection wiring (communication):

① Open electric box cover, drag the wiring (communication)from the rubber plug A, and tighten them individually by impact fastener.

② Wiring according to the indoor side circuit diagram.

◆ Fix the impact fastener after connection.

◆ Entwine the foam insulation on the electric wire(to prevent condensation).

◆ Tighten by impact fastener after connection and then fit on the electric box (1) and (2).

◆ Put the 4-core cable through the hole of the chassis and the bottom of the appliance upward, and then connect the power line and the communication line from the outdoor unit to the corresponding terminals N(1), 2, 3 , and grounding terminal of the indoor unit. Wiring shall be done properly as per the wiring diagram. (Note: Be sure the wiring terminals A/B/C/D and piping joints A/B/C/D of the indoor unit match with that of the outdoor unit respectively).

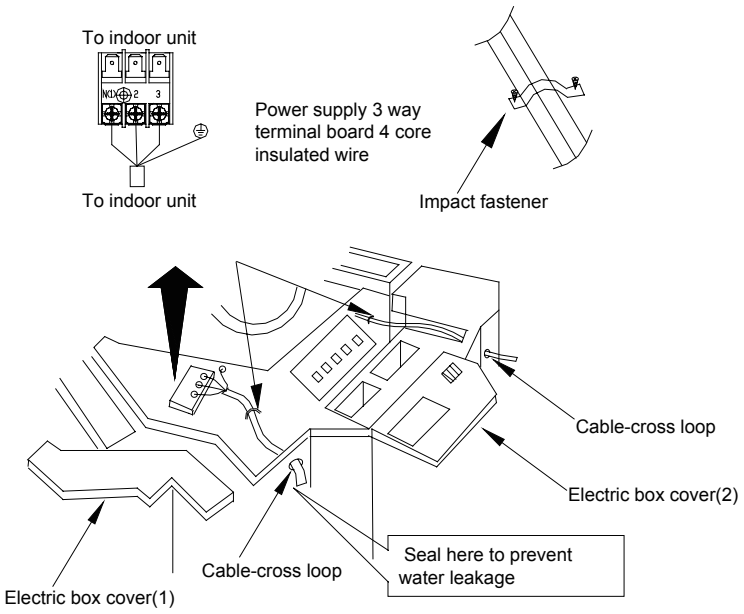
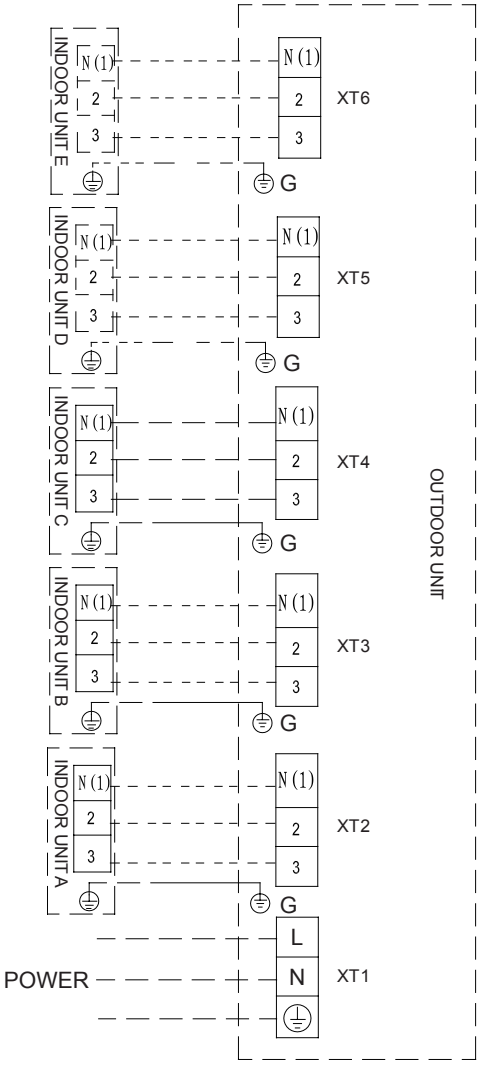


Fig.12

For example: wiring connection for 4TXM6542A1050BA



2.9 Install the Panel

1. Set the panel to the indoor unit body by matching the position of the swing flap motor of the panel to the piping position of the panel to the piping position of the indoor unit as shown by Fig.13.

2. Install the panel

① Install the panel on the indoor unit temporarily. When installing, hang the latch on the hook that is located on the opposite side of the swing flap on the panel of the indoor unit. (2 positions)

② Hang the remaining 2 latches to the hooks on the sides of the indoor unit.(Be careful not to let the swing motor lead wire get caught in the sealing material.)

③ Screw the 4 hexagon head screws under the latches in about 0.6 inches (15 mm). (The

panel would rise)

④ Adjust the panel by turning it toward the direction pointed by the arrow as shown in Fig.13, so that the adjust board connects with the ceiling well.

⑤ Tighten the screws until the thickness of the sealing material between panel and indoor unit is reduced to 0.2 - 0.3 inches (5-8 mm).

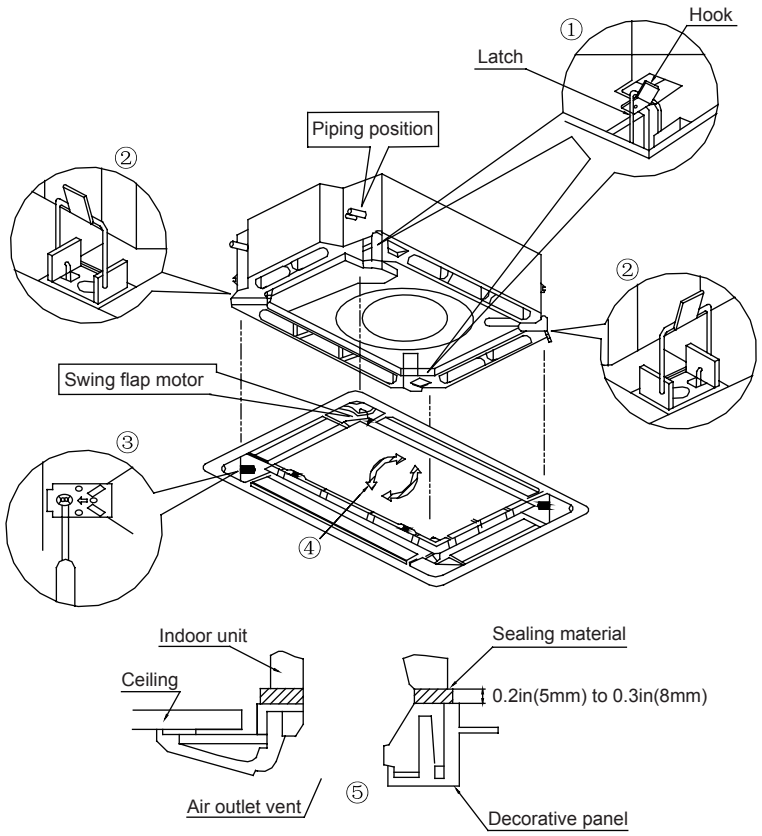


Fig.13

Notes:

1). Improper tightening of the screws may cause the problems shown in Fig.14.

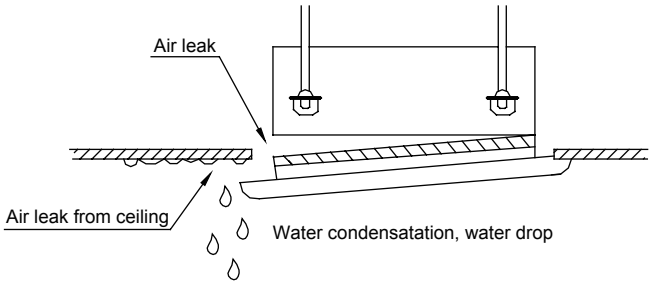


Fig.14

2). If a gap still exists between ceiling and decorative panel after tightening the screws, readjust the height of the indoor unit. (As shown in Fig.15)

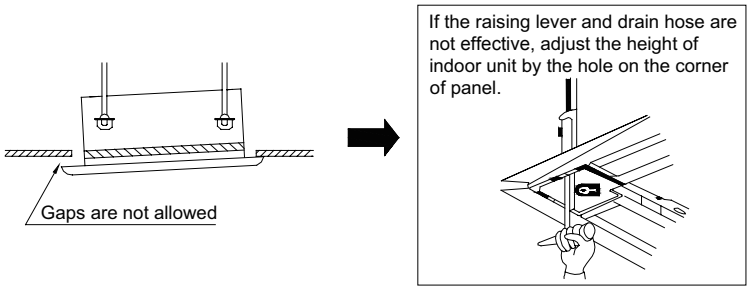


Fig.15

※ After adjusting, be sure no gap is left between the ceiling and the panel.

3). Wiring of the decorative panel (Fig.16)

Connect the joints for swing flap motor lead wire (at 2 places) installed on the panel.

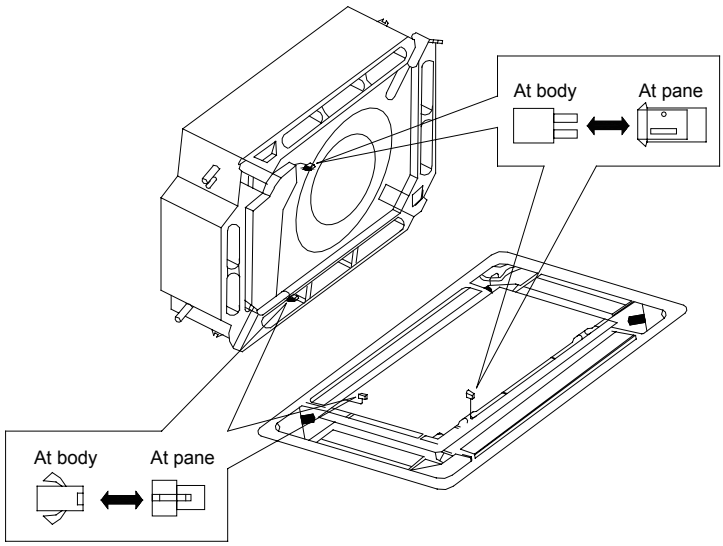


Fig.16

3 Parts and Components of Cassette Type Indoor Unit

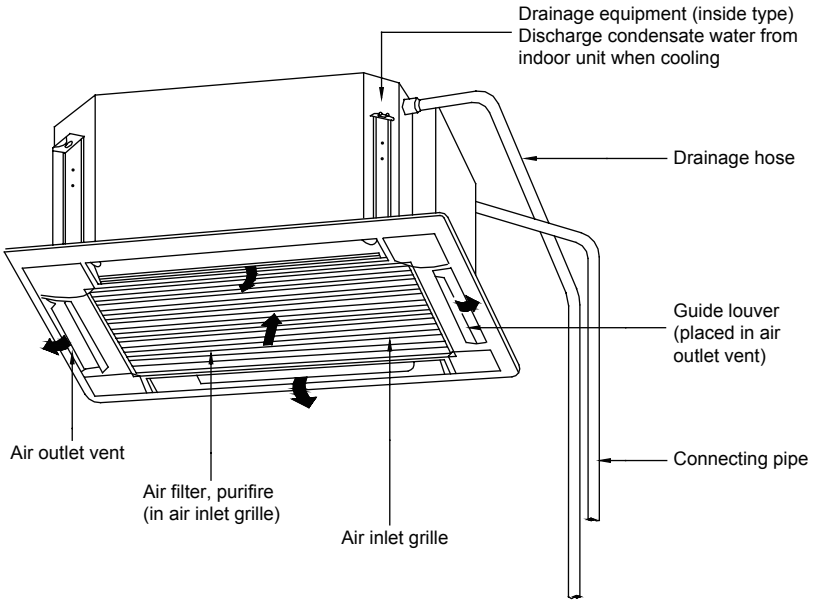


Fig.17

4 Working Temperature Range

Working Temperature Range

	OutdoorsideDB(°F)
Maximum cooling	110
Minimum cooling	0
Maximum heating	75
Minimum heating	5

5 Trouble Shooting

⚠ Warning!

◆ Turn off the main power switch immediately if a malfunction is detected. Contact your servicing or installing dealer. If the abnormal state is maintained, the unit may be damaged or electric shock or fire may occur.

◆ Do not try to move or reposition the conditioner. Please contact the servicing/installing dealer to repair or move the conditioner.

★ Check the following items before contacting the dealer.

Phenomena	Reason	Remedial Measures
Air conditioner doesn't run at all	Blown fuse or breaker	Change fuse or close breaker
	Power outage	Restart when there is power supply
	Power supply off	Turn on power supply
	Low batteries of wireless remote controller	Change new batteries
	Wireless remote controller exceeds remote control area	Signal range should be less than 26.25 feet (8 m)
Air conditioner runs but stops immediately	Blockage in inlet or outlet vent of indoor or outdoor unit	Clean out blockage
Abnormal cooling or heating	Blockage in inlet or outlet vent of indoor or outdoor unit	Clean out blockage
	Improper temperature setting	Adjust settings in wireless remote controller
	Low setting of fan speed	Adjust settings in wireless remote controller
	Incorrect airflow direction	Adjust settings in wireless remote controller
	Door or window opened	Close
	Direct sun exposure	Hang curtain or shades/blinds over windows
	Filter blocked by dirt	Clean filter

to

★ Instruction

If problem still cannot be solved after checking the above, please contact the installing or servicing dealer.

★ The following circumstance may not indicate malfunction

"Malfunction"		Reason
Air conditioner doesn't run	Start up unit immediately after turned off	The overload protects switch makes it run after 3 minutes delay.
	When opening power	Run for about 1 minute without other actions
Mist is blown from air conditioner	When cooling	The high humidity air in room is cooled rapidly
Noise is heard from air conditioner	Slight click sound heard once the unit starts running	Sound of initialization for electronic expansion valve
	Slight hissing sound heard continuously when cooling	The sound for gas refrigerant flowing in the unit
	Slight hissing sound heard when starting or stopping	The sound for gas refrigerant stopping or starting flow
	Slight hissing sound heard when running or after running	Sound for running of drainage system
	Creaking sound heard when running or after running	The creaking sound caused by expansion/contraction of panel and other parts due to the change of temperature
Dust blown from air conditioner	Started up after long idle time.	Dust in indoor unit being blown out
Odor being discharged from air conditioner	When running	When unit is operating, odors from the room that were sucked in are discharged again

★ After-sales Service

If there are any quality or other issues after purchasing air conditioner, please contact the installing/servicing dealer.

6 Maintenance Method

When the unit won't be used for a long time, please cut off the main power supply of air conditioner.

⚠ **Warning!**

◆ Turn off the unit and cut off the main power supply when cleaning the air conditioner, otherwise electric shock or injury may occur.

◆ It is forbidden to wash air conditioner by water rinsing, otherwise electric shock may happen.

6.1 Cleaning Air Filter

When the usage environment has lots of dust, air filter should be cleaned more frequently (about once 6 months).

(1). Open air inlet grille

Pull the 2 handles on air inlet grille at the same time with the direction shown by arrow in Fig. 18, pull it down slowly. (As per the reverse disassembly order when closing)

(2). Disassemble air filter

As shown in Fig. 19, pull the handle behind air inlet grille, raise it and disassemble. Then remove the 3 purifiers fixed on filter.

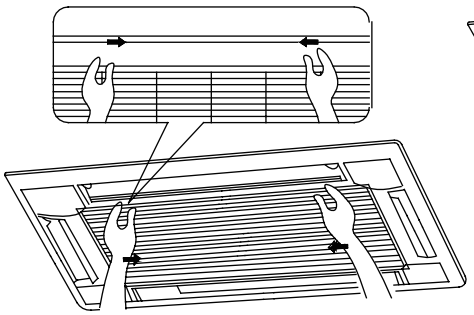


Fig.18

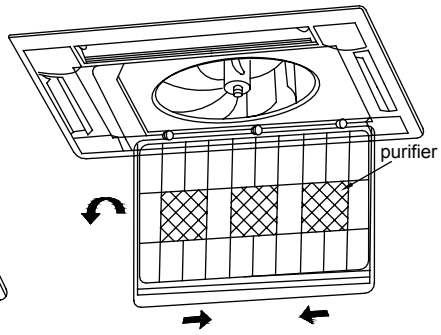


Fig.19

(3). Clean the filter

Use a cleaner or some water to wash filter; if the filter is too dirty (like oil stain on it), use some warm water (lower than 113℉(45℃)) with neutral detergent to clean it, then dry it in the shade.

⚠**Notice!**

Do not clean the filter by hot water which temp. is higher than 113℉(45℃) to prevent fading or deformation.

Do not place the filter near fire; otherwise the filter may catch fire or lead to deformation.

(4). Install air filter

Fix the 3 purifiers on filter, install filter on the several guides on top of air inlet grille, pull the

handle behind air inlet grille toward inside to fix filter. As shown in Fig. 20.

(5). Close air inlet grille (Refer to the 1st step)

Maintenance Method

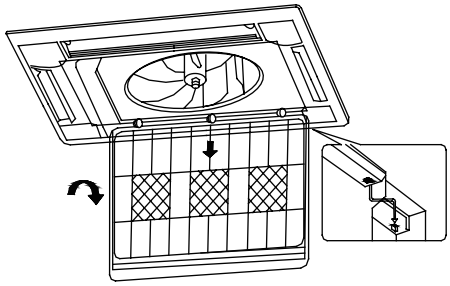


Fig.20

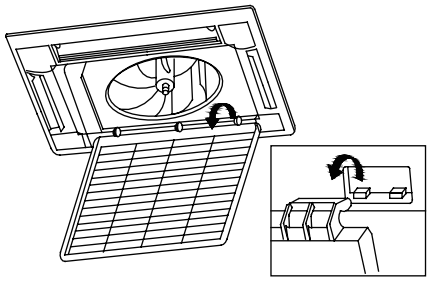


Fig.21

6.2 Clean Air Inlet Grille

(1). Open air inlet grille (the same with the 1st step of Clean Air Filter)

(2). Take out air filter (the same with the 2nd step of Clean Air Filter)

(3). Take out air inlet grille

Open air inlet grille for an angle of 45°, as shown in Fig.20, raise it.

(4). Clean

Clean it by soft brush, water and neutral cleanser, rinse and allow to air dry.

⚠ **Notice!**

Do not use water above 113℉(45℃) to wash the panel to prevent fading or deformation.

(5). Install air inlet grille (refer to 3rd step)

(6). Install air filter (refer to the 4th step of Clean Air Filter)

(7). Close air inlet grille (refer to the 1st step)

6.3 Install and Change Air Purifier

(1). Open air inlet grille (the same the 1st step of Clean Air Filter)

(2). Disassemble purifier

As shown in Fig.21, Disassemble air filter, remove fixing bolts fixed on purifier on filter, then purifier can be disassembled.

(3). Install the filter in frame of purifier,

and fix purifier on air filter.

(4). Install air filter (the same with the 4th step of Clean Air Filter)

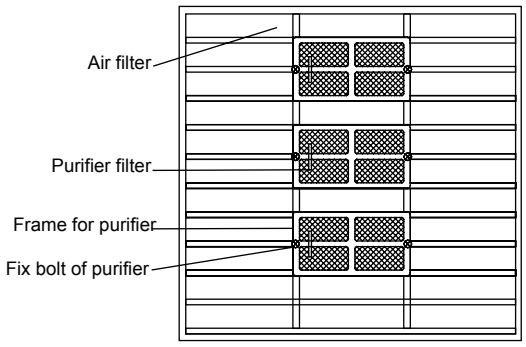


Fig.22

Usage period for air purifying

◆ Usage period is 6 months to 1 year. If it is necessary to change, purchase new purifier filter refills from the servicing/installing dealer.

6.4 Clean Outlet Vent and Surface Panel

◆ Clean the surface panel by soft dry cloth or wet cloth with neutral cleanser.

◆ It is forbidden to clean surface panel by gasoline, benzene, diluents, cleansing powder etc..

◆ If the guide louver is too dirty, it may be removed to be cleaned. (As narrated below)

Disassembly and installation of guide louver

(1). Disassemble guide louver

Screw bolts in both ends of guide louver to loosen.

⚠ **Notice!**

Do not forcibly wipe guide louver or use abrasives when cleaning, otherwise surface layer may be damaged.

(2). Install guide louver

Rotate guide louver slightly to install the protruding edge of both ends into grooves on both ends of guide louver, and then tighten bolts.

6.5 Maintenance before or after Seasonal Use

Check before the usage season

◆ Check if there is blockage in inlet or outlet vent of air conditioner.

◆ Check if the ground wire has been grounded properly.

◆ Check if the air filter had been installed correctly.

◆ In order to start up the air conditioner after long idle time or power disconnect, turn on the main power supply 8 hours before turning on the air conditioner.

Maintenance after seasonal use

◆ Cut off the main power supply of air conditioner.

◆ Clean filter and body of air conditioner.

◆ The cooling or heating capacity and sound level are tested before leaving factory.

◆ If the parameter changed, refer to the data offered on nameplate.