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TOSHIBA

Carrier

SERVICE MANUAL

AIR-CONDITIONER
MULT TYPE

<High Wall Types>

MMK-UP0301HP-UL

MMK-UP0361HP-UL

HFC

R410A

January, 2023

Adoption of R410A Refrigerant

This Air Conditioner is a new type which adopts a new refrigerant R410A an environmentally friendly refrigerant.

CONTENTS

Original instruction

Please read carefully through these instructions that contain important information and ensure that you understand them.

Generic Denomination: Air Conditioner

Definition of Qualified Installer or Qualified Service Person

The air conditioner must be installed, maintained, repaired and removed by a qualified installer or qualified service person.

When any of these jobs is to be done, ask a qualified installer or qualified service person to do them for you.

A qualified installer or qualified service person is an agent who has the qualifications and knowledge described in the table below.

Agent	Qualifications and knowledge which the agent must have
Qualified installer	• The qualified installer is a person who installs, maintains, relocates and removes the air conditioners made by Toshiba Carrier Corporation. He or she has been trained to install, maintain, relocate and remove the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations. • The qualified installer who is allowed to do the electrical work involved in installation, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. • The qualified installer who is allowed to do the refrigerant handling and piping work involved in installation, relocation and removal has the qualifications pertaining to this refrigerant handling and piping work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to refrigerant handling and piping work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. • The qualified installer who is allowed to work at heights has been trained in matters relating to working at heights with the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.
Qualified service person	• The qualified service person is a person who installs, repairs, maintains, relocates and removes the air conditioners made by Toshiba Carrier Corporation. He or she has been trained to install, repair, maintain, relocate and remove the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations. • The qualified service person who is allowed to do the electrical work involved in installation, repair, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. • The qualified service person who is allowed to do the refrigerant handling and piping work involved in installation, repair, relocation and removal has the qualifications pertaining to this refrigerant handling and piping work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to refrigerant handling and piping work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. • The qualified service person who is allowed to work at heights has been trained in matters relating to working at heights with the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.

Definition of Protective Gear

When the air conditioner is to be transported, installed, maintained, repaired or removed, wear protective gloves and 'safety' work clothing.
In addition to such normal protective gear, wear the protective gear described below when undertaking the special work detailed in the table below.
Failure to wear the proper protective gear is dangerous because you will be more susceptible to injury, burns, electric shocks and other injuries.

Work undertaken	Protective gear worn
All types of work	Protective gloves 'Safety' working clothing
Electrical-related work	Gloves to provide protection for electricians Insulating shoes Clothing to provide protection from electric shock
Work done at heights (19.7"(50 cm) or more)	Helmets for use in industry
Transportation of heavy objects	Shoes with additional protective toe cap
Repair of outdoor unit	Gloves to provide protection for electricians

The important contents concerned to the safety are described on the product itself and on this Service Manual.
Please read this Service Manual after understanding the described items thoroughly in the following contents (Indications / Illustrated marks), and keep them.

[Explanation of indications]

Indication	Explanation
⚠ DANGER	Indicates contents assumed that an imminent danger causing a death or serious injury of the repair engineers and the third parties when an incorrect work has been executed.
⚠ WARNING	Indicates possibilities assumed that a danger causing a death or serious injury of the repair engineers, the third parties, and the users due to troubles of the product after work when an incorrect work has been executed.
⚠ CAUTION	Indicates contents assumed that an injury or property damage (*) may be caused on the repair engineers, the third parties, and the users due to troubles of the product after work when an incorrect work has been executed.

* Property damage: Enlarged damage concerned to property, furniture, and domestic animal / pet

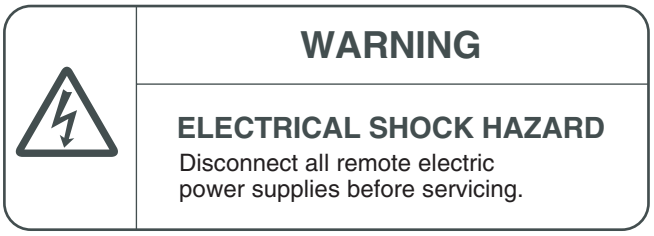
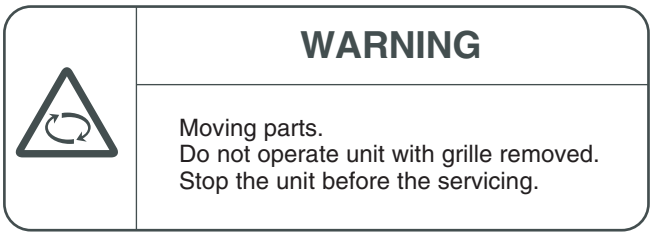
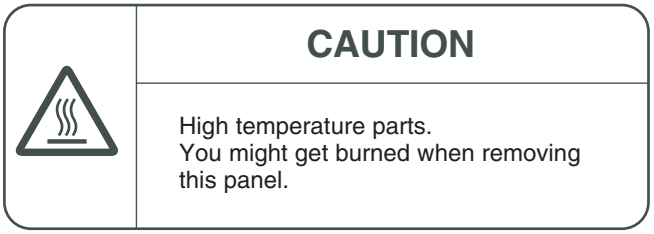
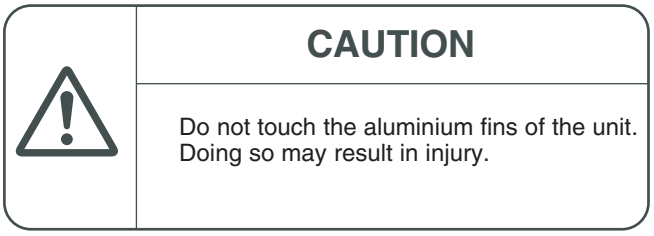
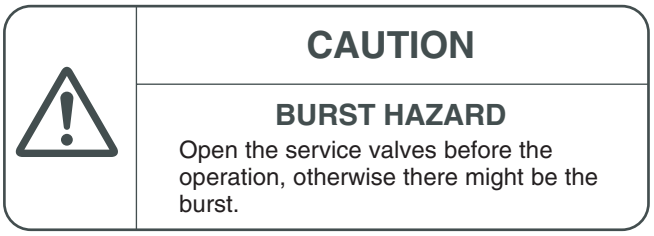
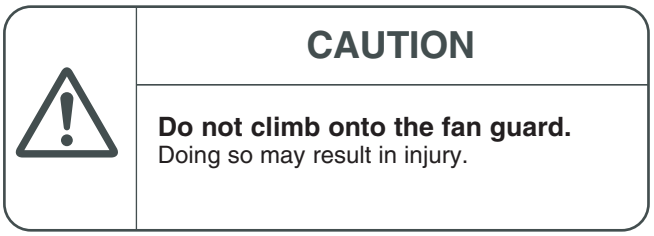
[Explanation of illustrated marks]

Indication	Explanation
	Indicates prohibited items (Forbidden items to do) The sentences near an illustrated mark describe the concrete prohibited contents.
	Indicates mandatory items (Compulsory items to do) The sentences near an illustrated mark describe the concrete mandatory contents.
	Indicates cautions (Including danger / warning) The sentences or illustration near or in an illustrated mark describe the concrete cautious contents.

Warning Indications on the Air Conditioner Unit

[Confirmation of warning label on the main unit]

Confirm that labels are indicated on the specified positions
If removing the label during parts replace, stick it as the original.

Warning indication	Description
	**WARNING** **ELECTRICAL SHOCK HAZARD** Disconnect all remote electric power supplies before servicing.
	**WARNING** Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.
	**CAUTION** High temperature parts. You might get burned when removing this panel.
	**CAUTION** Do not touch the aluminium fins of the unit. Doing so may result in injury.
	**CAUTION** **BURST HAZARD** Open the service valves before the operation, otherwise there might be the burst.
	**CAUTION** **Do not climb onto the fan guard.** Doing so may result in injury.

PRECAUTIONS FOR SAFETY

The manufacturer shall not assume any liability for the damage caused by not observing the description of this manual.

⚠ DANGER

 Turn off braeaker	Before carrying out the installation, maintenance, repair or removal work, be sure to set the circuit breaker for both the indoor and outdoor units to the OFF position. Otherwise, electric shocks may result.
	Before opening the electrical box cover of the indoor unit or service panel of the outdoor unit, set the circuit breaker to the OFF position. Failure to set the circuit breaker to the OFF position may result in electric shocks through contact with the interior parts. Only a qualified installer or qualified service person is allowed to remove the intake grille of the indoor unit or service panel of the outdoor unit and do the work required.
	Before starting to repair the outdoor unit fan or fan guard, be absolutely sure to set the circuit breaker to the OFF position, and place a “Work in progress” sign on the circuit breaker.
	When cleaning the filter or other parts of the indoor unit, set the circuit breaker to OFF without fail, and place a “Work in progress” sign near the circuit breaker before proceeding with the work.
	When you have noticed that some kind of trouble (such as when an error display has appeared, there is a smell of burning, abnormal sounds are heard, the air conditioner fails to cool or heat or water is leaking) has occurred in the air conditioner, do not touch the air conditioner yourself but set the circuit breaker to the OFF position, and contact a qualified service person. Take steps to ensure that the power will not be turned on (by marking “out of service” near the circuit breaker, for instance) until qualified service person arrives. Continuing to use the air conditioner in the trouble status may cause mechanical problems to escalate or result in electric shocks or other failure.
 Electric shock hazard	When you access inside of the service panel to repair electric parts, wait for about five minutes after turning off the breaker. Do not start repairing immediately. Otherwise you may get electric shock by touching terminals of high-voltage capacitors. Natural discharge of the capacitor takes about five minutes.
	When checking the electric parts, removing the cover of the electric parts box of Indoor Unit and/or service panel of Outdoor Unit inevitably to determine the failure, use gloves to provide protection for electricians, insulating shoes, clothing to provide protection from electric shock and insulating tools. Be careful not to touch the live part. Electric shock may result. Only “Qualified service person” is allowed to do this work.
 Prohibition	Place a “Work in progress” sign near the circuit breaker while the installation, maintenance, repair or removal work is being carried out. There is a danger of electric shocks if the circuit breaker is set to ON by mistake.
	When checking the electric parts, removing the cover of the electric parts box of Indoor Unit and/or front panel of Outdoor Unit inevitably to determine the failure, put a sign “Do not enter” around the site before the work. Failure to do this may result in third person getting electric shock.
	Before operating the air conditioner after having completed the work, check that the electrical parts box cover of the indoor unit and service panel of the outdoor unit are closed, and set the circuit breaker to the ON position. You may receive an electric shock if the power is turned on without first conducting these checks.
 Stay on protection	If, in the course of carrying out repairs, it becomes absolutely necessary to check out the electrical parts with the electrical parts box cover of one or more of the indoor units and the service panel of the outdoor unit removed in order to find out exactly where the trouble lies, wear insulated heat-resistant gloves, insulated boots and insulated work overalls, and take care to avoid touching any live parts. You may receive an electric shock if you fail to heed this warning. Only qualified service person is allowed to do this kind of work.

⚠ WARNING

General	Before starting to repair the air conditioner, read carefully through the Service Manual, and repair the air conditioner by following its instructions.
	Only qualified service person is allowed to repair the air conditioner. Repair of the air conditioner by unqualified person may give rise to a fire, electric shocks, injury, water leaks and / or other problems.
	Do not use any refrigerant different from the one specified for complement or replacement. Otherwise, abnormally high pressure may be generated in the refrigeration cycle, which may result in a failure or explosion of the product or an injury to your body.
	Only a qualified installer or qualified service person is allowed to carry out the electrical work of the air conditioner. Under no circumstances must this work be done by an unqualified individual since failure to carry out the work properly may result in electric shocks and / or electrical leaks.
	When the air conditioner is to be transported, installed, maintained, repaired or removed, wear protective gloves and 'safety' work clothing.
	To connect the electrical wires, repair the electrical parts or undertake other electrical jobs, wear gloves to provide protection for electricians, insulating shoes and clothing to provide protection from electric shocks. Failure to wear this protective gear may result in electric shocks.
	Electrical wiring work shall be conducted according to law and regulation in the community and installation manual. Failure to do so may result in electrocution or short circuit.
	Use wiring that meets the specifications in the Installation Manual and the stipulations in the local regulations and laws. Use of wiring which does not meet the specifications may give rise to electric shocks, electrical leakage, smoking and/or a fire.
	Only a qualified installer or qualified service person is allowed to undertake work at heights using a stand of (19.7"(50 cm)) or more or to remove the intake grille of the indoor unit to undertake work.
	When working at heights, use a ladder which complies with the ISO 14122 standard, and follow the procedure in the ladder's instructions. Also wear a helmet for use in industry as protective gear to undertake the work.
	Before working at heights, put a sign in place so that no-one will approach the work location, before proceeding with the work. Parts and other objects may fall from above, possibly injuring a person below. While carrying out the work, wear a helmet for protection from falling objects.
	When executing address setting, test run, or troubleshooting through the checking window on the electric parts box, put on insulated gloves to provide protection from electric shock. Otherwise you may receive an electric shock.
	Do not touch the aluminum fin of the outdoor unit. You may injure yourself if you do so. If the fin must be touched for some reason, first put on protective gloves and safety work clothing, and then proceed.
	Do not climb onto or place objects on top of the outdoor unit. You may fall or the objects may fall off of the outdoor unit and result in injury.
	Use forklift to carry in the air conditioner units and use winch or hoist at installation of them.
	When transporting the air conditioner, wear shoes with protective toe caps, protective gloves and other protective clothing.
	When transporting the air conditioner, do not take hold of the bands around the packing carton. You may injure yourself if the bands should break.
	Be sure that a heavy unit (22lbs(10 kg) or heavier) such as a compressor is carried by two persons.
	This air conditioner has passed the pressure test as specified in IEC 60335-2-40 Annex EE.
Check earth wires.	Before troubleshooting or repair work, check the earth wire is connected to the earth terminals of the main unit, otherwise an electric shock is caused when a leak occurs. If the earth wire is not correctly connected, contact an electric engineer for rework.
	After completing the repair or relocation work, check that the ground wires are connected properly.
	Be sure to connect earth wire. (Grounding work) Incomplete grounding causes an electric shock. Do not connect ground wires to gas pipes, water pipes, and lightning rods or ground wires for telephone wires.

 Prohibition of modification.	Do not modify the products. Do not also disassemble or modify the parts. It may cause a fire, electric shock or injury.
 Use specified parts.	When any of the electrical parts are to be replaced, ensure that the replacement parts satisfy the specifications given in the Service Manual (or use the parts contained on the parts list in the Service Manual). Use of any parts which do not satisfy the required specifications may give rise to electric shocks, smoking and / or a fire.
 Do not bring a child close to the equipment.	If, in the course of carrying out repairs, it becomes absolutely necessary to check out the electrical parts with the electrical parts box cover of one or more of the indoor units and the service panel of the outdoor unit removed in order to find out exactly where the trouble lies, put a sign in place so that no-one will approach the work location before proceeding with the work. Third-party individuals may enter the work site and receive electric shocks if this warning is not heeded.
 Insulating measures	Connect the cut-off lead wires with crimp contact, etc., put the closed end side upward and then apply a watercut method, otherwise a leak or production of fire is caused at the users' side.
 No fire	When performing repairs using a gas burner, replace the refrigerant with nitrogen gas because the oil that coats the pipes may otherwise burn. When repairing the refrigerating cycle, take the following measures. 1) Be attentive to fire around the cycle. When using a gas stove, etc., be sure to put out fire before work; otherwise the oil mixed with refrigerant gas may catch fire. 2) Do not use a welder in the closed room. When using it without ventilation, carbon monoxide poisoning may be caused. 3) Do not bring inflammables close to the refrigerant cycle, otherwise fire of the welder may catch the inflammables.
 Refrigerant	The refrigerant used by this air conditioner is the R410A.
	Check the used refrigerant name and use tools and materials of the parts which match with it. For the products which use R410A refrigerant, the refrigerant name is indicated at a position on the outdoor unit where is easy to see.
	Do not use any refrigerant different from the one specified for complement or replacement. Otherwise, abnormally high pressure may be generated in the refrigeration cycle, which may result in a failure or explosion of the product or an injury to your body.
	For an air conditioner which uses R410A, never use other refrigerant than R410A. For an air conditioner which uses other refrigerant (R22, etc.), never use R410A. If different types of refrigerant are mixed, abnormal high pressure generates in the refrigerating cycle and an injury due to breakage may be caused.
	When the air conditioner has been installed or relocated, follow the instructions in the Installation Manual and purge the air completely so that no gases other than the refrigerant will be mixed in the refrigerating cycle. Failure to purge the air completely may cause the air conditioner to malfunction.
	Do not charge refrigerant additionally. If charging refrigerant additionally when refrigerant gas leaks, the refrigerant composition in the refrigerating cycle changes resulted in change of air conditioner characteristics or refrigerant over the specified standard amount is charged and an abnormal high pressure is applied to the inside of the refrigerating cycle resulted in cause of breakage or injury. Therefore if the refrigerant gas leaks, recover the refrigerant in the air conditioner, execute vacuuming, and then newly recharge the specified amount of liquid refrigerant. In this time, never charge the refrigerant over the specified amount.
	When recharging the refrigerant in the refrigerating cycle, do not mix the refrigerant or air other than R410A into the specified refrigerant. If air or others is mixed with the refrigerant, abnormal high pressure generates in the refrigerating cycle resulted in cause of injury due to breakage.
	After installation work, check the refrigerant gas does not leak. If the refrigerant gas leaks in the room, poisonous gas generates when gas touches to fire such as fan heater, stove or cocking stove though the refrigerant gas itself is innocuous.
	Never recover the refrigerant into the outdoor unit. When the equipment is moved or repaired, be sure to recover the refrigerant with recovering device. The refrigerant cannot be recovered in the outdoor unit; otherwise a serious accident such as breakage or injury is caused.

 Assembly / Wiring	After repair work, surely assemble the disassembled parts, and connect and lead the removed wires as before. Perform the work so that the cabinet or panel does not catch the inner wires. If incorrect assembly or incorrect wire connection was done, a disaster such as a leak or fire is caused at user's side.
 Insulator check	After the work has finished, be sure to use an insulation tester set (500 V Megger) to check the resistance is 1 MΩ or more between the charge section and the non-charge metal section (Earth position). If the resistance value is low, a disaster such as a leak or electric shock is caused at user's side.
 Ventilation	When the refrigerant gas leaks during work, execute ventilation. If the refrigerant gas touches to a fire, poisonous gas generates. A case of leakage of the refrigerant and the closed room full with gas is dangerous because a shortage of oxygen occurs. Be sure to execute ventilation.
	If refrigerant gas has leaked during the installation work, ventilate the room immediately. If the leaked refrigerant gas comes in contact with fire, noxious gas may generate.
	After installation work, check the refrigerant gas does not leak. If the refrigerant gas leaks in the room, poisonous gas generates when gas touches to fire such as fan heater, stove or cocking stove though the refrigerant gas itself is innocuous.
 Compulsion	When the refrigerant gas leaks, find up the leaked position and repair it surely. If the leaked position cannot be found up and the repair work is interrupted, pump-down and tighten the service valve, otherwise the refrigerant gas may leak into the room. The poisonous gas generates when gas touches to fire such as fan heater, stove or cocking stove though the refrigerant gas itself is innocuous. When installing equipment which includes a large amount of charged refrigerant such as a multi air conditioner in a sub-room, it is necessary that the density does not the limit even if the refrigerant leaks. If the refrigerant leaks and exceeds the limit density, an accident of shortage of oxygen is caused.
	Tighten the flare nut with a torque wrench in the specified manner. Excessive tighten of the flare nut may cause a crack in the flare nut after a long period, which may result in refrigerant leakage.
	Nitrogen gas must be used for the airtight test.
	The charge hose must be connected in such a way that it is not slack.
	For the installation / moving / reinstallation work, follow to the Installation Manual. If an incorrect installation is done, a trouble of the refrigerating cycle, water leak, electric shock or fire is caused.
 Check after repair	Once the repair work has been completed, check for refrigerant leaks, and check the insulation resistance and water drainage. Then perform a trial run to check that the air conditioner is running properly.
	After repair work has finished, check there is no trouble. If check is not executed, a fire, electric shock or injury may be caused. For a check, turn off the power breaker.
	After repair work (installation of front panel and cabinet) has finished, execute a test run to check there is no generation of smoke or abnormal sound. If check is not executed, a fire or an electric shock is caused. Before test run, install the front panel and cabinet.
	Be sure to fix the screws back which have been removed for installation or other purposes.
 Do not operate the unit with the valve closed.	Check the following matters before a test run after repairing piping. • Connect the pipes surely and there is no leak of refrigerant. • The valve is opened. Running the compressor under condition that the valve closes causes an abnormal high pressure resulted in damage of the parts of the compressor and etc. and moreover if there is leak of refrigerant at connecting section of pipes, the air is sucked and causes further abnormal high pressure resulted in burst or injury.
 Check after reinstallation	Only a qualified installer or qualified service person is allowed to relocate the air conditioner. It is dangerous for the air conditioner to be relocated by an unqualified individual since a fire, electric shocks, injury, water leakage, noise and / or vibration may result.
	Check the following items after reinstallation. 1) The earth wire is correctly connected. 2) The power cord is not caught in the product. 3) There is no inclination or unsteadiness and the installation is stable. If check is not executed, a fire, an electric shock or an injury is caused.
	When carrying out the pump-down work shut down the compressor before disconnecting the refrigerant pipe. Disconnecting the refrigerant pipe with the service valve left open and the compressor still operating will cause air, etc. to be sucked in, raising the pressure inside the refrigeration cycle to an abnormally high level, and possibly resulting in reputing, injury, etc.

Cooling check	When the service panel of the outdoor unit is to be opened in order for the compressor or the area around this part to be repaired immediately after the air conditioner has been shut down, set the circuit breaker to the OFF position, and then wait at least 10 minutes before opening the service panel. If you fail to heed this warning, you will run the risk of burning yourself because the compressor pipes and other parts will be very hot to the touch. In addition, before proceeding with the repair work, wear the kind of insulated heat-resistant gloves designed to protect electricians.
	Take care not to get burned by compressor pipes or other parts when checking the cooling cycle while running the unit as they get heated while running. Be sure to put on gloves providing protection for heat.
	When the service panel of the outdoor unit is to be opened in order for the fan motor, reactor, inverter or the areas around these parts to be repaired immediately after the air conditioner has been shut down, set the circuit breaker to the OFF position, and then wait at least 10 minutes before opening the service panel. If you fail to heed this warning, you will run the risk of burning yourself because the fan motor, reactor, inverter heat sink and other parts will be very hot to the touch. In addition, before proceeding with the repair work, wear the kind of insulated heat-resistant gloves designed to protect electricians.
Installation	Only a qualified installer or service person is allowed to do installation work. Inappropriate installation may result in water leakage, electric shock or fire.
	Before starting to install the air conditioner, read carefully through the Installation Manual, and follow its instructions to install the air conditioner.
	Be sure to use the company-specified products for the separately purchased parts. Use of non-specified products may result in fire, electric shock, water leakage or other failure. Have the installation performed by a qualified installer.
	Do not supply power from the power terminal block equipped on the outdoor unit to another outdoor unit. Capacity overflow may occur on the terminal block and may result in fire.
	Do not install the air conditioner in a location that may be subject to a risk of expire to a combustible gas. If a combustible gas leaks and becomes concentrated around the unit, a fire may occur.
	Install the indoor unit at least 8'2"(2.5 m) above the floor level since otherwise the users may injure themselves or receive electric shocks if they poke their fingers or other objects into the indoor unit while the air conditioner is running.
	Install a circuit breaker that meets the specifications in the installation manual and the stipulations in the local regulations and laws.
	Install the circuit breaker where it can be easily accessed by the qualified service person.
	If you install the unit in a small room, take appropriate measures to prevent the refrigerant from exceeding the limit concentration even if it leaks. Consult the dealer from whom you purchased the air conditioner when you implement the measures. Accumulation of highly concentrated refrigerant may cause an oxygen deficiency accident.
	Do not place any combustion appliance in a place where it is directly exposed to the wind of air conditioner, otherwise it may cause imperfect combustion.

Explanations given to user

If you have discovered that the fan grille is damaged, do not approach the outdoor unit but set the circuit breaker to the OFF position, and contact a qualified service person to have the repairs done.
Do not set the circuit breaker to the ON position until the repairs are completed.

Relocation

- Only a qualified installer or qualified service person is allowed to relocate the air conditioner.
  It is dangerous for the air conditioner to be relocated by an unqualified individual since a fire, electric shocks, injury, water leakage, noise and / or vibration may result.
- When carrying out the pump-down work shut down the compressor before disconnecting the refrigerant pipe.
  Disconnecting the refrigerant pipe with the service valve left open and the compressor still operating will cause air, etc. to be sucked in, raising the pressure inside the refrigeration cycle to an abnormally high level, and possibly resulting in reputing, injury, etc.

• Refrigerant R410A

This air conditioner adopts a type refrigerant R410A which does not deplete the ozone layer.

1. Safety Caution Concerned to R410A Refrigerant

Accompanied with change of refrigerant, the refrigerating oil has been also changed.
Therefore, be sure that water, dust, the former refrigerant or the former refrigerating oil is not mixed into the refrigerating cycle of the air conditioner with new refrigerant during installation work or service work.
If an incorrect work or incorrect service is performed, there is a possibility to cause a serious accident.
Use the tools and materials exclusive to R410A to purpose a safe work.

2. Cautions on Installation/Service

(1) Do not mix the other refrigerant or refrigerating oil.
For the tools exclusive to R410A, shapes of all the joints including the service port differ from those of the former refrigerant in order to prevent mixture of them.

(2) As the use pressure of the new refrigerant is high, use material thickness of the pipe and tools which are specified for R410A.

(3) In the installation time, use clean pipe materials and work with great attention so that water and others do not mix in because pipes are affected by impurities such as water, oxide scales, oil, etc. Use the clean pipes.
Be sure to brazing with flowing nitrogen gas. (Never use gas other than nitrogen gas.)

(4) For the earth protection, use a vacuum pump for air purge.

(5) R410A refrigerant is azeotropic mixture type refrigerant.
Therefore use liquid type to charge the refrigerant. (If using gas for charging, composition of the refrigerant changes and then characteristics of the air conditioner change.)

3. Pipe Materials

For the refrigerant pipes, copper pipe and joints are mainly used.
It is necessary to select the most appropriate pipes to conform to the standard.
Use clean material in which impurities adhere inside of pipe or joint to a minimum.

(1) Copper pipe

<Piping>
The pipe thickness, flare finishing size, flare nut and others differ according to a refrigerant type.
When using a long copper pipe for R410A, it is recommended to select “Copper or copper-base pipe without seam” and one with bonded oil amount 0.0001/lbs / 32'10" (40mg/10m)
Also do not use crushed, deformed, discolored (especially inside) pipes.(Impurities cause clogging of expansion valves and capillary tubes.)

<Flare nut>
Use the flare nuts which are attached to the air conditioner unit.

(2) Joint
The flare joint and socket joint are used for joints of the copper pipe.
The joints are rarely used for installation of the air conditioner.
However clear impurities when using them.

4. Tools

(1) Required Tools for R410A

Mixing of different types of oil may cause a trouble such as generation of sludge, clogging of capillary, etc. Accordingly, the tools to be used are classified into the following three types.

1) Tools exclusive for R410A
2) Tools exclusive for R410A, but can be also used for conventional refrigerant
3) Tools commonly used for R410A and for conventional refrigerant

The table below shows the tools exclusive for R410A and their interchangeability.

Tools exclusive for R410A (The following tools for R410A are required.)

Tools whose specifications are changed for R410A and their interchangeability

No.	Used tool	Usage	R410A air conditioner installation		Conventional air conditioner installation
			Existence of new equipment for R410A	Whether conventional equipment can be used	Whether new equipment can be used with conventional refrigerant
①	Flare tool	Pipe flaring	Yes	∗(Note 1)	Yes
②	Copper pipe gauge for adjusting projection margin	Flaring by conventional flare tool	Yes	∗(Note 1)	∗(Note 1)
③	Torque wrench	Connection of flare nut	Yes	No	No
④	Gauge manifold	Evacuating, refrigerant charge, run check, etc.	Yes	No	No
⑤	Charge hose				
⑥	Vacuum pump adapter	Vacuum evacuating	Yes	No	Yes
⑦	Electronic balance for refrigerant charging	Refrigerant charge	Yes	Yes	Yes
⑧	Refrigerant cylinder	Refrigerant charge	Yes	No	No
⑨	Leakage detector	Gas leakage check	Yes	No	Yes
⑨	Charging cylinder	Refrigerant charge	(Note 2)	No	No

(Note 1) When flaring is carried out for R410A using the conventional flare tools, adjustment of projection margin is necessary. For this adjustment, a copper pipe gauge, etc. are necessary.

(Note 2) Charging cylinder for R410A is being currently developed.

General tools (Conventional tools can be used.)

In addition to the above exclusive tools, the following equipments are necessary as the general tools.

1) Vacuum pump
   Use vacuum pump by attaching vacuum pump adapter.
2) Torque wrench
3) Pipe cutter
4) Reamer
5) Pipe bender
6) Level vial
7) Screwdriver (+, –)
8) Spanner or Monkey wrench
9) Hole core drill
10) Hexagon wrench (Opposite side 0.2"(4mm))
11) Tape measure
12) Metal saw

Also prepare the following equipments for other installation method and run check.

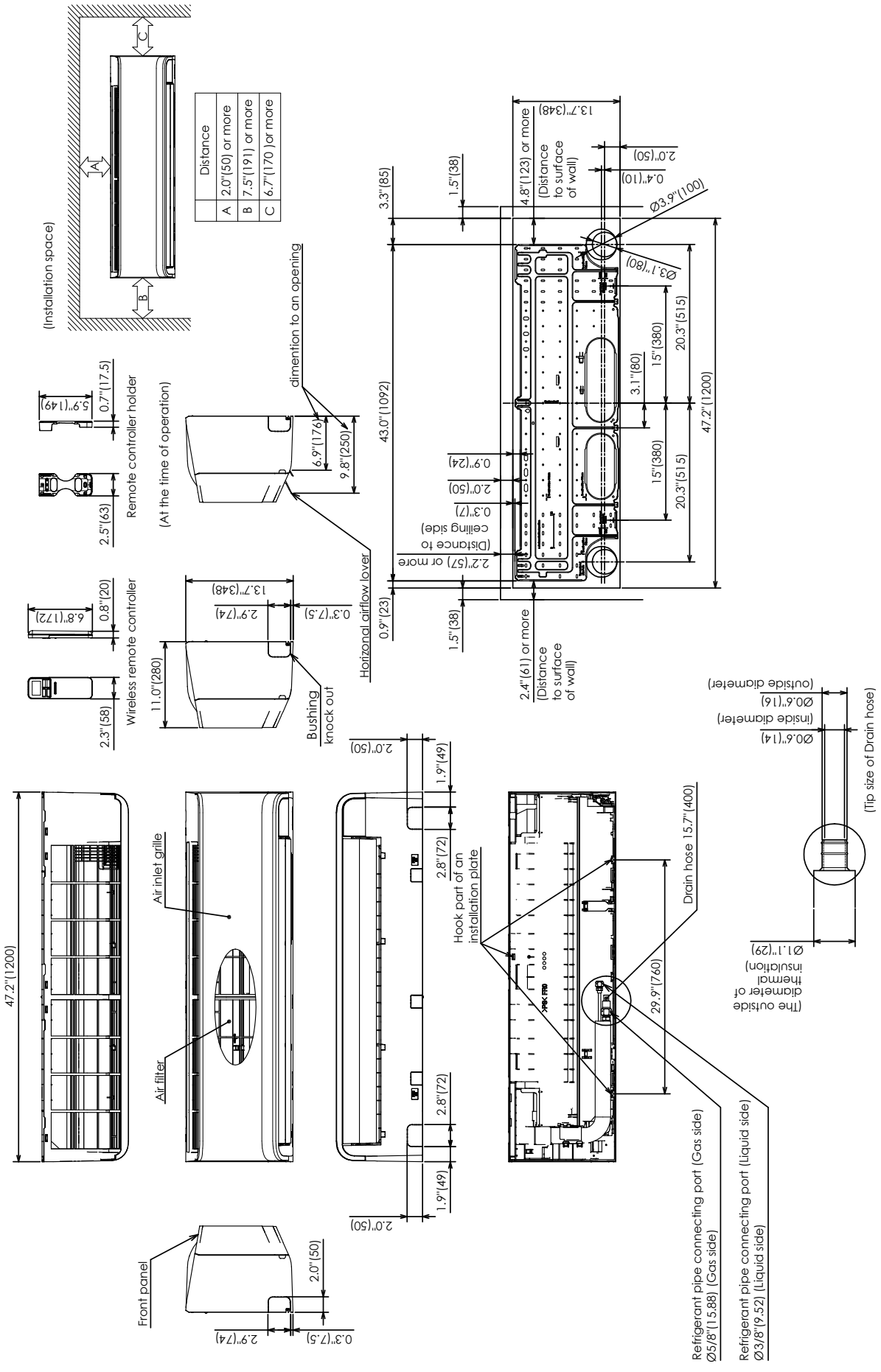
1) Clamp meter
2) Thermometer
3) Insulation resistance tester
4) Electroscope

1. SPECIFICATIONS

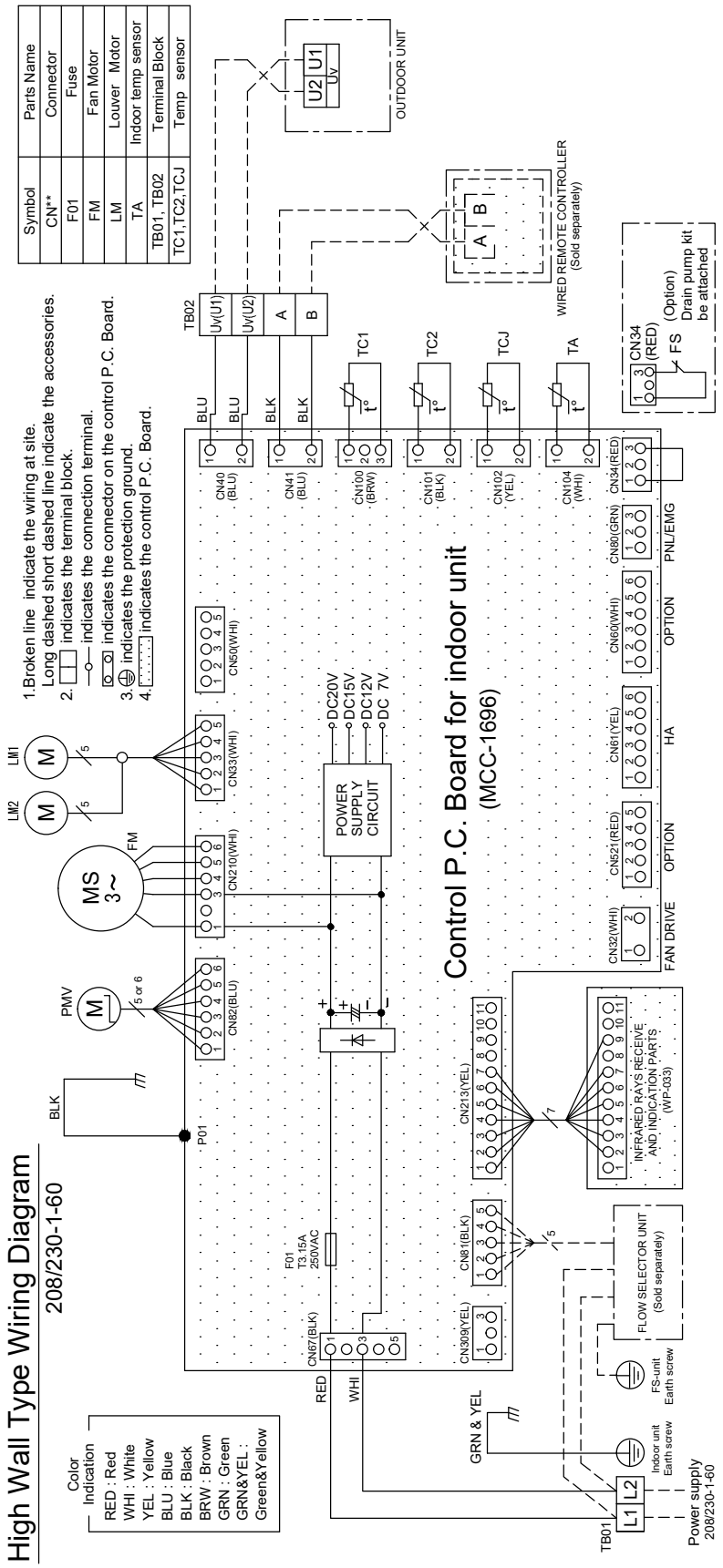
High wall type

Model name				MMK-UP0301HP-UL	MMK-UP0361HP-UL
Cooling Capacity			(kW)	8.80	10.60
			(Btu/h)	30000	36000
Heating Capacity			(kW)	10.00	11.70
			(Btu/h)	34000	40000
Electrical characteristics	Power supply			1Ph. 208/230V ~ 60Hz.	
	Running current		(A)	0.48	0.52
	Power consumption		(kW)	0.058	0.066
	Starting current		(A)	0.57	0.62
Appearance	Main unit			Gran White	
Outer diamension	Main unit	Height	(in)	13.7	
		Width	(in)	47.2	
		Depth	(in)	11.0	
Total weight	Main unit		(lbs)	46	
Heat exchanger				Finned tube	
Fan unit	Fan			Cross flow fan	
	Standard air flow	H/M/L	(cfm)	940/825/705	970/910/735
	Motor		(W)	61	
Air filter				Standard filter attached (Long life filter)	
Controller				Wireless R/C packed with unit	
Sound pressure level	H/M/L		(dB)	48/44/41	50/47/43
Sound power level	H/M/L		(dB)	63/59/56	65/62/58
Connecting pipe	Gas side		(in)	5/8	
	Liquid		(in)	3/8	
	Drain port		(in)	VP16 (0.9'')	

2. DIMENSIONAL DRAWING



3. WIRING DIAGRAM

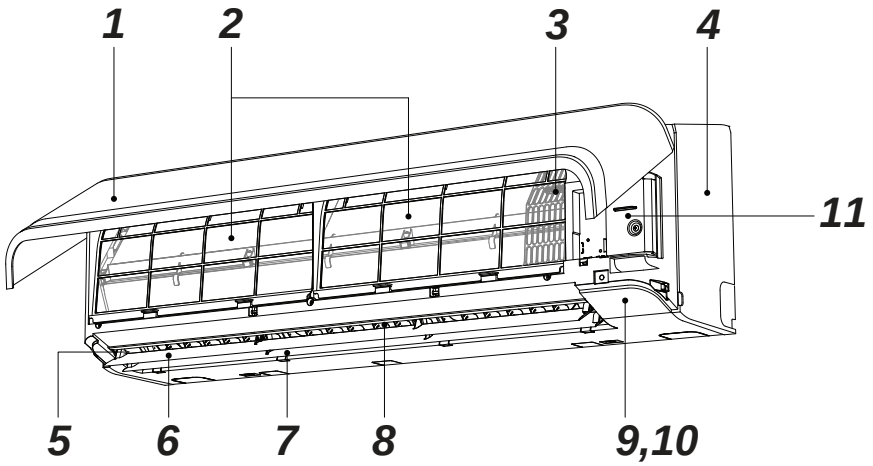


4. PARTS RATING

4-1. Parts Rating

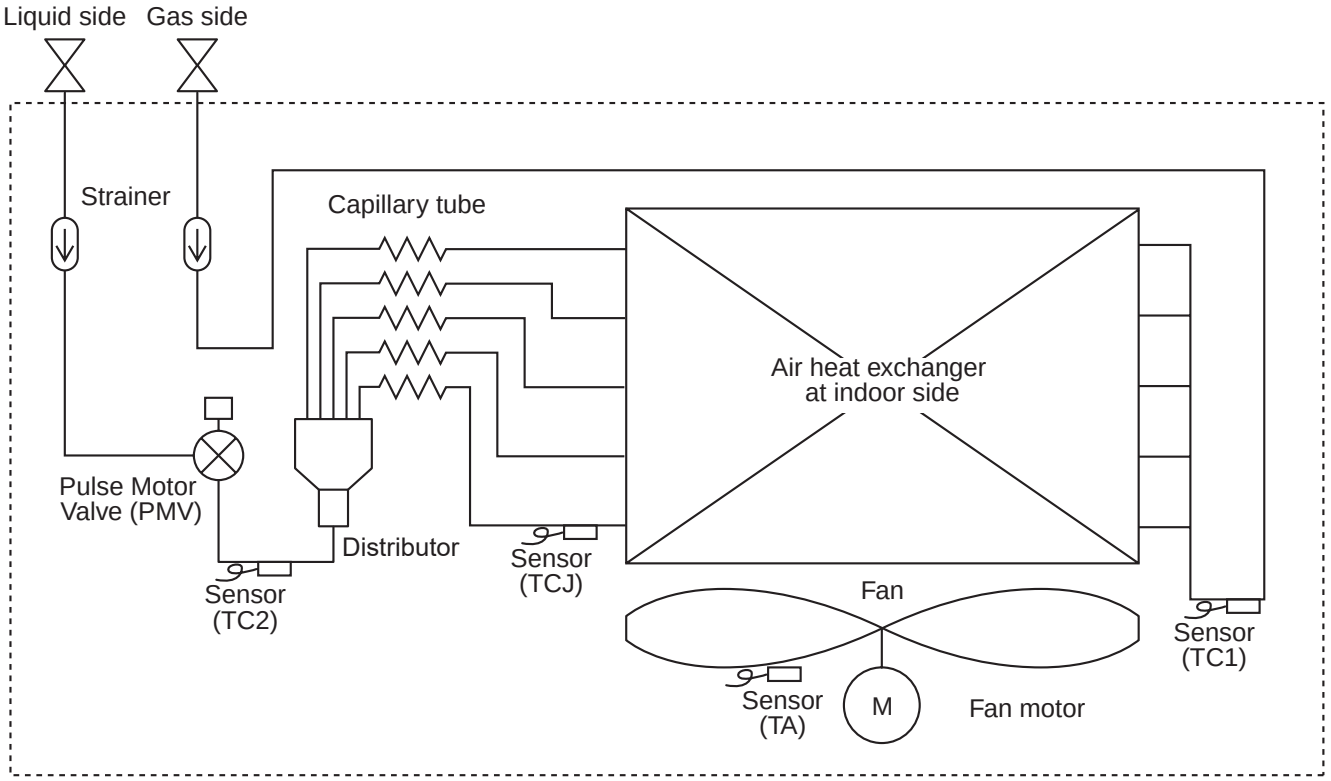
No.	Parts Name	Type	Specications
1	Fan motor (for indoor)	ICF-280-61-2	Output (Rated) 61W, 280V DC
2	Louver motor	MP24Z4N	4 phase, DC 12V
3	Thermo. Sensor (TA sensor)	20.4"(518mm)	10kΩ at 77°F (25°C)
4	Heat exchanger sensor (TC sensor)	Ø0.24"(6), 17.7"(450mm)	10kΩ at 77°F (25°C)
5	Heat exchanger sensor (TCJ sensor)	Ø0.24"(6), 19.7"(500mm)	10kΩ at 77°F (25°C)

4-2. Name of Each Part



1. **Air inlet grille**
2. **Air filter**
3. **Room temperature sensor**
4. **Front panel**
5. **Air outlet**
6. **Horizontal louver (Front)**
7. **Horizontal louver (Back)** } (For change vertical air flow direction)
8. **Vertical louver** (For change horizontal air flow direction, adjust manually)
9. **Display panel**
10. **Infrared signal receiver**
11. **Ground screw** (provided in the electric parts box)

5. REFRIGERANTING CYCLE DIAGRAM

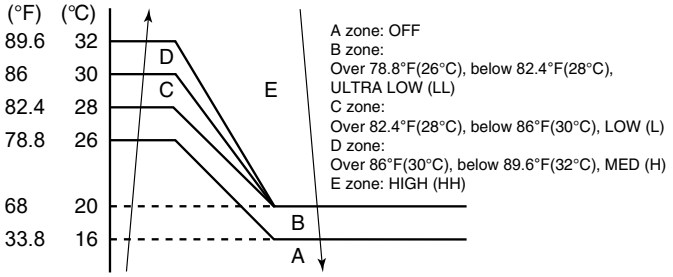
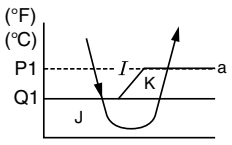
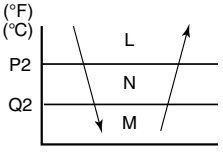


Functional part name		Functional outline
Pulse Motor Valve	PMV	(Connector CN82 (6P): Blue) 1) Controls super heat in cooling operation 2) Controls under cool in heating operation 3) Recovers refrigerant oil in cooling operation 4) Recovers refrigerant oil in heating operation
Temp. sensor	1. TA	(Connector CN104 (2P): White) 1) Detects indoor suction temperature
	2. TC1	(Connector CN100 (3P): Brown) 1) Controls PMV super heat in cooling operation
	3. TC2	(Connector CN101 (2P): Blue) 1) Controls PMV under cool in heating operation
	4. TCJ	(Connector CN102 (2P): Yellow) 1) Controls PMV super heat in cooling operation

6. CONTROL OUTLINE

6-1. Indoor Unit Control Specifications

<table>
<tr><th>No.</th><th>Item</th><th>Outline of specifications</th><th>Remarks</th></tr>
<tr><td>1</td><td>Power supply is reset.</td><td>(1) Distinction of outdoor unit
When the power supply is reset, the outdoor units are distinguished, and control is exchanged according to the distinctive results.
(2) Check code clear
When the power supply is reset, the check code is also reset once. If an abnormal status which the check code appears after Start/Stop button of the remote controller has been pushed continues, the check code is displayed again on the remote controller.</td><td>• Judgment of outdoor unit
• Exchange of cooling-only unit
• Exchange of standard model with the flex model</td></tr>
<tr><td>2</td><td>Operation select</td><td colspan="2">(1) Based upon the operation select command from the remote controller or central controller, the operation mode is se-lected.
<table>
<tr><th>Remote controller command</th><th>Control outline</th></tr>
<tr><td>STOP</td><td>Stops air conditioner.</td></tr>
<tr><td>FAN</td><td>Fan operation</td></tr>
<tr><td>COOL</td><td>Cooling operation</td></tr>
<tr><td>DRY</td><td>Dry operation</td></tr>
<tr><td>HEAT</td><td>Heating operation</td></tr>
<tr><td>AUTO</td><td>Cooling or HEAT operation mode is automatically selected by Ta and Ts and the unit starts operation.</td></tr>
</table>
(2) Operation commend permission mode
Neither AUTO mode of the standard model nor HEAT mode of Cooling-only model can be selected. When a wireless remote control is used, the mode is notified by the receiving sound Pi, Pi (Twice) and alternative flashing of “ ◴ ” and “ ❁ ”.
To release the alternative flashing, change the mode on the wireless remote controller.</td></tr>
<tr><td>3</td><td>Room temp. control</td><td>(1) Adjustment range Set temperature on remote controller (°F[°C])
<table>
<tr><td></td><td>COOL/DRY</td><td>HEAT</td></tr>
<tr><td>Wired type</td><td>64°F [18°C] to 84°F [29°C]</td><td>64°F [18°C] to 84°F [29°C]</td></tr>
<tr><td>Wireless type</td><td>63°F [17°C] to 86°F [30°C]</td><td>63°F [17°C] to 86°F [30°C]</td></tr>
</table>
(2) From the item code 06, the setup temperature in heating operation can be corrected.
<table>
<tr><td>SET DATA</td><td>0</td><td>2</td><td>4</td><td>6</td></tr>
<tr><td>Temperature setting adjustment</td><td>+0°F[+0°C]</td><td>+3.6°F[+2°C]</td><td>+7.2°F[+4°C]</td><td>+10.8°F[+6°C]</td></tr>
</table>
Setup at shipment
<table>
<tr><td>Setup data</td><td>2</td></tr>
</table></td><td>Heating suction temperature shift</td></tr>
<tr><td>4</td><td>Automatic capacity control</td><td>(1) Based upon difference between Ta and Ts, the operation frequency of the outdoor unit varies.</td><td>Ta: Room temperature
Ts: Setup temperature</td></tr>
<tr><td>5</td><td>Air volume control</td><td>(1) By the command from the remote controller, “HIGH (HH)”, “MED (H)”, or “LOW (L)” “AUTO” operation is executed.
For the wireless remote controller type, “HH”, “H+”, “H”, “L+”, “L”, or “AUTO” operation is executed.
(2) While air speed is in AUTO mode, the air speed is changed according to the difference between Ta and Ts.</td><td>HH > H+ > H >
L+ > L > LL</td></tr>
</table>

No.	Item	Outline of specifications	Remarks
6	Prevention of cold air discharge	(1) In heating operation, the upper limit of the fan tap is set by one with higher temperature of TC2 sensor and TCJ sensor. • When B zone has continued for 6 minutes, the operation shifts to C zone. • In defrost time, the control point is set to +10.8°F(+6°C).  	• In D and E zones, priority is given to remote controller air speed setup. • In A and B zones, "⚙" is displayed.
7	Freeze prevention control (Low temp. release)	(1) In cooling operation, the air conditioner operates as described below based upon temp. detected by TC1, TC2 and TCJ sensors. To prevent the heat exchanger from freezing, the operation stops. • When "J" zone is detected for 5 minutes, the forced thermo is OFF. • In "K" zone, the timer count is interrupted, and held. • When "*I*" zone is detected, the timer is cleared and the operation returns to the normal operation. • When the forced thermo-OFF became S0 with continuation of "J" zone, operation of the the indoor fan in LOW (L) mode until it reaches the "*I*" zone. It is reset when the following conditions are satisfied. **Reset conditions** 1) TC1 ≧ 53.6°F(12°C) and TC2 ≧ 53.6°F(12°C) and TCJ ≧ 53.6°F(12°C) 2) 20 minutes passed after stop.  | | TC1 | TC2, TCJ | |---|---|---| | P1 | 50°F(10°C)(41°F)(5°C) | 14°F(-10°C) | | Q1 | 32°F(0°C) | 6.8°F(-14°C) | (2) In cooling operation, the air conditioner operates as described below based upon temp. detected by TC2 and TCJ sensors. • When "M" zone is detected for 45 minutes, the forced thermo is OFF. • In "N" zone, the timer count is interrupted and held. • When shifting to "M" zone again, the timer count restarts and continues. • If "L" zone is detected, the timer is cleared and the operation returns to normal operation. **Reset conditions** 1) TC1 ≧ 53.6°F(12°C) and TC2 ≧ 53.6°F(12°C) and TCJ ≧ 53.6°F(12°C) 2) 20 minutes passed after stop.  | | TC2, TCJ | |---|---| | P2 | 41°F(5°C) | | Q2 | 28.4°F(–2.0°C) |	

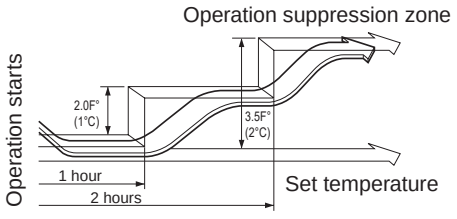
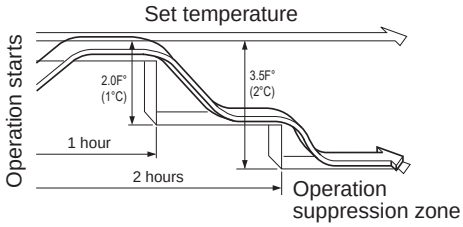
No.	Item	Outline of specifications	Remarks
8	Cooling oil (refrigerant) recovery control	While the outdoor unit is recovering cooling oil (refrigerant), the indoor units perform the following control tasks: [common for operational (cooling thermo ON/thermo OFF/FAN), as well as nonoperational indoor units] (1) Open the indoor PMV to a certain degree. (2) Engage in recovery control for a specified period of time and return to normal cooling operation at the end of this period upon terminating the control.	• Recovery operation normally takes place roughly every 2 hours. • The opening position of the indoor PMV depending on the type and capacity of the indoor unit.
9	Heating refrigerant (oil) recovery control	While the outdoor unit is recovering heating refrigerant (oil), the indoor units perform the following control tasks: (1) Open the indoor PMV to a certain degree. (2) Control the indoor fan according to the operation mode. [Indoor units operating in heating thermo ON/OFF state] Let the indoor fan continue operating, but turn it off if the temperature of the indoor heat exchanger drops. [Indoor units operating in FAN mode] Turn off the indoor fan and display “HEATING STANDBY ” on the remote controller. [Non-operational indoor units] Keep the indoor fan turned off. (3) Terminate the recovery operation depending on the TC2 temperature reading. The timing of termination is determined by each indoor unit.	• Recovery operation normally takes place roughly every hour. • The opening position of the indoor PMV depending on the type and capacity of the indoor unit.
10	Short intermittent operation compensation control	(1) For 5 minutes after the operation has started, the operation is continued even if entering thermostat-OFF condition. (2) However, Cooling/Heating exchange and the system protective control precede and thermostat is OFF.	
11	Elimination of remaining heat	(1) When the air conditioner stops in the “HEAT” mode, drive the indoor fan with “LOW” mode for approx. 30 seconds.	
12	Flap control	(1) Flap position setup (Wired type) • The flap position can be set up in the following operation range. **In cooling/dry operation** **In heating/fan operation**   • In group operation, the flap positions can be set up collectively or individually. (2) Swing setup • The swinging position can be moved in the following operation range. **All modes**  • In group operation, the swinging positions can be set up collectively or individually. (3) Fix set up (Wireless type) Keep pressing or pressing briefly the FIX button to move the flap in the desired direction. Operating angle of flap will be different during cooling, dry and heating operation. (4) When the unit stops, the flap automatically closes. (5) While the heating operation is ready, the flap automatically moves upward.	

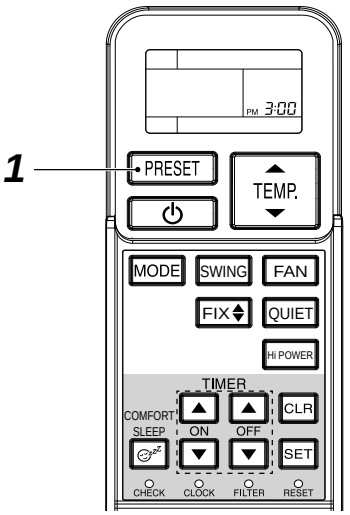
<table>
<tr><th>No.</th><th>Item</th><th>Outline of specifications</th><th>Remarks</th></tr>
<tr><td>13</td><td>Filter sign display
(None in wireless type)</td><td>(1) The operation time of the indoor fan is integrated and stored in memory, and the filter exchange signal is sent to the remote controller to display on the remote controller LCD after the specified time. (150H)
(2) When the filter reset signal is received form the remote controller, time of the integrated timer is cleared. In this time, if the specified time has passed, the measured time is reset and LCD display disappears.</td><td></td></tr>
<tr><td>14</td><td>Operation standby
Heating standby</td><td><Operation standby> .. Displayed on wired remote controller
(1) When any of the DN codes listed below is displayed
• “P05” - Detection of an open phase in the power supply wiring
• “P10” - Detection of indoor flooding in at least one indoor unit
• “L30” - Detection of an interlock alarm in at least one indoor unit
(2) Forced thermo OFF
• “COOL/DRY” operation is unavailable because at least one indoor unit is operating in “HEAT” mode.
• “HEAT” operation is unavailable because at least one indoor unit is operating in “COOL/DRY” mode under priority cooling setting (bit 1 of SW11 on outdoor I/F P.C. board ON).
(3) All indoor units not able to engage in any of the above operations stand by in thermo OFF state.
(4) The indoor fan has been turned off because the system is engaged in a heat refrigerant (oil) recovery operation.

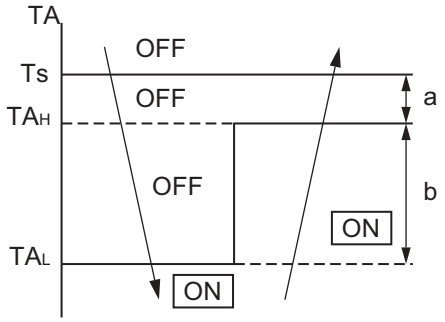
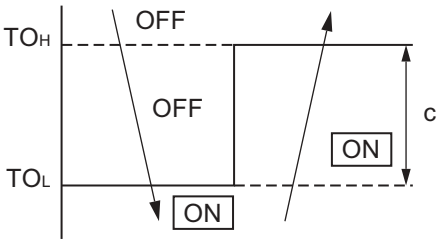
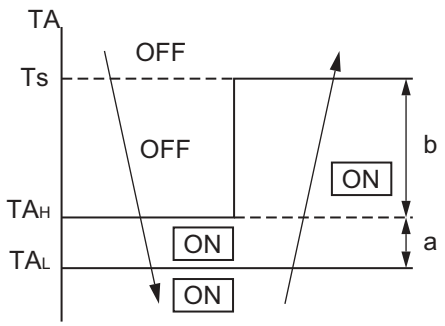
<Heating standby> ..... Displayed on wired remote controller
(1) Normal thermo OFF
• During heating, the indoor unit goes thermo OFF as the heating temperature setting is reached.
(2) During heating, the fan rotates at a breeze speed (UL or lower) or remains stationary to prevent cold air from being discharged (including defrosting operation).
(3) Forced thermo OFF
• “HEAT” operation is unavailable because at least one indoor unit is operating in “COOL/DRY” mode under priority cooling setting (bit 1 of SW11 on outdoor I/F P.C. board ON).</td><td>• “OPERATION STANDBY ⏻ ” displayed

No display provided on wireless remote controller

• “HEATING STANDBY ❄ ” displayed</td></tr>
<tr><td>15</td><td>Selection of central control mode</td><td>(1) The range of operations that can be performed via an indoor unit remote controller can be determined through the setting of the central controller.
(2) Setting details
TCC-Link central control
<table><tr><th rowspan="2">Operation via TCC-Link central control</th><th colspan="6">Operation via RBC-AMT32UL</th><th rowspan="2">RBC-AMT32UL display</th></tr><tr><th>Start/stop selection</th><th>Operation mode selection</th><th>Timer setting</th><th>Temperature setting</th><th>Fan speed setting</th><th>Air flow direction setting</th></tr><tr><td>Individual</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td rowspan="5">“CENTRAL CONTROL IN PROGRESS”</td></tr><tr><td>Central 1</td><td>×</td><td>○</td><td>×</td><td>○</td><td>○</td><td>○</td></tr><tr><td>Central 2</td><td>×</td><td>×</td><td>×</td><td>×</td><td>○</td><td>○</td></tr><tr><td>Central 3</td><td>○</td><td>×</td><td>○</td><td>×</td><td>○</td><td>○</td></tr><tr><td>Central 4</td><td>○</td><td>×</td><td>○</td><td>○</td><td>○</td><td>○</td></tr></table></td><td>• In the case of a wired remote controller, “CENTRAL CONTROL IN PROGRESS 🗎 ” is displayed (lit up) while in central control mode.
• The display blinks when a control function inaccessible to a remote controller is chosen.
• A wireless remote controller has the same set of control functions, although there is no display.
When a control operation is performed via a wireless remote controller while in central control mode, a peep sound alert (5 times) is provided.</td></tr>
</table>

No.	Item	Outline of specifications	Remarks
16	Hi POWER operation (Wireless remote control specific operations)	When you press the Hi POWER button during cooling, heating or A operation, the air conditioner will start the following operation. • **Cooling operation** Performs the cooling operation at 2.0F°(1°C) lower than the setting temperature. Only when the fan speed before the Hi POWER operation is not high, the fan speed will be increased. • **Heating operation** Performs the heating operation at 3.5F°(2°C) higher than the setting temperature. Only when the fan speed before the Hi POWER operation is not high, the fan speed will be increased.	
17	ECO timer operation (Wireless remote control specific operations)	When you press the ECO button during cooling, heating or A operation, the air conditioner will start the following operation. The fan speed display will indicate AUTO and low speed will be used. • **Cooling operation** In the operation suppression zone, where capacity is kept to the minimum, overcooling is prevented by raising the temperature setting by 2.0F°(1°C) after 1 hour and by 3.5F°(1°C) after 2 hours of operation. The room temperature is thus regulated between the operation suppression zone and the set temperature. • **Heating operation** In the operation suppression zone, where capacity is kept to the minimum, overheating is prevented by lowering the temperature setting by 2.0F°(1°C) after 1 hour and by 3.5F°(1°C) after 2 hours of operation. The room temperature is thus regulated between the set temperature and the operation suppression zone.  	

No.	Item	Outline of specifications	Remarks
18	PRESET operation (Wireless remote control specific operation)	To operate the air conditioner with the setting memorized. (1) Press the PRESET button. The setting memorized will be indicated and the air conditioner operates with regards to the setting. • The lamp (White) on the display panel of the indoor unit goes on, and operation starts after approximately 3 minutes. • Initial setting: MODE : AUTO Temperature : 22 (Memorized Setting) (1) Select your preferred operation (2) Press and hold PRESET PRESET button more than 3 seconds. The (P) make is indicated and the setting is memorized. (3) Press the PRESET button to operate the setting memorized.	
19	DC motor	(1) When the fan stator, positioning is performed for the starter and the rotor. (Vibrate slightly) (2) DC motor operates according to the command from the indoor controller. **(Note)** If the fan lock was detected, the operation of the indoor unit stops and the error is displayed.	Check code [P12]
20	Save operation	(1) The save operation starts when SAVE button on the remotecontroller is turned on. (2) While the save operation is performed, segment goes on the screen of the wired remote controller. (3) The request capacity ratio is restricted to approx. 75% during save operation. (4) If the save operation was validated, the contents are held during the operation stop, the operation mode change and the resetting of power supply. Therefore the operation at the next time also will be activated with “Save operation is valid”	RBC-AMT32UL

No.	Item	Outline of specifications	Remarks
21	Secondary heating	Secondary heating can be used while heating operations are performed. <Control Outline (Normal Mode)> 1) If the difference between the indoor temperature and the outdoor temperature is large while the air conditioner is operating, turn ON the secondary heating. 2) This function is valid when the CODE No. (DN) [DC] is set to ”0001” (32.9ºF(0.5ºC)) to “0010” (41ºF(5.0ºC)) using the wired remote controller, and the output to the external heating source will turn ON if the room temperature satisfies the condition. 3) The output will always stay ON while defrosting operations are being performed.  4) The output can be turned on by the outdoor temperature when CODE No. (DN) [C7] is set to “0001” (33.8ºF(1ºC)) to “0010” (50ºF(10ºC)) using the wired remote controller.  <Control Outline (Flip Mode)> 1) If the difference between the room temperature and the set temperature is large while using secondary heating, run the air conditioner. 2) This function is valid when the CODE No. (DN) [C5] is set to ”0001” (Flip mode) or the CODE No. (DN) [C7] is set to “0001” (33.8ºF(1ºC)) to “0010” (50ºF(10ºC)) using the wired remote controller, and when the output is switched ON when the room temperature satisfies the conditions. * The outdoor temperature determination is invalid whilst this control is performed.  	TAH : Temp.set air high (= Ts - a) TAL : Temp.set air low (= TAH - b) TOH : Temp.set out high TOL : Temp.set out low (= TOH - c)

No.	Item	Outline of specifications	Remarks
21	Secondary heating (Continued)		

DN [C5]

Data	Secondary heating mode
0000	Normal mode (Factory default)
0001	Flip mode

DN [C6]

Data	TO_H: Set temp. out (high) [ºF(ºC)]
-0015 to 0015	"-0015": 5ºF(-15ºC) to "0015": 59ºF(15ºC) "0000": 32ºF(0ºC) (Factory default)

DN [C7]

Data	c : TO_H - TO_L [ºF(ºC)]
0000	Unavailable (Factory default)
0001 to 0010	0001: 33.8ºF(1ºC) to "0010": 50ºF(10ºC)

DN [DB]

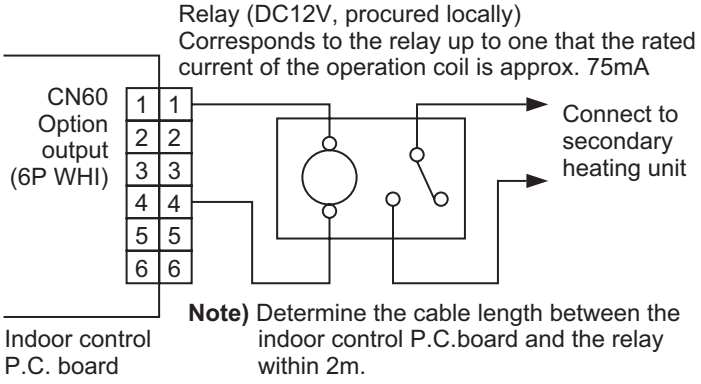
Data	b : TA_H - TA_L [ºF(ºC)]
0001 to 0010	"0001": 32.9ºF(0.5ºC) to "0010": 41ºF(5.0ºC) "0006": 37.4ºF(3ºC) (Factory default)

DN [DC]

Data	a : Ts - TA_H (Normal mode)[ºF(ºC)] TA_L - Ts (Flip mode)[ºF(ºC)]
0000	Unavailable (Factory default)
0001 to 0010	0001: 33.8ºF(1ºC) to "0010": 50ºF(10ºC)

<Wiring>

1) Use ① - ④ pin (Cooling output, DC 12 V) of CN60 on indoor P.C. board for output.



Note) Determine the cable length between the indoor control P.C.board and the relay within 2m.

* The output state can be checked from “Monitor function” on the wired remote controller. The manual for the remote controller for operation methods of “Monitor function”.

Monitor CODE No.	Secondary heating output
E5	- - - -: Unavaila 0000: OFF 0001: ON

7. COMMUNICATION TYPE, MODEL NAMES AND THE MAXIMUM NUMBER OF CONNECTABLE UNITS

7-1. This air conditioning (U series) has new communication specifications, and TU2C-Link (U series) and TCC-Link (other than U series) differ in a communication type. For the communication type and the model names such as each unit or remote controllers, refer to the following table.

Communication type	TU2C-Link (U series and future models)	TCC-Link (Other than U series)
Outdoor unit	MMY-M**U**P∗∗∗ ↑ This letter indicates U series model.	Other than U series MMY-MAP∗∗∗ MCY-MHP∗∗∗
Indoor unit	MM∗-**U**P∗∗∗ ↑ This letter indicates U series model.	Other than U series MM∗-AP∗∗∗
Wired remote controller	RBC-A∗∗**U**∗∗∗ ↑ This letter indicates U series model.	Other than U series
Wireless remote controller kit & receiver unit	RBC-AX**U**∗∗∗ ↑ This letter indicates U series model.	Other than U series
Remote sensor	TCB-TC∗∗**U**∗∗∗ ↑ This letter indicates U series model.	Other than U series

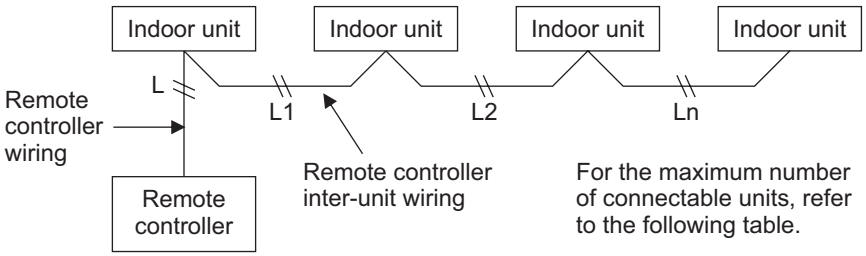
U series outdoor unit : SMMS-u (MMY-MUP∗∗∗)
Other than U series outdoor unit : SMMS-i, SMMS-e etc. (MMY-MAP∗∗∗)

7-2. If TU2C-Link (U series) is combined with TCC-Link (other than U series), the wiring specifications and the maximum number of connectable indoor units during group control operation will be changed.

(1) For wiring specifications, carry out the installation, maintenance, or repair according to the attached Installation Manual.

(2) For a communication type combination and the max. number of connectable indoor units, refer to the following table.

- Only when all outdoor unit, indoor unit and remote control are a U series, communication method is TU2C-LINK, and the maximum number of connectable units will be 16.



The combination of unit type and the number of the maximum connection of a communication method

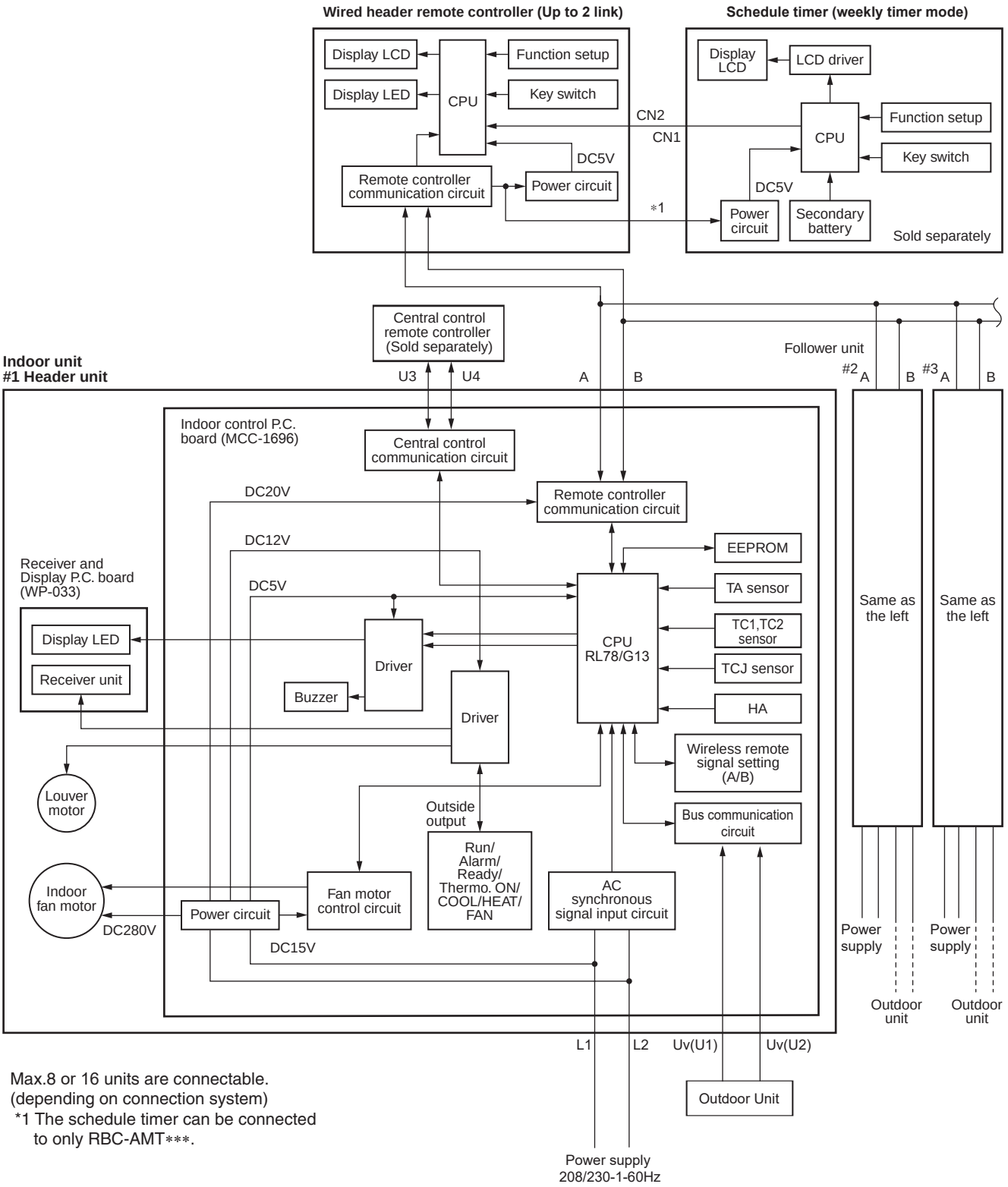
	Unit type							
Outdoor unit	U series	U series	U series	U series	*	*	*	*
Indoor unit	U series	U series	*	*	U series	U series	*	*
Remote controller Remote sensor	U series	*	U series	*	U series	*	U series	*
Communication type	TU2C-Link	TCC-Link						
Maximum number of connectable units	16	8						

* Other than U series

8. CONFIGURATION OF CONTROL CIRCUIT

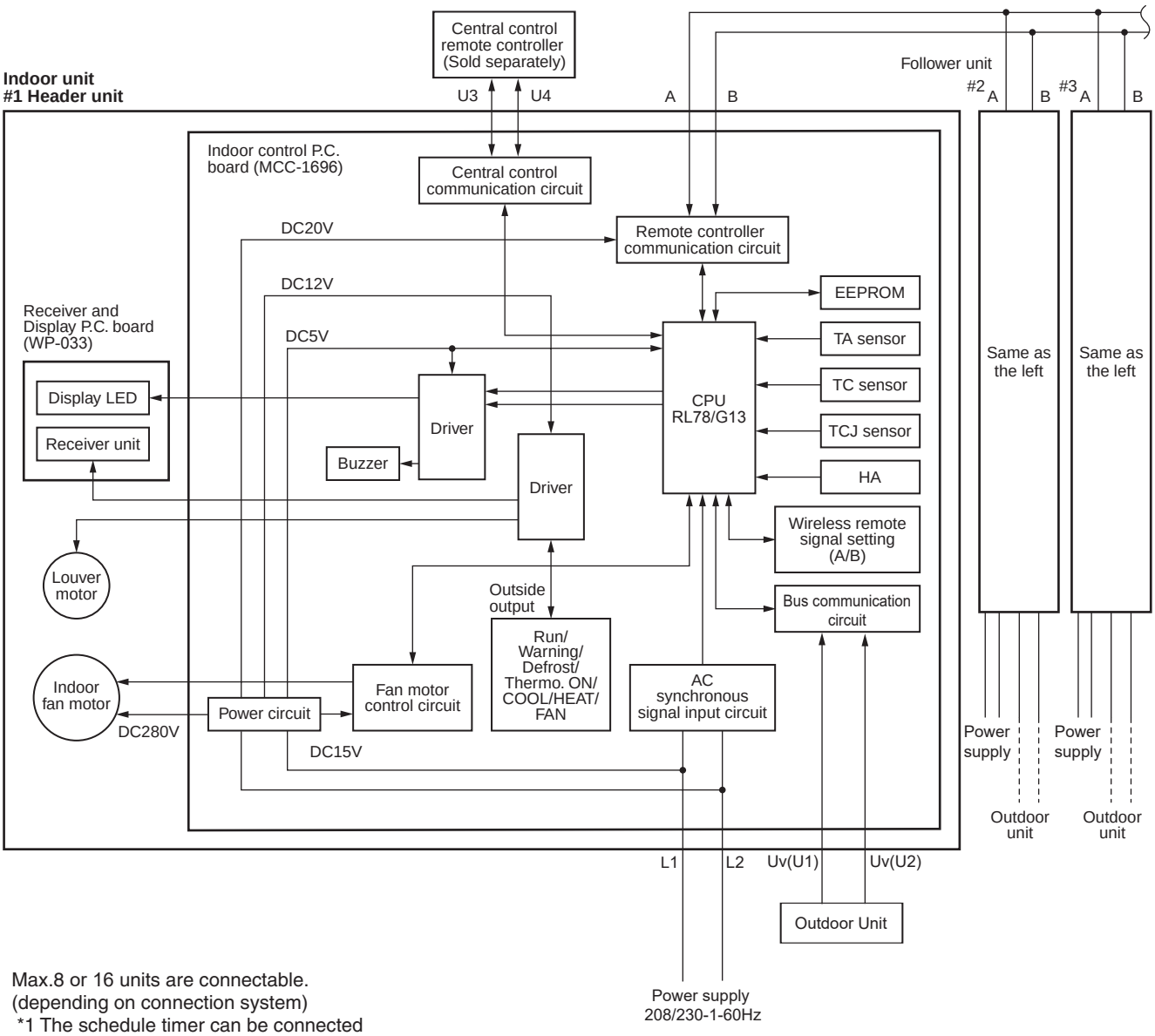
8-1. Indoor Controller block diagram (MCC-1696)

8-1-1. Connection of wired remote controller



Max.8 or 16 units are connectable.
(depending on connection system)
*1 The schedule timer can be connected to only RBC-AMT***.

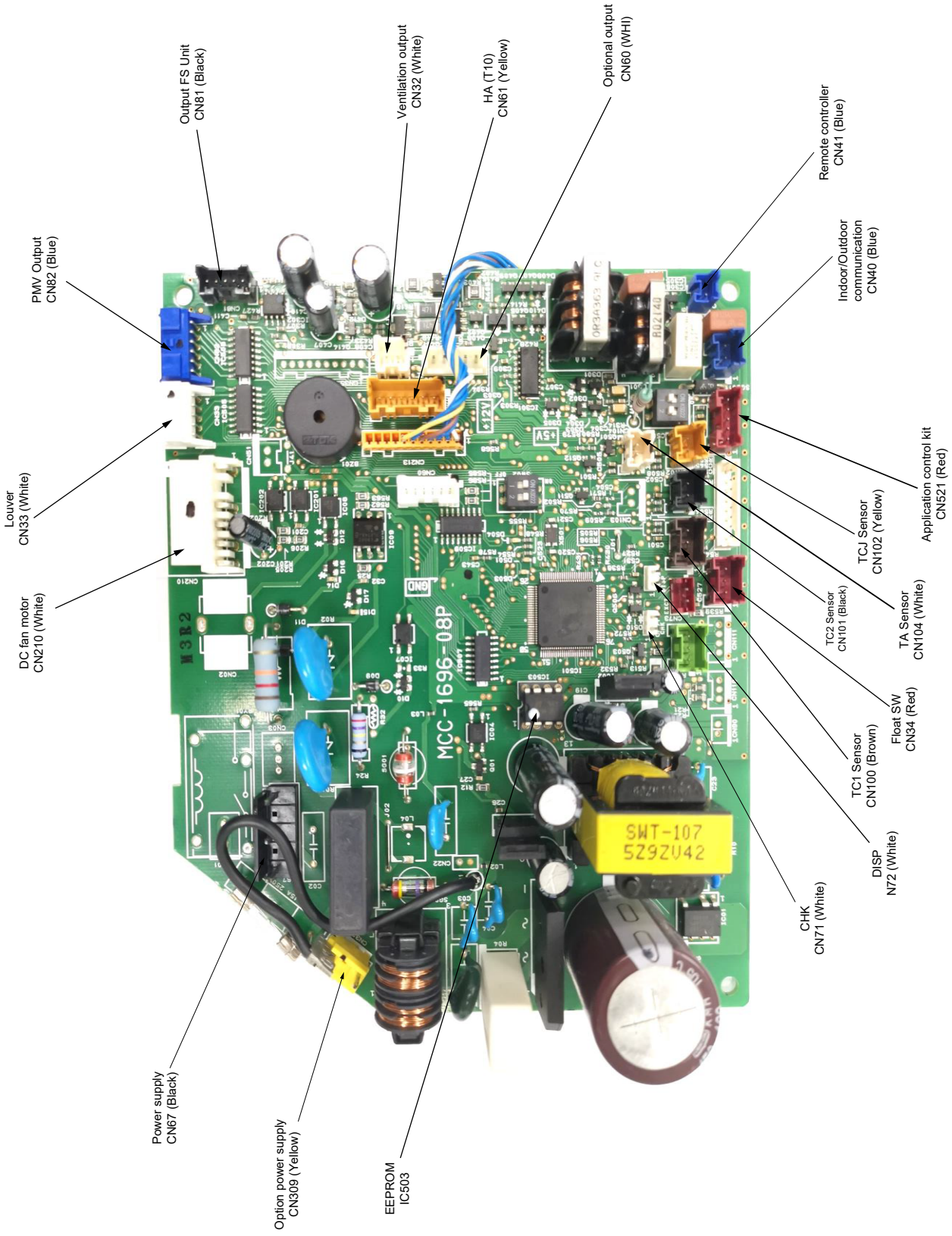
8-1-2. Connection of Wireless Remote Controller



Max.8 or 16 units are connectable.
(depending on connection system)
*1 The schedule timer can be connected to only RBC-AMT***.

8-2. Indoor P.C. Board

MCC-1696



Wall-Type P.C. Board Optional Switch/Connector Specifications

Function	Connector No.	Pin No.	Specifications	Remarks
Terminator resistor provided/Not provided	SW01	Bit 1	OFF: No terminator resistor, ON: Terminator resistor provided	Setup at shipment OFF: No terminator resistor. Only 1 unit is ON during central control by custom only.
Remote controller A/B		Bit 2	OFF: Remote controller A ON: Remote controller B	Setup at shipment OFF: Remote controller A
Fan output	CN32	1	DC12V	Setup at shipment: Linked operation of ON with operation of indoor unit and OFF with stop * The setup of single operation by FAN button on remote controller is executed from remote controller. (DN = 31)
		2	Output	
HA	CN61	1	Start/Stop input	HA Start/Stop input (J01: Provided/Not provided = Pulse (At shipment from factory)/Static input switch)
		2	0V (COM)	
		3	Handy prohibition input	Operation stop of handy remote controller is permitted / prohibited by input.
		4	Operation output	ON during operation (Answer back of HA)
		5	DC12V (COM)	
		6	Alarm output	ON during output of alarm
Optional output	CN60	1	DC12V (COM)	
		2	Defrost output	ON during defrosting of outdoor unit
		3	Thermo-ON output	ON when Real thermo. ON (Comp. ON)
		4	Cooling output	ON when operation mode is cooling line (Cool, Dry, Cooing/Heating AUTO cooling)
		5	Heating output	ON when operation mode is heating line (Heat, Cooling/Heating AUTO heating)
		6	Fan output	ON when indoor fan is ON
Outside error input	CN80	1	DC12V (COM)	At shipment from factory, the error code “L30” generates and optional error input to stop operation forcedly (DN:2A = 1) is controlled (Display of protection for devices attached to outside) by setup of outside error input (DN:2A = 2) for 1 minute. * Optional error input control is set up on the remote controller.
		2	DC12V (COM)	
		3	Filter/Option/Outside error input	
CHK Operation check	CN71	1	Check mode input	This check is used for operation check of indoor unit. (The specified operation such as indoor fan “H”, drain pump ON, etc. is executed without communication with outdoor unit or remote controller.)
		2	0V	
DISP Display mode	CN72	1	Display mode input	Display mode, communication is enabled by indoor unit and remote controller only. (When power supply is turned on.) Timer short (Usual)
		2	0V	
EXCT Demand	CN73	1	Demand input	Indoor unit forced thermo-OFF operation
		2	0V	
Input for float SW	CN34	1	DC12V	Normal when between ①-③ short-circuits, but abnormal when open-circuits. (check code "P10" appears)
		2	NC	
		3	Float SW input	
Output for Flow selector unit	CN81	1	DC12V	
		2	EP valve output (Open collector)	
		3	Balance valve output (Open collector)	
		4	Suction valve output (Open collector)	
		5	Discharge valve output (Open collector)	
Output power supply for option	CN309	1	AC230V	This can be used as power supply for option devices.
		3	AC230V	
Connection for option P.C.board	CN521	1	DC12V	Connected Application control kit (TCB-PCUC2E)
		2	DC5V	
		3	Send	
		4	Receive	
		5	0V	

8-3. Functions at test run

■ Cooling/Heating test run check

The test run for cooling/heating can be performed from either indoor remote controller or outdoor interface P.C. board.

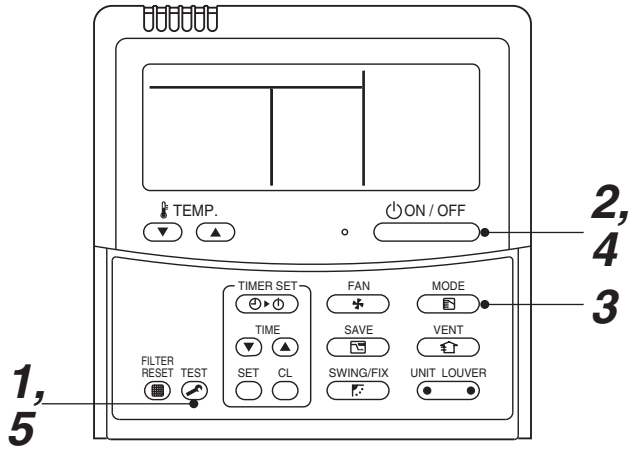
1. Start/Finish operation of test run

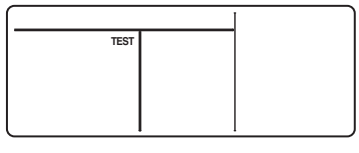
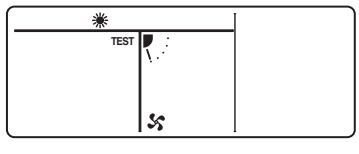
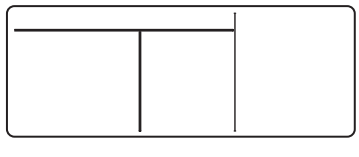
⊙ Test run from indoor remote controller

- Wired remote controller: Refer to the below item of “Test run” of the wired remote controller.
- Wireless remote controller: Refer to the next page item of “Test run” of the wireless remote controller.

◆ In case of wired remote controller

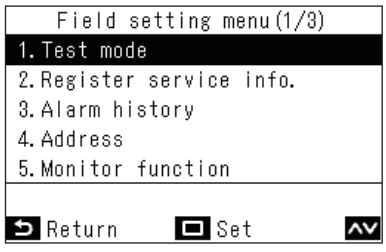
<RBC-AMT∗∗∗>

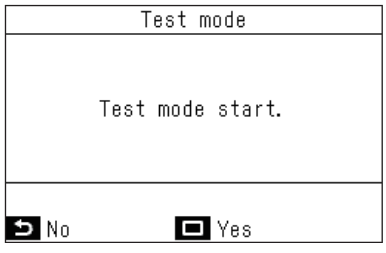


Procedure	Operation contents
1	Push [TEST] button for 4 seconds or more. [TEST] is displayed at the display part and the mode enters in TEST mode. 
2	Push [ON/OFF] button.
3	Change the mode from [COOL] to [HEAT] using [MODE] button. • Do not use [MODE] button for other mode except [COOL]/[HEAT] modes. • The temperature cannot be adjusted during test run. • The trouble detection is performed as usual. 
4	After test run, push [ON/OFF] button to stop the operation. (Display on the display part is same to that in Procedure *1* .)
5	Push [TEST] button to clear the TEST mode. ([TEST] display in the display part disappears and status becomes the normal stop status.) 

Note) The test run returns to the normal operation after 60 minutes.

<RBC-AWSU52-UL>

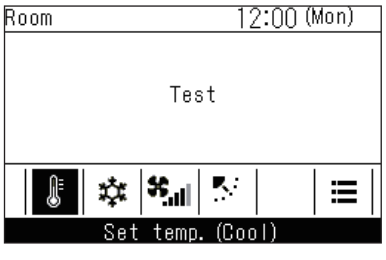




1 **In the "Field setting menu" screen, press [∧] and [∨] to select "Test mode", and then press [▭ Set/Fix]**

→ Test mode is set, and returns to the "Field setting menu" screen. Press the [⮌ Return] button 2 times, to open screen (2).

(1)



2 **Press [ON/OFF ON/OFF]**

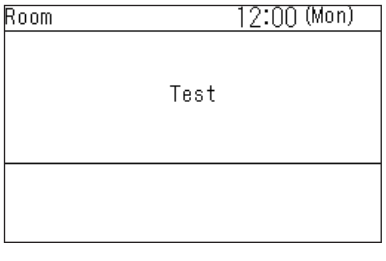
→ Operation starts, and in test mode screen (1) opens. (While stopped, it is screen (2))

→ Test mode is done while the operating mode is set to "Cool" or "Heat".

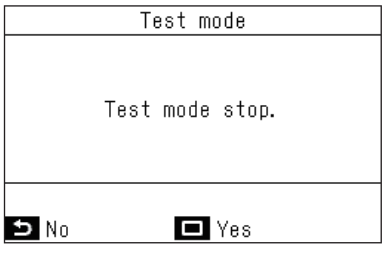
→ The temperature cannot be set in test mode.

→ Check codes are displayed in the normal way.

(2)



(3)



3 **After completing test mode, in the "Field setting menu" screen, press [∧] and [∨] to select "Test mode", and then press [▭ Set/Fix]**

→ Screen (3) appears.

→ Press [▭ Set/Fix] to end test mode and do normal operation.

Note) The test run returns to the normal operation after 60 minutes.

◆ In case of wireless remote controller

REQUIREMENT

1. For the operation procedure, be sure to follow the matter.
2. Finish the forced cooling operation in a short time because it applies excessive strength to the air conditioner.
3. A test operation of forced heating is unavailable. Perform a test operation by heating operation using the switches of the remote controller.

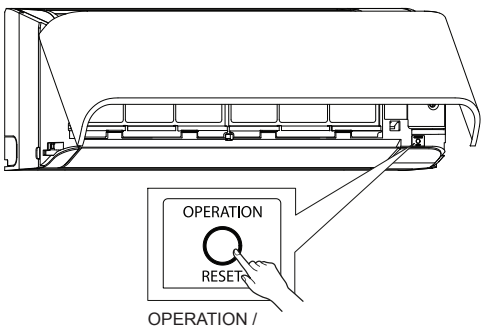
   However heating operation may be not carried out according to the temperature conditions.

• Check wiring/piping of indoor and outdoor units

1. Open the front panel.
2. When pushing [RESET] button for 10 seconds or more, “Pi!” sound is heard and the operation changes to a forced cooling operation. After approx. 3 minutes, a cooling operation starts forcedly. Check cool air starts blowing. If the operation does not start, check wiring again.
3. To stop a test operation, push [RESET] button once again (Approx. 1 second).
   The up/down air flow adjusting plate closes and the operation stops.

• Check transmission of remote controller

1. Push “START/STOP” button of the remote controller to check an operation can also start by the remote controller.
   - When pushing [RESET] button once (For 1 second), the operation changes to automatic operation. For a forced cooling operation, keep the [RESET] button pushed over 10 seconds.
   - “Cooling” operation by the remote controller may be unavailable according to the temperature conditions. Check wiring/piping of the indoor and outdoor units in forced cooling operation.



OPERATION /
RESET Button

■ Check function for operation of indoor unit (Functions at indoor unit side)

This function is provided to check the operation of the indoor unit singly without communication with the remote controller or the outdoor unit. This function can be used regardless of operation or stop of the system.

However, if using this function for a long time, a trouble of the equipment may be caused. Limit using this function within several minutes.

[How to operate]

1) Short-circuit CHK pin (CN71 on the indoor P.C. board).
   The operation mode differs according to the indoor unit status in that time.

   Normal time: Both float SW and fan motor are normal.
   Abnormal time: Either one of float SW or fan motor is abnormal.
2) Restricted to the normal time, if short-circuiting DISP pin (CN72 on the indoor P.C. board) in addition to short-circuit of CHK pin (CN71 on the indoor P.C. board), the minimum opening degree (30pls) can be set to the indoor PMV only.

   When open DISP pin, the maximum opening degree (1500pls) can be obtained again.

[How to clear]

Open CHK pin. While the system is operating, it stops once but automatically returns to operation after several minutes.

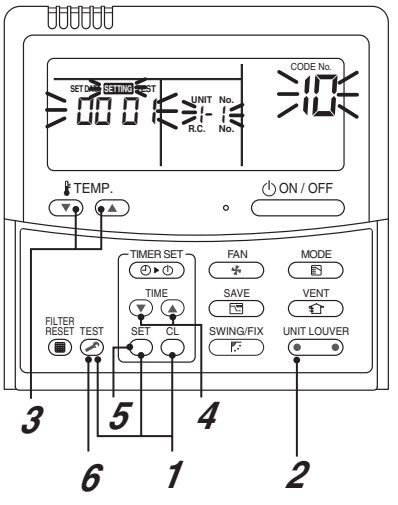
	Short-circuit of CHK pin		
	Normal time		**Abnormal time**
	DISP pin open	**DISP pin short circuit**	
Fan motor	(H)	(H)	Stop
Indoor PMV (*)	Max. opening degree (1500pls)	Min. opening degree (30pls)	Min. opening degree (30pls)
Louver	Horizontal	Horizontal	Immediate stop
Drain pump	ON	ON	ON
Communication	All ignored	All ignored	All ignored
P.C. board LED	Lights	Lights	Flashes

- To exchange the indoor PMV coil, set the indoor PMV to Max. opening degree.
- For the detailed positions of CHK pin (CN71 on indoor P.C. board) and DISP pin (CN72 on indoor P.C. board), refer to the indoor P.C. board MCC-1696.

9. APPLIED CONTROL

9-1. Setup of Selecting Function in Indoor Unit
(Be Sure to Execute Setup by a Wired Remote Controller)

<RBC-AMT*>**



1 **Push the TEST + SET + CL buttons simultaneously and hold for at least 4 seconds.**
The unit No. displayed first is the address of the header indoor unit in group control.
Then the fan and louver of the selected indoor unit move.

2 **Each time the UNIT LOUVER button (left side of the button) is pressed, one of the indoor unit Nos. under group control is displayed in turn. Then the fan and louver of the selected indoor unit move.**

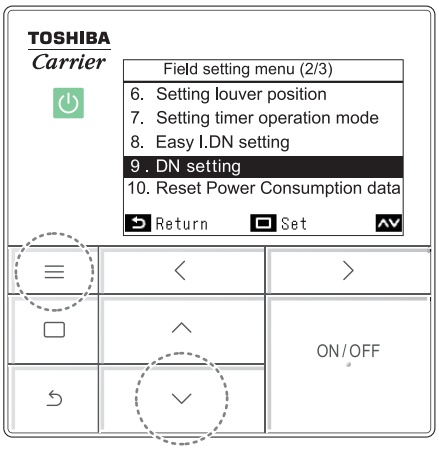
3 **Use the TEMP. button to select the CODE No. (DN code) of the desired function.**

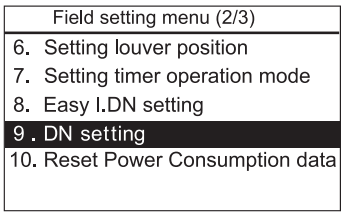
4 **Use the TIME button to select the desired SET DATA associated with the selected function.**

5 **Push the SET button. (The display changes from flashing to steady.)**
- To change the selected indoor unit, go back to step ***2***.
- To change the selected function, go back to step ***3***.

6 **When the SET button is pushed, the system returns to normal off state.**

<RBC-AWSU52-UL>





1 **Press [Menu] to open the "Menu"**

2 **Press and hold [Menu] and [ ] at the same time to open "Field setting menu"**

→Press and hold 4 seconds.

1 **In the "Field setting menu" screen, press [ ] and [ ] to select "DN setting", and then press [Set/Fix]**

2 **Press [ ] and [ ] to select "Indoor unit" or "Outdoor unit", and the press [Set/Fix]**

→If "Indoor unit" was selected, the fans and lovvres of the indoor units operate.

When doing group connections:

→The fans and louvres of the selected indoor units operate.

3 **Press [ ] to black highlight the item code (DN), and then press [ ] and [ ] to set the item code**

4 **Press [ ] to black highlight the data, and then press [ ] and [ ] to set the data**

5 **After finishing setting the data of the item code (DN), press [Set/Fix]**

→"Continue?" is displayed.

6 **To set the data of other item codes (DN), press [Set/Fix]**
To not do other settings, press [Return]

→The changes are fixed, and the "Field setting menu" screen returns.

→"⧖" appears while data is changing.

When doing group connections:

→Press [Return] to open the unit selection screen. In the unit selection screen, press [Return] to briefly display "⧖", and then return to the "Field setting menu" screen.

NOTE

For details on item codes and data to be set, refer to the Installation Manual and Service manual of the indoor unit and outdoor unit.

Indoor unit function Code No. (DN Code) table

(includes functions needed to perform applied control on site)

DN	Item	Description	At shipment
01	Filter display delay timer	0000: None 0001: 150H 0002: 2500H 0003: 5000H 0004: 10000H	Depending on model type
02	Dirty state of filter	0000: Standard 0001: High degree of dirt (Half of standard time)	0000: Standard
03	Central control address	0001: No.1 unit to 0064: No.64 unit … TCC-LINK 0001: No.1 unit to 0128: No.128 unit … TU2C-LINK 00Un: Unfixed (When using U series remote controller) 0099: Unfixed (Other than U series remote controller)	00Un/0099: Unfixed *1
04	Specific indoor unit priority	0000: No priority 0001: Priority	0000: No priority
06	Heating temp. shift	0000: 0°F(0°C) 0001: +1.8°F(+1°C) 0002: +3.6°F(+2°C) to 0010: +18°F(+10°C) (Up to +6 recommended)	Depending on model type
0b	Demand control (CN73 / CN4)	0000: Demand input 0001: O2 sensor input 0002: Card input setup.3 0003: Fire alarm input 0004: Card input setup.4 (Normal open) 0005: Fire alarm input 0006: Notice cord (202) (Normal close) 0008: Card input setup.1 0007: Card input setup.5 0009: Card input setup.2	0000: Demand input
0d	Existence of [AUTO] mode	0000: Provided 0001: Not provided (Automatic selection from connected outdoor unit)	0001: Not provided
0F	Cooling only	0000: Heat pump 0001: Cooling only (No display of [AUTO] [HEAT])	0000: Heat pump
10	Type	Refer to **Type DN code "10" list**	Depending on model type
11	Indoor unit capacity	0000: Unfixed 0001 to 0034 Refer to Indoor Unit Capacity DN code "11" list	According to capacity type
12	Line address	0001: No.1 unit to 0064: No.30 unit … TCC-LINK 0001: No.1 unit to 0128: No.128 unit … TU2C-LINK 00Un: Unfixed (When using U series remote controller) 0099: Unfixed (Other than U series remote controller)	00Un/0099: Unfixed *1
13	Indoor unit address	0001: No.1 unit to 0064: No.64 unit … TCC-LINK 0001: No.1 unit to 0128: No.128 unit … TU2C-LINK 00Un: Unfixed (When using U series remote controller) 0099: Unfixed (Other than U series remote controller)	00Un/0099: Unfixed *1
14	Group address	0000: Individual 0001: Header unit of group 0002: Follower unit of group 00Un: Unfixed (When using U series remote controller) 0099: Unfixed (Other than U series remote controller)	00Un/0099: Unfixed *1
19	Louver type (Air direction adjustment)	0000: No louver 0001: Swing only 0004: (4-way Air Discharge Cassette type, etc.)	Depending on model type
1E	Temp difference of [AUTO] mode selection COOL → HEAT, HEAT → COOL	0000: 0°F(0°C) to 0010: 18°F(10°C) (Ts ± 9.0°F(5°C)) Ts:Remote controller setup temp.	0003: 5.4°F(3°C) (Ts ±2.7°F(1.5°C))
28	Automatic restart of power failure	0000: None 0001: Restart	0001: Restart
2A	Selection of option/Trouble input (TCB-PCUC2E: CN3)	0000: Filter input 0001: Alarm input 0002: None (Air washer, etc.)	0002: None
2E	HA terminal (CN61) select	0000: Usual 0001: Card input setup.1 (3) 0002: Fire alarm input 0003: Card input setup.2 (4) (arbiter contact) 0004: Notice cord (201) 0005: Card input setup.5	0000: Usual (HA terminal)
31	Ventilating fan control	0000: Unavailable 0001: Available	0000: Unavailable
32	TA sensor selection	0000: Body TA sensor 0001: Remote controller sensor	0000: Body TA sensor

DN	Item	Description	At shipment
33	Temperature unit select	0000: °C 0001: °F	0001: °F
5d	External static pressure High-ceiling adjustment (Air flow selection)	Refer to next page.	Depending on model type
60	Timer setting (wired remote controller)	0000: Available (can be performed) 0001: Unavailable (cannot be performed)	0000: Available
77	Dual set point	0000: Unavailable 0002: Available	0000: Unavailable
79	Alarm output setup of the header unit	0000: Not including the state of following unit 0001: Including the state of following unit	0000: Not including the state of following unit
7A	Change unit 0.9°F(0.5°C) or 1.8°F(1°C) on remote	0000: 1.8°F(1°C) 0001: 0.9°F(0.5°C)	0001: 0.9°F(0.5°C)
b3	Soft cooling	0000: Unavailable 0001: Available	0001: Available
b5	Occupancy sensor/ Wireless Remote controller Provided / None	0000: None 0001: Occupancy sensor provided 0002: Wireless remote controller provided	0000: None
b6	Occupancy sensor Enable / Invalid (Absence time judgment time)	0000: Invalid 0001: 30min. 0002: 60min. 0004: 120min. 0005: 150min.	0002: Enable (60 min.)
b7	Occupancy sensor operation at absent time	0000: Stand by 0001: operation stop	0000: Stand by
d0	Whether the power saving mode can be set by the remote controller	0000: Invalid 0001: Valid	0001: Valid
E0	Destination	0000: Domestic 0001: North America	0001: North America
E6	Wireless remote controller A-B selection	0000: A 0001: B	0000: A
F6	Presence of Application control kit (TCB-PCUC2E)	0000: None 0001: Exist	0000: None
FC	Communication protocol *2	0000 : TCC-LINK 0003:TU2C-LINK	0000: TCC-LINK
Fd	Priority operation mode (FS unit)	0000: Heating 0001: Cooling	0000: Heating
FE	FS unit address	0001: No.1 unit to 0064: No.64 unit … TCC-LINK 0001: No.1 unit to 0128: No.128 unit … TU2C-LINK 00Un: Unfixed (When using U series remote controller) 0099: Unfixed (Other than U series remote controller)	00Un/0099: Unfixed *1

DN	Item	Description	At shipment
180	Notice code number 01	0000: None 0001 ~ 0255 : Notice code 0129 : Notice code (201) 0130 : Notice code (202) (0001 ~ 0255 : TU2C-LINK only)	0000: None
181	Notice code number 02		0000: None
182	Notice code number 03		0000: None
183	Notice code number 04		0000: None
184	Notice code number 05		0000: None
185	Notice code number 06		0000: None
186	Notice code number 07		0000: None
187	Notice code number 08		0000: None
188	Notice code number 09		0000: None
189	Notice code number 10		0000: None
191	Secondary Heat / Ventilation output port switching	0000 : Ventilation output 0001 : Secondary heating output	0000: Ventilation output
103	Remote controller	0000 : Use 0001 : Do not use • Indoor unit production after Jun-2021 does not need this DN setting. The serial number is 12600001 or upper.	0000 : Use
1FB	Central device control state	0000: No central device control (Remote controller use is possible) 0001: Central device control (Remote controller use is impossible)	0000: No central device control
1FC	Indoor Unit terminating resistance	0000: OFF 0001: ON	0000: OFF

*1 Display order of “00Un”and “0099” varies depending on remote controller models or communication types.

For Central control address (DN [03]), Indoor unit address (DN [13]), FS unit address (DN [FE])

Remote controller	Communication type	Display order
U series	TU2C-LINK	⋯ ⇔ 0128 ⇔ 00Un ⇔ 0001 ⇔ ⋯
	TCC-LINK	⋯ ⇔ 0064 ⇔ 00Un ⇔ 0001 ⇔ ⋯
Other than U series	TCC-LINK	⋯ ⇔ 0064 ⇔ 0099 ⇔ 0001 ⇔ ⋯

For Line address (DN [12])

Remote controller	Communication type	Display order
U series	TU2C-LINK	⋯ ⇔ 0128 ⇔ 00Un ⇔ 0001 ⇔ ⋯
	TCC-LINK	⋯ ⇔ 0030 ⇔ 00Un ⇔ 0001 ⇔ ⋯
Other than U series	TCC-LINK	⋯ ⇔ 0030 ⇔ 0099 ⇔ 0001 ⇔ ⋯

For Group address (DN [14])

Remote controller	Communication type	Display order
U series	TU2C-LINK TCC-LINK	⋯ ⇔ 0002 ⇔ 00Un ⇔ 0000 ⇔ ⋯
Other than U series	TCC-LINK	⋯ ⇔ 0002 ⇔ 0099 ⇔ 0000 ⇔ ⋯

*2 Communication protocol can be automatically switched with the setup in the outdoor unit during installation.

Type
DN code "10"

Value	Type	Model
0001*1	4 Way Cassette	MMU-UP****HP-UL
0008	High wall	MMK-UP****HP-UL

*1 Default value stored in EEPROM mounted on service P.C. board

Indoor Unit Capacity
DN code "11"

Setting data	Type
0000*	Disable
0013	030
0015	036

* EEPROM initial value on the P.C.board for indoor unit servicing.

9-2. Applied Control in Indoor Unit

■ Remote location ON/OFF control box (TCB-IFCB-4UL)

[Wiring and setup]

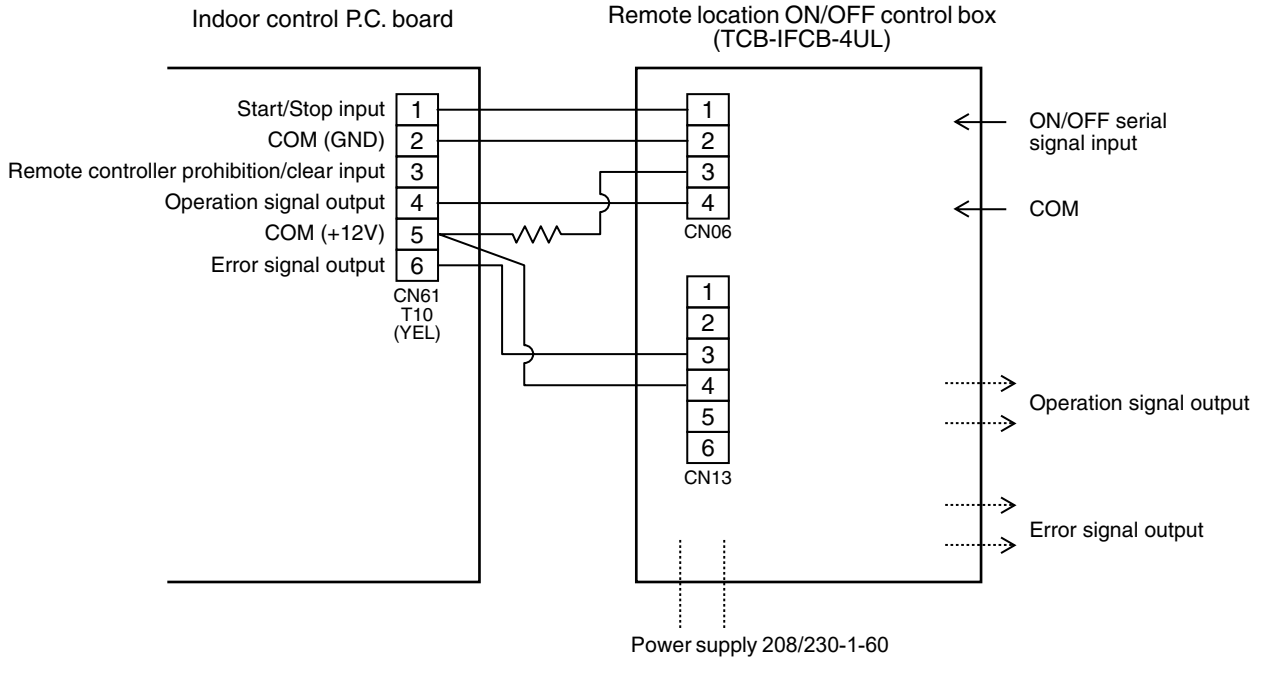
- Use the exclusive connector for connection with the indoor control P.C. board.
- In a group control, the system can operate when connecting with any indoor unit (Control P.C. board) in the group. However when taking out the operation/error signal from the other unit, it is necessary to take out from each unit individually.

1. Control items

1) Start/Stop input signal : Operation start/stop in unit
2) Operation signal : Output during normal operation
3) Error signal : Output during alarm
(Serial communication error or indoor/outdoor protective device) operation

2. Wiring diagram using remote control interface (TCB-IFCB-4UL)

Input IFCB-4UL : No voltage ON/OFF serial signal
Output No voltage contact for operation, error display
Contact capacity: Below Max. AC240V 0.5A



■ Ventilating fan control from remote controller

[Function]

- The start / stop operation can be operated from the wired remote controller when air to air heat exchanger or ventilating fan is installed in the system.
- The fan can be operated even if the indoor unit is not operating.
- Use a fan which can receive the no-voltage normally-open contact as an outside input signal.
- In a group control, the units are collectively operated and they cannot be individually operated.

1. Operation

Handle a wired remote controller in the following procedure.

* Use the wired remote controller during stop of the system.
* Be sure to set up the wired remote controller to the header unit. (Same in group control)
* In a group control, if the wired remote controller is set up to the header unit, both header and follower units are simultaneously operable.

<RBC-AMT∗∗∗>

1 **Push concurrently SET + CL + TEST buttons for 4 seconds or more.**

The unit No. displayed firstly indicates the header indoor unit address in the group control.
In this time, the fan of the selected indoor unit turns on.

2 **Every pushing UNIT LOUVER button (left side of the button), the indoor unit numbers in group control are displayed successively.**

In this time, the fan of the selected indoor unit only turns on.

3 **Using the setup temp ▼ or ▲ button, specify the CODE No. 31.**

4 **Using the timer time ▼ or ▲ button, select the SET DATA. (At shipment: 0000)**

The setup data are as follows:

SET DATA	Handling of operation of air to air heat exchanger or ventilating fan
0000	Unavailable (At shipment)
0001	Available

5 **Push SET button. (OK if display goes on.)**

- To change the selected indoor unit, go to the procedure ***2***).
- To change the item to be set up, go to the procedure ***3***).

6 **Pushing TEST returns the status to the usual stop status.**

<RBC-AWSU52-UL>

1 **Press [Menu] to open the "Menu"**

2 **Press and hold [Menu] and [ ] at the same time to open "Field setting menu"**

→Press and hold 4 seconds.

3 **In the "Field setting menu" screen, press [ ] and [ ] to select "DN setting", and then press [Set/Fix]**

4 **Press [ ] and [ ] to select "Indoor unit" or "Outdoor unit", and the press [Set/Fix]**

→ If "Indoor unit" was selected, the fans and lovvres of the indoor units operate.
When doing group connections:
→ The fans and louvers of the selected indoor units operate.

5 **Press [ ] to black highlight the item code (DN), and then press [ ] and [ ] to set the item code No. 31.**

6 **Press [ ] to black highlight the data, and then press [ ] and [ ] to set the data (At shipment : 0000).**

SET DATA	Handling of operation of air to air heat exchanger or ventilating fan
0000	Unavailable (At shipment)
0001	Available

7 **After finishing setting the data of the item code (DN), press [Set/Fix]**

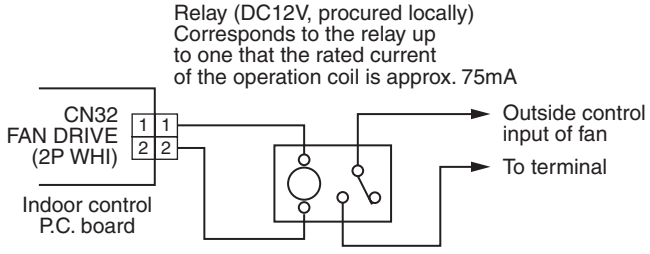
→"Continue?" is displayed.

8 **To set the data of other item codes (DN), press [Set/Fix] To not do other settings, press [Return]**

→ The changes are fixed, and the "Field setting menu" screen returns.
→ "⧖" appears while data is changing.

When doing group connections:
→ Press [Return] to open the unit selection screen.
In the unit selection screen, press [Return] to briefly display "⧖", and then return to the "Field setting menu" screen.

2. Wiring



Note) Determine the cable length between the indoor control P.C. board and the relay within 2m.

■ Auto-off feature control

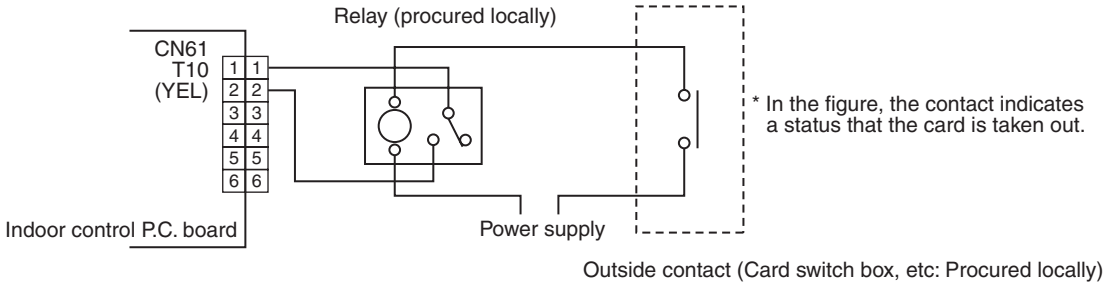
[Function]

- This function controls the indoor units individually. It is used when the start operation from outside is unnecessary but the stop operation is necessary.
- A card switch box or card lock helps protect customers from forgetting to turn off the indoor unit. (not including the following Card Input 3)
- It is connected with connector on the indoor control P.C. board, and switched with the Code No. and jumper wire setup for use.

[Setup method]

(1) Wiring

Connecting to the CN61 connector



NOTE) Determine the cable length between the indoor control P.C. board and the relay within 3m.

(2) Code (DN) setup

Set Code (DN) according to set indoor unit function DN code.

Connector	Jumper wire (J01)	Code No. (DN)	Set data	Function
CN61	Short-circuit (Factory default)	002E	0000 (Factory default)	"HA normal setup" (pulse)
			0001	"Card Input 1" setup
			0003	"Card Input 2" setup
			0005	"Card Input 5" setup
	Open-circuit (cut)		0000 (Factory default)	"HA normal setup" (Static)
			0001	"Card Input 3" setup
			0003	"Card Input 4" setup

[Control items]

Function	External contact terminal	
	Close (Status that card is inserted)	Open (Status that card is taken out)
Card Input 1	Manual prohibition release (Manual operation)	Manual prohibition (Operation stop)
Card Input 2	Manual prohibition release (Automatic operation)	Manual prohibition (Operation stop)
Card Input 3	Operation status continues (Do nothing)	Operation status continues and setting temperature changes (COOL/DRY: 84.2ºF(29ºC), HEAT: 64.4ºF(18ºC))
Card Input 4	Manual prohibition release (The status returns to operating condition before removing the card.)	Manual prohibition (Operation stop)
Card Input 5	1) To change a setting temperature by changing data at DN code No. 172 to 174. 2) The operation mode can be set by changing data (0000, 0001, 0002) at DN code No. 16b. 0000: operation mode is the same at the current mode. (factory setting default) 0001: operation mode returns to the previous mode when card was inserted. (in case of the previous mode is off operation, the operation mode is also off.) 0002: operation mode starts at the same previous mode when the card was inserted. (the operation mode is on operation even the previous mode is off operation.) See contents below for DN settings and detailed operations.	1) To change a setting temperature, fan speed and wind direction by changing data at DN code No. 16C to 171. 2) The operation mode can be set by changing data (0000, 0001) at DN code No. 16A. 0000: operation mode is the same at the current mode. (factory setting default) 0001: operation automatically starts. See contents below for DN settings and detailed operations.

* For the card switch box that does not involve contact operation described above, convert signals with a relay including a normally-closed contact.

[Card input setup.5 Code (DN)]

DN	Item	Description	At shipment
16C	Open mode Set temp. (Cool, Dry)	-0015 : 5ºF(-15ºC) to 0060 : 140ºF(60ºC)	0027 : 80.6ºF(27ºC)
16d	Open mode Set temp. (Heat)	-0015 : 5ºF(-15ºC) to 0060 : 140ºF(60ºC)	0020 : 68ºF(20ºC)
16E	Open mode Set temp. (Auto)	-0015 : 5ºF(-15ºC) to 0060 : 140ºF(60ºC)	0024 : 75.2ºF(24ºC)
16F	Open mode Fan speed (All operation mode)	0000 : No change 0001 : HH 0002 : H 0003 : L	0000 : No change
170	Open mode Wind direction (Cool, Dry, Fan)	0000 : No change 0001 : F1 0002 : F2 0003 : F3	0000 : No change
171	Open mode Wind direction (Heat)	0000 : No change 0001 : F1 0002 : F2 0003 : F3 0004 : F4 0005 : F5	0000 : No change
16A	Open mode Operation	0000 : No change 0001 : Run operation	0000 : No change
172	Close mode Set temp. (Cool, Dry)	-0015 : 5ºF(-15ºC) to 0060 : 140ºF(60ºC)	0024 : 75.2ºF(24ºC)
173	Close mode Set temp. (Heat)	-0015 : 5ºF(-15ºC) to 0060 : 140ºF(60ºC)	0024 : 75.2ºF(24ºC)
174	Close mode Set temp. (Heat)	-0015 : 5ºF(-15ºC) to 0060 : 140ºF(60ºC)	0024 : 75.2ºF(24ºC)
16b	Close mode Operation	0000 : No change 0001 : Card ON mode operation 0002 : Run operation (Card ON mode setting)	0000 : No change

[The example of Card Input 5 setting]

Case.	Code No. (DN) setting									External contact terminal	
	[16A] data	[16b] data	[16C] data	[16d] data	[16F] data	[170] data	[171] data	[172] data	[173] data	Close (Status that card is inserted)	Open (Status that card is taken n out)
(1)	0000	0000	0027	0020	0000	0000	0000	0024	0024	• The operation mode continues running at the same as the current mode. • The setting temperature of cooling/dry and heating mode is changed to 75.2ºF(24ºC) and 75.2ºF(24ºC) respectively due to change in code No. 172, 173.	• The operation mode continues running at the same as the current mode. • The setting temperature of cooling/dry and heating mode is changed to 80.6ºF(27ºC) and 68ºF(20ºC) respectively due to change in code No. 16C, 16d.
(2)*	0000	0001	0027	0020	0003	0001	0001	0024	0024	• The operation mode is running at the same mode as the last time when the card was inserted due to change in code no. 16b. * The operation mode will be off if the mode at the last time was in off operation. Also, the fan speed will the same as the last time when the card is inserted. • The setting temperature of cooling/dry and heating mode is changed to 75.2ºF(24ºC) and 75.2ºF(24ºC) respectively due to change in code No. 172, 173.	• The operation mode continues running at the same as the current mode. • The setting temperature of cooling/dry and heating mode is changed to 80.6ºF(27ºC) and 68ºF(20ºC) respectively due to change in code no. 172, 173. • The fan speed for all operation modes is changed due to change in code no.16F. • The wind direction of Cooling/dry/fan and heating mode are changed due to change in code No. 170, 171 respectively.
(3)*	0000	0002	0027	0020	0003	0001	0001	0024	0024	• The operation mode is running at the same mode as the last time when the card was inserted. Also, the operation mode will be on even the mode was in off operation at the last time due to change in code no. 16B. * The fan speed will the same as the last time when the card is inserted. • The setting temperature of cooling/dry and heating mode is changed to 75.2ºF(24ºC) and 75.2ºF(24ºC) respectively due to change in code No. 172, 173.	Same operation as case (2)
(4)	0001	0000	0027	0020	0003	0001	0001	0024	0024	• The operation mode continues running at the same as the current mode. • The setting temperature of cooling/dry and heating mode is changed to 75.2ºF(24ºC) and 75.2ºF(24ºC) respectively due to change in code No. 172, 173.	• Due to change in code no. 16A, the operation mode will be as below. • When the operation is ON, the operation mode will continue running at the same as the current mode. • When the operation is OFF, the air conditioner will turn on automatically. • The setting temperature of cooling/dry and heating mode is changed to 80.6ºF(27ºC) and 68ºF(20ºC) respectively due to change in code No. 172, 173. • The fan speed for all operation modes is changed due to change in code no.16F. • The wind direction of Cooling/dry/fan and heating mode are changed due to change in code No. 170, 171 respectively.

* The history operation mode is only recorded when the card is inserted even if the operation mode is changed when the card is taken out, there is no related to the history operation mode.

■ Notice code signal

Notice code is a function dedicated to TU2C-Link communication.
See service manual for u series outdoor unit for details of Notice code.

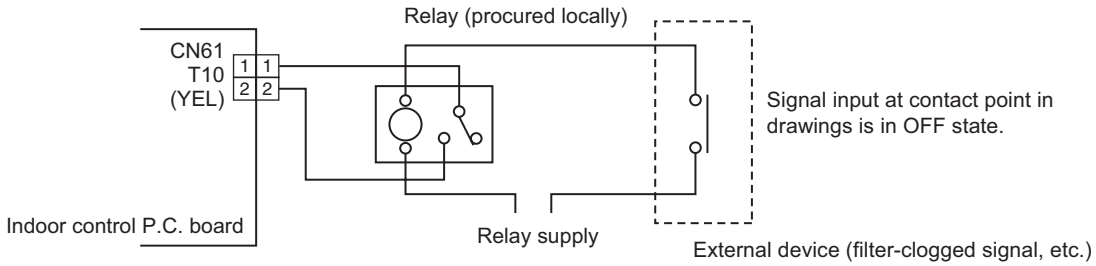
[Function]

- Notice Code is issued if there is signal input to connector of outdoor unit P.C. board. This can be used in cases such as when confirming state of outdoor unit (filter clogging, etc.) by air conditioner system.
- Used by switching functions with settings of Code No. (DN Code).
- Notice Code is continuously issued while input signal is ON.

[Setup method]

(1) Wiring

Connecting to the CN61 connector



Note) Determine the cable length between the indoor control P.C. board and the relay within 3m.

(2) Code (DN) setup and Notice code
Set Code (DN) according to set indoor unit function DN code.

Connector	Code No. (DN)	Set data	Notice code
CN61	002E	0004	201

* Setting of Code No. (DN Code) is necessary to display Notice code mark at remote controller.
Set data corresponding to Notice code to be used to one of Code No. 180 to 189, in accordance with following table.
In case where data other than 0000 is already set, set to other Code No. (DN Code).

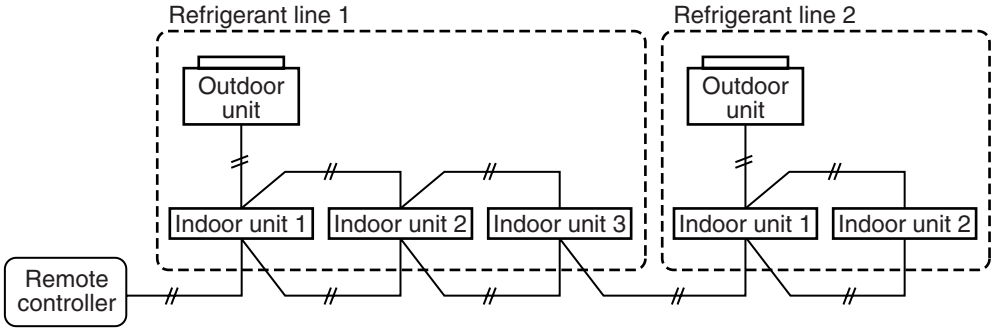
Code No. (DN)	Set data	Notice code
0180 to 0189	0000	OFF (Factory default)
	0129	201
	0130	202

* It may take up to ten minutes to be displayed on remote controller after Notice code is issued.

■ Manual address setting using the remote controller

Procedure when setting indoor units' addresses first under the condition that indoor wiring has been completed and outdoor wiring has not been started (manual setting using the remote controller)

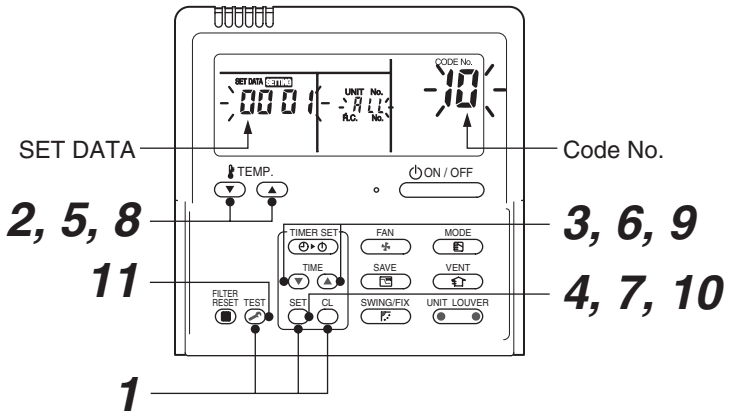
▼ Wiring example of 2 refrigerant lines



Line (system) address	1	1	1		2	2
Indoor unit address	1	2	3		1	2
Group address	1 Header unit	2 Follower unit	2 Follower unit		2 Follower unit	2 Follower unit

In the example above, disconnect the remote controller connections between the indoor units and connect a wired remote controller to the target unit directly before address setting.

<RBC-AMT*>**



Pair the indoor unit to set and the remote controller one-to-one.

Turn on the power.

1 **Push and hold the SET , CL and TEST buttons at the same time for more than 4 seconds.**
LCD starts flashing.

<Line (system) address>

2 **Push the TEMP. ▼ / ▲ buttons repeatedly to set the CODE No. to 12 .**

3 **Push the TIME ▼ / ▲ buttons repeatedly to set a system address.**
(Match the address with the address on the interface P.C. board of the header outdoor unit in the same refrigerant line.)

4 **Push SET button.**
(It is OK if the display turns on.)

<Indoor unit address>

5 **Push the TEMP. ▽ / △ buttons repeatedly to set the CODE No. to 13 .**

6 **Push the TIME ▼ / ▲ buttons repeatedly to set an indoor unit address.**

7 **Push the SET button.**
(It is OK if the display turns on.)

<Group address>

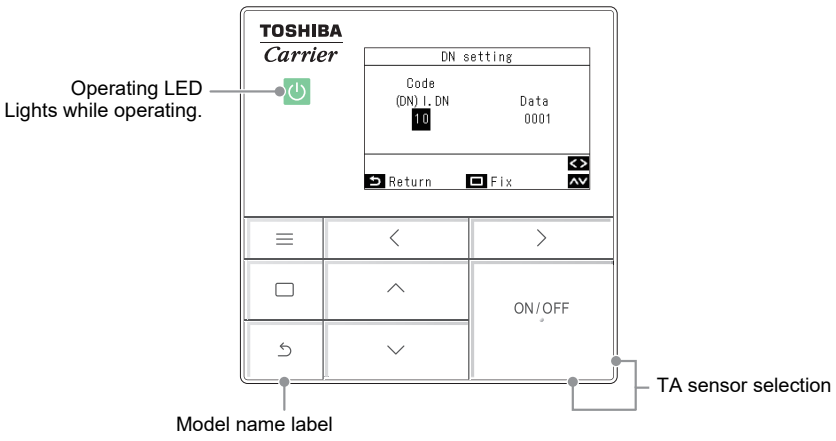
8 **Push the TEMP. ▽ / △ buttons repeatedly to set the CODE No. to 14 .**

9 **Push the TIME ▼ / ▲ buttons repeatedly to set a group address. If the indoor unit is individual, set the address to 0000 ; header unit, 0001 ; follower unit, 0002 .**
Individual : 0000
Header unit : 0001
Follower unit : 0002
} In case of group control

10 **Push the SET button.**
(It is OK if the display turns on.)

11 **Push the TEST button.**
The address setting is complete.
(SETTING flashes. You can control the unit after SETTING has disappeared.)

<RBC-AWSU52-UL>



Pair the indoor unit to set and the remote controller one-to-one.
Turn on the power.

1 **Press [☰ Menu] to open the "Menu"**

2 **Press and hold [☰ Menu] and [▽] at the same time to open "Field setting menu"**

→Press and hold 4 seconds.

3 **In the "Field setting menu" screen, press [△] and [▽] to select "DN setting", and then press [▭ Set/Fix]**

4 **Press [△] and [▽] to select "Indoor unit" or "Outdoor unit", and the press [▭ Set/Fix]**

→If "Indoor unit" was selected, the fans and lovvres of the indoor units operate.
When doing group connections:
→The fans and louvres of the selected indoor units operate.

<Line (system) address>

5 **Press [◁] to black highlight the item code (DN), and then press [△] and [▽] to set the item code No. to 12.**

6 **Press [▷] to black highlight the data, and then press [△] and [▽] to set the data system address.**

(Match the address with the address on the interface P.C.board of the header outdoor unit in the same refrigerant line.)

7 **After finishing setting the data of the item code (DN), press [▭ Set/Fix]**

→"Continue?" is displayed.

<Indoor unit address>

8 **Press [‹] to black highlight the item code (DN), and then press [^] and [v] to set the item code No. to 13.**

9 **Press [›] to black highlight the data, and then press [^] and [v] to set the data indoor unit address.**

10 **After finishing setting the data of the item code (DN), press [▭ Set/Fix]**

→"Continue?" is displayed.

<Group address>

11 **Press [‹] to black highlight the item code (DN), and then press [^] and [v] to set the item code No. to 14.**

12 **Press [›] to black highlight the data, and then press [^] and [v] to set the data indoor unit address.**
a group address. If the indoor unit is individual, set the address to 0000; header unit, 0001; follower unit, 0002.

Individual : 0000
Header unit : 0001
Follower unit : 0002
} In case of group control

13 **After finishing setting the data of the item code (DN), press [▭ Set/Fix]**

→"Continue?" is displayed.

14 **To set the data of other item codes (DN), press [▭ Set/Fix] To not do other settings, press [⮌ Return]**

→ The changes are fixed, and the "Field setting menu" screen returns.
→ "⧖" appears while data is changing.

When doing group connections:
→ Press [⮌ Return] to open the unit selection screen.
In the unit selection screen, press [⮌ Return] to briefly display "⧖", and then return to the "Field setting menu" screen.

NOTE

<In the case of combining with outdoor units of Super Modular Multi System u series (SMMS-u)>

- Turn ON DIP switch 1 of SW100 on the header outdoor unit interface P.C. board the lowest system address number.
- After finishing all the settings above, set the address of the central control devices. (For the setting of the central control address, refer to the installation manual of the central control devices.)

<In the case of combining with outdoor units other than Super Modular Multi System u series (SMMS-u)>

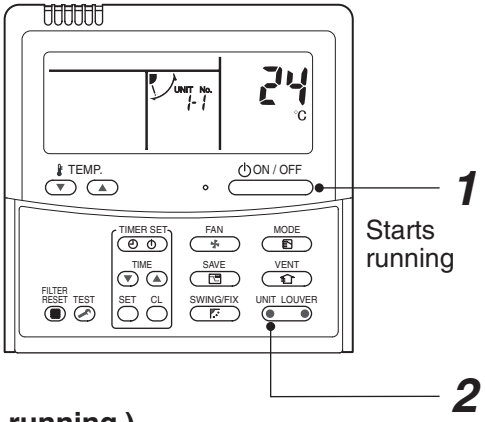
- Set a system address for the header outdoor unit of each line with SW13 and 14 of their interface P.C. boards.
- Turn off dip switch 2 of SW30 on the interface P.C. boards of all the header outdoor units connected to the same central control, except the unit that has the lowest address. (For unifying the termination of the wiring for the central control of indoor and outdoor units)
- Connect the relay connectors between the [U1, U2] and [U3, U4] terminals on the header outdoor unit of each refrigerate line.
- After finishing all the settings above, set the address of the central control devices. (For the setting of the central control address, refer to the installation manuals of the central control devices.)

◆To find an indoor unit's position from its address

Procedure to know the position of indoor unit body by address while indoor unit No. is known.

- Confirm each indoor unit address while indoor unit is stopped. (Be sure to stop air conditioner.)

<RBC-AMT✱✱✱>



(Execute it while the units are running.)

1 **Push the ON / OFF button if the units stop.**

2 **Push the UNIT LOUVER button (left side of the button).**

A unit numbers 1-1 is indicated on the LCD (it will disappear after a few seconds). The indicated number shows the system address and indoor unit address of the unit.
When 2 or more indoor units are connected to the remote controller (group-controlled units), a number of other connected units appears each time you push the UNIT LOUVER button (left side of the button).

<RBC-AWSU52-UL>

[Procedure]
The position of indoor unit body by address

1 **Push the [☰ MENU] button to display the menu screen.**

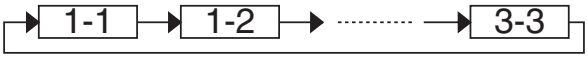
2 **Push and hold the [☰ MENU] button and the [∨] button at the same time to display the "Field setting menu".**

→ Push and hold the buttons for more than 4 seconds.

3 **Push the [∧] / [∨] button to select "7. DN setting" on the "Field setting menu" screen, then push the "[▭] Set"**

4 **Push the unit to confirm the address of indoor unit.**

→ The selected unit changes as follows each time the button is pushed:

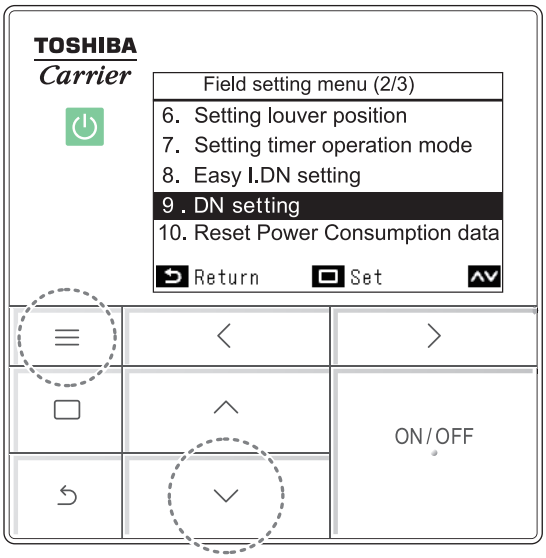


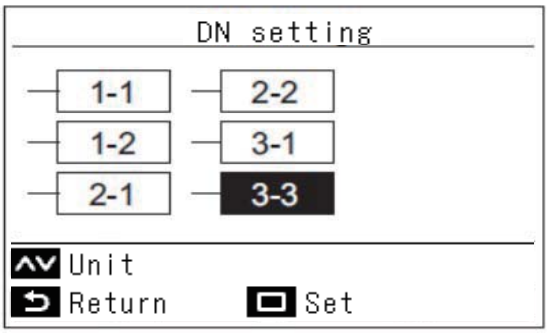
5 **Push the [▭ Set/Fix]**

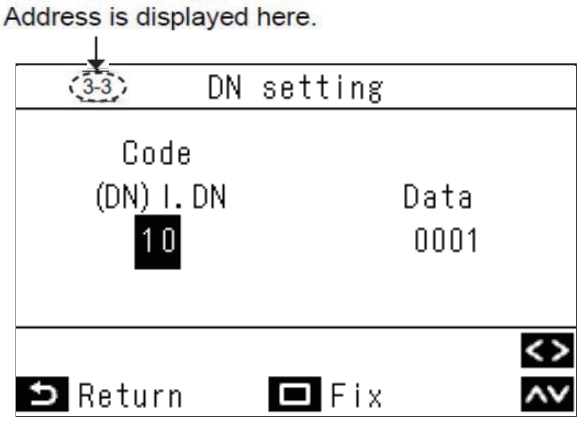
→ The setting display for the selected unit appears.

→ When the group control is used, the fan and louver of the selected indoor unit operate.

6 **Push the [☰ MENU] button to set the other Code(DN) and Data. After "Continue?" is displayed on the screen, push the [⮌ Return] to finish the setting operation. " ⧖ Setting" appears on the screen for a while, then the screen returns to the "Field setting menu" screen.**







◆ Check code clearing function

How to clear the check code using the wired remote controller

<RBC-AMT∗∗∗>

▼ Clearing a check code of the outdoor unit

Clear the currently detected outdoor unit for each refrigerant line to which the indoor unit controlled by the remote controller is connected. (The indoor unit check code is not cleared.)
Use the service monitoring function of the remote controller.

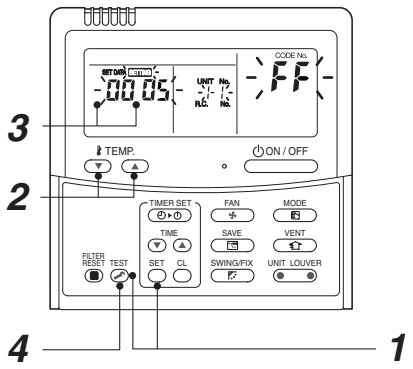
1 **Push and hold the CL , and TEST for 4 seconds or longer to enter the service monitoring mode.**

2 **Push the TEMP. button to set CODE No. to "FF".**

3 **The display in A of the following figure counts down as follows at 5-second intervals: "0005" → "0004" → "0003" → "0002" → "0001" → "0000".**

The check code is cleared when "0000" appears.
However, the display counts down from "0005" again.

4 **Push the TEST to return the display to normal.**

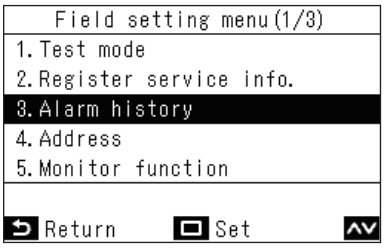


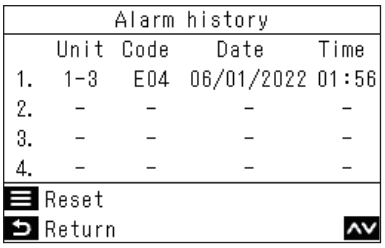
▼ Clearing a check code of the indoor unit

Push the ON / OFF button on the remote controller.
(Only the check code of the indoor unit controlled by the remote controller will be cleared.)

<RBC-AW5U52-UL>

Displays the last 10 check codes, and at which unit and when they occurred.





1 **In the "Field setting menu" screen, press [ ] and [ ] to select "Alarm history", and then press [Set/Fix]**

NOTE

- The check code history data shows a history of 10 occurrences. If the occurrences exceed 10, the oldest data is deleted.
- If the same check code occurs repeatedly, the date of the first occurrence is displayed.

Deleting check code history

1 **Press [Menu] while the "Alarm history" screen is displayed**
→ "Reset all alarm data." is displayed.

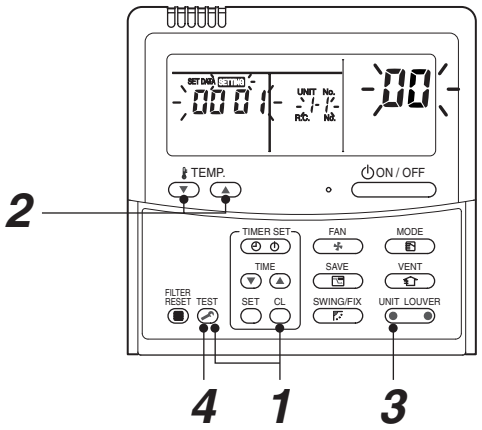
2 **Press [Set/Fix]**

REQUIREMENT

If you are using 2 remote controllers, delete the history at each remote controller.

▼ Monitoring function of wired remote controller

<RBC-AMT∗∗∗>



Content

Enter the service monitoring mode using the remote controller to check the sensor temperature or operation status of the remote controller, indoor unit, and outdoor unit.

1 **Push and hold the TEST , and CL for 4 seconds or longer to enter the service monitoring mode.**
The service monitor lights up. The CODE No. 00 appears at first.

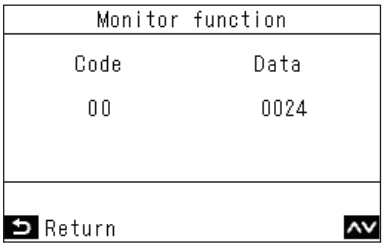
2 **Push the TEMP. button to change to CODE No. of the item to monitor. Refer to the next page for CODE No.**

3 **Push the left part of the UNIT LOUVER button (left side of the button) to change to the item to monitor. Monitor the sensor temperature or operation status of the indoor unit and outdoor unit in the refrigerant line.**

4 **Push the TEST button to return the display to normal.**

<RBC-AWSU52-UL>

Displays the codes and data indicating the operating condition and temperature of each sensor on the indoor units, outdoor units, and remote controllers.



1 In the “Field setting menu” screen, press [∧] and [∨] to select “Monitor function”, and then press [▭ Set/Fix]

→ Press [∧] and [∨] to change the item code and then check the data.

→ In a group connection, after a selection in the unit selection screen, move to the “Monitor function” screen.

2 Press [⮌ Return]

→ Return to the “Field setting menu” screen.

◆ Indoor service monitor list

	Code No.	Data name	Display format	Unit	Remote controller display example
Indoor unit data *	00	Room temperature (Use to control)	×1	°F(°C)	
	01	Room temperature (Remote controller)	×1	°F(°C)	
	02	Indoor suction air temperature (TA)	×1	°F(°C)	
	03	Indoor coil temperature (TCJ)	×1	°F(°C)	
	04	Indoor coil temperature (TC2)	×1	°F(°C)	
	05	Indoor coil temperature (TC1)	×1	°F(°C)	
	06	Indoor discharge air temperature (TF) **	×1	°F(°C)	
	07	Indoor fan motor number of revolutions**	×1	rpm	[0600] = 600rpm
	08	Indoor PMV opening	×1/10	pls	[0150]=1500pls
	F3	Filter sign time	×1	h	[2500] = 2500h
	F9	Suction temperature of air to air heat exchanger (TSA) **	×1	°F(°C)	[0024] = 75.2°F(24°C)
	FA	Outside air temperature (TOA) **	×1	°F(°C)	

* When the units are connected to a group, data of the header indoor unit only can be displayed.
** There is also a model which cannot be displayed.

• Refer to the service manual of an outdoor unit for "outdoor service monitor list".

10. TROUBLESHOOTING

10-1. Overview

(1) Before engaging in troubleshooting

(a) Applicable models
All Super Modular Multi System (SMMS-∗) models.
(Indoor units: MM∗-UP∗∗∗, Outdoor units: MMY-M∗P∗∗∗)

(b) Tools and measuring devices required
- Screwdrivers (Philips, flat head), spanners, long-nose pliers, nipper, pin to push reset switch, etc.
- Multimeter, thermometer, pressure gauge, etc.

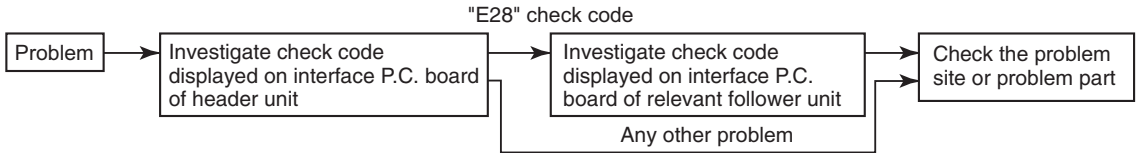
(c) Things to check prior to troubleshooting (behaviors listed below are normal)

NO.	Behavior	Possible cause
1	A compressor would not start	• The air conditioner is being controlled by the 3-minute protective function. • It is in standby status though the room temperature has reached the setup temperature. • It is being operated in timer mode or fan mode. • It is being in initial communication.
2	An indoor fan would not start	• The air conditioner is being controlled by the cool air discharge preventive function in "heating"?
3	An outdoor fan would not start or would change speed for no reason	• The air conditioner is being operated in "cooling" under the low outside air temperature. • It is being operated in defrost operation.
4	An indoor fan would not stop	• The air conditioner is being controlled by function of residual heat elimination being performed as part of the air conditioner shutdown process after heating operation.
5	The air conditioner would not respond to a start/stop command from a remote controller	• The air conditioner is being operated under external or remote controller.

⚠ CAUTION

The cooling performance may be declining considerably when total operating capacity of cooling indoor units is less than 4 HP while ambient temperature is below.

(2) Troubleshooting procedure
When a problem occurs, proceed with troubleshooting in accordance with the procedure shown below.



NOTE

Rather than a product trouble (see the List of Check Codes below), the problem could have been caused by a microprocessor malfunction attributable to a poor quality of the power source or an external noise. Check for possible noise sources, and shield the remote controller wiring and signal wires as necessary.

10-2. Troubleshooting method

The remote controllers (main remote controller and central control device) and the interface P.C. board of an outdoor unit are provided with an a 7-segment display (outdoor interface P.C. board) to display operational status. Using this self-diagnosis feature, the trouble site / trouble part may be identified in the event of a trouble by following the method described below.

The list below summarizes check codes detected by various devices. Analyze the check code according to where it is displayed and work out the nature of the trouble in consultation with the list.

- When investigating a trouble on the basis of a display provided on the indoor remote controller or central control device - See the “central control device or main remote controller display” section of the list.
- When investigating a trouble on the basis of a display provided on an outdoor unit - See the “Outdoor 7-segment display” section of the list.
- When investigating a trouble on the basis of a wireless remote controller-controlled indoor unit - See the “Indicator light block” section of the list.

List of check codes (indoor unit)

(Check code detected by indoor unit)

IPDU: Compressor / Fan inverter P.C. board
○: Lighting, ◎: Flashing, ●: Goes off
ALT.: Flashing is alternately when there are two flashing LED
SIM: Simultaneous flashing when there are two flashing LED

Check code			Display of receiving unit				Typical trouble on site	Description of check code
Remote controller display	Outdoor 7-segment display		Indicator light block					
		Sub-code	Operation ⏻	Timer ◴	Ready ✳	Flash		
E03	–	–	◎	●	●		Indoor-remote controller periodic communication check code	Communication from remote controller or network adaptor has been lost (so has central control communication).
E04	–	–	●	●	◎		Indoor-outdoor periodic communication check code	Signals are not being received from outdoor unit.
E08	E08	Duplicated indoor address	◎	●	●		Duplicated indoor address	Indoor unit detects address identical to its own.
E10	–	–	◎	●	●		Communication trouble between indoor unit MCU	Communication trouble between main MCU and the motor microcomputer MCU
E11	–	–	◎	●	●		Communication check code between Application control kit and indoor unit	Communication check code between Application control kit and indoor unit P.C. board
E18	–	–	◎	●	●		Check cod in periodic communication between indoor header and follower unit	Periodic communication between indoor header and follower units cannot be maintained.
F01	–	–	◎	◎	●	ALT	Indoor heat exchanger temperature sensor (TCJ) check code	Heat exchanger temperature sensor (TCJ) has been open / short-circuit.
F02	–	–	◎	◎	●	ALT	Indoor heat exchanger temperature sensor (TC2) check code	Heat exchanger temperature sensor (TC2) has been open / short-circuit.
F03	–	–	◎	◎	●	ALT	Indoor heat exchanger temperature sensor (TC1) check code	Heat exchanger temperature sensor (TC1) has been open / short-circuit.
F10	–	–	◎	◎	●	ALT	Ambient temperature sensor (TA) check code	Ambient temperature sensor (TA) has been open / short-circuit.
F11	–	–	◎	◎	●	ALT	Discharge temperature sensor (TF) check code	Discharge temperature sensor (TF) has been open / short-circuit.
F29	–	–	◎	◎	●	SIM	P.C. board or other indoor check code	Indoor EEPROM is abnormal (some other trouble may be detected).
F30	–	–	◎	◎	○	ALT	Occupancy sensor trouble	Occupancy sensor trouble has been detected.
L03	–	–	◎	●	◎	SIM	Duplicated indoor group header unit	There is more than one header unit in group.
L07	–	–	◎	●	◎	SIM	Connection of group control cable to a single indoor unit	There is at least one a single indoor unit to which group control cable is connected.
L08	L08	–	◎	●	◎	SIM	Indoor group address not set	Address setting has not been performed for one or more indoor units (also detected at outdoor unit end).
L09	–	–	◎	●	◎	SIM	Indoor capacity not set	Capacity setting has not been performed for indoor unit.
L20	–	–	◎	○	◎	SIM	Duplicated central control address	There is duplication in central control address setting.
L30	L30	Detected indoor unit No.	◎	○	◎	SIM	Indoor external check code input (interlock)	Unit shutdown has been caused by external check code input (CN80).
P01	–	–	●	◎	◎	ALT	Indoor AC fan check code	Indoor AC fan check code is detected (activation of fan motor thermal relay).
P10	P10	Detected indoor unit No.	●	◎	◎	ALT	Indoor overflow check code	Float switch has been activated.
P12	–	–	●	◎	◎	ALT	Indoor DC fan check code	• Indoor DC fan check code (e.g. overcurrent or lock-up) is detected.
P31	–	–	◎	●	◎	ALT	Other indoor unit check code	Follower unit cannot be operated due to header unit alarm (E03 /L03 / L07 / L08).

(Check code detected by remote controller)

Check code			Display of receiving unit				Typical trouble site	Description of trouble
Remote control	Outdoor 7-segment display		Indicator light block					
		Sub-code	Operation	Timer	Ready	Flash		
E01	–	–	◎	●	●		No master remote control, failure remote control communication (reception)	Signals cannot be received from indoor unit; master remote control has not been set (including two remote control).
E02	–	–	◎	●	●		Failure remote control communication (transmission)	Signals cannot be transmitted to indoor unit.
E09	–	–	◎	●	●		Duplicated master remote control	Both remote controls have been set as master remote control in two remote control (alarm and shutdown for header unit and continued operation for follower unit)

(Check code detected by central control device)

Check code			Display of receiving unit				Typical trouble site	Description of trouble
Central control	Outdoor 7-segment display		Indicator light block					
		Sub-code	Operation	Timer	Ready	Flash		
C05	–	–	No indication (when main remote control also in use)				Failure central control communication (transmission)	Central control device is unable to transmit signal due to duplication of central control device
C06	–	–					Failure central control communication (reception)	Central control device is unable to receive signal.
C12	–	–	–				Bracket alarm for general-purpose device control interface	Device connected to general-purpose device control interface is trouble.
P30 (L20)	–	–	(L20 is displayed.)				Communication Link	• Duplication addresses of indoor units in central control device • With the combination of air conditioning system, the indoor unit may detect the check code of L20

Note: The same trouble, e.g. a communication trouble, may result in the display of different check codes depending on the device that detects it. Moreover, check codes detected by the main remote controller / central control device do not necessarily have a direct impact on air conditioner operation.

Flow selector unit (FS unit) Relation

(Check code detected by indoor unit)

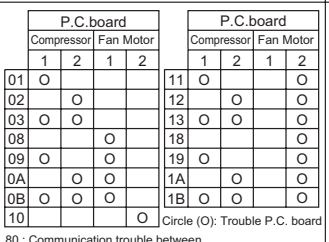
Check code			Display of receiving unit				Typical trouble site	Description of trouble
Main remote control	Outdoor 7-segment display		Indicator light block					
		Sub-code	Operation	Timer	Ready	Flash		
E17	–	–	◎	●	●		Communication trouble between indoor unit (s) and FS unit (s)	There is no communication from FS unit(s)
J03	–	–	●	◎	◎		Duplicated FS units	More than one FS units have been set up in one refrigerant line.
J10	–	–	●	◎	◎		FS unit overflow trouble	FS unit has been shutdown in one refrigerant line due to detection of overflow
J11	–	–	●	◎	◎		FS unit temperature sensor (TCS) trouble	FS unit temperature sensor (TCS) has been open/short-circuited.
L12	L12	–	◎	○	◎		FS unit(s) system trouble	FS unit(s) outside the application setting

List of Check Codes (Outdoor Unit)

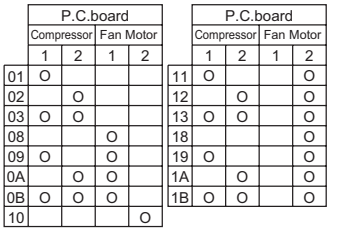
(Check code detected by outdoor interface - typical examples)

If "HELLO" is displayed on the oudoor 7-segment for 1 minute or more, turn off the power supply once and then turn on the power supply again after passage of 30 seconds or more. When the same symptom appears, it is considered there is a possibility of I/F board trouble.

◯ : Lighting, ◎ : Flashing, ● : Goes off
ALT.: Flashing is alternately when there are two flashing LED
SIM: Simultaneous flashing when there are two flashing LED

Check code			Display of receiving unit				Typical problem site	Description of problem
Outdoor 7-segment display		Central control or main remote controller display	Indicator light block					
	Sub-code		Operation ⏻	Timer 🕘	Ready	Flash		
E06	Number of indoor units from which signal is received normally	E06	●	●	◎		Signal lack of indoor unit	Indoor unit initially communicating normally fails to return signal (reduction in number of indoor units connected).
E07	–	(E04)	●	●	◎		Indoor-outdoor communication circuit trouble	Signal cannot be transmitted to indoor units (→ indoor units left without communication from outdoor unit).
E08	Duplicated indoor address	(E08)	◎	●	●		Duplicated indoor address	More than one indoor unit are assigned same address (also detected at indoor unit end).
E12	01: Indoor-outdoor communication 02: Outdoor-outdoor communication	E12	◎	●	●		Automatic address starting trouble	• Indoor automatic address setting is started while automatic address setting for equipment in other refrigerant line is in progress. • Outdoor automatic address setting is started while automatic address setting for indoor units is in progress.
E15	–	E15	●	●	◎		Indoor unit not found during automatic address setting	Indoor unit fails to communicate while automatic address setting for indoor units is in progress.
E16	00: Capacity over 01: Number of units connected	E16	●	●	◎		Too many indoor units connected/capacity over	Combined capacity of indoor units is too large. The maximum combined of indoor units shown in the specification table.
E19	00: No header unit 02: Two or more header units	E19	●	●	◎		Trouble in number of outdoor header units	There is no or more than one outdoor header unit in one refrigerant line.
E20	01: Connection of outdoor unit from other refrigerant line 02: Connection of indoor unit from other refrigerant line	E20	●	●	◎		Connection to other refrigerant line found during automatic address setting	Indoor unit from other refrigerant line is detected while indoor automatic address setting is in progress.
E23	–	E23	●	●	◎		Outdoor-outdoor communication transmission trouble	Signal cannot be transmitted to other outdoor units.
E25	–	E25	●	●	◎		Duplicated follower outdoor address	There is duplication in outdoor addresses set manually.
E26	Address of outdoor unit from which signal is not received normally	E26	●	●	◎		Signal lack of outdoor unit	Follower outdoor unit initially communicating normally fails to do so (reduction in number of follower outdoor units connected).
E28	Detected outdoor unit No.	E28	●	●	◎		Outdoor follower unit trouble	Outdoor header unit detects trouble relating to follower outdoor unit (detail displayed on follower outdoor unit).
E31	 80 : Communication trouble between MCU and Sub MCU	E31	●	●	◎		P.C. board communication trouble Sub MCU communication trouble	There is no communication between P.C. boards in inverter box.
F04	–	F04	◎	◎	○	ALT	Outdoor discharge temperature sensor (TD1) trouble	Outdoor discharge temperature sensor (TD1) has been open/short-circuited.
F05	–	F05	◎	◎	○	ALT	Outdoor discharge temperature sensor (TD2) trouble	Outdoor discharge temperature sensor (TD2) has been open/short-circuited.
F06	01: TE1 sensor 02: TE2 sensor 03: TE3 sensor	F06	◎	◎	○	ALT	Outdoor heat exchanger liquid side temperature sensor (TE1, TE2, TE3) trouble	Outdoor heat exchanger liquid side temperature sensors (TE1, TE2, TE3) have been open/short-circuited.
F07	01: TL1 sensor 02: TL2 sensor 03: TL3 sensor	F07	◎	◎	○	ALT	Outdoor liquid temperature sensor (TL1,TL2,TL3) trouble	Outdoor liquid temperature sensor (TL1,TL2,TL3) has been open/short-circuited.
F08	–	F08	◎	◎	○	ALT	Outdoor outside air temperature sensor (TO) trouble	Outdoor air temperature sensor (TO) has been open/short-circuited.
F09	01: TG1 sensor 02: TG2 sensor 03: TG3 sensor	F09	◎	◎	○	ALT	Outdoor heat exchanger gas side temperature sensor (TG1, TG2, TG3) trouble	Outdoor heat exchanger gas side temperature sensors (TG1, TG2, TG3) have been open/short-circuited.

Check code			Display of receiving unit				Typical problem site	Description of problem
Outdoor 7-segment display		Central control or main remote controller display	Indicator light block					
	Sub-code		Operation	Timer	Ready	Flash		
F12	01: TS1 sensor 03: TS3 sensor	F12	◎	◎	○	ALT	Outdoor suction temperature sensor (TS1,TS3) trouble	Outdoor suction temperature sensor (TS1,TS3) has been open/short-circuited.
F15	–	F15	◎	◎	○	ALT	Outdoor temperature sensor (TE1,TL1) wiring trouble	Wiring trouble in outdoor temperature sensors (TE1,TL1) has been detected.
F16	–	F16	◎	◎	○	ALT	Outdoor pressure sensor (Pd, Ps) wiring trouble	Wiring trouble in outdoor pressure sensors (Pd, Ps) has been detected.
F23	–	F23	◎	◎	○	ALT	Low pressure sensor (Ps) trouble	Output voltage of low pressure sensor (Ps) is zero.
F24	–	F24	◎	◎	○	ALT	High pressure sensor (Pd) trouble	Output voltage of high pressure sensor (Pd) is zero or provides abnormal readings when compressors have been turned off.
F31	–	F31	◎	◎	○	SIM	Outdoor EEPROM trouble	Outdoor EEPROM is failure (alarm and shutdown for header unit and continued operation for follower unit)
H05	–	H05	●	◎	●		Outdoor discharge temperature sensor (TD1) wiring trouble	Wiring/installation trouble or detachment of outdoor discharge temperature sensor (TD1) has been detected.
H06	–	H06	●	◎	●		Activation of low-pressure protection	Low pressure (Ps) sensor detects abnormally low operating pressure.
H07	–	H07	●	◎	●		Low oil level protection	Temperature sensor for oil level detection (TK1,TK2) detects abnormally low oil level.
H08	01: TK1 sensor trouble 02: TK2 sensor trouble	H08	●	◎	●		Trouble in temperature sensor for oil level detection (TK1,TK2)	Temperature sensor for oil level detection (TK1,TK2) has been open/short-circuited.
H15	–	H15	●	◎	●		Outdoor discharge temperature sensor (TD2) wiring trouble	Wiring/installation trouble or detachment of outdoor discharge temperature sensor (TD2) has been detected.
H16	01: TK1 oil circuit trouble 02: TK2 oil circuit trouble	H16	●	◎	●		Oil level detection circuit trouble	No temperature change is detected by temperature sensor for oil level detection (TK1,TK2) despite compressor having been started.
L04	–	L04	◎	○	◎	SIM	Duplicated outdoor refrigerant line address	Identical refrigerant line address has been assigned to outdoor units belonging to different refrigerant piping systems.
L06	Number of priority indoor units (check code L05 or L06 depending on individual unit)	L05	◎	●	◎	SIM	Duplicated priority indoor unit (as displayed on priority indoor unit)	More than one indoor unit have been set up as priority indoor unit.
		L06	◎	●	◎	SIM	Duplicated priority indoor unit (as displayed on indoor unit other than priority indoor unit)	More than one indoor unit have been set up as priority indoor unit.
L08	–	(L08)	◎	●	◎	SIM	Indoor group address not set	Address setting have not been performed for one or more indoor units (also detected at indoor end).
L10	–	L10	◎	○	◎	SIM	Outdoor capacity not set	Outdoor unit capacity has not been set (after P.C. board replacement).
L17	–	L17	◎	○	◎	SIM	Outdoor model incompatibility trouble	Old model outdoor unit has been connected.
L23	–	L23	◎	○	◎	SIM	SW setting mistake	
L28	–	L28	◎	○	◎	SIM	Too many outdoor units connected	More than five outdoor units have been connected.

Check code			Display of receiving unit				Typical problem site	Description of problem
Outdoor 7-segment display		Central control or main remote controller display	Indicator light block					
	Sub-code		Operation	Timer	Ready	Flash		
L29		L29	◎	○	◎	SIM	Trouble in number of P.C. boards	There are insufficient number of P.C. board in inverter box.
L30	Detected indoor unit No.	(L30)	◎	○	◎	SIM	Indoor external trouble input (interlock)	Indoor unit has been shut down for external trouble input in one refrigerant line (detected by indoor unit).
P03	–	P03	◎	●	◎	ALT	Outdoor discharge (TD1) temperature trouble	Outdoor discharge temperature sensor (TD1) has detected abnormally high temperature.
P05	00: Power detection trouble 01: Open phase 02: Power supply miswiring	P05	◎	●	◎	ALT	Power detection trouble /Open phase detection /Power supply miswiring detection	Open phase is detected when power is turned on. Inverter DC voltage is too high (overvoltage) or too low (undervoltage).
P07	1 : Compressor 1 heat sink trouble 2 : Compressor 2 heat sink trouble	P07	◎	●	◎	ALT	Heat sink overheating trouble	Temperature sensor built into IPM (TH) detects overheating.
	04: Heat sink dew condensation						Heat sink dew condensation trouble	Outdoor liquid temperature sensor (TL2) has detected abnormally low temperature.
P10	Indoor unit No. detected	(P10)	●	◎	◎	ALT	Indoor unit overflow	Indoor unit has been shutdown in one refrigerant line due to detection of overflow (detected by indoor unit).
P11	–	P11	●	◎	◎	ALT	Outdoor heat exchanger freeze trouble	Remaining frost on outdoor heat exchanger has been detected repeatedly.
P13	–	P13	●	◎	◎	ALT	Outdoor liquid backflow detection trouble	State of refrigerant cycle circuit indicates liquid backflow operation.
P15	01: TS condition 02: TD condition	P15	◎	●	◎	ALT	Gas leak detection	Outdoor suction temperature sensor (TS1) detects sustained and repeated high temperatures that exceed standard value.
P17	–	P17	◎	●	◎	ALT	Outdoor discharge (TD2) temperature trouble	Outdoor discharge temperature sensor (TD2) detects abnormally high temperature.
P19	Outdoor unit No. detected	P19	◎	●	◎	ALT	4-way valve reversing trouble	Abnormality in refrigerating cycle is detected during heating operation.
P20	–	P20	◎	●	◎	ALT	Activation of high-pressure protection	High pressure (Pd) sensor detects high pressure that exceeds standard value.

MG-CTT: Magnet contactor

(Check code detected by Inverter of Compressor featuring in outdoor unit - typical examples)

Check code			Display of receiving unit				Typical problem site	Description of proplem
Outdoor 7-segment display		Central control or main remote controller display	Indicator light block					
	Sub-code		Operation	Timer	Ready	Flash		
F13	1∗: Compressor 1 2∗: Compressor 2	F13	◎	◎	○	ALT	Trouble in temperature sensor built into indoor IPM (TH)	Temperature sensor built into indoor IPM (TH) has been open/short-circuited.
H01	1∗: Compressor 1 2∗: Compressor 2	H01	●	◎	●		Compressor breakdown	Inverter current (Idc) detection circuit detects overcurrent.
H02	1∗: Compressor 1 2∗: Compressor 2	H02	●	◎	●		Compressor trouble (lockup)	Compressor lockup is detected
H03	1∗: Compressor 1 2∗: Compressor 2	H03	●	◎	●		Current detection circuit trouble	Abnormal current is detected while inverter compressor is turned off.
P04	01: Compressor 1 02: Compressor 2	P04	◎	●	◎	ALT	Activation of high-pressure SW	High-pressure SW is activated.
P05	01: Compressor 1 side 02: Compressor 2 side	P05	◎	●	◎	ALT	Compressor Vdc trouble	Inverter DC voltage is too high (overvoltage) or too low (undervoltage).
P07	01: Compressor 1 side 02: Compressor 2 side	P07	◎	●	◎	ALT	Heat sink overheat trouble	Temperature sensor built into IPM (TH) detects overheating.
P11	–	P11	●	◎	◎	ALT	Outdoor heat exchanger freeze trouble	Remaining frost on outdoor heat exchanger has been detected repeatedly.
P22	1∗: Fan P.C. board 1 2∗: Fan P.C. board 2	P22	◎	●	◎	ALT	Outdoor fan P.C. board trouble	Outdoor fan P.C. board detects trouble.
P26	1∗: Compressor 1 2∗: Compressor 2	P26	◎	●	◎	ALT	Activation of IPM, compressor short-circuit protection	Short-circuit protection for compressor motor driver circuit components is activated (momentary overcurrent).
P29	1∗: Compressor 1 2∗: Compressor 2	P29	◎	●	◎	ALT	Compressor position detection circuit trouble	Compressor motor position detection trouble is detected.

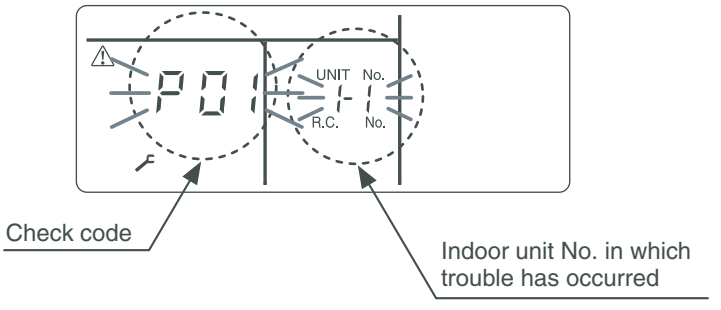
Note: The above check codes are examples only, and different check codes may be displayed depending on the outdoor unit configuration

10-3. Troubleshooting by check Display on Remote Controller

<RBC-AMT∗∗∗>

(1) Checking and testing

When a trouble occurs to an air conditioner, a check code and indoor unit No. are displayed on the display window of the remote controller. Check codes are only displayed while the air conditioner is in operation.
If the display has already disappeared, access check code history by following the procedure described below.



(2) Trouble history

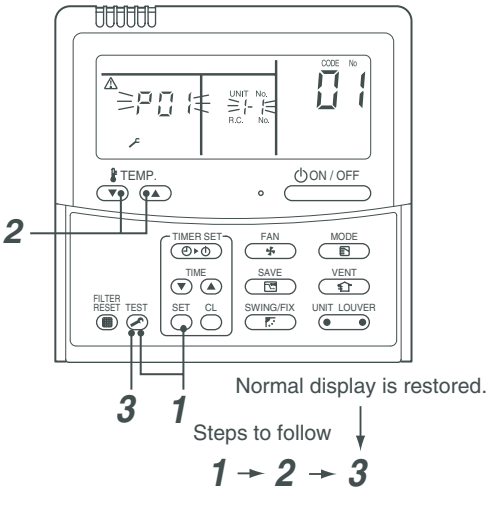
The trouble history access procedure is described below (up to four check codes stored in memory).
Check code history can be accessed regardless of whether the air conditioner is in operation or shut down.

<Procedure> To be performed when system at rest

1 **Invoke the SERVICE CHECK mode by pressing the TEST + SET buttons simultaneously and holding for at least 4 seconds.**
The letters "SERVICE CHECK" light up, and the check code "01" is displayed, indicating the trouble history. This is accompanied by the indoor unit No. to which the trouble history is related and a check code.

2 **To check other trouble history items, press the TEMP. button to select another check code.**
Check code "01" (latest) → Check code "04" (oldest)
Note: Trouble history contains four items.

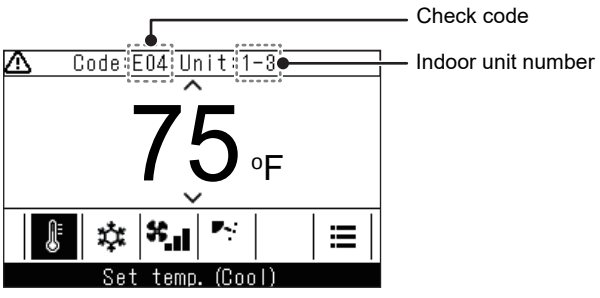
3 **When the TEST button is pushed, normal display is restored.**



⚠ CAUTION

Do not push the button as it would erase the whole trouble history of the indoor unit.

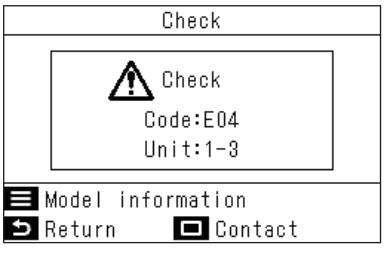
<RBC-AWSU52-UL>



When an error occurs in the air conditioner, the check code and the indoor unit number flash on the display of the remote controller.

* The check code is only displayed during the operation.

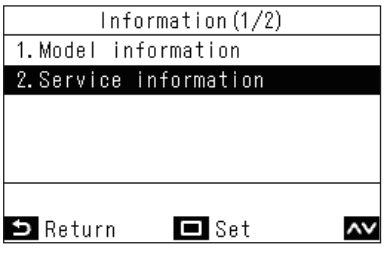
When the check code and indoor unit number are displayed, pressing [Return] opens the “Check” screen.



In the “Check” screen, press [Set/Fix] to show the contacts.
Press [Menu] to display “Model information”.

■ Contact information for repairs

You can look for contact information for repairs.



1 **In the “Information” screen, press [ ] and [ ] to select “Service information”, and then press [Set/Fix]**

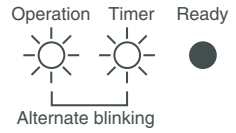
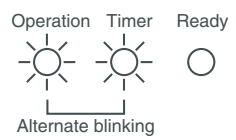
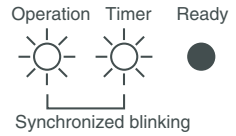
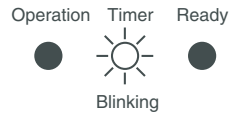
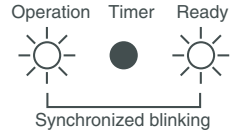
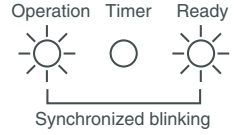
Using indoor unit indicators (receiving unit light block) (wireless type)

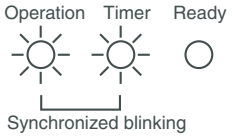
To identify the check code, check the 7-segment display on the header unit. To check for check codes not displayed on the 7-segment display, consult the “List of Check Codes (Indoor Unit)” in “10-2. Troubleshooting method”.

● : Goes off ◯ : Lighting ☼ : Blinking (0.5 seconds)

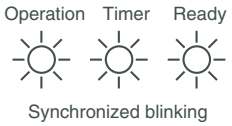
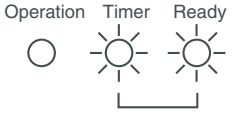
Light block	Check code	Cause of trouble		
Operation ● Timer ● Ready ● All lights out	–	Power turned off or trouble in wiring between receiving and indoor units		
Operation ● Timer ● Ready ☼ Blinking	E01	Trouble reception	Receiving unit	Trouble or poor contact in wiring between receiving unit and indoor units
	E02	Trouble transmission		
	E03	Loss of communication		
	E08	Duplicated indoor unit No. (address)		Setting trouble
	E09	Duplicated master remote controller		
	E10	Communication trouble between indoor unit MCU		
	E11	Communication trouble between Application control kit and indoor unit P.C. board		
	E12	Automatic address starting trouble		
	E18	Trouble or poor contact in wiring between indoor units, indoor power turned off		
Operation ● Timer ● Ready ☼ Blinking	E04	Trouble or poor contact in wiring between indoor and outdoor units (loss of indoor-outdoor communication)		
	E06	Trouble reception in indoor-outdoor communication (dropping out of indoor unit)		
	E07	Trouble transmission in indoor-outdoor communication		
	E15	Indoor unit not found during automatic address setting		
	E16	Too many indoor units connected / overloading		
	E19	Trouble in number of outdoor header units		
	E20	Detection of refrigerant piping communication trouble during automatic address setting		
	E23	Trouble transmission in outdoor-outdoor communication		
	E25	Duplicated follower outdoor address		
	E26	Trouble reception in outdoor-outdoor communication, dropping out of outdoor unit		
	E28	Outdoor follower unit trouble		
	E31	P.C. board communication trouble		
Operation ● Timer ☼ Ready ☼ Alternate blinking	P01	Indoor AC fan trouble		
	P10	Indoor overflow trouble		
	P11	Outdoor heat exchanger freezing trouble		
	P12	Indoor DC fan trouble		
	P13	Outdoor liquid backflow detection trouble		
Operation ☼ Timer ● Ready ☼ Alternate blinking	P03	Outdoor discharge (TD1) temperature trouble		
	P04	Activation of outdoor high-pressure SW		
	P05	Open phase / power failure Inverter DC voltage (Vdc) trouble MG-CTT trouble		
	P07	Outdoor heat sink overheating trouble - Poor cooling of electrical component (IGBT) of outdoor unit		
	P15	Gas leak detection - insufficient refrigerant charging		
	P17	Outdoor discharge (TD2) temperature trouble		
	P18	Outdoor discharge (TD3) temperature trouble		
	P19	Outdoor 4-way valve reversing trouble		
	P20	Activation of high-pressure protection		
	P22	Outdoor fan P.C. board trouble		
	P26	Outdoor IPM, Compressor short-circuit trouble		
	P29	Compressor position detection circuit trouble		
	P31	Shutdown of other indoor unit in group due to trouble (group follower unit trouble)		

MG-CTT: Magnet contactor

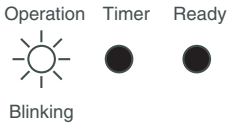
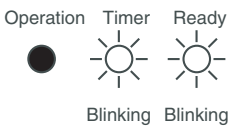
Light block	Check code	Cause of trouble	
	F01	Heat exchanger temperature sensor (TCJ) trouble	Indoor unit temperature sensor trouble
	F02	Heat exchanger temperature sensor (TC2) trouble	
	F03	Heat exchanger temperature sensor (TC1) trouble	
	F10	Ambient temperature sensor (TA) trouble	
	F11	Discharge temperature sensor (TF) trouble	
	F04	Discharge temperature sensor (TD1) trouble Discharge	Outdoor unit temperature sensor trouble
	F05	temperature sensor (TD2) trouble	
	F06	Heat exchanger temperature sensor (TE1, TE2) trouble	
	F07	Liquid temperature sensor (TL) trouble	
	F08	Outside air temperature sensor (TO) trouble	
	F09	TG1,TG2 or TG3 sensor trouble	
	F12	Suction temperature sensor (TS1) trouble	
	F13	Heat sink sensor (TH) trouble	
	F15	Wiring trouble in heat exchanger sensor (TE1) and liquid temperature sensor (TL) Outdoor unit temperature sensor wiring / installation trouble	
	F16	Wiring trouble in outdoor high pressure sensor (Pd) and low pressure sensor (Ps) Outdoor pressure sensor wiring trouble	
	F22	Outdoor discharge temperature sensor (TD3) trouble	
	F23	Low pressure sensor (Ps) trouble	Outdoor unit pressure sensor trouble
	F24	High pressure sensor (Pd) trouble	
	F30	Occupancy sensor trouble	
	F31	Indoor unit EEPROM trouble	
	F29	Failure in indoor EEPROM	
	H01	Compressor breakdown	Outdoor unit compressor related trouble
	H02	Compressor lockup	
	H03	Current detection circuit trouble	
	H04	Comp. 1 case thermostat operation	
	H05	Wiring / installation trouble or detachment of outdoor discharge temperature sensor (TD1)	
	H06	Abnormal drop in low-pressure sensor (Ps) reading	Protective shutdown of outdoor unit
	H07	Abnormal drop in oil level	
	H08	Trouble in temperature sensor for oil level detection circuit (TK1, TK2, TK3, TK4 or TK5)	
	F14	Comp. 2 case thermostat operation	
	H15	Wiring / installation trouble or detachment of outdoor discharge temperature sensor (TD2)	
	H16	Oil level detection circuit trouble - Trouble in outdoor unit TK1, TK2, TK3, TK4 or TK5 circuit	
	H25	Wiring / installation trouble or detachment of outdoor discharge temperature sensor (TD3)	
	L02	Model mismatched of indoor and outdoor unit	
	L03	Duplicated indoor group header unit	
	L05	Duplicated priority indoor unit (as displayed on priority indoor unit)	
	L06	Duplicated priority indoor unit (as displayed on indoor unit other than priority indoor unit)	
	L07	Connection of group control cable to a single indoor unit	
	L08	Indoor group address not set	
	L09	Indoor capacity not set	
	L04	Duplicated outdoor refrigerant line address	
	L10	Outdoor capacity not set	
	L17	Outdoor model incompatibility trouble	
	L18	Flow selector units trouble	
	L20	Duplicated central control address	
	L28	Too many outdoor units connected	
	L29	Trouble in number of P.C. boards	
	L30	Indoor external interlock trouble (External abnormal input)	

Light block	Check code	Cause of trouble
	F30	Occupancy sensor trouble
	F31	Outdoor EEPROM trouble

Other (indications not involving check code)

Light block	Check code	Cause of trouble
	–	Test run in progress
	–	Setting incompatibility (automatic cooling / heating setting for model incapable of it and heating setting for cooling-only model)

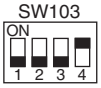
Flow selector unit (FS unit) Relation

Light block	Check code	Cause of trouble
	E17	Communication trouble between indoor unit(s) and FS unit(s)
	L12	FS unit(s) system trouble
	L24	FS unit(s) setting trouble
	J03	Duplicated FS units
	J10	FS unit overflow trouble
	J11	FS unit temperature sensor(TCS) trouble

10-4. Check Codes Displayed on Remote Controller and SMMS series Outdoor Unit (7-Segment Display on I/F Board) and Locations to Be Checked

For other types of outdoor units, refer to their own service manuals.

Check code			Location of detection	Description	System status	Check code detection condition(s)	Check items (locations)
Main remote controller	Outdoor 7-segment display						
	Check code	Sub-code					
E01	—	—	Remote controller	Indoor-remote controller communication trouble (detected at remote controller end)	Stop of corresponding unit	Communication between indoor P.C. board and remote controller is disrupted.	• Check remote controller inter-unit tie cable (A/B). • Check for broken wire or connector bad contact. • Check indoor power supply. • Check for failure in indoor P.C. board. • Check remote controller address settings (when two remote controllers are in use). • Check remote controller P.C. board.
E02	—	—	Remote controller	Remote controller transmission trouble	Stop of corresponding unit	Signal cannot be transmitted from remote controller to indoor unit.	• Check internal transmission circuit of remote controller. --- Replace remote controller as necessary.
E04	—	—	Indoor unit	Indoor-outdoor communication circuit trouble (detected at indoor end)	Stop of corresponding unit	Indoor unit is not receiving signal from outdoor unit.	• Check order in which power was turned on for indoor and outdoor units. • Check indoor address setting. • Check indoor-outdoor tie cable. • Check outdoor terminator resistor setting (SW100, Bit 2).
E04	E06	No. of indoor units from which signal is received normally	I/F	Dropping out of indoor unit	All stop	**Condition 1** All indoor unit initially communicating normally fails to return signal for specified length of time. **Condition 2** Outdoor I / F board SW103, Bit4 : OFF (Factory default)	• Check power supply to indoor unit. (Is power turned on?) • Check connection of indoor-outdoor communication cable. • Check connection of communication connectors on indoor P.C. board. • Check connection of communication connectors on outdoor P.C. board. • Check for failure in indoor P.C. board. • Check for failure in outdoor P.C. board (I/F).
	—	—	Indoor unit	Indoor-outdoor communication circuit trouble	Only specified indoor units stop	**Condition 1** Indoor unit initially communicating normally fails to return signal for specified length of time.	• Check power supply to indoor unit. (Is power turned on?) • Check indoor-outdoor power-on sequence. • Check indoor address setting • Check wiring of Indoor-outdoor communication wires • Check outdoor terminator resistor setting (SW100, Bit 2).

Check code			Location of detection	Description	System status	Check code detection condition(s)	Check items (locations)
Main remote controller	Outdoor 7-segment display						
	Check code	Sub-code					
E04/E06	E06	No. of indoor units from which signal is received normally	Indoor unit	Indoor-outdoor communication circuit trouble (E04)	All stop	**Condition 1** One indoor unit or more initially communicating normally fails to return signal for specified length of time. **Condition 2** Outdoor I / F board SW103, Bit4 : ON (To switch the check code detection condition.) SW103  Display on main remote controller. Indoor units unavailable for indoor / outdoor communication. :E04 Indoor units available for indoor / outdoor communication. : E06	• Check power supply to indoor unit. (Is power turned on?) • Check indoor-outdoor power-on sequence. • Check indoor address setting • Check wiring of Indoor-outdoor communication wires • Check outdoor terminator resistor setting (SW100, Bit 2).
			I/F	Dropping out of indoor unit (E06)			• Check power supply to indoor unit. (Is power turned on?) • Check connection of indoor-outdoor communication cable. • Check connection of communication connectors on indoor P.C. board. • Check connection of communication connectors on outdoor P.C. board. • Check for failure in indoor P.C. board. • Check for failure in outdoor P.C. board (I/F).
—	E07	—	I/F	Indoor-outdoor communication circuit trouble (detected at outdoor end)	All stop	Signal cannot be transmitted from outdoor to indoor units for 30 seconds continuously.	• Check outdoor terminator resistor setting (SW100, Bit 2). • Check connection of indoor-outdoor communication circuit.
E08	E08	Duplicated indoor address	Indoor unit I/F	Duplicated indoor address	All stop	More than one indoor unit are assigned same address.	• Check indoor addresses. • Check for any change made to remote controller connection (group/ individual) since indoor address setting.
E09	—	—	Remote controller	Duplicated master remote controller	Stop of corresponding unit	In two remote controller configuration (including wireless), both controllers are set up as master. (Header indoor unit is shut down with alarm, while follower indoor units continue operating.)	• Check remote controller settings. • Check remote controller P.C. boards.
E10	—	—	Indoor unit	Indoor inter-MCU communication trouble	Stop of corresponding unit	Communication cannot be established/maintained upon turning on of power or during communication.	• Check for failure in indoor P.C. board
E12	E12	01: Indoor-outdoor communication 02: Outdoor-outdoor communication	I/F	Automatic address starting trouble	All stop	• Indoor automatic address setting is started while automatic address setting for equipment in other refrigerant line is in progress. • Outdoor automatic address setting is started while automatic address setting for indoor units is in progress.	• Perform automatic address setting again after disconnecting communication cable to that refrigerant line.
E15	E15	—	I/F	Indoor unit not found during automatic address setting	All stop	Indoor unit cannot be detected after indoor automatic address setting is started.	• Check connection of indoor-outdoor communication line. • Check for trouble in indoor power supply system. • Check for noise from other devices. • Check for power failure. • Check for failure in indoor P.C. board.

Check code			Location of detection	Description	System status	Check code detection condition(s)	Check items (locations)
Main remote controller	Outdoor 7-segment display						
	Check code	Sub-code					
E16	E16	00: Capacity over 01-: No. of units connected	I/F	Too many indoor units connected	All stop	• Combined capacity of indoor units is too large. **Note:** **If this code comes up after backup setting for outdoor unit failure is performed, perform "No capacity over detected" setting.** <"No capacity over detected" setting method> Turn on SW103 / Bit 3 on I/F P.C. board of outdoor header unit. For Cooling Only model, this check code is not displayed even if it exceeds the combined capacity of indoor units. • More than 128 indoor units are connected.	• Check capacities of indoor units connected. • Check combined HP capacities of indoor units. • Check HP capacity settings of outdoor units. • Check No. of indoor units connected. • Check for failure in outdoor P.C. board (I/F).
E18	—	—	Indoor unit	Trouble in communication between indoor header and follower units	Stop of corresponding unit	Periodic communication between indoor header and follower units cannot be maintained.	• Check remote controller wiring. • Check indoor power supply wiring. • Check P.C. boards of indoor units.
E19	E19	00: No header unit 02: Two or more header units	I/F	Trouble in number of outdoor header units	All stop	• There are more than one outdoor header units in one line. • There is no outdoor header unit in one line.	Outdoor header unit is outdoor unit to which indoor-outdoor tie cable (U1,U2) is connected. • Check connection of indoor-outdoor communication line. • Check for failure in outdoor P.C. board (I/F).
E20	E20	01: Connection of outdoor unit from other line 02: Connection of indoor unit from other line	I/F	Connection to other line found during automatic address setting	All stop	Equipment from other line is found to have been connected when indoor automatic address setting is in progress.	Disconnect inter-line tie cable in accordance with automatic address setting method explained in "Address setting" section.
E23	E23	—	I/F	Outdooroutdoor communication transmission trouble	All stop	Signal cannot be transmitted to other outdoor units for at least 30 seconds continuously.	• Check power supply to outdoor units. (Is power turned on?) • Check connection of tie cables between outdoor units for bad contact or broken wire. • Check communication connectors on outdoor P.C. boards. • Check for failure in outdoor P.C. board (I/F). • Check termination resistance setting for communication between outdoor units.
E25	E25	—	I/F	Duplicated follower outdoor address	All stop	There is duplication in outdoor addresses set manually.	**Note:** **Do not set outdoor addresses manually.**
E26	E26	Address of outdoor unit from which signal is not received normally	I/F	Signal lack of outdoor unit	All stop	Outdoor unit initially communicating normally fails to return signal for specified length of time.	• Backup setting is being used for outdoor units. • Check power supply to outdoor unit. (Is power turned on?) • Check connection of tie cables between outdoor units for bad contact or broken wire. • Check communication connectors on outdoor P.C. boards. • Check for failure in outdoor P.C. board (I/F).

<table>
<tr><th colspan="3">Check code</th><th rowspan="3">Location of detection</th><th rowspan="3">Description</th><th rowspan="3">System status</th><th rowspan="3">Check code detection condition(s)</th><th rowspan="3">Check items (locations)</th></tr>
<tr><th rowspan="2">Main remote controller</th><th colspan="2">Outdoor 7-segment display</th></tr>
<tr><th>Check code</th><th>Sub-code</th></tr>
<tr><td>E28</td><td>E28</td><td>Detected outdoor unit No.</td><td>I/F</td><td>Outdoor follower unit trouble</td><td>All stop</td><td>Outdoor header unit receives trouble code from outdoor follower unit.</td><td>• Check check code displayed on outdoor follower unit.
<Convenient functions>
If SW04 is pressed and held for at least 1 second while [E28] is displayed on the 7-segment display of outdoor header unit, the fan of the outdoor unit that has been shut down due to an trouble comes on.
If SW04 and SW05 are pressed simultaneously, the fans of normal outdoor units come on.
To stop the fan or fans, press SW05 on its own.</td></tr>
<tr><td rowspan="2">E31</td><td rowspan="2">E31</td><td>P.C.board
Compressor / Fan Motor
1 2 1 2
01 O
02 O
03 O O
08 O
09 O O
0A O O
0B O O O
10 O
11 O O
12 O O
13 O O O
18 O
19 O O
1A O O
1B O O O
Circle (O): Trouble P.C. board</td><td>I/F</td><td>P.C. board communication trouble</td><td>All stop</td><td>Communication is disrupted between P.C. board in inverter box.</td><td>• Check wiring and connectors involved in communication between P.C. board I/F P.C. board for bad contact or broken wire.
• Check for failure in outdoor P.C. board (I/F, comp. P.C. board or Fan P.C. board).
• Check for external noise.</td></tr>
<tr><td>80</td><td></td><td>Communication trouble between MCU and Sub MCU</td><td>All stop</td><td>Communication between MCU and Sub MCU stopped.</td><td>• Operation of power supply reset (OFF for 60 seconds or more)
• Outdoor I/F PC board trouble check</td></tr>
<tr><td>F01</td><td>—</td><td>—</td><td>Indoor unit</td><td>Indoor TCJ sensor trouble</td><td>Stop of corresponding unit</td><td>Sensor resistance is infinity or zero (open/short circuit).</td><td>• Check connection of TCJ sensor connector and wiring.
• Check resistance characteristics of TCJ sensor.
• Check for failure in indoor P.C. board.</td></tr>
<tr><td>F02</td><td>—</td><td>—</td><td>Indoor unit</td><td>Indoor TC2 sensor trouble</td><td>Stop of corresponding unit</td><td>Sensor resistance is infinity or zero (open/short circuit).</td><td>• Check connection of TC2 sensor connector and wiring.
• Check resistance characteristics of TC2 sensor.
• Check for failure in indoor P.C. board.</td></tr>
<tr><td>F03</td><td>—</td><td>—</td><td>Indoor unit</td><td>Indoor TC1 sensor trouble</td><td>Stop of corresponding unit</td><td>Sensor resistance is infinity or zero (open/short circuit).</td><td>• Check connection of TC1 sensor connector and wiring.
• Check resistance characteristics of TC1 sensor.
• Check for failure in indoor P.C. board.</td></tr>
<tr><td>F04</td><td>F04</td><td>—</td><td>I/F</td><td>TD1 sensor trouble</td><td>All stop</td><td>Sensor resistance is infinity or zero (open/short circuit).</td><td>• Check connection of TD1 sensor connector.
• Check resistance characteristics of TD1 sensor.
• Check for failure in outdoor P.C. board (I/F).</td></tr>
</table>

Check code			Location of detection	Description	System status	Check code detection condition(s)	Check items (locations)
Main remote controller	Outdoor 7-segment display						
	Check code	Sub-code					
F05	F05	—	I/F	TD2 sensor trouble	All stop	Sensor resistance is infinity or zero (open/short circuit).	• Check connection of TD2 sensor connector. • Check resistance characteristics of TD2 sensor. • Check for failure in outdoor P.C. board (I/F).
F06	F06	01: TE1 sensor trouble 02: TE2 sensor trouble 03: TE3 sensor trouble	I/F	TE1/TE2/TE3 sensor trouble	All stop	Sensor resistance is infinity or zero (open/short circuit).	• Check connection of TE1/TE2/TE3 sensor connectors. • Check resistance characteristics of TE1/TE2/TE3 sensors. • Check for failure in outdoor P.C. board (I/F).
F07	F07	01: TL1 sensor trouble 02: TL2 sensor trouble 03: TL3 sensor trouble	I/F	TL1/TL2/TL3 sensor trouble	All stop	Sensor resistance is infinity or zero (open/short circuit).	• Check connection of TL1/TL2/TL3 sensor connector. • Check resistance characteristics of TL1/TL2/TL3 sensor. • Check for failure in outdoor P.C. board (I/F).
F08	F08	—	I/F	TO sensor trouble	All stop	Sensor resistance is infinity or zero (open/short circuit).	• Check connection of TO sensor connector. • Check resistance characteristics of TO sensor. • Check for failure in outdoor P.C. board (I/F).
F09	F09	01: TG1 sensor trouble 02: TG2 sensor trouble 03: TG3 sensor trouble	I/F	TG1/TG2/TG3 sensor trouble	All stop	Sensor resistance is infinity or zero (open/short circuit).	• Check connection of TG1/TG2/TG3 sensor connectors. • Check resistance characteristics of TG1/TG2/TG3 sensors. • Check for failure in outdoor P.C. board (I/F).
F10	—	—	Indoor unit	Indoor TA sensor trouble	Stop of corresponding unit	Sensor resistance is infinity or zero (open/short circuit).	• Check connection of TA sensor connector and wiring. • Check resistance characteristics of TA sensor. • Check for failure in indoor P.C. board.
F11	—	—	Indoor unit	Indoor TF sensor trouble	Stop of corresponding unit	Sensor resistance is infinity or zero (open/short circuit).	• Check connection of TF sensor connector and wiring. • Check resistance characteristics of TF sensor. • Check for failure in indoor P.C. board.
F12	F12	01: TS1 sensor trouble 03: TS3 sensor trouble	I/F	TS1/TS3 sensor trouble	All stop	Sensor resistance is infinity or zero (open/short circuit).	• Check connection of TS1/TS3 sensor connector • Check resistance characteristics of TS1/TS3 sensor. • Check for failure in indoor P.C. board.
F13	F13	1∗: Compressor 1 side 2∗: Compressor 2 side	Compressor P.C. board	TH sensor trouble	All stop	Sensor resistance is infinity or zero (open/short circuit).	• Failure in IPM built-in temperature sensor → Replace Compressor P.C. board.
F15	F15	—	I/F	Outdoor temperature sensor wiring trouble (TE1, TL1)	All stop	During compressor operation in HEAT mode, TL1 continuously provides temperature reading higher than indicated by TL1 by at least specified margin for 3 minutes or more.	• Check installation of TE1 and TL1 sensors. • Check resistance characteristics of TE1 and TL1 sensors. • Check for outdoor P.C. board (I/F) trouble

Check code			Location of detection	Description	System status	Check code detection condition(s)	Check items (locations)
Main remote controller	Outdoor 7-segment display						
	Check code	Sub-code					
F16	F16	—	I/F	Outdoor pressure sensor wiring trouble (Pd, Ps)	All stop	Readings of high-pressure Pd sensor and low-pressure Ps sensor are switched. Output voltages of both sensors are zero.	• Check connection of high-pressure Pd sensor connector. • Check connection of low-pressure Ps sensor connector. • Check for failure in pressure sensors Pd and Ps. • Check for trouble in outdoor P.C. board (I/F). • Check for compressor poor compression.
F23	F23	—	I/F	Ps sensor trouble	All stop	Output voltage of Ps sensor is zero.	• Check for connection trouble involving Ps sensor and Pd sensor connectors. • Check connection of Ps sensor connector. • Check for failure in Ps sensor. • Check for compressor poor compression. • Check for failure in 4-way valve. • Check for failure in outdoor P.C. board (I/F). • Check for failure in SV4 circuit.
F24	F24	—	I/F	Pd sensor trouble	All stop	Output voltage of Pd sensor is zero (sensor open-circuited). Pd > 4.15MPa despite compressor having been turned off.	• Check connection of Pd sensor connector. • Check for failure in Pd sensor. • Check for failure in outdoor P.C. board (I/F).
F29	—	—	Indoor unit	Other indoor trouble	Stop of corresponding unit	Indoor P.C. board does not operate normally.	• Check for failure in indoor P.C. board (failure EEPROM)
F31	F31	—	I/F	Outdoor EEPROM trouble	All stop *1	Outdoor P.C. board (I/F) does not operate normally.	• Check power supply voltage. • Check power supply noise. • Check for failure in outdoor P.C. board (I/F).
H01	H01	1∗: Compressor 1 side 2∗: Compressor 2 side	Compressor P.C. board	Compressor breakdown	All stop	Inverter current detection circuit detects overcurrent and shuts system down.	• Check power supply voltage. (AC380V-415V ± 10%). • Check for failure in compressor. • Check for possible cause of abnormal overloading. • Check for failure in outdoor P.C. board (Compressor).
H02	H02	1∗: Compressor 1 side 2∗: Compressor 2 side	Compressor P.C. board	Compressor trouble (lockup) MG-CTT trouble	All stop	Overcurrent is detected several seconds after startup of inverter compressor.	• Check for failure in compressor. • Check power supply voltage. (AC380V-415V ± 10%). • Check compressor system wiring, particularly for open phase. • Check connection of connectors/terminals on compressor P.C. board. • Check conductivity of case heater. (Check for refrigerant problem inside compressor.) • Check for failure in outdoor P.C. board (Compressor). • Check outdoor MG-CTT.
H03	H03	1∗: Compressor 1 side 2∗: Compressor 2 side	Compressor P.C. board	Current detection circuit trouble	All stop	Current flow of at least specified magnitude is detected despite inverter compressor having been shut turned off.	• Check current detection circuit wiring. • Check failure in outdoor P.C. board (Compressor).

*1 Total shutdown in case of header unit
Continued operation in case of follower unit

Check code			Location of detection	Description	System status	Check code detection condition(s)	Check items (locations)
Main remote controller	Outdoor 7-segment display						
	Check code	Sub-code					
H05	H05	—	I/F	TD1 sensor miswiring (incomplete insertion)	All stop	Discharge temperature of compressor 1 (TD1) does not increase despite compressor being in operation.	• Check installation of TD1 sensor. • Check connection of TD1 sensor connector and wiring. • Check resistance characteristics of TD1 sensor. • Check for failure in outdoor P.C. board (I/F).
H06	H06	—	I/F	Activation of low-pressure protection	All stop	Low-pressure Ps sensor detects operating pressure lower than 0.02MPa.	• Check service valves to confirm full opening (both gas and liquid sides). • Check outdoor PMVs for clogging (PMV1, 2, 3). • Check for failure in SV4 circuits. • Check for failure in low-pressure Ps sensor. • Check indoor filter for clogging. • Check valve opening status of indoor PMV. • Check refrigerant piping for clogging. • Check operation of outdoor fan (during heating). • Check for insufficiency in refrigerant quantity.
H07	H07	—	I/F	Low oil level protection	All stop	Operating compressor detects continuous state of low oil level for about 2 hours.	<All outdoor units in corresponding line to be checked> • Check connection and installation of TK1 and TK2 sensors. • Check resistance characteristics of TK1 and TK2 sensors. • Check for gas or oil leak in same line. • Check for refrigerant problem inside compressor casing. • Check SV3D, SV3F valves for failure. • Check oil return circuit of oil separator for clogging. • Check oil equalizing circuit for clogging.
H08	H08	01: TK1 sensor trouble 02: TK2 sensor trouble	I/F	Trouble in temperature sensor for oil level detection	All stop	Sensor resistance is infinity or zero (open/short circuit).	• Check connection of TK1 sensor connector. • Check resistance characteristics of TK1 sensor. • Check for failure in outdoor P.C. board (I/F).
					All stop	Sensor resistance is infinity or zero (open/short circuit).	• Check connection of TK2 sensor connector. • Check resistance characteristics of TK2 sensor. • Check for failure in outdoor P.C. board (I/F).
H15	H15	—	I/F	TD2 sensor miswiring (incomplete insertion)	All stop	Discharge temperature of (TD2) does not increase despite compressor 2 being in operation.	• Check installation of TD2 sensor. • Check connection of TD2 sensor connector and wiring. • Check resistance characteristics of TD2 sensor. • Check for failure in outdoor P.C. board (I/F).

Check code			Location of detection	Description	System status	Check code detection condition(s)	Check items (locations)
Main remote controller	Outdoor 7-segment display						
	Check code	Sub-code					
H16	H16	01: TK1 oil circuit trouble 02: TK2 oil circuit trouble	I/F	Oil level detection circuit trouble	All stop	No temperature change is detected by TK1 despite compressor 1 having been started.	• Check for disconnection of TK1 sensor. • Check resistance characteristics of TK1 sensor. • Check for connection trouble involving TK1 and TK2 sensors • Check for clogging in oil equalizing circuit capillary. • Check for refrigerant entrapment inside compressor.
						No temperature change is detected by TK2 despite compressor 2 having been started.	• Check for disconnection of TK2 sensor. • Check resistance characteristics of TK2 sensor. • Check for connection trouble involving TK1 and TK2 sensors • Check SV3F valve malfunction. • Check for clogging in oil equalizing circuit capillary. • Check for refrigerant entrapment inside compressor.
H17	H17	1∗: Compressor 1 side 2∗: Compressor 2 side	Compressor P.C. board	Compressor trouble (Step-out)	All stop	Judged that the synchronization could not be taken.	• Check power supply voltage. (AC380V-415V ± 10%). • Check for failure in compressor. • Check for possible cause of abnormal overloading. • Check for failure in outdoor P.C. board (compressor).
L02	L02	—	Indoor unit	Outdoor units model disagreement trouble	Stop of corresponding unit	In case of different outdoor unit (Not corresponded to Air to Air Heat Exchanger type)	• Check outdoor unit model. (Check whether the outdoor unit corresponds to Air to Air Heat Exchanger type or not.)
L03	—	—	Indoor unit	Duplicated indoor header unit	Stop of corresponding unit	There are more than one header units in group.	• Check indoor addresses. • Check for any change made to remote controller connection (group/ individual) since indoor address setting.
L04	L04	—	I/F	Duplicated outdoor line address	All stop	There is duplication in line address setting for outdoor units belonging to different refrigerant piping systems.	• Check line addresses.
L05	—	—	I/F	Duplicated priority indoor unit (as displayed on priority indoor unit)	All stop	More than one indoor units have been set up as priority indoor unit.	• Check display on priority indoor unit.
L06	L06	No. of priority indoor units	I/F	Duplicated priority indoor unit (as displayed on indoor unit other than priority indoor unit)	All stop	More than one indoor units have been set up as priority indoor unit.	• Check displays on priority indoor unit and outdoor unit.
L07	—	—	Indoor unit	Connection of group control cable to standalone indoor unit	Stop of corresponding unit	There is at least one standalone indoor unit to which group control cable is connected.	• Check indoor addresses.
L08	L08	—	Indoor unit	Indoor group / addresses not set	Stop of corresponding unit	Address setting has not been performed for indoor units.	• Check indoor addresses. **Note:** **This code is displayed when power is turned on for the first time after installation.**
L09	—	—	Indoor unit	Indoor capacity not set	Stop of corresponding unit	Capacity setting has not been performed for indoor unit.	Set indoor capacity. (DN = 11)

<table>
<tr><th colspan="3">Check code</th><th rowspan="2">Location of detection</th><th rowspan="2">Description</th><th rowspan="2">System status</th><th rowspan="2">Check code detection condition(s)</th><th rowspan="2">Check items (locations)</th></tr>
<tr><th rowspan="2">Main remote controller</th><th colspan="2">Outdoor 7-segment display</th></tr>
<tr><th>Check code</th><th>Sub-code</th></tr>
<tr><td>L10</td><td>L10</td><td>—</td><td>I/F</td><td>Outdoor capacity not set</td><td>All stop</td><td>Initial setting of I/F P.C. board has not been implemented.</td><td>• Check model setting of P.C. board for servicing outdoor I/F P.C. board.</td></tr>
<tr><td>L20</td><td>—</td><td>—</td><td>Network adaptor Indoor unit</td><td>Duplicated central control address</td><td>All stop</td><td>There is duplication in central control address setting.</td><td>• Check central control addresses.</td></tr>
<tr><td>L23</td><td>—</td><td>—</td><td>I/F</td><td>SW setting mistake</td><td>All stop</td><td>Outdoor P.C. board (I/F) does not operate normally.</td><td>• Check switch setting of outdoor P.C. board (I/F).</td></tr>
<tr><td>L28</td><td>L28</td><td>—</td><td>I/F</td><td>Too many outdoor units connected</td><td>All stop</td><td>There are more than 5 outdoor units.</td><td>• Check No. of outdoor units connected (Only up to 5 units per system allowed).
• Check communication lines between outdoor units.
• Check for failure in outdoor P.C. board (I/F).</td></tr>
<tr><td>L29</td><td>L29</td><td>
<table>
<tr><th></th><th colspan="4">P.C.board</th></tr>
<tr><th></th><th colspan="2">Compressor</th><th colspan="2">Fan Motor</th></tr>
<tr><th></th><th>1</th><th>2</th><th>1</th><th>2</th></tr>
<tr><td>01</td><td>O</td><td></td><td></td><td></td></tr>
<tr><td>02</td><td></td><td>O</td><td></td><td></td></tr>
<tr><td>03</td><td>O</td><td>O</td><td></td><td></td></tr>
<tr><td>08</td><td></td><td></td><td>O</td><td></td></tr>
<tr><td>09</td><td>O</td><td></td><td>O</td><td></td></tr>
<tr><td>0A</td><td></td><td>O</td><td>O</td><td></td></tr>
<tr><td>0B</td><td>O</td><td>O</td><td>O</td><td></td></tr>
<tr><td>10</td><td></td><td></td><td></td><td>O</td></tr>
<tr><td>11</td><td>O</td><td></td><td></td><td>O</td></tr>
<tr><td>12</td><td></td><td>O</td><td></td><td>O</td></tr>
<tr><td>13</td><td>O</td><td>O</td><td></td><td>O</td></tr>
<tr><td>18</td><td></td><td></td><td></td><td>O</td></tr>
<tr><td>19</td><td>O</td><td></td><td></td><td>O</td></tr>
<tr><td>1A</td><td></td><td>O</td><td></td><td>O</td></tr>
<tr><td>1B</td><td>O</td><td>O</td><td></td><td>O</td></tr>
</table>
Circle (O): Trouble P.C. board</td><td>I/F</td><td>Trouble in No. of P.C. board</td><td>All stop</td><td>Insufficient number of P.C. board are detected when power is turned on.</td><td>• Check model setting of P.C. board for servicing outdoor I/F P.C. board.
• Check connection of UART communication connector.
• Check compressor P.C. board, fan P.C. board, and I/F P.C. board for failure.</td></tr>
<tr><td>L30</td><td>L30</td><td>Detected indoor address</td><td>Indoor unit</td><td>Indoor external interlock (External abnormal input)</td><td>Stop of corresponding unit</td><td>• Indoor unit has been shut down due to external abnormal input signal.</td><td>When external device is connected:
1) Check for trouble in external device.
2) Check for trouble in indoor P.C. board.
When external device is not connected:
1) Check for trouble in indoor P.C. board.</td></tr>
<tr><td>—</td><td>L31</td><td>—</td><td>I/F</td><td>Extended IC trouble</td><td>Continued operation</td><td>There is part failure in P.C. board (I/F).</td><td>Check outdoor P.C. board (I/F).</td></tr>
<tr><td>P01</td><td>—</td><td>—</td><td>Indoor unit</td><td>Indoor fan motor trouble</td><td>Stop of corresponding unit</td><td></td><td>• Check the lock of fan motor (AC fan).
• Check wiring.</td></tr>
<tr><td>P03</td><td>P03</td><td>—</td><td>I/F</td><td>Discharge temperature TD1 trouble</td><td>All stop</td><td>Discharge temperature (TD1) exceeds 115 ˚C.</td><td>• Check outdoor service valves (gas side, liquid side) to confirm full opening.
• Check outdoor PMVs (PMV1, 2, 3, 4) for clogging.
• Check resistance characteristics of TD1 sensor.
• Check for insufficiency in refrigerant quantity.
• Check for failure in 4-way valve.
• Check for leakage of SV4 circuit.
• Check SV4 circuit (wiring or installation trouble in SV41 or SV42).</td></tr>
</table>

Check code			Location of detection	Description	System status	Check code detection condition(s)	Check items (locations)
Main remote controller	Outdoor 7-segment display						
	Check code	Sub-code					
P04	P04	1∗: Compressor 1 side 2∗: Compressor 2 side	I/F	Activation of high-pressure SW	All stop	High-pressure SW is activated.	• Check connection of high-pressure SW connector. • Check for failure in Pd pressure sensor. • Check outdoor service valves (gas side, liquid side) to confirm full opening. • Check for failure in outdoor fan. • Check for failure in outdoor fan motor. • Check outdoor PMVs (PMV1, 2, 3) for clogging. • Check indoor/outdoor heat exchangers for clogging. • Check for short-circuiting of outdoor suction/discharge air flows. • Check for failure in outdoor P.C. board (I/F). • Check for trouble in indoor fan system (possible cause of air flow reduction). • Check opening status of indoor PMV. • Check indoor-outdoor communication line for wiring trouble. • Check for failure operation of check valve in discharge pipe convergent section. • Check gas balancing SV4 valve circuit. • Check for refrigerant overcharging.
P05	P05	00: Power detection trouble 01: Open phase 02: Power supply miswiring	I/F	Power detection trouble / Open phase detection / Power supply miswiring	All stop	• Open phase is detected when power is turned on. • Inverter DC voltage is too high (overvoltage) or too low (undervoltage).	• Check for failure in outdoor P.C. board (I/F). • Check wiring of outdoor power supply. • Check power supply voltage.
		1∗: Compressor 1 side 2∗: Compressor 2 side	Compressor P.C. board	Compressor Vdc trouble			
P07	P07	1∗: Compressor 1 side 2∗: Compressor 2 side	Compressor P.C. board	Heat sink overheating trouble	All stop	Temperature sensor built into IPM (TH) is overheated.	• Check outdoor fan system trouble. • Check IPM and heat sink for thermal performance for failure installation. (e.g. mounting screws and thermal conductivity) • Check for failure in Compressor P.C. board. (failure IPM built-in temperature sensor (TH))
		01: Compressor 1 heat sink trouble 02: Compressor 2 heat sink trouble 04: Heat sink dew condensation	I/F	Heat sink overheating trouble Heat sink dew condensation trouble	All stop	Condensation detection on heat sink has occurred four times or more in operation. Temperature sensor built into IPM (TH) is overheated.	• Check outdoor fan system trouble. • Check IPM and heat sink for thermal performance for troubled installation. (e. g. mounting screws and thermal conductivity) • Check for failure in compressor P.C. board. (failure IPM built-in temperature sensor (TH)) • Check shortage of refrigerant. • Check outdoor service valves. • Check connection of TL2 sensor. • Check resistance characteristics of TL2 sensor. • Check resistance characteristics of TO sensor. • Check malfunctions of Pd and Ps sensors. • Check outdoor I/F P.C. board malfunction. • Check PMV2 and PMV3

Check code			Location of detection	Description	System status	Check code detection condition(s)	Check items (locations)
Main remote controller	Outdoor 7-segment display						
	Check code	Sub-code					
P10	P10	Detected indoor address	Indoor unit	Indoor overflow trouble	All stop	• Float switch operates. • Float switch circuit is open-circuited or disconnected at connector.	• Check float switch connector. • Check operation of drain pump. • Check drain pump circuit. • Check drain pipe for clogging. • Check for failure in indoor P.C. board.
P11	—	—	I/F	Outdoor heat exchanger freeze trouble	All stop	• Outdoor heat exchanger remaining frost detection has occurred eight times or more due to abnormal frost formation in heating operation.	• Check shortage of refrigerant. • Check connection of TE1, TE2 and TE3 sensors. • Check resistance characteristics of TE1, TE2, and TE3 sensors. • Check disconnection of TS1 sensor. • Check resistance characteristics of TS1 sensor. • Check outdoor I/F P.C. board malfunction. • Check operation of 4 way valve. • Check operation of outdoor PMV (1, 2, 3). • Check short circuit from outlet air to inlet air.
P12	—	—	Indoor unit	Indoor fan motor trouble	Stop of corresponding unit	• Motor speed measurements continuously deviate from target value. • Overcurrent protection is activated.	• Check connection of fan connector and wiring. • Check for failure in fan motor. • Check for failure in indoor P.C. board. • Check impact of outside air treatment (OA).
P13	P13	—	I/F	Outdoor liquid backflow detection trouble	All stop	<During cooling operation> When system is in cooling operation, high pressure is detected in the unit that has been turned off. <During heating operation> When system is in heating operation, low pressure is detected to be high in unit that has been turned off.	• Check full-close operation of outdoor PMV (1, 2, 3, 4). • Check for failure in Pd or Ps sensor. • Check failure in outdoor P.C. board (I/F). • Check capillary of oil separator oil return circuit for clogging. • Check for leakage of check valve in discharge pipe
P15	P15	01: TS condition	I/F	Gas leak detection (TS1 condition)	All stop	Protective shutdown due to sustained suction temperature at or above judgment criterion for at least 10 minutes is repeated four times or more. <TS trouble judgment criterion> In cooling operation: 60 ˚C In heating operation: 40 ˚C	• Check for insufficiency in refrigerant quantity. • Check outdoor service valves (gas side, liquid side) to confirm full opening. • Check PMVs (PMV1, 2, 3, 4) for clogging. • Check resistance characteristics of TS1 sensor. • Check for failure in 4-way valve. • Check SV4 circuit for leakage
		02: TD condition	I/F	Gas leak detection (TD condition)	All stop	Protective shutdown due to sustained discharge temperature (TD1 or TD2) at or above 108 ˚C for at least 10 minutes is repeated four times or more.	• Check for insufficiency in refrigerant quantity. • Check PMVs (PMV 1, 2, 3, 4) for clogging. • Check resistance characteristics of TD1 and TD2 sensors. • Check indoor filter for clogging. • Check piping for clogging. • Check SV4 circuit (for leakage or coil installation trouble).

Check code			Location of detection	Description	System status	Check code detection condition(s)	Check items (locations)
Main remote controller	Outdoor 7-segment display						
	Check code	Sub-code					
P17	P17	—	I/F	Discharge temperature TD2 trouble	All stop	Discharge temperature (TD2) exceeds 115 ˚C.	• Check outdoor service valves (gas side, liquid side) to confirm full opening. • Check outdoor PMVs (PMV1, 2, 3, 4) for clogging. • Check resistance characteristics of TD2 sensor. • Check for failure in 4-way valve. • Check SV4 circuit for leakage. • Check SV4 circuit (for wiring or installation trouble involving SV41 and SV42).
P19	P19	Detected outdoor unit No.	I/F	4-way valve reversing trouble	All stop	Abnormal refrigerating cycle data is collected during heating operation.	• Check for failure in main body of 4-way valve. • Check for coil failure in 4-way valve and loose connection of its connector. • Check resistance characteristics of TS1 and TE1,TE2 sensors. • Check output voltage characteristics of Pd and Ps pressure sensors. • Check for wiring trouble involving TE1 and TL1 sensors.
P20	P20	—	I/F	Activation of high-pressure protection	All stop	<During cooling operation> Pd sensor detects pressure equal to or greater than 3.85 MPa. <During heating operation> Pd sensor detects pressure equal to or greater than 3.6 MPa.	• Check for failure in Pd pressure sensor. • Check service valves (gas side, liquid side) to confirm full opening. • Check for failure in outdoor fan. • Check for failure in outdoor fan motor. • Check outdoor PMV (PMV1, 2, 3, 4) for clogging. • Check indoor/outdoor heat exchangers for clogging. • Check for short-circuiting of outdoor suction/ discharge air flows. • Check for failure in outdoor P.C. board (I/F). • Check for failure in indoor fan system (possible cause of air flow reduction). • Check opening status of indoor PMV. • Check indoor-outdoor communication line for wiring trouble. • Check for troble operation of check valve in discharge pipe convergent section. • Check gas balancing SV4 valve circuit. • Check for refrigerant overcharging.

Check code			Location of detection	Description	System status	Check code detection condition(s)	Check items (locations)
Main remote controller	Outdoor 7-segment display						
	Check code	Sub-code					
P22	P22	1∗: Fan P.C. board 1 2∗: Fan P.C. board 2	Fan INV. P.C. board	Outdoor fan P.C. board trouble	All stop	Protected operation of Fan inverter P.C. board	• Check fan motor. • Check for failure in fan P.C. board. • Check connection of fan motor connector. • Check power voltage of the main power supply.
P26	P26	1∗: Compressor 1 side 2∗: Compressor 2 side	Compressor P.C. board	IPM, Compressor shortcircuit protection trouble	All stop	Overcurrent is momentarily detected during startup of compressor.	• Check connector connection and wiring on compressor P.C. board. • Check for failure in compressor (layer shortcircuit). • Check for failure in outdoor P.C. board (Compressor).
P29	P29	1∗: Compressor 1 side 2∗: Compressor 2 side	Compressor P.C. board	Compressor position detection circuit trouble	All stop	Position detection is not going on normally.	• Check wiring and connector connection. • Check for compressor layer short-circuit. • Check for failure in compressor P.C. board.
P31	—	—	Indoor unit	Other indoor trouble (group follower unit trouble)	Stop of corresponding unit	There is trouble in other indoor unit in group, resulting in detection of E07/L07/L03/L08.	• Check indoor P.C. board.

Check codes Displayed on by Central Control Device

Check code			Location of detection	Description	System status	Check code detection condition(s)	Check items (locations)
Main remote controller	Outdoor 7-segment display						
	Check code	Sub-code					
E03	—	—	Indoor unit	Indoor-remote controller communication trouble (detected at indoor end)	Stop of corresponding unit	There is no communication from remote controller (including wireless) or network adaptor.	• Check remote controller and network adaptor wiring.
C05	—		Central control device	Central control device transmission trouble	Continued operation	Central control device is unable to transmit signal.	• Check for failure in central control device. • Check for failure in central control communication line. • Check termination resistance setting.
C06	—		Central control device	Central control device reception trouble	Continued operation	Central control device is unable to receive signal.	• Check for failure in central control device. • Check for failure in central control communication line. • Check terminator resistor setting. • Check power supply for devices at other end of central control communication line. • Check failure in P.C. boards of devices at other end of central control communication line.
C12	—		General-purpose device I/F	Batch alarm for general-purpose device control interface	Continued operation	Trouble signal is input to control interface for general-purpose devices.	• Check trouble input.
P30	Differs according to nature of alarm-causing trouble		Central control device	Group control follower unit trouble	Continued operation	Trouble occurs in follower unit under group control. ([P30] is displayed on central control remote controller.)	• Check check code of unit that has generated alarm.
	(L20 displayed.)			Duplicated central control address	Continued operation	There is duplication in central control addresses.	• Check address settings.

▼ Points to Note When Servicing Compressor

(1) When checking the outputs of inverters, remove the wiring from all the compressors.

▼ How to Check Inverter Output

(1) Turn off the power supply.
(2) Remove compressor leads from the compressor P.C. board.
(The model with two compressor should remove the wiring for two sets (6 leads).
(3) Turn on the power supply and start cooling or heating operation.
(4) Check the output voltage across each pair of inverter-side. If the result is unsatisfactory according to the judgment criteria given in the table below, replace the compressor P.C. board.

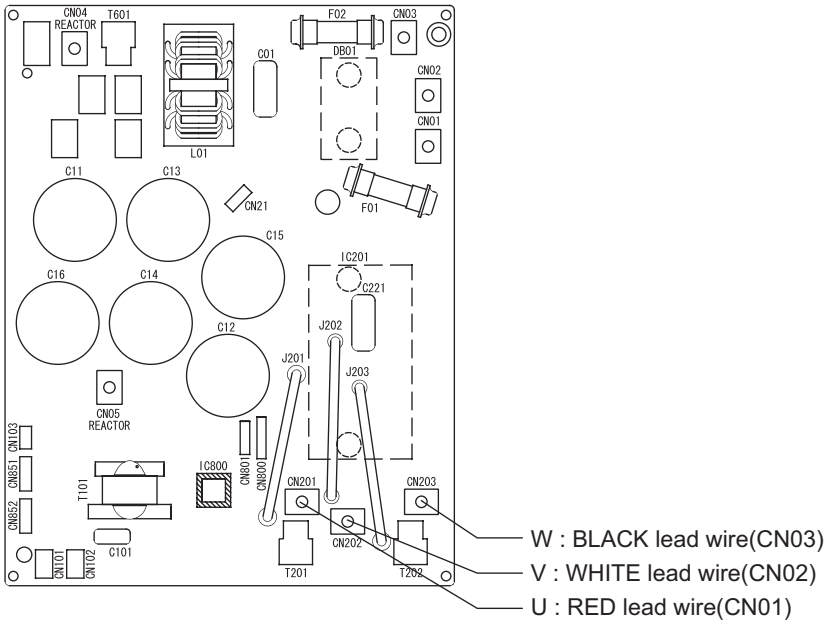
No.	Measured leads	Criterion
1	CN201 - CN202	380~580V
2	CN202 - CN203	380~580V
3	CN203 - CN201	380~580V

▼ How to Check Resistance of Compressor Winding

(1) Turn off the power supply.
(2) Remove compressor leads from the compressor P.C. board. (Be sure to remove all the leads.)
(3) With each compressor, check the phase-to-phase winding resistances and winding-to-outdoor cabinet resistance using a multimeter.
- Earth trouble?
→ It is normal if the winding-to-outdoor cabinet resistance is 10MΩ or more.
- Inter-winding short circuit?
→ It is normal if the phase-to-phase resistances are in the 0.1-1.0Ω range. (Use a digital multimeter.)

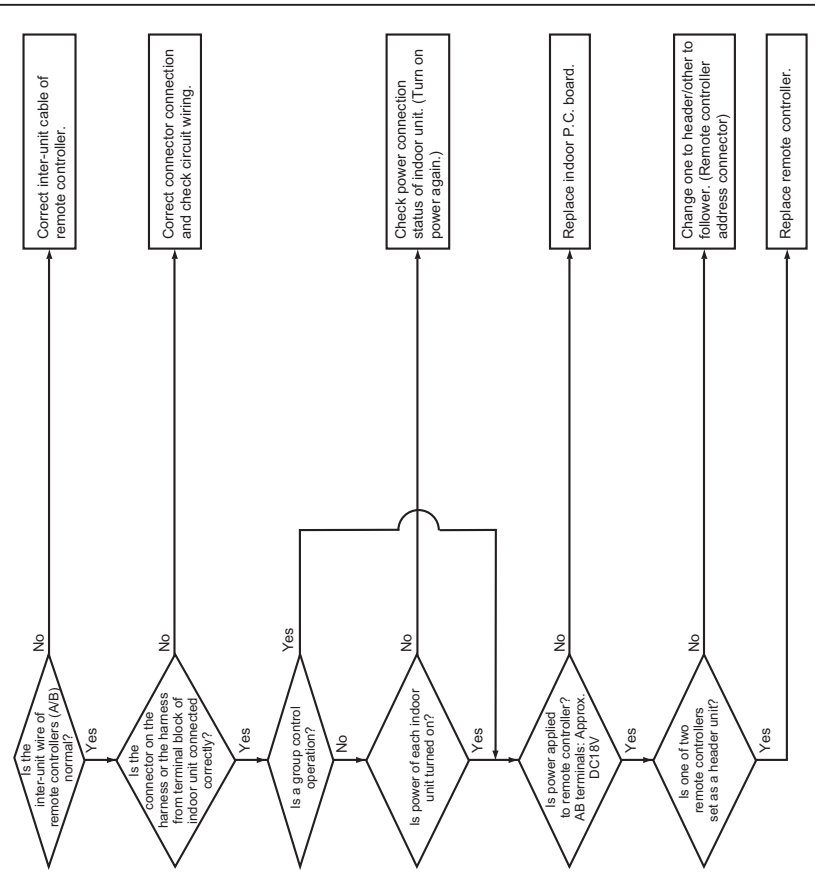
▼ How to Check Outdoor Fan Motor

(1) Turn off the power supply.
(2) Remove fan motor leads from the fan P.C. board for the outdoor fan.
(3) Rotate the fan by hand. If the fan does not turn, the fan motor is faulty (locked up). Replace the fan motor. If the fan turns, measure the phase-to-phase winding resistances using a multimeter. It is normal if the measurements are in the 8.1-9.9 range. (Use a digital multimeter.)



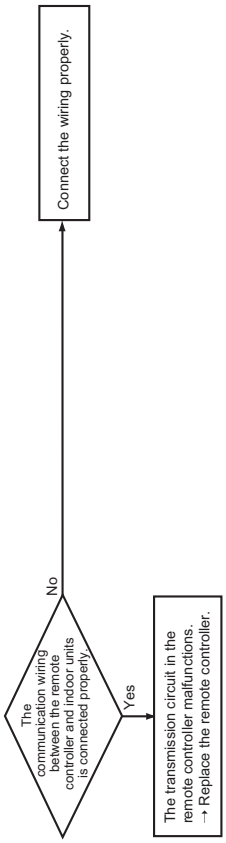
10-5. Diagnostic Procedure for Each Check Code (Indoor Unit)

Check code	Check code name	Cause
[E01]	Communication trouble between the indoor unit and remote controller (detected on the remote controller)	1. Remote controller inter-unit wire trouble 2. Indoor power trouble 3. Indoor P.C. board trouble 4. Remote controller address setup trouble 5. Remote controller P.C. board trouble



Check code	Check code name	Cause
[E02]	Signal transmission trouble on the remote controller	Unable to send signals to indoor units

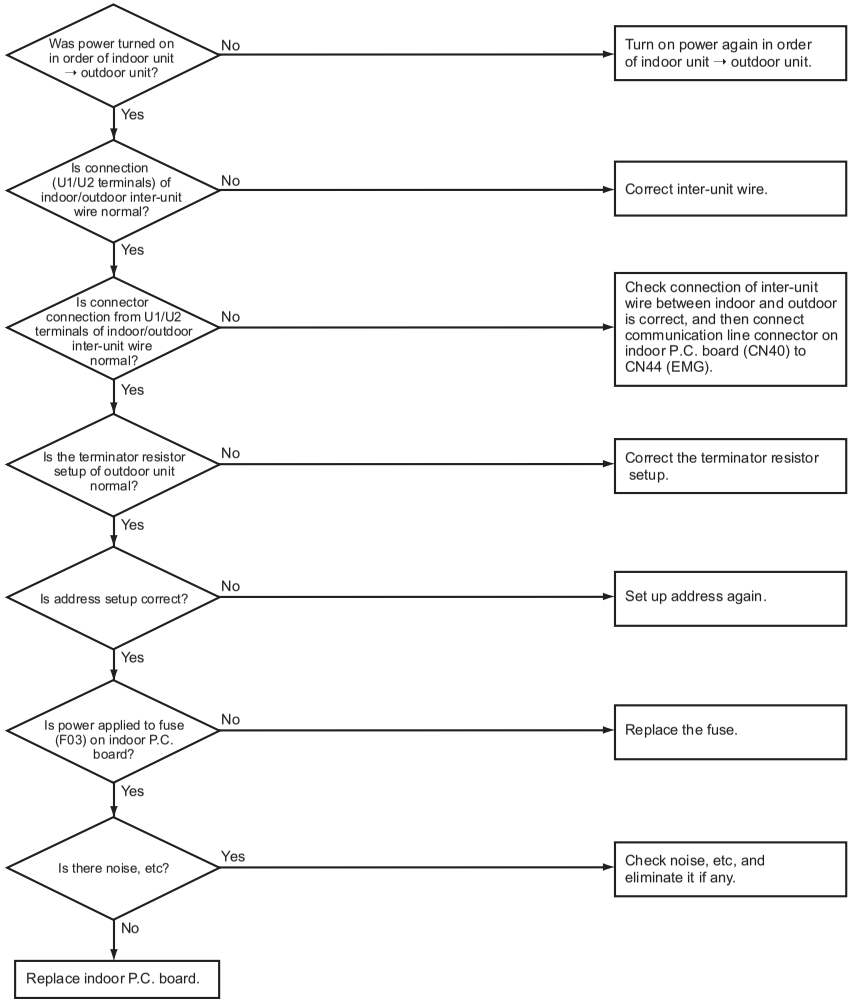
* The check code is not indicated on the central control device or the 7-segment indication on the outdoor unit.



Check code	Check code name	Cause
[E03]	Communication trouble between the indoor unit and remote controller (detected on the indoor unit)	1. No signal from a wired remote control and a wireless receiving unit. 2. In case the Central remote controller is used without changing DN code [103]. (Indoor unit before May, 2021 manufacture)

- A check code [E03] is displayed when an indoor unit cannot receive the signal from a wired remote control and a wireless receiving unit. Check the communication wiring from the remote controller A and B.
- When using an air conditioner without a remote controller by indoor unit before May, 2021 manufacture, the setting change to 0001 from 0000 is requied in the DN code [103]. A check code [E03] will be displayed, if it is used without making a setting change. (Excluding High wall type)
- Since communication is impossible, this check code [E03] is not displayed on a wired remote control. Check code [E03] will be displayed on the Centrol remote controller.

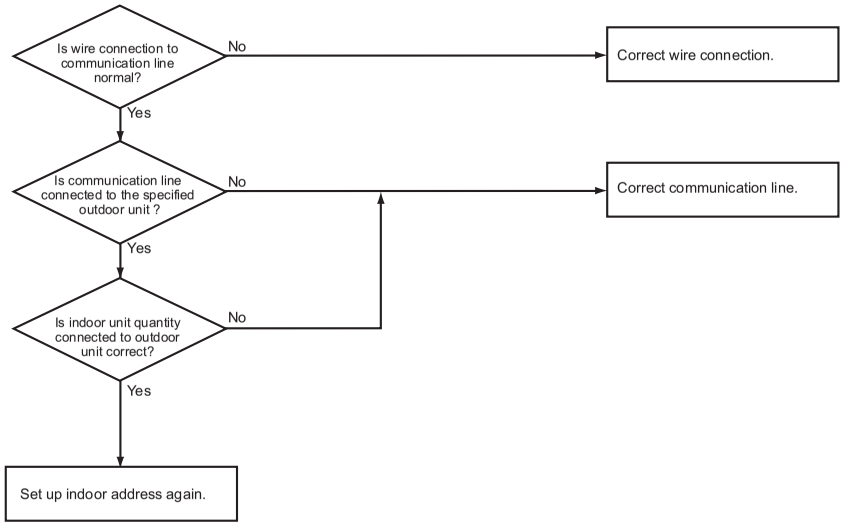
Check code	Check code name	Cause
[E04]	Indoor/Outdoor communication circuit trouble (Detected at indoor side)	1. Power of outdoor unit was firstly turned on. 2. Connection trouble of communication line between indoor and outdoor 3. Terminator resistor setup trouble on communication between indoor and outdoor 4. Address setup trouble



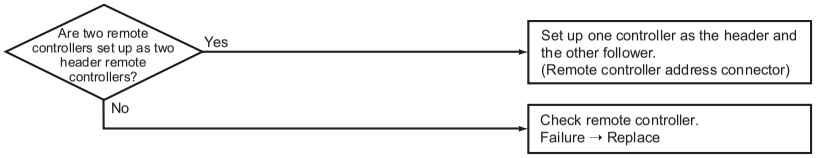
Check code	Check code name	Cause
[E08]	Duplicated indoor addresses	Indoor addresses are duplicated.

Sub-code: Duplicated indoor address

Using a wired remote controller, check the setup CODE No. (DN code) 12, 13, and 14.
When there is no address duplication, check to the following flowchart.

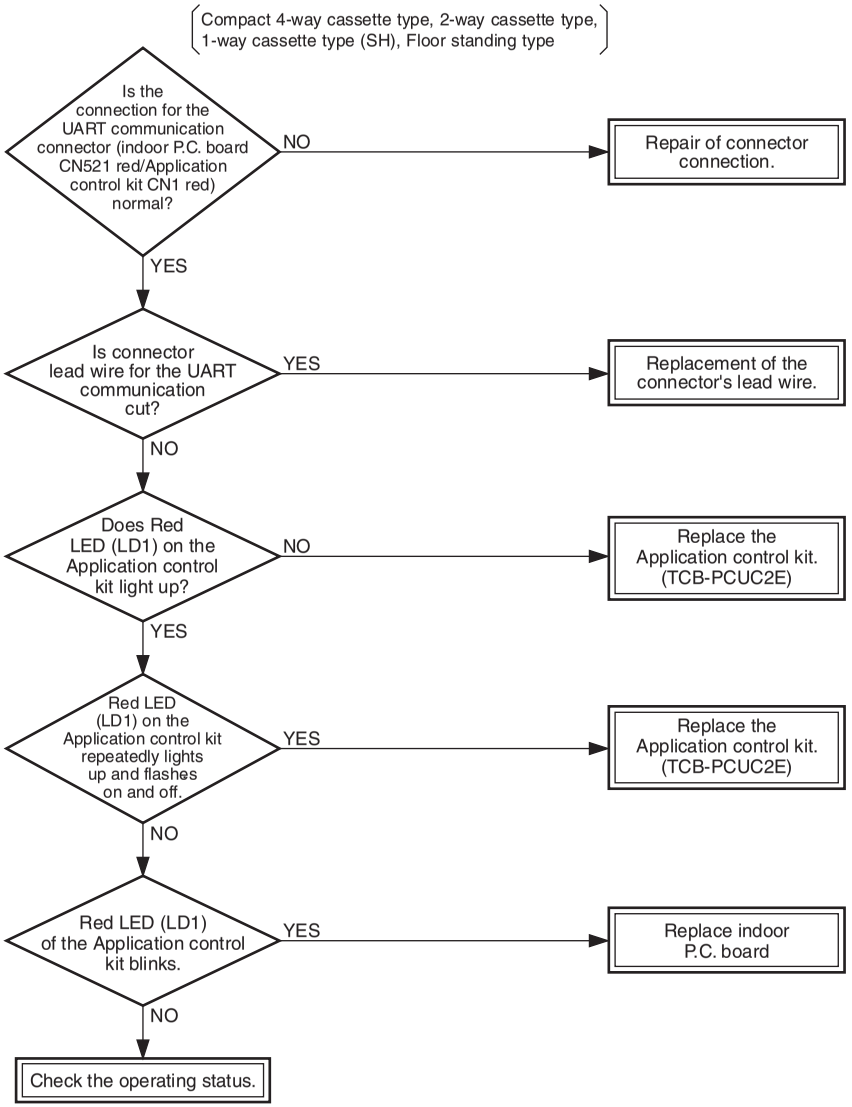


Check code	Check code name	Cause
[E09]	Duplicated header remote controller	Setup of header remote controller is duplicated.

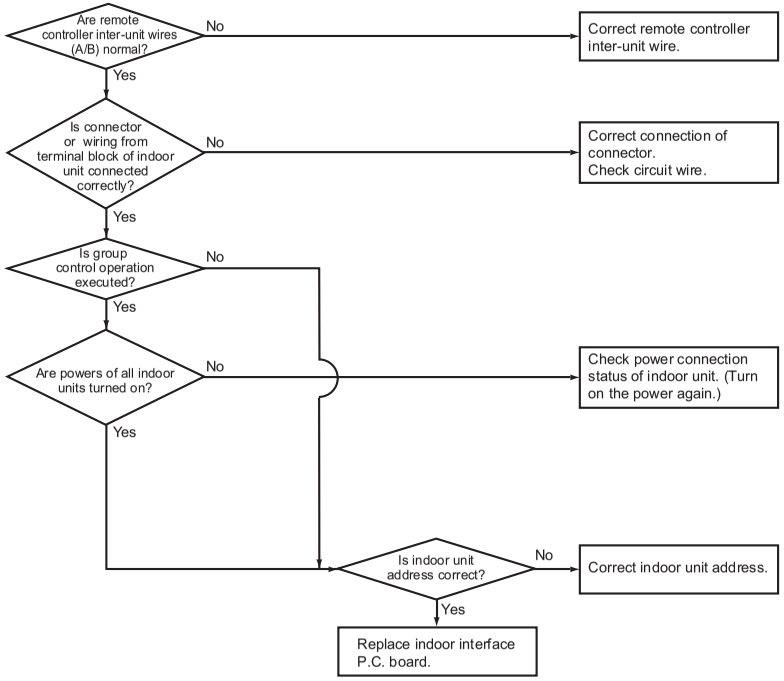


Check code	Check code name	Cause
[E10]	Communication trouble between indoor MCUs.	Indoor P.C. board trouble.

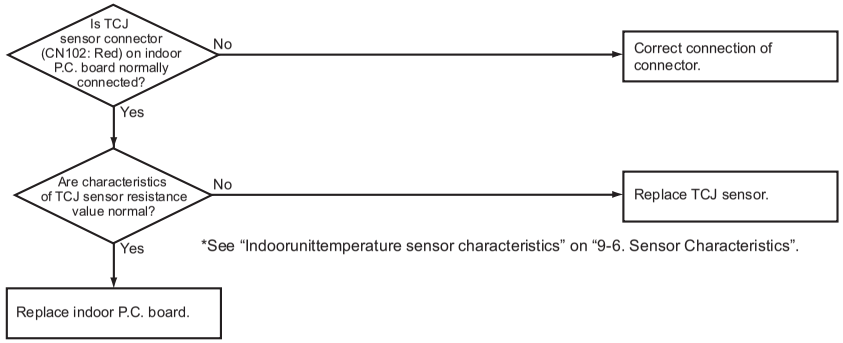
Check code	Check code name	Cause
[E11]	Communication trouble between Application control kit and Indoor unit	1.Application control kit trouble 2. Indoor P.C. board trouble



Check code	Check code name	Cause
[E18]	Communication trouble between indoor header and follower	Regular communication between indoor header and follower is unavailable.

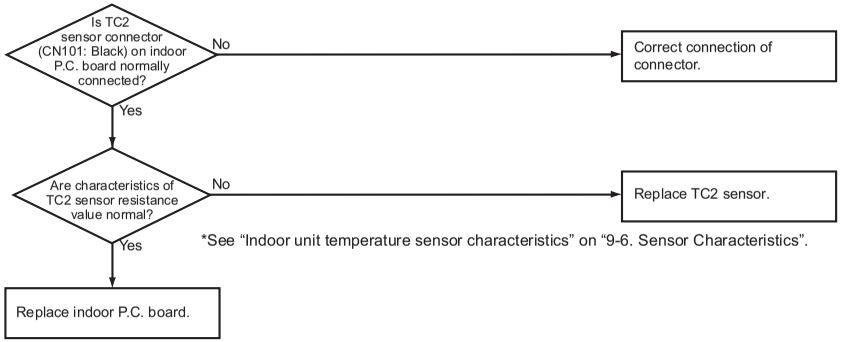


Check code	Check code name	Cause
[F01]	Indoor TCJ sensor trouble	TCJ sensor Open/Short-circuit



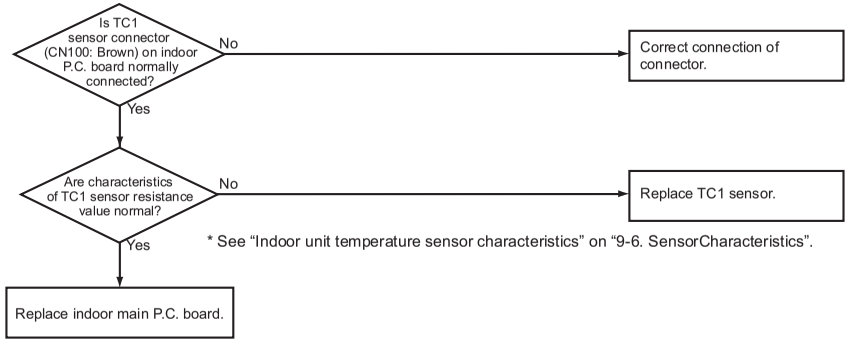
*See “Indoorunittemperature sensor characteristics” on “9-6. Sensor Characteristics”.

Check code	Check code name	Cause
[F02]	Indoor TC2 sensor trouble	TC2 sensor Open/Short-circuit



*See “Indoor unit temperature sensor characteristics” on “9-6. Sensor Characteristics”.

Check code	Check code name	Cause
[F03]	Indoor TC1 sensor trouble	TC1 sensor Open/Short-circuit



* See “Indoor unit temperature sensor characteristics” on “9-6. SensorCharacteristics”.

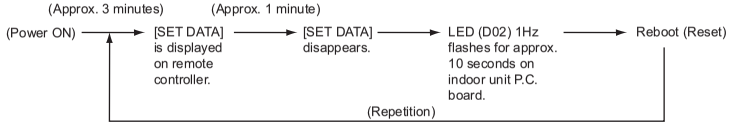
Check code	Check code name	Cause
[F10]	Indoor TA/TSA sensor trouble	TA sensor Open/Short-circuit

This trouble code means detection of Open/Short-circuit of TA sensor. Check disconnection of circuit for connection of connector (TA /TSA sensor : CN104, Yellow) and characteristics of sensor resistance value. (See “Indoor unit temperaturesensor characteristics” on “9-6. Sensor Characteristics”.)
If sensor is normal, replace indoor P.C. board.

Check code	Check code name	Cause
[F29]	Indoor other trouble	Indoor P.C. board trouble

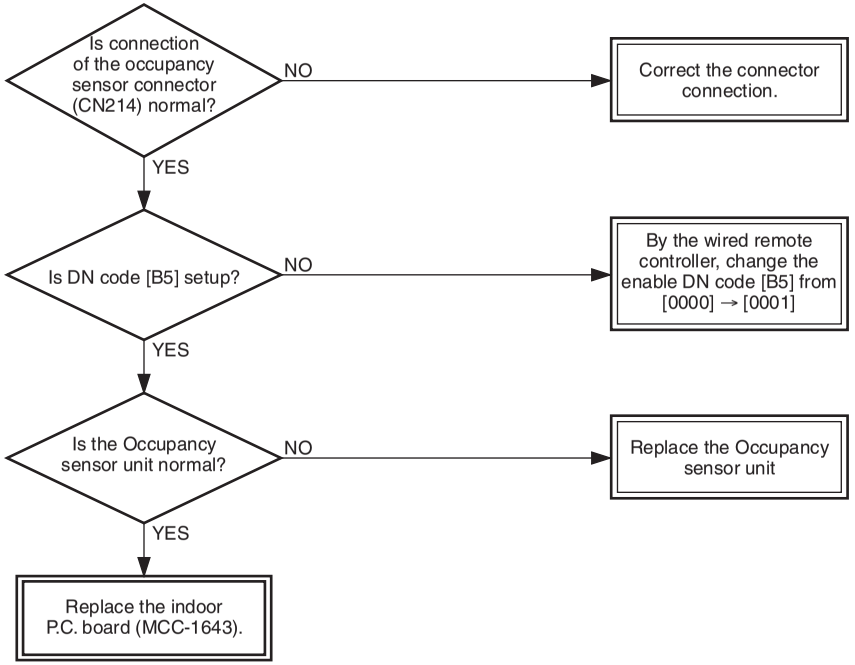
This trouble is detected during operation of air conditioner of IC10 non-volatile memory (EEPROM) on indoor unit P.C.board. Replace service P.C. board.

* If EEPROM was not inserted when power was turned on or it is absolutely impossible to read/write EEPROM data, the automatic address mode is repeated.



Check code	Check code name	Cause
[F30]	Occupancy sensor trouble	1.Occupancy sensor trouble 2. Indoor P.C. board trouble

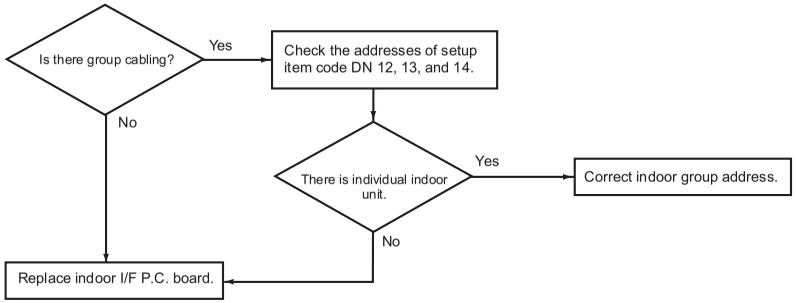
(4-way cassette type)



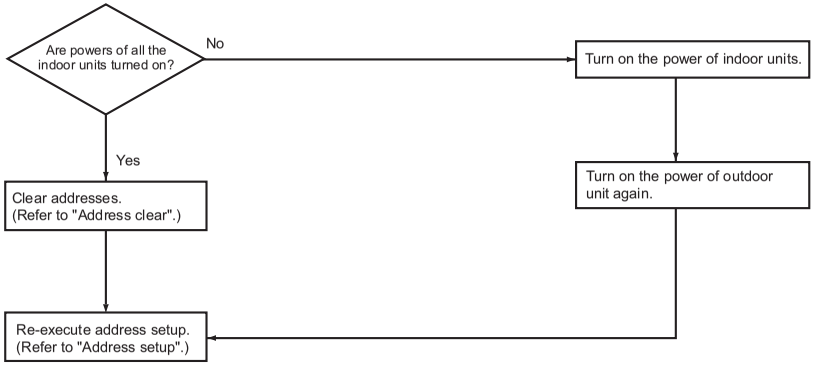
Check code	Check code name	Cause
[L03]	Duplicated indoor header units	There are two or more indoor header units in a group during group control.

1) Check whether the connection on remote controllers (group and/or individual) has been changed since the group configuration and address checking on the remote controllers finished.
2) If the group configuration and address are normal when power has been turned on, the mode automatically shifts to address setup mode. For setting up addresses again, refer to "Address setup".

Check code	Check code name	Cause
[L07]	A group line exists in an individual indoor unit	A group line is connected to an individual indoor unit.

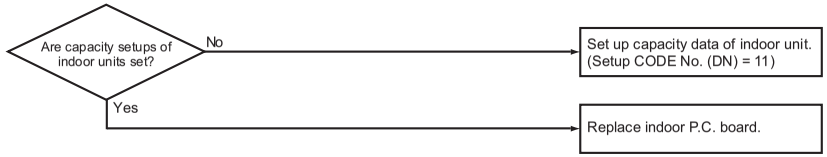


Check code	Check code name	Cause
[L08]	Indoor group / address unset	Indoor unit address is unset

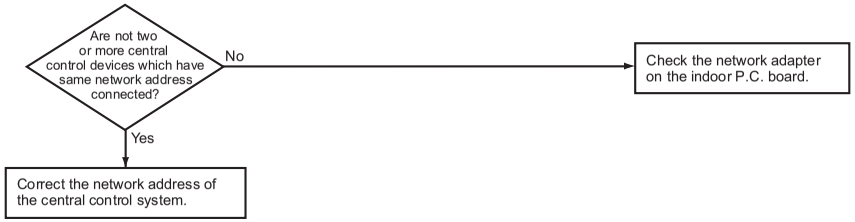


Note) This code is displayed when the power is turned on at the first time after installation. (Because the address is not yet set up)

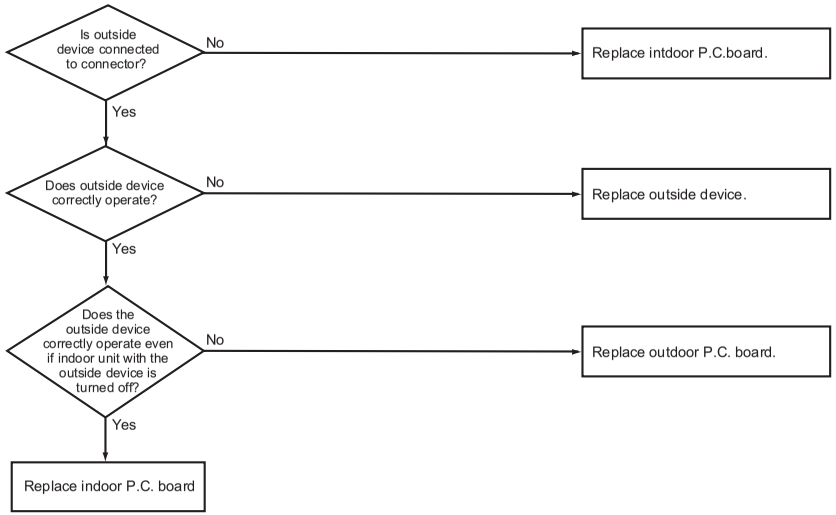
Check code	Check code name	Cause
[L09]	Indoor capacity unset	Indoor unit's capacity is unset



Check code	Check code name	Cause
[L20]	Duplicated central control addresses	Central control addresses are duplicated.

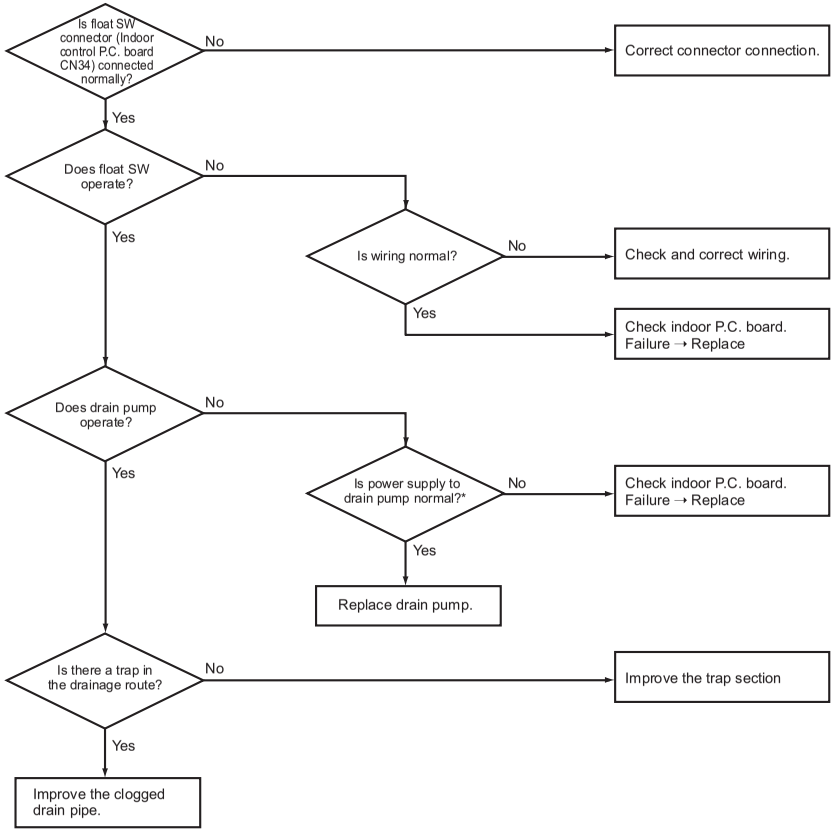


Check code	Check code name	Cause
[L30]	Interlock in indoor unit from outside	Abnormal input from the outside



Check code	Check code name	Cause
[P10]	Water overflow in an indoor unit	1. Float SW malfunction 2. Drain pump malfunction 3. Clogging of drain pipe 4. Indoor P.C. board trouble

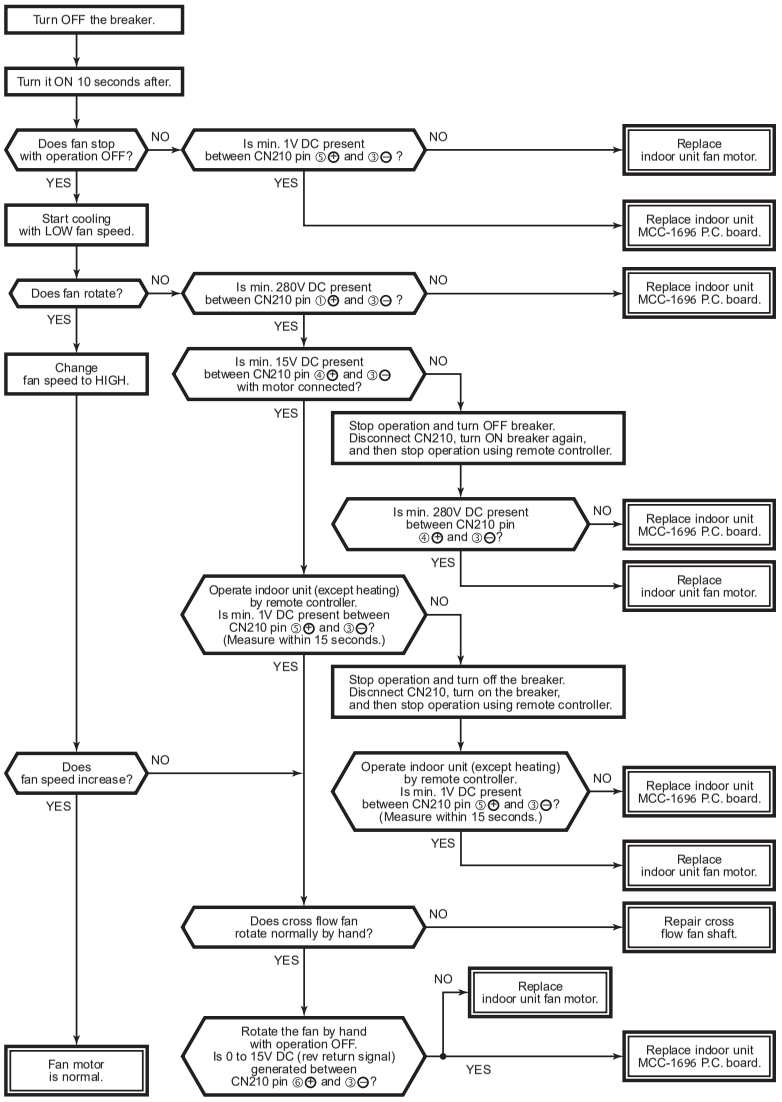
Sub-code: Overflowing indoor unit's address



* Check there is 220V-240V voltage of 1-3 pin of CN504 on indoor P.C. board.

Check code	Check code name	Cause
[P12]	Indoor fan motor trouble	1. Wiring trouble of fan motor connector 2. Fan motor trouble 3. Indoor P.C. board trouble

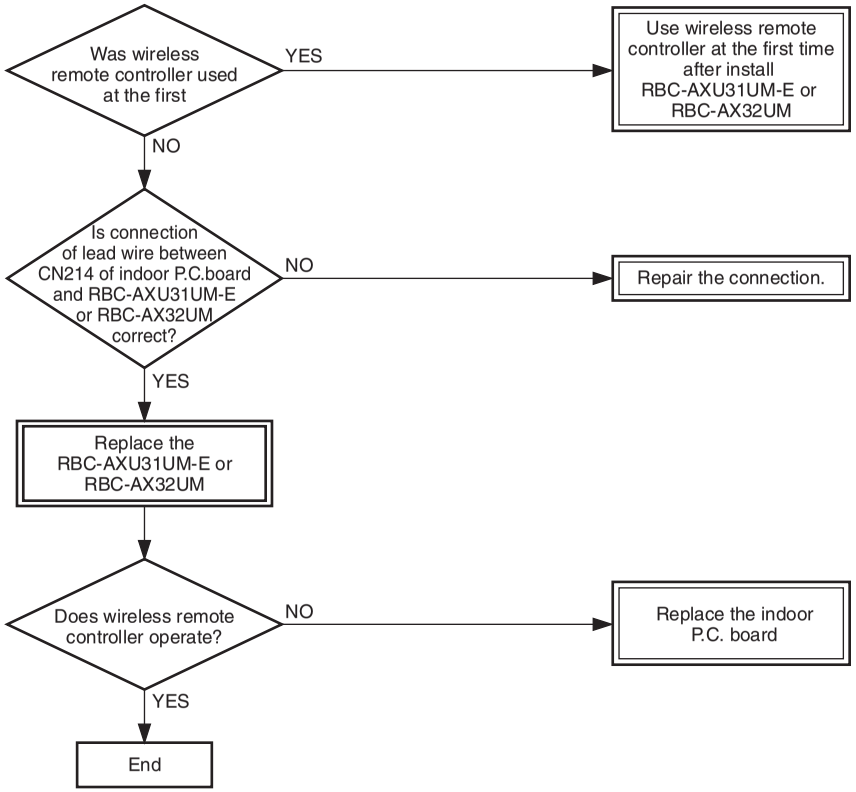
[P12 error]



Check code	Check code name	Cause
[P31]	Other indoor trouble (Group follower unit trouble)	Another indoor unit in the group is abnormal.

When the header unit of the group detected trouble [E03], [L03], [L07] or [L08], the follower unit of the group displays [P31] trouble and stops. There are no check code display and alarm record of the main remote controller.

Check code	Check code name	Cause
----	Wireless remote controller trouble	1. Wireless remote controller trouble 2. Indoor P.C. board trouble

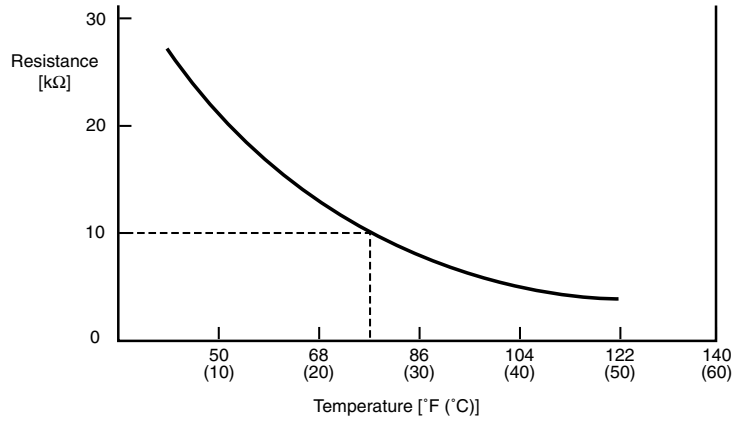


10-6. Sensor Characteristics

Indoor Unit

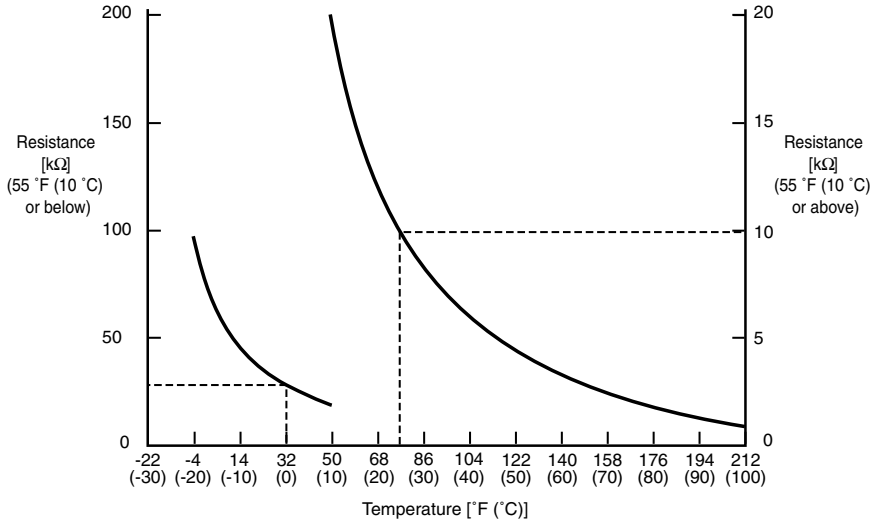
■ Temperature sensor characteristics

Indoor TA sensor



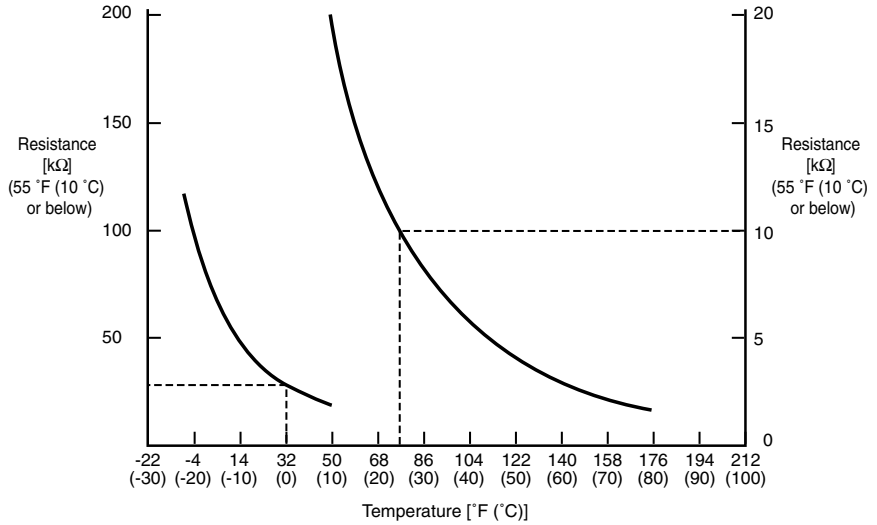
Temperature [˚F (˚C)]	Resistance [kΩ]
32 (0)	33.9
41 (5)	26.1
50 (10)	20.3
59 (15)	15.9
68 (20)	12.6
77 (25)	10.0
86 (30)	8.0
95 (35)	6.4
104 (40)	5.2
113 (45)	4.2
122 (50)	3.5
131 (55)	2.8
140 (60)	2.4

Indoor TC1 sensor



Temperature [˚F (˚C)]	Resistance [kΩ]
-4 (-20)	99.9
5 (-15)	74.1
14 (-10)	55.6
23 (-5)	42.2
32 (0)	32.8
41 (5)	25.4
50 (10)	19.8
59 (15)	15.6
68 (20)	12.4
77 (25)	10.0
86 (30)	8.1
95 (35)	6.5
104 (40)	5.3
113 (45)	4.4
122 (50)	3.6
131 (55)	3.0
140 (60)	2.5
149 (65)	2.1
158 (70)	1.8
167 (75)	1.5
176 (80)	1.3
185 (85)	1.1
194 (90)	1.0
203 (95)	0.8
212 (100)	0.7

Indoor TC2 and TCJ sensors



Temperature [˚F (˚C)]	Resistance [kΩ]
-4 (-20)	115.2
5 (-15)	84.2
14 (-10)	62.3
23 (-5)	46.6
32 (0)	35.2
41 (5)	26.9
50 (10)	20.7
59 (15)	16.1
68 (20)	12.6
77 (25)	10.0
86 (30)	8.0
95 (35)	6.4
104 (40)	5.2
113 (45)	4.2
122 (50)	3.5
131 (55)	2.8
140 (60)	2.4
149 (65)	2.0
158 (70)	1.6
167 (75)	1.4
176 (80)	1.2

11. REPLACEMENT OF SERVICE P.C. BOARD

Indoor Unit

⚠ CAUTION

<Note: when replacing the P.C. board for indoor unit servicing>

The nonvolatile memory (hereafter called EEPROM, IC503) on the indoor unit P.C. board before replacement includes the model specific type information and capacity codes as the factory-set value and the important setting data which have been automatically or manually set when the indoor unit is installed, such as system/indoor/group addresses, high ceiling select setting, etc.

When replacing the P.C. board for indoor unit servicing, follow the procedures below.

After replacement completes, confirm whether the settings are correct by checking the indoor unit No., Group header unit/follower unit settings and perform the cooling cycle confirmation through the trial operation.

<Replacement procedures>

CASE 1

Before replacement, the indoor unit can be turned on and the setting data can be read out by wired remote control operation.

EEPROM data read out **[1]**

⇩

Replacement of P.C. board for Indoor unit servicing and power on **[2]**

⇩

Writing the read out EEPROM data **[3]**

⇩

Power reset
(for all indoor units connected to the remote control when the group operation control is performed.)

CASE 2

The EEPROM before replacement is trouble and the setting data cannot be read out.

EEPROM data read out **[2]**

⇩

Writing the setting data to EEPROM, such as optional connection setting, etc., based on the customer information. **[3]**

⇩

Power reset
(for all indoor units connected to the remote control when the group operation control is performed.)

[1] Setting data read out from EEPROM

(Stop the operation of the unit.)

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[1] Setting data read out from EEPROM

The setting data modified on the site, other than factory-set value, stored in the EEPROM shall be read out.

Step 1 Push SET , CL and TEST button on the remote controller simultaneously for more than 4 seconds.

***** When the group operation control is performed, the unit No. displayed for the first time is the header unit No.
At this time, the CODE No. (DN) shows " 10 ". Also, the fan of the indoor unit selected starts its operation and the swing operation also starts if it has the louvers.

Step 2 Every time when the UNIT LOUVER (left side button) button is pushed, the indoor unit No. under the group control is displayed in order. Specify the indoor unit No. to be replaced.

1. Change e the CODE No. (DN) to 10 → 01 by pushing ▼ / ▲ buttons for the temperature setting. (this is the setting for the filter sign lighting time.)
At this time, be sure to write down the setting data displayed.

2. Change the CODE No. (DN) by pushing ▼ / ▲ buttons for the temperature setting.
Similarly, be sure to write down the setting data displayed.

3. Repeat the step 2-2 to set the other settings in the same way and write down the setting data as shown in the table 1 (example).

***** The CODE No. (DN) are ranged from " 01 " to " FE ". The CODE No. (DN) may skip.

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1 Push the **[MENU]** button to display the menu screen.

2 Push and hold the **[MENU]** button and the **[ ]** button at the same time to display the "**Field setting menu**".

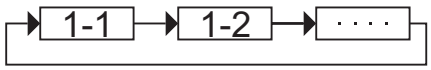
- Push and hold the buttons for more than 4 seconds.

3 Push the **[ ]** / **[ ]** button to select **"7. DN setting"** on the **"Field setting menu"** screen, then push the **[Set/Fix]** button.

- When the group control is used, all the indoor units connected into the system are displayed on the screen.

4 Push the to select indoor unit in which you want to read out setting data in the EEPROM.

- The selected unit changes as follows each time the button is pushed:



5 Push the**" [Set/Fix]"** button.

- The setting display for the selected unit is displayed.
- The fan and louver of the indoor unit operate.

6 Push the **[ ]** / **[ ]** to set "**DN code**" to **[0001]**, then write down the setting data to be displayed.
(Filter sign lighting time)

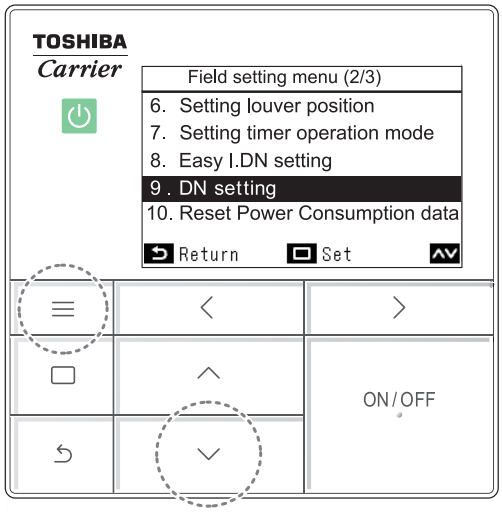
7 Repeat the operation of ***1*** to ***6*** , then write down the setting data like **Table 1. Setting data** (CODE No. table (example)).

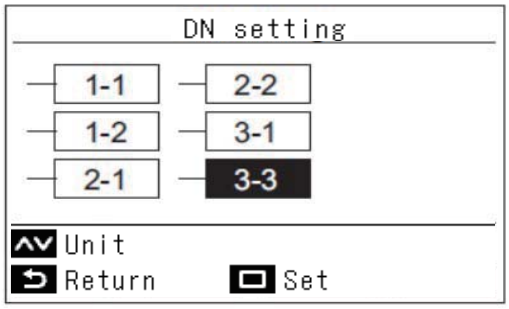
∗ The Code No.(DN) are ranged in order of No., which may be sometimes skipped.

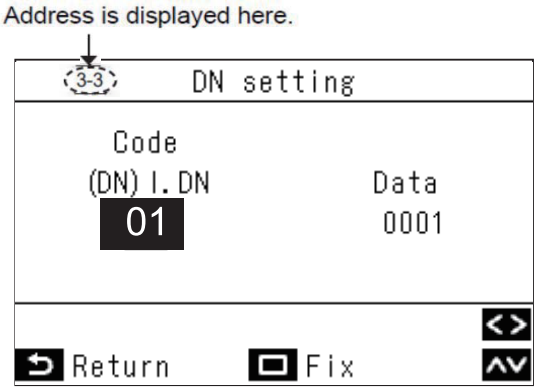
8 After writing down all the setting data, push the **"[Set/Fix]"**

- The setting display for the selected unit is displayed.
- When the group control is used, the fan and louver of the selected indoor unit operate.

9 Push the **[MENU]** button to set the other **"Code(DN)"** and **"Data"**. After **"Continue?"** is displayed on the screen, push the **[Return]** button to finish the setting operation. " Setting" appears on the screen for a while, then the screen returns to the "Field setting menu" screen.







CODE No. required at least

DN	Contents
0010	Type
0011	Indoor unit capacity
0012	System address
0013	Indoor unit address
0014	Group address

1. The CODE No. for the Indoor unit type and Indoor unit capacity are required to set the rotation number setting of the fan.
2. If the system/indoor/group addresses are different from those before replacement, the auto-address setting mode starts and the manual resetting may be required again.
   (when the multiple units group operation including twin system.)

[2] P.C. Board for indoor unit servicing replacement procedures

Step 1 Replace the P.C. board to the P.C. board for indoor unit servicing.
At this time, perform the same setting of the jumper wire (J01, J08, J09) setting (cut), switch SW501, (short-circuit) connector CN34 as the setting of the P.C. board before replacement.

Step 2 According to the system configuration, turn on the indoor unit following to the either methods shown below.

a) Single operation (Indoor unit is used as standalone.)
Turn on the indoor unit.

1. After completion of the auto-address setting mode (required time: approx. 5 min.), proceed to [3]. (System address = 1, Indoor unit address = 1, Group address = 0 (standalone) are automatically set.)
2. Interrupt the auto-address setting mode, and proceed to [3].

b) Group operation (including twin triple and double twin system)
Turn on the indoor unit(s) with its P.C. board replaced to the P.C. board for indoor unit servicing, according to either methods 1 or 2 shown below.

1. Turn on only the indoor unit with its P.C. board replaced. (Be sure to confirm the remote controller is surely connected. If not, the operation [3] cannot be performed.)
   Perform either methods 1 or 2 described in item a) above.
2. Turn on the multiple indoor units including the indoor unit with its P.C. board replaced.
   - Twin or triple or double twin 1 system only
   - All group connections

After completion of the auto-address setting mode (required time: approx. 5 min.), proceed to **[3]**.

* The header unit of the group may be changed by performing the auto-address setting.
  Also, the system address/Indoor unit address of the indoor unit with its P.C. board replaced may be assigned to the addresses (not used) other than those of the indoor units without its P.C. board replaced.
  It is recommended to keep the information in advance, which refrigerant system the indoor unit belongs to or whether the indoor unit works as the header unit or the follower unit in the group control operation.

[3] Writing the setting data to EEPROM

(Stop the operation of the unit.)

<RBC-AMT∗∗∗>

Step 1 Push SET , CL and TEST buttons on the remote controller simultaneously for more than 4 seconds.

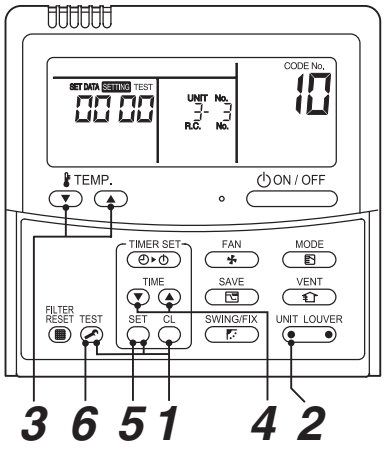
* In the group control operation, the unit No. displayed for the first time is the header unit No.. At this time, the CODE No. (DN) shows " 10 ". Also, the fan of the indoor unit selected starts its operation and the swing operation starts if it has the louvers.
(The unit No. " ALL " is displayed if the auto-address setting mode is interrupted in [2] step 2 a))

Step 2 Every time when UNIT LOUVER (left side button) button is pushed, the indoor unit No. in the group control operation are displayed in order.
(The settings stored in the EEPROM of the P.C. board for indoor unit servicing are the factory-set values.)
Specify the indoor unit No. with its P.C. board replaced to the P.C. board for indoor unit servicing.
(You cannot perform this operation if "ALL " is displayed.)

Step 3 Select the CODE No. (DN) can be selected by pushing the ▼ / ▲ button for the temperature setting.

• Set the indoor unit type and capacity.
The factory-set values shall be written to the EEPROM by changing the type and capacity.

1. Set the CODE No. (DN) to 10 . (without change)
2. Select the type by pushing ▼ / ▲ buttons for the timer setting.
(For example, High wall Type is set to "0008". Refer to table 2)
3. Push SET button.
(The operation completes if the setting data is displayed.)
4. Change the CODE No. (DN) to " 11 " by pushing ▼ / ▲ buttons for the temperature setting.
5. Select the capacity by pushing ▼ / ▲ buttons for the timer setting.
(For example, UP036 Type is set to "0015". Refer to table 3)
6. Push SET button.
(The setting completes if the setting data are displayed.)



Step 4 Write the on-site setting data to the EEPROM, such as address setting, etc. Perform the steps 1 and 2 above again.

Step 5 Change the CODE No. (DN) to " 01 " by pushing ▼ / ▲ buttons for the temperature setting.
(this is the setting for the filter sign lighting time.)

Step 6 Check the setting data displayed at this time with the setting data put down in [1].

1. If the setting data is different, modify the setting data by pushing ▼ / ▲ buttons for the timer setting to the data put down in [1].
The operation completes if the setting data is displayed.
2. If the data is the same, proceed to next step.

Step 7 Change the CODE No. (DN) by pushing ▼ / ▲ buttons for the temperature setting.
As described above, check the setting data and modify to the data put down in [1].

Step 8 Repeat the steps 6 and 7.

Step 9 After the setting completes, push TEST button to return to the normal stop status.
(It takes approx. 1 min until the remote controller operation is available again.)

* The CODE No. (DN) are ranged from " 01 " to " FE ". The CODE No. (DN) is not limited to be serial No.
Even after modifying the data wrongly and pushing SET button, it is possible to return to the data before modification by pushing CL button if the CODE No. (DN) is not changed.

<RBC-AWSU52-UL>

1 Push the **[Menu]** button to display the menu screen.

2 Push and hold the **[Menu]** button and the **[ ]** button at the same time to display the **"Field setting menu"**.

- Push and hold the buttons for more than 4 seconds.

3 Push the **[ ] / [ ]** button to select **"7. DN setting"** on the **"Field setting menu"** screen, then push the **[Set/Fix]**.

- When the group control is used, all the indoor units connected into the system are displayed on the screen.

4 Push the to select indoor unit in which you want to write the setting data to EEPROM, then push the **[Set/Fix]**.

- The setting display for the selected unit is displayed.
- The fan and louver of the indoor unit operate.

5 Move the cursor to select **"Code (DN)"** with the **[ ]** button, then set **"[0010]"** with the **[ ] / [ ]** button.

6 Move the cursor to select **"Data"** with the **[ ]** button, then push the **[ ] / [ ]** button to set the **"Data"** to each Type name of indoor unit.
For High wall type, set **"Data"** to **[0008]**.

7 Push the **[Menu]** button to set the other **"Code(DN)"** and **"Data"**. After **"Continue?"** is displayed on the screen, push the **[Set/Fix]**.

8 Move the cursor to select **"Code(DN)"** with the **[ ]** button, then set **[0011]** with the **[ ] / [ ]** button.

9 Move the cursor to select **"Data"** with the **[ ]** button then push the **[ ] / [ ]** button to set the "Data" to each capacity of indoor unit.
For 036 model, set **"Data"** to **[0015]**.

10 Push the **[Menu]** button to set the other **"Code(DN)"** and **"Data"**. After **"Continue?"** is displayed on the screen, push the No to finish the setting operation. " Setting" is displayed on the screen for a while, then the screen returns to the **"Field setting menu"** screen.

11 Pushing the **[Return]** button on the unit selection screen displays **" Setting"** on the screen for a while when the single operation is used, then the screen returns to the **"Field setting menu"** screen.
(It takes approx. 1 min until the remote controller operation is available again.)

12 Write the on-site setting data, such as an address setting, after installation to the EEPROM.
Perform the operation of ***1*** to ***4*** again.

13 Push the **[ ]** button to select **"Code(DN)"**, then set it to **[0001]** with the **[ ] / [ ]**
(Filter sign lighting time)

14 Check the setting data displayed at this time with the setting data written down in **[1] Setting data read out from EEPROM**.
If the setting data is different, set **"Code(DN)"** with the **[ ] / [ ]** button, push the **[ ]** to select **"Data"** and change it to the setting data written down in **[1] Setting data read out from EEPROM** with the **[ ] / [ ]** button, then push the **[Menu]** button.
If the setting data is the same, proceed to next operation.

15 Change **"Code (DN)"** to **[0002]** with the **[^] / [v]** button. (Filter pollution level)

16 Perform the operation of ***14***. Check the other **"Code (DN)"** also, change **"Data"** into the setting data written down in **[1] Setting data read out from EEPROM** if the setting data is different.

17 After writing down all the data, push the **[Return]** button.

At the time, " **Setting"** is displayed on the screen for a while when the single operation is used, then the screen returns to the **"Field setting menu"** screen.

Pushing the **[Return]** button on the unit selection screen again displays " **Setting"** on the screen for a while when the group control is used, then the screen returns to the **"Field setting menu"** screen.

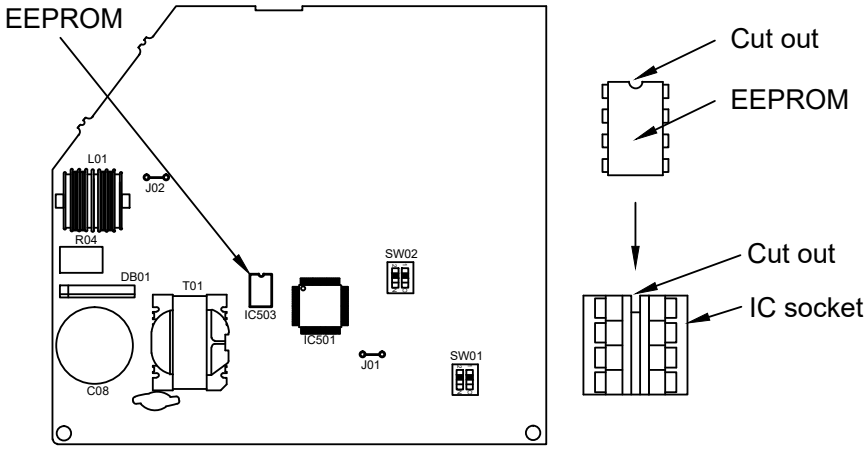
(It takes approx. 1 min until the remote controller operation is available again.)

***** The **Code No.(DN)** are ranged in order of No., which may be sometimes skipped.
Even after changing the data wrongly and pushing the **[Menu]** button, it is possible to return to the data before change by pushing the **[Return]** button if the CODE No (DN) is not changed.

<Fig. 2 EEPROM layout diagram>

The EEPROM (IC503) is attached to the IC socket. When detaching the EEPROM, use a tweezers, etc.
Be sure to attach the EEPROM by fitting its direction as shown in the figure.

* Do not bend the IC lead when replacing.



□Fig.2□

Table 1.Setting data(CODE No. table(example))

DN	Item	Setting data	Factory-set value
01	Filter display delay timer		0002 : 2500H
02	Dirty state of filter		0000 : Standard
03	Central control address		00Un/0099 : Unfixed
04	Specific indoor unit priority		0000 : No priority
06	Heating suction temperature shift		0002 : +3.6°F(+2°C)
0D	Automatic mode		0001 : No automatic
0F	Cooling only		0000 : Heat pump
10	Type		Depending on model type
11	Indoor unit capacity		According to capacity type
12	Line address		00Un/0099 : Unfixed
13	Indoor unit address		00Un/0099 : Unfixed
14	Group address		00Un/0099 : Unfixed
19	Flap type (Wind direction adjustment)		Depending on Type
1E	Temperature range of cooling/heating automatic SW control point		0003 : 3 deg (Ts±1.5)
28	Automatic restart of power failure	0001 : Enable	0000 : None
29	Humidifier operation condition		0000 : Usual
2A	Selection of option / Trouble input (TCB-PCUC2E: CN3)		0002 : None
2E	HA terminal (CN61) select		0000 : Usual (HA terminal)
31	Ventilating fan control		0000 : Unavailable
32	Sensor SW		0000 : Body sensor
33	Temperature unit select	0001 : Fahrenheit (°F)	0000 : Centigrade (°C)
5D	External static pressure		0000 : Default setting
60	Timer setting (wired remote controller)		0000 : Available
7A	Change unit 0.9°F(0.5°C) or 1.8°F(1°C) on remote	0001 : 0.9°F(0.5°C)	0000 : 1.8°F(1°C)
D0	Remote controller operation save function		0001 : Enable
E0	Region	0001 : North America	0000 : Domestic
F6	Presence of Application control kit (TCB-PCUC2E)		0000 : None
FC	Communication protocol		0000 : TCC-LINK
FE	FS unit adress		00Un/0099 : Unfixed
103	Remote controller setting		0000 : With remote controller
1Fb	Remote controller operation		0000 : Operation possible
1FC	Indoor Unit terminating resistance		0000 : OFF

Table 2. Type : CODE No.10

Setting data	Type	Type name abb.
0001 *1	4-way Air Discharge Cassette Type	MMU-UP****HP-UL
0008	High wall type	MMK-UP****HP-UL

Table 3. Indoor unit capacity : CODE No.11

Setup data	Model
0000 *1	Invalid
0013	030 type
0015	036 type

*1 EEPROM initial value on the P.C. board for indoor unit servicing.

*2 ⚠ CAUTION

< Model name MMK-UP****HP-UL >

For the above model. Set the CODE no. to

"E0" the setting data "0000" (initial) to "0001"

"28" the setting data "0000" (initial) to "0001"

"33" the setting data "0000" (initial) to "0001"

"7A" the setting data "0000" (initial) to "0001"

12. INSTALLATION MANUAL

Please read this Installation Manual carefully before installing the Air Conditioner.
- This Manual describes the installation method of the indoor unit.
- For installation of the outdoor unit, follow the Installation Manual attached to the outdoor unit.

ADOPTION OF NEW REFRIGERANT

This Air Conditioner uses R410A an environmentally friendly refrigerant.

Contents

Generic Denomination: Air Conditioner

Definition of Qualified Installer or Qualified Service Person
The air conditioner must be installed, maintained, repaired and removed by a qualified installer or qualified service person. When any of these jobs is to be done, ask a qualified installer or qualified service person to do them for you.
A qualified installer or qualified service person is an agent who has the qualifications and knowledge described in the table below.

Agent	Qualifications and knowledge which the agent must have
Qualified installer	• The qualified installer is a person who installs, maintains, relocates and removes the air conditioners made by Toshiba Carrier Corporation. He or she has been trained to install, maintain, relocate and remove the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations. • The qualified installer who is allowed to do the electrical work involved in installation, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. • The qualified installer who is allowed to do the refrigerant handling and piping work involved in installation, relocation and removal has the qualifications pertaining to this refrigerant handling and piping work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to refrigerant handling and piping work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. • The qualified installer who is allowed to work at heights has been trained in matters relating to working at heights with the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.
Qualified service person	• The qualified service person is a person who installs, repairs, maintains, relocates and removes the air conditioners made by Toshiba Carrier Corporation. He or she has been trained to install, repair, maintain, relocate and remove the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations. • The qualified service person who is allowed to do the electrical work involved in installation, repair, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. • The qualified service person who is allowed to do the refrigerant handling and piping work involved in installation, repair, relocation and removal has the qualifications pertaining to this refrigerant handling and piping work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to refrigerant handling and piping work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. • The qualified service person who is allowed to work at heights has been trained in matters relating to working at heights with the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.

Definition of Protective Gear

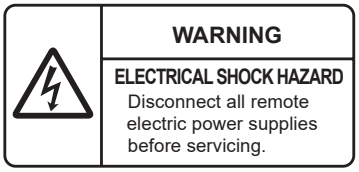
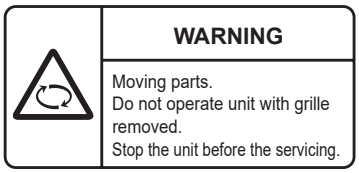
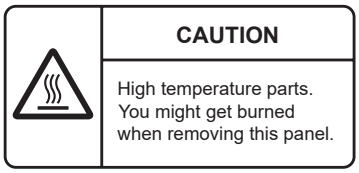
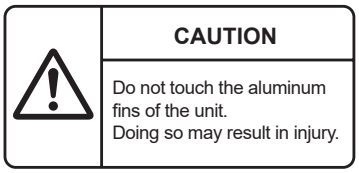
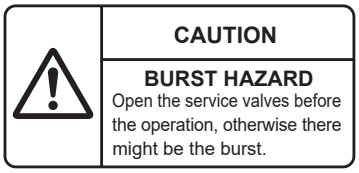
When the air conditioner is to be transported, installed, maintained, repaired or removed, wear protective gloves and 'Safety' work clothing.

In addition to such normal protective gear, wear the protective gear described below when undertaking the special work detailed in the table below.

Failure to wear the proper protective gear could lead to injury, burns, electric shocks and other injuries.

Work undertaken	Protective gear worn
All types of work	Protective gloves 'Safety' working clothing
Electrical-related work	Gloves to provide protection for electricians and from heat Insulating shoes Clothing to provide protection from electric shock
Work done at heights (19.7″ (50 cm))	Helmets for use in industry
Transportation of heavy objects	Shoes with additional protective toe cap

■ Warning indications on the air conditioner unit

Warning indication	Description
	**WARNING** **ELECTRICAL SHOCK HAZARD** Disconnect all remote electric power supplies before servicing.
	**WARNING** Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.
	**CAUTION** High temperature parts. You might get burned when removing this panel.
	**CAUTION** Do not touch the aluminium fins of the unit. Doing so may result in injury.
	**CAUTION** **BURST HAZARD** Open the service valves before the operation, to avoid unnecessary pressure built up which could lead to explosion.

1 PRECAUTIONS FOR SAFETY

- Ensure that all Local, National and International regulations are satisfied.
- Read this “PRECAUTIONS FOR SAFETY” carefully before Installation.
- The precautions described below include the important items regarding safety. Observe them without fail.
- After the installation work, perform a trial operation (test run) to check for any problem.
  Follow the Owner’s Manual to explain how to use and maintain the unit to the customer.
- Turn off the main power supply switch (or breaker) before the unit maintenance.
- Ask the customer to keep the Installation Manual together with the Owner’s Manual.

The manufacturer shall not assume any liability for the damage caused by not observing the description of this manual.

⚠ WARNING

General

- Before starting to install the air conditioner, read through the Installation Manual carefully, and follow its instructions to install the air conditioner.
- Only a qualified installer or qualified service person is allowed to do installation work. Inappropriate installation may result in water or refrigerant leakage, electric shock or fire.
- Do not use any refrigerant different from the one specifled for complement or replacement. Otherwise, abnormally high pressure may be generated in the refrigeration cycle, which may result in a failure or explosion of the product or an injury to your body.
- Before opening the front panel of the indoor unit set the circuit breaker to the OFF position. Failure to set the circuit breaker to the OFF position may result in electric shocks through contact with the interior parts. Only a qualified installer or qualified service person is allowed to remove the front panel of the indoor unit and do the work required.
- Before carrying out the installation, maintenance, repair or removal work, be sure to set the circuit breaker to the OFF position. Otherwise, may result in electric shocks.
- Place a “Work in progress” sign near the circuit breaker while the installation, maintenance, repair or removal work is being carried out. There is a danger of electric shocks if the circuit breaker is set to ON by mistake.
- Only a qualified installer or qualified service person is allowed to undertake work at heights using a stand of 19.7″ (50 cm) or more or to remove the front panel of the indoor unit to undertake work.
- Wear protective gloves and safety work clothing during installation, servicing and removal.
- Do not touch the aluminium fin of the unit. You may injure yourself if you do so. If the fin must be touched for some reason, first put on protective gloves and safety work clothing, and then proceed.

- When work is performed at heights, use a ladder which complies with the ISO 14122 standard, and follow the procedure in the ladder's instructions. Also wear a helmet for use in industry as protective gear to undertake the work.
- Before cleaning the filter set the circuit breaker to OFF without fail, and place a "Work in progress" sign near the circuit breaker before proceeding with the work.
- Before working at heights, put a sign in place so that no-one will approach the work location, before proceeding with the work. Parts and other objects may fall from above, possibly injuring a person below. While carrying out the work, wear a helmet for protection from falling objects.
- The refrigerant used by this air conditioner is the R410A.
- The air conditioner must be transported in stable condition. If any part of the product is broken, contact the dealer.
- When the air conditioner must be transported by hand, carry it by two or more people.
- Do not move or repair any unit by yourself. Must be done by qualified installer or qualified service person. Special precaution should be taken when removing the cover for the unit to avoid electric shock from high voltage lines.
- To transport the air conditioner, wear shoes with additional protective toe caps.
- To transport the air conditioner, do not take hold of the bands around the packing carton. You may injure yourself if the bands should break.
- This appliance is intended to be used by expert or trained users in shops, in light industry, or for commercial use by lay persons.

Selection of installation location

- When the air conditioner is installed in a small room, provide appropriate measures to ensure that the concentration of refrigerant leakage occur in the room does not exceed the critical level.
- Do not install the air conditioner in a location that may be subject to a risk of exposure to a combustible gas. If a combustible gas leaks and becomes concentrated around the unit, a fire may occur.
- Do not place any combustion appliance in a place where it is directly exposed to the wind of air conditioner, otherwise it may cause imperfect combustion.
- Do not install in a location where flammable gas leaks are possible. If the gas leak and accumulate around the unit, it may ignite and cause a fire.
- Install the indoor unit at least 8′2″ (2.5 m) above the floor level since otherwise the users may injure themselves or receive electric shocks if they poke their fingers or other objects into the indoor unit while the air conditioner is running.

Installation

- Install the air conditioner securely in a location where the base can sustain the weight adequately. If the strength is not enough, the unit may fall down resulting in injury.
- Follow the instructions in the Installation Manual to install the air conditioner. Failure to follow these instructions may cause the product to fall down or topple over or give rise to noise, vibration, water leakage or other trouble.

- If refrigerant gas has leaked during the installation work, ventilate the room immediately. If the leaked refrigerant gas comes in contact with fire, noxious gas may generate.
- Use forklift to carry in the air conditioner units and use winch or hoist at installation of them.

Refrigerant piping

- Install the refrigerant pipe securely during the installation work before operating the air conditioner. If the compressor is operated with the valve open and without refrigerant pipe, the compressor sucks air and the refrigeration cycles is over pressurized, which may cause a injury.
- Tighten the flare nut with a torque wrench in the specified manner. Over tightening of the flare nut may cause a crack in the flare nut after a long period, which may result in refrigerant leakage.
- After the installation work, confirm that refrigerant gas does not leak. If refrigerant gas leaks into the room and flows near a fire source, such as a cooking range, noxious gas may be generated.
- When the air conditioner has been installed or relocated, follow the instructions in the Installation Manual and purge the air completely so that no gases other than the refrigerant will be mixed in the refrigerating cycle. Failure to purge the air completely may cause the air conditioner to malfunction.
- Nitrogen gas must be used for the airtight test.
- The charge hose must be connected in such a way that it is not slack.

Electrical wiring

- Only a qualifled installer or qualified service person is allowed to carry out the electrical work of the air conditioner. Under no circumstances must this work be done by an unqualified individual since failure to carry out the work properly may result in electric shocks and/or electrical leaks.
- To connect the electrical wires, repair the electrical parts or undertake other electrical jobs, wear gloves to provide protection for electricians and from heat, insulating shoes and clothing to provide protection from electric shocks. Failure to wear this protective gear may result in electric shocks.
- Use wiring that meets the specifications in the Installation Manual and the stipulations in the local regulations and laws. Use of wiring which does not meet the specifications may give rise to electric shocks, electrical leakage, smoking and/or a fire.
- Connect earth wire. (grounding work) Incomplete grounding causes an electric shock.
- Do not connect grounding wires to gas pipes, water pipes, and lightning conductor or telephone grounding wires.
- After completing the repair or relocation work, check that the grounding wires are connected properly.

- Install a circuit breaker that meets the specifications in the Installation Manual and the stipulations in the local regulations and laws.
- Install the circuit breaker where it can be easily accessed by the agent
- Under no circumstances the power wire must not be extended. Connection trouble in the places where the wire is extended may give rise to smoking and/or a fire.
- Electrical wiring work shall be conducted according to law and regulation in the community and Installation Manual. Failure to do so may result in electrocution or short circuit.

Test run

- Before operating the air conditioner after having completed the work, check that the electrical control box cover of the indoor unit and service panel of the outdoor unit are closed, and set the circuit breaker to the ON position. You may receive an electric shock if the power is turned on without first conducting these checks.
- If there is any kind of trouble (such as an error display has appeared, smell of burning, abnormal sounds, the air conditioner fails to cool or heat or water is leaking) has occurred in the air conditioner, do not touch the air conditioner but set the circuit breaker to the OFF position, and contact a qualified service person. Take steps to ensure that the power will not be turned on (by marking “out of service” near the circuit breaker, for instance) until qualified service person arrives. Continuing to use the air conditioner in the trouble status may cause mechanical problems to escalate or result in electric shocks or other trouble.
- After the work has finished, use an insulation tester set (500V Megger) to check the resistance is 1MΩ or more between the charge section and the non-charge metal section (Earth / Ground Section). If the resistance value is low, a disaster such as a leak or electric shock is caused at user’s side.
- Upon completion of the installation work, check for refrigerant leaks an check the insulation resistance and water drainage. Then conduct a test run to check that the air conditioner is operating properly.

Explanations given to user

- Upon completion of the installation work, tell the user where the circuit breaker is located. If the user does not know where the circuit breaker is, he or she will not be able to turn it off in the event that trouble has occurred in the air conditioner.
- If the fan grille is damaged, do not approach the outdoor unit but set the circuit breaker to the OFF position, and contact a qualified service person to have the repairs done. Do not set the circuit breaker to the ON position until the repairs are completed.
- After the installation work, follow the Owner’s Manual to explain to the customer how to use and maintain the unit.

Relocation

- Only a qualified installer(*1) or qualified service person(*1) is allowed to relocate the air conditioner. It is dangerous for the air conditioner to be relocated by an unqualified individual since a fire, electric shocks, injury, water leakage, noise and/or vibration may result.
- While carrying out the pump-down work shut down the compressor befor disconnecting the refrigerant pipe. Disconnecting the refrigerant pipe with the service valve left open and the compressor still operating will cause air or other gas to be sucked in, raising the pressure inside the refrigeration cycle to an abnormally high level, and possibly resulting in rupture, injury or other trouble.

⚠ CAUTION

New refrigerant air conditioner installation

- **This Air Conditioner uses R410A an environmentally friendly refrigerant.**
- The characteristics of R410A refrigerant are; easy to absorb water, oxidizing membrane or oil. Accompanied with the new refrigerant, refrigerating oil has also been changed. Therefore, during installation work, be sure that water, dust, former refrigerant, or refrigerating oil does not enter the refrigerating cycle.
- To prevent charging an incorrect refrigerant and refrigerating oil, the sizes of connecting sections of charging port of the main unit and installation tools are changed from those for the conventional refrigerant.
- Accordingly the exclusive tools are required for the new refrigerant (R410A).
- For connecting pipes, use new and clean piping designed for R410A, an please care so that water or dust does not enter.

To disconnect the appliance from main power supply.

- This appliance must be connected to the main power supply by means of a switch with a contact separation of at least 0.1″ (3 mm)

The installation fuse (all types can be used) must be used for the power supply line of this air conditioner.

Install the indoor unit at least 8′2″ (2.5 m) above the floor level since otherwise the users may injure themselves or receive electric shocks if they poke their fingers or other objects into the indoor unit while the air conditioner is running.

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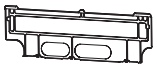
2 ACCESSORY PARTS

Part name	Q'ty	Shape	Usage
Installation Manual	1	This manual	(Hand over to customers)
Owner's Manual	1		(Hand over to customers)
Installation plate	1		
Wireless remote controller	1		
Batteries size AAA	2		
Remote controller holder	1		
Mounting screw Ø5/32″ (4 mm) × 1.0″ (25 mm)	6		
Flat head wood screw Ø1/8″ (3.1 mm) × 0.6″ (16 mm)	2		
Screw Ø5/32″ (4 mm) × 0.4″ (10 mm)	3		
Insulation	1		
Eletrical cover 2 holes	1		

3 SELECTION OF INSTALLATION PLACE

⚠ WARNING

- **Install the air conditioner at enough strong place to withstand the weight of the unit.**
  If the strength is not enough, the unit may fall down resulting in injury.

⚠ CAUTION

- **Do not install the air conditioner in a location subject to a risk of exposure to a combustible gas.**
  If a combustible gas leaks and stays around the unit, a fire may occur.

Upon approval of the customer, install the air conditioner in a place that satisfies the following conditions.

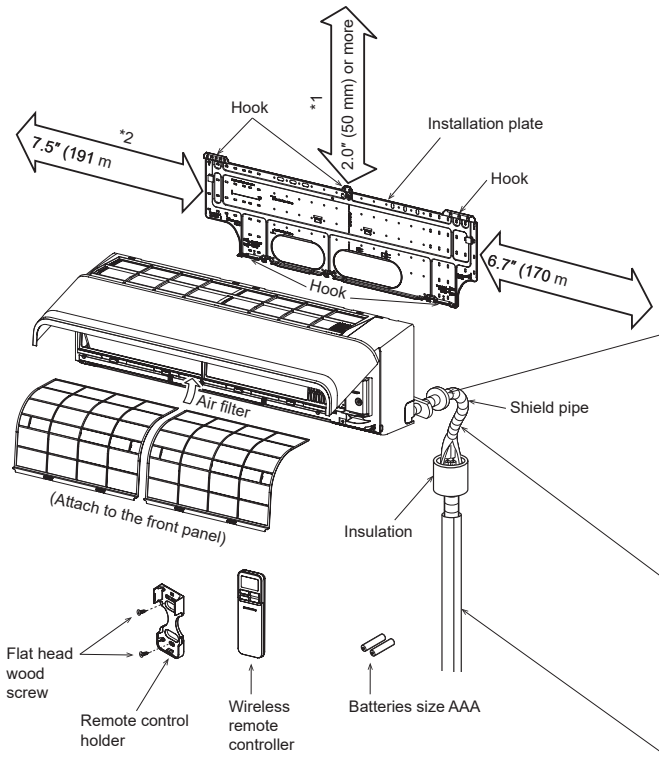
- Place where the unit can be installed horizontally.
- Place where a sufficient servicing space can be ensured for safety maintenance and check.
- Place where drained water will not cause any problem.

Avoid installing in the following places.

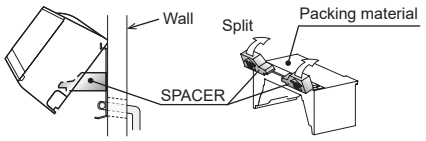
Select a location for the indoor unit where the cool or warm air will circulate evenly.
Avoid installation in the following kinds of locations.

- Saline area (coastal area).
- Locations with acidic or alkaline atmospheres (such as areas with hot springs, factories where chemicals or pharmaceuticals are made and places where the exhaust air from combustion appliances will be sucked into the unit).
  Doing so may cause the heat exchanger (its aluminum fins and copper pipes) and other parts to become corroded.
- Locations with atmospheres with mist of cutting oil or other types of machine oil.
  Doing so may cause the heat exchanger to become corroded, mists caused by the blockage of the heat exchanger to be generated, the plastic parts to be damaged, the heat insulators to peel off, and other such problems to result.
- Places where iron or other metal dust is present. If iron or other metal dust adheres to or collects on the interior of the air conditioner, it may spontaneously combust and start a fire.
- Locations where vapors from food oils are formed (such as kitchens where food oils are used).
  Blocked filters may cause the air conditioner's performance to deteriorate, condensation to form, the plastic parts to be damaged, and other such problems to result.
- Locations near obstructions such as ventilation openings or lighting fixtures where the flow of the blown air will be disrupted (a disruption of the air flow may cause the air conditioner's performance to deteriorate or the unit to shut down).
- Locations where an in-house power generator is used for the power supply.
  The power line frequency and voltage may fluctuate, and the air conditioner may not work properly as a result.
- On truck cranes, ships or other moving conveyances.
- The air conditioner must not be used for special applications (such as for storing food, plants, precision instruments or art works).
  (The quality of the items stored may be degraded.)
- Locations where high frequencies are generated (by inverter equipment, in-house power generators, medical equipment or communication equipment).
  (Malfunctioning or control trouble in the air conditioner or noise may adversely affect the equipment's operation.)
- Locations where there is anything under the unit installed that would be compromised by wetness.
  (If the drain has become blocked or when the humidity is over 80%, condensation from the indoor unit will drip, possibly causing damage to anything underneath.)
- In the case of the wireless type of system, rooms with the inverter type of fluorescent lighting or locations exposed to direct sunlight.
  (The signals from the wireless remote controller may not be sensed.)
- Locations where organic solvents are being used.
- The air conditioner cannot be used for liqueed carbonic acid cooling or in chemical plants.
- Location near doors or windows where the air conditioner may come into contact with high-temperature, high-humidity outdoor air.
  (Condensation may occur as a result.)
- Locations where special sprays are used frequently.

■ Installation diagram of Indoor units

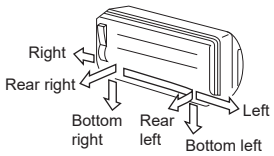


For the rear left, bottom left and left piping



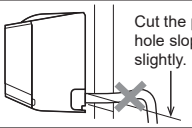
Split out 2 pieces of SPACER from indoor unit packing material, insert between the indoor unit and wall to tilt the indoor unit for better operation.

The auxiliary piping can be connected to the left, rear left, rear right, right, bottom right or bottom left.



Do not allow the drain hose to get slack.

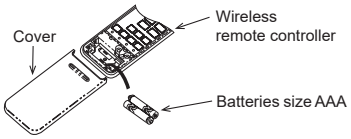
Make sure to run the drain hose sloped downward.



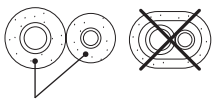
Refrigerant piping must be protected from physical damage. Install a plastic cover or equivalent.

Before installing the wireless remote controller

1. Remove the battery cover.
2. Insert 2 new batteries (R03 [AAA] type) following the (+) and (−) positions.



Insulate the refrigerant pipes separately with insulation, not together.



0.2″ (6 mm) thick heat resisting polyethylene foam

■ Installation space

The indoor unit shall be installed at least 8′2″ (2.5 m) height.
Also it must be avoided to put anything on top of the indoor unit.

*1 Reserve space required to install the indoor unit and for service work.
Keep 2.0″ (50 mm) or more for clearance between top plate of the indoor unit and the ceiling surface.

*2 Provide a space as shown for service clearance for the cross flow fan.

■ Installation place

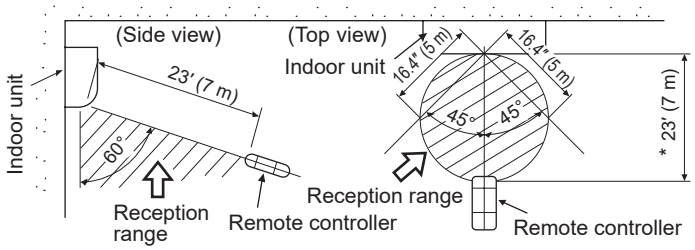
- A place which provides the spaces around the indoor unit as shown in the above diagram.
- A place where there is no obstacle near the air inlet and outlet.
- A place that allows easy installation of the piping to the outdoor unit.
- A place which allows the front panel to be opened.

⚠ CAUTION

- Direct sunlight to the indoor unit's wireless receiver should be avoided.
- The microprocessor in the indoor unit should not be too close to RF noise sources. (For details, see the owner's manual.)

■ Wireless remote controller

- A place where there are no obstacles such as a curtain that may block the signal from the indoor unit.
- Do not install the remote controller in a place exposed to direct sunlight or close to a heating source, such as a stove.
- Keep the remote controller at least 3′3″ (1 m) apart from the nearest TV set or stereo equipment. (This is necessary to prevent image disturb-bounces or noise interference.)
- The location of the remote controller should be determined as shown below.



* : Axial distance

4 INSTALLATION OF INDOOR UNIT

⚠ WARNING

Install the air conditioner certainly to sufficiently withstand the weight.
If the strength is insufficient, the unit may fall down resulting in human injury.
Perform a specified installation work to guard against strong wind or earthquake.
An incomplete installation can cause accidents by the units falling and dropping.

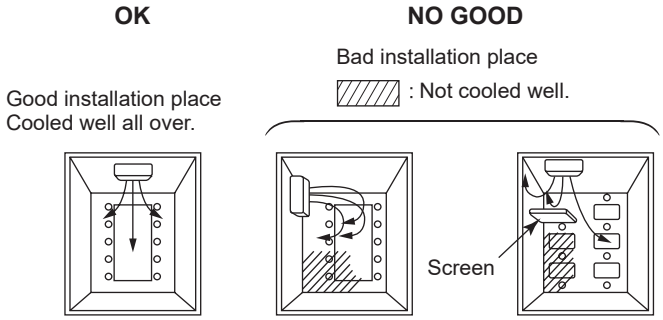
REQUIREMENT

Strictly comply with the following rules to prevent damage of the indoor units and human injury.

- Do not put a heavy article on the indoor unit. (Even units are packaged)
- Carry in the indoor unit as it is packaged if possible. If carrying in the indoor unit unpacked by necessity, be sure to use buffering cloth, etc. to not damage the unit.
- To move the indoor unit, do not apply force to the refrigerant pipe, drain pan, foamed parts, or resin parts, etc.
- Carry the package by two or more persons, and do not bundle it with plastic band at positions other than specified.

Be careful to the following items when installing the unit.

- Considering air discharge direction, select an installation place where discharde air can circulate evenly in a room. Avoid to install the unit at place with **"NO GOOD"** mark in the right figure.



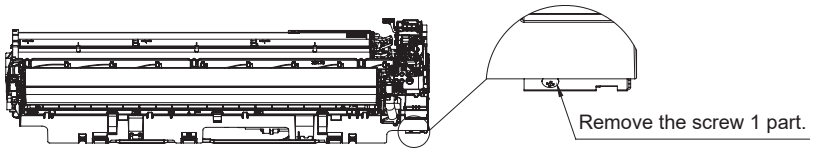
■ Installation of eletrical cover 2 holes type

REQUIREMENT

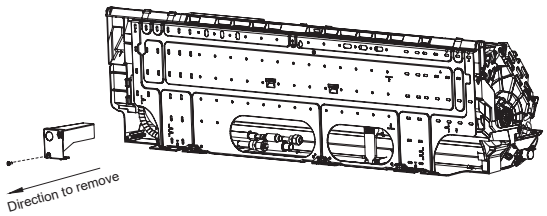
In case of group control, electrical cover 1 hole type need to change to electrical cover 2 holes type.

● Step to remove the electrical cover 1 hole.

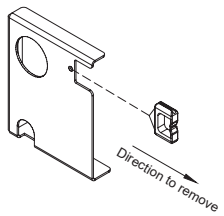
1) The electical cover 1 hole can be removed by removing the screw securing the electical cover 1 hole and them pulling out the electical cover 1 hole.



2) Remove the electical cover 1 hole by direction backside of unit.

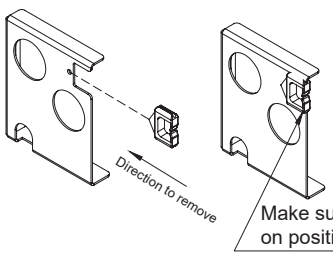


3) Remove the EDGE-SADDLE take off from electical cover 1 hole.

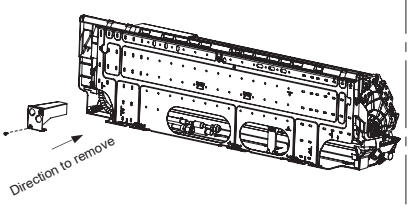


● Step to install the electical cover 1 hole (Option connect power supply 2 holes)

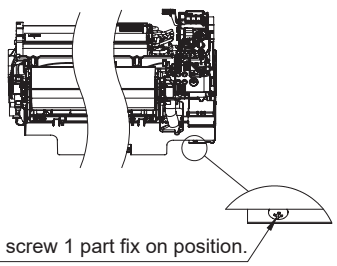
1) Install the EDGE-SADDLE to electical cover 1 hole



2) Install the electical cover 1 hole to unit



3) Insert the screw.

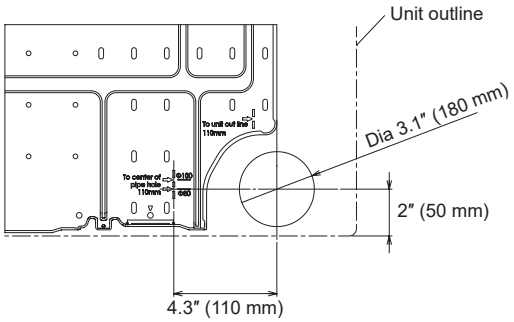


5 CUTTING A HOLE AND MOUNTING INSTALLATION PLATE

■ Cutting a hole

In case of installing the refrigerant pipes from the rear:

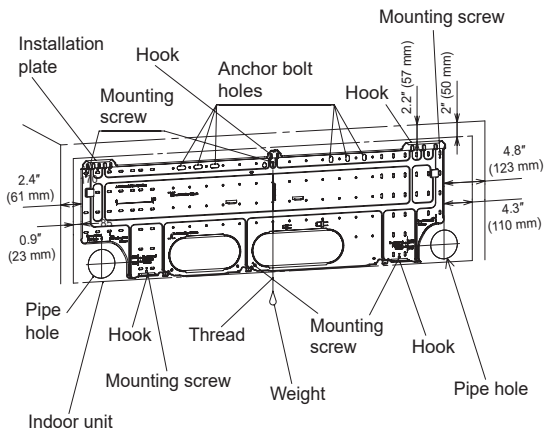
1. Decide the hole position for piping at 4.3″ (110 mm) from the arrow mark (⇨) on the installation plate and drill a hole at a slight downward slant toward outdoor side.



NOTE

- When drilling a wall that contains a metal lath, wire lath or metal plate, be sure to use a pipe hole brim ring sold separately.

■ Mounting the installation plate

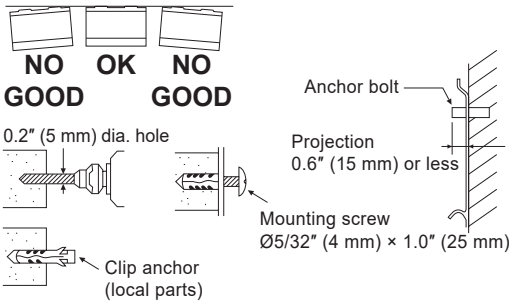


■ When the installation plate is directly mounted on the wall

1. Securely fit the installation plate onto the wall by screwing it in the upper and lower parts to hook up the indoor unit.
2. To mount the installation plate on a concrete wall with anchor bolts, utilize the anchor bolt holes as illustrated in the above figure.
3. Install the installation plate horizontally in the wall.

⚠ CAUTION

When installing the installation plate with a mounting screw, do not use the anchor bolt hole. Otherwise the unit may fall down and result in personal injury and property damage.



⚠ CAUTION

Failure to firmly install the unit may result in personal injury and property damage if the unit falls.

- In case of block, brick, concrete or similar type walls, make 0.2″ (5 mm) dia. holes in the wall.
- Insert clip anchors for appropriate mounting screws.

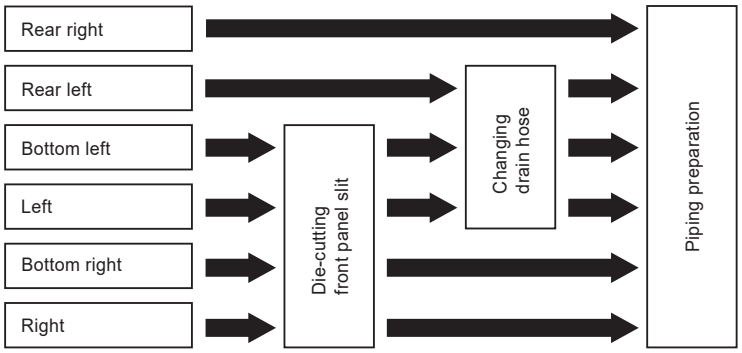
NOTE

- Secure four corners and lower parts of the installation plate with 6 mounting screws to install it.

6 PIPING AND DRAIN HOSE INSTALLATION

■ Piping and drain hose forming

* Since dewing results in a machine trouble, make sure to insulate both connecting pipes.
(Use polyethylene foam as insulating material.)



1. Die-cutting front panel slit

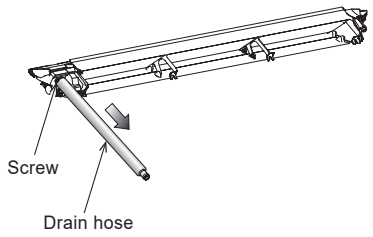
Cut out the slit on the left or right side of the front panel for the left or right connection and the slit on the bottom left or right side of the front panel for the bottom left or right connection with a pair of nippers.

2. Changing drain hose

For leftward connection, bottom-leftward connection and rearleftward connection's piping, it is necessary to change the drain hose and drain cap.

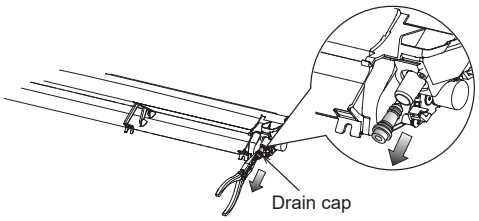
How to remove the drain hose

- The drain hose can be removed by removing the screw securing the drain hose and then pulling out the drain hose.
- When removing the drain hose, be careful of any sharp edges of steel plate.
  The edges can injuries.
- To install the drain hose, insert the drain hose firmly until the connection part contacts with heat insulator, and then secure it with original screw.



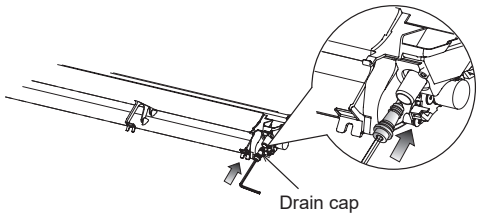
How to remove the drains cap

Clip the drain cap by needle-nose pliers and pull out.

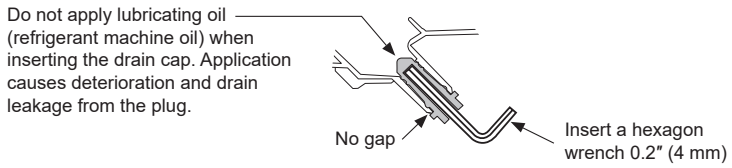


How to fix the drains cap

1) Insert hexagonal wrench (dia. 0.2″ (4 mm)) in a centre head.



2) Firmly insert drains cap.

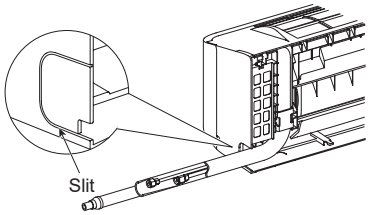


⚠ CAUTION

Firmly insert the drain hose and drain cap; otherwise, water may leak.

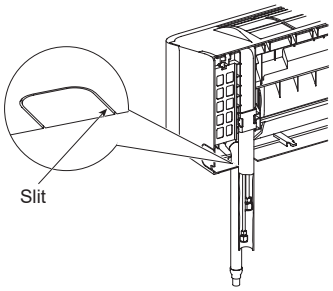
▼ In case of right or left piping

• After scribing slits of the front panel with a knife or a marking-off pin, cut them with a pair of nippers or an equivalent tool.



▼ In case of bottom right or bottom left piping

• After scribing slits of the front panel with a knife or a marking-off pin, cut them with a pair of nippers or an equivalent tool.

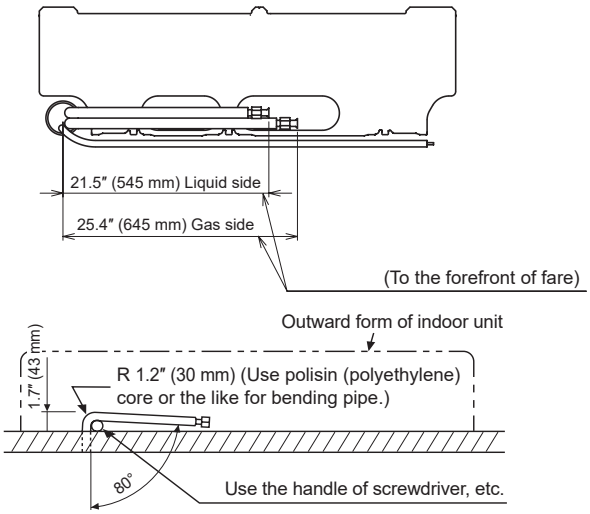


▼ Left-hand connection with piping

Bend the connecting pipe so that it is laid within 1.7″ (43 mm) above the wall surface. If the connecting pipe is laid exceeding 1.7″ (43 mm) above the wall surface, the indoor unit may unstably be set on the wall. When bending the connecting pipe, make sure to use a spring bender so as not to crush the pipe.

Bend the connecting pipe within a radius of 1.2″ (30 mm).

To connect the pipe after installation of the unit (figure)

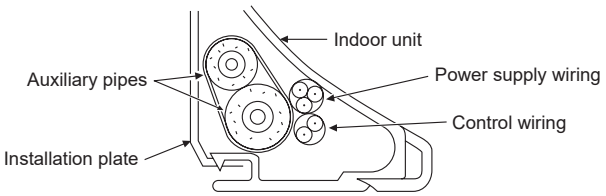


NOTE

If the pipe is bent incorrectly, the indoor unit may unstably be set on the wall.
After passing the connecting pipe through the pipe hole, connect the connecting pipe to the auxiliary pipes and wrap the facing tape around them.

⚠ CAUTION

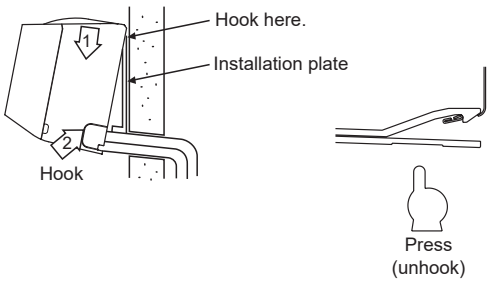
• Bind the auxiliary pipes (two) and power supply wiring and control wiring with facing tape tightly.
In case of leftward piping and rear leftward piping, bind the auxiliary pipes (two) only with facing tape.



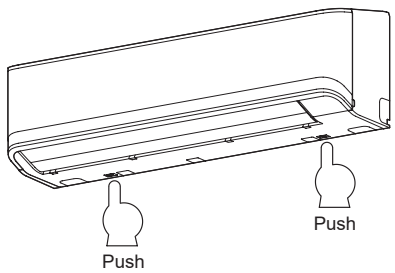
• Carefully arrange pipes so that any pipe does not stick out of the rear plate of the indoor unit.
• Carefully connect the auxiliary pipes and connecting pipes to one another and cut off the insulating tape wound on the connecting pipe to avoid double-taping at the joint; moreover, seal the joint with the vinyl tape, etc.
• Since dew results in a machine trouble, make sure to insulate both the connecting pipes. (Use polyethylene foam as insulating material.)
• When bending a pipe, carefully do it, not to crush it.

7 INDOOR UNIT FIXING

1. Pass the pipe through the hole in the wall, and hook the indoor unit on the installation plate at the upper hooks.
2. Swing the indoor unit to right and left to confirm that it is firmly hooked up on the installation plate.
3. While pressing the indoor unit onto the wall, hook it at the lower part on the installation plate. Pull the indoor unit toward you to confirm that it is firmly hooked up on the installation plate.

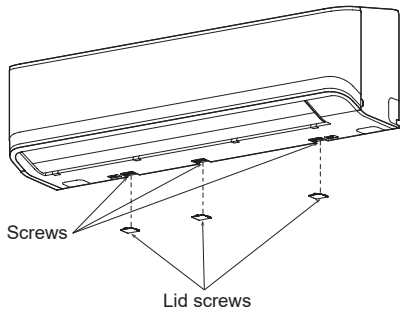


- For detaching the indoor unit from the installation plate, pull the indoor unit toward you while pushing its bottom up at the specified parts.



REQUIREMENT

The lower part of indoor unit may float, due to the condition of piping and you cannot fix it to the installation plate. In that case, use the screws provided to fix the unit and the installation plate. **Especially when the pipes are pulled out from the left side, the unit must be screwed to the installation plate.**



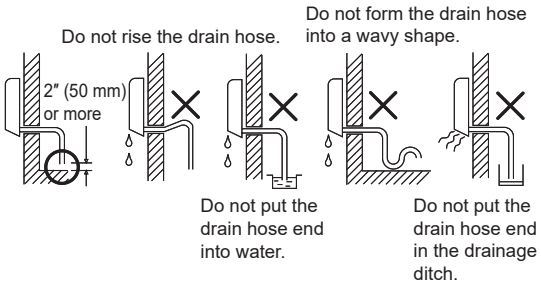
8 DRAINAGE

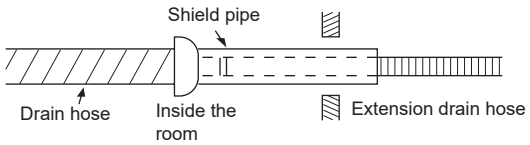
1. Run the drain hose sloped downwards.

NOTE

- Hole should be made at a slight downward slant on the outdoor side.

2. Put water in the drain pan and make sure that the water is drained out of doors.
3. When connecting extension drain hose, insulate the connecting part of extension drain hose with shield pipe.

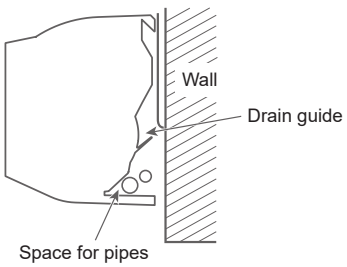




⚠ CAUTION

Arrange the drain pipe for proper drainage from the unit.
Improper drainage can result in dew-dropping.

This air conditioner has the structure designed to drain water collected from dew, which forms on the back of the indoor unit, to the drain pan. Therefore, do not store the power cord and other parts at a height above the drain guide.



9 REFRIGERANT PIPING

■ Refrigerant Piping

1. **Use copper pipe with 0.03″ (0.8 mm) or more thickness.** (In case pipe size is dia. 5/8″ (15.9 mm), with 0.04″ (1.0 mm) or more.)
2. Flare nut and flare works are also different from those of the conventional refrigerant. Take out the flare nut attached to the main unit of the air conditioner, and use it.

REQUIREMENT

When the refrigerant pipe is long, provide support brackets at intervals of 8′2″ - 9′10″ (2.5 - 3 m) to clamp the refrigerant pipe. Otherwise, abnormal sound may be generated

⚠ CAUTION

IMPORTANT 4 POINTS FOR PIPING WORK

1. Remove dust and moisture from the inside of the connecting pipes.
2. Tight connection (between pipes and unit)
3. Evacuate the air in the connecting pipes using VACUUM PUMP.
4. Check the gas leakage. (Connected points)

■ Pipe size

(dia.: in (mm))

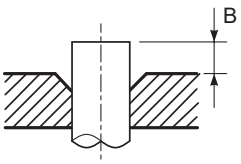
MMK	PIPE SIZE (mm)	
	Gas side	Liquid side
UP0301 UP0361	5/8″ (15.9)	3/8″ (9.5)

■ Permissible Piping Length and Height Difference

They vary according to the outdoor unit.
For details, refer to the Installation Manual attached to the outdoor unit.

Flaring

- Cut the pipe with a pipe cutter.
  Remove burrs completely.
  Remaining burrs may cause gas leakage.
- Insert a flare nut into the pipe, and flare the pipe.
  As the flaring sizes of R410A differ from those of refrigerant R22, the flare tools newly manufactured for R410A are recommended.
  However, the conventional tools can be used by adjusting projection margin of the copper pipe.



▼ Projection margin in flaring: B (Unit: in mm)
RIDGID (Clutch type)

Outer dia. of copper pipe	Tool used	Conventional tool used
1/4″ (6.4), 3/8″ (9.5)	0.02″-0.04″ (0.5-1.0)	0.04″-0.06″ (1.0-1.5)
1/2″ (12.7), 5/8″ (15.9)	0.02″-0.04″ (0.5-1.1)	0.06″-0.08″ (1.5-2.0)

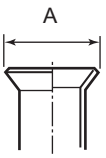
▼ Flaring dia. meter size: A (Unit: in (mm))

Outer dia. of copper pipe	$A^{+0}_{-0.4}$
	R410A
1/4″ (6.4)	0.4″ (9.1)
3/8″ (9.5)	0.5″ (13.2)
1/2″ (12.7)	0.7″ (16.6)
5/8″ (15.9)	0.8″ (19.7)

⚠ CAUTION

- Do not scratch the inner surface of the flared part when removing burrs.
- Flare processing under the condition of scratches on the inner surface of flare processing part will cause refrigerant gas leak.
- Check that the flared part is not scratched, deformed, stepped, or flattened, and that there are no chips adhered or other problems, after flare processing.
- Do not apply refrigerating machine oil to the flare surface.

* In case of flaring for R410A with the conventional flare tool, pull it out approx. 0.02″ (0.5 mm) more than that for R22 to adjust to the specified flare size. The copper pipe gauge is useful for adjusting projection margin size.



Tightening connection

⚠ CAUTION

- Do not apply excessive torque. Otherwise, the nut may crack depending on the conditions.

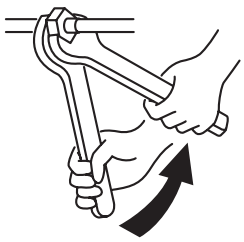
(Unit: in (mm))

Outer dia. of copper pipe	Tightening torque
1/4″ (6.4 mm) (dia.)	10-13 (14-18)
3/8″ (9.5 mm) (dia.)	24-31 (33-42)
1/2″ (12.7 mm) (dia.)	37-46 (50-62)
5/8″ (15.9 mm) (dia.)	50-60 (68-82)

▼ Tightening torque of flare pipe connections

Pressure of R410A is higher than that of R22. (Approx. 1.6 times) Therefore, using a torque wrench, tighten the flare pipe connecting sections which connect the indoor and outdoor units of the specified tightening torque.

Incorrect connections may cause not only a gas leak, but also a trouble of the refrigeration cycle. Align the centres of the connecting pipes and tighten the flare nut as far as possible with your fingers. Then tighten the nut with a spanner and torque wrench as shown in the figure.



Work using double spanner

REQUIREMENT

Tightening with an excessive torque may crack the nut depending on installation conditions.
Tighten the nut within the specified tightening torque.

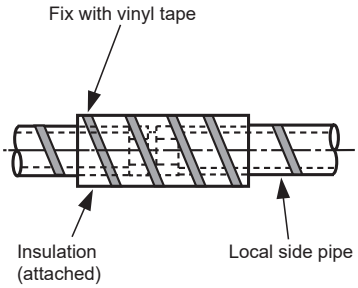
Piping with outdoor unit

- Shape of valve differs according to the outdoor unit.
  For details of installation, refer to the Installation Manual of the outdoor unit.

Insulation

Insulation for the pipes should be done separately for the liquid side and gas side. Because both of the liquid and gas side pipes become a low temperature during cooling operation, sufficient insulation should be done to prevent condensation.

- Insulation with a heat resistance of 248°F (120°C) or more must be used for the gas side pipe.
- The pipe connection section of the indoor unit must be insulation securely and compactly with the attached insulation.



■ Airtight test/Air purge, etc.

For airtight test,air purge, addition of refrigerant, and gas leak check, follow the Installation Manual attached to the outdoor unit.

■ Open fully valves of the outdoor unit

■ Gas leak check

Check with a leak detector or soap water whether gas leaks or not, from the pipe connecting section or cap of the valve.

REQUIREMENT

Use a leak detector manufactured exclusively HFC refrigerant (R410A, R134a, etc.).

10 ELECTRICAL CONNECTION

⚠ WARNING

1. . **Use predefined wire and connect the certainly. Keep the connecting terminal freefrom external force.**
   Improper wire connection or clamping may result in exothermic, fire or malfunction.
2. **Connect grounding wire. (grounding work)**
   Incomplete grounding cause an electric shock. Do not connect grounding wires to gas pipes, water pipes, lightning rods or grounding wires for telephone wires.
3. **Appliance shall be installed in accordance with national wiring regulations.**
   Capacity shortage of circuit breaker or incomplete installation may cause an electric shock or a fire.
4. Means for full disconnection under overvoltage category III conditions must be incorporated in the fixed wiring according to national wiring rules.

⚠ CAUTION

- Consult local building codes, NEC (National Electrical Code) or CEC (Canadian Electrical Code) for special requirements.
- If incorrect / incomplete wiring is carried out, it will cause an electrical fire or smoke.
- Install circuit breaker is not tripped by shock waves. If circuit breaker is not installed,an electric shock may be caused.
- Use the cord clamps attached to the product
- Do not damage or scratch the conductive core and inner insulator of power and control wires when peeling them.
- Use the power cord and control wire of specified thickness, type, and protective devices required.
- Do not connect 208/230V power to the terminal blocks (Uv (U1)), (Uv (U2)), (A), (B) for control wiring. (Otherwise,the system will fail.)
- Perform the electric wiring so that it does not come to contact with the high-temperature part of the pipe.
  The coating may melt resulting in an accident.
- Do not turn on the circuit breaker of the indoor unit until vacuuming of the refrigerant pipes completes.

REQUIREMENT

- For power supply wiring, strictly conform to the Local Regulation in each country.
- Run the refrigerant piping line and control wiring line in the same line.

■ Power supply wire and control wires specifications

Power supply wire and control wires are locally procured.
For the power supply specifications, follow to the table below. If capacity is little, it is dangerous because overheat or seizure may be caused.

Indoor unit power supply

For the power supply of the indoor unit, prepare the exclusive power supply separated from that of the outdoor unit.

▼Power supply

Power supply	208/230-1-60

Control wiring, Central control wiring

- 2-core with non-polarity wires are used for the control wiring between indoor unit and outdoor unit and Central control wiring.
- To prevent noise trouble, use 2-core shielded wire.
- The length of the communication line means the total length of the control wire length between indoor and outdoor units added with the central control wire length.

Power supply wire

Recommended wire diameter and wire length for power supply wire.

Power supply wiring	Wire size: 2 × AWG12 Ground 1 × AWG12 or thicker	Up to 164′1″ (50 m)

▼ Electric characteristics

Model	Power Supply	Voltage Range (V)		MCA	MOCP
		Min	Max	(A)	(A)
MMK-UP0301HP-UL	208/230V-1-60Hz	187	253	0.83	15
MMK-UP0361HP-UL				0.83	15

Control wire

Control wiring between indoor units, and outdoor unit (2-core shielded wire)	Wire size	(Up to 3280′10″ (1000 m)) AWG16 (Up to 6561′8″ (2000 m)) AWG14

▼ Communication line

TU2C-Link models (U series) can be combined with TCC-Link models (other than U series).
For details of communication type, refer to the following table.

Communication type and model names

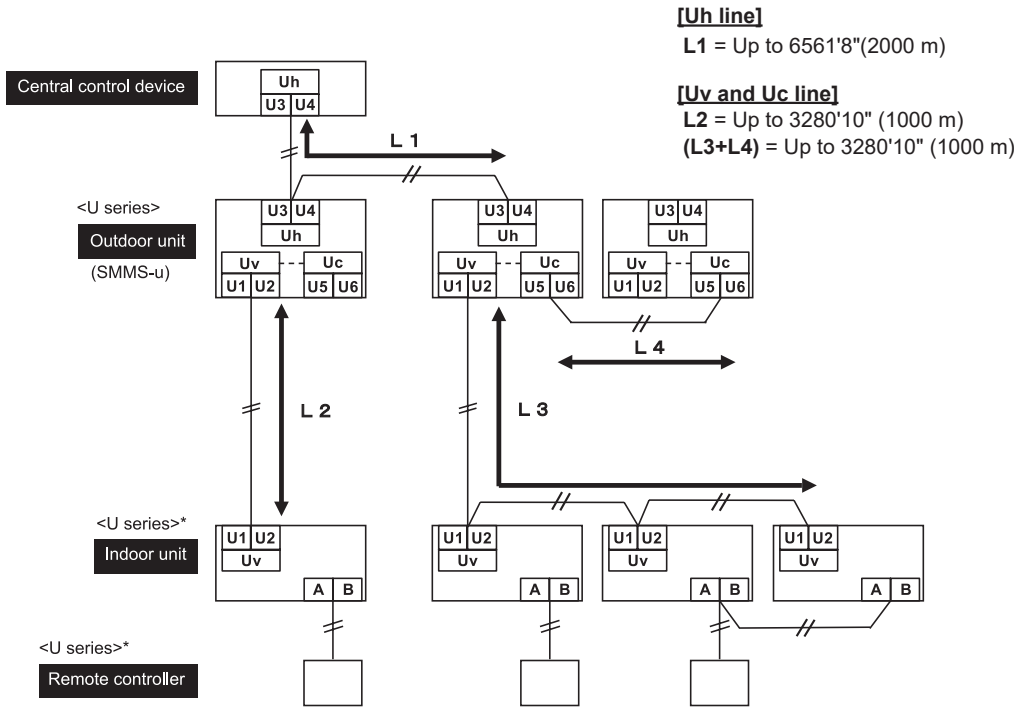
Communication type	TU2C-Link (U series and future models)	TCC-Link (Other than U series)
Outdoor unit	MMY-MUP ＊＊＊ ↑ This letter indicates U series model.	Other than U series MMY-MHP ＊＊＊ MCY-MHP ＊＊＊ MMY-MAP ＊＊＊
Indoor unit	MM*-UP ＊＊＊ ↑ This letter indicates U series model.	Other than U series MM *-AP ＊＊＊
Wired remote controller	RBC-AWSU ＊＊＊ ↑ This letter indicates U series model.	Other than U series
Wireless remote controller kit & receiver unit	RBC-AXU ＊＊＊ ↑ This letter indicates U series model.	Other than U series

U series outdoor unit : SMMS-u (MMY-MUP ＊＊＊)
Other than U series outdoor unit : SMMS-i, SMMS-e etc. (MMY-MHP ＊＊＊)

<In the case of combining with outdoor units of Super Modular Multi System u series (SMMS-u)>

Uv line and **Uc** line **(L2, L3, L4)** (2-core shield wire, non-polarity)	Wire size :	AWG20 AWG18 to AWG16	(Up to 1640'5" (500 m)) (Up to 3280'10" (1000 m))
Uh line **(L1)** (2-core shield wire, non-polarity)	Wire size :	AWG18 to AWG16 AWG14	(Up to 3280'10" (1000 m)) (Up to 6561'8" (2000 m))

- **U (v, h, c)** line means of control wiring.
  Uv line : Between indoor and outdoor units.
  Uh line : Central control line.
  Uc line : Between outdoor and outdoor units.
- **Uv** line and **Uc** line are independent from another refrigerant line. Total length of **Uv** and **Uc** lines **(L3+L4)** in each refrigerant line is up to 3280'10"(1000 m)

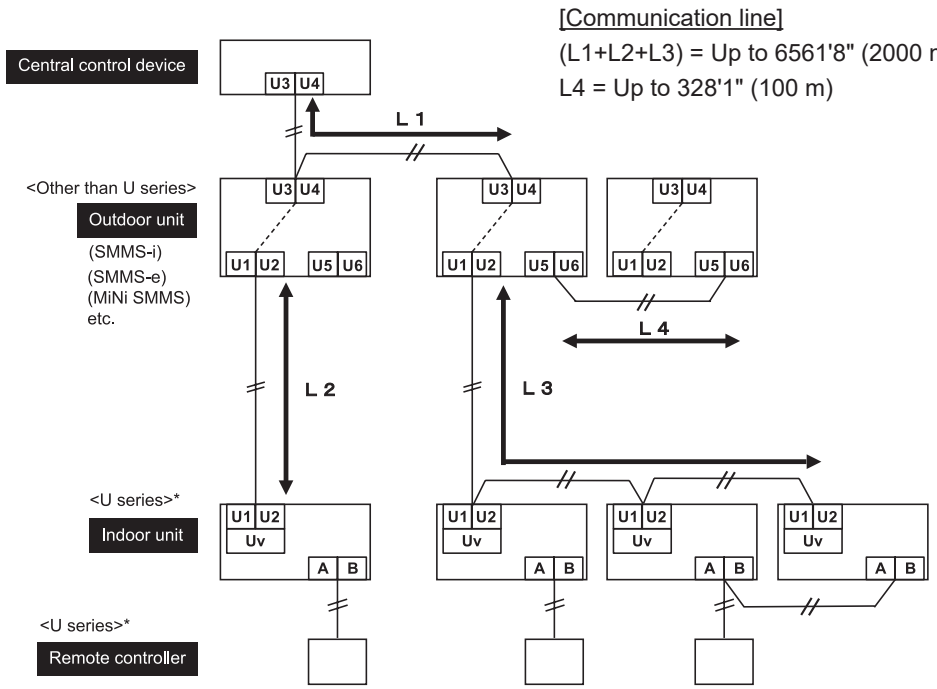


* Even if the indoor unit and the remote controller are “other than U series”, the wirin specification are the same.

<In the case of combining with outdoor units other than Super Modular Multi System u series (SMMS-u)>

Control wiring between indoor units, and outdoor unit (L2, L3) (2-core shield wire, non-polarity)	Wire size :	AWG16 AWG14	(Up to 3280'10" (1000 m)) (Up to 6561'8"(2000 m))
Central control line wiring (L1) (2-core shield wire, non-polarity)			
Control wiring between outdoor units (L4) (2-core shield wire, non-polarity)	Wire size : AWG16 to AWG14 (Up to 328'1"(100m))		

- The length of the communication line **(L1+L2+L3)** means the total length of the inter-unit wire length between indoor and outdoor units added with the central control system wire length.



* Even if the indoor unit and the remote controller are “other than U series”, the wirin specification are the same.

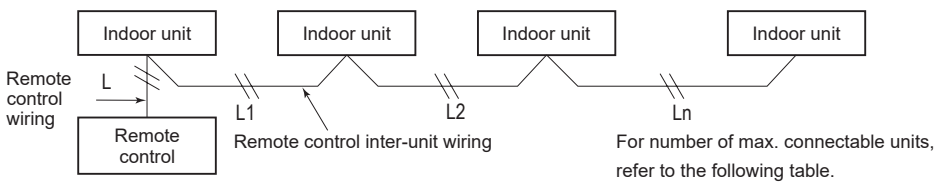
Remote control wiring

2-core with non-polarity wire is used for wiring of the remote control wiring and group remote controls wiring.

Remote control wiring, remote control inter-unit wiring	Wire size: AWG20	
Total wire length of remote control wiring and remote control inter-unit wiring = L + L1 + L2 + … Ln	In case of wired type only	Up to 1640′5″ (500 m)
	In case of wireless type included	Up to 1312′4″ (400 m)
Total wire length of remote control inter-unit wiring = L1 + L2 + … Ln		Up to 656′2″ (200 m)

⚠ CAUTION

- **The remote controller wire (Communication line) and AC 208-230V wires cannot be parallel to contact each other and cannot be stored in the same conduits. If doing so, a trouble may be the caused on control system due to noise or other factor.**
- If U series models (TU2C-Link) are combined with models other than U series (TCC-Link), the wirin specifications and maximum number of connectable indoor units will be changed. Pay attentions to their communication specifications when carrying out the installation, maintenance, or repair. For its details, refer to the “Communication line" in **10 ELECTRICAL CONNECTION.**



Max. number of connectable indoor units, and communication type

	Unit type							
Outdoor unit	U series	U series	U series	U series	∗	∗	∗	∗
Indoor unit	U series	U series	∗	∗	U series	U series	∗	∗
Remote controller	U series	∗	U series	∗	U series	∗	U series	∗
Communication type	TU2C-Link	TCC-Link						
Max. number of connectable unit	16	8						

∗ : Other than U series

NOTE

- Use copper supply wire.
- Use UL wire rated 600V for the power supply.
- Use UL wire rated 300V for the remote control wires and control wires.

⚠CAUTION

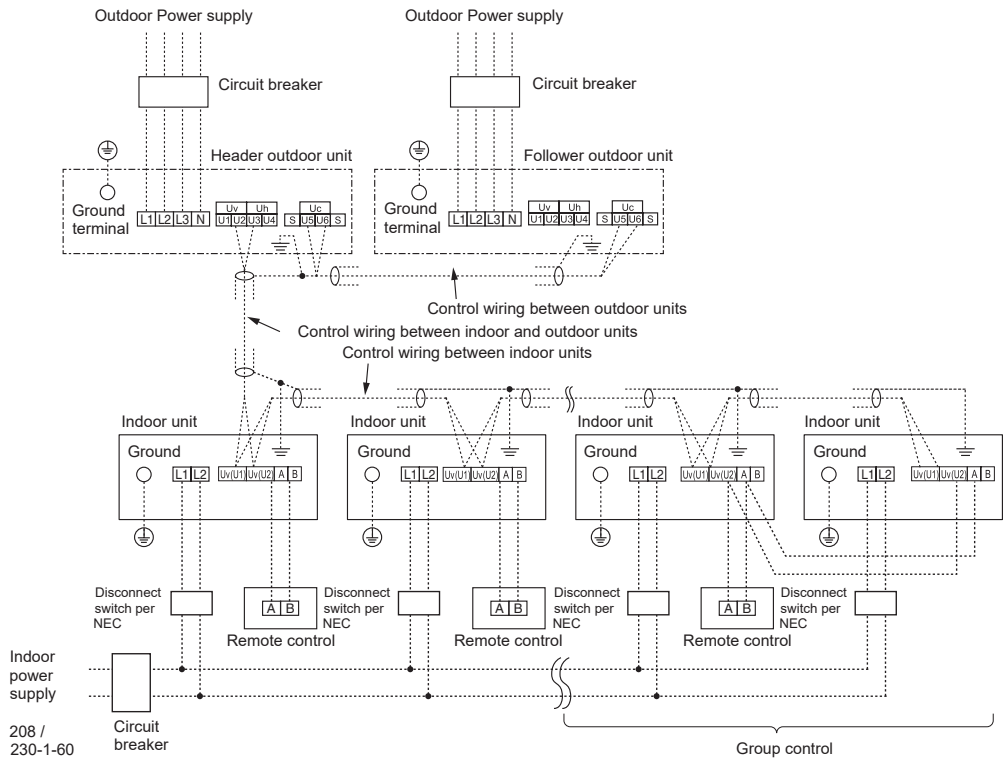
The remote control wire (Communication line) and AC208/230V wires cannot be parallel to contact each other and cannot be stored in the same conduits. If doing so, a trouble may be caused on the control system due to noise or other factor.

■ Wiring between indoor and outdoor units

NOTE

An outdoor unit connected with control wiring between indoor and outdoor units wire becomes automatically the header unit.

▼ Wiring example



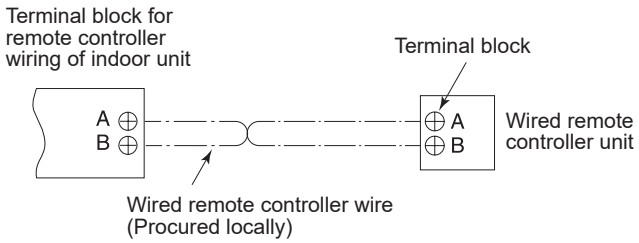
■ Address setup

Set up the addresses as per the Installation Manual supplied with the outdoor unit.

■ Wired remote controller wiring

- As the wired remote controller wire has non-polarity, there is no problem if connections to indoor unit terminal blocks A and B are reversed.

▼ Wiring diagram



■ Wiring Connection

How to connect the power supply wiring and control wiring

The power supply wire and the control wire can be connected without removing the front panel.

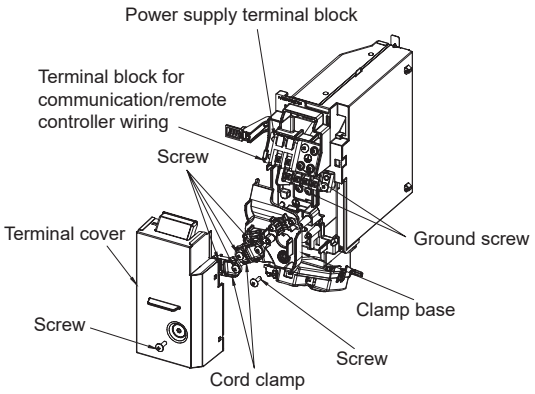
REQUIREMENT

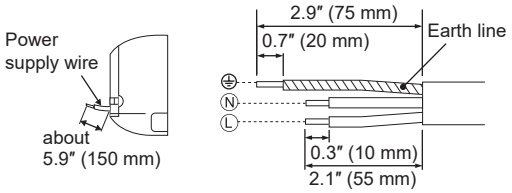
Connect the power supply wire after connecting the control wire for this model.

1. Remove the air inlet grille.
   Open the air inlet grille upward and pull it toward you.
2. Remove the terminal cover and the clamp base.
3. Insert the power supply wire and control wire (according to the local rule) into the pipe hole on the wall.
4. Take the power supply wire out of the cable slot on the rear panel so that it protrudes about 5.9″ (150 mm) mm from the front.
5. Insert the control wire fully into the control/wired remote controller terminal block (Uv (U1)), (Uv (U2)), (A), (B) and secure it tightly with screws.
6. Clamp the control wire with the cord clamp.
7. Install the clamp base with a screw.
8. Insert the power supply wire fully into the terminal block and secure it tightly with screws. Tightening torque: 0.9 ft • lbs (1.2 N·m) Secure the earth line with the ground screw.
9. Clamp the power supply wire with the cord clamp.
10. Attach the terminal cover and the air inlet grille to the indoor unit.

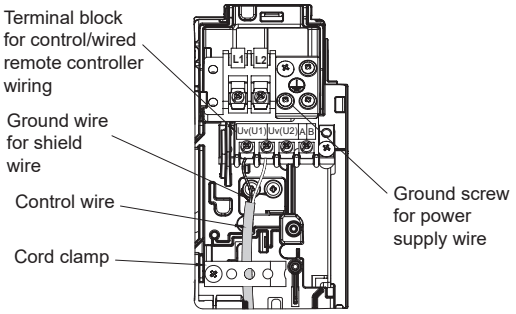
⚠ CAUTION

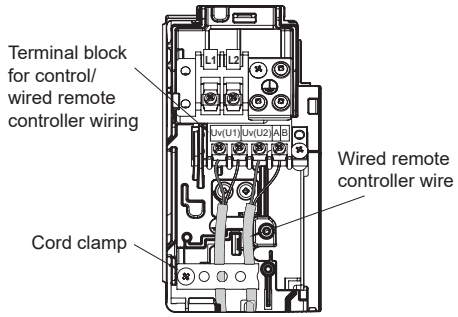
- Be sure to refer to the wiring diagram attached inside the front panel.
- Check local electrical cords an also any specific wiring instructions and limitations.
- Do not catch the control wire when installing the clamp base.



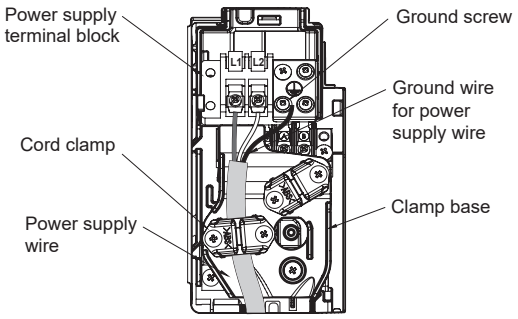


<Stripping length of the power supply wire>





<Connecting wired remote controller wire>

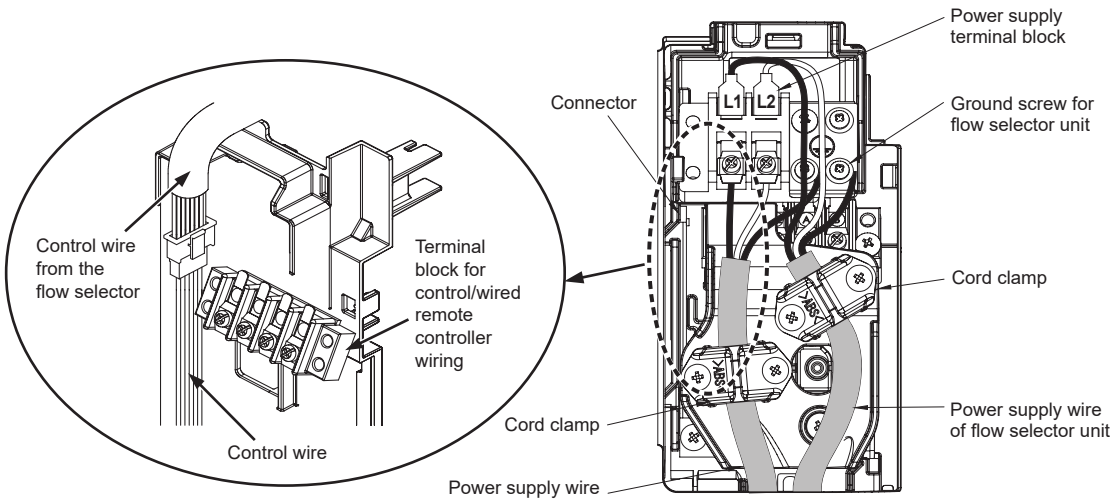


■ Wiring connection for flow selector unit

How to connect the wiring of flow selector unit

Connect the power supply wire and the communication wire supplied with the flow selector unit to the indoor unit.

1. Remove the air inlet grille.
   Open the air inlet grille upward and pull it toward you.
2. Remove the terminal cover and the clamp base.
3. Insert the control wire fully into the control/wired remote controller terminal block and secure it tightly with screws.
4. Connect the control wire connector of the flow selector unit to the lead with a connector to the left of the control/wired remote controller terminal block.
5. Clamp the control wire and the control wire of the flow selector unit with the cord clamp.
6. Install the clamp base with a screw.
7. Insert the power supply wire fully into the terminal block and secure it tightly with screws.
   Tightening torque: 0.9 ft • lbs (1.2 N·m)
   Secure the ground line with the ground screw.
8. Clamp the power supply wire with the cord clamp.
9. Insert the power supply wire fasten terminal of the flow selector unit into the power supply terminal.
   Secure the ground line with the ground screw.
10. Clamp the power supply wire of the flow selector unit tight with the cord clamp.
11. Attach the terminal cover, the front panel and the air inlet grille to the indoor unit.



⚠ CAUTION

Confirm that every wires are stored in the electric parts box without getting caught before attaching the terminal cover.

11 APPLICABLE CONTROLS

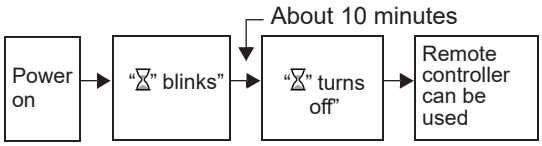
A wired remote controller is necessary for this function. This function cannot be operate with a wireless remote controller.

REQUIREMENT

- When the unit is used for the first time, it takes a while for the remote controller to recognize operation input after the power is turned on. This is not a malfunction.

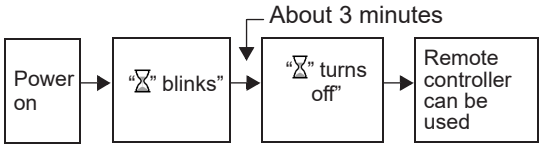
  ▼ Turning on the power the first time after installation

  It takes approximately 10 minutes until you can operate the remote controller.



▼ Turning on the power from the 2nd time onward

It takes approximately 3minutes until you can operate the remote controller.



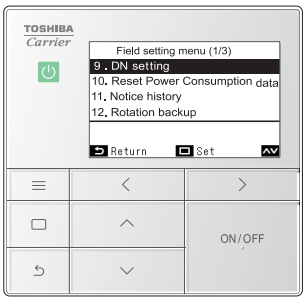
- Normal settings were made when the indoor unit was shipped from factory.
  Change the indoor unit settings as required.
- Use the built-in remote controller to change the settings.
  * The settings cannot be changed using the wireless remote controller, simplified wired remote controller, or remote-controller-less system (for central remote controller only).

■ Basic procedure for changing settings

Change the settings while the air conditioner is not working. **(Stop the air conditioner before making settings.)**
The display content for setting differs from that on the former types of remote controller (RBC-AWSU52-UL)

⚠ CAUTION

Set only the "Code(DN)" shown in the following table: Do not set any other "Code(DN)".
If a "Code(DN)" not listed is set, it may not be possible to operate the air conditioner or other trouble with the product may result.



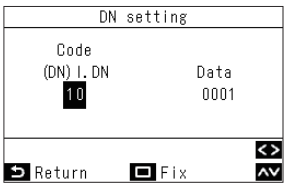
1 **In the "Field setting menu" screen, press [∧] and [∨] to select "DN setting", and then press [▭ Set/Fix]**

2 **Press [∧] and [∨] to select "Indoor unit" or "Outdoor unit", and the press [▭ Set/Fix]**

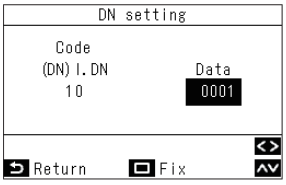
→If "Indoor unit" was selected, the fans and lovvres of the indoor units operate.

When doing group connections:
→The fans and louvres of the selected indoor units operate.

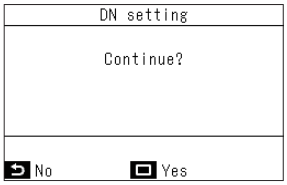
3 **Press [<] to black highlight the item code (DN), and then press [∧] and [∨] to set the item code**



4 **Press [>] to black highlight the data, and then press [∧] and [∨] to set the data**



5 After finishing setting the data of the item code (DN), press [Set/Fix]
→"Continue?" is displayed.



6 To set the data of other item codes (DN), press [Set/Fix]
To not do other settings, press [Return]
→The changes are fixed, and the "Field setting menu" screen returns.
→"⧖" appears while data is changing.

When doing group connections:
→Press [Return] to open the unit selection screen. In the unit selection screen, press [Return] to briefly display "⧖", and then return to the "Field setting menu" screen.

■ Change of lighting time of filter sign

According to the installation condition, the lighting time of the filter sign (Notification of filter cleaning) can be changed.
Follow to the basic operation procedure (***1*** → ***2*** → ***3*** → ***4*** → ***5*** → ***6***).

- For the CODE No. in Procedure ***3***, specify [01].
- For the [SET DATA] in Procedure ***4***, select the SET DATA of filter sign lighting time from the following table.

SET DATA	Filter sign lighting time
0000	None
0001	150H (Factory setting)
0002	2500H
0003	5000H
0004	10000H

■ To secure better effect of heating

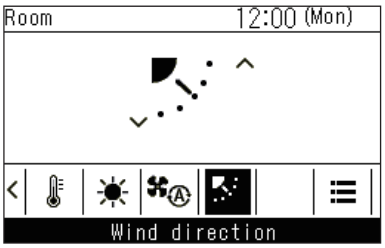
When it is difficult to obtain satisfactory heating due to installation place of the indoor unit or structure of the room, the detection temperature of heating can be raised. Also use a circulator, etc. to circulate heat air near the ceiling.
Follow to the basic operation procedure (***1*** → ***2*** → ***3*** → ***4*** → ***5*** → ***6***).

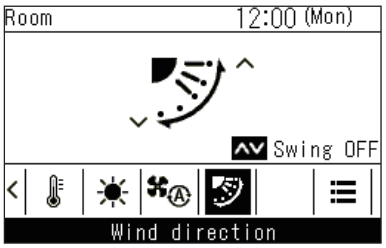
- For the CODE No. in Procedure ***3***, specify [06].
- For the SET DATA in Procedure ***4***, select the SET DATA of shift value of detection temperature to be set up from the table below.

SET DATA	Detection temp shift value
0000	No shift
0001	+1.8°F (+1°C)
0002	+3.6°F (+2°C) (Factory setting)
0003	+5.4°F (+3°C)
0004	+7.2°F (+4°C)
0005	+9°F (+5°C)
0006	+10.8°F(+6°C)

■ Changing the wind direction

Up / down direction: Horizontal louvres

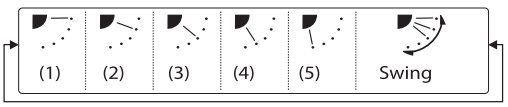




* Display while swingin

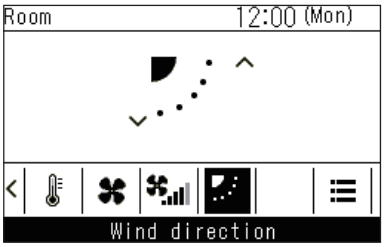
1 Press [ ] and [ ] to switch to the "Wind direction" screen (horizontal louvres)

2 Press [ ] and [ ] to select wind direction

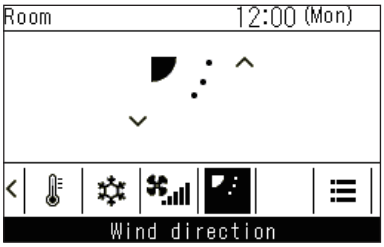


Operation mode	Settable angles
Heat, Fan, Auto (Heat)	(1), (2), (3), (4), (5), Swing
Cool, Dry, Auto (Cool)	(1), (2), (3), Swing

■ Cancelling swing



* Display when swinging (up / down) is cancelle "Fan", "Heat"



* Display when swinging (up / down) i cancelled "Cool", "Dry"

1 **During swing operation, press [<] and [>] to switch to the "Wind direction" screen**

2 **Press [^] or [v]**

→The louvres stop at the position when [^] or [v] is pressed.

→When [^] is pressed in the display when swing was cancelled, the louvres go to wind direction position (1), when [v] is pressed, the louvres go to position (3) during "Cool" or "Dry" operation, and go to position (5) during "Fan" or "Heat" operation.

■ Group control

In a group control, a remote controller can control up to maximum 8 or 16 units. (Depending on the outdoor unit.)

- The wired remote controller only can control a group control. The wireless remote controller is unavailable for this control.
- For cabling procedure and cables of the individual line (Identical refrigerant line) system, refer to "Electrical connection" in this Manual.
- Cabling between indoor units in a group is performed in the following procedure. Connect the indoor units by connecting the remote controller inter-unit cables from the remote controller terminal blocks (A, B) of the indoor unit connected with a remote controller to the remote controller terminal blocks (A, B) of the other indoor unit. (Non-polarity)
- For address setup, refer to the Installation Manual attached to the outdoor unit.

NOTE

Net work adapter (Model TCB-PCNT31TLUL) can not connect to this High Wall type air conditioner.

■ Remote controller sensor

The temperature sensor of the indoor unit senses room temperature usually. Set the remote controller sensor to sense the temperature around the remote controller.

Select items following the basic operation procedure (***1*** → ***2*** → ***3*** → ***4*** → ***5*** → ***6***).

- Specify **[32]** for the CODE No. in Procedure ***3.***
- Select the following data for the SET DATA in Procedure ***4.***

SET DATA	0000	0001
Remote controller sensor	Not used (factory default)	Used

When flashes, the remote controller sensor is defective.

Select the SET DATA [0000] (not used) or replace the remote controller.

12 TEST RUN

A wired remote controller is necessary for this function. This function cannot be operate with a wireless remote controller.

■ Before test run

- Before turning on the power supply, carry out the following procedure.
  1) Using 50 -megger, check that resistance of 1MΩ or more exists between the terminal block of the power supply and the earth (grounding).
     If resistance of less than 1MΩ is detected, do not run the unit.
  2) Check the valve of the outdoor unit being opened fully.
- To protect the compressor at activation time, leave power-ON for 12 hours or more be for operating.

⚠ WARNING

- Never press the electromagnetic contactor to forcibly perform a test run.
  (This is very dangerous because the protective device does not work.)
- Before starting a test run, be sure to set addresses following the Installation Manual supplied with the outdoor unit.

◆ Requirements for turning thermostat OFF

Cooling operation

- When the outdoor/suction air temperature is lower than or equal to 66.2°F (19°C).
- When the outdoor/suction air temperature is lower than or equal to 37.4°F (3°C) above the set temperature.

Heating operation

- When the outdoor/suction air temperature is lower than or equal to 14°F (-10°C).
- When the outdoor/suction air temperature is higher than or equal to 59°F (15°C).
- When the outdoor/suction air temperature is higher than or equal to 37.4°F (3°C) above the set temperature.

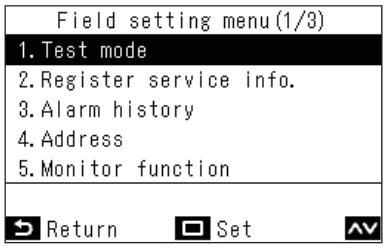
■ Execute a test run

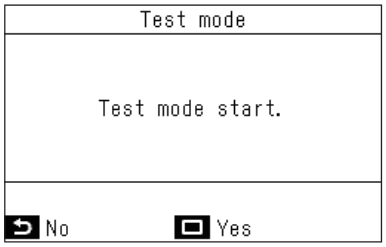
Use the remote controller to check operations. For the operation procedures, refer to the Owner's Manual provided. You can do forced operations by using the test mode function in the following procedure, under conditions that the thermostat is off.
This test mode function will automatically stop after 60minutes, to prevent continuous forced operation, and do normal operation (operation according to set temperature).

* Thermostat off: When the temperature of the room reaches the set temperature, the compressor of the outdoor unit stops, and operation switches from "Cool" or "Heat" to "Fan". The indoor unit is operating, but the outdoor unit repeatedly turns on/off in response to the room temperature.

⚠ CAUTION

- This test mode function does forced operation that ignores the set temperature, so be aware of the room temperature and be sure to do a stop / end operation when your work is finished.
- This test mode function puts a higher than normal load on the equipment, so only use it for inspections and to check operations.

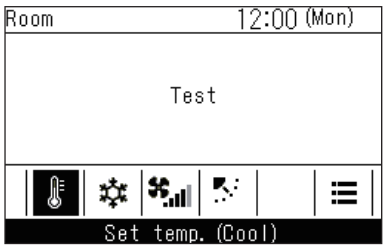




1 **In the “Field setting menu” screen, press [∧] and [∨] to select “Test mode”, and then press [▭ Set/Fix]**

→Test mode is set, and returns to the “Field setting menu” screen. Press the [⮌ Return] button 2 times, to open screen (2).

(1)



2 **Press [ON/OFF ON/OFF]**

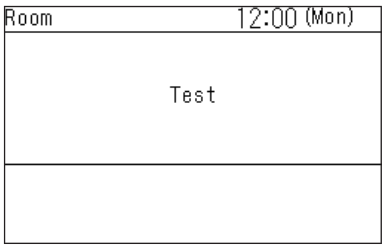
→Operation starts, and in test mode screen (1) opens. (While stopped, it is screen (2))

→Test mode is done while the operating mode is set to “Cool” or “Heat”.

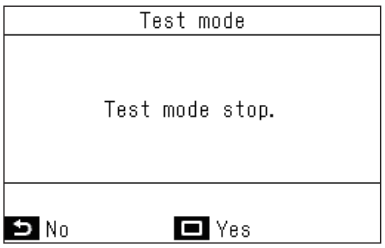
→The temperature cannot be set in test mode.

→Check codes are displayed in the normal way.

(2)



(3)



3 **After completing test mode, in the “Field setting menu” screen, press [∧] and [∨] to select “Test mode”, and then press [▭ Set/Fix]**

→Screen (3) appears.

→Press [▭ Set/Fix] to end test mode and do normal operation.

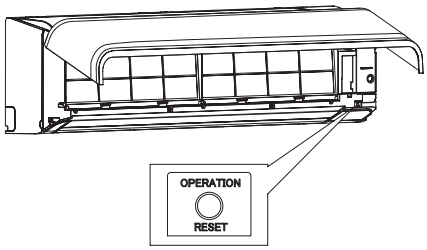
In case of wireless remote controller (Forced test operation is performed in a different way.)

REQUIREMENT

- For the operation procedure, be sure to follow the Owner's Manual.
- Finish the forced cooling operation in a short time because it applies excessive strength to the air conditioner.
- A test operation of forced heating is unavailable. Perform a test operation by heating operation using the switches of the remote controller.
  However heating operation may be not carried out according to the temperature conditions.

- **Check wiring/piping of indoor and outdoor units**

1. When pushing [RESET] button for 10 seconds or more, "Pi!" sound is heard and the operation changes to a forced cooling operation. After approx. 3 minutes, a cooling operation starts forcedly. Check cool air starts blowing. If the operation does not start, check wiring again.
2. To stop a test operation, push [RESET] button once again (Approx. 1 second). The louver closes and the operation stops.



OPERATION / RESET button

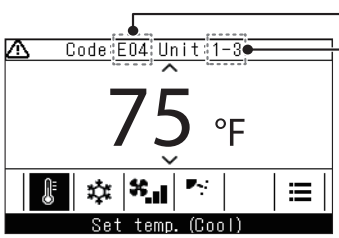
- **Check transmission of remote controller**

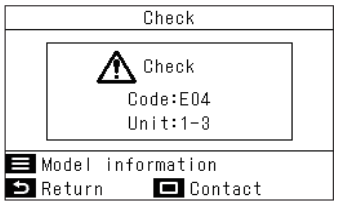
1. Push "START/STOP" button of the remote controller to check an operation can also start by the remote controller.
   - "Cooling" operation by the remote controller may be unavailable according to the temperature conditions. Check wiring/piping of the indoor and outdoor units in forced cooling operation.

13 TROUBLESHOOTING

A wired remote controller is necessary for this function. This function cannot be operate with a wireless remote controller.

■ Confirmation and check





When an error occurs in the air conditioner, the check code and the indoor unit number flash on the display of the remote controller.

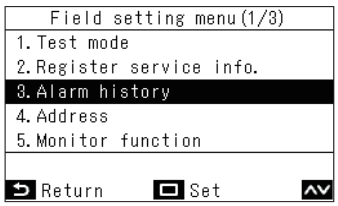
* The check code is only displayed during the operation.

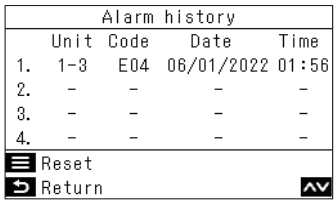
When the check code and indoor unit number are displayed, pressing [Return] opens the “Check” screen.

In the “Check” screen, press [Set/Fix] to show the contacts.Press [Menu] to display “Model information”.

■ Confrming an alarm history

Ten check codes in the past, troubled unit, and date when trouble occurred are displayed on “Alarm history” screen.





1 **In the “Field setting menu” screen, press [ ] and [ ] to select “Alarm history”, and then press [Set/Fix]**
List of latest 10 alarm data is displayed.

* The oldest data are deleted in order to record the new ones.

→ The date and time when the check code occurred for the frst time is displayed for the repeated alarm.

Deleting the alarm history

1 **Press [Menu] while the “Alarm history” screen is displayed**

→ “Reset all alarm data.” is displayed

2 **Press [Set/Fix]**

→ Delete the Alarm history in each remote controller when the dual remote controller system is used.

Check method

On the wired remote controller, central control remote controller and the interface P.C. Board of the outdoor unit (I/F), a check display LCD (Remote controller) or 7-segment display (on the outdoor interface P.C. Board) to display the operation is provided. Therefore the operation status can be known. Using this self-diagnosis function, a trouble or position with error of the air conditioner can be found as shown in the table below.

Check code list

The following list shows each check code. Find the check contents from the list according to part to be checked.

- In case of check from indoor remote controller: See “Wired remote controller display” in the list.
- In case of check from outdoor unit: See “Outdoor unit 7-segment display” in the list.
- In case of check from indoor unit with a wireless remote controller: See “Sensor block display of receiving unit” in the list.

○ : Lighting, ☼ : Flashing, ● : Goes off
ALT: Flashing is alternately when there are two flashing LED.
SIM: Simultaneous flashing when there are two flashing LED.
Inverter: Compressor / Fan inverter P.C. Board
I/F: Interface P.C. Board

Check code			Wireless remote controller				Check code name	Judging device
Wired remote controller display	Outdoor unit 7-segment display		Sensor block display of receiving unit					
		Auxiliary code	Operation	Timer	Ready	Flash		
E01	–	–	☼	●	●		Communication trouble between indoor unit and remote controller (Detected at remote controller side)	Remote controller
E02	–	–	☼	●	●		Remote controller transmission trouble	Remote controller
E03	–	–	☼	●	●		Communication trouble between indoor unit and remote controller (Detected at indoor unit side)	Indoor unit
E04	–	–	●	●	☼		Communication circuit trouble between indoor / outdoor unit (Detected at indoor unit side)	Indoor unit
E06	E06	No. of indoor units in which sensor has been normally received	●	●	☼		Decrease of No. of indoor units	I/F
–	E07	–	●	●	☼		Communication circuit trouble between indoor / outdoor unit (Detected at outdoor unit side)	I/F
E08	E08	Duplicated indoor unit addresses	☼	●	●		Duplicated indoor unit addresses	Indoor unit • I/F
E09	–	–	☼	●	●		Duplicated master remote controllers	Remote controller
E10	–	–	☼	●	●		Communication trouble between indoor unit MCU	Indoor unit
E11	–	–	☼	●	●		Communication trouble between Application control kit and indoor unit	Indoor unit Application control kit
E12	E12	01: Indoor/Outdoor units communication 02: Outdoor/Outdoor units communication	☼	●	●		Automatic address start trouble	I/F
E15	E15	–	●	●	☼		No indoor unit during automatic addressing	I/F
E16	E16	00: Capacity over 01: No. of connected units	●	●	☼		Capacity over / No. of connected indoor units	I/F
E17	–	–	☼	●	●		Communication trouble between indoor unit and Flow Selector unit	Indoor unit
E18	–	–	☼	●	●		Communication trouble between header and follower units Indoor unit	Indoor unit

Check code			Wireless remote controller				Check code name	Judging device
Wired remote controller display	Outdoor unit 7-segment display		Sensor block display of receiving unit					
		Auxiliary code	Operation	Timer	Ready	Flash		
E19	E19	00: Header is not detected 02: Two or more header units	●	●	☼		Outdoor header units quantity trouble	I/F
E20	E20	01: Outdoor unit of other line connected 02: Indoor unit of other line connected	●	●	☼		Other line connected during automatic address	I/F
E23	E23	–	●	●	☼		Sending trouble in communication between outdoor unitsTrouble in number of heat storage units (trouble with reception)	I/F
E25	E25	–	●	●	☼		Duplicated follower outdoor addresses	I/F
E26	E26	No. of outdoor units which received signal normally	●	●	☼		Decrease of No. of connected outdoor units	I/F
E28	E28	Detected outdoor unit number	●	●	☼		Follower outdoor unit trouble	I/F
E31	E31	*1 Inverter quantity information	●	●	☼		Inverter communication trouble	I/F
F01	–	–	☼	☼	●	ALT	Indoor unit TCJ sensor trouble	Indoor unit
F02	–	–	☼	☼	●	ALT	Indoor unit TC2 sensor trouble	Indoor unit
F03	–	–	☼	☼	●	ALT	Indoor unit TC1 sensor trouble	Indoor unit
F04	F04	–	☼	☼	○	ALT	TD1 sensor trouble	I/F
F05	F05	–	☼	☼	○	ALT	TD2 sensor trouble	I/F
F06	F06	01: TE1 sensor 02: TE2 sensor 03: TE3 sensor	☼	☼	○	ALT	TE1,TE2 or TE3 sensor trouble	I/F
F07	F07	01: TL1 sensor 02: TL2 sensor 03: TL3 sensor	☼	☼	○	ALT	TL1,TL2 or TL3 sensor trouble	I/F
F08	F08	–	☼	☼	○	ALT	TO sensor trouble	I/F
F09	F09	01: TG1 sensor 02: TG2 sensor 03: TG3 sensor	☼	☼	○	ALT	TG1,TG2 or TG3 sensor trouble	I/F
F10	–	–	☼	☼	●	ALT	Indoor unit TA sensor trouble	Indoor unit
F11	–	–	☼	☼	●	ALT	TF sensor trouble	Indoor unit
F12	F12	01: TS1 sensor 03: TS3 sensor 04: TS3 sensor disconnect	☼	☼	○	ALT	TS1 or TS3 sensor trouble	I/F
F13	F13	1 ∗ : Comp. 1 side 2 ∗ : Comp. 2 side	☼	☼	○	ALT	TH sensor trouble	Inverter
F15	F15	–	☼	☼	○	ALT	Outdoor unit temp. sensor miswiring (TE, TL)	I/F
F16	F16	–	☼	☼	○	ALT	Outdoor unit pressure sensor miswiring (Pd, Ps)	I/F
F22	F22	–	☼	☼	○	ALT	TD3 sensor trouble	I/F
F23	F23	–	☼	☼	○	ALT	Ps sensor trouble	I/F
F24	F24	–	☼	☼	○	ALT	Pd sensor trouble	I/F
F29	–	–	☼	☼	●	SIM	Indoor unit other trouble	Indoor unit
F30	F30	–	☼	☼	○	SIM	Occupancy sensor trouble	Indoor unit
F31	F31	–	☼	☼	○	SIM	Indoor unit EEPROM trouble	I/F
H01	H01	1 ∗ : Comp. 1 side 2 ∗ : Comp. 2 side	●	☼	●		Compressor break down	Inverter
H02	H02	1 ∗ : Comp. 1 side 2 ∗ : Comp. 2 side	●	☼	●		Compressor trouble (lock)	Inverter
H03	H03	1 ∗ : Comp. 1 side 2 ∗ : Comp. 2 side	●	☼	●		Current detect circuit system trouble	Inverter
H04	H04	–	●	☼	●		Comp. 1 case thermostat operation	I/F
H05	H05	–	●	☼	●		TD1 sensor miswiring	I/F
H06	H06	–	●	☼	●		Low pressure protective operation	I/F

Check code			Wireless remote controller				Check code name	Judging device
Wired remote controller display	Outdoor unit 7-segment display		Sensor block display of receiving unit					
		Auxiliary code	Operation	Timer	Ready	Flash		
H07	H07	–	●	☼	●		Oil level down detective protection	I/F
H08	H08	01: TK1 sensor trouble 02: TK2 sensor trouble 03: TK3 sensor trouble 04: TK4 sensor trouble 05: TK5 sensor trouble	●	☼	●		Oil level detective temp. sensor trouble	I/F
H14	H14	–	●	☼	●		Comp. 2 case thermostat operation	I/F
H15	H15	–	●	☼	●		TD2 sensor miswiring	I/F
H16	H16	01: TK1 oil circuit system trouble 02: TK2 oil circuit system trouble 03: TK3 oil circuit system trouble 04: TK4 oil circuit system trouble 05: TK5 oil circuit system trouble	●	☼	●		Oil level detective circuit trouble	I/F
H17	H17	1 ∗ : Compressor 1 side 2 ∗ : Compressor 2 side	●	☼	●		Compressor trouble (Step out)	I/F
H25	H25	–	●	☼	●		TD3 sensor miswiring	I/F
J02	–	–	●	☼	☼	SIM	Communication trouble between control boards in Flow Selector unit	Indoor unit
J03	–	–	●	☼	☼	SIM	Duplicated Flow Selector unit addresses	Indoor unit
J10	J10	Detected indoor unit address	●	☼	☼	SIM	Flow Selector unit overflow trouble	Indoor unit
J11	–	–	●	☼	☼	SIM	Flow Selector unit temperature sensor (TCS) trouble	
J29	–	–	●	☼	☼	SIM	Refrigerant leak detection sensor trouble	Indoor unit
J30	J30	Detected indoor unit address *Not displayed depending on the DN code (I.DN) setting	●	☼	☼	SIM	Refrigerant leak detection	Indoor unit
J31	–	–	●	☼	☼	SIM	Refrigerant leak detection sensor exceeding its life of the product	Indoor unit
L02	L02	Detected indoor unit address	☼	●	☼	SIM	Model mismatch of indoor and outdoor unitIndoor unit incompatible with A2L (R32) refrigerant	I/F
L03	–	–	☼	●	☼	SIM	Indoor unit centre unit duplicated	Indoor unit
L04	L04	–	☼	○	☼	SIM	Outdoor unit line address duplicated	I/F
L05	–	–	☼	●	☼	SIM	Duplicated indoor units with priority (Displayed in indoor unit with priority)	I/F
L06	L06	No. of indoor units with priority	☼	●	☼	SIM	Duplicated indoor units with priority (Displayed in unit other than indoor unit with priority)	I/F
L07	–	–	☼	●	☼	SIM	Group line in individual indoor unit	Indoor unit
L08	L08	–	☼	●	☼	SIM	Indoor unit group/Address unset	Indoor unit, I/F
L09	–	–	☼	●	☼	SIM	Indoor unit capacity unset	Indoor unit
L10	L10	–	☼	○	☼	SIM	Outdoor unit capacity unset	I/F
L11	L11	Detected indoor unit address	☼	○	☼	SIM	Flow Selector unit not connected	I/F
L12	L12	01: Flow Selector unit installation trouble	☼	○	☼	SIM	Flow Selector unit system trouble	I/F
L13	L13	Detected indoor unit address	☼	○	☼	SIM	Safety device setting unmatch	I/F
L14	L14	Detected indoor unit address	☼	○	☼	SIM	Safety device nonconformity	I/F
L17	L17	–	☼	○	☼	SIM	Outdoor unit type mismatch trouble	I/F
L18	L18	Detected indoor unit address	☼	○	☼	SIM	Flow Selector unit trouble	I/F
L20	–	–	☼	○	☼	SIM	Duplicated central control addresses	Indoor unit
L22	–	–	☼	○	☼	SIM	There is a DX-kit (heat source capacity command) non-compliant machine in the group (DDC control, TA control and TF control are mixed)	Indoor unit
L24	L24	01: Duplication of Flow Selector unit address 02: Indoor unit operation mode priority setting	☼	○	☼	SIM	Flow Selector unit setting trouble	I/F

Check code			Wireless remote controller				Check code name	Judging device
Wired remote controller display	Outdoor unit 7-segment display		Sensor block display of receiving unit					
		Auxiliary code	Operation	Timer	Ready	Flash		
L28	L28	—	☼	○	☼	SIM	Too many outdoor units connected	I/F
L29	L29	*1 Inverter quantity information	☼	○	☼	SIM	No. of inverter trouble	I/F
L30	L30	Detected indoor unit address	☼	○	☼	SIM	Indoor unit outside interlock	Indoor unit
—	L31	—	—				Extended I/C trouble	I/F
P01	—	—	●	☼	☼	ALT	Indoor fan motor trouble	Indoor unit
P03	P03	—	☼	●	☼	ALT	Discharge temp. TD1 trouble	I/F
P04	P04	1∗: Comp. 1 side 2∗: Comp. 2 side	☼	●	☼	ALT	High-pressure SW system operation	Inverter
P05	P05	1∗: Comp. 1 side 2∗: Comp. 2 side	☼	●	☼	ALT	Phase missing detection/Power failure detectionInverter DC voltage trouble (comp.)	I/F
P07	P07	1∗: Comp. 1 side 2∗: Comp. 2 side ---------- 04: Heat sink	☼	●	☼	ALT	Heat sink overheat trouble ---------- Heat sink dew condensation trouble	Inverter, I/F
P10	P10	Detected indoor unit address	●	☼	☼	ALT	Indoor unit overflow trouble	Indoor unit
P11	P11	—	●	☼	☼	ALT	Outdoor heat exchanger freezing trouble	I/F
P12	—	—	●	☼	☼	ALT	Indoor unit fan motor trouble	Indoor unit
P13	P13	—	●	☼	☼	ALT	Outdoor liquid back detection trouble	I/F
P15	P15	01: TS condition 02: TD condition	☼	●	☼	ALT	Gas leak detection	I/F
P16	P16	01: PMV5 02: PMV6 03: SV7	☼	●	☼	ALT	Injection circuit trouble	I/F
P17	P17	—	☼	●	☼	ALT	Discharge temp. TD2 trouble	I/F
P18	P18	—	☼	●	☼	ALT	Discharge temp. TD3 trouble	I/F
P19	P19	0#: 4-way valves 1#: 4-way valve1 2#: 4-way valve2 *Put in outdoor unit No. in [#] mark.	☼	●	☼	ALT	4-way valve inverse trouble	I/F
P20	P20	—	☼	●	☼	ALT	High-pressure protective operation	I/F
P22	P22	1∗: Compressor 1 side 2∗: Compressor 2 side	☼	●	☼	ALT	Outdoor unit fan inverter trouble	Inverter
P26	P26	1∗: Comp. 1 side 2∗: Comp. 2 side	☼	●	☼	ALT	IPM short protection trouble	Inverter
P29	P29	1∗: Comp. 1 side 2∗: Comp. 2 side	☼	●	☼	ALT	Comp. position detective circuit system trouble	Inverter
P31	—	—	☼	●	☼	ALT	Other indoor unit trouble(Group follower indoor unit trouble)	Indoor unit

• For details about check codes determined with an Interface .C. Board or an Inverter P.C. Board, refer to the Installation Manual of the outdoor unit.

***1 Inverter quantity information**
(Super Modular Multi System e and u series (SMMS-e, SMMS-u, SHRM-U))

No.	Comp. Inverter		Fan Inverter		Trouble
	1	2	1	2	
01	○				Comp. 1
02		○			Comp. 2
03	○	○			Comp. 1 + Comp. 2
08			○		Fan1
09	○		○		Comp. 1 + Fan1
0A		○	○		Comp. 2 + Fan1
0B	○	○	○		Comp. 1 + Comp. 2 + Fan1
10				○	Fan2
11	○			○	Comp. 1 + Fan2
12		○		○	Comp. 2 + Fan2
13	○	○		○	Comp. 1 + Comp. 2 + Fan2
18			○	○	Fan1 + Fan2
19	○		○	○	Comp. 1 + Fan1 + Fan2
1A		○	○	○	Comp. 2 + Fan1 + Fan2
1B	○	○	○	○	All
○ : Inverter trouble					

Trouble detected by central control device

Check code			Wireless remote controller				Check code name	Judging device
Central control device indication	Outdoor unit 7-segment display		Sensor block display of receiving unit					
		Auxiliary code	Operation	Timer	Ready	Flash		
C05	–	–	–				Sending trouble in central control device	Central control device
C06	–	–	–				Receiving trouble in central control device	Central control device
C12	–	–	–				Batch alarm of general-purpose equipment control interface	General-purpose equipment I/F
P30 (L20)	Differs according to trouble contents of unit with occurrence of alarm						Group control follower unit trouble	Central control device
	–	–	(L20 is displayed.)				• Duplication addresses of indoor units in central control device • With the combination of air conditioning system, the indoor unit may detect the check code of L20	
S01	–	–	–				Receiving trouble in central control device	Central control device

WARNINGS ON REFRIGERANT LEAKAGE

Check of Concentration Limit

The room in which the air conditioner is to be installed requires a design that in the event of refrigerant gas leaking out, its concentration will not exceed a set limit.

The refrigerant R410A which is used in the air conditioner is safe, without the toxicity or combustibility of ammonia, and is not restricted by laws to be imposed which protect the ozone layer. However, since it contains more than air, it poses the risk of suffocation if its concentration should rise excessively. Suffocation from leakage of R410A is almost non-existent. With the recent increase in the number of high concentration buildings, however, the installation of multi air conditioner systems is on the increase because of the need for effective use of floor space, individual control, energy conservation by curtailing heat and carrying power etc.

Most importantly, the multi air conditioner system is able to replenish a large amount of refrigerant compared with conventional individual air conditioners. If a single unit of the multi conditioner system is to be installed in a small room, select a suitable model and installation procedure so that if the refrigerant accidentally leaks out, its concentration does not reach the limit (and in the event of an emergency, measures can be made before injury can occur).

In a room where the concentration may exceed the limit, create an opening with adjacent rooms, or install mechanical ventilation combined with a gas leak detection device.

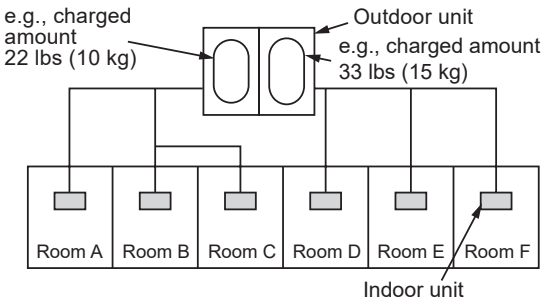
The concentration is as given below.

$$\frac{\text{Total amount of refrigerant (lbs (kg))}}{\text{Min. volume of the indoor unit installed room (ft}^3\text{ (m}^3\text{))}} \leq \text{Concentration limit (lbs/ft}^3\text{ (kg/m}^3\text{))}$$

The concentration limit of R410A which is used in multi air conditioners is 0.019 lbs/ft³ (0.3 kg/m³).

▼ NOTE 1

If there are 2 or more refrigerating systems in a single refrigerating device, the amounts of refrigerant should be as charged in each independent device.



For the amount of charge in this example:

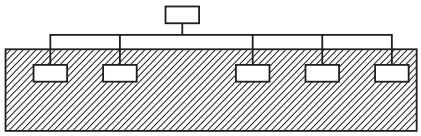
The possible amount of leaked refrigerant gas in rooms A, B and C is 22 lbs (10 kg).

The possible amount of leaked refrigerant gas in rooms D, E and F is 33 lbs (15 kg).

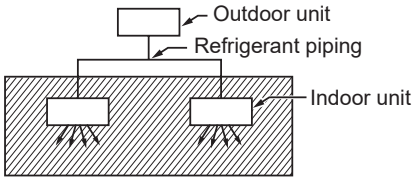
▼ NOTE 2

The standards for minimum room volume are as follows.

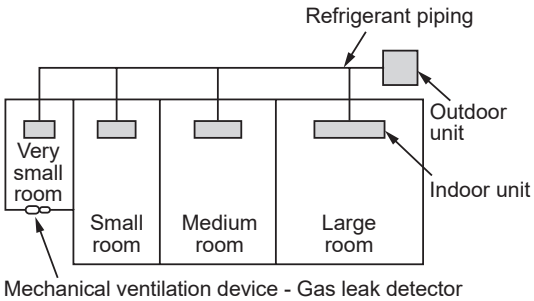
(1) No partition (shaded porti



(2) When there is an effective opening with the adjacent room for ventilation of leaking refrigerant gas (opening without a door, or an opening 0.15% or larger than the respective floor spaces at the top or bottom of the door).

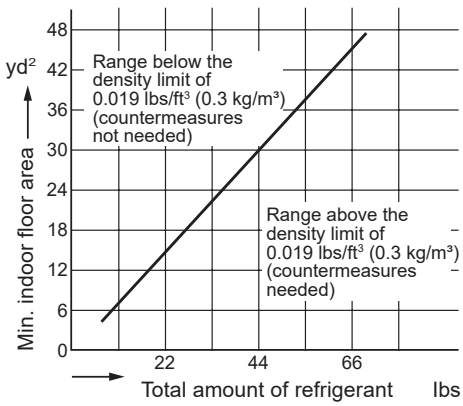


(3) If an indoor unit is installed in each partitioned room and the refrigerant piping is interconnected, the smallest room of course becomes the object. But when a mechanical ventilation is installed interlocked with a gas leakage detector in the smallest room where the density limit is exceeded, the volume of the next smallest room becomes the object.



▼ NOTE 3

The minimum indoor floor area compared with the amount of refrigerant is roughly as follows:
(When the ceiling is 8′11″ (2.7 m) high)



CONFIRMATION OF INDOOR UNIT SETUP

Prior to delivery to the customer, check the address and setup of the indoor unit, which has been installed in this time and fill the check sheet (Table below). Data of four units can be entered in this check sheet. Copy this sheet according to the No. of the indoor units. If the installed system is a group control system, use this sheet by entering each line system into each installation manual attached to the other indoor units.

REQUIREMENT

This check sheet is required for maintenance after installation. Be sure to fill this sheet and then pass this Installation Manual to the customers.

Indoor unit setup check sheet

Indoor unit	**Indoor unit**	**Indoor unit**	**Indoor unit**
Room name	**Room name**	**Room name**	**Room name**
Model	**Model**	**Model**	**Model**

Check indoor unit address. (For check method, refer to Applicable controls in this sheet.)
* In case of a single system, it is unnecessary to enter the indoor address. (CODE No.: Line [12], Indoor [13], Group [14], Central control [03])

Line	**Indoor**	**Group**	**Line**	**Indoor**	**Group**	**Line**	**Indoor**	**Group**	**Line**	**Indoor**	**Group**

Central control address	**Central control address**	**Central control address**	**Central control address**

Various setup	**Various setup**	**Various setup**	**Various setup**

Have you changed high ceiling setup? If not, fill check mark [×] in [NO CHANGE], and fill check mark [×] in [ITEM] if changed, respectively. (For check method, refer to Applicable controls in this sheet.) * In case of replacement of short plugs on indoor microcomputer P.C. board, setup is automatically changed.

High ceiling setup (CODE No. [5d])	High ceiling setup (CODE No. [5d])	High ceiling setup (CODE No. [5d])	High ceiling setup (CODE No. [5d])
☐ NO CHANGE	☐ NO CHANGE	☐ NO CHANGE	☐ NO CHANGE
☐ STANDARD [0000]	☐ STANDARD [0000]	☐ STANDARD [0000]	☐ STANDARD [0000]
☐ HIGH CEILING 1 [0001]	☐ HIGH CEILING 1 [0001]	☐ HIGH CEILING 1 [0001]	☐ HIGH CEILING 1 [0001]
☐ HIGH CEILING 3 [0003]	☐ HIGH CEILING 3 [0003]	☐ HIGH CEILING 3 [0003]	☐ HIGH CEILING 3 [0003]

Have you changed lighting time of filter sign? If not, fill check mark [×] in [NO CHANGE], and fill check mark [×] in [ITEM] if changed, respectively.
(For check method, refer to Applicable controls in this sheet.)

Filter sign lighting time (CODE No. [01])	Filter sign lighting time (CODE No. [01])	Filter sign lighting time (CODE No. [01])	Filter sign lighting time (CODE No. [01])
☐ NO CHANGE	☐ NO CHANGE	☐ NO CHANGE	☐ NO CHANGE
☐ NONE [0000]	☐ NONE [0000]	☐ NONE [0000]	☐ NONE [0000]
☐ 150H [0001]	☐ 150H [0001]	☐ 150H [0001]	☐ 150H [0001]
☐ 2500H [0002]	☐ 2500H [0002]	☐ 2500H [0002]	☐ 2500H [0002]
☐ 5000H [0003]	☐ 5000H [0003]	☐ 5000H [0003]	☐ 5000H [0003]
☐ 10000H [0004]	☐ 10000H [0004]	☐ 10000H [0004]	☐ 10000H [0004]

Have you changed detected temp. shift value? If not, fill check mark [×] in [NO CHANGE], and fill check mark [×] in [ITEM] if changed, respectively.
(For check method, refer to Applicable control in this sheet.)

Detected temp. shift value setup (CODE No. [06])	Detected temp. shift value setup (CODE No. [06])	Detected temp. shift value setup (CODE No. [06])	Detected temp. shift value setup (CODE No. [06])
☐ NO CHANGE	☐ NO CHANGE	☐ NO CHANGE	☐ NO CHANGE
☐ NO SHIFT [0000]	☐ NO SHIFT [0000]	☐ NO SHIFT [0000]	☐ NO SHIFT [0000]
☐ +1.8°F (+1°C) [0001]	☐ +1.8°F (+1°C) [0001]	☐ +1.8°F (+1°C) [0001]	☐ +1.8°F (+1°C) [0001]
☐ +3.6°F (+2°C) [0002]	☐ +3.6°F (+2°C) [0002]	☐ +3.6°F (+2°C) [0002]	☐ +3.6°F (+2°C) [0002]
☐ +5.4°F (+3°C) [0003]	☐ +5.4°F (+3°C) [0003]	☐ +5.4°F (+3°C) [0003]	☐ +5.4°F (+3°C) [0003]
☐ +7.2°F (+4°C) [0004]	☐ +7.2°F (+4°C) [0004]	☐ +7.2°F (+4°C) [0004]	☐ +7.2°F (+4°C) [0004]
☐ +9°F (+5°C) [0005]	☐ +9°F (+5°C) [0005]	☐ +9°F (+5°C) [0005]	☐ +9°F (+5°C) [0005]
☐ +10.8°F (+6°C) [0006]	☐ +10.8°F (+6°C) [0006]	☐ +10.8°F (+6°C) [0006]	☐ +10.8°F (+6°C) [0006]

Incorporation of parts sold separately	**Incorporation of parts sold separately**	**Incorporation of parts sold separately**	**Incorporation of parts sold separately**

Have you incorporated the following parts sold separately? If incorporated, fill check mark [×] in each [ITEM].
(When incorporating, the setup change is necessary in some cases. For setup change method, refer to Installation Manual attached to each part sold separately.)

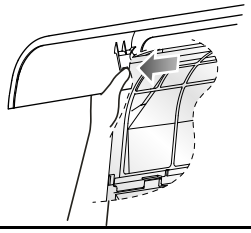
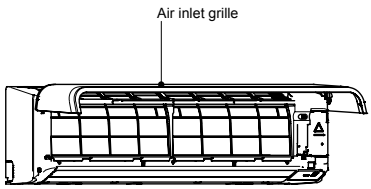
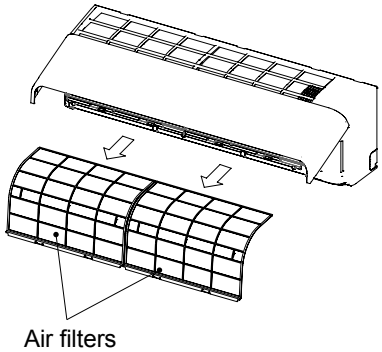
Panel	Panel	Panel	Panel
☐ Standard panel	☐ Standard panel	☐ Standard panel	☐ Standard panel
Filter	Filter	Filter	Filter
☐ Super long life filter	☐ Super long life filter	☐ Super long life filter	☐ Super long life filter
☐ Others ( )	☐ Others ( )	☐ Others ( )	☐ Others ( )
☐ Others ( )	☐ Others ( )	☐ Others ( )	☐ Others ( )

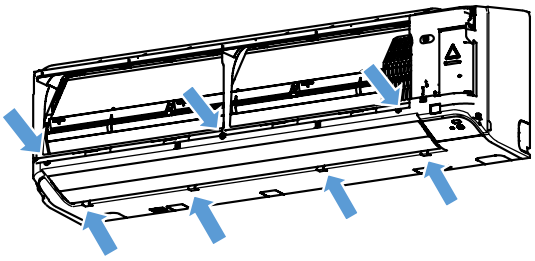
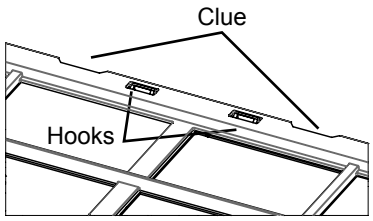
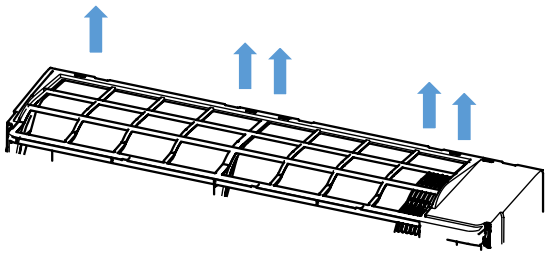
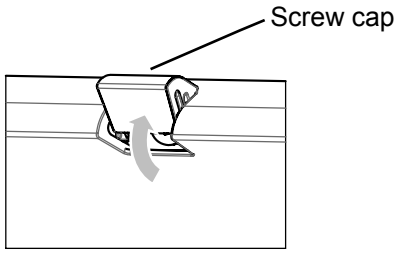
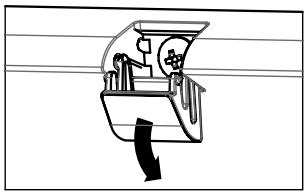
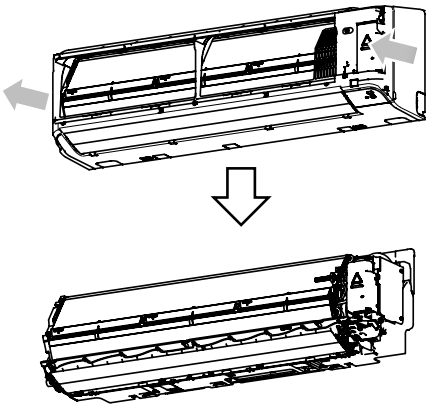
13. HOW TO REPLACE THE MAIN PARTS

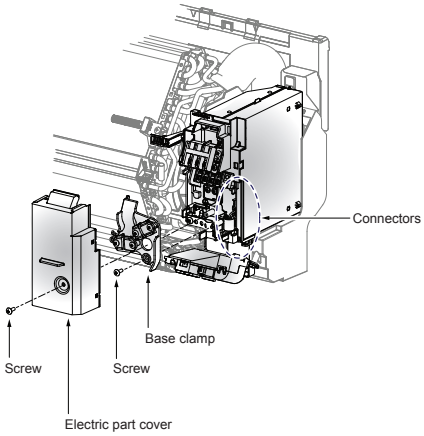
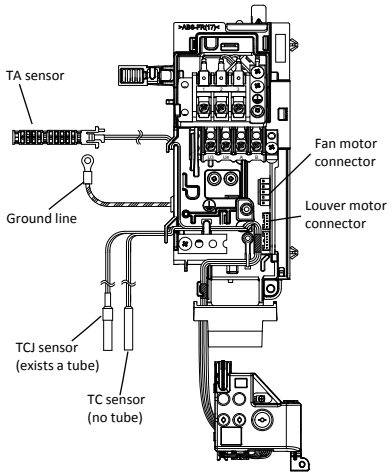
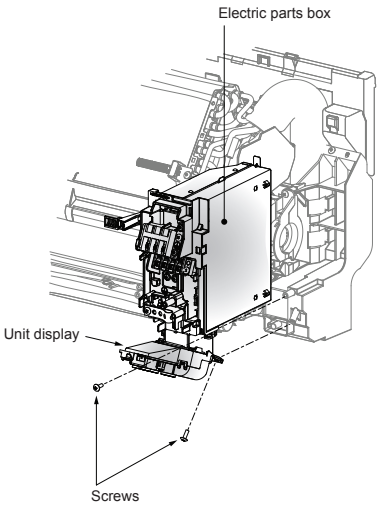
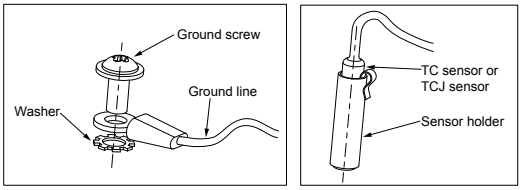
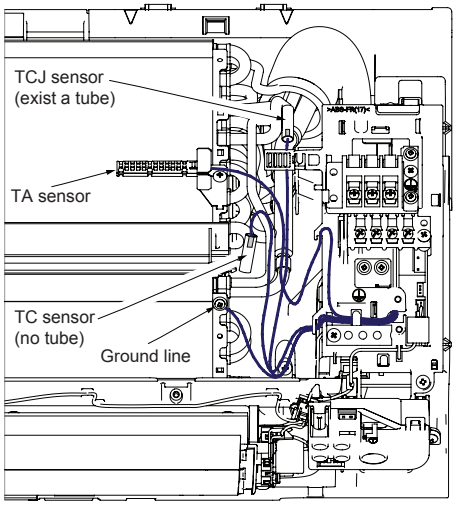
WARNING

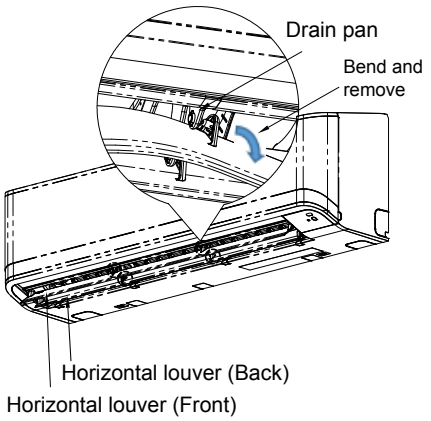
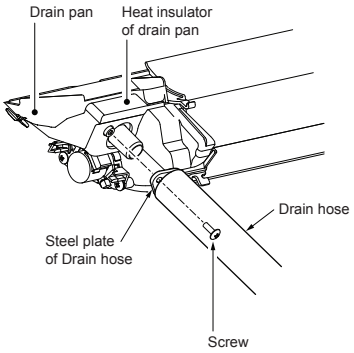
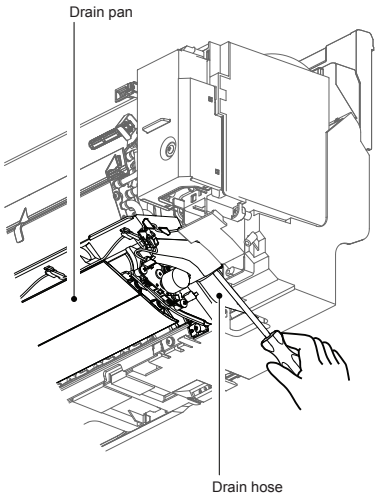
- Since high voltages pass through the electrical parts, turn off the power without fail before proceeding with the repairs.
  Electric shocks may occur if the power plug is not disconnected.
- After the repairs have been completed (after the front panel and cabinet have been installed), perform a test run, and check for smoking, unusual sounds and other abnormalities.
  If this check is omitted, a fire and/or electric shocks may occur.
  Before proceeding with the test run, install the front panel and cabinet.
- Ensure that the following steps are taken when doing repairs on the refrigerating cycle.
  1. Do not allow any naked flames in the surrounding area.
     If a gas stove or other appliance is being used, extinguish the flames before proceeding.
     If the flames are not extinguished, they may ignite any oil mixed with the refrigerant gas.
  2. Do not use welding equipment in an airtight room.
     Carbon monoxide poisoning may result if the room is not properly ventilated.
  3. Do not bring welding equipment near flammable objects.
     Flames from the equipment may cause the flammable objects to catch fire.
- **If keeping the power on is absolutely unavoidable while doing a job such as inspecting the circuitry, wear rubber gloves to avoid contact with the live parts.**
  Electric shocks may be received if the live parts are touched.
  High-voltage circuits are contained inside this unit.
  Proceed very carefully when conducting checks since directly touching the parts on the control circuit board may result in electric shocks.

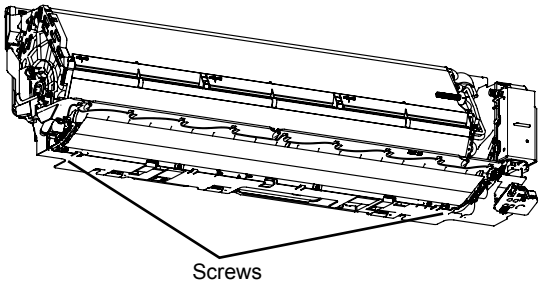
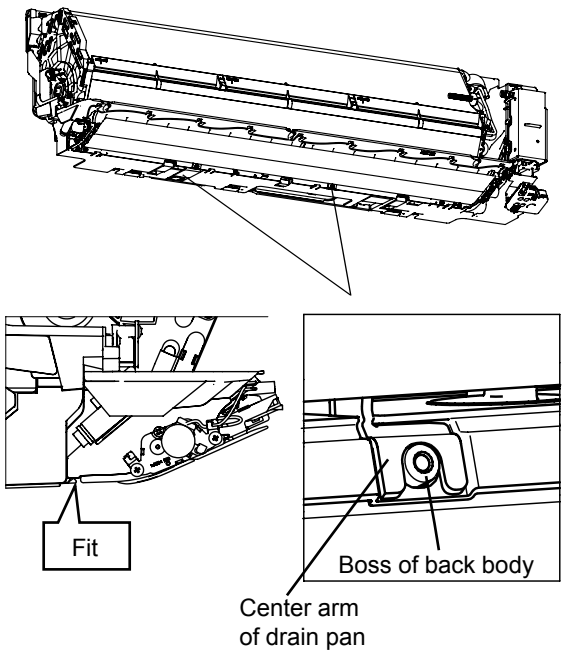
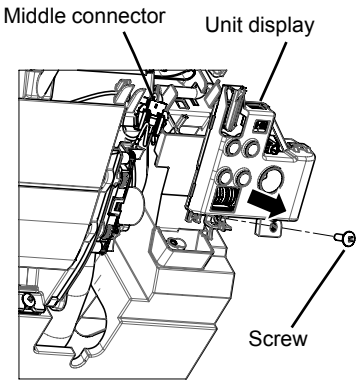
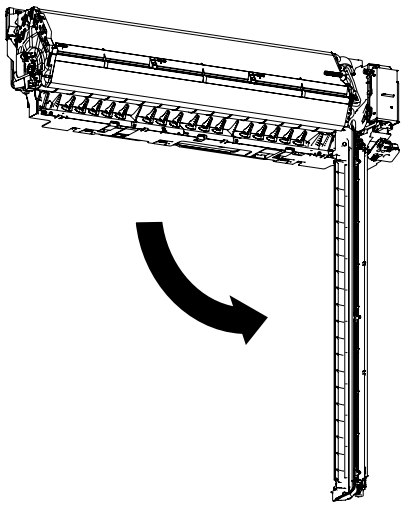
12-1. Indoor Unit

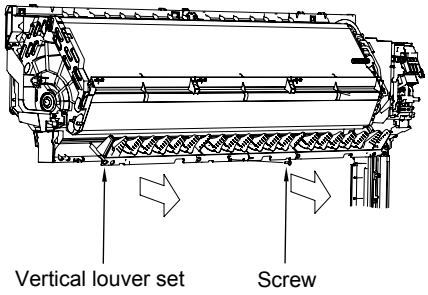
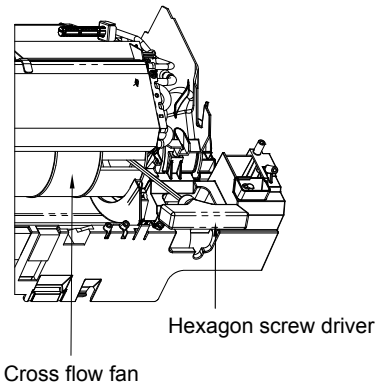
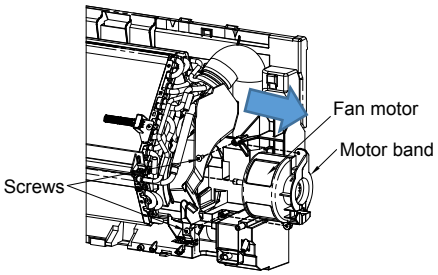
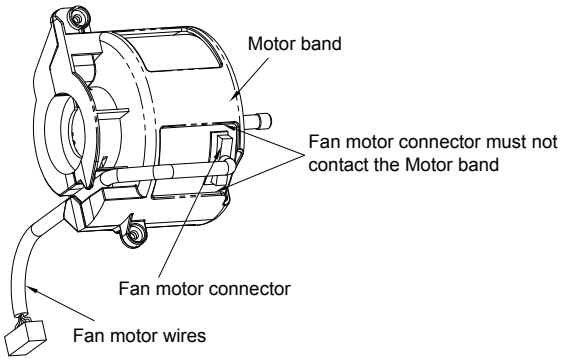
No.	Part name	Procedures	Remarks
①	Air inlet grille	1) Stop operation of the air conditioner and turn off its main power supply. 2) Open the air inlet grille and push it up until the air inlet grille take off. **<Remark>** If you do not have enough space for push the air inlet grille up until it take off, you can push the arms of air inlet grille toward the outside, and remove the air inlet grille. 	
②	Air filters	1) Follow to the procedure in the item ①.  2) Remove the left and the right air filters from the front panel.	

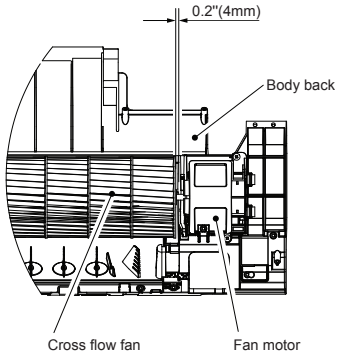
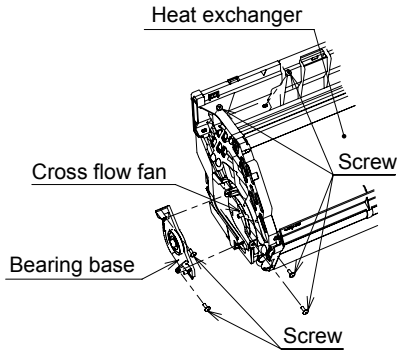
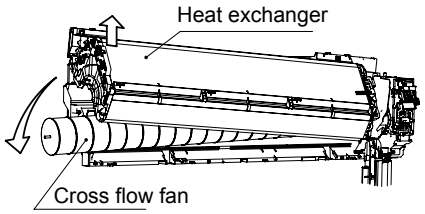
No.	Part name	Procedures	Remarks
③	Front panel	1) Follow to the procedure in the item ② . 2) Securely remove screws (3 pcs.) at the front panel. 3) Open 4 screw caps and securely remove screws (4 pcs.) at the front panel.  4) Pull the clue of a front panel and remove the hook of the back body.   5) Slightly open the lower part of the front panel then pull the upper part of the front panel toward you to remove it as shown on figure.	[How to open screw cap] Step 1) Push up screw cap  Step 2) Lower screw cap  

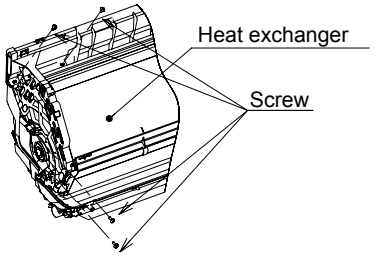
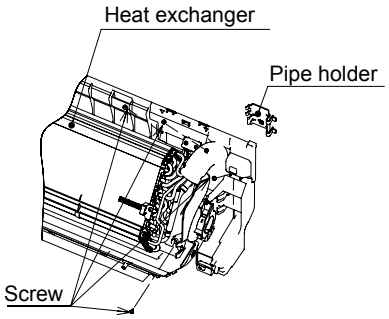
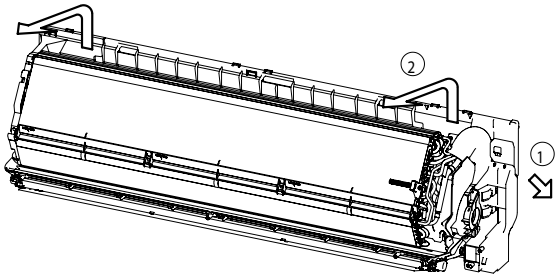
No.	Part name	Procedures	Remarks
④	Electric part box assembly	1) Follow the procedure item③. 2) Remove screw holding the electric part cover then remove fixing screw of base camp and remove it.	
			
		3) Disconnect the connectors for the fan motor and louver motor from P.C.board assembly. 4) Remove the earth screw and ground line from evaporator. 5) Pull out TC sensor and TCJ sensor from sensor holder of the evaporator.	
			
		6) Remove TA sensor from the evaporator. 7) Remove the 2 fixing screws that secures the electric parts box assembly, unit display assembly and remove the electric parts box assembly.	
		<To re-installation> - The sensor, ground line must turn to down.	
			

No.	Part name	Procedures	Remarks
⑤	Horizontal louver	1) Remove shaft of the horizontal louver from the drain pan. (First remove 2 the center shafts then remove the other shafts.)	
⑥	Drain hose	1) Follow the procedure item ③. 2) The drain hose can be removed by removing the screw securing the drain hose and then pulling out the drain hose. 3) When removing the drain hose, be careful of any sharp edges of steel plate. The edges may cause injury.  **<To re-installation>** - To install the drain hose, insert the drain hose firmly until the connection part contacts with heat insulator, and then secure it with original screw.	

No.	Part name	Procedures	Remarks
⑦	Drain pan assembly	1) Follow to the procedure in the item ③ 2) Remove screw holding the electric part cover. 3) Remove fixing screws of the unit display and remove unit display. 4) Disconnect the middle connector of louver motor code (5P) 5) Remove 2 fixing screws from the drain pan then remove the drain pan assembly from the body back.  **<To re-installation>** - Press the drain pan into the back body - Please confirm that drain pan is attached certainly. - Please confirm that center arm of drain pan has fitted into back body certainly.  	 

No.	Part name	Procedures	Remarks
⑧	Vertical louver assembly	1) Follow the procedure item ③ and ⑦. 2) Remove fixing screw from the vertical louver set then remove them from the body back.	
⑨	Fan motor	1) Follow the procedure item ③,⑦and ⑧. 2) Loosen the set screw of the cross flow fan.	
		3) Remove 2 fixing screws of the motor band. 4) Pull the motor band and the fan motor outward.	
		<To re-installation> - Keep connector position and arrange fan motor wires follow figure. 	

No.	Part name	Procedures	Remarks
⑩	Cross flow fan	1) Follow the procedure item③,⑦and⑧. 2) Loosen the set screw of the cross flow fan. (Refer to the⑨for how to remove set screw.) 3) Remove 4 fixing screws from the bearing base then remove it from the main unit. 4) Remove 4 screws which are fixing heat exchanger. 5) Lift up the heat exchanger follow the figure. Pull out the left hand side until the cross flow fan is released from the shaft of the fan motor and then pull out the lower side of heat exchanger follow the figure. **<To re-installation>** 1) To incorporate the fan motor and the motor into the position in the following figure. - Install the cross flow fan so that the right end of the 1st joint from the right of the Cross flow fan is keep 0.2"(4.0mm) from closed wall of the main unit.  - Holding the set screw, install the cross flow fan so that thin area on shaft of the fan motor comes to the mounting hole of the set screw.	 

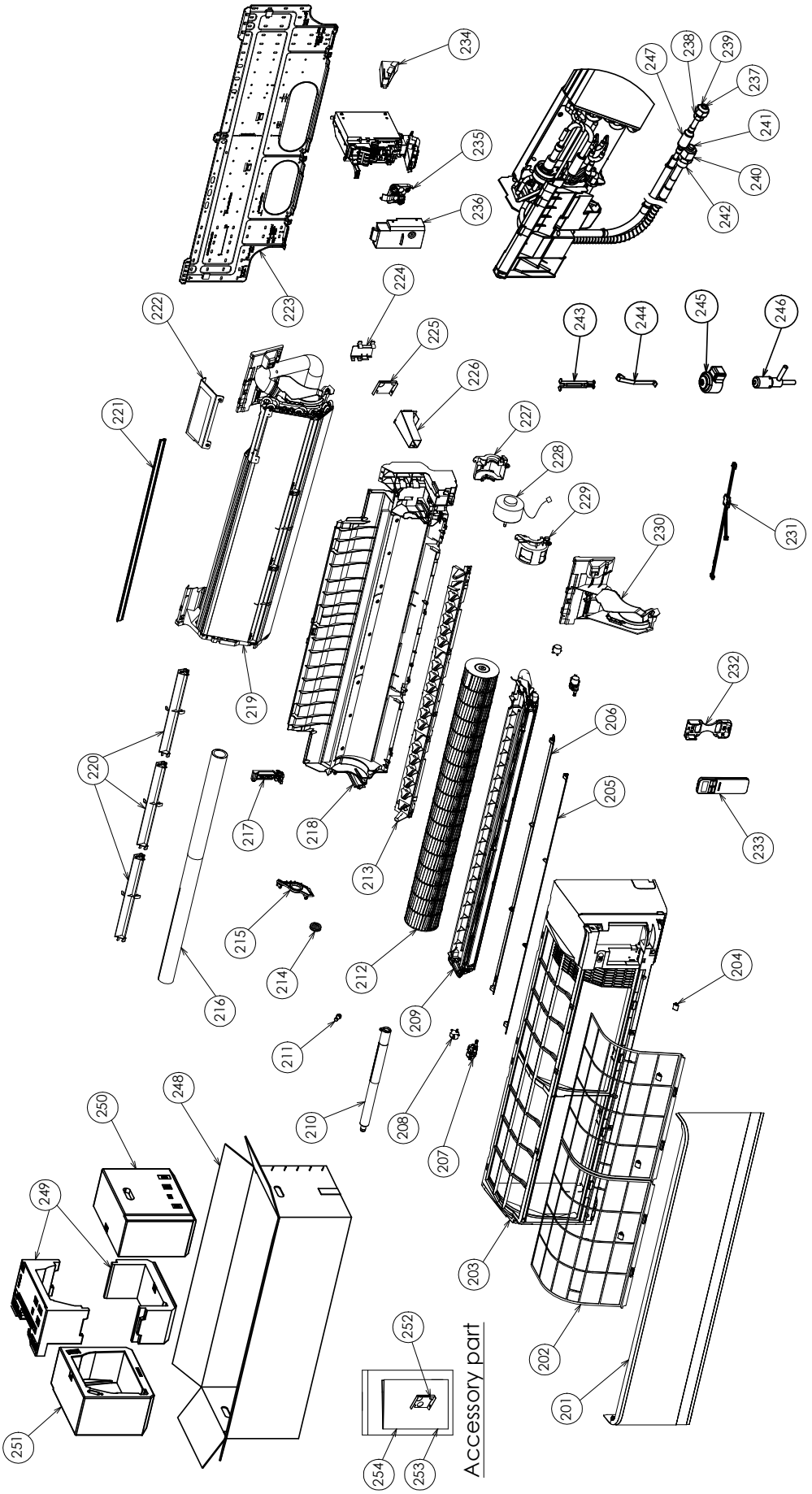
No.	Part name	Procedures	Remarks
⑪	Heat exchanger (Evaporator)	1) Follow the procedure item ③ and ④. 2) Remove 4 fixing screws at the left side of the heat exchanger.	
		3) Remove 3 fixing screw at the upper right side of the heat exchanger. 4) Remove fixing screw at the under right side of the heat exchanger. 5) Remove the pipe holder from the rear side of the main unit.	
			

Microcomputer

No.	Part name	Procedure	Remarks
①	Common procedure	1) Perform procedure item ③ and ④of Indoor Unit.	Replace terminal block, microcomputer ass'y and the P.C. board ass'y.

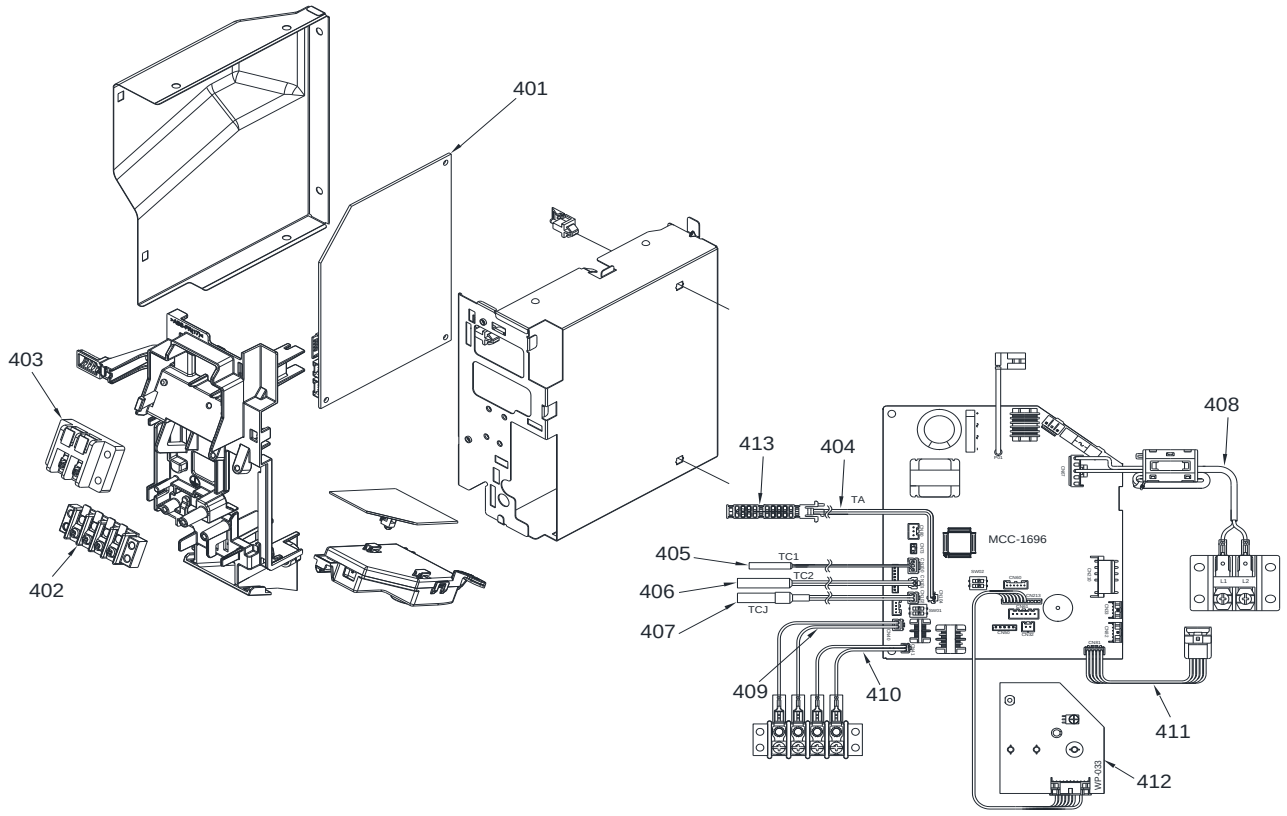
14. EXPLODED VIEWS AND PARTS LIST

Indoor Unit



Location No.	Part No.	Description	Model name MMK-UP****HP-UL	
			0301	0361
201	43T09606	GRILLE OF AIR INLET ASSY	1	1
202	43T80356	AIR FILTER	2	2
203	43T00842	FRONT PANEL ASSY	1	1
204	43T00771	CAP SCREW ASSY	4	4
205	43T22362	HORIZONTAL LOUVER FRONT	1	1
206	43T22363	HORIZONTAL LOUVER BACK	1	1
207	43T2D303	GEAR ASSY	2	2
208	43T21527	MOTOR-LOUVER	2	2
209	43T72374	DRAIN PAN ASSY	1	1
210	43T70325	DRAIN HOSE ASSY	1	1
211	43T79322	DRAIN CAP	1	1
212	43T20369	CROSS FLOW FAN ASSY	1	1
213	43T22361	VERTICAL LOUVER ASSY	1	1
214	43T22312	BEARING ASSY, MOLD	1	1
215	43T39402	BASE BEARING ASSY	1	1
216	43T49381	PIPE, SHIELD	1	1
217	43T49382	PIPE FIXTURE	1	1
218	43T03416	BACK BODY ASSY	1	1
219	43T44736	REFRIGERATION CYCLE ASSY	1	1
220	43T49383	SEAL, FRONT	3	3
221	43T49384	SEAL, UP	1	1
222	43T04467	PMV COVER ASSEMBLY	1	1
223	43T82345	PLATE, INSTALLATION ASSY	1	1
224	43T49043	HOLDER, PIPE	1	1
225	43T62402	CONDUIT MOUNT	1	1
226	43T62404	CONDUIT PARTITION A ASSENBY	1	1
227	43T39403	MOTOR BAND BACK	1	1
228	43T21492	FAN-MOTOR	1	1
229	43T39404	MOTOR BAND FRONT	1	1
230	43T39401	MOTOR COVER ASSY	1	1
231	43T60511	CORD MOTOR LOUVER HR	1	1
232	43T83305	HOLDER, REMOTE CONTROL	1	1
233	43T66415	WIRELESS REMOCO (WH-TE03NE)	1	1
234	43T62382	CONDUIT PARTITION B ASSENBY	1	1
235	43T62365	CLAMP BASE ASSY	1	1
236	43T47332	BONNET, 9.52 DIA	1	1
237	43T62364	TERMINAL COVER ASSY	1	1
238	43T82318	SOCKET	1	1
239	43T97312	NUT, FLARE, 3/8 IN	1	1
240	43T47334	BONNET; 15.88 DIA	1	1
241	43T82321	SOCKET	1	1
242	43T97314	NUT, FLARE, 5/8 IN	1	1
243	43T19333	HOLDER, SENSOR	2	2
244	43T19321	FIX-P-SENSOR	1	1
245	43T46519	COIL, PMV	1	1
246	43T46518	BODY, PMV	1	1
247	43T47386	STRAINER	1	1
248	43T91414	PACKING BOX	1	1
249	43T91384	PACKING CUSHION CENTER	1	1
250	43T91382	PACKING CUSHION RIGHT	1	1
251	43T91383	PACKING CUSHION LEFT	1	1
252	43T62403	CONDUIT MOUNT	1	1
253	43T85907	INSTR-INST	1	1
254	43T85909	MANUAL	1	1

Indoor Unit (Part-E)



Location No.	Part No.	Description	Model name MMK-UP****HP-UL	
			0301	0361
401	43TN9873	PC BOARD ASSY(MCC-1696)	1	1
402	43T60448	TERMINAL	1	1
403	43T60078	TERMIMAL BLOCK	1	1
404	43T50391	SENSOR; THERMOSTAT	1	1
405	43T50410	TC-SENSOR	1	1
406	43T50414	TC-SENSOR	1	1
407	43T50306	TEMPERATURE SENSOR	1	1
408	43T60548	ASM-HOUSING(PW)	1	1
409	43T60546	ASM-HOSING(BUS)	1	1
410	43T60545	ASM-HOUSING(REM)	1	1
411	43T60539	ASM-HOUSING(MOV)	1	1
412	43T6V932	PC BOARD ASSY	1	1
413	43T63356	HOLDER-TA	1	1

Toshiba Carrier (Thailand) Co., Ltd.

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AMPHUR MUANG, PATHUMTHANI 12000, THAILAND.