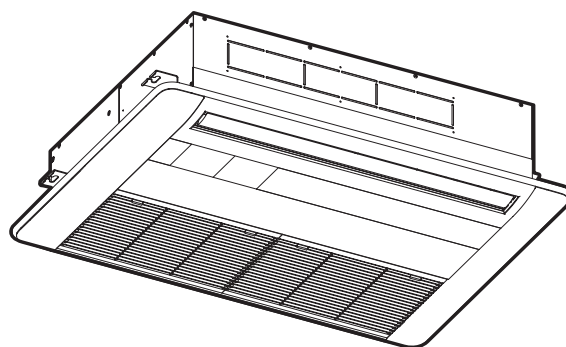


Operation Manual

INVERTER-DRIVEN MULTI-SPLIT SYSTEM HEAT PUMP AIR CONDITIONERS

Type	Model
1-Way Cassette	(H,Y,C)IC1006B21S
	(H,Y,C)IC1008B21S
	(H,Y,C)IC1012B21S
	(H,Y,C)IC1015B21S



IMPORTANT:

***READ AND UNDERSTAND
THIS MANUAL BEFORE
USING THIS HEAT PUMP
AIR CONDITIONER.
KEEP THIS MANUAL FOR
FUTURE REFERENCE.***

P5417057

Important Notice

- Johnson Controls Inc. pursues a policy of continuing improvement in design and performance in its products. As such, Johnson Controls Inc. reserves the right to make changes at any time without prior notice.
- Johnson Controls Inc. cannot anticipate every possible circumstance that might involve a potential hazard.
- This heat pump air conditioning unit is designed for standard air conditioning applications only. Do not use this unit for anything other than the purposes for which it was intended for.
- The installer and system specialist shall safeguard against leakage in accordance with local codes. The following standards may be applicable, if local regulations are not available. International Organization for Standardization: (ISO 5149 or European Standard, EN 378). No part of this manual may be reproduced in any way without the expressed written consent of Johnson Controls Inc.
- This heat pump air conditioning unit is operated and serviced in the United States of America and comes with a full complement of the appropriate Safety, Danger, and Caution, warnings.
- If you have questions, please contact your distributor or dealer.
- This manual provides common descriptions, basic and advanced information to maintain and service this heat pump air conditioning unit which you operate as well for other models.
- This heat pump air conditioning unit has been designed for a specific temperature range. For optimum performance and long life, operate this unit within the range limits according to the table below.

Temperature

		Maximum	Minimum
Cooling Operation	Indoor	89°F DB/73°F WB (32°C DB/23°C WB)	69°F DB/59°F WB (21°C DB/15°C WB)
	Outdoor	118°F DB (48°C DB) *	14°F DB (-10°C DB) *
Heating Operation	Indoor	80°F DB (27°C DB)	59°F DB (15°C DB)
	Outdoor	59°F WB (15°C WB) *	-4°F WB (-20°C WB) *

DB: Dry Bulb, WB: Wet Bulb

* The temperature may change depending on the outdoor unit

- This manual should be considered as a permanent part of the air conditioning equipment and should remain with the air conditioning equipment.

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1. Introduction

Read this manual carefully before working with this product.
Keep this information with the product.



Forward this manual and the warranty to the next team of installers and then users.

Ask them to keep this manual with the air conditioning unit.


(Refrigerant Piping Work) → (Electrical Wiring Work) → (Ref. Charge Work) → (Test Run) → (User)

- For details on wiring between the indoor unit and the outdoor unit, refer to the installation and maintenance manual for the outdoor unit.
- For details on the optional decorative panel, refer to the installation and maintenance manual for the optional decorative panel.
- For details on the optional controller, refer to the installation and maintenance manual for that optional controller module.
- For details on each optional part, refer to the installation and maintenance manual for each optional part.
- For central controller, refer to the installation and maintenance manual for the central controller.

2. Safety Instructions

Signal Words	
 WARNING	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates information considered important, but not hazard-related (for example, messages relating to property damage).

General Precautions

 WARNING	To reduce the risk of serious injury or death, read these instructions thoroughly and follow all warnings or cautions included in all manuals that accompanied the product and are attached to the unit. <i>Refer back to these safety instructions as needed.</i>
--	--

- This system should be installed by personnel certified by Johnson Controls, Inc. Personnel must be qualified according to local, state and national building and safety codes and regulations. Incorrect installation could cause leaks, electric shock, fire or explosion. In areas where Seismic Performance requirements are specified, the appropriate measures should be taken during installation to guard against possible damage or injury that might occur in an earthquake if the unit is not installed correctly, injuries may occur due to a falling unit.
- Use appropriate Personal Protective Equipment (PPE), such as gloves and protective goggles and, where appropriate, have a gas mask nearby. Also use electrical protection equipment and tools suited for electrical operation purposes. Keep a wet cloth and a fire extinguisher nearby during brazing. Use care in handling, rigging, and setting of bulky equipment.
- When transporting, be careful when picking up, moving and mounting these units. Although the unit may be packed using plastic straps, do not use them for transporting the unit from one location to another. Do not stand on or put any material on the unit. Get a partner to help, and bend with your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut fingers, so wear protective gloves.
- Do not touch or adjust any safety devices inside the indoor or outdoor units. All safety features, disengagement, and interlocks must be in place and functioning correctly before the equipment is put into operation. If these devices are improperly adjusted or tampered with in any way, a serious accident can occur. Never bypass or jump-out any safety device or switch.

- Before servicing, turn-OFF current at the power source and use accepted lockout and tag out procedures at all main switches.
- This unit is the pressurized system. Never loosen threaded joints while the system is under pressure and never open pressurized system parts.
- Johnson Controls will not assume any liability for injuries or damage caused by not following steps outlined or described in this manual. Unauthorized modifications to Johnson Controls products are prohibited as they...
 - May create hazards that could result in death, serious injury or equipment damage;
 - Will void product warranties;
 - May invalidate product regulatory certifications;
 - May violate OSHA standards;

WARNING

- Do not insert fingers or objects into air inlet/outlet. Injury can result from rotating fan blades or energized electrical components.
- Do not touch the wired controller with wet hands. It can result in failure of the wired controller or an electrical shock.
- Hair spray, insecticides, lacquers, and other pressurized substances should not be used within 3.3ft (1m) of any air conditioning unit. It can react with energized electrical components and cause fire.
- Do not install the indoor unit anywhere discharge airflow can pass directly toward nearby heating equipment (space heaters). It may interfere with the combustion process in these units.
- Air circulation should be optimized to achieve the best distribution pattern and not settle into isolated pockets that can make people uncomfortable.
- When the indoor unit is operating with heating equipment, ventilate a room sufficiently. Any leaked refrigerant gases that happen to come into contact with any heat source can become toxic on contact which can cause suffocation in the immediate area.
- Shut down at the main power source if the GFCI (Ground Fault Circuit Interrupter) activates frequently. Contact your distributor or contractor immediately. Failure to act accordingly can result in serious injury and damage to the unit.
- CAUTION! If you smell anything burning, shut down the unit and turn OFF the power at the main power source. Contact the fire department and your installer or electrical contractor.
- Make sure that a test for leakage of refrigerant gases has been performed. The refrigerant used for this unit (HFC R410A), is a non-flammable, non-toxic, and odorless gas. However if refrigerant should leak and make contact with sparks, fire; toxic gas will be generated. Also, because the fluorocarbon is heavier than air, the floor surface will be filled with it, which can cause suffocation.
- If fluorocarbon gas should leak, turn OFF all heating equipment and ventilate the room immediately. Mop down or vacuum floor areas of residual toxic particulate.
- CAUTION! Do not operate indoor units with the electrical box and switch panel open and exposed. Incidental contact with energized components can prove fatal.

Repair / Relocation

WARNING

- When the air conditioner is to be repaired or transported to a new location, contact your distributor or contractor. If the repair and the installation are not completed, it may cause an electric shock or fire.

Others

WARNING

- Turn OFF all power at the main power source before performing maintenance work. Failure to do so can result in damage to internal components with severe or fatal electrical shock.
- Insulate all electrical components and connections from exposure to moisture. Failure to do so can result in an electrical short, fire.
- Do not tamper with or attempt to "repair" electrical wiring or connections. Call your installer or electrical contractor. Serious or fatal injury can occur.
- Perform all maintenance work on a firm and stable platform to minimize the risk of injury.
- Do not attempt to "clean" indoor unit components with liquid or powdered cleaning agents during maintenance. Electric shock, sparks, flame, and serious or fatal injury can occur.
- System piping is charged with refrigerant and highly pressurized.

CAUTION

- Hold the air filter and the air inlet grille securely when attaching or removing it. Carelessness can result in accident or injury.

3. Before Operation

NOTICE

Apply power to the outdoor unit(s) at least 12 hours prior to operation of the system for preheating of the compressor oil. Make sure that the outdoor unit is not covered with snow or ice. If it is covered with snow or ice, remove it by using hot water approximately 122°F (50°C).

If the water temperature is higher than 122°F (50°C), it will cause damage to plastic parts.

- Turn OFF the main switch when the system is stopped for a long period of time.
If the main switch is not turned OFF, electricity is consumed because the oil heater is always energized during compressor stoppage.
- When the system is started after a shutdown longer than approximately three months, it is recommended that the system be checked by your service contractor.

3.1 Operating Range

This heat pump air conditioner has been designed for the following temperatures. Operate the heat pump air conditioner within this range.

Temperature

		Maximum	Minimum
Cooling Operation	Indoor	89°F DB/73°F WB (32°C DB/23°C WB)	69°F DB/59°F WB (21°C DB/15°C WB)
	Outdoor	118°F DB (48°C DB) *	14°F DB (-10°C DB) *
Heating Operation	Indoor	80°F DB (27°C DB)	59°F DB (15°C DB)
	Outdoor	59°F WB (15°C WB) *	-4°F WB (-20°C WB) *

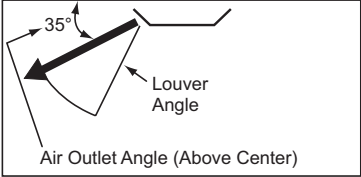
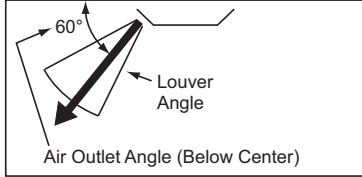
DB: Dry Bulb, WB: Wet Bulb

* The temperature may change depending on the outdoor unit.

3.2 Efficient Use of Indoor Unit

- **Do not leave a window or a door open.**
The operating efficiency will be decreased.
It may cause condensation of the indoor unit.
- **Attach a curtain or a blind to a window.**
Blocking direct sunlight into a room will increase efficiency.
- **Do not use heating equipment as much as possible during the cooling operation.**
Cooling efficiency will be decreased. It may cause condensation.
- **Use a circulator if warm air stays around the ceiling.**
Comfort will be increased. Contact your distributor for details for using a circulator.
- **Change the air flow direction downward if the ceiling surface gets dirty.**
It is recommended to change the air flow direction by approx. 35° downward.
- **Turn OFF the main power source if the indoor unit is not used for a long period.**
The unit will continue to draw power even if the indoor unit is unused.

3.3 Efficient Use of Cooling and Heating

COOLING	HEATING
<p>(1) Airflow Direction The appropriate air outlet angle is approximately 35°. If cooling is not sufficient, change the airflow direction. The louver angle can be changed approximately 5° per step by the wired controller.</p>  <p>(2) Airflow Volume Medium, "MED", airflow volume should be used as first choice, then adjusted as needed.</p>	<p>(1) Airflow Direction The appropriate air outlet angle is approximately 60°. If heating is not sufficient, change the airflow direction. The louver angle can be changed approximately 5° per step by the wired controller.</p>  <p>(2) Airflow Volume Medium, "MED", airflow volume should be used as first choice, then adjusted as needed.</p>

NOTE

For Multi-Split Systems

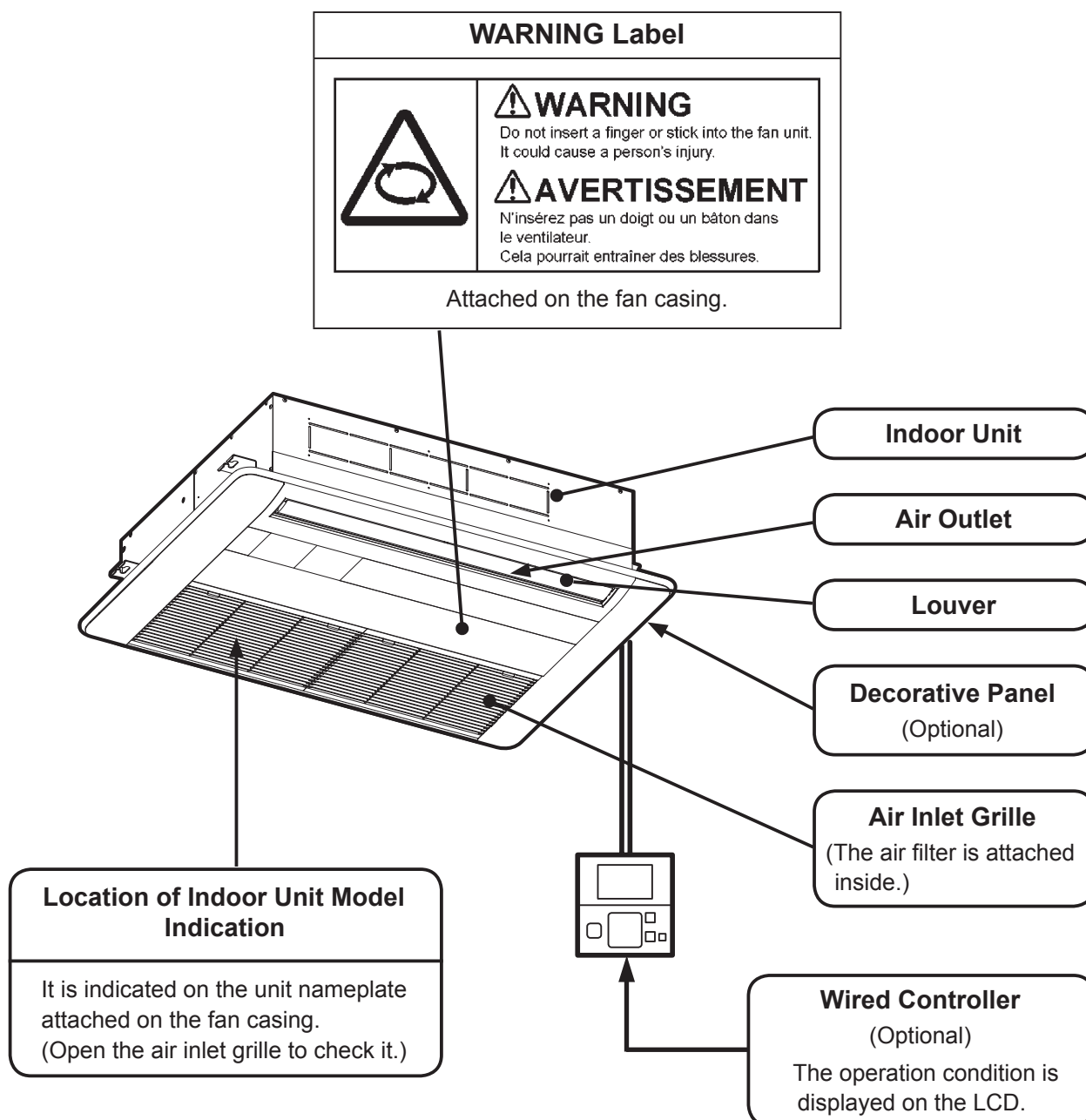
When the number of the indoor units in operation or the operating mode is changed, the change in air outlet temperature can cause the indoor temperature to change. In this case, adjust the settings as follows.

- During Cooling Operation: Lower the temperature setpoint slightly.
 - During Heating Operation: Raise the temperature setpoint slightly.
-

4. Names of Parts and Indications for Safety Consideration

Safety labels are affixed to the indoor unit in order to ensure safe use.
Read and understand this manual before using the indoor unit.

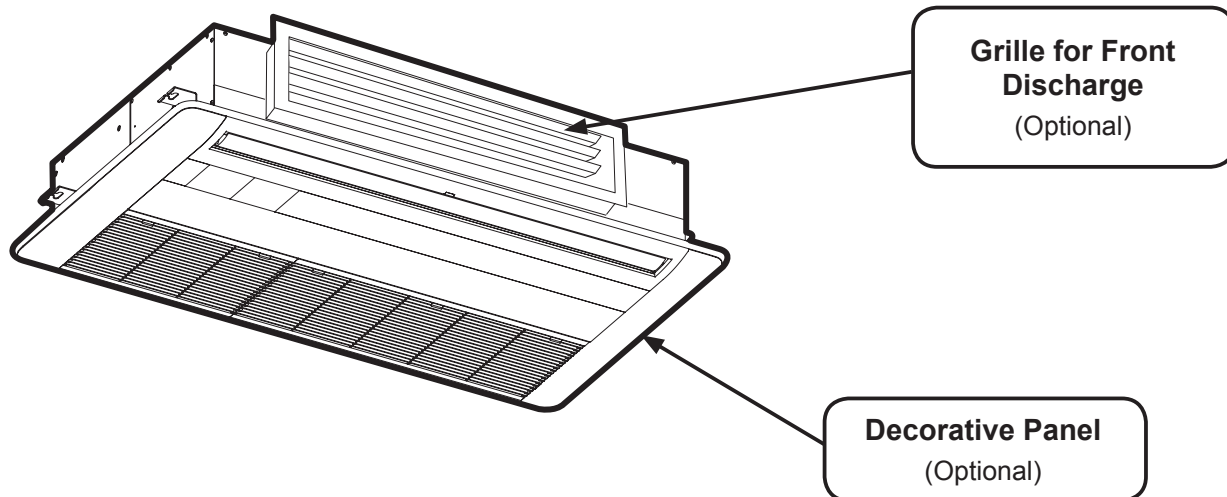
4.1 Indoor Unit



NOTE

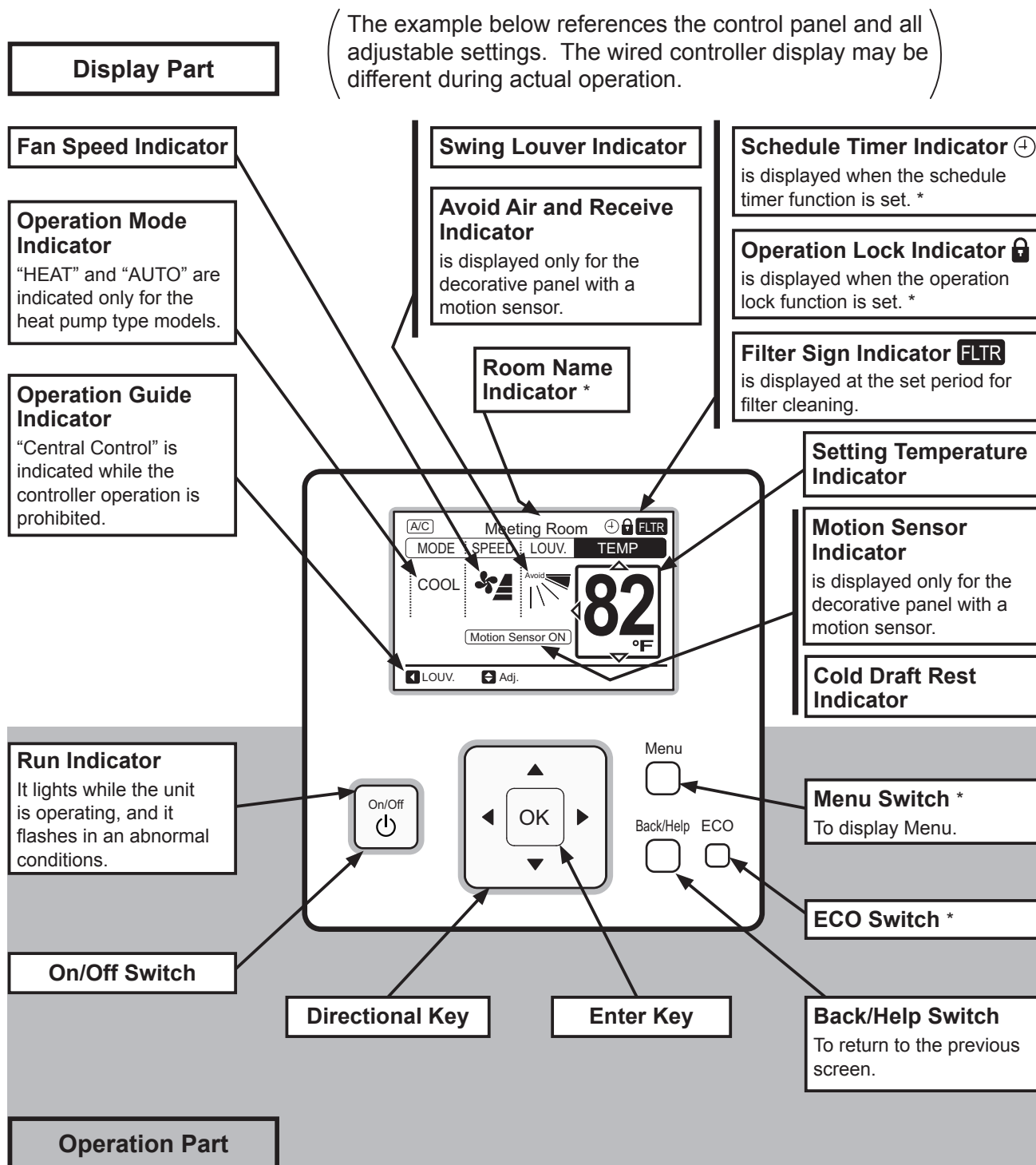
- Press switches lightly to control the wired controller. Do not press them with a sharp object such as a pen, as it could cause damage to the controller.
- The optional wireless controller and receiver kit operate according to each installation manual attached to them.

Clipped Ceiling Type



4.2 Wired Controller (CIW01)

Following is an example of how the CIW01 is utilized. If other models of the controller are utilized, operate the unit according to the manual for that controller.


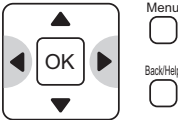
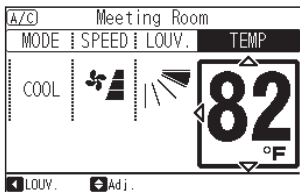
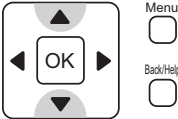
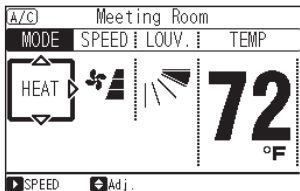


NOTE

* For detailed descriptions, refer to the "Operation Manual" for the wired controller.

5. Operation Method

5.1 Basic Operation

Item Selection	By pressing “◀” or “▶”, the icon “  ” will move between “MODE”, “SPEED”, “LOUV.” and “TEMP”.		
Change of Settings	With “MODE”, “SPEED”, “LOUV.” or “TEMP” selected, press “Δ” or “∇”. The setting will be changed.		

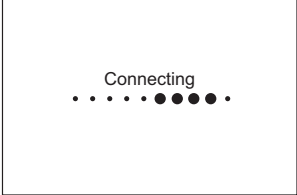

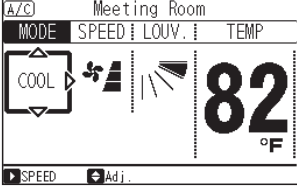


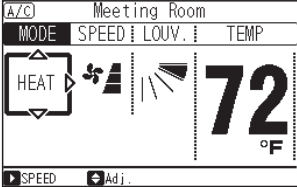
5.2 Cooling / Heating / Fan Operation

Heating Operation is for VRF systems only and is not available for typical systems.

Function

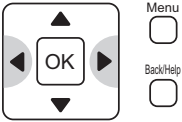
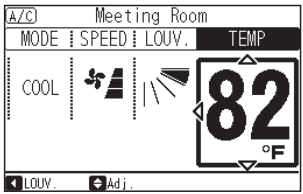
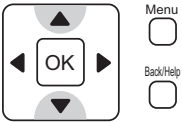
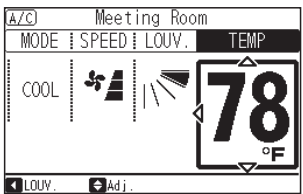
- * Cooling Operation: To decrease the room temperature.
- * Heating Operation: To increase the room temperature.
- * Dry Operation: To decrease the humidity in the room.
- * Fan Operation: To circulate the air in the room.

- Dry operation may not be performed properly if there are other heat sources that exceed the capacity of the unit.
- The humidity control is unavailable for this unit. If you require dehumidification and the control of humidity, choose specialized equipments.
- Decreasing of the humidity during dry operation might be unavailable.

Before Operation	<p>Turn ON the power supply. Turn ON the main power approximately 12 hours before operation in order to preheat the compressor.</p> <p>Do not turn OFF the main power to the indoor unit during heating or cooling season.</p>		
1	Press “◀” or “▶” to select “MODE”.		
2	<p>By pressing “△” or “▽”, the mode is changed as follows.</p> 		


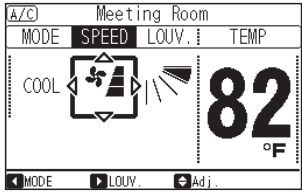


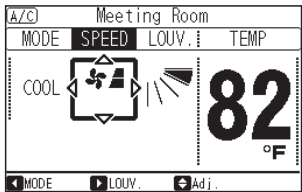
- Automatic cooling/heating operation (AUTO) requires an extra setting. Contact your distributor or contractor for details.

5.3 Temperature Setting

1	Press “◀” or “▶” and select “TEMP”.		
2	<p>By pressing “Δ”, the temperature is increased by 1°F (0.5°C). (Max. 86°F (30°C))</p> <p>By pressing “▽”, the temperature is decreased by 1°F (0.5°C). COOL, FAN operation: Min. 66°F (19°C) HEAT operation: Min. 62°F (17°C)</p>		

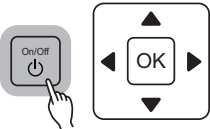
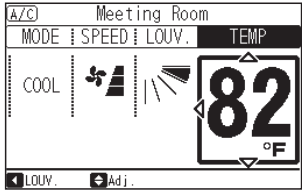
- In case the optional function “Automatic Reset of Setting Temperature” is set:
Even when changing the setting temperature on the wired controller, it automatically returns to the temperature set by “Automatic Reset Temperature” after a set time.
- Minimum and maximum temperature setpoint limits can be configured by selecting a cooling lower limit and heating upper limit in the “Function Selection” mode of the wired controller's Test Run Menu.
- Contact your distributor or dealer for details on optional functions “Automatic Reset of Setting Temperature,” “Cooling Lower Limit for Setting Temperature” and “Heating Upper Limit for Setting Temperature.”

5.4 Fan Speed

1	Press “◀” or “▶” and select “SPEED”.		
2	By pressing “△” or “▽”, the fan speed is changed as follows. 		


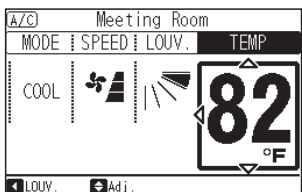
- During the dry operation, the fan speed is automatically changed to “LOW” and cannot be changed to any other fan speed. (“LOW” is NOT displayed on the Liquid Crystal Display (LCD) at this time. The present setting condition is displayed on LCD.)
- The fan speed setting “HIGH 2” may not be available depending on the indoor unit type.

5.5 Operation

Operation Start	Press “⏻” (On/Off). The RUN indicator is turned ON and the operation will start.		
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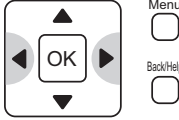
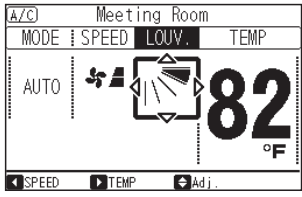
Temperature/Airflow Setting

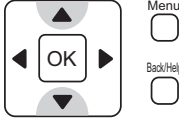
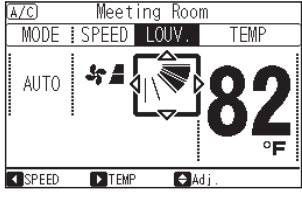
- The setting condition is memorized. Therefore, no daily setting is required. Temperature setpoint and airflow settings are retained after the indoor unit is turned OFF at the controller. In case the setting change is required, refer to Sections 5.2 to 5.4.









Operation Stop	Press “⏻” (On/Off) again. The RUN indicator is turned OFF and the operation will stop.		
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- The indoor unit fan may continue to operate for up to two minutes following the heating cycle to dissipate residual heat from the indoor unit.


5.6 Louver Swing Direction

1	<p>Press "⏻" (On/Off). Make sure the operation is started. Press "◀" or "▶" and select "LOUV".</p>		
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2	<p>By pressing "△" or "▽", the louver direction will be changed as follows.</p>		
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Step	1	2	3	4	5	6	7	-
LCD Indication								
Louver Angle	Approx. 35°	Approx. 40°	Approx. 45°	Approx. 50°	Approx. 55°	Approx. 60°	Approx. 65°	
FAN		Recommended Angle		Angle Range				
				Auto-Swing Range				
Louver Angle	Approx. 35°	Approx. 40°	Approx. 45°	Approx. 50°	Approx. 55°	Approx. 60°	Approx. 65°	
COOL and DRY		Recommended Angle		Angle Range				
				Auto-Swing Range				
Louver Angle	Approx. 35°	Approx. 40°	Approx. 45°	Approx. 50°	Approx. 55°	Approx. 60°	Approx. 65°	
HEAT				Angle Range		Recommended Angle		
				Auto-Swing Range				

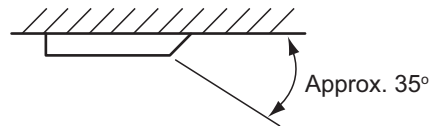
NOTE:
Even if 60° or 65° is selected during cooling operation and dry operation, the louver angle is automatically fixed at 55°.

 : Auto swing operation is activated.
At this time, animated louver graphic on the LCD will appear to swing.

- The louver angle indicated on the LCD and the actual louver angle do not correspond precisely with each other during auto-swing mode operation. When the louver angle is established, set the louver angle according to the louver position indicated on the LCD.
- Louver movement may NOT stop immediately after the switch is pressed.
- As for the indoor unit for a clipped ceiling, the auto-swing function is not available. It cannot select "LOUV".

During heating operation the swing louver direction will automatically changed.

- Regarding to "Start-up of Heating Operation", "During Defrost Operation" and "Activation of Thermistor", all the louver angles are fixed at 35° automatically even when this function is activated.

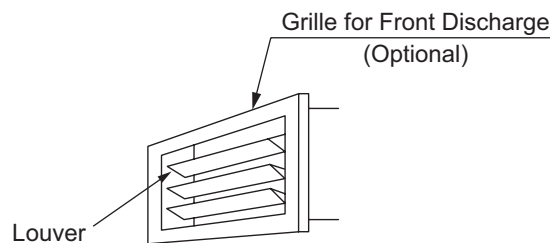


- When the air outlet temperature rises to 86°F (30°C) or more, the temperature setting condition is back to the former temperature setting condition.

At this time, the LCD setting condition is not changed to other displays. The present setting condition is displayed on the LCD.

Clipped Ceiling Type

- The optional "Grille for Front Discharge" is equipped with the louvers for air flow direction adjustment. The louvers can be adjusted by hand.
- The recommended louver direction are as follows.
Heating Operation: Upward
Cooling Operation: Downward
- For details of the louver angle adjustment, refer to the "Installation and Maintenance Manual" for the optional "Grille for Front Discharge".



An automatic heating/cooling operation and setback operation requires extra settings.
Contact your distributor or contractor for details.

5.7 Automatic Heating/Cooling Operation

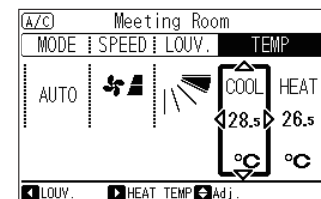
In case dual setpoint is selected in automatic heating/cooling operation, during auto mode both cooling setpoint and heating setpoint can be selected.

By default, temperature when the heating/cooling mode changes is as follows.

Cooling mode changes to heating mode when the indoor temperature is at the heating setpoint -2°F (-1°C).

Heating mode changes to cooling mode when the indoor temperature is at the cooling setpoint +2°F (+1°C).

If the temperature for changing modes requires to be changed, contact your distributor or contractor for details.



NOTE:

In case of Celsius Indication.

5.8 Setback Operation

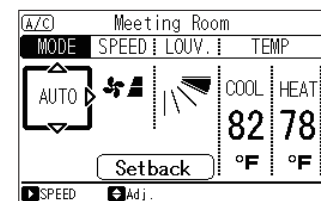
If the setback operation is enabled and the card key is removed, the louver starts to open in approximately 5 seconds, the setpoint is adjusted for setback, and the fan operates at “Low” speed. During this time, “Setback” is displayed on the LCD.

By default,

Cooling: Setpoint +4°F (+2.5°C)

Heating: Setpoint -4°F (-2.5°C)

If the adjustment for setback operation must be changed, contact your distributor or contractor for details.



NOTE:

In case of Fahrenheit Indication.

6. Automatic Control

This air conditioner automatically starts the following operations according to the conditions.

The system is equipped with the following functions.

Three-Minute Guard		<ul style="list-style-type: none"> ▪ Enforced Stoppage: The compressor remains off for at least three minutes once it has stopped. If the system is started within approximately three minutes after it has stopped, the RUN indicator is activated. However, the cooling operation or the heating operation remains off and does not start until after three minutes has elapsed. ▪ Enforced Operation: If all indoor units of the system are Thermo-OFF* within approximately three minutes after the compressor has started, compressor operate continuously during those three minutes. However, if all indoor units of the system are stopped by a controller, compressor has stopped.
Cooling and Dry	Frost Prevention	When the indoor unit is operating at a low discharge air temperature, the cooling operation may be changed to fan operation for a while to avoid frost formation on the indoor heat exchanger.
	Self-Cleaning of Expansion Valve	The expansion valve self-cleaning when the cooling operation has stopped. The sound of which the refrigerant flows may be heard from the indoor unit during the self-cleaning. This is not abnormal.
Heating	Hot Start	To prevent cold air discharge in the room, the fan speed is controlled from the slow position and the low position and then to the set position according to the discharge air temperature. At this time the louver is fixed horizontally and "HOT-START" is displayed on the LCD of the wired controller.
	Defrost Operation	The indoor unit fan operation is stopped to prevent cold air discharge during the defrost operation. At this time, the indication "HOT-START" is displayed on the LCD of the wired controller and the indoor unit fan louver angle is fixed horizontally.
	Residual Heat Removal	When the heating operation is stopped, the indoor fan operation may remain at the slow speed for a maximum of two minutes to lower the internal temperature of the indoor unit.
	Prevention of Overload Operation	When the outdoor temperature is high (approximately 70°F (21°C) or more) during the heating operation, the operation is stopped by activation of the outdoor thermistor.

* Thermo-OFF: The outdoor unit and some indoor units stay on, but don't run.

Thermo-ON: The outdoor unit and some indoor units are running.

The auto-swing function is not available for an indoor unit for a clipped ceiling. The swing louver direction cannot be set automatically by the power saving function during the operation control of the indoor unit. At this time, the present setting of the swing louver direction is fixed.

NOTE

- This air conditioner adopts a hot air circulation system for the heating operation.
- Any oversized room with a low ambient air temperature will require an extended amount of time to warm up. Once the air temperature gets to the required temperature setpoint, the display "HOT START" is turned OFF.
- If "HOT-START" displays during, or right after, the defrosting operation, this is NOT abnormal. Activation of the hot start operation prevents cold drafts.

7. Maintenance

WARNING

- Turn OFF the power source before maintenance work. If the power source is not turned off, it may cause a fire or an electric shock.
- Perform the maintenance work with a stable foothold or foundation. This may prevent falling or injury.

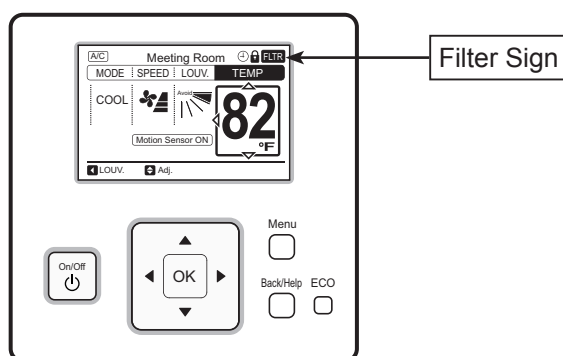
CAUTION

- Hold the air filter and the air inlet grille securely by hand when attaching or removing it. Not doing so may cause the unit to fall, resulting in serious injury.

7.1 Maintenance

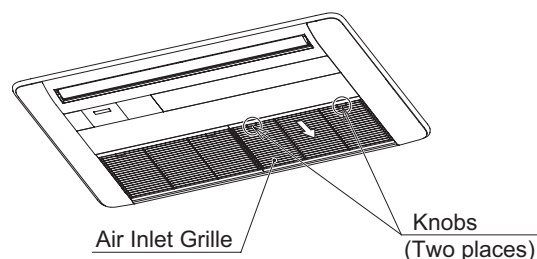
7.1.1 Cleaning Air Filter

Clean the air filter when the filter sign is turned ON.



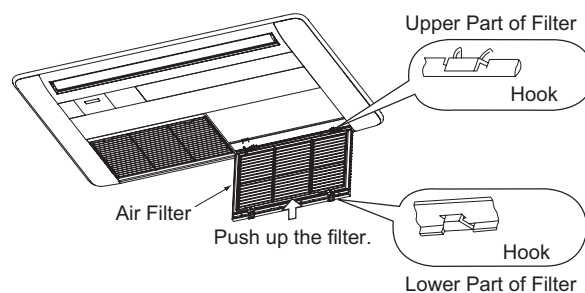
(1) Open the air inlet grille.

While sliding the knobs on both sides of the air inlet grille in the direction of the arrow, as shown, open the air inlet grille.



(2) Remove the air filter.

- Push up the air filter to create a slight bow on the top edge.
- Remove the air filter from the hooks at the lower part of the air inlet grille.
- Pull out the air filter to remove it.



(3) Clean the air filter.

- Vacuum dust off with a hand-held vacuum cleaner, or wash the air filter with water or a neutral detergent.
- Dry the air filter in a shaded area.

NOTE

- Do not use water warmer than 122°F (50°C). Filter elements can be damaged.
- Do not dry the air filter by holding it over open flame, with a hair dryer, or any type of heating device. Filter elements can be damaged by heat.

(4) Attach the air filter.

After the air filter is dried, attach it in the reverse order from what is shown in procedure “2”.

(5) Close the air inlet grille.

NOTE

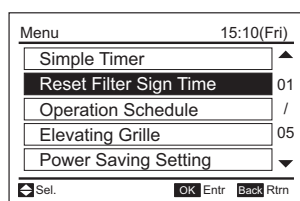
- Be sure to attach the air filter.
Operating the indoor unit without a filter installed will cause serious damage and breakdown.
- Make sure that the air inlet grille is securely locked with the knobs. If not properly secured, it could swing open, strike someone below and cause injuries.

(6) Reset the filter sign.

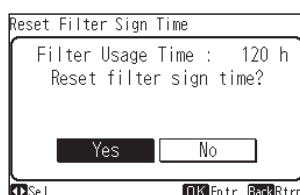
NOTE

If the accumulated operation time is shorter than the filter sign setting, the indication “” is turned ON and “Setting Disabled” is displayed.

- Press “Menu”.
Select “Reset Filter Sign Time” from the menu and press “OK”.
The confirmation screen is displayed.



- Select “Yes” by pressing “<” or “>” and press “OK”.
The “FLTR” indication is turned OFF and the screen returns to the normal mode.



7.1.2 Removing, Cleaning and Attaching Air Inlet Grille

Wipe down the decorative panel with a soft cloth soaked in lukewarm water and wrung out.

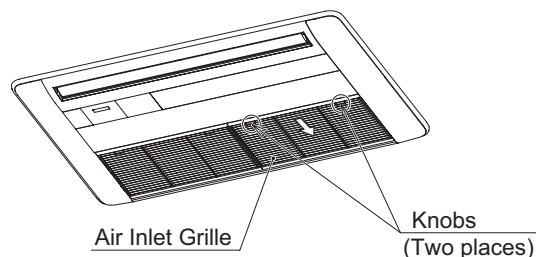
NOTICE

- Wipe down the air inlet grille with a soft cloth soaked in lukewarm water and wrung-out.
- Gently wipe down using only a clean soft cloth. Avoid the use of benzene type thinners or chemical detergents and abrasives as cleaning agents which will damage the finish of outer plastic surfaces and louver. Avoid using excessive force when cleaning these surfaces as they can be easily damaged.

The air inlet grille can be removed and cleaned.

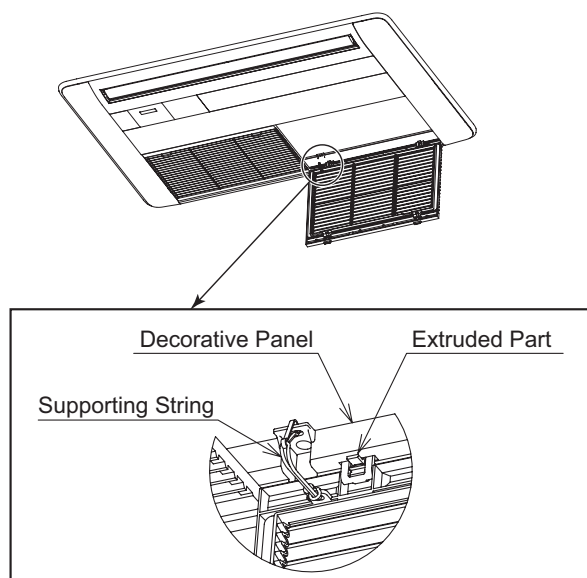
(1) Open the air inlet grille.

While sliding the knobs on both sides of the air inlet grille in the arrow direction, open the air inlet grille.



(2) Remove the air inlet grille.

- Unhook the supporting string from the decorative panel.
- While opening the air inlet grille, push the extruded part of the hinge, then pull the air inlet grille downward to remove it.



(3) Clean the air inlet grille.

(4) Reattach the air inlet grille.

Reattach the air inlet grille in the reverse procedure to removing it.

7.2 Maintenance Prior to and After Use

Prior to Use

- Remove any obstacles around the air inlet grilles and the air outlet of the indoor unit and outdoor unit.
- Check that the air filter is not clogged with dust and dirt.

After Use

- Clean the air filter, the air inlet grille and the decorative panel.

8. Troubleshooting

8.1 This is Not Abnormal

Phenomenon		Cause and Action
Operation Stopped	All indication lamps on the wired controller are turned OFF.	The micro-computer is activated to protect the device from electromagnetic waves. Restart the operation.
	After Power Failure	Restart the operation. If the instantaneous power failure is within two seconds, the operation restarts automatically.
White Steam from Indoor Unit	During Heating Operation	This might occur during the defrosting operation in the heating operation.
White Smoke from Indoor Unit	At Beginning of Heating Operation Season	This might occur when dust attached to the heat exchanger has been dried.
Mist from Indoor Unit	In Restaurant or Kitchen	This might occur when oil attached to the fins might decrease the heat exchange efficiency.
	During Dry Operation	This might occur when the air outlet temperature becomes lower. Change the operation mode.
	During Cooling Operation in Humid Environment	This might occur when the air outlet temperature becomes lower. Raise the set temperature and the air flow volume.
Odor from Indoor Unit	Odor Discharged from Indoor Unit	This might occur when the smell of cigarette smoke infiltrated the inside of the indoor unit. Ventilate the unit well in the fan mode and clean the air filter, the air outlet and the air inlet grille.
Sound from Indoor Unit	Grate is heard when starting or stopping the operation.	This is the sound made when the components are rubbing against each other due to the extension and contraction of the resin parts caused by the temperature change.
	Sound of water flowing or bubbling during the operation.	This is the sound made when the refrigerant flows or the drain-up mechanism drains water. The sound may be heard especially when starting the operation or stopping the compressor (for approx. three minutes).
	Growling sound may be heard temporarily right after the air flow volume is changed.	It is generated because the fan motor makes temporary sound by change of fan speed.
Condensation on Decorative Panel	Condensation on Decorative Panel or Cabinet, or condensation drops.	This might occur when the operation is performed in a humid environment (relative humidity around 80%) over a prolonged period of time. Change the louver angle to ensure the cold air does not build up around the air outlet or increase the air volume so temperature increases around the air outlet.
Temperature Irregularity	The air flow volume and temperature of each air outlet are irregular.	This might occur for structural reasons, such as the size of air outlet and the location of heat exchanger.
“HOT-START” on LCD Turned ON		This might occur according to the operation mode or operation conditions.
Operation Mode on LCD Flashing		

8.2 Before Contact

Refer to the information below before contacting a contractor.

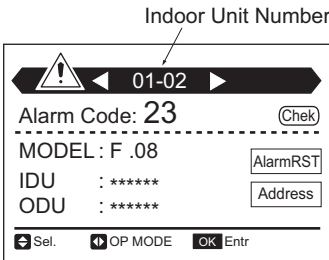
Trouble		Check Point	Action
Operation Unavailable		Check that the main power source is turned ON.	Turn ON the main power source for the air conditioner.
		Check that the fuse is not blown out or the circuit breaker of the main power source tripped.	Replace the fuse or reset the circuit breaker. If the trouble recurs, contact your contractor or distributor.
Immediate Shutdown after Start-Up	Cooling	Check that the air inlet and outlet of the outdoor unit are not covered with paper, vinyl or other objects.	Remove objects covering the air inlet and outlet.
	Heating	Check for any obstacles preventing the air flow near the air inlet and outlet of the outdoor unit.	Remove the obstacles preventing the air flow.
		Check that the outlet air is not short-circuited to the air inlet.	
Insufficient Cooling or Heating		Check that the operation mode is correct.	If the fan mode is selected, switch the operation mode to cooling or heating.
		Check that the set temperature is correct.	If not, change the set temperature by pressing “Δ” or “▽” by the wired controller.
		Check that the air flow direction is correct.	If not, change the airflow direction. In the case that the footing is not heated well during the heating operation, change the louver downward.
		Check that the air filter is not clogged.	Clean the air filter.
		Check that a window and a door are not opened.	Close the window or the door.
		Check for any obstacles preventing the air flow near the air inlet and outlet of the indoor and outdoor units.	Remove the obstacles.

8.3 Contact Distributor

If problem still remains even after looking for previous issues or other problems not mentioned in the previous issues occur, stop using the product and contact your distributor or contractor.

WARNING

If an abnormality such as a burnt odor or something similar occurs, stop the operation and turn OFF the main power source immediately. If the power source is not turned OFF, there may be damage of the product, an electric shock or a fire.
Contact your distributor or contractor.

Trouble	Action before Contacting Contractor or Distributor
The protection devices (fuse, breaker, GFCI, and so forth) are frequently activated or the operation switch does not work.	Turn OFF the power source.
Water Leakage from the Indoor Unit.	Stop the operation.
<ul style="list-style-type: none">The RUN indicator (red) is flashing.The indoor unit number, the alarm code, the unit model code and the number of connected indoor units are displayed on the LCD.If multiple indoor units are connected to one controller, the above abnormality informations for each indoor unit is displayed individually. <p>Check the details on the LCD and contact your distributor.</p> 	<p>Refer to the alarm code table. Contact your distributor and advise the indication detail on the wired controller.</p>

Provide the following information when contacting your distributor.

- 1) Unit Model
- 2) Explain the Trouble or Problem
- 3) Alarm Code No. on the LCD or Details of a Flashing Indicator

8.4 Alarm Code

Code	Category	Content of Abnormality	Code	Category	Content of Abnormality
01	Indoor Unit	Activation of Protection Device	35	System	Incorrect Setting of Indoor Unit No.
02	Outdoor Unit	Activation of Protection Device (High Pressure Cut)	36		Incorrect Indoor Unit Combination
03	Communication	Operational Irregularities between Indoor and Outdoor	38		Problem with Protective Pickup Circuit in Outdoor Unit
04		Problem between Inverter PCB and Outdoor PCB	39	Compressor	Problem with Running Current at Constant Speed Compressor
05	Supply Phase	Problem of Power Source Phases	41	Pressure	Overload Cooling
06	Voltage	Abnormal Voltage Drop in Outdoor Unit	42		Overload Heating
07	Cycle	Decrease in Superheated Discharge Gas	43	Protection Device	Activation of Pressure Ratio Decrease Protection Device
08		Increase in Discharge Gas Temperature	44		Activation of Low Pressure Decrease Protection Device
09	Outdoor Unit	Activation of Protection Device for Outdoor Fan	45		Activation of Low Pressure Increase Protection Device
11	Sensor on Indoor Unit	Inlet Air Thermistor Failure	46		Activation of High Pressure Increase Protection Device
12		Outlet Air Thermistor Failure	47		Activation of High Pressure Decrease Protection Device
13		Freeze Protection Thermistor Failure	48		Activation of Overcurrent Protection Device
14		Gas Piping Thermistor Failure	51	Inverter	Problem with Inverter Current Sensor
19	Fan Motor	Activation of Protection Device for Indoor Fan	52		Activation of Inverter Overcurrent Protection
20	Sensor on Outdoor Unit	Compressor Thermistor Failure	53		Activation of Transistor Module Protection
21		High Pressure Sensor Failure	54		Abnormality of Inverter Fin Temperature
22		Outdoor Air Thermistor Failure	56	Outdoor Fan	Abnormality of Detection for Fan Motor Position
23		Discharge Gas Thermistor Failure	57		Activation of Fan Controller Protection
24		Evaporating Thermistor Failure	58		Abnormality of Fan Controller
29		Low Pressure Sensor Failure	b0	System	Incorrect Setting of Unit Capacity
31	System	Incorrect Capacity Setting of Outdoor Unit and Indoor Unit	b1		Incorrect Setting of Unit and Refrigerant Cycle No.
32		Incorrect Setting of Other Indoor Unit Number	EE	Compressor	Compressor Protection Alarm

